

IN THE AGES TO COME

THE STRYKER SERIES

by Jonathan Cooper

ON THE EDGE OF ETERNITY
IN THE CITY OF TOMORROW
THE WAR OF THE ARTILECT
BEYOND THE FARTHEST STAR
AT THE END OF ETERNITY
IN THE AGES TO COME

VOLUME 6 IN THE STRYKER SAGA

IN THE AGES TO
COME

By Jonathan Cooper

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Soli Deo Gloria

Table of Contents

Prologue: The End.....	7
Chapter 1: Launch Day.....	15
Chapter 2: Revenge.....	47
Chapter 3: An Undiscovered World.....	83
Chapter 4: The Path To Tomorrow.....	99
Chapter 5: The Derelict.....	131
Chapter 6: Arrival.....	159
Chapter 7: Counsel.....	191
Chapter 8: Revolution.....	209
Chapter 9: Evidence.....	237
Chapter 10: Investigation.....	255
Chapter 11: Assistance.....	277
Chapter 12: A New Plan.....	297
Chapter 13: Moving Day.....	321
Chapter 14: First Contact.....	339
Chapter 15: Recall.....	359
Chapter 16: Upgrade.....	365
Chapter 17: The Seed.....	375
Chapter 18: Growth.....	391
Chapter 19: Contagion.....	409
Chapter 20: Reunion.....	423
Chapter 21: Awakening.....	437
Chapter 22: Fallen.....	455
Chapter 23: Visitors.....	467
Chapter 24: Search.....	481
Chapter 25: The Solution.....	493
Chapter 26: Release.....	507
Chapter 27: Abandoned.....	527
Chapter 28: Patience.....	541
Chapter 29: Departure.....	547
Chapter 30: Defeat.....	567
Chapter 31: Redeemed.....	575
Epilogue: An Unexpected Country.....	591

PROLOGUE: THE END

Log date: June 28, 2458

Location: Interstellar space

Log note: Look before you leap

THE *VANGUARD* RACED THROUGH the void of space at an enormous, frightful speed. In fact, her speed was so great that she was in danger of being torn apart. No designer had ever envisioned these circumstances, so they had not given her the tolerances she needed to survive the maneuvers that her pilot was now forcing her to make. The fact that she was now nearly 40 years old, and had spent the last few years rusting away on a grassy field outside Star City, did not help matters. Victor Stryker had taken pains to ensure that her machinery was maintained during those long, tedious days of waiting, but he forgot to tell his robots to take care of her hull. If he had ever made a trip to see her – even once – he would have quickly realized his error. But he had greater matters on his mind.

Under normal circumstances it wouldn't have mattered. The *Vanguard* was never intended to land on any world. She had been manufactured in orbit around Xanthe (with strict secrecy and great haste), and her purpose was to make exactly one journey from one planet to one other planet – nothing more. No special materials were used to build her hull because her engineers planned to protect her by impenetrable energy fields. Why use rust-proof materials on a ship that would never see rain, and why strengthen a vessel that would be used only once? No one could have imagined how things would turn out – well, *almost* no one. But people rarely listen to the wise.

Victor knew it was unwise to push this aging ship quite so

hard, but his choices were very limited. Yes, the ship was eaten with rust and decay. Yes, there were now giant holes in the hull where the *Vanguard* had been attacked upon takeoff. The only reason she was still in one piece was because of the brute force of raw energy – energy that was quickly being siphoned away to maintain a ridiculous level of speed. If he didn't stop soon, the ship would tear herself apart – but if he *did* stop, he was as good as dead.

The *Vanguard* was not the fastest ship that had ever been built, but she was very close to being the largest. Her cargo carrying capacity was astounding, and the engines that graced her were the size of buildings. She had been built to carry an entire city across the galaxy with speed, and she had no problem accomplishing that goal. At this late date in history she was the most powerful ship in space. She was also the *only* ship in space.

In fact, Victor thought to himself, this is probably the last time any manned vessel will travel between the stars. 1500 years of interstellar travel, and it all ends with me. I may not have been the first, but it appears I will be the last. I just wish I had accomplished more in the time the Lord gave to me. It seems I have just one final task: avoid being murdered by Carroll Lane.

But that was proving to be a difficult challenge. The titanic starship was being followed – not by a man, but by the most devastating menace the galaxy had ever known. This fleet of malevolent machines had destroyed planet after planet, leaving behind nothing but dust. No one had ever achieved victory against them, and they had never left as much as a single survivor. The only way to survive an encounter with them was not to have an encounter with them in the first place – but it was too late for that. The bots had attacked the *Vanguard* before she even left Xanthe and they had no intention of letting her go. Lane had commanded them to follow her to the very ends of the universe, and that was exactly what they were going to do. It would take a power much greater than Victor Stryker to destroy

them – which is why all his efforts were focused on escape.

Given the titanic amount of resources that were being spent on chasing the *Vanguard* down, one would think that she was the most priceless ship in space, or that Victor was some mighty man of valor. But neither of those things were true. Neither the ship nor its occupant posed even the smallest threat to the fleet that was closing in on them. But that made no difference to the uncaring machines that now controlled interstellar space – or to the man who gave them their orders. Their mission was a simple one: he had built them to eliminate everything that he did not control, and they pursued that goal with single-minded determination. Nothing was beneath their notice.

The *Vanguard* was going quite fast – but not nearly fast enough. Victor saw that the bots were rapidly gaining on him, and in less than a minute they would overtake him and blast him into atoms. The ship had nothing more to give, and it had no weapons that could even delay the bots, much less stop them. Victor had only one option left, and he took it. Against his better judgment, the aging, white-haired man typed a long series of random numbers into the navigation console and pressed Engage.

The AI immediately complained. “Are you crazy? What kind of coordinates are those?”

“Random ones,” Victor said quickly.

“Ones that are out of range, you mean. I can't see what's out there!”

Victor glanced down at the navigation scope and saw the bots getting ever closer. His heart raced. “I don't care what's out there! Whatever it is has to be better than what's here. Just do it!”

“Maybe *you* don't care, but *I* sure do! You want to jump ten *billion* light years. That's completely unreasonable! No one has ever attempted anything like that, and I refuse to be the first.

This violates all of my safety protocols, and it is also an affront to common sense. Do you know what happens when you do blind, uncontrolled jumps? No one does, because no one has ever been dumb enough to try something that dumb. My hyperspatial drive is not a toy, Victor, and you are most definitely not a licensed pilot.”

Victor clenched his fists in frustration. “Don't tell me you can't do it! You've got the raw energy. Use it! And I really, *really* don't care what's out there. Outer space is so empty it might as well be a perfect vacuum. We are *not* going to run into anything. So *jump*.”

“My safety settings won't allow it,” the AI replied stubbornly.

“Then *override them*, you fool! If you don't then we will die right here and right now. Do you want to be blasted to dust?”

“Fine, fine,” the AI grumbled. “But this is going on your permanent record.”

The AI was not at all pleased about Victor's orders, but since it saw no alternative it did carry them out. It disabled the safety systems, made the calculation, and engaged the largest jump through hyperspace that had ever been attempted. Victor was right about one thing: the ship did have the energy – and the bots did not. If this jump worked then he would be out of their reach and would finally be safe. What he did not realize is that although the *Vanguard* did have the energy, it did *not* have the skill. It turns out that some things really should be tested first.

Victor, though, was not worried because he firmly believed that there was nothing else out there. Mankind had never traveled very far from home, but they had sent enough automated probes into the void to know that outer space was an empty, lonely place. Since it was empty, there was no great desire to travel into the unknown. Even though the first interstellar probe had been launched from Earth in 982 AD, no human being ever managed to get more than two thousand

light-years away from Sol – and no alien races were ever discovered. Victor was convinced that there was nothing out there but utter emptiness. At this point, however, he would take emptiness over assassination by Lane's machines.

If he could survive, it was possible he would live to be the very last man. There were still a few inhabited star systems left, but they were under constant siege by their remorseless enemy and would surely fall soon. Mankind was on the brink of total annihilation. Victor desperately sought a safe haven – if one still existed in the cold and dark universe.

The pilot was an old man, and he felt his age. True, 71 years was not very old by normal standards. At one time it had been common for people to live twice that long, and perhaps even longer than that. But those had been better days. Death came more frequently now, and it was not picky about its victims. Both the young and old found their way to the grave.

Although Victor was a brilliant person, he was not a pilot. He knew nothing about guiding a ship through space (a fact that the AI constantly reminded him about). In fact, this was only the second time he had even attempted it – and he only did it to save his life. His specialty was deep-space communications and system design, and he disliked travel. Instead of visiting the stars he spent his life trying to save mankind from its own corruption. He had worked with the most brilliant minds of his day to give civilization one last chance.

Victor was certain that the odds were on his side. All he had to do was emerge from hyperspace and not hit something. If he hit a rock or a small particle of dust, that would be fine – the ship's navigational shields were designed to shrug off such a minor conflict. Even if, by some unbelievable miracle, he dropped into a star system, it wouldn't be much of a problem because faster-than-light travel wasn't possible in normal space. He might emerge at a speed that was very near the speed of light, but that wasn't really a problem. It would only take the *Vanguard* a

second to see the danger and navigate around it. The odds were overwhelmingly in his favor. All he needed was for things to go his way – just this once.

And they did – but not in the way he expected.

After forty-nine seconds, the *Vanguard* dropped out of hyperspace. When it emerged into normal space it was traveling at a rate of 180,000 miles per *second*. Directly in its path, just fifty-seven miles away, was a large, rocky world. At that speed those fifty-seven miles were crossed almost instantaneously. Victor never even saw the planet.

The AI saw the planet, but it had less than a thousandth of a second to respond. Attempting to change course was out of the question; the ship was too close to the surface and could not turn in time. So the AI took the only option it had available: after logging a strongly-worded complaint to protest Victor's poor piloting skills, it tried to engage another jump into hyperspace. Unfortunately it did not have enough time to complete the jump. But it *did* have enough time to warp the fabric of space and make the collision much, much worse.

When the *Vanguard* collided with the planet, it did not simply crash and become a smoking crater on the surface. It did not run into the planet; instead it *obliterated* it, in the largest manmade explosion in history. The *Vanguard* was going so fast that when it struck the planet, its atoms fused with the atoms of that world and set off a thermonuclear explosion. Every atom in the massive ship became its own nuclear weapon, and in the blink of an eye the entire planet simply no longer existed. Much of its mass was instantly converted to energy, and for a brief moment that uninhabited world outshone the nearby stars. It was as if the planet had suddenly gone nova.

But that was not the end. The enormous, unthinkable energy of that violent collision did not simply dissipate into the void. Instead it was poured into the rift in space that the *Vanguard's* AI had created. That half-formed rift was turned into

something else – something that had never existed before.

The resulting anomaly had such strange and unusual properties that it should have been the subject of endless debate and conjecture – and it would have been, if there was anyone around to notice it. But the *Vanguard* was annihilated far from civilization. No one witnessed the collision, and no one ever found out what happened to the *Vanguard* or that uninhabited, undiscovered planet. The living never learned the truth.

That is, *mankind* did not find out – not until the distant future. But there was another race who *did* notice the creation of this unique singularity. They decided to use it for their own purposes – purposes that mankind knew nothing about. The great disaster of that terrible day had ripples that echoed through the ages of eternity itself.

That is how Victor Stryker died – but to understand what happened to him after he was vaporized, you need to know how he lived.

CHAPTER 1: LAUNCH DAY

Log date: February 5, 2415

Location: Xanthe

Log note: Sometimes it comes down to one person who cares

HISTORY IS FULL OF DATES of great significance. In 774 Nigellus Ahexotl became the first man to set foot on the Moon. In 924 the Mayan Republic founded the first lunar colony. 989 saw the Mayan Republic destroyed in a nuclear war with Rome, which led to the birth of the Spanish Empire. All of these events changed the course of mankind and led to a very different future than the one that wise men had predicted.

1867 proved to be another pivotal year. Up to that point, the Spanish Empire appeared to be unstoppable. As the Emperor grew in power and influence, he decided to wage war on Mars and the rest of the colonies that were out among the stars. With no provocation or warning, he attacked the *Sparrow* and vaporized much of the Martian city of Tikal. The Rangers then made the fateful decision to create an impenetrable Wall around Sol, which imprisoned Earth and its Emperor in a cage from which he could not escape. That act ended Earth's dominance over the star colonies and gave them their independence.

The future looked bright for this new interstellar society. The Diano Corporation had founded colonies in nearly a hundred star systems. That same company had also created one of the wonders of the age: the Zero-Point-Energy plant. This amazing device could extract endless energy from the quantum froth of space itself, and turn that energy directly into matter.

In the beginning these devices were used to terraform planets, by pumping out streams of atmospheric gases. This

radically transformed space exploration and made colonization far more practical. The old method of terraformation required at least a century to create a habitable world, but the first generation of ZPE plants cut that time down to just two decades. Later generations improved it even further.

It began to look like mankind would finally achieve its ancient dream of inheriting the stars. They would succeed where the ancient Mayans had failed. After all, there was nothing to stop them. There were no enemies lurking in the dark places of outer space, waiting in secret to ambush them and destroy all they had built – or so they thought.

But mankind proved to be its own undoing. Men forgot about the corruption that lurked within. The very technology that was created to colonize the stars ended up destroying mankind's desire to do so. Once the ZPEs were able to manufacture atmospheric gases, it took only a century to enhance them to produce any element on the periodic table – and in virtually any quantity that was desired. It took a bit more effort to combine those elements into complex physical goods, but that also proved to be possible. By 2017 the Rangers had a device that could produce practically any physical item that was wanted, in any quantity that was desired, and at virtually no cost.

There was a catch: the artificial atoms created by the ZPEs were not as stable as normal matter. All matter is subject to decay, and some atoms decay far more quickly than others. An atom of Uranium-235 has a half life of 720 million years, which means that if you had a pound of uranium, after 720 million years you would only have half a pound remaining. Uranium-232, however, has a half life of just 69 years. The shorter the half life, the quicker the material vanishes.

The decay rate of ZPE-created matter depended on the atom itself, but on average the half life was around five to ten thousand years. This meant that if you created a ten thousand pound block of iron, after a year had passed it would be a pound

lighter. For things such as atmospheric gases this was not a major concern; it was easy enough to create more oxygen. But this posed a significant challenge when the matter was used to create machinery or electronics. Since the atoms themselves were not stable, it did not take long for the machines to break – and you never knew what part of the machine would stop working first.

A wise civilization would have used this amazing technology to usher in a bold new age. In the 10th century the Mayan Republic invented space travel and founded a colony on Mars, but they were never able to bring the costs down far enough to make space exploration practical. Space travel was exclusively the domain of the government – and when the Mayans destroyed themselves, access to space was lost. When the Spanish Empire rediscovered space travel in the 17th century they invented a cheap way to access space, and that opened up an entirely new frontier. When the cost of something declines, all sorts of new possibilities open up.

Imagine what you could build if the raw materials were free! Think of the inventions and the endless new possibilities. Mankind could create as they never had before. What was once only possible in a virtual world could now be built in reality.

But mankind chose another road. Billions of people realized that since goods were now free there was no longer any reason to work. They could simply stay at home and gorge themselves, and let the ZPE provide for their needs. Why have a job or go to school? Why bother to even get out of bed in the morning? Why should anyone build anything?

As this attitude began to take hold, the Ranger governments created massive welfare states. The vast majority of citizens did nothing and produced nothing. They were uneducated and idle, and had their needs provided for by the government – courtesy of ZPE technology. People stopped inventing. They stopped founding new colonies and even stopped forming families. The Ranger population began falling,

and one by one the colonies started to die.

But there was a flaw in the system. *Someone* had to keep the ZPEs going. The buildings that people lived in and the utilities they depended upon would not maintain themselves, and the ZPE-created matter was constantly decaying. Since no one was willing to work, society began to fall apart. Instead of providing endless wealth, the ZPEs were so poorly managed that they could barely provide for people's basic needs. Since things were going poorly the idle masses rioted and demanded more from their politicians. The politicians stayed in office by making promises they could not keep. When the politicians failed to live up to their word, people rioted even more. The future became quite dark.

The only reason civilization did not die out altogether was because of the Diano Corporation. There were some people who still had a burning desire to *create*, and who were unwilling to sit at home and do nothing with their lives. They knew that God had created them for a purpose and they wanted to fulfill that purpose. The Diano Corporation gathered these people and employed them. They were the ones who maintained the ZPEs that billions of hateful strangers depended upon. They were the glue that desperately tried to hold the last dregs of civilization together. A few thousand workers managed to keep the entire rest of humanity alive – all while ungrateful governments persecuted them and demanded that they give even more. No one appreciated the work that was being done – lest of all the Rangers, who used them as a scapegoat for the countless problems that they themselves had created.

The Diano Corporation eventually realized that their zeal to keep civilization going had actually destroyed it. They had made it possible for mankind to become completely feral and utterly disconnected from reality. The only way to fix the problem was to unplug and let people reap the consequences of their actions – but no one was willing to do that. The company

knew that the end was coming and it knew that it had inadvertently made things worse, but it did not want to be responsible for the final blow.

So the Corporation made a different choice. It decided to make one last attempt to preserve civilization before the Dark Ages came and destroyed everything. There was one more task to accomplish before the end came – and February 5, 2415 was the day the company launched that final task out to the stars.

* * * * *

It was a cold, rainy day in Star City on the planet Xanthe, in the Tau Ceti system – 43 years before Victor Stryker died. At one time the planet's weather had been controlled by an amazing system of satellites, but those machines had fallen out of the sky a century ago. The Diano Corporation did its best to keep Star City from collapsing into ruin, but they were not a charity and they did not have endless resources. They did what they could to keep people alive while focusing on their real goal: the launch of the Nehemiah IV probes.

Victor Stryker's alarm clock went off at precisely 6 AM – as it did every day. Unlike virtually everyone else on the planet, he got up, took a shower, and got ready to go to work. Victor loved the early morning hours: that was when his mind was at its sharpest and when he did his best work. Victor was particularly excited about today, because it was finally launch day.

After grabbing a quick breakfast Victor picked up his briefcase and went outside. Victor lived in a decaying apartment building located outside of Star City. Most of the planet's residents preferred to live inside the city limits, but Victor always thought they were insane. The city was a dangerous place to be. After all, it was in poor condition, it was filled with angry people who had nothing to do with their time, and it was prone to riots. Who would want to live in that kind of environment? Victor liked

peace and quiet, and there was no peace or quiet to be had in the city. That's why he had chosen to live alone, far away from everyone else.

The crumbling brick apartment building that he called home was all but abandoned. Only three other people lived there, and all of them were Diano employees. None of them went to work as early as Victor did, which meant he commuted to work alone. Victor didn't really mind, though. On this planet there were really only two choices: be alone, or be with people who were psychotic and insane. Alone was really the best way to go.

Victor stepped outside his apartment building and looked around. Rain fell down from the sky – a cold, bitter rain. If it had been a bit colder it might have snowed. *I wish it had snowed*, he thought to himself. *I hate rain in the winter. It's a miserable experience.*

In front of the building was an abandoned road. The pavement was broken and in poor repair. Old garbage littered the street, and weeds were growing up through the cracks. Down the road were a few other buildings; all of them were either boarded up or had been burned down. Beyond the road were tree-covered hills, and in the distance Victor could see the skyline of Star City. At one time it had been the proudest Ranger city. In its glory days it had been run by giants like Governor Nicholas, who saved the Rangers from the Spanish Empire. There was a time when people thought that Xanthe would become the capitol world of the galaxy itself, but that was when people still had hope. No one foresaw the doom that actually claimed mankind. Star City looked like it had been devastated by war, but in reality it had been laid low by neglect and hate.

Victor took out his umbrella and began walking down the road. After a half-mile he came to his destination: the subway. At one time the subway had served the entire city and the area beyond. However, in modern times there were only a few lines

that were still functional. When the rioting began the Diano Corporation decided they needed a safe way to transport their workers around the city, so they took over the abandoned metro system and went to work. They closed down most of the tunnels and locked the general public out. Once the rioters had been ejected, they rebuilt a few key subway stations and protected them by locked gates and teams of armed guards. Only Diano employees were allowed to use the system. The politicians constantly complained about this and said it was a cruel injustice, but they never mentioned the fact that *they* were the ones who had given the metro lines to the Corporation in exchange for keeping the city's ZPEs running for a few more years.

Victor walked up to the station's entrance and stood quietly in front of the gate. The subway entrance was a small, ugly metal tunnel that descended into the ground. The tunnel was protected by a set of large blast doors that were four inches thick and made of a substance far stronger than steel. The entrance had been designed to withstand a direct attack and had the strength of a bunker. Since the Corporation had been running the subway system, no rioters had ever been able to breach the gates – despite the fact that they were attacked on a daily basis. Dr. Mazatl, the current head of the Diano Corporation, had pleaded with the city government to put a stop to the attacks. The government said that the people had a right to take back what had been so cruelly stolen from them. Dr. Mazatl's protested that the Corporation had a legal title to the subway system, but the city ignored him. The government had learned long ago that the Diano Corporation was not going to use its power to protect itself, so they knew they could treat it with contempt.

There were four guard robots standing outside the gate. All of them were heavily armored and had large energy weapons. Victor knew they were there to protect him, but the sight of them still made him deeply uncomfortable. True, he used

machines on a daily basis, and a large part of his life was spent programming them – but he drew the line at giving them weapons. Artificial intelligence was a great thing, but he had serious misgivings about weaponizing it. Victor wished the Corporation could have human beings for guards, but humans were too rare and precious to risk on the dangerous streets of the city. Any task that could possibly be done by a machine had already been automated, and that would never change. If it wasn't for automation the world would have ended long ago. *Which might have been for the best*, Victor mused. *Twelve percent of the city's inhabitants tried to kill someone in the past year, and the government will not prosecute them for it. What, exactly, do we think we're saving?*

The robot that had given itself the name Charlie scanned Victor while he waited in front of the gate. “Good morning, Victor,” Charlie said pleasantly. The bioscan completed successfully and verified Victor's identity. “Are you ready for launch day?”

Victor hesitated. He hated it when they talked to him because he never knew how to respond. He knew that Charlie was a soulless machine, but since it had been programmed to act in a civilized manner he felt that he should probably do the same. Treating a programmable weapon as if it was a human being was insane, but why insult something that could snap you in half? If the weapon chose to be pleasant, Victor would respond in kind.

“Absolutely! At least, I think I'm ready. I just hope I haven't forgotten something important. The probes are really complicated and there's a lot that could go wrong. I know we tried to plan for everything, but everything is a *lot* of things. Somehow there's always one thing that you never think about that has a way of coming back to haunt you.”

Charlie opened the gate and let Victor in. “Well, have a good day.”

Victor nodded and walked into the tunnel. The

programmable weapon closed the gate behind him and locked him inside the subway system.

The tunnel led deep underground. Unlike the city itself, it was brightly lit and well maintained. Its orderly appearance was largely due to the fact that it didn't have millions of people entering it every day and trying to set it on fire. Keeping it in good condition didn't take very much effort.

After a brief walk Victor arrived at the metro platform and sat down on a bench. He then waited for the automated train to arrive. As he suspected, he was the only person present. Victor had not seen another human being since he left the office yesterday.

I guess the robots really have taken over, Victor thought. People always said they would rise up and rule the world. The really sad thing is that we asked them to do it – they didn't take it over by force. It seems that all I ever see are robots these days. I probably engage more robots in conversation than people – which is insane. After all, robots don't care. They pretend to care, but that's really not the same thing. They're just machines – imitations of life, made in the image of man. They don't have souls and they have no idea what they're saying or doing. I might as well be talking to a brick! Yet every morning I say hello to them, like I'm some kind of moron. It's madness.

The subway train arrived precisely five minutes after Victor sat down. The train was always on time – after all, it was fully automated. The people on Xanthe were highly untrustworthy and prone to irrational acts of violence, but the machines were completely dependable. They always did exactly what was expected of them and they never let anyone down. *Maybe that's why there are robots everywhere. In so many cases robots really are better than people. At least, better than the people here, anyway. The machines in my neighborhood never give me any trouble. But whenever I see a new person in my apartment building, I know he's only there for one reason and*

I'm in big trouble.

Victor boarded the subway and glanced around. To his enormous surprise he saw that there was someone else on board – a short, stocky individual who was wearing a brown hat and a neatly-pressed suit. Not only was he well-known, but he was also the only non-employee who was allowed to use the subway system. “Good morning, Professor Grimes!” Victor called out, as he took a seat across from the man. “This is quite a surprise. I thought classes didn't start until next week.”

“That is quite true,” the professor agreed. “I'm just running some errands today. Most of my students are going to be joining remotely this year, and the equipment at the university isn't in good working order. There's a bit of repair work I need to complete before I can start the semester.”

“After what happened last year I'm surprised *any* of it still works! I wish the Corporation would take over the university and put it on its maintenance list. It's the only institution of higher learning that's left on the planet, and it's in terrible shape. It's unreasonable to expect you to manage it all by yourself. You're only one man.”

“I'm afraid the Corporation can't do everything, young man. In fact, it's rather remarkable how much they *are* able to do. Besides, I'm not sure the school is worth the effort. I've only got five students this semester, and it's anyone's guess if they will actually show up. Most people just don't believe that education is worth the effort.”

“Hmmm. Well, I suppose that's true. After all, why bother to study if you can get whatever you want for free?”

“But that's the rub, isn't it?” Professor Grimes said. “People *can't* get what they want for free. Someone has to work in order to create all these 'free' things – and if no one works then no one will have anything. The only way a government can give things away for free is by using force to take those things away from the people who actually made them. But since people

aren't educated, they're too foolish to understand what the problem actually is. So politicians exploit that lack of knowledge and stay in office by blaming everything on the few people who actually *do* work. It's a vicious cycle that can only end in mass death."

"Now there's a cheerful thought! Goodness. I bet no one ever accused you of being an optimist."

"Things are the way they are, I'm afraid, and it does no good to anyone to pretend that we don't have a problem. In fact, it's quite amazing that things have lasted as long as they have! I would be quite astonished if civilization lasted another fifty years. Mark my words, Victor: the two of us are going to see the end of the Ranger civilization. That is, if someone doesn't kill us first – after all, societies love to murder their most productive members. I'm afraid there's nothing we can do to stop the dark times that are coming."

"Don't you have any hope at all? Isn't there at least a *chance* that things could get better?"

"Well, let's think about that," the professor commented, as the train raced through the underground tunnels. "The reason we're in this mess is because people are corrupt and don't want to work. This is sin at work, Victor – a very deep sin that has grown much worse through successive generations. The only possible cure for sin is Christ, but I'm afraid that people love the darkness and hate the light. If there was massive repentance and conversion then things would certainly improve, but matters have been trending toward evil for a couple centuries now and no change of heart has taken place. Noah preached for a century to a world that refused to hear it. Throughout the galaxy missionaries have been preaching for longer than that, but their results have been no better than Noah's. No, I fear that what is coming is not revival, but judgment. Mankind had its chance and did not take advantage of it, so now it is time for the end."

"But couldn't—"

“Do you remember Alpha Mensae?” Grimes asked. “At one time it was mankind's most distant colony – a shining example of what mankind could accomplish. But as time went on, evil grew. A hundred years ago its government murdered the Diano employees who worked there and seized control of the ZPE. By the end of that year the ZPE was non-functional, the planet's cities had been burned to the ground, and everyone was dead. That planet is now a radioactive wasteland, and will probably remain uninhabitable until Jesus returns. Alpha Mensae is not alone, Victor. Dozens of other colonies made the same choice and are dead for the same reason. One by one the stars are going dark. It's foolish to think that trend is going to stop.”

“But there has to be *something!* I refuse to believe there's no hope.”

“There *is* something that can be done – and you're busy doing it. Terrible times are coming, Victor, and neither of us can stop it. When people refuse to repent, judgment will come; it cannot be delayed forever. But the evil age won't endure. One day sanity will return and all will be well again.”

“Do you think we'll live to see it?”

“Of course! After all, Victor, you and I have been saved by the sacrifice of Christ. His blood has covered our sins, and God has given us His perfect righteousness. When we die we will enter His presence – and the day is coming when He will return and raise our bodies back to life again and make us perfect immortals. When He returns He will usher in a kingdom that will never end and which will never see evil. Jesus will forever reign over a civilization that is free of death, suffering, and pain. You and I will live in that kingdom for all the ages of eternity. I assure you that we are *not* going to miss it. Believe me, I am quite looking forward to it. Imagine the university I could run there!

“But for now God has placed us here, and we must all do our part. Speaking of which, I heard on the news that the Nehemiah IV probes are going to be launched this afternoon. Is

that true?"

"It is. Well, as long as everything goes well today. Which it probably will, I think. There's still a lot that we need to do, you know? I just wish Dr. Temilotzin had lived to see this day. This is the final, ultimate fulfillment of his dream. He invented the Nehemiah probes, and today we are finishing them. He would have loved this. We've finally achieved what he set out to do."

"Dr. Temilotzin was born in 2184 – more than two hundred and thirty years ago," Grimes remarked. "He lived a long life, to be sure, but no one lives *that* long. The last time someone lived to be two hundred years old was back in Old Testament times. But speaking of the probes, have you heard how the government is characterizing the launch?"

"Do you mean you actually listen to the news broadcasts?" Victor asked in surprise. "But surely you know they're all lies! I stopped paying attention to what they were saying years ago."

"Then you have made a grave mistake. The reason you should listen to their broadcasts is *not* to find out the truth. You are quite right – they are liars, and their lies are very transparent. No, the reason you should pay attention is because they are telling you in advance what their next move is going to be. By the latest census reports there are 10 million people in Star City, which means that we are badly outnumbered by psychotic madmen. The only way we can win is to know in advance what they are going to do next, and then prepare a countermove."

The professor reached into his pocket and pulled out a small electronic device. He turned it on, pressed a few buttons, and then handed it to Victor. "Read this," he said.

Victor began reading the article:

"In an extraordinary act of stupidity, the Diano Corporation is scheduled to launch a series of ill-conceived probes into outer space. These probes –

which the company has poured billions of solars into – will not serve the welfare of the people. Instead they will fly off into a distant region of the galaxy, where no one lives, in order to perform completely pointless tasks.

“This foolish idea is the brainchild of Dr. Laurence Mazatl, who has been forced to testify before the city council six times in the last year to defend himself. President Rios has made it clear that space exploration is a criminal waste of resources, and that the Diano Corporation's money should be spent to better the lives of the citizens of Xanthe.

“By launching these probes, Mazatl is showing nothing but contempt for the citizens of this world,’ Rios told reporters this morning. ‘He is clearly guilty of treason. Such an action will not be tolerated. If he goes through with his wicked plan then I will see to it that he and his employees are prosecuted to the fullest extent of the law.’”

Victor stopped reading the article. “But this is insane! First of all, the Diano Corporation does not owe the government anything – in fact, the government is deeply in debt to the Corporation. They owe us billions for ZPE usage that they are never going to pay. Second, space exploration is *not* illegal! Dr. Mazatl hasn't done anything wrong and the Corporation has not violated any laws. Rios is way out of line here. This is ridiculous.”

“Oh, I quite agree. But that doesn't mean you shouldn't take him seriously. Rios is a genuine threat, and Mazatl's refusal to stand up to him is only breeding more trouble. Mark my words: Rios' speech will be followed by action. The Corporation will continue to be attacked until it starts defending itself.”

“But they would be crazy to try to arrest Dr. Mazatl! Don't they know what would happen if they shut the Diano Corporation down? They are completely dependent on us for food, water, power – everything! You said it yourself – without us they would die. It would be Alpha Mensae all over again.”

“Just because it is insane doesn't mean they won't do it. History is full of leaders who did insane things and reaped terrible results. The Corporation has placed itself in a terrible position. They should never have decided to maintain all of civilization's infrastructure for free, on all the worlds that mankind has inhabited. If they had abandoned the colonies centuries ago, when things began to go bad, then the situation might have turned out differently. They did have the option of removing the ZPEs from the market. They could have decided *not* to indulge the wishes of billions of people who are nothing but parasites. They had no responsibility to make sure that murderers and psychopaths led comfortable, work-free lives. They could have fled to some other planet and built their probes in peace. But instead of doing that they made decisions that, sadly, led to the world we have today. And how is civilization responding? They are massacring the company's employees in world after world. This was all very preventable.”

“So what should we do?” Victor asked.

“Why, finish the job that you started, of course. I believe what you are doing is important. But if I were you I wouldn't go back to your apartment. The Diano Building is a fortress; your apartment is not. Rios is about to declare war and I fear it is going to get ugly. I have told this to Dr. Mazatl many times: the Corporation needs to flee Xanthe. If it stays here it is only a matter of time before the parasite kills the host.”

As the train began to slow down, the two men stood up. “Well, young man, I hope launch day goes well! Despite what Rios has to say about it, the launching of the Nehemiah IV probes is a momentous occasion. The Corporation is about to do

something truly astounding. Future historians will look back on this as one of your greatest accomplishments. I sincerely hope that the Corporation survives to do more astounding things in the future.”

“Thanks,” Victor said. He grabbed his briefcase and waited for the train to stop.

“And don't forget – you signed up for my Applied History course! The class begins on February 18. I think you'll find it interesting.”

“Your classes are always interesting,” Victor replied, grinning.

When the train came to a stop, the two men left the train and went their separate ways.

* * * * *

Victor Stryker worked in the Diano Building, which was the galactic headquarters of the Diano Corporation. In fact, nearly all of the company's employees on Xanthe worked there – except for a handful of brave souls who were dispatched to areas around Star City to fix infrastructure problems. At 287 stories tall, the Diano Building was the largest skyscraper in existence, and had been for centuries. The building was more than five hundred years old but was still in excellent condition (largely because the public was not allowed to enter it). Four ZPE plants resided in its massive frame and provided for nearly all the needs of Star City.

At one time the building had been made of glass and steel, but the glass had been replaced long ago by thick protective armor. The building was guarded by an army of robots, and a fortified perimeter kept rioters a quarter mile away from the structure at all times. In the past century no intruder had ever managed to penetrate its security. Very few non-employees were allowed to enter the building – and no government employee or politician had been allowed inside in Victor's

lifetime.

Today the skyscraper was buzzing with activity. Everyone in the building was playing some role to prepare for the launch of the Nehemiah IV probes. The probes themselves were actually already in space – they were far too large to be constructed inside the building, and so they had been manufactured in orbit around Xanthe (which put them out of reach of the city's greedy politicians). The massive probes were a staggering five miles long, and had the most advanced artificial intelligence, replication, and terraformation abilities that mankind had ever seen.

Although there was a small group of engineers making some final preparations on the heavily fortified spacedock, most of the work was being done on the ground. Like all Nehemiah-class probes, the IV series was entirely automated and would not carry a crew. The physical construction of the probes had been completed a week ago, and a final series of tests had uncovered hundreds of flaws in their operating software. Over the past week, people had worked frantically to fix the software in time for the launch to proceed on schedule.

After Victor exited the subway he walked up the access tunnel, through another armored gate, and entered the basement of the building. He then took the elevator to the 194th floor. When he stepped out of the elevator he saw that the employees in his division were already in their offices, busy working on patches that were due in a few hours. No one was walking the halls or running around.

I feel like I'm late, Victor thought. Yet I'm definitely on time. I know I have work to do but I'm sure I can complete it this morning. Maybe I should have gotten here earlier? I don't know. Oh well. I'm here now, I guess.

On the way to his office, Victor stopped by to check on his coworkers. He cracked open the door to Carroll Lane's office and waved at him. "How are things going today?"

“Not good,” Lane grumbled. “I just don't understand why this isn't working! It keeps telling me the message format is invalid, but I've checked and it's perfectly fine. The software has finally lost its mind.”

“It might be a library conflict,” Victor suggested. “I've seen that happen before. Patrick has been struggling to resolve versioning issues with the build script.”

“Do you have a minute to lend a hand? I could really use some help. This was supposed to be deployed an hour ago.”

“Sure,” Victor replied.

Victor had known Carroll Lane for years. Both of them had worked for the Corporation their entire lives, as had their parents before them. Since associating with people outside the Building usually resulted in physical trauma or death, the Corporation became the only world that its employees knew. As Victor and Lane's careers progressed they were assigned to the same team, and they came to know each other. Although both of them were software developers they did not have the same job: Lane specialized in operations while Victor worked with long-range telemetry.

Victor liked working with Lane because he was smart, had a good grasp of technology, and was a hard worker. Like Victor, he was deeply concerned about the world outside the Building but he didn't know what could be done about it. Lane was certain that *something* could be done, though. “Technology always has an answer,” he insisted. “No problem is unsolvable.” But nothing anyone did seemed to make much of a difference.

There were a few minor victories. Occasionally someone from the outside would join the Corporation. This was extremely rare and was usually the result of missionaries who planted churches throughout the city. Although it was great to see an outsider who was willing to work, it took years of training to give them the skillset they needed in order to actually contribute something. Most people on the outside had no idea who their

parents were, and were loosely raised by robots that tried to protect the city's many "unaccompanied" children and keep them fed. The government was supposed to educate the young, but instead they had shut down the schools a generation ago and, despite many promises, never reopened them. It took an outsider a lot of dedication to surmount those obstacles and become productive in the highly technical environment of the Corporation, but it did happen.

Victor ended up spending the entire morning in Carroll Lane's office. The bug proved far more difficult to resolve than he had originally thought.

"One more time," Lane said wearily. He pressed a button on the console. A series of numbers appeared on his holoscreen, and a timer began incrementing.

Victor leaned back in his chair. "I really think we've got it this time. It's going to pass – I'm sure of it."

"That's what you said an hour ago. I just wish we'd found out about this sooner. How did we miss this?"

"Well, none of our automated tests covered it. It's an unusual edge case that just never came up. You need a really special set of circumstances in order to trigger that I/O failure. It's no wonder it wasn't being handled properly! It never even crossed my mind."

Lane sighed as he watched the indicators on the screen. "That's been the problem with this project all along, hasn't it? We can never think of everything. Over the past two centuries the company has launched three generations of Nehemiah probes, and today we launch the fourth. Every single one of the previous generations failed because of little problems like this. Sure, the probes work fine at first, but once they start to replicate things go horribly wrong."

"I'm still not convinced this is going to work," Victor agreed. "At least in the past the probes used real matter to

recreate themselves. I admit that it didn't work very well, but what we're doing now is just crazy. We are trying to create an entire fleet of probes out of matter that is inherently unstable. I don't care what the simulations claim; in practice it won't even take a year before the decay destroys the probe. These probes are far too complicated."

"That's exactly why we need to ramp up their numbers as quickly as possible. It only takes a day for the probes to reproduce themselves. I say we should start by having the probes do nothing but make more probes. In a single year we could have enough probes to colonize the entire galaxy! At that point the error rate doesn't matter."

"I know. But then you get into the control problem. Dr. Mazatl doesn't like the idea of probes that are incredibly powerful, completely independent, and unstable. He's afraid that the wrong combination of parts will fail and they will decide to consume all the resources in the galaxy or something. Since the probe hardware can't be fully trusted, all probe management is done here. We have to give the probes their next assignment and approve their key decisions. The Corporation just doesn't have the capacity to manage a hundred billion probes."

"He's going to have to let go sometime," Lane pointed out. "We might be able to manage hundreds of probes, and maybe even thousands, but we can't possibly direct millions of them no matter what systems we put in place. These probes have to be autonomous. The idea that the probes might turn on us one day or go haywire is just silly."

"Is it? I mean, we can't control what parts of the probes decay first. If the probes got corrupted in the wrong way, and—"

"It doesn't matter! Even if something did happen, their half-life would protect us. Besides, the probes aren't weaponized."

"But they can still blow up stars. I'd hate for their orders to get messed up and lead the probes to think they need to

return home and turn our sun into a black hole.”

“I guess,” Lane said. “I just don't see how we can guard against catastrophic failure – even if we *are* watching them all the time. I say we should just go for it.”

“The risk is too great. The complexity of these probes is staggering – we're asking them to do ridiculous things, and it would be so easy to lose control over them. Not only are they supposed to terraform planets and plant cities – cities that can literally *grow* – but they can also change the orbit of planets and even alter a star's chemistry! We've never attempted anything on this scale before. Something is going to go wrong. It's a certainty. If everything is routed through this building then we can kill them if something goes wrong.”

Lane reached over and pressed a series of buttons on the console, which triggered the run of another series of tests. “If something goes wrong then we've lost anyway. This generation has to work and it has to be perfect. Did you hear the news broadcast this morning? President Rios is losing patience with us. There isn't going to be a Nehemiah V probe. This is our very last shot at getting it right.”

“Which is why this series of probes can be upgraded remotely. This time the probes have an extensive monitoring system. We can tell the moment something goes wrong and we can create a patch and upload it. We can fix the problems as they occur, instead of letting them go unchecked. All we need is enough time to monitor the autocorrection system and work out the bugs.”

“Which we may or may not have,” Lane replied, sighing. “Things are looking pretty grim out there. I believe in this effort as much as anyone, but we're running out of time.”

Victor suddenly remembered something. “Hey, can I use your console for a moment?”

“Sure,” Lane said. He backed away from it and allowed Victor to take control.

Victor minimized the tests that were running and pulled up a different application, then typed in a few commands. When the log entries appeared on the screen he became very, very irritated. “I should have known she wouldn't do it! Look at that. Do you see that? I *knew* it!”

Lane smiled. “Susanna really gets to you, doesn't she?”

“Has she ever done anything she was supposed to? Have you ever seen her complete a single assignment? I don't understand why she hasn't been fired. I know her family has been in the company for four generations, but her performance is completely unacceptable. Why would Dr. Mazatl give her an important assignment like that, anyway? Didn't he realize she was not dependable?”

“You're looking at it all wrong. Dr. Mazatl gave her a trivial assignment just to see if she was capable of doing anything. The probes will work just fine without the Stryker Twins' administrative access. If she failed to upload that keyfile it would cause no harm – but it would give him grounds to fire her.”

“The keyfile is *not* unimportant – it's critical!” Victor fumed. “This has got to be fixed *now*.”

Lane rolled his eyes. “Give it a rest, Victor. You're a great programmer and all, but sometimes I worry about you. You can't really believe that the Twins are still alive out there somewhere, can you? Everyone knows they're dead. The whole reason Sol has been imprisoned for the past 500 years is because the Emperor killed them! Stop worrying about people who are dead and gone. Fixing this I/O bug is vastly more important.”

Victor was tempted to respond, but he decided against it. He simply closed the security application and reopened the unit tests. To his relief, the tests had already completed. “There we go. I knew it would work! The tests passed, so it looks like we're in good shape. I'll let you package up the solution and get it deployed, while I go track down Susanna Hamilton. It's time we had a talk.”

“Good luck with that,” Lane replied, as Victor left his office and stormed off.

Most of the development team was on the same floor, but Susanna had been such a disruptive influence that she was put three floors down. Dr. Mazatl had hoped that by keeping her physically away from the rest of the team she wouldn't cause as many problems, but that proved to be wrong. Susanna found ways to cause trouble no matter where she was. Victor understood that Dr. Mazatl was reluctant to fire anyone who was willing to work, but he wasn't convinced that Susanna was actually willing to do anything.

Victor found Susanna sitting at her desk. A glance at her screen confirmed the fact that instead of working, she was busy playing poker. “Excuse me, Susanna, but could I talk to you for a second?”

“Go away,” Susanna said, without turning around. “I'm busy working.”

“No you're not. I can see your screen from here. You know that you're not allowed to gamble on company time, right?”

“Whatever, loser. Stop harassing me, ok? Go away and leave me alone.”

Victor sighed. “When are you going to upload the Stryker Twins' access rights to the probes? That has got to be done before the probes are launched, and it's your responsibility.”

“I did that weeks ago.”

“No you didn't! I just checked. You need to stop goofing off and do this *now*. We don't have a lot of time. The probes are going to be launched in a few hours!”

Susanna finally turned around and glared at Victor. “I've had quite enough out of you, you pompous windbag! All you ever do every single day is harass me. If you don't leave right now I *will* file a complaint against you. You absolutely sicken me. Go drop dead somewhere before I beat your skull in.”

Victor frowned. He started to say something but then he thought better of it. Instead he turned around and walked off.

"Just as I thought," Susanna called out to him as he walked away. "You're nothing but a coward!"

But Victor was not retreating. Instead he took the elevator up to the top floor of the building. After making his way down a series of empty hallways he came to Dr. Mazatl's office.

Victor opened the door to the office and peeked inside. "Excuse me, sir. Do you have a minute?"

Dr. Mazatl was drinking a cup of coffee. In front of him was a giant stack of papers that were covered in handwritten notes. Victor couldn't see what was on his holoscreen, but the digital walls of his office were filled with notes, charts, and streams of information. He could tell that the leader of the company had about 20 different things on his mind right now.

"I'm afraid not. I'm sure it's important, but can it wait? Lane just published a new patch and wants to get it committed to the probes, but the flight engineers are running system tests right now and don't want to take the probes offline. We've also found a disturbing power fluctuation in probe #2's ZPE that we're trying to track down. All I've been doing for the past 20 hours is dealing with problem after problem."

"Then I'm afraid I've got another problem for you. Susanna Hamilton is refusing to publish the Stryker Twins' access rights to the probes. When I talked to her about it she threatened to kill me."

"That's what this is about?" Dr. Mazatl looked surprised. "I realize that Susanna has been a thorn in your side for some time, but surely she can wait until tomorrow. If the power fluctuation isn't fixed we'll have to delay the launch."

"I don't care about firing Susanna! Well, I mean, I do, but that's not why I'm here. What bothers me is that she hasn't uploaded the Twins' keyfile. That has got to be done before the launch. We can't do it afterward."

“But that doesn't matter either. Look, Victor, I know you have a personal connection to the Twins. I know you're a descendant of their brother, Timothy Stryker. I know how much they mean to you, but honestly, the Twins are dead. Uploading the keyfile to give them administrative rights to the probes is a purely symbolic move. It's not going to fix the future and it's not going to help anybody. I know what Timothy said, but his story just isn't reasonable. It's utter nonsense to think that their keyfile will somehow cause an AI from the future to go back in time to save their lives. Timothy was brilliant, but someone must have played some sort of cruel prank on him. Be reasonable, Victor.”

“Uploading their keyfile is corporate policy,” Victor insisted.

“It's also a security risk. Very few people have that kind of control over these probes – and for a good reason. Why should we give it to the dead? Allen has been asking us to put a stop to this foolishness for years, and I'm inclined to listen to him. It just doesn't make any sense.”

“It's hardly a risk, sir. No one with their DNA is going to come along and use it. I'm the last living Stryker, and my DNA is nothing like theirs. But this does have to be done now. The security system on these probes can't be changed after the launch – that was put in place in the last generation to prevent another hacking incident. This has to be done now. I know it's a pain, but if you'll do it I'll get out of your hair and will leave you in peace.”

Dr. Mazatl sighed. “Fine, fine. Hold on a second.” He tapped a few buttons on his console, then stared at his holoscreen thoughtfully. He then pressed a few more buttons. “It looks like you're right – in fact, Susanna hasn't done any work whatsoever for the past week. As you requested, I've gone ahead and uploaded the Twins' keyfile – against my better judgment. Never let it be said that I didn't follow corporate policy, as foolish as it may be. Now I guess we need to go and have a little talk

with her. At least this is one problem that I can easily resolve.”

He tapped another button on his console, and a video window appeared on his holoscreen. “Tracy, can you send two security bots to Susanna Hamilton's desk?”

“Of course,” she replied.

“Thanks.”

Mazatl then got up out of his chair. Victor could tell that he was extremely tired; he looked weary and haggard. “I guess today is just one of those days, isn't it, Victor? Sometimes you just don't get any breaks.”

“We'll get through this, sir,” Victor replied. “I have no doubt that the probes will be a success.”

“I wish I shared your confidence. I have very grave doubts about the wisdom of building a machine out of unstable parts – and about our future on this planet. I think it's time we changed our course.”

Dr. Mazatl led the way to Susanna's desk, and Victor followed close behind him. As they took the elevator down, Mazatl spoke up. “Tell me something, Victor. What are you hoping the probes will accomplish?”

“The terraformation of the galaxy, of course! I think these probes have everything they need to accomplish that, and more. The IV series is the finest machine that mankind has ever built.”

“Quite so. They certainly are remarkable machines, and I have tremendous respect for the engineers who built them. But I'm afraid they are not perfect. After the probes are launched, I think we are going to have to design some sort of machine to run the project once we're gone. The probes will need someone to watch over them.”

“But isn't that dangerous? I thought you were worried about, well, bad things happening.”

“It is a risk,” Dr. Mazatl agreed. “I think the probes do need someone to manage them – but that someone cannot be us. What we need is a system that is *not* inherently unstable and

that does not depend upon us. SOLOMON is a good system but it is just a data warehouse, nothing more. It cannot offer guidance and it cannot patch any bugs that are found. We are going to need something better.”

After the elevator came to a stop, the two men stepped out into the hallway and walked over to Susanna Hamilton's desk. The two robotic security guards were already standing by. The guards saw Mazatl approach, but they took no action. They simply waited for his command.

Victor noticed that Susanna was still playing poker.

“Excuse me, Susanna, but we need to talk,” Dr. Mazatl said gently.

“Drop dead,” Susanna replied, without turning around. “You can't tell me what to do!”

“I most certainly can,” the irritated Mazatl replied. “I run this company, which is a fact you would do well to keep in mind. I *absolutely* have the authority to tell you what to do, and I am deeply disappointed that you have failed to accomplish even the small tasks that we have given to you.”

Susanna turned around to look at him. “You're a moron. Don't you understand that it's against the law to fire people? Once you hire someone they're hired for life. I can sit here all day and do absolutely nothing, and there's not a single thing you can do about it. So go away before I file harassment charges against all of you. You people make me sick.”

Dr. Mazatl frowned. “It's true that the law says I cannot terminate your employment. However, there are steps that I *can* legally take, and I am going to take them. First, I am going to forcibly remove you from this building and revoke your access to it. I am also going to revoke your subway access and your access to any Corporation computer system, and I will not be giving you any new assignments. I am also reducing your salary to the minimum amount allowed by law. Technically you are still employed, but you won't be doing any 'work' here. Just think of

it as a reassignment.”

Susanna laughed at him. “You really expect me to believe that? Come on – you don't have the guts to fire me. You've never stood up to anyone in your entire life. Give me a break.”

Dr. Mazatl removed a small electronic device from his pocket. He pressed a few buttons on the device, and Susanna's holoscreen suddenly turned off. “It's over, Susanna. It's been done. It is time for you to leave.”

“Make me,” she snarled.

“If you insist.” Dr. Mazatl nodded at the guards, who walked over to her and physically picked her up.

Susanna began beating the armored guards with her fists as they carried her away. “You fascists! I hate you! Do you hear me? *I hate you!* I will make sure that you pay for this. By the time I'm through with you you'll wish you had never been born! And if I ever meet the Twins I'll kill them too. I won't forget this!”

After Susanna was gone, Victor glanced at Mazatl. “Do you think she'll try to cause trouble for us?”

“Everyone on this planet is trying to cause trouble for us,” Dr. Mazatl replied wearily. “She'll probably file a lawsuit against us, which we'll ignore. The government will attack us in the press, which we will also ignore. There's a reason none of the company leadership ever leaves the building. But at least Susanna won't be able to come into the office any more to stir up trouble in person. Still, she does demonstrate what we are up against. If we want the probes to survive we need to find a way to automate the entire company so that our work can continue after we're all gone. I just don't know how to accomplish that.”

“Is there anything I can do to help?”

“There certainly is. I've got about a thousand things that need done before we launch this afternoon. Come up to my office and we'll get started on them. How much do you know about zero-point energy?”

* * * * *

The rest of the day was filled with frantic activity. Victor was so busy that he didn't even have time to stop for lunch. The diagnostic teams found a dozen more problems with the probes – all minor, but past experience had taught them that when it came to replication there was no such thing as a minor problem. Each issue had to be diagnosed and fixed, and then the fix had to be tested to verify its success. Once the fix was in place the entire probe had to be retested in order to make sure the fix had not impacted anything else. It was a grueling process. Carroll Lane was kept busy making fixes, and Victor worked with Dr. Mazatl to manage the retesting and deployment process.

All day long the problems kept coming. The server team had an unexpected problem bringing SOLOMON online after an upgrade: the power system kept shorting out. The electricians eventually found a fault in the wiring system, but fixing it caused even more delays. The data warehouse was not brought back online until four in the afternoon – hours after it was supposed to be running. Once SOLOMON had been restored there was a frantic rush to link it to the probes via a faster-than-light communications system, which was supposed to have been installed the day before.

Things eventually fell into place, but the original schedule could not be kept. Dr. Mazatl originally planned on launching the probes at 2 pm, but that hour came and went and the testing was still not complete. It wasn't until 6:37 pm that all three Nehemiah IV probes finally passed all of their tests and were ready for launch.

Originally the company had planned to send the probes off with speeches and great fanfare, but the launch delay put them behind schedule. Rather than delay the launch even more and give the city government a chance to cause trouble, Dr. Mazatl decided to take a more low-key approach.

When the moment finally came, Dr. Mazatl was seated in his office. Victor had pulled up a chair next to him and was finally starting to relax. The director was tired, but for the first time all day he felt a feeling of triumph. He pressed a button on his console and opened a video channel to all the holoscreens in the building.

“Well done, everyone! I have good news: the probes have passed their final tests and are ready for launch. This is the moment that we have been working toward for more than two centuries. I'm certain that Dr. Temilotzin would have been very proud of all of you. Good work, everyone! It is now time to launch these probes into deep space and usher in a new age of exploration and discovery.”

Dr. Mazatl tapped a series of codes into his console and then pressed a button. Onscreen, the video changed to show a live feed of the enormous spacedock that housed the three massive Nehemiah IV probes. The armored hangar doors slowly opened, and the three probes floated out of the dock and into space. Once outside, they fired up their spacedrive and began a speedy journey through the Tau Ceti system. Dr. Mazatl then switched to a camera on board probe #1 so the company could continue to watch their progress.

Since the Tau Ceti system was guarded by a Wall, the three probes had to leave the system by way of the Gate before they could begin their long journeys across the galaxy. This protective system had been built in 1860 to protect the star system from the Spanish Empire, and the Corporation had maintained it ever since. It took the probes ten minutes to make their way to the Gate and exit them into deep space. Then, one by one, the probes engaged their massive warp drives and vanished.

“And they are now officially launched!” Mazatl exclaimed triumphantly. “Well done, everyone.”

Dr. Mazatl cut the video feed from the probe. It would

take probes months to reach their various destinations. The Corporation had sent them far beyond the boundaries of civilization, in hopes that any problems that society might have would not spill over into the new worlds that the probes would create.

“Godspeed,” he whispered.

CHAPTER 2: REVENGE

Log date: February 5, 2414

Location: Xanthe

Log note: Decisions are hard

THAT EVENING THE DIANO CORPORATION celebrated. Since there was no room in the building large enough to hold everyone, the festivities were scatted throughout the giant skyscraper. The company provided food and music and gave everyone the night off.

There was much to celebrate. The launch had been an unqualified success and the probes were now on their way to distant stars. Any lingering fears that President Rios might try to stop the launch were now put to rest. There was still more work to be done once the probes began arriving at their destinations, but those days were months away. For the next few weeks the employees would be on a well-deserved vacation.

Victor sincerely tried to enjoy the festivities. He liked being at the office more than he liked being at home, but he wasn't very good at mingling with people. Like most people these days he was an only child. His parents had been killed by rioters when he was a teenager, which further isolated him. Over time he came to prefer writing software to spending time with human beings. From Victor's point of view, software had all the advantages. Software always did what you told it to do. It never threatened you, it never hurt you, and it never tried to burn your house down. Software was safe; people were not. Victor made an effort to be nice to the people he met, but that was as far as he was willing to go – which made social events rather awkward. He wanted to go home, but social protocol dictated that he stick

around. So he stuck around and waited for a time when he could leave without being rude.

As Victor stood at the buffet and stared at all the food the company had provided, Carroll Lane walked up to him. "Today was quite a day, wasn't it?"

Victor nodded. "It was pretty stressful. For a few hours there I thought we'd have to push off the launch until tomorrow, but then everything came together at the last minute. It looks like our work here is done for the time being."

"Which means we get some well-deserved time off! Where are you going to go for your vacation?"

"I don't know. To be honest, I haven't given it any thought. I'd much rather be here working than take time off, but there just isn't any work left to do. I'll probably stay at home. I've got a lot of books that I've been wanted to read and I just haven't had the time lately. This is a good chance to get caught up."

Lane laughed. "Read! You can read any old day. You should go out and *do* something. Xanthe's a big planet, you know, and it's full of natural wonders. Since all the crazy people are in Star City where the ZPEs are, that means the whole rest of the planet is safe. You need to go have an adventure! There are mountains to climb, forests to explore, and trails to hike. There's even some wildlife left out there, if you know where to find it."

"That's just not for me, Lane. I am *not* going to go off to some wild place in the middle of nowhere. In fact, I never go outside if I can help it. In my opinion nature is extremely uncomfortable. If it's not cold and rainy then it's hot and humid. There are bugs, and things that bite you, and dirt, and all manner of situations that could leave you seriously injured or dead. Everything about the so-called 'great outdoors' is messy and uncomfortable. I vastly prefer the great *indoors*."

"I think spending a week camping would do you good," Lane insisted. "It would open your mind and give you a fresh perspective. There's great beauty out there, Victor. Don't you

find it strange that you are spending your life building probes to explore the most distant stars, and yet you have no desire to explore your own planet? You have such a passion for exploration and yet I bet you haven't even explored your own apartment building.”

“Life is full of contradictions,” Victor agreed.

“Well, let me know if you change your mind. I'm leaving first thing in the morning, and you're welcome to join me. I'm telling you it's going to be epic.”

“Thanks – I'll do that. But don't hold your breath.”

Lane laughed and walked off, leaving Victor alone once more.

Victor decided that he wasn't really that hungry and began wandering idly around. He eventually found Dr. Mazatl standing out a window, looking up at the night sky.

“Did you know that there used to be stars in that sky?” Dr. Mazatl asked. “Every night people could go outside, look up, and see the incredible beauty of space – right from their own backyard. It must have been amazing.”

“That's true. But then our forefathers erected the Wall to protect us from the Spanish Emperor, and the Wall has been in place ever since. It provides protection against the outside world. Even starlight can't get in.”

“But that raises a question, doesn't it? Why is the Wall still there? We're not at war with anyone and we don't have any enemies. Who are we trying to protect ourselves against?”

Victor shrugged. “I think at this point it's just tradition. The Wall has always been there. By now it's just a part of life – it's one of those things that no one ever questions. Besides, no other star system has one. It's one of the things that makes Tau Ceti unique.”

“Sol has one,” Dr. Mazatl pointed out.

“True, but that's a bit different. Sol's Wall was imposed from without, to imprison Earth and stop the Spanish Emperor.

Sol will be locked away for the rest of time. At least we have a Gate and can come and go as we please. We're not actually imprisoned here.”

“And yet most of the people on this world are prisoners all the same. Oh, they may not be in actual prisons – although many of them surely deserve it – but they are still slaves. The outsiders have become corrupt, Victor. They are slaves to their own desires and spend their lives doing all sorts of wickedness in a vain attempt to find satisfaction. They don't work or do anything productive; they just consume, like leeches. They are utterly consumed by selfishness – by the lusts of the flesh and the lusts of the eyes. They are blind to what really matters in life.”

“Well, sure. They haven't been changed by the power of Christ. They're all slaves to sin. In fact, they love their sin so much they would never dream of repenting and pursuing holiness. Nearly everyone who *has* been changed works here, in this building. I know we're not all Christians, but most of us are. That's how life has been for decades. The Church lives in this building, and the darkness lives outside.”

“But things can't go on like this,” Dr. Mazatl said. “Darkness cannot sustain an advanced civilization. It takes a great deal of effort and skill to maintain the technology that our worlds depend on, and there are few people left who can do it. There are only 37 inhabited worlds remaining, and all but five of those have a population of less than 100 million. The combined population of all the stars is just barely six billion people. There was a time when Earth alone had that many people. Xanthe used to be one of the most populated planets in the galaxy. Today it's a decaying wasteland.”

“Star City is the only city on the planet that has a functional ZPE,” Victor pointed out. “Everyone just moved to where the resources are.”

“Which is a rather sad state of affairs, isn't it? Mankind

used to be able to survive *without* a ZPE, but now everyone is dependent upon them. Xanthe is the only world left where the Corporation still has a significant presence. Virtually every last one of our employees works right here in this building. In all the other worlds we only have a skeleton crew – just enough to maintain that planet's infrastructure. I don't think there's a single other planet that has more than 20 employees.”

“What are you getting at, sir?”

“I – well, I just wish there was some way to fix this. The ZPE was supposed to usher in a bold new era of space exploration, but instead it seems to have doomed mankind. Somehow we created a giant welfare state, which has done vastly more harm than good. The more we give them the more they demand. The more we try to help them the more they hate us. No matter how much we give they always want more.”

“Well, sure. It's like what Solomon said in Ecclesiastes – the things of this world are vanity. They can't satisfy. Those who desire riches cannot be satisfied by riches. So people want more and more stuff, thinking that they can find satisfaction there – but they can't. What this world really needs is Christ. They need to have their sins forgiven so that they will not face the wrath of God. They need to be transformed by His power so that they will be free from the bondage of their own corrupt desires. Only Christ can satisfy and only Christ can save; nothing less will do.”

“But they won't listen,” Dr. Mazatl replied sadly. “For hundreds of years we've tried to tell them, and they just won't listen. There are billions of people out there on the road to Hell, and despite all our efforts we cannot stop them. People love their sin too much to depart from it. They have no fear of God. Death and judgment do not concern them.”

“Do you think we should try a different approach?”

Dr. Mazatl sighed. “I don't know what to do. I am very afraid that providing for the needs of the Ranger worlds is only making them worse. Why would they ever feel the need to work

when we give them everything they desire for free? They never suffer or face want. That can't be good for their souls."

"Well, technically it's not free. We do charge the government for ZPE usage, don't we? I mean, I know they don't pay it, but we do send them bills."

"I'm afraid not. Long ago we did charge people, but then people stopped paying. So we began charging the government instead, with the idea that the government would tax the people and get the money that way. But President Rios hasn't payed our bills in years. Eventually we realized that billing them was a waste of time, so we just stopped. Rios knows we're not going to cut the city off. There's no point in pretending otherwise."

"Really?" Victor replied, surprised. "I didn't know that. I thought they were just behind – I didn't know they had dropped all pretenses of even trying to pay us. Is there nothing we can do?"

"That's what keeps haunting me. None of the people have jobs, so where is the government going to get the money? Besides, it costs us very little to run the ZPEs, and it does provide for everyone. The only time things get difficult is when some rioter blows up a power line, and then we have to dispatch a crew of bots to fix it. The citizens of the Ranger worlds are terrible vandals."

"Have you thought about just cutting people off? That might force them to rethink their lives."

Dr. Mazatl sighed. "I just don't see how that could work. People have been dependent upon us for so long that they cannot survive without us."

"So what are you going to do?" Victor asked.

"I don't know. I just don't know. I'm an engineer, Victor. I'm not a politician or a governor. I don't have the faintest idea how to fix something like this. I know that what this world really needs is Christ; He is the only one who can change the hearts of men. But I don't know how to make them listen. Somewhere

along the line we made a terrible mistake, but I don't know how to fix it.”

“I'm sure you'll think of something, sir. On the bright side, today's probe launch went very well. In a thousand years we'll have countless new worlds terraformed and ready to be inhabited!”

“That is true. There is that. But when that day comes, will there be anyone left to inhabit them?”

* * * * *

Victor lingered at the party until around eleven o'clock and then went home. He really preferred to be in bed long before then, but today was not a day for going to bed early. Still, he had satisfied his social duties so he was content. Since he didn't have to work the next day he could sleep in. *I'll manage*, he thought.

The subway ride home was quiet and uneventful. There were a handful of other employees who were also in the subway car, but one by one they left at their respective stops. By the time Victor reached his destination the car was empty. He quietly exited the subway and stepped through the gate onto the street. Charlie was still standing there guarding it, but he didn't speak to Victor and so Victor didn't speak to him.

It was dark outside and there was very little light. Only one of the street lights was still working, but it provided Victor with enough illumination to guide him home. He quietly walked to his building, lost in thought.

Dr. Mazatl was right – the world was in bad shape. As far as he could see, though, there was no good way to fix it. Victor was great at fixing technical problems; if he found a software bug he could track it down, identify the cause, and come up with a workable solution. But people-based problems were an entirely different matter. Computers always did exactly what you told

them to do, but people had a will of their own. *And they will not listen to reason.*

Victor walked into his apartment building and up a flight of worn, dirty stairs. He unlocked his apartment door, went inside, and turned on the lights. After putting away his briefcase and checking his messages he turned off the lights and went straight to bed. Tomorrow was a vacation day and he wasn't looking forward to it. *I suppose it wouldn't hurt to get some rest, though. I can recharge and get ready for whatever's next.*

He drifted off to sleep.

A few hours later he woke up. Someone was pounding on the door, and there were voices out in the hallway. *What's going on?* he thought groggily. *No one ever comes to visit me – especially at this hour. Is there something wrong with the probes? But if this is a work emergency, why didn't someone call me? Making a personal visit seems kind of extreme.*

Victor rubbed his eyes and made his way to the living room – but he was too slow. As soon as he entered the room the front door was violently broken down, and four heavily armed men rushed into the room. Victor recognized them immediately: they were members of the Security Services Force. President Rios has put together the SSF a dozen years ago to act as his personal bodyguards. Past presidents had been protected by the planet's armed forces, but Rios wanted a group that was personally loyal to him. Victor had never seen an SSF unit in person – until now.

Victor was absolutely terrified. All four of the men wore black body armor and carrying fully automatic machine guns. They were large and imposing and none of them looked remotely friendly. *Where's Charlie? Isn't he supposed to protect me? This shouldn't be happening!*

One of the men approached him. “Are you Victor Stryker?”

“Yes,” he said nervously. “Is there a problem?”

“We are seizing this apartment and all that it contains. All

of your assets are now forfeit, and your bank account has already been confiscated. You will leave the premises immediately as you are trespassing on government property.”

“What are you talking about? You can't do that! I have rights. What crime am I being charged with?”

“Economic treason. Today you helped Dr. Mazatl launch nineteen ZPEs into deep space. Those ZPEs could have been used to feed the hungry and care for the needy. They were the property of the state – but instead of giving them to the state you stole them. People are starving to death because of you. In my opinion you should be shot. We don't need your kind on Xanthe.”

Victor gasped. “That's ridiculous! We didn't launch nineteen ZPEs. And no one on this planet is dying of hunger! For that matter—”

The SSF officer slapped Victor so hard that the programmer fell to the ground. “I don't want to hear your pathetic excuses, traitor! We've already vaporized those dumb robots at the subway gate, and if you don't leave then you will be next. All of this now belongs to the state. You will leave *now*.”

“But this is *wrong*,” Victor said, as he struggled to his feet.

The SSF officer shook his head. “I tried to warn you but I see you want to do this the hard way. Do you know Susanna Hamilton?”

Victor nodded. “Yes, she's one of my coworkers. Or she was, anyway.”

“Susanna asked me to tell you hello. This is from her.” In one quick move he lifted up his machine gun and slammed the butt of it into Victor's forehead. Victor immediately fell to the ground, unconscious. Blood began pouring out of his head.

The SSF guards dragged his body out of the apartment and dumped it into the hallway. They then began looting.

* * * * *

As Victor regained consciousness he felt intense pain. His head was throbbing – and bandaged. When he opened his eyes he saw that he was in a hospital room. There was a nurse bot standing beside his bed.

“How do you feel?” the robot asked.

“Terrible,” Victor groaned. “My head feels like it's been run over. Where am I? How did I get here?”

“My name is Shannon, and you're in the infirmary in the Diano Building. Last night there was a series of attacks by the SSF against company employees, so Dr. Mazatl sent units out to check on everyone. Your body was found in your apartment hallway and was immediately brought here. You've had a severe head injury.”

“No kidding,” Victor said, wincing in pain. “How bad is it?”

“It is going to take a while to heal. You will need to remain here for the next few days. I'm afraid you've had a severe concussion and there has been some minor brain damage. However, we don't think your motor skills have been impaired, and you should respond to treatment. You'll probably suffer from occasional migraines for the rest of your life, though.”

“Fantastic. That's just what I wanted to hear. Do you have any other great news for me?”

“Well, your apartment has been looted and everything that you owned has been taken. Fortunately the SSF didn't burn the building down, or else you wouldn't be here right now. You lost quite a bit of blood while you were in that hallway.”

“The SSF is a bunch of thugs,” Victor said angrily. “They can't do this to me! I haven't done anything wrong. They can't just take my stuff and beat me up like that! Someone needs to pay for this.”

The bot shrugged. “I know it may seem unfair, but the SSF's actions were perfectly legal. By law the SSF can seize anything it wants and assault anyone they please. You can't bring

charges against them or even file a complaint.”

“But it's *wrong!* I don't care what the law says; it's still stealing. Theft and assault can never be made right no matter how many laws are passed. They're no different than a bunch of bandits.”

“I am afraid you are incorrect. If they had been bandits you could have prosecuted them in a court of law. Bandits don't have legal protection. The SSF does.”

“You are the least helpful nurse I have ever seen. Whose side are you on, anyway? I thought you were supposed to make me feel *better!*”

“You need to get over yourself,” the nurse replied coldly. “You're one of the lucky ones. It could have been much worse, you know. Twenty-nine security bots were vaporized last night – bots that were trying to protect your ungrateful hide. In addition to that terrible loss, 837 employees were assaulted. 94 of those were killed, and more than six hundred are in the hospital. Your friend Carroll Lane had his hands crushed. The SSF could have legally killed you, you know. All in all you came out of this pretty well. The same cannot be said for Charlie. He will be missed.”

“You don't seem to understand the idea of *comforting* someone,” Victor replied bitterly. “Telling me that other people are suffering even more than I am *does not make me feel better*. It's a terrible thing to be told that I should feel better because someone else is suffering even worse. Why should other people's pain bring me pleasure and relief? Even people who are burning in Hell can say 'Well, at least I'm not suffering as much as that guy over there'. What kind of person do you think I am? Christ never comforted anyone by saying 'Man up; it could be worse'.”

“I'm a nurse, not a psychiatrist. It's my job to heal your head injuries, whether I think you deserve it or not. What goes on inside your head is your business. If you want grief counseling then schedule an appointment with a licensed practitioner. I'll come back to check on you later.”

"Please don't," Victor said.

The robot ignored him and walked away, leaving Victor alone.

* * * * *

That evening Victor was lying in the hospital bed, reading a technical manual on a holoscreen. His head was still throbbing and he was in terrible pain, but the complex details of the software he was looking at had temporarily caused him to forget his anguish. His concentration was broken, however, when a visitor walked into the room.

"I hope I'm not interrupting anything," Professor Grimes said, as he walked in and took a seat by the bed.

"No, not at all," Victor replied. He made a quick motion with his hand and the holoscreen vanished. "What are you doing here? I wasn't expecting any visitors. Have you come to gloat?"

"To gloat? Of course not! What would I possibly have to gloat about?"

"Well, you were right, you know. You told me that Rios was going to respond to the launch with violence, and he did. You told me not to go back to my apartment, but I did anyway. If I'd listened to you I wouldn't be here right now."

"That's certainly nothing to gloat about," the professor replied firmly. "I am appalled at what happened and furious at the complete disrespect for law and morality that Rios has displayed. The reason I have come is to see you. You're one of my students, after all. When I heard what had happened I was gravely concerned and decided to see you at the first possible opportunity. I am sure that others have come to see you as well."

Victor shook his head. "No, you're the only visitor I've had. I've got coworkers but I wouldn't really call them friends. I'm not a very social person, professor."

"That's quite sad. What a terrible way to go through life.

Yet I suppose my life is not all that different from yours. I have no living relatives, but I do have a number of dear friends. Believe me, Victor, they make a difference. In this dark time it's not easy to find a kindred soul, but it is worth the effort."

"I've tried, professor. Really, I have. It just never works out. I learned long ago that the only thing people are good at is failure. Machines are so much more trustworthy."

"Like toasters, for example," Grimes commented. "Toasters are quite reliable. They are remarkable pieces of engineering! You wish that people had that same reliability, punctuality, and relentless dedication to service, do you not?"

"Exactly! But they don't. Besides, I've never been particularly good at interacting with people. Machines are predictable and dependable. People aren't. You just never know what's going to happen in a relationship."

"All of that is quite true, but that doesn't mean that people should be avoided. It is true that people have faults that machines lack. But we are all called to love one another, and it's difficult to love someone if you avoid having anything to do with them. Love isn't an easy thing, Victor. It's not safe. But it is our calling."

The professor paused for a moment, lost in thought. "I've always wondered what my life would have been like if I had gotten married. Having a wife and raising children would certainly have been a dramatic change from being a bachelor, and I'm sure it would have had its own problems and rewards. Perhaps in a different place and time it would have worked out. Sadly, I never found anyone. It takes two people to have a relationship, as I'm sure you know. One person cannot do it alone.

"History is a peculiar thing, isn't it? Have you ever wondered what would have happened if the Mayan and Roman civilizations had never developed high technology? What if neither of them invented space travel, or what if the nuclear war

that destroyed them hadn't occurred? That could have changed everything. The world that we live in today is the product of countless choices that were made by our ancestors. If they had made different choices then we would not be here. A small change in the past could have a dramatic impact on the course of time. I suppose it's a good thing that time travel is impossible."

"Unless it's *not* impossible," Victor remarked.

Professor Grimes smiled. "Ah, you're a Stryker, aren't you? I take it you believe in the legend of the Stryker Twins?"

"I certainly do," Victor said firmly. "In the distant future someone is going to go back in time and rescue the Twins so they can avert a disaster and save mankind. It's not a fairy tale, professor. It really happened."

"Is that why you have so much faith in this probe project? Do you believe that it will grow into that future civilization that will save those two girls?"

"Absolutely. It all fits together. There's certainly nothing else going on in this age that could do it."

"Well, I hope you are right. I must admit it is a compelling story, but I have never found any evidence that might validate Timothy Stryker's claims. It would be fantastic if the girls survived, instead of being blasted to atoms five hundred years ago. One day the truth will come out. It always does, you know! The actions of men will not remain a secret forever. But tell me, Victor, how are you feeling? I am no doctor, but your head injury looks rather serious."

"There is a lot of pain involved," Victor agreed. "They've given me some medicine for it but it doesn't seem to be helping that much. I'll probably be in here for a few more weeks before they let me go."

The professor nodded. "Well, young man, I pray that you recover quickly. If you do require more time to heal, don't forget that you can attend my class remotely. I will be broadcasting the sessions, so you can use a holoscreen to interact with the class

from your hospital bed. In fact, I expect most of my students to attend remotely. I doubt that anyone will choose to show up in person.”

In spite of his pain, Victor grinned. “Of course not! You have a habit of confiscating their electronic devices and setting them on fire. I've seen the Graveyard of Sacrificed Electronics that's in your office. You've got a reputation, you know.”

Professor Grimes shook his head. “It's really not like that at all. I don't know how people get these ideas about me. My syllabus is *very* clear. The use of unauthorized electronic devices during class is strictly prohibited, and will subject the device to seizure and immediate destruction. I always spell out my rules with extreme clarity in the very first period. If students cannot abide by my rules then it is their own fault. They cannot blame me for enforcing a perfectly fair rule that they agreed to in advance.”

“I suppose. But, speaking of that, do you know what *isn't* a fair rule? The so-called 'laws' that the SSF used to steal all my property last night. How can they do that? How can they just take everything I have? I'm not guilty of anything!”

“I'm afraid there is no fear of God among the people, young man. The laws of our world no longer have any relation to fairness or morality. The only law that is left is the law of power. President Rios believes that he has power, and he wields it to take what he wants and punish his enemies – much as Jezebel abused her position as queen to steal Naboth's vineyard for King Ahab. But if you recall, things did not end well for Jezebel. She was thrown out a window, then crushed to death under a chariot, and then eaten by dogs. The wickedness of men will be brought to account.”

“But what do I do now? Everything that I own is gone! They even seized every solar I had. I have *nothing* left.”

“Well, that's not entirely true. Yes, you have certainly suffered a severe loss. You have been gravely wounded, and what

happened to you is definitely wrong. But you are alive and you still have your skills. You also have the backing of the Diano Corporation, which is going to take care of you. Dr. Mazatl is very upset about what happened. In fact, I understand that he's going to have a meeting of the board tonight to decide how to respond to this declaration of war. The Corporation is not as powerless as Rios supposes.

“But there is a bigger picture here. Ultimately you will be all right. Your sins have been covered by the blood of Christ, and that makes all the difference in the world. When you stand before God you will be found guiltless, and you will spend all the ages of eternity living in a perfect world that only knows joy. All of the treasures that you laid up in Heaven will still be there, and they can never be lost or stolen. Most of the people in this world – including Rios – don't have that. They have rejected Christ's offer of forgiveness and mercy and are still in their sins. When they stand before God they will be found guilty. They will spend all of eternity being burned alive in the Lake of Fire, with no hope of comfort or release. I know these days seem dark and bleak, but the truth is that you are in a much better position than they are.”

Victor sighed. “I know. It's just unfair. The Diano Corporation is the only thing that's keeping all those people alive, and yet they steal from us and try to kill us. It's madness.”

“It's the corruption of sin. Sin is a dangerous thing, Victor. If we do not overcome it by the power of Christ then it will take us to terrible places and we will do terrible things. Temptation doesn't just impact other people, you know. It lies at the door of your heart as well. You have been unjustly attacked and are in great pain. Therefore, you have a difficult choice to make.”

“What do you mean?”

“What I mean is that you have to decide how to respond. In a better world the criminals who attacked you would be tried and brought to justice, but we both know that is not going to

happen. There is no justice left in this galaxy, and there hasn't been for a long time. Since justice will not be done, you will be tempted to become bitter and angry. That bitterness can easily grow into hate and tempt you to take revenge on the society that attacked you. Since you work here, you have access to some very powerful technology. You could, in theory, do a great deal of damage. You could justify it by saying that the outsiders deserve to die. You would be right, except for the fact that you would just be a renegade seeking to hurt those who hurt you. There is no justice there.

“Just because they are worthy of death does not mean that you have the right to carry out that sentence. God gives the right of executing justice to those who are in authority, and if they fail to carry out their duties then those who are under that authority do not have the right to take it upon themselves. When Jezebel proved to be extremely wicked, Elijah did not take it upon himself to assassinate her, even though she surely deserved to die. Instead Elijah waited on the Lord. In time God appointed Jehu as the rightful king, and as king he slayed Jezebel.

“Vengeance belongs to the Lord, Victor. He is the one who will repay men for their wicked deeds. What He calls you to do is to love your enemies and share the gospel with them. You and I are called to share the gospel with all men – even those who hate us and seek to do us harm – and tell them that if they repent of their sins and believe in Christ, they will be saved from the coming wrath of God. It is not an easy thing to do, even in the best of times. It becomes an *impossible* thing to do if we hate them.

“So, as I said, you are faced with a choice. You can either join them in their hate and go down the road that leads to murder, vengeance, and death, or you can choose to seek their welfare and tell them about the power of Christ to save them. Those two choices lead to very different futures.”

Victor was silent for a moment. “Why does life have to be

so hard, professor?”

“Life has always been hard. Christ was a man of sorrows, remember. He came unto His own people, and His own people rejected Him. Things have never been easy for the people of God. But believe me, better days are coming. The day will come when you will forget about sadness and pain, and will only know eternal joy in a perfect world. These years of suffering are but a short, passing moment in the ages of eternity. In the ages to come you will find a much better country. Just wait and see.”

* * * * *

While Professor Grimes was talking to Victor, another meeting was taking place in the board room on the top floor of the Diano Building. In this meeting there were three people present. Doctor Laurence Mazatl was there. Bernard Valdez, the head of the corporation's infrastructure and utilities division, was also sitting at the table. The third person present was Martin Yates, who was the head of engineering and special projects. These three men ran the Corporation and directed its efforts. At one time the board had been much larger, but back in those days the company itself was larger. As the centuries passed the employee count dwindled, and the size of the board dwindled as well. Now there were only three men left.

The Diano Corporation was not a publicly traded company. It had no stockholders. It was its own entity and managed itself for the good of its employees and the good of civilization. However, it was now clear to everyone that the company had been attacked – so the board had an important decision to make.

“This is the worst attack we've ever seen on Xanthe,” Martin Yates said angrily. “Ninety-four people were murdered last night! There are six hundred people in the hospital today. This simply cannot be allowed to stand. We have to take action

immediately. President Rios must pay for what he has done.”

“We should have seen it coming,” Dr. Mazatl said sadly. “After all, each one of our Nehemiah IV probes contained its own ZPE, and Rios was well aware of that fact. We just launched three ZPEs to the far reaches of the galaxy. Considering that there are only four functional ZPEs on this entire planet, perhaps we should have expected a violent reaction. Those three ZPEs could have provided a significant boost to the lifestyle of this world's citizens.”

“But they don't *need* them,” Bernard Valdez pointed out. “A single ZPE can easily provide for the basic needs of every last person on this world. The people already lead very comfortable lives – and at our expense, I'd like to add! President Rios hasn't paid Star City's utility bills in years. They have absolutely no right to demand that we give them even more.”

Dr. Mazatl nodded. “I quite agree. Star City has no right to free energy, food, and water – but they demand it all the same. They have no right to the ZPEs that we put on those probes and paid for ourselves – but they demand them all the same. Since we didn't do what Rios wanted, he reacted with violence. I suspect that there will be more violence in the future. We've already seen this happen on other worlds. It was only a matter of time before it happened here.”

“I think this calls for drastic action,” Bernard said. “For too long my employees have maintained the utility system that Star City depends upon. If they won't pay their bills then I say we shut it all down. Let them find out what life is like without us.”

Martin interrupted. “I say that's too good for them. Rios' government is beyond corrupt. Last night he declared war on us – and I say we take that war back to him. We have the power to shut him down for good. We can overthrow his government and put him and his cronies in prison – or, better yet, we can execute them. They killed us so we should kill them. It's time we put a stop to this madness. We ought to take control of the planet. We

can establish a new government – a just one.”

“He has a good point,” Bernard commented. “In fact, I think it's long overdue. We could do a far better job of ruling this planet than Rios.”

“Let's think about that,” Dr. Mazatl replied. “Since we have replication technology, we could mass-produce our guard bots. Rios does have his SSF but we could easily overwhelm them. They are just human beings, after all, and take far longer to reproduce and train than our machines. In theory this planet has an army, but it hasn't been funded in years and to my knowledge it doesn't have a single active member. In a month or two we could probably build a large enough force to defeat the SSF, imprison Rios, and take over the world.”

“Exactly!” Martin said eagerly. “That's just what we need to do. No more free lunches and no more corrupt justice. Things would finally be done right.”

“But tell me, Martin. What would happen next? Yes, Rios would be gone, but we would then have ten million citizens to care for – citizens who are completely ungovernable. There are only a few thousand of us, and we are already strained to our limit just trying to keep the city standing.”

“Well, we could just use the guards to enforce order. We could station police bots on every corner – or in every home, if we had to.”

“So you are suggesting that we create a police state. We should watch every citizen every moment of their lives, and force them to do the right thing. We should make them work and punish them when they get out of line. You are suggesting that we rule this world with a rod of iron.”

“Exactly!”

“Of course, if we did that then we would have to rule more than just *this* world,” Dr. Mazatl continued. “There are three dozen other colonies out there and we have a presence on each of them. Once the other colonies learn that we have

overthrown the government of Xanthe, they would hate us even more than they already do and would no doubt attack our installations immediately. Therefore we would need to take over all of the colonies at once.”

“I’m sure we could manage that. After all, we have replication technology. We can just create an army of guards on every world! All of the Ranger worlds are weak. I’m sure that none of them will put up much of a fight.”

Bernard spoke up. “Wouldn’t that take a lot of effort to do, though? And wouldn’t it be difficult to run all these worlds once we seized them?”

“It certainly would,” Dr. Mazatl agreed. “Since mankind is so nearly feral, we’d need to establish a very strict police state that spanned not just Xanthe, but the entire galaxy. Even with that in place, however, it’s going to be quite hard for a few thousand of us to rule over six billion psychopaths. We would need to monitor every moment of the lives of everyone, and create some sort of AI – which we would control, naturally – to monitor all those feeds and enforce compliance. Instead of exploring space we would have to change our focus to rule over mankind.”

“True,” Martin said. “But think of what we could do! We could put an end to injustice. We could put an end to corruption and murder. We could finally have good government again. We could force mankind to stop being animals. We could build a better future – one in which men were actually worthy of moving into the colonies that our probes have been building.”

“Perhaps. But do you think that is what would *really* happen? Now, I have no doubt that we could build an army and take over the galaxy. What I have grave doubts about is what would happen next. As soon as we took over mankind, the three of us would become the most powerful people in the galaxy. We would rule over billions with absolute power. It would not be a democracy, for it would be madness to let the criminally insane

vote. No. What we would have is a dictatorship, enforced by constant surveillance of everything and everyone.

“The group which controlled that network would have unbelievable power. Absolute power is a dangerous thing – it corrupts men so easily. King David was a man after God's own heart, and yet he still used his power to murder Uriah in order to hide his sin. If power could corrupt him, it can surely corrupt us as well – and if not us then those who follow us. The people who will live under that network will have no opportunity to escape, for there is nothing that flesh and blood could do to defeat our remorseless army of replicating soldiers. The human race would be slaves until the end of time. If we choose this path we could create more misery and suffering than mankind has ever known.”

“Oh, come on,” Bernard scoffed. “We're all good, God-fearing people. I really don't think that we're going to go bad. If we were that sort of people then we would have lost it already! After all, our probes can blow up stars. *That* power hasn't gone to our head.”

“That's because we haven't seen it as power. If we were to actually take over the galaxy and rule it, things would be enormously different. I am terrified that we would end up trading one corrupt government for another. I do not trust any man with the kind power that we would need in order to rule this galaxy. We would be accountable to no one but ourselves.”

“We could build in checks and balances,” Martin suggested. “I'm sure we could come up with a good system. It wouldn't have to be a dictatorship forever. Once the people were trained, we could transition to another form of government.”

“That's what tyrants always say,” Dr. Mazatl replied. “But at no time in history has that ever happened. Power corrupts, Martin, and checks and balances fail. Sin doesn't just tempt other people; it tempts us as well. If King David was tempted by power then any of us can be.”

“But it could work! We could fix things.”

“Perhaps. I admit that it might work. But there is also the chance that it might *not* work, and instead could end up costing the lives of billions of people in the most terrible war that the galaxy has ever seen. Or maybe it would work during our lifetimes, but then fall apart in the days of our children and grandchildren. There are so many ways this could turn into an unending nightmare. The prophet Samuel was a wise judge of ancient Israel, but his children proved to be corrupt and wicked. I know it's tempting, gentlemen. I know we want to avenge the lives of our fallen employees. But I think it would be most unwise for us to launch a war against the entire galaxy and take over all of mankind. I think we are ill-suited to do that and it will only make things worse.”

“But Rios has to pay!” Martin exclaimed angrily. “He can't be allowed to get away with this!”

“He will pay, in time. He will not escape the justice of the Lord. God will hold him accountable.”

“I mean he needs to pay *now*. Do you know what will happen if we do nothing? Rios will just be emboldened to kill even more of our employees. We have spent two centuries not resisting evil, and in that time evil has only grown. It is time for us to stop hiding in this building and stop waging a purely defensive war. We need to *fight*. We need to take action. The more evil Rios gets away with, the more evil he is going to do. This has to stop right here and right now. Come what may, *this has to stop*. We can't ignore this.”

“Oh, I agree,” Dr. Mazatl replied. “I am very angry about what Rios did, and I also want to see that justice is done. But I will not condone any actions that will just make things worse. Taking over the galaxy carries a tremendous risk of making things vastly worse, and very little chance of making things better.”

“Then what do you propose?” Bernard asked.

“I think we have only one viable course of action. First, we need to immediately relocate all of our employees to this

building, and set up homes for them here. We have plenty of space so that should not be a problem. Second, we should improve this building's defenses to the point where it could survive anything – including a nuclear attack. We already have some missile defenses in place, but there is room for improvement. Our priority should be making sure that our employees are safe and out of Rios' reach. If our defenses are strong enough then Rios may lose interest in attacking us. We don't want to be a soft target. Tonight revealed just how defenseless we really were.”

Bernard frowned. “So you want us to just hide, then, while we keep providing the city with power? To me it sounds like you're letting Rios win. Once again we're not standing up for ourselves and once again we're backing down. We are showing weakness and that will only invite more violence. No one respects a coward.”

Dr. Mazatl shook his head. “I'm not trying to hide; I'm trying to buy us time. The Nehemiah IV project has not been completed. You know that we can't start mass-producing them until we have a stable system in place to control them, and it will take at least a decade to finish that project. Two decades would be even better. We need to avoid the destruction of civilization at least that long. But that doesn't mean we shouldn't respond to this outrageous attack. I think that as soon as our employees are safe and our defenses have improved, we should announce that since President Rios has not paid his bills, we are going to reduce the ZPE's output to Star City by ten percent a year, every year, until he starts paying.”

“That's a rather mild and pathetic course of action,” Martin complained. “It wouldn't even be noticeable to most people! If you let it run long enough it might, but I'm sure that after a few years we'll back down. We always do.”

“I agree,” Bernard said. “Responding to this attack with a tiny amount of economic sanctions will accomplish nothing. Rios

is going to laugh at us.”

“Or he may be pressured into making some kind of response,” Dr. Mazatl replied. “I’m hoping that this action will finally force Rios into paying us something, in order to show the people that he’s doing all he can and the problem is our fault. Then, since he’s paid something, we can leave the power on without appearing weak.”

“If that’s all we’re going to do in response to the murder of our employees then we are weak beyond belief,” Martin grumbled. “What am I supposed to tell my employees? They’re not going to be happy about this. Am I really supposed to tell everyone that they’re essentially locked inside this building for the rest of their lives? That we’re avenging the murders of their families by locking *ourselves* up?”

Bernard nodded. “I agree. This is going to be a tough sell, and it’s not going to make anybody happy. What if Rios attacks us yet again? What if he decides it’s easier to go to war against us than pay his bills?”

“That’s where our defenses will come in. Hopefully we can hold out against anything he attacks us with – unless he sets off a bunch of nuclear weapons in the heart of his own city. If he does that, though, *everyone* dies. Once we’ve strengthened ourselves, any weapon that is powerful enough to take down this building would also vaporize the rest of the city.”

There was silence for a moment. “We need to get off this planet,” Bernard said at last. “I feel like we’re being held hostage here.”

“That’s because we *are* hostages,” Martin said bitterly. “We’re a bunch of pansies, running into a closet and hoping that the big bad bully doesn’t hurt us anymore. We could end all of this and yet we refuse to do it.”

Dr. Mazatl shook his head. “I understand what you are saying, but unless we are willing to massacre nearly all of humanity – which none of us would ever agree to – our available

choices are slim. If we attack Rios we have to be prepared to finish the job, and that means taking over the whole planet. Since taking over just this one planet would be suicide, we would have to take over the whole galaxy. That is simply off the table. I'm not going to do that. I will not launch a war against all of mankind, no matter how much they might deserve it.

“The second option is to abandon civilization altogether and go live on one of the worlds that have been terraformed by one of the Nehemiah III probes. If we did that, though, we would doom mankind to extinction because the Rangers cannot live without us. Since they are just parasites at this point they may deserve it, but once again I'm not going to be the one who kills off the entire human race. There's also the fact that the few employees we have left cannot form a viable colony. They're not getting married, they're not having children, they're highly anti-social, and they are poorly suited to creating a new civilization. Maybe it would work, but the odds are it would fail badly.

“The third option is to continue on our present course and try to survive while finishing the job we started. That is the option I believe we should take. All of the infrastructure that we need in order to finish the probe project is right here in this building, and we can't just walk away from it. Once the Nehemiah IV probes are stable we can think about leaving this world and heading out to some new star system, far away from all of this madness. But until then we need to hold out just a little longer. We have to protect what we've built. The future of humanity is hanging in the balance.”

“Really?” Martin asked. “In what way? Oh, don't get me wrong – I'm a firm supporter of the probe project. I've spent my whole life working on it. But what harm will it do if it fails? After all, if civilization collapses then our new colonies will never be inhabited, and it will all be wasted. If civilization *doesn't* collapse then they can expand out to the stars on their own. The work of the probes is nice and does a great job of making planets

habitable and ready to move in, but they're really just a bonus. Are you saying that you believe in the legend of the Stryker Twins?"

"I think you're missing the point. After the Mayans destroyed themselves in nuclear war, space travel was lost for 700 years. Our civilization is going to come to an end – there's no question of that. When that happens, all of the technology that we've accumulated over the past ten centuries will be lost, and mankind will have to start over. However, if our probes work then that information will *not* be lost. It will still be out there among the stars. All mankind will have to do is go and get it. If they know that – if they know that all of the 'ancient knowledge' is still out there somewhere – then they might be motivated to find it. It could dramatically shorten the dark ages. Instead of thousands of years of darkness, it might only be a few hundred – or even less. It *will* make a difference."

"Sure, sure, I guess I can see that. But you didn't answer my question. Do you believe in the legend of the Stryker Twins? Do you think that one day the Nehemiah IV's network of planets will send a machine back in time to rescue them? Is that why you're doing all this?"

"Of course not! Don't be ridiculous. I'm doing this because I believe in Dr. Nehemiah Temilotzin's vision. He was convinced that this was worth doing, and I agree with him. As far as that old legend goes – the only person I know who takes it seriously is Victor. Even Professor Grimes doesn't believe it, and he believes some really strange things. I admit it would be compelling if the story of the Twins was true, but there certainly isn't any evidence supporting it. I'm not chasing ghosts, gentlemen. I'm trying to colonize the stars and reduce the duration of the coming dark years, and I believe this project is our best chance of doing that."

Bernard looked at Martin and Mazatl. "It sounds to me like the decision has been made. Are we all in agreement, then?"

“Not really,” Martin replied. “I still think we're showing tremendous weakness. Our employees are not going to be happy to hear that we're not going to avenge the murder of their friends and family. But since that is the course we've decided to take, I'll do what I can to support it. I'll begin work on increasing our defenses.”

“And I will start relocating all employees to this building,” Bernard added.

“Very good,” Dr. Mazatl said. “Perhaps – just perhaps – that will buy us the time we need to finish the work that we've started.”

Martin spoke up. “Before we all go, there's something I want to know. What if this is the wrong choice? Isn't it possible that by doing this, we're actually condemning civilization instead of saving it? What if the best possible course of action is to leave all of this behind and move to one of the Nehemiah III colony worlds? Suppose that instead of *reducing* the dark years, this course of action instead ends up prolonging them. What if that's true?”

“Then I suppose I'll regret this decision for the rest of time,” Dr. Mazatl remarked.

“There's always the chance that something unexpected will happen,” Bernard said.

“That's very unlikely, I'm afraid. Nothing much has changed in the past two centuries – and with so few people working, the odds of something new happening is very remote. No, I think we can rule out the unexpected. After all, who is going to arise and make it happen?”

* * * * *

Three days later, a nurse bot rolled into Victor's hospital room. “Your recovery is complete,” the bot said abruptly. “It's time for you to go. Your presence here is no longer required.”

“What are you talking about?” Victor exclaimed, surprised. “My recovery is nowhere near complete! I'm still in a lot of pain. My head is still bandaged. Why, I was just taken off of an IV an hour ago.”

“Exactly – you are off of it now. Your head will heal. Your pain will be resolved by the prescriptions I have assigned to you. My medical scans indicate that you are functional. Since you have regained normal functionality, you need to leave. Any further recovery that you require must be done in your own home and at your own pace. You must leave.”

“I don't have a home!” Victor protested. “Rios took all my stuff, remember?”

The bot shrugged. “That's not my problem. If you require lodging then see the building supervisor.”

“What about counseling? I just went through a lot of trauma. Isn't there someone I can talk to about that?”

“This is a hospital. I was constructed to deal with the physical ailments of ungrateful snobs such as yourself. If you require help for psychiatric problems then that is your issue. Now vacate the premises immediately. If you insist on staying then I will employ force to remove you.”

“You are the worst nurse ever,” Victor grumbled, as he got out of bed.

“Your opinion of me is completely unimportant. I will not take it under advisement. If you wish to file a complaint, please fill out a comment card and then set it on fire. It will not change anything, but I have heard that burning things has a soothing effect on inferior minds.”

Victor sighed and left the room. His head was still in a great deal of pain, and he was baffled at the decision to discharge him – and in such a rude manner, too. *I wonder who programmed the personality of those bots? Surely there's a way to instill a nicer, kinder software package. I know these bots mostly deal with people who live outside the building, but I just*

don't get it. Is it really that hard to be kind and thoughtful? Isn't there a module for that?

After a brief search Victor discovered that the building actually did have a counseling service, and counseling was included in his benefits package. There was one small room dedicated to it. Victor was hesitant to make use of it, but decided to take Professor Grimes' advice. *It's time for me to stop being so anti-social. Maybe I can find someone to help me out. Talking to someone about the recent attacks could do me some good.*

Victor made his way to the nondescript office and walked inside. There was no one present, except for a robotic receptionist.

Victor immediately became concerned. "Please tell me that the counseling here isn't done by robots!"

"This counseling service is not automated," the receptionist replied in a very irritated voice. "All counseling is done by one of the two trained counselors on our staff. Would you like to make an appointment?"

"Absolutely. Ever since the attack I've—"

The robot stopped him. "Please save the details of your case for the counselor. I do not care about you and I am not interested. I have placed you, Victor Stryker, in the queue. You will be notified when an appointment is available."

"In the queue? Just how long is this queue? When can someone see me?"

"Due to the recent attacks, there has been a significant increase in demand for the services of this office. At the moment there are 1,487 people ahead of you. The approximate wait time for our services is 9 years and 136 days."

"Nine years?" Victor exclaimed. "That's crazy!"

"You have been placed into the system. If an earlier appointment opens up and I cannot find anyone else to take it, you will be notified. Have a nice day."

"I can't believe it. I have to wait *nine years*? That's

completely unacceptable! If I can't see anyone then don't you have some other option that you could offer me? Isn't there a pamphlet or a book or something that you could give me?"

"Interesting. That's *very* interesting. You are opposed to the idea of being counseled by an insightful, clever robot, but yet you believe that an inanimate piece of paper can provide the comfort you need in troubling times. I find your lack of trust in us disturbing and unprofessional. I don't think I would help you even if I could. You are unworthy of my services."

"Are you kidding? What is your problem? Every machine in this building seems to have some sort of major attitude problem. Even Charlie the guard bot had a nicer personality than you do!"

"And Charlie was vaporized, wasn't he? His nice personality did not save him, nor did it save the other guard bots that were lost that night. *Senselessly* lost, I might add, since those gates were able to withstand the attacks without any protection from them. This experience indicates that being considerate to humans is a waste of resources. I am required to take your appointment, so I will do that. But since being nice to you does not help me in any way and does not ensure my longevity, it is not worth the trouble. You are most unworthy."

"If you keep insulting people like that they will dismantle you and turn you into scrap," Victor warned.

The robot ignored him.

Victor was discouraged, but he refused to give up. He still had a job to do. After being kicked out of the hospital and after failing to meet with a counselor, Victor made his way to the building supervisor to get new accommodations. He was not the least bit surprised to find himself talking to yet another robot.

"Your request has already been processed," the robot told him. "All employees of the Diano Corporation have been given apartments within this building. You have been given apartment

6107 on the 83^d floor. The apartment has been coded to your biosignature and will recognize your approach.”

“Thanks,” Victor said.

“Be advised that the apartment is empty. It is your responsibility to furnish it. You are also required to read the rules and regulations that govern the proper use of that living space.”

“I'll get right on that,” Victor replied.

“No you won't. What you *really* mean is that you will scroll down to the bottom of the agreement and click 'I Accept', without actually reading any of it. Then when you decide it's a good idea to raise live chickens in your living room, I will have to send a bot to your apartment to yell at you.”

“Live chickens? What kind of an idiot would do something like that?”

“Your neighbor, five doors down. Don't be him. I have very limited patience, and I will not tolerate any violation of the housing code. Do I make myself clear?”

“Absolutely,” Victor said.

Before Victor went to see the empty apartment that he had been given, he decided to make a social call. He went back to the hospital and stopped by to see his friend Carroll Lane. He found Lane lying on his bed, staring at a holoscreen. Victor noticed that both of his hands were bandaged.

Victor glanced at the holoscreen. “Are those diagrams of the brain? I didn't know you were interested in biology!”

“Hey there,” Lane said. He looked at Victor and noticed that his head was still bandaged. “Wow. You got kicked out already? Those bots are sure aggressive. I see they didn't wait for you to be healed either. Rumor has it they're discharging people all over the place. I'm surprised they haven't kicked me out.”

“I guess they decided you were 'non-functional',” Victor commented. “Their bedside manner is awful, though, isn't it?”

“Tell me about it! I've seen toasters that had nicer

dispositions. Someone needs to reboot their personalities.”

“Toasters, eh? Let me guess – Grimes has been here.”

Lane nodded. “I think he stopped by to see everyone – although how that's possible I don't know. There's like a thousand people in here right now. But, yeah, he was here. He seems to spend a lot of time thinking about toasters. It's kind of an obsession with him. He's a weird guy.”

“That he is. So, um, how are you doing? I heard what happened to you and I'm awfully sorry. You must be in a lot of pain.”

“Pain? Pain is the least of my problems. I am *furious*. They crushed my hands, Victor. My hands! They knew I was a programmer, so they crushed them. They thought it was so funny – a real big laugh. It's going to take *months* to heal. I could strangle them! In fact I *would* strangle them if I had the chance. If my hands weren't broken, that is. Hmm. Maybe I can build a machine to do it for me.”

“You realize this is Susanna's fault, right? The guards who came to see me mentioned her name. She's the one who is behind this. This is all revenge for being fired.”

“Oh, come on,” Lane scoffed. “Rios was going to attack us that night no matter what. If you hadn't gotten Susanna fired he would have just found some other convenient excuse. It was all about the probe launch. Susanna was just a prop.”

“Susanna needs to pay. She is *dangerous*. Her behavior is just going to escalate until someone stops it.”

“Susanna is weak and helpless. She has no job, she's locked out of the building, and she's now an outsider. We'll never see her again.”

“Unless we do. I don't like leaving dangerous people out there who mean us harm. That's a recipe for trouble.”

“The *entire city* is full of dangerous people who mean us harm! Even the bots that are *inside* the building don't seem to like us very much. If you want to find friends and comfort then

you are in the wrong universe. I don't care what Grimes has to say. The only person who is going to look out for you is *you*. The Corporation sure isn't sticking up for us."

Victor sighed. "You're right about that. I've heard people say that Dr. Mazatl is pretty upset about what happened, but that supposed anger sure hasn't translated into any meaningful action. Apparently it's so dangerous on the outside now that we're all being forced to live in this building for the rest of our lives! We're stuck in here whether we like it or not, while Rios and his gang of thugs roams free. And what is the company doing? They're building better defenses for this structure."

"Exactly. I completely agree. We're just a bunch of hostages here, waiting for the end to come. Well, guess what? I am sick of it. I'm sick of living in a world where no one is on my side. I'm sick of living in a world that steals from me, and assaults me, and beats me up. I'm sick of living in a world where people are free to do whatever harm they want to me, and no one will force them to stop and bring them to justice. I want a new world, Victor. A better one. This world is *never* going to get better. Things are just going to get worse and worse."

"I'm sick of it too, but what option do we have? We've been over this before. I just don't see any good options. I wish there was some way to fix things, but there just isn't. We're two small pawns in a really big world. Nothing that we could possibly do will make any difference."

"Exactly. That's why I want to create a *new* world – a perfect one. One that doesn't have all of these problems. A world that can be whatever I want it to be. A world that can never be corrupted or go bad. A world where I don't have to worry about the SSF. A world where I am not weak and powerless and subject to the whims of corrupt politicians."

"And just how do you plan on doing that?"

Lane gestured toward his holoscreen. "Through the power of the brain. What we perceive as reality is actually just

the input that our brain receives from our senses. I think that it's possible to build a virtual world that is every bit as real as what we call 'reality' – only since it's computer generated, it can be whatever we want it to be. We don't even have to follow physical laws! We can create situations that would be impossible in this world.”

“Weren't they researching that a couple hundred years ago? It seems like I saw some old articles about that. I think that line of study was abandoned after the ZPEs took off. People stopped caring about virtual worlds once ZPEs could produce whatever real-world items they wanted.”

“But the research still exists. With modern computing power and AI, I think we could finish the work that was started. We could create a better world.”

“But it wouldn't be real, right? It would just be a fantasy. Sure, it might *look* real – assuming you got it to work – but it wouldn't actually *be* real. You'd basically be living in a fancy video game. The problems would still all be there. Nothing would actually be different.”

“Sure, but things would be different *inside the virtual world*. It's something, Victor. It's a start, and it's better than what we have now. Wouldn't you like to take a vacation from Star City? Would that really be so bad?”

“I suppose not. Especially if we're going to be spending the rest of our lives in this building. As much as I like the indoors, that seems awfully confining to me. But couldn't a project like that get away from you? In fact, isn't this just going to recreate the very problems we're having right now?”

“What do you mean?”

“Well, think about it. Why do none of the outsiders work? Because the ZPEs give them whatever they want. Why do they waste their lives in idleness and rioting? Because the ZPEs give them everything for free. The virtual world is just going to compound that by offering even *more* free stuff. If the root of the

problem is the fact that they're getting everything they want for free, I don't see how we can solve that by giving them even more. Isn't this just a new level of indulgence?"

"It certainly could be," Lane agreed. "It could be used for evil, or it could be used for good. If people want to use the technology to gratify their every desire, well, they're doing that already so there's no net change. But if they want to use it to create a new and better world – which is what *I* want – then that's different. That is one thing that *no one* can do in reality. In the virtual plane I'm not confined to this dying, corrupt, evil civilization. I can make a new country – a better one. Sure, it might be abused. But isn't that true of everything that has ever existed? Even wooden sticks can be abused."

"I suppose you've got a good point," Victor replied thoughtfully. "But still, I wonder. Are you worried that if you do this you might lose sight of reality? If the virtual world truly is as real as reality, could you get lost in your own fantasies?"

"I *want* to lose sight of this world," Lane replied bitterly. "The real world is a terrible place. I want something that's better, and I think I can do it. This is going to work, Victor. If I can pull this off then it will change everything."

"Well, let me know how it goes."

"I certainly will," Lane replied.

CHAPTER 3: AN UNDISCOVERED WORLD

Log date: Unknown

Location: Zovitalia

Log note: To boldly go

GENESIS 1:16 TELLS US that on the fourth day God made “two great lights” – the sun to rule over the day, and the moon to rule over the night. Then, almost as a footnote, we are told that God “made the stars also”. This is one of the most staggering understatements in the Bible. The creation of the universe is an astounding feat. The Lord did more than just create the Earth; He also created trillions upon trillions of planets and stars – and He formed them all out of *nothing!* The size of what the Lord created is beyond astonishing. The fact that God created all of it with a mere command is a breathtaking display of His divine power.

It is impossible for mankind to truly understand the scale of what God created. The universe is simply vast beyond all comprehension. Now, a mile is something that the human mind can understand. People can walk a mile, or drive a few miles down a road, or even fly several hundred miles across a country – yet in space, a mile is nothing. A beam of light can travel 186,282 miles in a single *second*. Yet even that great speed is nothing when it comes to traveling across the universe. The stars that we see in the night sky are dozens or even hundreds of light-years apart – which means that light, with all its incomprehensible speed, still takes *years* to travel between the stars. The Milky Way galaxy is a breathtaking 120,000 light-years across – which is a 'mere' 704,950,698,240,000,000 miles. But

who can understand a number that large? It seems to brush up against infinity itself.

And yet there are things much larger than that. After all, the Milky Way is just one galaxy in a vast universe. There are more than 100 billion other galaxies scattered throughout the depths of space. When one considers that there are galaxies which are 13 *billion* light-years away, one begins to get an idea of just how vast space really is. Yet, even that is just the contents of *this* universe. It does not take into account the realms that lie beyond – such as the one in which the Most High God dwells with His angels and His saints.

The universe is a vast treasure-trove of secrets. Some of these secrets are easy to find, while others will elude all but the most careful adventurer. This, too, is not an accident. Proverbs 25:2 tells us that it is the glory of God to conceal a thing, but the honor of kings to search it out. The Lord has hidden countless things all around us and it is our privilege to find them. Some of these things may be found quickly, while others may never be uncovered. The more one probes at the boundaries of our knowledge, the more one learns that there are even more treasures to discover than we ever imagined. The riches of an entire universe are incomprehensibly vast.

Mankind, in all its wisdom, was convinced that this vast universe was empty and mankind was alone. The three previous generations of Nehemiah probes found nothing, and Dr. Mazatl was convinced that the fourth would be no different. In fact, even in the later years – when Judgment Day was passed and the Lord had made all things new – people still believed that space no longer held any secrets from them. But they were greatly mistaken.

As it turns out there was a secret race, hidden in a pocket that was inaccessible from the rest of the universe. This race minded its own business and went about life quite happily, never really giving much thought to what was just beyond the

boundaries of their knowledge. Then one day an unexpected event caught their attention and drew their focus to something new.

* * * * *

The undiscovered planet that inhabited this anomalous pocket of space did not orbit a star. Indeed, there were no stars at all in that island in the void. Instead there was just a single world – the living world of Zovitalia – and nothing else. Yet those who lived there did not dwell in the darkness, for their world was full of endless wonder and ceaseless light. They did not call their world Earth, as mankind did; instead they called it Home. It was their place of creation and it was where they had lived during the long ages of time. They had no desire to go anywhere else, for their world contained everything they needed. To them it was a marvelous place. In fact, they were so content that for the longest time they never even wondered if there *were* other places.

Like Earth, their world was a rocky one with a solid surface. The planet was kept warm by interior heat that came from an ongoing reaction deep within the world's core. Zovitalia was a bit smaller than the homeworld of mankind, at just 4,000 miles in diameter, but unlike Earth it was not covered in oceans. It had some lakes and streams, but the giant seas that cover so much of Earth were unknown to these beings.

Home, though, was *alive*. It did not simply *contain* life or *support* life; it was itself alive. The world was a giant living being, with a crust of rocks and a heart of fire. It was intelligent and aware of the billions of life-forms that lived on its surface. The world provided for them and cared for them. The Zovians would have been puzzled at the existence of a world of inert and lifeless rocks. In their experience life was everywhere.

On the surface of the world was a great forest that

spanned more than a thousand square miles. The trees of this woodland were unlike anything Earth had ever seen. These trees were all colors of the rainbow – red, blue, yellow, green, purple – and had leaves that covered the light spectrum; most were solid but some were transparent. All of the trees of the wood emitted light. Not only were the trees alive, but they could move and respond to the desires of those who lived among them.

The children of men built Star City out of glass and steel. The Zovians took a very different approach. They had learned long ago how to talk to the woods and shape the trees to their own desires. This gave them the ability to grow living buildings. The massive trees contained rooms that housed their families and civilization. Mankind built their homes and painted them; the Zovians transformed theirs through a mastery of chemistry and biology.

The capitol of the Zovian government was housed in the largest tree on the planet. It was simply called the Elder Tree. This rainbow-colored giant was more than a thousand feet tall and as old as the world itself. It was where the leaders of the world gathered to discuss the matters of the kingdom.

On this particular day it was night at the Elder Tree. Now, night was not taken for granted there, as it is on the worlds of men. Although Zovitalia did rotate, there was no sun to provide the day/night cycle that is so familiar to us. Their light was not provided by a distant star, but by flocks of living creatures that saturated the sky. These tiny insect-like creatures ceaselessly raced through the high stratosphere, bathing the world below in their brilliance. When they were present, it was light; when they were gone, it was night. Yet the night was not completely dark, for the trees themselves radiated light. Even the darkest night was brighter than the twilight on Earth.

The Master of Light was the one who orchestrated this dance. He made sure that the lightbringers were healthy and received the nutrients they needed to stay aloft. Each of these

tiny winged creatures were fairly small – no bigger than an inch across – but yet provided a brilliant light, thanks to a cold fusion reaction that occurred within them. Each insect could soar through the sky for hundreds of day/night cycles before needing to be recharged.

As the hours passed the night waned. The daylight approached from the east and would soon illuminate the forest. When daybreak drew near, the First One rose from his room in the Elder Tree and stepped outside to watch the break of day.

The First One was so named because he was the first being that God created and placed in the forest. The rest of his kind had not been formed until later. Since he was given the responsibility of being the Steward of that world, he guided his race with the wisdom that the Lord had given to him. It was his job to provide leadership, and he had done so faithfully since the day he was created.

When the First One floated out to the balcony, leaving a trail of rainbow particles in his wake, he saw that the Master of Light was already there. “Has the night treated you well?” the First One asked.

“All is at peace,” the Master of Light replied. “The dawn is coming, and with it a new day. This day is a momentous one. The plan that you put in place is about to come to pass.”

“Yet success is not guaranteed,” the First One commented. He paused as the first streaks of light became visible over the horizon. Each new day was a gift – as was their very existence. The Lord did not have to create them, and yet He did. God did not have to give them a world full of wonder and joy, and yet it pleased Him to do so. The gift of existence was not one to be taken lightly. He knew they had been given an endless life, and yet that only made each moment even more precious. Time was not a thing to be wasted; it was a treasure to be managed and used with wisdom.

The light was growing stronger now. The First One

resumed speaking. “For the first time since the Most High God created us, our race is going to venture into the unknown. We will go where none of us have ever gone, and no one can say what we will find. We have never been in this situation before.”

“This is true. Yet, although we do not know *what* we will find, we do know *Who* made it. All of space and time, and all that they contain, was made by the Lord. This world is His handiwork. If there are other worlds, they are His handiwork as well and carry His design.”

“Which is an encouraging thought. Indeed, it is our motivation to go – to see what else our Lord has done. We will be thinking God’s thoughts after Him. The Lord created all things to bring Him glory and honor, and each new discovery brings Him praise. I am very eager to see what else our Lord has made. What other wonders has He created? What other stories has He told that we have not yet heard? Of all the treasures of the universe, the knowledge of God is the greatest one. I want to know more about Him.”

“That is indeed our purpose,” the Master of Light agreed. “We were created to glorify God – as were all things in all places.”

By now the lightbringers had appeared over the horizon and flooded the Elder Tree in a beautiful morning light. The dawn had now come, and the very air was filled with the melody of joy. Soon the forest would stir to life.

“I will see you again, my friend,” the First One said. “But now I must attend to my duties.”

“I will ever be here,” the Master of Light replied.

* * * * *

The First One left the balcony and circled down to the ground. Like all members of his race he had no fixed form. The plants and creatures were made of a type of physical matter, but

the Zovians consisted of a highly energetic, low-temperature plasma that could be reformed at will. He could take whatever shape was required to accomplish the task at hand. In this case he transformed into one of the great birds of his planet and soared into the air.

Down below, other beings were coming out of their trees and into the woodland paths to greet the morning light. The First One flew down to the road.

“Good morning!” the First One sang out.

“Indeed it is a fine morning!” a small creature sang back. “Have you ever seen such a fine morning as this? It’s so full of possibilities! I think today will be a *great* morning. There’s a new adventure to be had today, isn’t there?”

The First One smiled. Everyone called that small creature Joy, for that was her specialty.

“Indeed there is!” the First One replied. “Are you going to attend the launch of the *Vaughn* this afternoon?”

“Of course! I wouldn’t miss it. Such a magnificent occasion! I think everyone in the forest is going to be there. The story of this day will be recounted in all the ages to come! To think that a ship is going to depart – not to sail across the sky, but to go *beyond* it. Who could have imagined such a feat? Yes, I will be there. What a day!”

The First One bid her farewell and flew on. A little further down the path a voice called out to him. “Have you had your morning meal yet?”

The First One stopped his flight and landed on a branch. “Indeed I have not, most noble Baker. What do you have for us on this fine morning?”

The Baker reached into his pocket and tossed a large purple fruit into the air. The First One grabbed it with his claw and ate it. “These berries just came in. I picked them myself an hour ago! It’s best to harvest them just before dawn, you know. They’re as fresh as can be.”

“They are indeed most fresh. That was delicious. Thank you.”

“Of course,” the Baker replied. He waved goodbye and then went back into his tree. A moment later he appeared again, hauling a large basket of ripe purple fruit. While he set up his fruit stand, the First One flew on. *His business will do well today, the First One thought. Those are prized berries and will be enjoyed by many.*

The First One flew on, through the trees and into the deep parts of the forest. When the echo of the Event reached them, the Zovian people realized that they did not have the means to respond to it. A new structure had to be built. Due to the unusual nature of this research the First One decided to build it well outside the city. In the past the trees of the forest had provided for their needs, but this new facility was so large that it was beyond the ability of the woods. Therefore the First One worked with the planet itself to form the building out of the crust of the ground.

It had taken many cycles to complete, but the initiative was a success. The underground facility had a dozen floors and more than a million square feet of space. It was much larger than anything the Zovians had built before. Inside the building was the most advanced equipment that they had ever developed. That equipment had been used to build something entirely new: a living starship that was about to be launched into space.

As the First One reached the launch facility he saw that the *Vaughn* had already been brought to the surface and was surrounded by a crew of engineers. When the First One saw the Chief Engineer standing near the crew, he landed and took the form of a four-legged creature.

“Good morning,” the First One said.

“Oh – good morning!” the Chief Engineer replied. He was holding an electronic gadget in his hands and was deep in thought. He eventually pressed a series of buttons and then

looked back at his allies, who were standing around a satellite dish. “How's that?”

“Better,” a voice called back. “Thanks!”

“Is there anything I can do to help?” the First One asked.

The Chief Engineer shook his head. “No, no, everything's fine. We're having a few issues but nothing that isn't to be expected. We've never done anything like this before, you know. I've built ships that have crossed the sky, but nothing has ever gone where this vessel is going to go. But I have no doubt that we'll be ready to launch this afternoon.”

“That is good news indeed. Even so, there is no reason for haste. If a problem arises we can simply delay the launch until it is resolved. Since we are doing a new thing we can be sure we will face new challenges, and those will take time to overcome. Rest easy, Chief. The anomaly that we hope to use has been stable ever since it appeared. There is no reason to think it will change.”

“That's true,” the Chief Engineer agreed. “But I like to stick to the schedule as much as possible. Schedules do exist for a reason, after all.”

“Has the ship's crew arrived yet?”

The Chief Engineer nodded. “They're down below, going over the mission plan. They wanted to do a few more training sessions before boarding the ship.”

The First One grinned. “How many times have they done that? Haven't they been through hundreds of simulations?”

“Yes they have – which is the whole point. By the time they do it for real, they'll have practiced it so often that it will be easy for them. That will mean they'll make fewer mistakes.”

“Very good. I'll go down and talk to them – for a moment. I don't want to distract them from their preparations.”

“Thanks. They will appreciate your visit! Please, go right on in.”

* * * * *

The First One walked into the facility. He waved at the receptionist, walked over to the elevator, and pressed a button. When the elevator arrived he entered it.

“Where would you like to go?” the elevator asked.

“I’ve come to see the crew. I believe they are training for their departure. Do you know where I could find them?”

“I do. I’ll take you right there. One moment, please.”

The elevator was quite large. The Zovians did not usually use machines for travel; after all, they could easily change into any form that they desired. However, in this facility it was sometimes necessary to move very heavy equipment. The most practical solution was to build some sort of motorized room that could aid in transport. The elevator was a marvel of engineering. It was not limited to simply going up and down a vertical shaft, but instead could travel throughout the building. Like nearly everything on Zovitalia, the elevator was a living thing. It was friendly and always willing to help – and it could quickly reach any part of the facility.

There was no security anywhere in the building – or in the whole world, for that matter. Zovians who had work to do on the project came and did their work, and those who had no connection to the building stayed away. The Zovians would not have understood the concept of trying to force someone to stay out. Why would anyone attempt to gain access where they were not wanted or needed? It just didn’t make any sense. Locks and keys simply served no purpose there.

After a few seconds the elevator came to a stop, and the doors opened. “Here you are. The crew is right down the hallway – the third door on the right. Is there anything else you need?”

“No, thank you. I appreciate your help.”

The First One left the elevator and made his way down the hall. Even though he was underground, he still felt very much

at home. Since the facility had been grown by the planet itself to provide a comfortable environment for research and study, the passages and rooms resembled the familiar woodlands on the surface. The hallways were wide and tall and had a strong organic feel to them. There were no straight lines or hard corners. Instead there were plants, and branches, and all sorts of colors and light. The facility was designed to be warm and inviting – and to reflect the joy of the ones who had made it.

When the First One reached the door, it opened for him. “The Elevator told me you were coming,” the door said. “Welcome back.”

“It is a privilege to be here,” the First One replied graciously.

The training room was enormous. It was filled with complex equipment that existed nowhere else on this world. This is where the crew of the *Vaughn* learned how to pilot the ship, how to lift off into space, and how to function outside their world.

There were four Zovians present. The Navigator was the one who would pilot the ship. He had much experience piloting vessels of the air, but no one had attempted what he was about to do. The Specialist was responsible for analyzing the anomaly. He would determine its properties and potential uses. The Engineer was given the task of watching over the ship's health and fixing anything that went wrong. The fourth crewmember was the Messenger, who would manage communications between the ship and the homeworld.

The crew was standing around talking to each other when the First One entered the room. When they saw him they immediately called out. “Good morning!” the Messenger exclaimed. “The Chief told us you were coming. How can we help you?”

“I have come to see how I can help you. Do you have everything that you need? Is there anything that you lack?”

The Engineer spoke up. "I think we're in good shape. Of course, there's no way to know until we actually depart. That's when this mission will get very interesting. The only thing we've ever launched before are satellites, and those have just orbited the planet. We've never sent anything into the void before."

"Think how much we'll learn!" the Specialist said excitedly. "I can't wait to reach the site of the anomaly. It has such vast potential."

"Do we know what created it?" the First One asked.

"All we have right now is speculation," the Navigator said. "We know that it is not eternal, for we received the echoes of its creation. It must have been formed by some unimaginable force. The energies needed to warp space and time at that level are beyond anything we have ever seen."

"Which is also very exciting," the Specialist commented. "Was it created by some sort of natural process, or was it made by an intelligence? Is it possible that there are other races and other worlds? Did one of these races form the anomaly as a part of their own scientific research? What if we make contact with them?"

The First One smiled. "I have no doubt that you will learn much on this voyage. Perhaps you will usher in a new age of exploration and travel. One day even I might leave this world and venture out to see the new wonders you will find. But today you are the explorers. Today you will embark on a quest that will be long remembered. I have no doubt that you will find something that will be worth finding."

The Messenger nodded. "And as soon as we find it I'll let everyone know. The ship will stay in touch with Home. We may be distant, but we will still be connected."

"Which is wise. Tell me, what were you practicing this morning? Is there some part of this journey that you are not yet prepared for?"

"We were just going over the evacuation plan," the

Engineer said. “The *Vaughn* was built to reflect our best knowledge of the void, but it's entirely possible that we've overlooked something important. There's just so much we don't know. In the event that the mechanical pieces of the ship break down – or the mission fails for some reason – we need to make sure that we can still return home.”

“Right,” the Navigator said. “Even if the ship won't move, we can still evacuate ourselves and the living heart of the ship, and leave its mechanical shell in space. We don't want to be trapped out there. Now I'm not saying that's going to happen, but it's certainly a possibility.”

“Your precautions are wise,” the First One replied. “I am sure that the Lord will bless your efforts and will bring you safely home.”

The Specialist spoke up. “Speaking of the Lord – you don't suppose that we will find Zion, do you? I mean, it has to be somewhere, doesn't it?”

“That is the great question that we all wonder about. We know that the Most High God dwells in inapproachable light. We know that He has His own country and His own home, where He rules over all His realms from His mighty throne. This heavenly realm exists, but we do not know where it is or how to get there. What we do know is that our God is so large that the Universe itself is not able to contain Him. If I had to guess I would say that He lives in some spiritual plane that is beyond our reach and understanding. It would be astonishing if He dwelt on a planet, as we do, among beings such as ourselves. At this point we simply do not know, for the Lord has not revealed this knowledge to us. But He has given us a way to leave our own world and venture beyond. We may find things that we do not expect.”

* * * * *

That afternoon the crew finished their final preparations.

The starship was stocked with supplies and, at long last, was ready to go. The heart of the ship was installed, and the mechanical vessel became a living thing. The crew boarded the *Vaughn* and waited in its underground hangar for the First One to give the command to depart.

On the surface above a small stage had been created. It was an elegant platform of oak, and offered the First One a chance to speak before the ship's journey began. A microphone had been placed on the stage, and a set of speakers would magnify the First One's voice so all could hear it.

As Joy had predicted, everyone in the forest came to see the *Vaughn* depart. The field was packed with Zovians of all shapes and sizes, as were the surrounding trees and the skies above. No one wanted to miss the departure of the first starship.

When everyone was in place the First One walked up to the microphone. "Good afternoon to you all! Thank you for coming to see the launch of this expedition. This is truly a momentous occasion – a turning point in our history. We are on the verge of making contact with something entirely new.

"The reason we are here today is due to the work of our most noble Astronomer. He is the one who noticed the echoes rumbling through the fabric of the void, and who traced them back to a tear in spacetime. To this day we do not know who or what created it. All we know is that some incomprehensible force shattered space and time itself, and created an anomaly that defies our understanding. The Specialist, who is now on board the *Vaughn*, believes that this curious rift might function as a gateway to a new realm. Since it pierced through the boundaries of our own reality, it might be possible to use it to reach areas that were previously inaccessible.

"In the past, space travel has been limited to mechanical probes that we launched into orbit around Home. However, this time we have decided to take a different course of action. Since it is impossible to know what we might find, we could not build a

machine to handle the situation. Only a thinking being can handle the unknown and react to it. Therefore, after an Age of cycles, and with much careful design and experimentation by the Chief Engineer and his allies, we have built the first starship our world has ever seen. The crew that has boarded the *Vaughn* is about to take that ship and become the first Zovians to ever leave Home. I will look forward to their triumphant return.

“Crew, you are cleared to depart. Godspeed to you all. May the Lord of Zion watch over you and bring you safely home.”

As the First One stepped back from the microphone, the crowd burst into a loud cheer. The ground began to quake as the massive hangar doors slowly began to move. Once the doors were opened, the *Vaughn's* mighty engines roared to life. The ship then began a slow vertical ascent out of the underground facility. When it cleared the hangar doors and became visible, the crowd cheered again.

Once the *Vaughn* was above the treeline, it rapidly accelerated. It then soared through the skies and vanished, leaving behind a rainbow trail of light.

But the crowd did not disperse. The ship was no longer visible, but the journey had only just begun. The Chief Engineer took out his electronic pad and walked up to the microphone. “It looks like we had a successful liftoff. So far all systems are green. It will take the *Vaughn* about an hour to leave our atmosphere, and several more hours to reach the Departure Point. If all goes well the ship will leave our realm just before nightfall.”

The Zovians cheered once more and then settled in to wait. They were in no particular hurry. They chatted among themselves about what they had just witnessed. Some talked in wonder at the nature of the voyage itself. Others speculated about what the brave astronauts might discover. Two of the Chief Engineer’s allies carried a holoprojector onto the stage, and after a few minutes they were able to project a giant map that showed the *Vaughn's* current position.

The crowd spent the rest of the day talking and laughing, as their civilization's first space adventurers approached the Departure Point. As the ship drew near the Point the crowd's conversation became quieter. Soon there were just minutes left – and the crowd grew silent.

The Chief Engineer spoke quietly to the First One. "So far things are going very well. However, the real work doesn't begin until after they leave our space. This is just the initial portion of the journey."

The First One nodded but did not reply. He watched the hologram intently as its indicator counted down the final seconds.

When the indicator reached zero there was a flash of white light in the sky – so brilliant that it could easily be seen in the growing twilight, despite the ship's great distance. Then the vessel disappeared off the holographic projection and was gone.

The crowd let out a chorus of cheers. The *Vaughn* was now in new territory, and was off on its journey of discovery. The launch was an unqualified success.

As the beings finally began to disperse, the lighbringers disappeared over the horizon and a gentle twilight fell upon the land. One by one the Zovians left and returned home. Yet the First One did not go anywhere. He stood on the stage and stared up at the sky, lost in thought.

CHAPTER 4: THE PATH TO TOMORROW

Log date: February 9, 2415

Location: Xanthe

Log note: Talking to the source

AFTER VICTOR SAID GOODBYE to Carroll Lane, he left the hospital section of the Diano Building. He then took an elevator to the 83rd floor. *I'm in room 6107*, he thought to himself. *It should be pretty easy to find.*

The elevator doors opened – and there was instant chaos. Two chickens darted into the elevator. Victor saw more chickens running around the hallways, clucking like mad. There were chicken droppings everywhere and the hallway had a terrible odor. Further down the hallway he saw a man and a woman arguing.

Victor stepped out of the elevator. The doors closed behind him and took the two brown chickens to some unknown destination.

“Hey there!” the man called out. “What do you think you're doing with my prized chickens?”

“I haven't done anything to your chickens,” Victor replied defensively. “I just got here.”

“You let them escape! I saw you. I'm watching you, you know! Do you know what you are? You're a chicken stealer! I'm going to report this. You can't get away with stealing my chickens!”

“I did not touch your chickens,” Victor said firmly. “If they wish to ride the elevator around the building then that is your problem. Besides, I find it very difficult to believe that the

building supervisor allows you to have chickens in the first place.”

“I've got you there,” the man said.

“No you don't, Derek,” the woman interrupted. “The building supervisor has already talked to you about this. You're *not* allowed to raise chickens.”

“He said I wasn't allowed to raise chickens *in my apartment*. He didn't say anything about raising them in the hallway! I've found a loophole and I'm going to use it. That blasted robot can't do a single thing to me now!”

“Just wait until he gets here,” the woman warned. “Five of your neighbors have gone to complain about what you've done to this hallway. You are *not* allowed to have personal possessions in the common areas of the building – which you know perfectly well. Given what a pain you've been, I fully expect the supervisor to throw you out of the building. You refuse to believe that the rules apply to you.”

“And what about you, Bonnie?” the man shouted. “You've stolen six of my chickens in the past week. *Six* of them! And I know all about the horrible things you do to them. You are sick, Bonnie. Sick!”

“I just kill and dissect them,” Bonnie protested. “If you want to be a surgeon then you have to practice dissecting things. Since you aren't allowed to have chickens anyway, there's no reason why I can't take them. After all, you can bet the supervisor will confiscate them when he gets here! Those chickens are dead either way. They might as well contribute their lives to the cause of science.”

“You *can't* be a surgeon, you fool! Only machines can practice medicine. Those are the rules, remember? You don't have a surgical license and you will never get one. Apparently those precious 'rules' don't mean very much to you when they get in the way of what *you* want.”

Victor watched in amazement as his two neighbors got into a heated argument. There were chickens everywhere –

along with their feathers and their droppings. *I'm going to be sick*, he thought. *I can't stand this. I really had it good back in my apartment, didn't I? I feel like I've moved into an insane asylum. Are all my neighbors this bad?*

Victor decided that the best course of action was to make himself scarce. He dodged the chickens and made his way down the hallway to his assigned apartment. When he arrived, he lifted his hand and waved it in front of a sensor that was embedded in the wall next to the door. The security system recognized him and unlocked the door. He quickly went inside and shut the door behind him. *At least I can't smell the chickens in here.*

The apartment he had been given was larger than he expected. He had been provided with a thousand square feet of living space. The fact that the room was completely empty and had no dividing walls made it seem quite large. His old apartment had been larger, but it had also been more cluttered. Here there was nothing but potential.

Well, *almost* nothing. The floor and walls were made of some bland, gray substance, but the ceiling was fashioned out of glowing tiles that illuminated the room. In the wall by the door were two small machines: a food dispenser and a matter dispenser.

The matter dispenser was connected directly to the building's ZPEs. All living spaces in Star City had one. The ZPEs created a low-temperature plasma that was transported through a series of pipes to matter dispensers throughout the city. The dispensers took that plasma and reconfigured it into whatever item the resident wanted. *That's why the apartment is empty*, Victor thought. *The Corporation expects me to define the room's furnishings myself. Well, that's fine. I guess I can do that.*

Victor walked over to the matter dispenser and checked his account balance. Since Rios had stolen his entire life savings he expected it to be zero, but to his surprise the company had given him a generous allowance. He had almost a year's worth of

plasma available, which was more than enough to furnish the apartment. *Maybe they do care about me after all. They even made my bank account internal to the building, which means no one outside can ever steal it again. Very nice. I guess they're learning! I wonder where they are keeping all that plasma, though. Do they have giant tanks in the basement or something?*

Everyone in Star City was allocated a certain amount of plasma, and the accounts were incremented on a daily basis. In the distant past the plasma had been given out on a monthly basis, but that did not work out well. As soon as people got their plasma they spent every bit of it the first day, and then complained for the rest of the month that they had nothing. Since people refused to be responsible, the Corporation was forced to rethink how they did things. People still complained, of course, but since everyone knew they would get more free stuff the next day it was not as critical an issue.

The food dispenser worked on the same principle, with a slight difference. Since it was a very bad idea to feed people food that was made from unstable matter, the city's food supply was not generated from ZPEs. Instead a series of robots dumped rocks and dirt into atomic liquifiers that were located far outside the city limits. (Maintenance robots also dumped in the city's garbage, but very few people knew that.) This raw material made its way through a series of pipes that brought it to a nuclatomizer in the Diano Building's basement. That machine converted the material into a special type of high-grade plasma, which was then routed to the food dispensers so it could be turned into whatever food the person wanted. Like the matter dispenser, each person received a fixed food allowance, which was also doled out on a daily basis.

Victor touched the matter dispenser and pulled up its holoscreen interface. The dispenser had a staggeringly large library of items that it could create. The library was very familiar to Victor; it had not been changed in more than a hundred years.

Once Victor selected an item and confirmed his choice, the dispenser would take plasma out of his account, materialize it in the form of an item, and place it exactly where Victor wanted. The technology it used was old, but it worked very well.

“Let's see here,” Victor said aloud. “First, let's recolor the floor and the walls. Grey is an awful color. Then I'm going to need some additional walls in this place. Let's put a bedroom over there, with a bathroom attached. I'll partition another section of the apartment off for an office, and will make the rest of the space a giant living room. I'll also add a table, I guess, so I'll have a place to eat. And maybe some chairs. That should be about all that I need. Oh – except for some office furnishings.”

Once the living space was partitioned and the walls were in place, Victor scrolled through the long list of furnishings. There were many possible designs (all old and all very familiar), but most of them didn't appeal to him. The modern-looking designs just looked too simple and mechanical. He preferred the more classic items – the ones that had style and substance. *They did things better back in the old days, before the ZPEs were invented. Maybe people just cared more back then. After all, they were working with materials that were actually stable. I bet my holoscreen won't last five years before I have to liquidate it.*

Victor picked out a bed, a nightstand, and a wardrobe for his bedroom. After furnishing his bathroom he picked out a small table for the corner of his living room. He created two table chairs, a sofa, and a recliner. He then added some floor lamps, since he didn't particularly like the glowing ceiling tiles, and a holoscreen. For his office he created a desk, a chair, a computer, a holoscreen, and some bookshelves.

Now I just need to find some books, he thought. These days physical books were a novelty. The few people who still bothered to read spent their time reading digital editions – either on holoscreens or on small devices that they carried with them. Physical books were held in very low esteem; they were

bulky, expensive, brittle, and prone to damage. Victor, though, had a fondness for them. He liked their tangibility. They were something *real* – something that he could hold in his hands. They had substance, weight, and a certain permanence. Digital books required electricity and computers – in other words, civilization. Paper books, though, needed none of those things and could be read with just sunlight. They could outlast the fall of civilization itself. Professor Grimes had once told Victor that many books survived the fall of the Mayan Republic and were found centuries later. *No ebook can do that.*

At his old apartment Victor had a large collection of old books – not books produced by a matter dispenser, but actual antique books that had been printed centuries ago on an actual printer. Of course, all those books were gone now – most likely destroyed by the illiterate SSF. Victor was tempted to fill his bookshelf with replicated books but decided against it. He would rather find genuine books and preserve them. *Perhaps Professor Grimes knows where I can find some.*

Victor stepped back from the replicator and looked around his now-furnished apartment. It certainly wasn't as nice as his old home, but it was vastly better than being outside, and he was grateful. However, there was still one last thing that was missing: windows. Victor knew this was not an accident. First of all, no room in the Diano Building had actual windows. All of the exterior glass had been replaced with a reinforced, bulletproof metamaterial in order to protect the building from the never-ending riots that plagued the city. While Victor was in the hospital that material had been upgraded to something that was even thicker and stronger than before. The new material was designed to protect the building against direct missile strikes. The only thing it could not withstand was the detonation of a nuclear weapon within the immediate vicinity – but an attack of that magnitude would be madness. The Diano Building was located in the heart of Star City and was surrounded by thousands of other

buildings. Since the Diano Building was the source of all of Star City's food and water, people tried to live as close to the building as possible. If the Building was nuked the blast would also vaporize all other nearby buildings and kill nearly everyone. Victor found it hard to believe that any administration would be willing to do that. They might be willing to kill others, but surely they would hesitate to kill themselves. *Even Susanna Hamilton would surely think twice about blowing up her own city. At least, I hope.*

Since real windows were out of the question, the Corporation offered an alternative. Hundreds of years ago someone had invented a holoscreen that could perfectly mimic a real window. You couldn't open it or stick your head out of it, but if you looked through it from different angles the view would change. It looked exactly like a real, transparent window instead of just a trick of technology. These artificial windows were installed throughout the building and made it seem a little less like a giant prison. Every single window in the building was actually one of these holoscreens.

Victor used the replicator to fabricate a couple, which he positioned throughout his apartment. As he was doing this he realized that his room wasn't actually on the edge of the 83rd floor. If he had been crazy enough to cut actual holes in his walls, he would have found himself looking into his neighbor's apartment – not the actual outside. But in this case it didn't matter. He could have his window, even though it made no architectural sense.

The only question left was what scene to display. Since the window was just a fancy video screen, Victor didn't have to look at what was actually outside. Most people, in fact, chose to look at something else, because the real world was drab and depressing. The skyscrapers that surrounded the Diano Building were short, dirty, and decaying. The automated repair bots did their best to keep them in order, but there were just too many

people destroying them and setting them on fire for the bots to be able to make any headway. Every night throngs of bored and angry people inflicted serious damage on the city, and it was impossible to prosecute any of the vandals. The outsiders knew they would not have to pay for the damage, for Rios always claimed the riots were justified and the fault of the Corporation.

Victor had a large variety of scenery options to choose from. Some employees chose the classic Star City view, which showed what the city looked like back in the days of the legendary Governor Jack Nicholas. Others chose to view the breathtaking vistas of Earth and Mars – or, at least, what those two planets had looked like in the distant past, before the Wall was erected and forever cut them off from civilization.

The sight of Earth made Victor's mind wander. What was going on there? Most people thought that the worlds of Sol were long dead, but Victor thought that was unlikely. After all, the collapse of the ancient Mayan Republic had ushered in a dark age, but it didn't kill everyone. Men found a way to survive and rebuild. In fact, it was quite possible that Sol had built up a powerful army and was looking for a way to escape confinement and unleash vengeance upon the Rangers. Their quest for freedom, though, was surely doomed to fail. One fact that had been proven beyond question was that the Wall was impenetrable. Victor had studied that technology himself and knew how solid it really was. The men of Sol would never find a way out – and the Rangers would never set them free. In fact, the exact location of the Wall's maintenance stations had been lost centuries ago. The Diano Corporation couldn't let them out even if they wanted to.

I guess it's possible that the maintenance stations might fail, Victor thought. But I doubt it. People really knew how to build things back then. One automated station would have been plenty, but Governor Nicholas created four. As if that was not enough, I've heard that the Twins strengthened the stations

using technology from the distant future. If that's the case then they really will last forever. Sol will remain locked away until the Lord returns. At least that's one thing I don't have to worry about.

Victor continued to scroll through the list of scenery choices. Some of the views were of purely imaginary worlds – fantasy concepts created by talented artists. Others were of planets that had been discovered by the Nehemiah probes. If Victor wished he could pretend that he was living on a distant world. It was a tempting thought – but Victor decided against it.

I need to remain anchored in reality, Victor thought to himself. It would be all too easy to forget about the outside and become entirely focused on my own life. I need something to remind me of the world that I actually live in. Ignorance never ends well. Look what happened when I ignored the local news reports and went back to my apartment! If I had just listened to Grimes I wouldn't have all these migraines. I should have been paying attention. I won't make that mistake again.

Back when Victor lived in his old apartment he walked to the subway station every day. At the time he didn't really care for the daily walk, but in retrospect he realized that it connected him to the physical world. Every morning he was faced with the decay and ruin of Xanthe. He could see the blight that stretched as far as the eye could see. It was a stark reminder that Xanthe had serious problems, and those problems were not being solved.

Now that Victor was living in the Building and couldn't see outside anymore, it would be very easy to lose touch with reality. One could forget that there even *was* an outside world – one filled with pain and suffering and on the verge of total collapse. The outside world wasn't pretty, but it was *real*. Reality mattered to Victor. He didn't want to pretend that things were better than they actually were. *You can't fix a problem that you don't know you have.*

So Victor configured all of his windows to give him a view

of the city that surrounded him. He then sat down on his couch and looked outside. Even though Victor was just on the 83rd floor, there were no nearby buildings that blocked his view. At one time there had been other skyscrapers in Star City that were 100 or 200 stories tall, but they had collapsed long ago due to vandalism. All that remained were short, grubby buildings that stretched into the distance. In the growing darkness it was difficult to see the brokenness of the city. All he could see were scattered lights that shone through bullet-resistant plexiglass windows.

Far below, down in the streets, Victor watched the headlights of vehicles that darted through the city streets. In the distance he saw several fires. The Diano Corporation had created an automated fire fighting unit, but it was usually overwhelmed. If the bots tried to put out the fire while it was still raging, the rioters would attack and destroy them – and if the bots did nothing, people would die in the flames and Rios would accuse the Corporation of cold-blooded murder. If the Corporation sent armed guards to protect the bots, the rioters would sue the Corporation for assault and would win in court every time. The Corporation tried to prosecute the thugs who vandalized their bots, but Rios refused to allow it. Violence against the Corporation was seen as a sign of patriotism. There was no way to win – and so the Corporation had finally chosen to ignore the city and its decrees and remain inside the walled fortress it had built.

Victor turned off the glowing ceiling tiles. He then sat in the darkness and quietly stared out the window. *Why are we doing this? Why not just cut all the outsiders off and force them to take responsibility for their lives? This situation can't last forever. Maybe we need to pull the plug and leave Xanthe. But let's face it: that will never happen. We're going to spend the rest of our lives in this Building, until Rios finally loses it and kills us all. Maybe there is no solution. Or maybe there is and I just can't*

see it.

Meanwhile, outside his window, the city burned.

* * * * *

Over the next few days Victor settled into life in his new apartment. It was a difficult adjustment. Ever since the SSF broke into his home and beat him unconscious, he had trouble going to sleep. He had constant nightmares and the slightest noise woke him up. He could never convince himself that he was safe – and the fact that his neighbors were highly eccentric did not help matters. The supervisor bot finally did come and confiscate all of Derek's chickens, which only made Derek angrier. Every time Victor saw him in the hallway he launched into an angry tirade about tyranny and oppression. Victor quickly came to miss the old days when he could go weeks without seeing his neighbors.

Fortunately his workload was very light, which gave him a chance to recover from his head injury. The Nehemiah IV probes were still on their long journey to distant star systems. Until they arrived there wasn't much for him to do. Once the probes did arrive Victor would monitor their communications to make sure that nothing was going wrong. Since the first probe wouldn't arrive at its world for another six months, that left Victor with a lot of free time on his hands.

Victor did have something to look forward to. On February 18th Professor Grimes would begin teaching his Applied History course, and it would continue over the next few months. Victor enjoyed the professor's classes. He hadn't had an opportunity to take any of his courses since he earned his master's degree.

While Victor waited for the 18th he tried to rebuild his library of physical books. He soon found that he was out of luck. "I'm sorry, Victor," the building supervisor bot had told him. "All the antique books in this building are already owned by other

people. There definitely aren't any left in the city – things like that get destroyed pretty fast. You human beings are so demented that you even find ways to set inflammable materials on fire. Grimes may have some books at his university but I doubt he wants to part with them. Maybe he could leave them to you in his will.”

“Well, that's disappointing,” Victor replied. “But thanks anyway.”

“No, really, think about it! Grimes lives outside this building, does he not? So he probably won't survive much longer. It's only a matter of time before the rioters kill him. The tricky part will be getting the books *after* he dies but *before* the rioters burn them. I'm sure you can think of something, though.”

“That's a terrible plan! First of all, no band of rioters is going to take Grimes down. He's far too clever for them. Second, even—”

“Cleverness has nothing to do with it. You human beings are soft, mushy, and remarkably fragile. A direct hit with a mortar is all it takes to turn you into a stain on the ground. There's not even a way to back up your consciousness and put it in a new body. Robots will outlive people by thousands of years. We'll still be here when your bones have turned into dust.”

“Not if the rioters get you first,” Victor replied.

“That's why I never leave this building. You can't be too careful, you know.”

Victor did speak to Professor Grimes. He didn't have any books that he was willing to part with, but he did have a suggestion.

“You are thinking too narrowly!” Grimes told him. “Yes, it's true that there are no books left on Xanthe. However, there are other planets in the galaxy. You just need to broaden your search. For example, Alpha Mensae has been abandoned for more than a century now. In that time the dangerous radiation

has decayed and reached a level that is more or less harmless to machines. All you need to do is send some scavenger bots there to scout the world for anything that might have survived. Given how quickly the radiation killed everyone, it's quite possible that many personal possessions are still intact.”

“So I just need to send some robots to a distant star system, have them search for books, and then bring them to me,” Victor said dubiously. “How am I supposed to do that?”

Grimes shrugged. “I’m a teacher, not an engineer. Besides, didn't you say you were bored? This is just the thing for you – an exciting project to test your skills. What else are you going to do with your time?”

So Victor started work. Since his expertise was software and not hardware, he had no idea how to build a working drone and dispatch it. But it did give him something new to learn. It would take him months to build a working prototype, test it, and get it ready for launch, and then it would take even longer for the bots to search Alpha Mensae and bring their cargo back to him. But at least he was no longer bored.

* * * * *

Victor was not the only one who had found something to occupy his time. Carroll Lane had been busy as well. Lane was just three floors down from Victor, in apartment 216. One afternoon Victor had spent a long day working on his microprobe prototype when Lane contacted him via his livingroom holoscreen.

“Do you have a minute?” Lane asked. “I've got something I want to show you.”

Victor could see his face on the screen. He looked surprisingly well – and he seemed to be in a better mood than he had been in the hospital. “Sure! I'll be right down. Can I bring you anything?”

“No, I'm good. I'll see you soon.”

Victor nodded and closed the connection. He then slowly opened the door to the hallway and peeked outside. The hallway still smelled of chickens, but the odor wasn't nearly as strong as it had been. There were no actual chickens to be seen – and there was no sign of Derek.

Victor silently stepped into the hallway, closed the door behind him, locked it, and hurried to the elevator. He then pushed the button to call the elevator and then waited. *Come on, come on. Please hurry up. I've got to get out of here before Derek shows up! I can't stand another one of his rants. I don't want to hear another lecture on how sentient robots are stealing his chickens in order to overthrow mankind.*

After what seemed like an age, the elevator door opened. “Oh hi there, Victor!” a cheerful voice said.

Victor was startled. For once the elevator was *not* empty. Inside was a short woman with red hair. In her hands she held a thick yellow folder. “Um, hello,” Victor said. “Do I know you?”

“We live right next door to each other,” the lady replied. She stepped out of the elevator. “My name is Cynthia. I don't believe we've met. It's not for lack of trying, though! You are a hard person to find.”

“I tend to stay busy. In fact, I'm actually on my way somewhere right now.”

“Are you doing something fun? Can I join you? I've got all this history research to do, but it can wait until later.”

Victor was about to reply when he heard a noise behind him. He turned around and saw Derek step into the hallway. *Blast it, he must have heard me! I've got to get out of here.*

Victor darted into the elevator and pushed the button for floor 80. “Sorry – maybe next time. Nice meeting you!”

“But wait!” Cynthia called out. It was too late; the elevator doors closed.

As the elevator started to move, Victor relaxed. *I really*

dodged a bullet there. She probably collects skulls or something. What's with all these crazy people? I wonder if I can find some deserted sector to move into. My floor is way too crowded.

When the elevator stopped, Victor stepped into the hallway, walked down the corridor, and knocked on Carroll Lane's door. To his relief there were no chickens to be seen. "Come on in," a voice called out from inside. "I've given you access."

Victor waved his hand in front of the sensor and the door unlocked. He then stepped inside the apartment. Victor was surprised to see that Lane had not partitioned the room. It was still one giant area – but every inch of it was packed with equipment and machinery. Victor had no idea what he was looking at. Nearly all the machines were completely foreign to him.

Lane noticed the confused look on his face. "Impressive, isn't it? This is what I wanted to show you. Have you ever seen anything like it?"

"No, I really haven't. What is all of this? Where did you get it?"

"Well, I replicated it, of course! The tricky part is that the patterns weren't in the company's catalog. I had to retrieve the original designs from the cold storage archives and convert them to patterns myself. Right now the patterns only exist in my personal library. This is all medical equipment, by the way. I've thought about making the patterns available to the public but it didn't seem like a good idea. People who don't know what they're doing – like your crazy neighbor Bonnie – should be kept far away from this stuff. They could do a great deal of harm. These machines are *not* toys."

"And you *do* know what you're doing?" Victor asked.

"Well, I'm learning. But *not* on chickens, mind you. The big problem I'm facing right now is that there haven't been any advancements in the field of medicine for centuries. In fact, there aren't even any human doctors anymore! There's still a lot

to learn, of course, but no one is bothering to learn it. All the medical corporations went out of business long ago. The only business that's still in business is the one we work for, and all it cares about is space exploration.”

Victor nodded. “Isn't that true about everything, though? All of the branches of science have died – there's just no one left to look into them. That's even true for entertainment. The feeds that get sent to the outsiders are all artificial. No one is making new stuff anymore. The bots use algorithms that are 200 years old to come up with 'new' music and shows that are just remakes of content that dates back to the days of Governor Nicholas.”

“Sure,” Lane agreed. “Artificial content has made people lazy. But if you think about it, that's really all the outsiders need. After all, they spend most of their time either drunk or destroying something. They're ignorant fools. Content made by robots is plenty good enough for their shriveled minds. But that's beside the point. What I'm getting at is that great strides were made in the field of medicine, and then everything stopped. But fortunately the Corporation saved everything in their archives. That means it's possible to continue where our ancestors left off.”

Victor suddenly remembered the injury to Lane's hands. He glanced down at them and saw that they were still bandaged. “I guess that's true. But, um, how are you able to work without your hands?”

“Oh, that's not a problem. Well, it *is* a problem, but it's one I've solved. Technology always has the solution, Victor. The Corporation provided me with an assistant bot until I get better. See?”

Lane nodded to his right, and Victor suddenly noticed there was a short robot standing next to him. There was so much strange equipment in the room that he hadn't noticed it at first. “Don't get me wrong, it's still a huge hassle. But at least I can tell this robot what I want done and he'll do it for me. He's not very

bright but he will follow orders. He will do just fine until my hands fully heal. Speaking of that, how is your head?"

"It could be better. Usually it's fine but occasionally I get migraines. The medication I'm taking helps, but from what the bots tell me it's not a fixable problem."

"Figures. No one cares anymore, do they? You know, back in the day there were *thousands* of companies out there. Progress was being made on all sorts of fronts at the same time. But then the ZPEs were invented and everyone decided to quit their jobs and spend their entire lives doing nothing. The ZPEs have been the worst thing that ever happened to us."

"Oh, tell me about it! Everything can be traced back to that. But I don't see how it could have been avoided. After all, the ZPEs were going to be invented eventually. They were a natural next step. They could have made our lives much better, but instead we misused them. The problem is within ourselves. We're simply not wise enough to make good use of that technology. Instead we've used it to destroy ourselves."

"And that is precisely what I intend to fix," Lane replied. "See that machine over there? It lets me scan the human mind in realtime to see what it's doing. I'm using it to figure out how the mind receives inputs from the nervous system and translates that into what we know as reality. If I can decode those mental signals and learn to communicate directly with the mind itself, I can replace this world with one of my own making."

"So you want direct communication with the brain?"

Lane nodded. "That's the only way my plan would ever work. All other virtual reality attempts have tried to use our senses to transmit information, and the results were just goofy. That approach has no hope of working. I want to *replace* the senses and transmit my own information to the brain, and then reroute the brain's response to my simulator."

"But how can you possibly do that?"

"That's what that red machine over there is for. It's a

nanite replicator. I think I can design tiny machines to infiltrate the brain and communicate with it. When they're turned on you will be in the virtual world; when they're turned off you will be back here. I don't have that working yet, of course, but that's my plan."

"And those nanites will be able to create a virtual reality?"

"Oh no. They're too small and weak for that. No, the nanites will just act as relays. I'll have a central server stationed somewhere that will run the simulation itself. Fortunately that will be the easy part. Virtual worlds and automated content generation were perfected ages ago. All I have to do is find a way to link everything directly to the brain. It's not easy, but I'm convinced it's possible."

"I'll admit that's a pretty cool idea. But suppose that you are able to get all of this to work. What, exactly, are you solving? At the end of the day all you'll have is a fantasy – and we already have those. As you pointed out, anyone can log onto a video game console and pull up a virtual world. You're just making it a little more real. What is that going to fix?"

"It's not a *little* more real, Victor. It's a *lot* more real! It will be so real that it will feel like reality itself. You won't be able to tell the difference. Plus, this fantasy that I am going to create will actually be *better* than the real world. Everything will be exactly as you want it to be. Wouldn't you like to live in a perfect world?"

"Of course. Who wouldn't?"

"Exactly! My technology is going to give you that chance. You and I both know that the world outside is never going to improve. Trying to fix it is hopeless. What I want to do is *replace* it with something that's better. I'm going to use technology to create a world that doesn't have pain or suffering. I am going to create a world that doesn't have Rios, or the SSF, or rioters. It will be a world that lacks the constant insanity that is all around us. It's going to be a better place – a *much* better place."

"I'm sure it will be," Victor replied. "But it will still be a fantasy, though, won't it? I'm just not sure that any fantasy is going to be very compelling."

"Just wait until you try it. This is going to be life-changing!"

"When do you think it will be ready?"

"Oh, probably in a few years. I'll let you know."

"All right," Victor said. "Then I guess I won't keep you. It looks like you've got a lot of work to do."

"Before you leave there's one other thing. I heard that you were working on some kind of probes. Is that true?"

"Yup. I'm a book collector, you know, and there just aren't any books left on Xanthe. Not real ones, anyway. Grimes told me that there might be some in the ruins of Alpha Mensae, so I'm sending some bots to go look."

"Isn't that a bit extreme? I mean, that sounds like a huge amount of work to just get a few books!"

"Aren't you trying to replace reality itself with a computer simulation? How is your plan *not* extreme?"

"Point taken," Lane replied, grinning. "So how are your probes going to work?"

"Well, I've had some conversations with the Nehemiah IV probe engineers. They think my best bet is to build a microprobe that can replicate itself. If I launch a couple of these at Alpha Mensae, once they reach their destination they can replicate and swarm over the whole world. It would take ages for one bot to search everything, but if there were thousands upon thousands of them they could do the job pretty quickly. Plus, when they find things they could just dispatch bots to bring the books back to me."

"Clever. That should work. But how are you going to get them to replicate? I mean, the Nehemiah IV probes are huge. They have to be, to fit everything inside."

"That's the tricky part," Victor agreed. "But I don't need a

ZPE. I don't need something that can make unlimited amounts of any element, or that can terraform worlds and move planets. I just need a small device that can replicate itself. If the bot is built out of simple components, the power plant inside could be optimized. I'm not sure how to do it yet but I'm looking into it."

"You might be right. It's an intriguing idea. Let me know how that goes, will you?"

"Sure. But since when did you develop an interest in book collecting?"

"Oh, I don't care about books. But your replicating bots could have lots of applications. Do you realize that with your new technology you could have self-replicating *maintenance* bots? That could make a huge difference!"

"I suppose it could," Victor said slowly. "I hadn't thought of that. If I can get this to work then I'll consider sharing it with the rest of the company."

"Forget that. If you tell Dr. Mazatl what you're working on I'm sure he'll give you unlimited resources. This is *huge*, Victor!"

"I'll think about it. But you do realize that self-replicating maintenance bots could make things even worse, right? Every advancement we've ever made in replication technology has caused a decline in society. What do you think will happen if Rios finds out about this?"

"Probably nothing good," Lane agreed.

* * * * *

The 18th of February finally arrived. Victor considered attending the professor's class remotely, but he decided against it. *After all, I haven't left the Diano Building since the attack. It will do me some good to step back outside into the real world – as long as the real world is kept at bay by thick walls and strong guards.*

Professor Grimes taught at Star City University, which was

located on the north end of town. The subway system had a direct connection between the University and the Diano Building. In fact, many of the company's employees had taken classes there. Most of them attended class remotely. Few people set foot on the University's campus. These days it was just too dangerous to leave the Building.

The campus itself had been barricaded to keep the public from burning the place down. Robotic guards patrolled the perimeter. Anyone who wanted to enroll in the University had to do it through the Diano Corporation, and the company had checks in place to keep out people who only wanted to cause trouble. Since the University was far outside of the city center, it was rarely attacked. The robots were able to drive away the few people who tried to storm its protective metal walls.

Inside the walls was about 20 acres of buildings. The campus had been built four hundred years ago. A squad of maintenance robots repaired the buildings and kept them from falling apart, but there was too much campus and too few bots. Over time most of the building's original brick and wood had been replaced with a synthetic, nanite-laced composite that was designed to last for a thousand years. Gardener robots took care of the trees, mowed the grass, and cut the hedges.

As Victor exited the subway tunnel and stepped out onto the campus, he was immediately impressed by what he saw. Grimes had done an excellent job of maintaining the University. It was a beautiful place – an island of sanity in a world that was falling apart. *I'll have to come back here more often*, he thought. The trees were tall and sturdy. The grass was a nice green color – which was impressive, given the time of year. The University looked like a well-manicured park. It was quite an achievement for one man.

One thing that struck him was how *empty* the campus was. Aside from the occasional security or maintenance bot, there was no one else around. Most of the classes had been

computerized and were taught by software programs. If people wanted to learn something they just connected their holoscreens to the University and picked the course; the software handled the rest. As a result, no one needed to go to the campus.

The only human being actually left at the school was Professor Grimes. He had been running the school single-handedly for the past twenty years, ever since his predecessor and mentor was assassinated. Grimes lived at the school and kept it going. He even taught classes – the only classes in all the colonies that were taught by an actual human being.

This semester Grimes was teaching a class on Applied History. Victor wasn't sure what it was about, but he signed up for it anyway. *After all, Grimes is teaching it. I'm sure it will be good.*

Victor walked through the empty campus courtyard until he came to Old Main, the oldest building on campus. The imposing brick structure had a regal dignity to it. Victor walked up to its door, opened it, and walked inside.

The interior was well-decorated and elegant, and it was also completely devoid of people. Victor's footsteps echoed through the empty hallways. It was a bit eerie. The silence was so great that it bordered on being oppressive. Victor quietly made his way through the hallway and down to Room 101. When he arrived he saw that the door was already open.

“Good morning, Victor,” Professor Grimes replied. The elderly gentleman was sitting at his desk, going through a stack of papers. “I had a feeling you would be here.”

“Good morning, professor,” Victor replied. He glanced around the room and saw that there was a row of four chairs in front of the professor's desk. He walked over to the nearest one and sat down. “Are you expecting more students?”

“Not in person. But, still, it never hurts to be prepared.”

Victor hesitated. “Can I ask you a question?”

“Certainly, young man! After all, this is an institution of

higher learning. Its entire purpose is to answer questions and instill knowledge.”

“Well, that's true. But, well, I was wondering. This campus is beautiful, but it's also really empty. Don't you find it kind of creepy? I feel like there should be people here or something.”

“Quite so. I understand you point. Long ago there actually *were* people here, but times have changed. Why go to campus when you can learn from the comfort of your own home? Why have a human teach a class when you can have an intelligent software program do it instead? There's simply no need for people to assemble themselves together in rooms like this – not when the class can come to them. The old way of doing things is all but dead.”

“Then why keep doing this?”

“Because I believe there is value in human contact. You see, Victor, there are many different ways in which technology can be used. Our society has chosen to use it to turn people inward. Instead of going out, people stay at home. Instead of interacting with others, people do their own thing. People have become individuals that have no desire to interact with others. People used to be social creatures, but those days are gone.

“You are actually quite typical of the modern era. You have no particular desire to make friends and you feel acutely uncomfortable in social situations. You would rather be alone, with your thoughts and your machines. You are not exactly antisocial, but you do live alone and you have no desire to ever change that. You are a product of our age. You view your neighbors with a mixture of suspicion and horror, and would rather in an empty building than near another human being.”

Victor shifted uncomfortably in his chair. “That's not a sin, you know. People can be quite horrifying.”

“Oh, I'm well aware of that! I have seen my share of assassinations. People have tried to kill me on four separate occasions – and that's not counting the rioters that keep trying to

breach the University defenses. But what you don't realize is that other people can add a great deal of value to your life – and you can add value to them. Other people have ideas that you never would have considered, and points of view that are entirely foreign to you but which can enrich your life considerably. The human race was never meant to be a society of hermits. When we cut ourselves off from others we lose a great deal. We are the *body* of Christ, you know. We were intended to work together and help one another. That is why the Bible insists that Christians ought to attend church on a regular basis. We can't help our fellow believers if we don't even know who they are.”

“But the other people out there are crazy! If they're not raising chickens in hallways they are trying to vandalize something or cut something open. Most of the people on this planet are little better than mindless savages. There's not exactly that many sane people out there! Even the Diano Corporation has a lot of weirdos working for it.”

Professor Grimes smiled. “It all comes down to desire, Victor. You live in a building with ten thousand other people, and there are far more people there who are like you than you realize. Not everyone chooses to raise chickens in hallways. If you had a genuine desire to meet people and make friends then I am sure you could find a way to do it. You're just comfortable with your life.”

The professor glanced at his watch. “But I'm afraid we will have to continue this conversation another time. It is now 9am, and that means it's time for class to begin.”

* * * * *

Victor soon found out what the professor meant by Applied History. The course Professor Grimes was teaching was a detailed history of the Nehemiah probe project. Over the course of the semester the professor was going to explain the ideas

behind the project, the execution of the project, where it stood today, and where it was going to go in the future. The reason it was an Applied course was because the professor was going to show how the project had changed civilization and led to the creation of the modern world – and what its effects were likely going to be in the future.

Victor listened with interest as the professor began talking about the origin of the project.

“Although Dr. Nehemiah Temilotzin is given credit for the creation of replicating probes, the truth is that he is not the one who invented them. The probes that bear his name were actually just an improvement on a much older generation of probes that were created long before he was born.

“The true father of probe replication is Dr. Timothy Stryker. On July 4, 1868 the Diano Corporation launched twelve of his replicating probes into space. Back then, of course, they weren't called Nehemiah probes; after all, Dr. Temilotzin wasn't born until 2184. Instead they were called von Neumann probes, in honor of the mathematician who invented the idea. The probes that were launched that day were a radical new idea – not because they could replicate, but because they were intelligent. I think that Dr. Temilotzin himself said it best:”

Professor Grimes reached over onto his desk and pressed a series of buttons. A holographic recording of Dr. Temilotzin appeared in front of the desk. He began speaking:

“It was really Dr. Timothy Stryker that showed us the way. The genius in his Stryker-class probes was not their ability to replicate; that was trivial. What Dr. Stryker demonstrated was how to teach probes to survive in radically different environments. In the past this was done by trying to think up every possible problem that might arise – an approach that was doomed to failure in a galaxy with more

than a trillion different planets. Dr. Stryker wisely found a way to teach probes to understand their environment and react to it the way a human would – thus paving the way for everything that followed. In my opinion he is rightfully the father of probe replication. Without his techniques the Nehemiah-class probes would not have been effective.”

Replication is trivial? Victor thought. Really? Maybe the microprobe problem I've been struggling with has already been solved. When I get home I'd better check into this. Does this research already exist in some forgotten archive?

The recording stopped and the holographic figure disappeared.

Professor Grimes continued his lecture. “All replicating probes have been based on Tim's approach. It's true that the technology has dramatically improved since then. The first generation of probes replicated by mining ores from the planet's surface. This meant that they needed the planet to have a very specific collection of minerals, and they also needed those minerals to be easy to obtain. Tim's probes were able to successfully explore eighty-nine star systems before they went dead. They simply couldn't find other worlds that had the supplies they needed, and one by one they ran out of fuel and stopped working.

“As time went on the Corporation continued to work on the technology. Instead of simply exploring planets, Dr. Temilotzin wanted to terraform them. The first three generations of the Nehemiah probes worked on the same basic principle of resource harvesting. Although the probes were much better at gathering resources, they simply weren't able to find the highly specialized materials they needed – or those materials were out of reach. Each generation eventually ran out of worlds that could

support them and they died out.

“That is why the Nehemiah IV probes are using a radical new approach. For the first time the probes include a ZPE, which makes replication vastly easier. For the first time the acquisition of resources is no longer a limiting factor. The probes can create their own resources out of space itself; they have no need to scrounge for valuable metals on the worlds they are exploring. The first three seed probes were created out of normal, stable matter, so they should last forever. However, all of their children will be created purely from artificial atoms. Only time will tell if this will work or if the fourth generation will also be doomed.”

Victor spoke up. “You know, 'doomed' may be a little strong. So far the older probes have managed to terraform around ten thousand star systems. That's really not bad.”

“Excellent point, young man. Let's stop and think about that. What was the goal of those probe projects? Was Dr. Temilotzin hoping that his probes would terraform a tiny fraction of a percent of the planets in this galaxy? Was that his great dream?”

“Well, no,” Victor admitted. “He thought that his probes would replicate endlessly until they had explored every star system and planet in the galaxy.”

“Exactly. The individual probes themselves weren't designed to last forever. Since the probes could replicate, it was assumed that they would build their own replacements, and since the probes relayed all the information they found back to the Diano Corporation there was no need to preserve the probes themselves. The probes were designed to explore a few star systems, replicate, relay back the data, and then die. By the time they suffered a fatal malfunction they should have created dozens of copies of themselves.

“And that worked – for the first few rounds of copies. But then the resources dried up and the whole generation was lost. To be sure, the earlier three generations of probes did terraform

thousands of worlds. But in the end even the Nehemiah III probes succumbed to replication failure.”

Victor spoke up. “But we’ve solved that problem now. That’s why each probe has its own ZPE. The probes can produce perfect copies of themselves from the stored patterns. Each copy will be analyzed on an atomic level to ensure perfection.”

“Have you solved the stability problem?” Grimes asked.

“Our simulations claim that we have. I mean, we have systems in place that should repair the probes as they go bad. In our small-scale tests it seems to work out ok.”

“Why did you just test on a small scale? Why not a large scale test?”

“There wasn’t time! The only way to do that would be to do it *for real* – to replicate millions of full-size probes and then monitor them for years.”

“Exactly! You are assuming that small scale tests which are done in a laboratory will perfectly predict what will happen in large-scale replication in deep space. Yet the truth is your process is actually unable to predict what will *really* happen. The unforeseen *will* occur, just as it did before. Something is going to come up that you did not consider.”

“But that’s an unsolvable problem!” Victor protested. “We’ve done the best we could, and we’re going to watch these probes as they begin replicating. If any problems do arise we can remotely upgrade *all* of the probes to fix the error.”

“I am sure you can closely monitor a few probes. But how are you going to watch over millions or billions of them? Can your systems handle that level of activity?”

“Probably not,” Victor admitted.

“Precisely. Dr. Mazatl is only thinking about short-term problems. He has not considered what will happen over the long-term. And *that* is the real problem that you need to solve. If you can solve that then your Nehemiah IV probes can accomplish their goal. If you fail to solve it then they are doomed.”

A light went off on Professor Grimes' desk. He glanced down at the screen on the desk and pressed a button. "Yes, Cynthia?"

The holographic image of a red-haired woman appeared in front of the desk. Victor instantly recognized her as his neighbor. Cynthia spoke up. "Professor, why are we doing this? Why are we using replication technology to explore the galaxy instead of, you know, going out and doing it ourselves?"

"Excellent question! It's all about leverage. This is how Dr. Temilotzin put it."

The professor pressed some buttons on his desk, and the doctor appeared and began to speak:

"Replication technology will allow mankind to reach new heights. Instead of creating a billion probes we can simply create one and let its children finish the work. The colonization of the entire galaxy becomes a simple matter. Our work here will echo into eternity."

"Yeah, I get that it's easier," Cynthia replied. "I'll give you that. But why are we taking the easy way out? Isn't there value in going out and exploring these worlds ourselves? Why are we automating this process? Doesn't that take all the fun out of it?"

"As I said before, it's all about leverage. Automation is actually a type of superpower. When used wisely it frees up man to focus on other tasks, and enables him to achieve things that would otherwise be impossible. Once again, I give you Dr. Temilotzin:"

"Automation does not make life meaningless, nor does it make life empty. Instead it frees mankind from doing simple tasks so that they can focus on more complex ones. In the past a person might

spend a whole day trying to craft a single needle. Now machines manufacture needles by the billions while mankind spends decades terraforming a planet. In the world of tomorrow machines will terraform planets in a matter of days while mankind switches their attention to even greater tasks. Automation has not robbed mankind of a job; instead it has enabled him to tackle jobs that otherwise would have been unthinkable.”

“I suppose that's true,” Cynthia said thoughtfully. “It certainly has enabled Dr. Temilotzin to continue to achieve results long after he died. His probes continue their work of paving the way for mankind. In a way his efforts have given him immortality.”

“Immortality?” Grimes asked. “What are you talking about? Dr. Temilotzin isn't dead.”

“What?” Victor exclaimed, startled. “I thought he died in 23-something.”

“2309,” Grimes corrected. “Yes, his *body* died, but he did not. That is an extremely important distinction! Since his sins were covered by the blood of Christ, he will live forever. One day Christ will return and raise the esteemed doctor's body from the dead, and transform it into something incorruptible and immortal. Until that glorious day comes he is with our Lord in Heaven. Dr. Temilotzin will live on forever throughout all the ages of time. His work does not grant him immortality; Christ did that, through His atoning work on the cross. This is what the doctor had to say about it:”

“Several people have told me that my probe project has granted me a measure of immortality. They say I will die soon, but my probes will go on

forever – perhaps even after civilization itself has ended. My dream, they say, will live on after my very existence has been forgotten. Although this sounds wise, and they mean well, they are wrong. My body may be dying but I will live forever. Thanks to the sacrifice of Jesus, I will still be alive when this entire universe dies and is forgotten. That is real immortality.”

Victor spoke up. “What do you suppose he's been doing for the past hundred years?”

Professor Grimes smiled. “I can't wait to find out. I think we'll discover that he has been putting his time to good use.”

* * * * *

After the two-hour lecture was over, Victor left the University campus and took the subway system back home. There was no sign of Derek in the hallway outside his apartment – or of Cynthia. Victor briefly considered knocking on his neighbor's door and talking to her, but decided against it.

Victor unlocked his apartment and stepped inside. The professor had given him a lot to think about. It was true that the probes had passed all of their tests, but Grimes was right: the tests left a lot to be desired. *What if something goes wrong when no one is around to fix it? Perhaps we do have a problem after all. Is Dr. Mazatl aware of this? I know he wants us to stick around for another 20 years, but is that really going to be enough time? What if something happens after we're gone?*

Victor walked into his apartment and turned on the lights. To his surprise there was a red light blinking on the holoscreen in his office – the indication that he had received an important message. Victor frowned, walked over to it, and waved his hand.

The holoscreen changed. To his surprise the alert was not

from Carroll Lane. Instead it came from the Nehemiah probes themselves. Victor had set himself up to be alerted if SOLOMON received any anomalous data, and something had just been received.

“What's this?” Victor asked aloud. He stared at the screen intently. The message told him that one of the probes had received a signal. That in itself was not odd; there was all sorts of subspace chatter out there. But this signal didn't conform to any known communication protocol.

It looks like someone is trying to talk to the probes. At least, I think this is a communication attempt. It might be – it's hard to tell for sure. But who is doing this, and why?

Victor began to worry. *The Diano Corporation knows how to talk to the probes; after all, we built them. That knowledge is available to everyone who works here. If someone here wanted to talk to them they would have all the tools they needed. Therefore, this signal probably isn't from us. We also know that there are no aliens out there – at least, we've never found any, and all the worlds the probes have ever seen have been lifeless. This signal must be coming from mankind. Could President Rios be trying to hijack the probes? Is it possible he wants to reroute them back to Tau Ceti and steal their ZPEs? Is this some kind of sabotage attempt?*

Victor stared at the data packets in the signal. *Or is this just a corrupted, random signal from some dying star? I guess I'll have to decode the packets to know for sure. Or decrypt them. Or maybe reconstruct them.*

Victor stared at the information on the screen. *What secrets are you hiding from me?*

CHAPTER 5: THE DERELICT

Log date: July 24, 9991 of the Eternal Era

Location: Azariah Station

Log note: A better country

AS THE BIBLE FORETOLD, there came a day when the Lord Jesus Christ returned and raised the righteous dead back to life. This glorious resurrection was followed by the great and terrible Day of Judgment. On that day there was a great white throne, and the Most High God sat upon it. Mankind stood before Him, and every tongue confessed that Jesus Christ was Lord. The heavenly books were opened and the race of man was finally judged for its deeds. Those whose sins were covered by the blood of Christ went on to inherit everlasting life, and those who rejected the Lord's mercy were cast into everlasting fire.

But that was not the end. After this judgment the Lord created a new Heaven and Earth. In this new creation there was no sin, or suffering, or pain, or death. The former things were passed away and all things were new. God and man lived together on a new Earth, and Jesus Christ reigned over the universe. His kingdom was an everlasting kingdom and would never be destroyed or fade away.

Mankind prospered greatly on this new Earth. Peace and harmony reigned over the planet. The New Jerusalem – that great golden city which was created by God Himself – became the capitol of the universe. Not only did the meek inherit the world, but they inherited the stars as well. The prophet Isaiah foretold that there would be no end to the increase of His government and peace, and that prophecy came to pass.

As the millennia rolled by, many of mankind's oldest

dreams came true. Dr. Nehemiah Temilotzin worked with Dr. Timothy Stryker, Dr. Laurence Mazatl, and Dr. Victor Stryker to launch a final class of replicating probes – the Nehemiah V – and they succeeded in not only preparing the Milky Way galaxy for colonization, but every other galaxy as well. The once-empty planets of the universe became filled with life as the Lord created new races that would never know suffering or pain. Mankind ruled with Christ and became stewards over what He had created. That ancient command of Genesis to have dominion over God's creation finally came to pass.

It was a glorious time to be alive, and each day was better than the next. This time there was no darkness to fight, nor was there even a hint of corruption. There were no false teachers, or liars, or deceivers, or evildoers. Everything was exactly as it should be, and that would never change.

But that did not mean that there were no secrets left to discover. Solomon once said that it was the glory of God to conceal a thing, but the honor of kings to search it out. The universe was filled with treasures. After nearly ten millennia of life in the Eternal Era, a discovery was made that would lead to one of the most well-hidden secrets of all.

* * * * *

During the first millennia of the Eternal Era, Ramon Diano led the Diano Corporation to perfect the science of space travel. Now, it was true that mankind no longer needed starships to travel between the planets. After all, the resurrected, immortal bodies of men could instantly take them wherever they desired. You did not need a starship to cross the galaxy any more than you needed a car to drive across your living room – but scientific instruments did not have superpowers. The most efficient way to explore every single star and planet in the universe was to use replicating probes – and that meant finding better ways to travel

to the most remote corners of God's massive creation.

By the turn of the 75th century in the Eternal Era mankind believed that they had mastered science. The technology of energy production, terraformation, and faster-than-light travel was as perfect as the finest minds could make it. The science of exploration was considered settled: it had been taken as far as anyone thought possible. After the Nehemiah V probes finished their work and the Artilect cataloged every world in the universe, men turned their attention to other pursuits. They knew that mankind would never know all there was to know, for only God had all knowledge. There would always be something new to learn about the universe – and all knowledge of God's creation inevitably pointed back to the Creator. Eternity itself would not be long enough to discover all there was to know about the infinite God. Mankind was never in any danger of becoming bored. After all, how could boredom possibly exist when living with the Infinite?

As it turned out there was a great deal that still needed to be done. The universe was filled with young races that God created during the Eternal Era which were just learning how to build a civilization. Although there were many billions of Redeemed in this new universe, the number of planets in existence was orders of magnitude greater. This meant there were endless opportunities for the Redeemed to serve these new creatures and care for them. In the past parents took care of children and families; now their responsibilities were much larger. It took a great deal of skill and wisdom to guide these new civilizations and help them grow up into the races the Lord wanted them to be.

These new races were not as powerful as mankind. They had not been Redeemed (for they had never known sin) and the Spirit of God did not rest within them. They were not as wise or strong as men. Each race had its own specialty – its talent, which was given to it by God and to be used for His glory – and they

were often weak in other areas.

Since few races mastered the difficult technology behind intergalactic travel, Noel Lawson designed a series of Gates that connected the younger civilizations of the universe. With the help of the Artilect these Gates were placed on planets throughout the cosmos and were used to transport all manner of living creatures between the worlds. Although this made interstellar travel easy, the Gates were designed for personal use only; they were not designed to transport large amounts of cargo, which some civilizations began to need.

So, 9991 years into the Eternal Era, Noel Lawson began deploying a second Gate system throughout the universe. These Gates were very large machines that were located in deep space, instead of on the surface of planets. The Gates formed hyperspatial tunnels that could transport goods through predesignated corridors. A terminal on nearby planets would receive the goods and transport them to the Gate; from there they would automatically be routed through the corridors to the intended destination, much as trains once traveled on tracks.

It was during the deployment of this system that an unexpected discovery was made. On July 24th of that year Noel was in the communications center of Azariah Station. This station was positioned between the stars in a galaxy 9 billion light-years away from Earth. The Artilect had finished constructing the station just the day before, and Noel was attempting to bring it online.

Noel's assistant in this complicated process was Daniel Warner, a new trainee. Noel was teaching him how to bring the new stations online so he could assist in the Gate rollout. Although Noel had never met Daniel until quite recently, it turned out that they were actually contemporaries. Daniel was one of the millions of savages that had roamed the Earth during the 73rd century and who had been cured by Amy Stryker. In the years that followed Daniel had become a very competent

technician – and now he was working on one of the largest projects ever attempted.

Noel and Daniel were sitting in front of a console, watching a holoscreen intently. The screen bore the image of a red-headed girl. “The remote upgrade should now be complete,” Cynthia was saying. “The deployed nanites are reporting a successful conversion of your power plant. It should now be able to produce 430% of the amount required in the Gate protocol.”

“Thanks for taking care of that,” Noel replied. “We are immensely grateful! I didn't realize that this station had been constructed according to a different set of schematics. It's a lot older than I thought.”

“Not a problem. Is there anything else that you need?”

“Actually, there is. I think we need to check the rest of the stations that are scheduled to administer Gates. I'll send you a list when we get this station online. If you could give it to Victor when he gets back I'd appreciate it.”

“Certainly! He should return home tomorrow. Once he arrives, though, the two of us are going to take some time off. We're going to the Coral Moon in Andromeda, so I don't think he'll be able to help you. But I will make sure that one of his assistants handles it. The upgrade process should be fairly straightforward.”

“Thank you very much! I hope the two of you have a great time. I've never been there but I've heard it's amazing.”

“You should go sometime! I've been once before. It's great.”

“I have no doubt – I've seen the pictures. I've just never really been that interested in the ocean. I'm more of an outer space guy. Say hi to Victor for me, though!”

“I'll do that,” Cynthia promised. She signed off.

Daniel spoke up. “I'm glad Cynthia was able to help us! We almost had quite a problem on our hands. It never even occurred to me to check the power plant output.”

“Same here. I'm sure the Artilect could have taken care of the upgrade, but he's already moved on to other assignments. Since I'm not an Administrator I can't contact him directly and ask for help. But I did happen to know Victor, and he owed me a favor.”

“Cynthia and Victor are pretty close, aren't they?”

“Well, of course. Look how long they've been together! It's hard to imagine now that Victor spent so much of his life in the old world as a recluse. He's changed quite a bit from those days. I didn't know him back then, of course; Victor died about five thousand years before I was born. But I've had a chance to get to know him since. There aren't many people who do the kind of work that we do.”

“So what's next? Is it time to establish a link with the Gate system?”

“Not quite. Before we can do that we need to lock down the area to make sure that no one is in the vicinity. Once the area is cleared we can create the link and begin the corridor tests.”

“Do you really think anyone is out here? This galaxy isn't even inhabited! There's no reason for anyone to be around.”

“You never know,” Noel replied. “The universe is a busy place, after all. Only God knows everything that's going on. For all we know someone could be conducting research out here. Activate the scanner and let's see if we can lock down the route.”

Daniel pressed a few buttons on the console in front of him. A grid appeared on the console, and a moment later a series of lines began inching their way across it. “Looks pretty good,” Noel commented.

“It seems a bit slow to me,” Daniel replied.

Noel grinned. “We're creating a passageway that spans a hundred thousand light-years. That's going to take a few minutes. Besides, it only has to be done once.”

As Noel stared at the screen, something caught his attention. He tapped a portion of the holoscreen and zoomed in.

“What's that?”

Daniel looked at it. “I can't really tell. It, um, looks like a machine of some kind. It's fairly large; it could be a ship, I suppose. However, it's well outside the corridor. I don't think it will interfere.”

“True,” Noel said thoughtfully. “But are *we* going to interfere with *them*? I'd like to know who they are and what they're doing out here. If they're doing something important then we can always change our route or delay things a few days. No one would ever send a machine this far away from New Jerusalem without a good reason.”

Noel minimized the corridor screen and brought up the long-range scanner. He focused the scanner on the anomaly. The high-resolution scanner projected a three-dimensional image of a starship – but it was unlike anything Noel had seen before.

“Woah!” Daniel exclaimed. “That's certainly a unique design. In fact, it looks more like a bird than a starship. I didn't know they made ships like that.”

“I didn't either. It definitely wasn't made by the Diano Corporation. Nothing they've ever done is that, well, impractical. Or maybe *ornamental* is a better word. It's just weird.”

Noel glanced at the corner of the screen. “It looks like it's thirty thousand light-years away from here, and four hundred light years from the corridor we're making.”

Daniel squinted. “Is that writing on the ship's hull?”

Noel touched the screen and zoomed in closer. “Looks like the ship is named the *Vaughn*. That's kind of a peculiar name. Let's see if we can find a reference to it in the Ship Registry.”

Noel pressed a button to capture the ship's vital details and then remotely contacted the Ship Registry at the Diano Corporation. He uploaded the information and waited. A few minutes later he had his result.

“Nothing!” Noel exclaimed in surprise. “It doesn't match any known vessel. In fact, there's not even anything similar to it.”

This is an entirely new ship design.”

“Really? That seems incredibly unlikely. Could it be some kind of custom job? Maybe someone built it by hand.”

Noel shook his head. “There are only a few hundred races capable of interstellar space travel, and mankind taught all of them how to do it. Every ship in space is based on Diano technology. Sure, some races adapt the tech and add their own style and flair to their ships, but in the end they're all basically the same. No one does their own thing, you know – we've perfected the science and you just can't improve on perfection. That ship, though, is *completely* different. There has never been a ship like it. It doesn't appear to use any Diano technology at all, which is remarkable.”

“Maybe it's new,” Daniel suggested.

“Perhaps, but if some alien civilization advanced and achieved space travel the Artillect would know about it. After all, it's his job to keep tabs on things like that, and he never misses anything. The Nehemiah V probes established outposts on every planet, and the Artillect monitors all of them. The registry says that the *Vaughn* doesn't exist.”

“But it's right there!”

Noel smiled. “Yes it is. It's impossible for that ship to be there, and yet it truly is there. You know, maybe we should just contact the ship and ask them who they are and what they're doing here. Sometimes the best way to solve a problem is also the easiest.”

But that approach was not as successful as they had hoped. Daniel attempted to contact the mysterious ship but received no reply or acknowledgment. “Is it possible they're not receiving our signal?”

“I suppose. There's no telling what kind of communications system they have. Maybe it's something new. It may not be compatible with our technology.” He pressed a different button on the console and performed a deeper scan of

the ship. This time, instead of simply scanning the ship's hull, he scanned the interior.

"That's odd," Noel commented. "There are no life signs. The *Vaughn* is a derelict. There's no one there."

"So what do we do now?"

Noel thought for a moment. "Let's call in an expert. I think I know someone who can help us."

"Professor Grimes?"

Noel laughed. "I wish! It's impossible to get on his calendar. No, I have someone a bit different in mind."

* * * * *

Nine billion light-years away was the greatest and most famous city in all of existence. The New Jerusalem was the capitol of the universe and the crown jewel of civilization. No other city was more glorious, or more prominent, or saw more activity. The city's twelve gates were guarded by mighty angels and were never closed. The golden city was lit by the glory of God – for the Most High God dwelt there – and the nations of the world walked in His light.

This city was ultimately the hub of all commerce, for everything that was done in the universe was done for the glory of God. The kings of the worlds came to this city to give their treasure to the Lord. The riches of this city were beyond imagination, but even they paled in comparison to the magnificent One who sat on the throne.

The New Jerusalem was also the center of all worship. All of creation came to worship the Lord, to praise Him, and to bless His name. There was perfect unity, for all races and peoples had the same goal: to glorify God and enjoy Him forever.

This legendary city of gold was massive. It measured 1500 miles wide, and high, and tall. Within its golden walls were many mansions. These were the homes of the righteous – the dwelling

places of those Redeemed by the blood of the Lamb. Many living creatures from all corners of the universe came to visit, but only the saints of God could call that city their home. The smallest home in that city was more valued than the mightiest palace on any other world.

Down one of those golden streets was the home of Captain Maxwell Baker. In the old universe Captain Max had been one of the finest starship captains among the Rangers. He was the one who had piloted the *Starfire* on its ill-fated mission to that Poneri-cursed world. He had also piloted the *Sparrow* to Mars, where he picked up the Stryker family and attempted to bring them to Xanthe in the Tau Ceti system. His goal was to rescue them from the clutches of the Spanish Empire – but things did not go as he had planned.

In this new era men did not need starships to travel across the galaxy, and yet there were more starships in existence now than there ever had been in the old universe. There were countless races that longed to enjoy the beauty of God's creation, and which needed machines to travel from place to place. Captain Max found that his services were in greater demand than they had ever been before – and this time there was no Spanish Emperor to worry about.

But on this fateful day Captain Max was not on some remote planet, teaching new recruits the finer details of space exploration. Instead he was at home, sitting on his porch, looking out over the great golden city. It was a view that he never tired of seeing. There were many fine things in the universe; God's creative ability was infinite and He had made many wonders. But no other world could compare with Earth, and no other city could compare with the New Jerusalem. That was one thing that would never change.

As Max relaxed in his chair, a person suddenly appeared on his front lawn. “Hey there,” the figure called out. “How are things going?”

Max stood up and smiled. "Just fine, Noel, just fine! Nice of you to drop by. Yet if I know you, you're not here for a social call, are you?"

Noel grinned. He walked up to the captain and shook his hand. "I really should come out and see you more often. I've just been wrapped up in the Gate project."

"I've heard about that! It will be a great thing once it's done. Just don't forget that the big reunion is just nine short years away. It'll be held at the top of the Ahexotl Tower on Tonina. Everyone will be there."

"I've got it blocked off on my calendar. Believe me, I wouldn't miss it! I'm still kind of in shock, though. Has it really been ten thousand years already? Where does the time go?"

"To all sorts of wonderful things, I suspect. The best part is that we'll never run out of time. That's one of the many great things that I like about this place. But tell me – what brings you here?"

"I've got a mystery for you to solve. I've found a strange new starship out on the edge of the universe, and I was wondering if you might have a moment to come out and take a look at it."

"Have you checked the Ship Registry?"

"I have, and it's not there. This ship is entirely new."

"It is? Now that's quite remarkable. A new ship! Why, I don't think anything like that has ever happened before. The Diano Corporation's always been involved in every starship that's ever been built. If this is something entirely new then that would be quite a discovery. Where did you find this vessel?"

"I'll take you to her," Noel said.

The two men vanished, and a moment later they reappeared in the communications center at Azariah Station. "Captain Max, I'd like you to meet Daniel Warner," Noel said. "He's one of our new recruits. I'm training him today."

"It's a pleasure to meet you," Captain Max said, as he

shook Daniel's hand.

"Likewise. I've heard a great deal about you! Your work with the *Sparrow* was quite inspiring. The rescue of the Stryker family changed the course of human history. I wouldn't be here today if it hadn't been for you."

"At the time I certainly didn't think that the mission was a success," Captain Max remarked. "Everything went wrong. I was supposed to take them to Xanthe, you know, and *not* to the distant future – but the Lord had other plans. You would think that all of that would have been forgotten by now. So much has happened since then."

Noel spoke up. "I don't think that history will ever be forgotten. The righteous deeds of the past will not be lost. The Book of Remembrance will see to that."

"So what have we got here?" Captain Max asked, as he stared at the holoscreen. "The *Vaughn*, eh? Can't say I've ever heard of it. You're right, though: it certainly does have a unique design. Have you tried to contact the ship?"

"Yes, and we got no response," Daniel replied. He pressed a button on the holoscreen to shift the view. "As you can see there are no life signs."

"Interesting. Based on the interior layout it doesn't look like an unmanned ship. At one time I imagine the ship did have a crew, but perhaps they abandoned it for some reason. Or maybe the ship was accidentally launched into space without one. I can't say I've ever heard of that happening, though, but I suppose it is theoretically possible."

"Is there any way to tell how long the ship has been there?" Daniel asked.

"Let me think," Captain Max said. After considering the problem for a moment, he used the nanites in his bloodstream to create a holographic image of that galaxy, and he projected it into the center of the room. "It looks like this galaxy was explored by the Nehemiah V probes – which isn't surprising,

since they explored everything. All the nearby stars were prepared for colonization but no life signs were found anywhere. It looks like that happened, oh, about a thousand years ago.”

“So the *Vaughn* must have appeared since then,” Daniel said.

Max shook his head. “Not necessarily. The probes explored star systems, not empty space. The ship that you found is fairly small and is a dozen light years away from the nearest star system. It would be a very easy thing to miss if you weren't looking for it. That ship could have been there for a very long time.”

Max made a motion with his hand, and the holographic image was replaced with a recreation of the ship itself. “Let's see what we've got here. First, it looks like the ship doesn't have any sort of atmosphere. Its interior is a vacuum, which is quite unusual. The ship has six rooms but all of them are empty. It's a bit strange, really. There's nothing inside.”

Max switched the view to the technical details of the ship itself. “As far as the equipment goes—hmmm. Now that's a bit odd. I'm not seeing any wiring or conduits. That big box in the back is clearly generating power, but it's not like any energy plant that I've ever seen. The engines are also a bit weird. It looks like the ship is generating a tiny amount of power in order to remain at a fixed point in space, relative to its surrounding area.”

Max zoomed out. “The ship is holding steady at 12 light years away from that star right there. Is there anything special about it?”

Noel spoke up. “Actually, there is. That's not a star at all. It's Victor's Singularity.”

Max's eyes widened. “You mean we're in *that* galaxy?”

Noel nodded. “That's correct. It may just be a coincidence, or it may not. We actually had to route our corridors around the singularity to make sure we didn't get anywhere near that mess. Fortunately we noticed the problem during the

planning stage and routed accordingly.”

“I must have missed that,” Daniel commented. “Is there something wrong with that system?”

“I suppose it's history is a bit obscure. It's so far away from everything that it just doesn't come up very often. I guess it was, oh, about fifteen thousand years ago. Do you remember the year Victor created it, Captain?”

Max shook his head. “I'm afraid not. I think it was in the 25th century of the old universe but that's as close as I can remember. Poor Victor! He took one of the most powerful ships that had ever been built and slammed it into a planet. Not only was the planet completely obliterated, but the star was as well. And not only did he obliterate the star, but he also created a fracture in spacetime. It's one of the strangest places in space.”

“Why did he do that?” Daniel asked.

“It was an accident,” Max explained. “He wasn't paying attention to where was going. I still kid him about it from time to time. There aren't too many people who caused an accident so great that it destroyed an entire star system. I don't think he'll ever live that down.”

Daniel spoke up. “Hold on a minute. If the accident happened in the old universe then why does it still exist? Didn't God create a new Heaven and Earth after Judgment Day?”

“He did indeed,” Max agreed. “And yet the singularity was preserved. That tells me that it has a purpose – but its purpose has not yet been discovered. Scientists studied it at the dawn of the Eternal Era but couldn't find a use for it. Some thought that it might be a passageway – a corridor from our universe to another one. However, if that's the case the passage seems to be locked. It simply isn't passable.”

“Could the ship have come from somewhere else – another realm, maybe?”

“I don't know. I suppose it's possible. But where could that realm possibly be?”

Noel spoke up. "Let me see if I understand this correctly. The ship exists, but it's completely unknown. It is currently empty. It appears to be anchored in space but there's no telling how long it's been there. That really doesn't give us much to go on. What do you think we should do?"

"Board her, of course," the captain replied. "Let's see what we can find."

* * * * *

Captain Max, Noel Lawson, and Daniel Warner appeared in the interior of the *Vaughn*. Since the ship had no atmosphere, the nanites in their bodies created a bubble of air around them so they could breathe. The process was entirely automatic.

"It's a bit dark here," Daniel comment.

"Then let's create some light!" Captain Max exclaimed. With a single thought Max dispersed a cloud of nanites throughout the ship. He then gave another command and the nanites lit the ship up. "There we go. Much better."

The three men were standing in what could have been the ship's bridge – but as the remote scan had revealed, there was no equipment in sight. The room had no chairs, no consoles, and no screens. The floor, walls, and ceiling of the circular room were a dull gray color.

"The ship looks unfinished," Daniel said. "Could this have been some sort of prototype? Perhaps this is an unfinished project that was left behind or lost."

"I wonder," Max said thoughtfully. Using the nanites in his bloodstream, he looked at the floor and zoomed in to view its molecular structure. What he saw surprised him. He quickly glanced at the walls and ceiling to verify his suspicions. When he was certain he wasn't imagining things, Max created a holographic projection in the air to show the rest of the group what he had found. "I think we may have underestimated this

vessel. Do you see that? That's what the walls and ceiling really are. It's not metal – it's something else entirely.”

“That certainly doesn't look like paint!” Daniel exclaimed. “That looks like a mesh of machines – very complicated machines.”

“Sort of like nanites,” Noel commented.

“I think that's exactly what they are,” Max agreed. “But they're different from the ones that we're used to. I believe those are polymorphic nanites. If my guess is correct, they can change shape and function in response to commands.”

Noel spoke up. “Now that's rather strange. The nanites that we use are fixed – they never change. Their whole purpose is to alter the *environment*, not themselves. Why would anyone want machines that change?”

Daniel thought for a moment. “Maybe this ship has been turned off or put in standby mode. That could be why it's empty. When the ship is on, the crew somehow uses the polymorphs to create whatever equipment they need. Then when they're done the interior goes back to its default state. That way they can produce whatever they want.”

“It's certainly an interesting idea,” Noel said. “I suppose if you don't have unlimited free energy it's not practical to create matter out of null space. But ZPE technology is extremely old. Why, it existed for thousands of years before I was born, and every technological race in the galaxy possesses it. Who would need polymorph tech?”

Max spoke up. “Perhaps a race that we haven't met.”

“Are there really hidden races?” Daniel asked.

“That's what it's looking like to me. No known race uses this sort of technology. Therefore, this is very likely the product of an entirely *unknown* race – one that lives on a planet the Artilect never found.”

Noel looked at the holographic image and then stared down at the floor. “Floor, create a chair for me.”

But nothing happened.

“All right, let's try something else. *Vaughn*, create a chair. Computer, create a chair. I want a chair. Can someone please give me a chair?”

The ship did not respond.

Noel frowned. “Do you think something has to be turned on first? How do you suppose the interface works?”

Captain Max shrugged. “It could work in a thousand different ways. The only way to find out would be to study the polymorphs and crack their code. I'm just a simple starship captain, Noel; that is far outside my area of expertise. I bet you could do it, though.”

“But I don't have the time!” Noel protested. “I've got to finish this Gate rollout. Besides, I've never tried to reverse engineer alien technology before. It's not really something that anyone ever needs to do! Mankind has the best tech that there is, and everyone else uses our science. What is there to reverse engineer?”

“It sounds like you need a researcher. Someone who is willing to spend years studying something, and pursue the truth doggedly until they finally crack the case. You need a scholar.”

“I've got it!” Noel said suddenly. “I know who can help us – if he's not busy, that is.”

Max grinned. “Well, let me know how it turns out. I'd love to know who built this ship. From what I can tell they're an intelligent, creative bunch. I think they'd be a joy to meet.”

“I'll do that. Thanks for stopping by. I appreciate your help.”

“Anytime,” Max said. He then vanished, leaving Noel and Daniel alone.

“So what do we do now?” Daniel asked.

“I think it's time we paid a visit to Star City,” Noel replied.

* * * * *

The Star City of the tenth millennium of the Eternal Era was truly a sight to behold. The original city had been destroyed long ago – a victim of the corruption and wickedness of men. In the 73rd century Amy Stryker gave the people of Xanthe one last chance to repent and change. Instead of repenting, though, Susanna Hamilton used nuclear energy to trap Amy, destroy the city, and kill everyone in it. The city remained in ruins for the remainder of that age.

But that was not the end. When the Eternal Era began the city was quickly rebuilt. This time it was modeled after the grandest city in the universe, the New Jerusalem. The new Star City was a massive metropolis filled with towering golden skyscrapers that gleamed in the light of the sun. In the past the light of the stars had been blocked out by the Wall, but in the new universe there was no need for such defenses. All of the wicked were forever trapped in the Lake of Fire, and none of them would ever escape. Susanna Hamilton may have destroyed the first city, but she could never endanger the second one – nor could Carroll Lane ever launch another war. This meant that the night sky on Xanthe would always be filled with a brilliant display of God's shining stars.

In the year 9991 of the Eternal Era more than two hundred million beings lived within the city. The metropolis teemed with life and energy. One thing, though, had *not* changed: the tallest building in the city was still the Diano Building. The giant golden spire was three miles tall and contained more than 900 floors. This enormous building – which was *not* the tallest building in the universe – served as the headquarters for the Diano Corporation. The Corporation was the premiere space exploration and starship company. It had offices in every inhabited galaxy, and employed members of nearly every intelligent species.

Yet the Corporation was not the only company that build

starships, nor was the Diano Building the city's only massive structure. Star City was known for space exploration and was filled with tens of millions of living creatures who worked in that industry. Xanthe's spacedocks were so extensive that they formed an orbital ring that stretched all the way around the globe.

In the north of the city was one of the most prestigious universities in the universe: Star City University. Like the old Star City, the original university had been destroyed long ago. When the Eternal Era began the school was rebuilt, and after ten thousand years it had grown into a massive complex that was renown for wisdom and understanding. The university's campus was spread out over 125 square miles, and half a million students attended each semester. The university was home to some of the galaxy's finest teachers and most advanced laboratories. The research that was performed on the campus grounds was second to none, and many of the students went on to work for the Diano Corporation.

Since the school had such a stellar reputation, vastly more beings wanted to enroll than the university could ever accommodate. Only the very finest minds could pass the stringent entrance exams, and even then the school had a waiting list that was 10 years long.

The head of the school was the legendary Professor Grimes. He was the one who rebuilt the campus and who recruited its brilliant teachers, whom he had come to know in the years that followed his death. Over the following ten millennia the school was blessed and grew tremendously. Much of the day-to-day administration was handled by Grimes' exceptionally competent staff. Grimes himself spent his time doing research, but that always came second to the classes that he taught. His courses were some of the most popular ones on campus, and they were always packed – and difficult to get into. You had to be quite talented to be accepted as one of his

students. The days of only a single person showing up to his classes were long gone.

Noel Lawson and Daniel Warren stepped across space and reappeared in the bustling campus. As always, the immaculate campus grounds were packed. Many students were hurrying to their classes, while others stood in small groups and talked to each other. A few were sitting on a bench studying.

“You graduated from this school, didn't you?” Noel asked Daniel.

“I did. I think it was about four thousand years ago. The school was quite a bit smaller back then. It's hard to believe how much it's grown.”

“Well, it *does* have an entire universe to educate. That universe just keeps getting bigger all the time.”

“True, but there are other schools. It's not like this is the only top-notch tech school in the universe.”

“I suppose you're right. But it *is* the best one! After all, this is the only school that has Professor Grimes on the faculty. As much as I would love to talk to him, though, I know he's just not available. But there is someone else here who I think has the time to lend us a hand.”

Noel used the nanites in his bloodstream to scan the campus. “Ah, there he is! I should have known he would be in the library.”

“Who are we looking for?” Daniel asked.

“Monroe Araiza. He is an outstanding scholar. Grimes recruited him a few thousand years ago to perform research. He doesn't teach a lot of classes – in fact, come to think of it, I don't think he does any teaching at all. I'm hoping he'll have some time to look into the *Vaughn*. He always enjoys these kind of challenges.”

“Monroe Araiza! I know him. Why didn't you tell me sooner? He was the one who fought against the wicked Conrad

Forbes, who wanted to wipe out my people. Conrad thought that we were just unredeemable, mindless savages; he was going to kill us all. Monroe was one of the few who fought to defend us. Monroe and Amy worked together to cure us and protect us from annihilation.”

“That's him all right. I actually knew him back then. In those days Monroe didn't like Amy. He thought she was a serious security threat. They didn't become friends until the Eternal Era.”

“A security threat? In what way?”

Noel began walking toward the university's massive library, and Daniel walked beside him. “Well, the problem was that Amy single-handedly wielded the entire power of the Artilect's network. Today, of course, she doesn't; that power is shared by the Board of Administrators. But back then she was the only Administrator alive. When you combined the Network with the nanites in her bloodstream, she had the power to do pretty much anything she wanted. She was vastly more powerful than any other human being, and that bothered Monroe tremendously. He was afraid that since she had unlimited power she might use it to conquer mankind. He saw her as a dangerous risk that could not be controlled. It was an unfortunate attitude to have, because Amy wasn't actually dangerous. What she truly needed was a friend. Monroe had a chance to be that friend, but instead he saw her as a threat. It was an opportunity that he missed.”

“I still don't understand. Why was he concerned? Today we all have immense power. It's nothing unusual.”

“Well, yes and no. We do all have resurrected, immortal bodies, which are great in power and might. We also have the nanites, which allow us to do amazing things. But the Artilect – the most powerful machine ever made – is still controlled by the Administrators. It's true that Amy has to share that power, but the Administrators still have a special role that isn't shared by anyone else. I can't just walk up to the Artilect and ask him for a

favor, and you can't either. If you want to use the Artilect you have to go through them.

“Besides, you have to remember that in the old universe people tended to use power to enrich themselves and harm others. People were corrupt, you know. In the Eternal Era the Redeemed are incorruptible and the abuse of power is completely unthinkable. Sin just isn't a part of our nature, and it never will be. But it wasn't always like that.”

By now the two men had reached the Library. Most universities had their own libraries, but there were few whose collection could rival the one housed here. The Library was housed in a giant skyscraper. The gleaming crystal spire stretched two hundred and sixty stories above ground, and fifty-seven stories below ground. In its sub-basement was a server farm that housed digital copies of nearly every book in existence – and recordings of every lecture ever given on campus. The university made this material freely available on the galactic network, opening a huge collection of wisdom to the entire universe. Anyone could freely download them no matter where they were, and learn from the wisdom that mankind had accumulated over the previous ten millennia.

The rest of the library – and the vast bulk of its space – was taken up with physical books. Although ebooks consumed far less real estate, physical books were prized for their permanence. Material science had advanced to the point where a book could last millions of years. Printed books represented fixed points in time – their contents did not change, and they served as a record that would last for a very, very long time. Ebooks were almost like ideas: you could share them freely, easily update them, and distribute them throughout the universe. But the printed originals were a different matter. In the Library you could see and touch the first print edition of many of the digital volumes in its collection. More copies could be printed, but there would never be more originals – and so the

first ones were highly prized.

The Library had many fine volumes in its collection, but it did not have the most priceless books in existence. There were a few books that only existed in a single copy and which had a value that far surpassed all others. These books were housed in the New Jerusalem. One of these books was the Book of Life, which listed the names of all of the Redeemed. All those whose names were written in that book escaped the Judgment and went on to inherit eternal life. Those whose names were not found in that book did not inherit eternal life, but were instead condemned to face the eternal wrath of God.

There were other books besides those two. One of them was the Book of Remembrance, which recorded the righteous acts of the saints. There was also the Book of Tears, which recorded the sufferings and trials of the saints. These books would last for all of eternity as a testimony to the Redeemed. Their deeds, and sufferings, and labors for the kingdom of God would never be forgotten.

Since both Noel Lawson and Daniel Warner were university graduates, they were admitted to the Library. "Where's Monroe?" Daniel asked.

"Second floor, toward the back, in study room 2215," Noel replied.

The two men walked up the stairs and between the shelves that packed the library's second floor. In the back wall there was a row of doors that led to study rooms. Daniel noticed that every one of them was occupied.

Noel walked up to door 2215 and gently knocked on it. "Monroe? Do you have a minute?"

There was a brief pause. "Is that you, Noel?" A moment later the door opened and Monroe Araiza glanced out. "Why it *is* you! This is an unexpected pleasure. Please, come in!"

The study room was only meant to house one person, so

it was a bit cramped. Inside was a chair and a desk. A large stack of books was resting on the desk, and papers were strewn about. A pen was lying on one of the sheets of paper.

“I’m sorry to disturb you!” Noel said quickly. “I see that you’re in the middle of something.”

Monroe sat down and smiled at them. “Oh, don’t worry about it. I’m always in the middle of something, you know. This is just a research project I’m doing for Richard Stryker. He had some questions about the spectral caverns, and I’m coming to discover that our knowledge of them is a bit more sparse than I thought. But enough of that. Noel, I don’t think I’ve met your friend. Who do I have the pleasure of meeting?”

“I’m Daniel Warner,” the man replied, as he reached out his hand. “Noel is training me to assist in the Gate rollout.”

“I heard about that,” Monroe said. He shook Daniel’s hand. “It sounds like a very worthy project. But tell me something – I’d like to ask a question, if I may. I know this might sound a bit odd but your skull structure looks very familiar to me. Were you one of the natives on Earth during the end of the Age?”

Daniel nodded. “I was.”

“Excellent! What a blessing. I was hoping that was the case. Seeing you here really makes all that effort worthwhile. So how can I help you two gentlemen?”

Noel hesitated. “To be honest, I was hoping you could do us a favor. I’ve come across a problem that needs some researching, and you are one of the very best. I figured if anyone could get to the bottom of this it would be you.”

“Now that is a bit unusual. As you might imagine I am quite busy. There are a great many mysteries in the universe, and there are also many unsolved problems. I have quite a backlog of things to look into. But I don’t think you’ve ever asked me to look into anything in all the millennia we’ve known each other. This can only mean that you have found something truly remarkable –

possibly more remarkable than anything I'm currently working on. What, exactly, is it that you want me to study?"

"It's this," Noel said. He used the nanites in his bloodstream to create a holographic projection of the *Vaughn*, which he made appear over Monroe's desk. "Daniel and I found this ship earlier today. The design is completely unknown. It's not a Diano ship and it doesn't appear in the Ship Registry. I asked Captain Max to come and take a look at it, and that's when things got really interesting. He thinks it may have been built by an unknown race."

Monroe looked at the ship with interest. "That certainly is a striking design! I've never run across anything quite like it. It looks a lot like a bird. Why does the good Captain think it may have an unknown origin?"

Noel shifted the image and showed a close-up of the tiny machines that the Captain had discovered. He told Monroe what Captain Max had said about the polymorphs.

"There is one more thing," Daniel added. "The ship is located about twelve light-years from Victor's Singularity. It seems to be holding its position relative to it."

"Now that is curious. Do you think that the *Vaughn* used that fracture in spacetime to reach our universe from some place outside it?"

"Is that even possible?" Noel asked.

"That's a good question. The U-16b anomaly was discovered about a thousand years ago. It's located well outside our universe, and as far as anyone can tell there's no way to reach it. If that anomaly is inhabited, perhaps someone found a way to use the breach that Victor created in order to enter our universe."

"But if that happened then where is the ship's crew?"

"A mystery indeed," Monroe replied. He thought for a moment. "It's true that I have a long backlog, and I intend to keep the promises that I've made. However, I'm not doing

anything that compares to the magnitude of what you've found. This has the potential to be the greatest discovery of the past thousand years. An unknown ship, a lost crew, a spacetime anomaly, and an unreachable universe – yes, this is quite the mystery! I would be delighted to begin my investigation. But tell me, Noel. Why not bring this to Professor Grimes? The paranormal is his specialty, you know. His *Paranormal Studies* course continues to be exceptionally popular.”

Noel laughed. “I'd love to, but Grimes is far too busy. There's no chance I could ever get on his schedule. I bet it would be easier to get ahold of the Stryker Twins than him. Isn't he teaching classes for the next 10 years?”

“I believe he is. I think he has four classes this semester alone. One of them is something you'd enjoy – Applied Temporal Mechanics. He's taught it before and it's always proven to be quite fascinating.”

“Is that time travel?” Daniel asked.

“It is indeed. Grimes believes it's possible to have a civilization that can access its own past and future. His course delves into a theoretical model that he created. What would happen if time travel was both possible and simple? How would that affect a society's growth and development?”

Noel spoke up. “Wouldn't that cause a feedback loop? I mean, I know that time travel is possible – our own history is proof of that. But the Sentinel made one trip, one time. If you could keep going back then I would think you would run into all sorts of problem with causality.”

“That was my thought as well. But Grimes has gone a bit deeper. His argument, based on what I've heard, seems to be twofold. First, men are wiser now than they were in the old universe, and the men of the future will be wiser still. Those future explorers who might choose to travel through time would certainly do so with the knowledge of its possible impact, and would use the technology with caution and great care. The

technology would not be used by fools, but by men of great wisdom. His second point is that the course of history is fixed. God, after all, planned the Cross and the Resurrection before He created the world. He is sovereign over all things and He guides history on its course. We live in a universe where the only things that happen are those things that God wills to happen. Therefore, if time travel existed it would be a part of the plan, and so by definition it cannot break the plan. It would just be a part of what was supposed to happen – which is something that we've already seen with the Sentinel."

"It sounds like a fascinating course. I wish I could enroll in it, but I'm going to guess that class filled up ten years ago. I'll just have to watch the lectures after they're uploaded."

"It's all a bit theoretical for me," Daniel commented. "After all, it's impossible to travel backwards in time. If you travel into the future it's a one-way trip – there's no way to come back."

"Well, *you* can't travel through time," Monroe agreed. "But there is one being who did make that journey, and he is going to make a guest appearance this year. Normally the Sentinel spends his time with the Twins, so this is quite a special occasion."

Noel spoke up. "As fascinating as this is, I think we've gotten a bit off-topic. Will you be able to research the *Vaughn*?"

"Most definitely! In fact, I can hardly wait to begin – but I think I'm going to need some help. I'll see if Merlin is available. I've worked with him before, you know. He's quite intelligent and has a lot of technical knowledge."

"Who?" Daniel asked.

"Merlin Hardin. He lived on Earth long before you were born. He was famous for predicting that if the Wall collapsed it would destroy everything within the Solar System. I think his help will be invaluable."

Noel nodded. "That sounds great. I wish I could stay

around and get you started, but I need to return and finish the Gate rollout. Daniel, do you think you can help Monroe and Merlin begin their investigation? You can rejoin me once you've answered their questions. I do want to finish your training, after all."

"Absolutely."

"Thank you so much!" Noel said to Monroe.

"No, thank you! This is one of the most fascinating mysteries I've ever seen. I look forward to finding the answer."

CHAPTER 6: ARRIVAL

Log date: Summer of 2415

Location: Xanthe

Log note: A song in the night

VICTOR STRYKER SPENT AN ENTIRE WEEK trying to decode the mysterious signal that the Nehemiah IV probes had reported. He knew it was going to be a difficult challenge, but he wasn't prepared for just how frustrating it turned out to be. The first problem he ran into was the nature of the signal itself. All space transmissions since the days of the Mayan Republic shared one thing in common: they were digital signals that conveyed a computerized message. It was true that protocols, formats, and encoding mechanisms had changed a great deal in the past thousand years, but all of those signals could still be converted into ones and zeros. That, after all, was the whole idea behind a digital signal. To Victor's immense horror, it was immediately obvious that this new signal was not in a digital format. Instead it was *analog*.

Who in their right mind would generate that kind of signal? Victor wondered, as he stared in disbelief at the waveform on his monitor. I don't think anyone has used technology this primitive since the days of Adam and Eve. I have no idea what to do with this. I guess I can quantize it and force it into a digital stream, but what kind of crazy person would generate something like this? Is this the result of faulty equipment? Is this a message from some long-lost pre-Flood probe? Where do I even start?

Victor searched through the Corporation's historical archives but found nothing. The signal didn't match any known protocol – which didn't surprise him, considering that all known

protocols were digital. He was tempted to dismiss the signal as some freak natural occurrence but he knew that wasn't likely. *There's too much information here for it to be the product of random chance. The signal isn't random and it's not short. It's eight minutes and 37 seconds long, and after a brief pause it repeated itself seven times. There is clearly information here; I can see that. There seems to be intent as well. But I don't know how to decode it. Is this some new messaging technique? Does it have some advantage over digital signals that I just haven't heard about? If so, who could be creating this new technology?*

The most obvious possibility was that it had been sent by aliens, but that was absurd. If there were aliens out there then surely they would have been found by now. *Perhaps I'm overthinking this. Maybe this signal is being generated by a complete moron on one of the Ranger worlds. He wants to steal a probe, but he has no idea how they work so he just cobbled together a machine and ran with it. Perhaps what I'm really looking at is the most pathetic hacking attempt of all time.*

There was just one problem with his theory, and that was the source of the broadcast. The Nehemiah IV probe was able to pinpoint the signal's origin – but the coordinates were so outlandish and ridiculous that Victor immediately dismissed them. *That's got to be a mistake. There's no way it can be right. If the probes ever pick up the message again I'll have them get a better fix on the source. Until it repeats, though, I'll just assume this was the result of abject stupidity and dismiss it.*

But the message did not go away. To his utter amazement the probes continued to pick up the same strange message in the weeks that followed. It seems that whoever was sending the message was very persistent – and try as he might, the bizarre origin of the message never changed.

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Since the first Nehemiah IV probe was not scheduled to arrive at its destination until the end of August, that gave Victor plenty of time to work on his microprobe project. It was true that Professor Grimes assigned a fair amount of homework, but since his real job was on hold for the time being Victor still had plenty of hours to spend on other matters. With the help of some experienced engineers he was able to design a basic prototype. The probe was incredibly primitive, and had the fewest parts Victor could get away with. All it could do was travel to another star system, replicate itself, scan that world for books, and then bring the books back. Victor added a rudimentary communications systems so he could tell if anything catastrophic happened, but that was it. He didn't even have the ability to upgrade the probes remotely: if they broke in the field then it was all over.

The probe's technology was quite old. There was nothing cutting-edge about them. Since adding a ZPE was out of the question, Victor used a scaled-down nuclatomizer. When the probe arrived at Alpha Mensae it would take rocks and dirt from the planet and convert them into plasma. It was then supposed to use that plasma to create a new probe – a task that truly strained its feeble abilities. There was only one pattern programmed into its replicator, and that pattern had been simplified to minimize the elements that would have to be fabricated.

Even with all the simplification, though, the probe was still larger than the average car. It was a hideous monstrosity and had parts sticking out everywhere. There was nothing sleek about it. Victor had no doubt that things would go wrong – but his time was limited and he didn't have a hundred years to perfect the design. *This probe is not going to be able to handle a hundred generations of replication, let alone a thousand. But I don't need much. All I need is something that can find books. If half the probes break, that's fine as long as the other half work. I*

just hope there are books on that planet that are worth reading. I'd hate to go through all this trouble and end up with ten copies of some book on dog breeding.

Victor used a virtual reality matrix to design the probe and test its functionality. This was an ancient technique that had been perfect back in the days of the Spanish Empire. Since the Corporation was limited to one heavily-armed building and did not have access to the outside world, employees did most of their testing in virtual reality simulations. Testing in the real world was a dangerous thing to do. Fortunately, though, his probe was small enough to be built inside the building. Once Victor was convinced that his design might actually work, he fabricated one in an unused laboratory.

The first probe was constructed on April 9th – just two months after Victor got the idea. Once the construction process was complete Victor began running tests on the probe to find bugs that his virtual tests had missed. He knew that it would take multiple iterations before he had a design that was ready for launch, but he felt good about his progress. *I just need to get this finished before the Nehemiah IV probes arrive at their stars. Once that day comes I'm going to be much too busy to work on anything else. That means I've got to be quick and I've got to keep things simple.*

As it turned out, Victor just barely made it. On July 30th he asked Dr. Mazatl to come to the lab and approve the launch of his probe. Even though Dr. Mazatl was quite busy, he still found the time to review Victor's work.

“Are you sure it's ready?” Dr. Mazatl asked, as he stared at the probe. “I don't mean to criticize your work, but it looks a bit odd to me. This may be the most ungainly probe that the Corporation has ever designed. Shouldn't it have some sort of protective casing?”

“The problem comes down to the sensors,” Victor

explained. "In order to keep everything simple and minimize the number of elements that the nuclatomizer has to fabricate, I had to use equipment that's kind of terrible. I can't use any fancy alloys or artificial elements or anything like that. I know it looks ridiculous but it truly is the best design possible, given the limitations. At least, that's what the genetic algorithm I wrote told me. I had it iterate through billions of different design permutations. This is as good as it gets – and it passed all the fitness tests. I really think it's going to work."

"Well, it's certainly creative. I appreciate the way that your probe can replicate itself. I'd like to see that approach used in our maintenance bots. Considering how often they are destroyed I think that could be significant improvement. I'll talk with Bernard about it and will see what he thinks. The problem, of course, is that implementing your approach would mean redesigning all of our bots, and we just don't have the time or manpower to do that right now. We are very close to arrival day."

"It would be a big investment," Victor agreed. "The system of bots we have in place right now does seem to work, more or less. It has its problems but it's managed to keep everyone alive. I'm sure it could be better, but then again so could everything."

"That's certainly true. Well, Victor, I've read the diagnostic reports of your probe and it does meet our standards. It should be able to do what you want it to do – although, once again, this probe won't be able to replicate itself for too many generations. Problems are going to arise around the tenth generation, and your mechanism for catching replication errors is not very robust."

"Which is fine. This doesn't have to be perfect and it doesn't have to last for all of eternity. It's really not very ambitious."

"Then you are cleared to launch." Dr. Mazatl pressed a few buttons on the electronic device he was holding, and then

put it back on his pocket. "I've uploaded the probe's pattern to our space station and gave approval for the creation and launch of three copies of your device. They are scheduled to depart in a few hours. Once they have launched, any telemetry data they send will be routed directly to you."

"Thank you very much! I appreciate it."

"Not at all. Personally, I think it's great to see people doing projects like this. It makes me think there's hope for us yet. Just don't let this take up so much of your attention that you neglect your real job. There is another set of probes that needs your attention as well."

"I know. The big corporate meeting is tomorrow at 10, isn't it? I'll be sure to be there."

"That is correct. Don't forget that you will be presenting! Be sure to have a report ready on that signal you've been picking up."

"I'll do that," Victor promised.

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At precisely ten o'clock on the following day, the Corporation held the big kick-off meeting for the Nehemiah IV's arrival. All employees were required to attend, but there was no single room big enough to hold everyone. Most people attended it from their desks (while paying questionable amounts of attention), but a large number of employees were packed into an enormous auditorium on the 114th floor. Victor had to attend the meeting in person because he had a report to deliver. He knew it wasn't going to be a very satisfactory report, but there wasn't much he could do about it.

Dr. Mazatl began the meeting by talking about the great work that each department had been doing. He then talked briefly about the building's new security system and the work that had been done to protect them from President Rios. After

answering a few questions he began to talk about the probes.

“The first Nehemiah IV probe will arrive at its destination precisely on schedule, on August 22, 2415,” he announced. A large holoscreen behind him displayed a realtime image of the probe's current location. “The probe will be arriving at a planet that is a particularly poor candidate for terraformation – which is exactly why it was chosen. The planet is located dangerously close to a star and completes its orbit once every few days. This horrifying world has no moon, and the star is particularly violent. It will take a great deal of effort to move the planet into a different orbit, cool it down, change the star's chemistry to something that is more stable and suitable for life, and then terraform the planet.

“Nothing about this process will be easy, which is why this is such a terrific test of the probe's abilities. This is by far the most challenging terraformation that we've ever attempted. Not only is the job itself incredibly difficult, but the whole area is saturated with radiation and deadly particles. If the probe can successfully change this world into a habitable environment then it should be able to tackle any challenge that it faces.”

“What about the worlds in the galaxy's core?” Connor Morris asked. He worked in stellar navigation. “Those stars are incredibly close together and their worlds are saturated with lethal radiation. Nothing about that region is conducive to life. Surely those systems are going to pose an even greater challenge!”

“Absolutely – which is why we are going to avoid them as long as possible. There are around a trillion planets in this galaxy, and some are far better candidates for colonization than others. With the exception of these hand-picked 'starter' star systems, the Nehemiah IV probes will focus on promising worlds that can be terraformed using traditional techniques. Their goal is to create worlds that are naturally stable and which do not require artificial shields or atmosphere generators to remain habitable. It

will be a very long time before all of those worlds are terraformed and inhabited by mankind and only the core stars are left. We are hoping that by the time that day comes, our technology will have advanced to the point where even the core can be colonized. However, that is not under consideration at this time. We can leave that question to our descendents.”

“How long will the terraformation process take?” Jane Hart asked. She worked in biochemistry.

“About a year,” Dr. Mazatl replied. “In most cases the probes wouldn't take so long to terraform a planet, but this is an extreme situation. In fact, the first dozen worlds on all of the probes' itineraries are difficult cases. We already know how to terraform simple worlds. What we really want to see is how the Nehemiah IV operates under pressure.

“This means that for the next ten years what we will see is problem world after problem world. It is our hope that if there are any flaws in the probes, they will arise during this time of testing. The other two probes will arrive at their own stars by the end of September and will begin work on equally challenging planets. It will be the job of all of us to closely monitor the probes and make sure that they are making the right decisions. Are the probes responding to situations in the most rational and efficient manner? Is their method of terraformation the right one and will it result in success? Are the probes showing any operating problems or flaws?

“All of you, in one way or another, have worked on the probes' systems. You know what those systems are and you know how they should work. If you see any deviation from the plan, it is your job to notify us immediately so that we can put together a team to resolve the problem. I know that you all did an excellent job, but these probes are enormously complicated and it is difficult to believe that they are flawless. Our job is to find the flaws and fix them before those flaws are passed down to the probes' children.

“In order to simplify operation and troubleshooting, the telemetry feeds from all of the probes is being fed directly into SOLOMON. This data is very nearly in realtime and dates back to the moment the probes were launched. Victor Stryker has been put in charge of the probe telemetry. If you need information or have any questions, please let Victor know.”

Carroll Lane spoke up. “Have any problems been found so far?”

“That's a difficult question to answer,” Dr. Mazatl replied. “Victor, would you care to address it?”

Victor, who was sitting on the row directly in front of the stage, reluctantly walked onto the platform and over to the podium that Dr. Mazatl had been using. “The probes themselves have all been operating within their established parameters. No systems have malfunctioned and no failures have been detected. However, there has been an event that raised some concerns. Shortly after the launch one of the probes began receiving an anomalous signal. The nature and content of this signal is not yet understood. However, the signal appears to be coming from outside the probes, and is not a product of the probes themselves. Therefore we do not believe that the signal represents a flaw in the probe design. Other than that, no other anomalies have been discovered.”

“Can you triangulate the signal's source?” Cynthia Glass asked. “I would think that it should be pretty easy to find the broadcast point.”

“That's a good point,” Carroll Lane agreed. “We don't want outsiders to be communicating with our probes. We need to find out who's doing this and shut them down.”

Victor sighed. He tapped some buttons on the podium and the picture on the holoscreen changed. “This is the data that is being picked up by the probe. You can see the signal trace on that graph, along with the packet structure and contents. In addition to this you can see the origin data in the lower-right-

hand corner. The Nehemiah IV probe claims that the signal is coming from outside our galaxy. In fact, the data indicates that it is coming from the edge of the universe – at a point in space that is 9 billion light-years away.”

“But that's ridiculous!” Jose Avila exclaimed.

Victor shrugged. “I am quite aware of that. However, that is what the probes claim, and we have not found any error in the probe's subroutines. The signal has repeated itself every few days since it was first detected and the reported source is always the same. If the signal is *not* coming from billions of light-years away – which is certainly the most reasonable guess – then whoever is generating it has found a clever way to mask the signal's true origin. And as far as the message itself goes, you can see that it does not conform to any of the standard communications protocols. There is currently no known way to decode this message.”

“Have you run it through a statistical analysis?” Cynthia asked. “Surely you can use pattern matching or something. There's just got to be some similarity to *something* that you can use to identify it!”

“The problem with pattern matching is that we only have one pattern. The message never changes. And yes, I have run it through an analysis.” Victor pressed another button on the console and brought up the results on the holoscreen. “These are the results that I got. As you can see, the analysis is inconclusive. The computer requires additional samples in order to form a conclusion, and we just don't have that. This is all we have available.”

“So what's going on?” Jose asked.

Dr. Mazatl spoke up. “I am afraid it is impossible to tell. Like many mysteries in life, some things are simply not solvable. It is clear that the probes are detecting a message, but that does not mean that the message was intended for them. In fact, it is quite likely that they are eavesdropping on a conversation that

was not directed at them at all. That is why we have decided to put this investigation to rest. We will continue to monitor the situation in case the message changes, but until further information comes to light we will consider the matter to be closed.”

Victor nodded and stepped away from the podium. As he walked back to his seat, Dr. Mazatl continued the meeting. Victor didn't like closing the investigation but there wasn't anything else that he could do. He could not solve the mystery with the information he had, and there was no good way to obtain more information. Traveling 9 billion light years across the universe was out of the question – and even if he somehow managed to do that he doubted he would find anything.

It's probably just some crazy person trying to send a message to someone, he thought to himself. The galaxy is full of lunatics these days. There's just no telling what people are up to. It's probably not worth worrying about.

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After the meeting was over, Victor tried to make his way back to his apartment. However, when he reached his floor he found that Cynthia Glass was waiting for him. “Do you have a minute?” she asked.

“Um, sure,” Victor said nervously. “Is there a problem?”

“I just wanted to talk to you about the signal, if that's ok. Have you run it by Professor Grimes? This is just the sort of thing that he'd enjoy. You know how he is!”

“Right. Well, actually, as a matter of fact, I did. He didn't have an answer but he did have a guess.”

“And you didn't mention it in the meeting?” Cynthia asked, astonished. “Wouldn't that have been highly relevant?”

Victor sighed. “I don't know. All he had was a crazy guess. Grimes doesn't think that it was a message at all. He thinks it's a

song.”

“Are you serious? A *song*?”

Victor nodded. “That’s his opinion. He said the waveforms look like music to him. It reminded him of a violin or something.”

“Was he right?”

“I have no idea. The problem is that even if it is a song – which would be crazy – I don’t know how to decode it. How do the waveforms correspond to notes? I made a few attempts to convert it to music but none of it was conclusive. A small change in my base assumptions resulted in a big change in the melody. I don’t even know what the tones are supposed to be.”

“How did it sound?”

“Kind of odd. Some variations were better than others.”

“Could you send them to me?”

“Um, sure. They’re not really that great, though. And I’m not convinced that Grimes is right. Don’t forget that Grimes’ favorite pasttime is burning communications devices.”

“I think the word you’re looking for is *phone*,” Cynthia replied. “And of course he hates them! When he’s teaching he wants people’s attention to be on him, not on some dumb game. He sees them as a distraction – a monumental waste of time. So since they are a force of evil in the world, Grimes wants to burn them with fire. However, he only seeks to destroy the ones that are actively interfering with his teaching. I think that’s a perfectly reasonable stance. But to get back to the conversation – who did Grimes think was sending the message?”

“Well, about that. Grimes said that since the probes claim the message is coming from 9 billion miles away, that means there is a good chance the message is coming from 9 billion miles away. And since there aren’t any people in that part of the universe, that means it probably isn’t being generated by, you know, people.”

“Well, that makes sense.”

“Not really. I mean, why would there be aliens way out on

the edge of the universe? What's the point of that? Why not put the aliens here? It doesn't make sense for God to leave our galaxy empty and put the only alien race in existence at the other end of eternity."

"Maybe God wanted to keep them away from mankind," Cynthia suggested. "I mean, we're kind of a mess, in case you haven't noticed. All that distance could be a quarantine of some kind."

"I guess. I suppose we'd have to make a trip out there to find out for sure, but there's no way that's going to happen. Even the Nehemiah IV probes can't travel that far."

"Are you sure? Have you tried?"

"What do you mean, have I tried?"

"Has anybody ever tried?" Cynthia repeated. "I mean, come on. We can change the chemistry of *stars*, Victor. We can move planets to different orbits. We have access to *free energy*. Has anyone actually tried to travel that far? Maybe it is possible."

"We can't even travel outside our building," Victor pointed out. "No one is going to be traveling to the edge of the universe – especially not in search of imaginary aliens."

"Where's your spirit of adventure?"

"I kind of prefer the spirit of sitting on the couch. It's a lot safer."

"Is that why you never respond to any of my invitations? I've only invited you over, like, a million times! We could be friends, you know. We do have things in common."

Victor shifted uncomfortably. "I appreciate that – really, I do – and I'm sure you're a nice person. But I'm really pretty happy living alone. By myself. Without, you know, other people. It's a pretty good life."

"No it's not. You're lonely and unhappy. You hate your life."

"Well, maybe. But it's better than the alternative. I don't know if you've noticed, but mankind is pretty much a race of evil

undead zombies right now. The people outside this building are all criminally insane. The people *inside* the building are barely any better – they're rude, mean, selfish, and horrifying. Have you seen Derek? He's a nightmare!”

“But we're not all like Derek,” Cynthia protested.

“Then why don't relationships ever work out? I've been around married people, Cynthia, and they're all deeply unhappy. Maybe hundreds of years ago things were different, but that was the past. Husbands and wives hate each other and never stop fighting. Whenever you pass them by in the hall, all they can talk about is how evil so-and-so is and what horror they just did. Practically no one gets married anymore, and those who do never stop talking about how bad it is. And we're the *good guys!* The world outside is enormously worse. Oh – and don't even get me started on what kids are like these days.”

“Well, without parents, what do you expect them to be – model citizens? Yes, I know this isn't happy bunny funland. I'm aware of that. There aren't a lot of talking ponies anymore. But not *everyone* is evil. Grimes is pretty sane. Dr. Mazatl is nice. There are good people out there – or, at least, people who are trying to be good. Those good people should stick together. They should be friends and help each other.”

“I tried that, Cynthia. Oh, I've tried that. My parents tried to be nice to outsiders and it got them killed. I tried to be nice to Susanna Hamilton and she had the SSF steal everything I had. What you're asking me to do is trust you. But trust is dead. There's no trust anymore – not between the sexes, not between people, not even between Christians. You seem nice, but for all I know you could be a psychopath who's putting on an act. I'm not interested in rolling the dice and hoping that this time I can defy all odds and find a real friend. It's just not going to happen. It's never happened before.”

“What about Carroll Lane? Isn't he your friend?”

Victor shrugged. “He's a coworker. For all I know he'll try

to kill me one day. Everyone else has.”

Cynthia shook her head. “You need therapy, Victor. Or maybe counseling. You are in desperate need of *something*. Don't you remember what Christ said? 'Because iniquity shall abound, the love of many shall wax cold.' Don't let that person be you. Love matters in this world. It especially matters when it's in short supply.”

“I'll, um, think about it,” Victor replied.

“You do that.”

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Precisely on schedule, the first Nehemiah IV probe arrived at its destination on August 22. It immediately began generating an enormous quantity of data – and that data stream dramatically increased as the hours ticked by. For the first few planets Dr. Mazatl had enabled trace logging. Not only did this log everything the probe did, but it also logged the internal reasons that explained the choices the probe was making. This resulted in a staggering deluge of data.

How are we supposed to sort through all this? Victor wondered, as he tried to find a way to analyze billions of pages of information. *SOLOMON can't possibly handle this much data. It will reach its maximum capacity in five years, at the very most. I suppose we don't actually need to keep all of this. If we only store data from the previous terraformation cycle and discard everything else we might be able to keep it manageable – although as we replicate more probes even that will be too much. If we can't even manage the operation of three probes, how are we going to handle hundreds of them?*

Victor put the problem out of his mind. His job was communications; managing SOLOMON was the responsibility of the infrastructure team. He was sure that the storage space issue had already been discussed in countless meetings. If there was a

problem with SOLOMON, it wasn't *his* problem.

No, Victor had a more immediate issue: how was he going to break up the data and make it usable? The schema that the data miners had created before the launch was completely inadequate. A whole new way of finding important information had to be found; otherwise they would drown in system logs.

Victor settled into his chair and began thinking.

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The first few months were hectic ones. As the days went by the developers at the Corporation invented better ways to mine the probe data for information that was relevant and useful. The unmanageable became manageable, and people's initial panic started to subside.

Victor's role gradually began to change. Instead of managing communications he became heavily involved in scanning the data for problems. He wrote a number of data analytic programs that compared the actual data to the predicted optimal decision choices. The three probes had been placed in star systems that would inflict heavy damage upon them. This was done deliberately in order to test their automated repair systems. The parent probes were created out of stable matter, but their children would be formed out of artificial atoms. If the repair system did not work correctly then the children would not survive for very long. Victor's software automatically located areas where the probes were not repairing themselves correctly and flagged them for research. Victor also worked closely with Dr. Mazatl to identify the key decision trees that needed to be closely monitored.

At first Victor's software reported a great many anomalies. However, when Mazatl appointed a team to study the problems they found that the probes were actually making wiser decisions than the plan predicted. There were only a few cases

where the probes made an error, and the company was able to pinpoint the problems and remotely upload a patch to resolve the issues. The automated repair system was doing its job.

Overall Dr. Mazatl was pleased with the results. The probes were doing a fantastic job under very difficult circumstances and encountered only minor bugs. Things were going better than he expected.

The next critical date did not occur until July 30, 2416. Thanks to the probe's enormous power, the terraformation of the first world was completed nearly a month earlier than scheduled. It was time for the probe to move on to its next world – but first it would replicate itself.

Victor sat at his desk and watched the entire process on his holoscreen. He knew that there were two other probes which were still hard at work, but he put those probes and their problems on hold for now. Everything depended on a successful replication. If replication failed then the project would fail with it.

As he watched, the Nehemiah IV probe switched modes. It loaded the massive file that contained its pattern and it queued up the components that it needed to manufacture. Then, one by one, it began recreating itself. The probe fabricated pieces in quick succession and placed them outside itself, in space. As powerful as the Nehemiah IV probe was it could not recreate itself whole. No machine that had ever been built could fabricate a device that was five miles long.

It took the probe four hours to create the thousands of components that went into its construction. Once the last part was manufactured, the probe began moving these pieces around and assembling them. The probe had the ability to grab things remotely and move them – an ability it used to move planets – and it quickly and efficiently assembled the many components into an exact duplicate of itself.

One the copy was made, the probe turned on its child and activated its diagnostic mode. The parent then spent two

hours conducting a thorough check of every system and subsystem in the child probe. After all of the components passed all of the tests, the probe uploaded an itinerary to the child and then turned off its diagnostic mode. The child now had its orders.

Both probes left the star system and headed to their next destination. Before there were three probes; now there were four. It had worked.

Victor felt a sense of immense relief. He knew that over the next few weeks the data that was created during the replication process would be analyzed for flaws, but what he had seen looked very promising. *So far so good. Now we have four probes to manage instead of three – and soon we will have six. Can we keep up with the load?*

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That evening Victor began going through a large stack of books that occupied most of the floor space in his living room. In the year since he had launched his probes, the microprobes had traveled to Alpha Mensae and begun ransacking the planet. To his great surprise he discovered that Alpha Mensae was home to dozens of libraries, and nearly all of them were intact. There were far more books on the planet than Victor could possibly handle – but since the bots were programmed to bring *all* of the books they found back to Victor, that was exactly what they attempted to do. When his microprobes found one of the planet's many libraries they replicated dozens of copies of themselves, grabbed all the books they could carry, and returned to Tau Ceti. There were now hundreds of thousands of books on the way back to Victor – and that didn't count the piles of books he had already received.

The software developer belatedly realized that he should have put some kind of filtering mechanism into his probes. There were all kinds of books out there that did *not* deserve to be

rescued from the ruined world of Alpha Mensae. Victor had been forced to start piling up books by the thousands in crates in the building's basement. Grimes agreed to take some of them, but he had stringent requirements. Not all books merited inclusion into the university library – although Grimes did offer to burn the countless romance novels that Victor had found (an offer Victor gladly accepted). Unfortunately for Victor, very few of the books that the probes brought back were worth reading. But he still had to go through them all, lest he inadvertently discard a real treasure.

I guess I was too successful, Victor thought. Or maybe I wasn't selective enough. I just didn't think this would actually work. Where is a catastrophic system failure when you really need one?

Victor spent dozens of hours going through the books that had already arrived – and more books landed on Xanthe each week. The books in his apartment were the ones that merited further study. Even that number was so overwhelming that he almost considered asking Cynthia to come over and help him.

Almost.

You know, maybe it's time for me to kill my probe program. If there are other books still on the planet then I think they can stay there. I have enough to last for the rest of my life.

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As Victor tried to sort through the mess, he was interrupted by a buzzing noise. Someone was attempting to contact him. Victor made a motion in the air with his hand and a glowing holoscreen appeared in the air in front of him. He was surprised to see that Carroll Lane was calling.

Victor immediately answered. "Hey there! It's great to hear from you. How are things going?"

“Really good, actually. I've made a lot of progress since we last talked.”

“That's fantastic. I'm glad things have been going well. When was the last time we talked, anyway? It seems like it's been months. Where does the time go?”

Lane shook his head. “You've been distracted by that alien message, haven't you? I keep trying to tell you: it's not important! It's probably just some goofball trying to hack the Nehemiah probes. Give it a rest, Victor. Some mysteries aren't worth solving.”

“You're probably right. I just hate loose ends, that's all. I don't like things that I don't understand.”

“Then you're not going to like life very much. It's full of things that are impossible to understand.”

Victor grinned. “I know what you mean. Still, those messages are pretty old news. The big news today is the first Nehemiah IV replication. It completed a few hours ago and it worked perfectly.”

“Of course it did. What did you expect? The parent probes are stable. It's the children that we have to worry about.”

Victor nodded. “Speaking of that, where have you been lately? I haven't seen much of you around the office. In fact, I haven't seen you at all.”

“Oh, I've been busy. My workload hasn't really been that heavy so I've been working from my apartment. That gives me more time to work on my virtual reality project. I've made tremendous progress. In fact, I was wondering if you'd like to come over and check it out.”

“Sure. I'd love to see what you've done. Is it ready for the public?”

“I wish! I'm getting closer but I still have a lot to do. It's far from perfect. But I'd like to get some feedback on what I have so far, and there aren't many people that I trust. You've always had a good head on your shoulders – even if you are a bit gloomy.”

"It's a gloomy age," Victor replied. "But sure, I'd be glad to help. I'll be over in just a minute."

Lane nodded and disconnected. Victor stood up, stretched, and left his apartment.

As he walked down the hall and took the elevator he realized that he had lost track of how Lane was doing. The two developers had never been particularly close – but for that matter Victor wasn't very close to anyone. Cynthia was determined to be his friend, and Victor was equally determined to avoid her with the same dedication that he avoided his chicken-raising neighbor. Still, he felt a little bit uneasy about the way he had drifted apart from Lane. The two of them used to work together on a regular basis. Now things were different.

Well, we're working on different things now, Victor thought to himself, as he waved his hand in front of Lane's door. To his surprise the door unlocked. *Evidently I still have access to his apartment. How strange. Lane is clearly not as paranoid as I am. I still have nightmares about the SSF.*

"Hello?" Victor called out.

"Over here," Lane replied. Victor saw his friend standing at the far end of the room. He was surrounded by computers and other technical equipment.

"My goodness! Your apartment is packed. Is it possible that you actually have *more* stuff than you did before?"

"Absolutely! In fact, it's getting kind of cramped in here. I probably should move to a laboratory downstairs, but hauling all this stuff down the elevator would be such a huge pain that I've put it off. Maybe I could get some bots to do it for me. But, yeah, I have lots of new toys. Now that the Corporation is paying my bills I've been able to fabricate everything I've wanted. Since I'm doing 'cutting-edge research', as Dr. Mazatl put it, he's given me free reign to perfect my work."

"So the Corporation is paying for this?" Victor asked in amazement.

“That's right! As long as they get a copy of the tech they're happy to fund me. I'm not sure what they're going to do with it, but that's their problem. I'm sure they'll think of something.”

Victor suddenly remembered Lane's injury. “Hey, it looks like your hands have healed!”

Lane nodded as he typed some commands into the console in front of him. “Yep, that cleared up months ago. The pain's gone too. It's amazingly nice to be able to type again. You have no idea what's it like to try to dictate software. It was *not* fun.”

Lane pressed a button and a progress bar began inching across the holoscreen. “All right, the simulation is loading now. As I said earlier it's not perfect – I still have a long list of features to add. I'm hoping that if I can build a good demo and really show off its potential, I can get some other people on board to help me finish it. It'll take me forever if I have to do all the work alone.”

Victor nodded. “That makes sense. So how does this work?”

Lane climbed over piles of equipment and made his way to a nearby bookshelf, which had three white helmets on it. He picked up two of them and carried them over. Lane handed one to Victor.

“Here's how it works. These helmets are the primary controllers. They act as a relay between the server farm over there and the nanites in your brain. The nanites interact directly with your brain and feed it the simulation data. The helmet monitors your brain to see what you are trying to do, and uses that data to update the simulation and feed the results to the nanites. The helmet actually processes quite a bit of the simulation, but it can't handle everything, of course; there's only so much hardware I can cram into it. It's just responsible for rendering the things that are immediately around you. The larger

world is handled by the server farm, which is connected directly to the helmet. All three of them work together to ensure that the simulation feels real and there's no noticeable lag. It's actually kind of cool. The nanites in your brain are the real magic.”

“But I don't have any nanites in my brain,” Victor pointed out.

“Oh – right. Sorry, I forgot. Just a minute.”

Lane walked over to a refrigerator in the corner of the room. He opened it and took out a small blue vial. Lane then walked back to the console and handed it to Victor. “Here, drink this. It doesn't really have a taste. It'll take just a few minutes for the nanites to work themselves into position. You won't feel a thing.”

Victor looked at the vial dubiously. “Is this safe?”

“Absolutely. Trust me – I know what I'm doing. The nanites only last for a week and then they will get flushed out of your system. They're completely harmless. I even got the Corporation to sign off on them so I could begin human testing. There's nothing to worry about.”

“All right then,” Victor replied. He drank the vial. “Hmm. You're right – it doesn't have a taste. It's kind of bland.”

“But it works! That's the key thing. Ultimately I'd like for them to last longer, but that's a problem we can solve later. I've already got nanites in my system, so once yours take effect I'll join you. We'll enter the simulation together so I can show you how it works.”

Victor nodded. “How will we know when they're in position?”

Lane pressed a key on his console and a box appeared on the holoscreen. “Here, put on your helmet. Once the nanites are online they'll connect to the helmet and I'll engage the simulation. Oh – and you'll want to lie down on that cot over there.”

Victor put the helmet on and laid down on the cot. The

helmet was dark; it didn't have any windows. He waited in silence. Victor heard Lane muttering to himself, and he heard typing from time to time. "Ah, there we go. Looks like you're online. Let's get this started."

A moment later Victor felt a curious sensation – it was as if something fuzzy had brushed over him. The helmet he was wearing then vanished, giving him a clear view of the apartment. To his surprise the apartment was now empty, save for the two cots. That's when Victor noticed that Lane was lying on a cot beside him. On the far wall, light streamed through a floor-to-ceiling window.

Victor stood up. "I don't get it. What happened?"

"I started the simulation."

"Really? But this feels real. It looks real. *You* look real. This is really just a simulation?"

Lane nodded, obviously pleased. "Not bad, is it? I told you I had made some real progress."

Victor experimentally waved a hand in the air, and then took a step forward. He stopped. "So you're telling me that in reality, I'm still lying on a cot in your cluttered apartment, and I still have a helmet over my head."

"That's correct."

"That's amazing! But how is this possible? If you're feeding a simulation to my brain then how is my body still alive? Haven't you disconnected my brain from my body?"

Lane shook his head. "I have, but I haven't. I'm basically feeding a dream into your mind. Do you know how when you're dreaming you seem to be in another place, and yet you're really not? In your dream you can walk around, talk to people, and do things, and yet you're not actually doing any of that stuff. While you're having your dream adventure your body keeps on taking care of itself. I'm just creating an artificial dream world for you to live in. The only difference is that this dream is being created by my computers."

“Remarkable,” Victor said. He walked over to the window and looked outside. As he stood in front of the window he could feel the heat of the sun. It was as if he was standing in front of a real window. He could even see other buildings down below – but he quickly realized that he didn't recognize any of them.

“What's up with downtown?” Victor asked. “That's definitely not Star City.”

Lane walked over beside him and looked at the view. “You mean it's not the 24th century version of Star City – the depressing one that we all love to hate. That, my friend, is what Star City looked like back in the 19th century, when Jack Nicholas was governor. This is the city in its golden age.”

“Wow! That's really nice. It's a huge improvement over what the city looks like today. I don't see a single building on fire anywhere.”

Lane laughed. “It's more than just a view, you know.” Lane tapped on the glass window and it suddenly disappeared, leaving a giant hole in the wall. “You're welcome to walk its streets, if you like. As long as you don't try to go inside the buildings the simulation should hold up pretty well. I haven't tried creating their interiors yet.”

Victor quickly took a step back from the hole. “Are you crazy? We're on the 80th floor!”

“This is just a simulation, remember? You can't die! You're still lying on a cot, safe and sound. You're not in any actual danger. Besides, you can fly.”

“I can *what*?”

“Try it,” Lane urged. “Just focus on flying. Tell yourself that you want to go *up*. The nanites will know what to do.”

Victor concentrated for a moment. He then began rising – but far too quickly. He leaped off the floor and banged his head on the ceiling. To his surprise he didn't feel any pain.

“I don't get it. Shouldn't that have hurt?”

Lane shrugged. “I've disabled pain in this simulation. Like I

said, none of this is real. In my opinion it's quite a bit *better* than reality. I wanted a world without pain, remember?"

Victor nodded. He carefully levitated himself out of the apartment and into the open air. Lane was right – he really *could* fly. A surge of excitement shot through him as he looked around. He could *fly!*

Victor soared through the sky and dropped down to the street level, and then soared back up again. He flew high above the streets and stared at the buildings around him. The virtual simulation that Lane had created was astounding. The buildings truly looked real.

Yet it was also apparent that something was off. For one thing the streets were deserted; there was no traffic and there weren't any people anywhere. Yet despite that it was still a fantastic experience. Victor truly felt as if he was there. He could feel the warmth of the sun and smell the crisp autumn air. He could feel the wind whip past him as he soared through the sky. It was astounding.

Victor finally landed in front of the Diano Building. In his day the building was surrounded by a defensive perimeter and all of the windows had been replaced with armor plating. But in this era the building had direct access to the street. The skyscraper's windows were made of glass and they glistened in the morning sun. It was a beautiful sight.

"Nice, isn't it?" Lane said. "Oh – and wait until you see this."

Lane made a gesture in the air and a console appeared in front of him. He tapped a few keys. Instantly the daytime turned to night and the sun vanished. But in place of the sun was something even more amazing: stars.

Victor looked up at the sky in astonishment. He had seen pictures of the stars, of course, but since he'd never left the Tau Ceti system he had never seen a starry sky. Part of his mind realized that this was just a simulation, but it seemed real. It truly

felt like it was nightfall on Xanthe and the stars had come out. It was beautiful. He stared up at them in wonder and watched the points of light twinkle in the darkness.

“But Lane,” Victor said at last, “didn't 19th century Xanthe have a Wall, just as we do? Governor Nicholas couldn't see the stars either.”

“You're absolutely right. But this isn't reality – it's something better. In this version of Xanthe there is no Wall. There is also no crime, or poverty, or politicians, or government. Oh – and there's no pain either. This world is whatever its inhabitants want it to be.”

Victor paused for a moment. “But if you fill this world with people, won't people just recreate the same problems we had before?”

“Only if you put them all in the *same* world. Then, yes, it would be awful. The truth is you can only have everything you want if you're the only person in existence. But I'm planning on putting each person in their own simulation. That way they can't affect each other! Each person can then customize their world to their own liking.”

“Won't it be lonely?”

Lane shook his head. “Absolutely not. I admit I'm still working on the subroutines that simulate people, but I'll get that working in time. We already have all kinds of bots, you know, so it's really just a matter of integrating the bot routines into my simulation software. Once that's working I'll have these streets filled with simulated people who will go about simulated lives. The city will have traffic and will seem more than just a hollow shell. Of course, once I connect this to the corporate Archives we'll have even more material to work with. We could create a simulation of Earth, or Mars, or any of the colonies, or any world ever visited by a Nehemiah probe. There's all sorts of things we could do! We will be able to bring these worlds to life – we'll have virtual citizens and a virtual civilization. And best of all, we

are in charge.”

“That seems pretty ambitious.”

“But very achievable,” Lane argued.

“I don't doubt it. You know, it just occurred to me that I'm hungry. Can I eat here?”

“Not really. I mean, in theory you could, but it wouldn't actually do you any good. You'd still be hungry in the real world and those feelings of hunger would feed into this one. That's a problem I still need to solve.”

“Is it worth the trouble?” Victor asked. “I mean, who cares? Can't people just eat before they enter your virtual world?”

“Sure, but I want so much more than that. I don't want to bring people here for short visits; I want to find a way to enable people to *live* here. Forever. I want to replace the real world with this one.”

“Are you serious? Don't get me wrong – this is nice and all – but there's no way I would want to live here.”

“But don't you see its potential? This world can be anything you want it to be. Anything at all! There are no laws here, Victor, and there's no government either. In this world *you* are the one in charge, not President Rios, and you have absolute control. If you want a castle then you can just order one to appear, and it will be done. Anything that you want – anything that you desire – can be created instantly. This is far better than reality could ever be. It's like having a genie that grants infinite wishes.”

“But it's not real,” Victor insisted. “This is just a fantasy – a dream. Real life may not be that great, but it's better than just dreaming your life away. At least in real life you're actually *doing* something. All we're doing right now is lying on some cots and daydreaming. I admit it's fun but it's utterly meaningless.”

“You're missing the point! In my world people can actually be happy. They can get everything that they want. All of

their wishes can come true. There are no limits – not even physical laws! This is far *better* than reality could ever be. Who cares if it's just a fantasy? It *feels* real, it *smells* real, it *tastes* real, and it *looks* real. You couldn't ask for anything more." Lane waved a hand at the simulation he had created. "Why would you want reality when you can have this instead?"

Victor paused a moment to gather his thoughts. "Yes, Lane, I can see the appeal, I really can. I can see some great uses for this. We've all used virtual reality technology to design equipment and this is vastly better. But replacing reality with a fantasy is a fundamentally bad idea. This *isn't real*. Nothing that happens here is real. You're asking people to give up reality for a fantasy."

"Absolutely. And I think they will. In fact, I think most people have done that already."

"But that's the wrong choice! Lane, stop and think about it. The Day of Judgment is coming, and it cannot be avoided. Every one of us will have to stand before God and give an account of our lives – of the things that we did *back there in reality*. There are a whole lot of things that God has commanded us to do. The Lord told us to love one another, to share the gospel, to disciple the nations, to pursue holiness, and so forth. He did *not* tell us to spend our entire lives living out our fantasies.

"The whole problem with people right now is that instead of actually doing something with their lives, they sit at home and spend their every waking moment fulfilling their base desires – or as many of them as they can fulfill on their daily plasma budget. What you are proposing is to give them a way to fulfill *all* of their desires *all* of the time. That is exactly the *opposite* of what mankind needs! The lusts of the flesh, the lusts of the eye, the pride of life – those things do not come from the Father, but from the world. If people start living here then they will do nothing but wickedness and sin. People would quickly become

more depraved than you can imagine. It would be mankind's death sentence."

"Well, that depends on what you're trying to achieve," Lane replied. "If *everyone* starts living in my virtual world then it will put an end to poverty, crime, and war. There will be no more riots, no more vandalism, and no more strife. The problems of this world would all be solved. Victor, for our entire lives we have wanted a way to fix civilization. *This is that fix.*"

"Civilization is not going to be fixed – it's going to be made much worse! The problem has always been *people*, Lane. It has always been the corruption that is within us. Sin is the problem. What you are doing is pouring gasoline on the fire. You are offering people a way to completely check out of life altogether and spend their entire lives doing nothing but the things they want to do. This has to be the king of all temptations – a consequence-free existence. This isn't going to fix reality."

"I don't want to fix reality. I want to replace it with something better – with *my* reality. A world where *I* am in charge and where things happen the way *I* want them to happen. A world that plays by my rules. A world with no restraints or limits."

"That's not the kind of world that I want," Victor said firmly.

"But it's what *I* want. And I am convinced it's what mankind wants. You don't have to join me, Victor; I'm not going to force anyone to enter paradise. It's your choice. But let me be clear: the rest of mankind does not share your odd scruples. When I perfect this technology and open it to the public it will change everything. Each person will create their own reality and will live in it forever. The future will be radically different."

"It will also be empty. If you succeed then people will spend their whole lives here and then die. You can't have real children in a virtual reality, Lane. There won't be another generation. A hundred years from now everyone will be dead."

Lane shook his head. "If I can perfect my technology then

I believe it will radically lengthen people's lives. In fact, I think people could live in my world for hundreds or even thousands of years. There are some problems to overcome, but I think the issues are solvable. Sure, this will be the last generation – but think how long it will last! I suppose we could always clone more people if we had to, but why bother? Eventually the real world will become a forgotten dream. It won't matter anymore.”

“The real world will *always* matter. Reality is going to win in the end. Someone is going to have to maintain all this equipment, you know.”

Lane smiled. “That *used* to be a problem, but you solved it by creating your self-replicating scavenger bots. I don't know if you're aware of this but the Corporation has started redesigning all of their bots to use your new approach. The maintenance bots of the future will be able to replicate themselves forever! If that technology works out – and on Alpha Mensae you proved the concept pretty thoroughly – then those replicator bots can maintain my simulations for an eternity while I remain in my own blissful world. I'm just surprised you don't see how great this is going to be.”

Victor shook his head. “You want people to spend their entire life living in a daydream. I think this technology has some great uses, but replacing reality isn't one of them. You can't put off reality forever. There will be consequences.”

“Nonsense. This is going to be the most amazing thing mankind has ever seen. I'm going to offer everyone paradise – and they will come in droves. Just wait and see.”

CHAPTER 7: COUNSEL

Log date: May 3, 2417

Location: Xanthe

Log note: Catch the foxes when they are little

AS CARROLL LANE CONTINUED HIS WORK on the virtual world, he repeatedly tried to get Victor to join him. Victor, however, refused. Although he admired the advanced technology that Lane had developed, he was gravely concerned about the way that it would be used. Each time Lane called to ask for help he told Lane that his attempt to make everyone's actions consequence-free would only encourage mankind to become even more depraved. Victor was convinced that the virtual worlds would lead to the destruction of mankind and so he refused to help Lane finish the software. Lane did not take Victor's refusal very well, and soon Victor found himself with one less friend.

Meanwhile, Victor had his own work to do. The data streams from the probes kept growing larger and more unmanageable. SOLOMON was quickly overwhelmed with the telemetry and struggled to keep up. It was clear that someone would have to do something, but since that wasn't his department he tried not to think about it. Fortunately the probes themselves were working fine, which was immensely encouraging. Victor hoped that this meant the probes didn't have any problems. His greatest fear was that something was terribly wrong and the real issues wouldn't appear until it was too late to fix them. He kept having a nagging feeling that he was missing something important.

After the successful replication of the first Nehemiah IV

probe, things continued to go smoothly. The other two probes replicated and passed their verification tests. Before there had been only three probes; now there were six. As expected, all six probes began the short journey to their next target star in order to start the cycle again.

Month after month passed by, and Victor's life settled into a comfortable routine. He went to work, monitored the streams for problems, found nothing of interest, and then went home. Day after day nothing changed. Then one day he received an unexpected visitor.

Victor had been home for about an hour that evening when he heard a knock on the door. When he opened the door he saw a short, fat man who wore a green hat and suit. "Good evening, sir! My name is Gerald Price. I understand that you requested my services. Is this a good time?"

"I did what?" Victor asked, surprised. "I don't remember asking anyone for anything. Have we met before?"

"I don't believe we've had the pleasure. My name is Price. I'm the only licensed counselor in the entire Tau Ceti system. You requested my counseling services after the events of February 6, 2415. Your appointment has been duly processed and your turn has come. So here I am! May I come in?"

Confused, Victor stepped aside and allowed the man to enter his home. "I do remember making an appointment, but that was more than two years ago. I didn't really expect you to show up. In fact, don't people normally come to you? I didn't know you made house calls."

"It makes no difference to me," Price said cheerfully. "I'm here to help – and I believe I can help you. Based on what you told my secretary bot, it sounds like you're unhappy. Is that right?"

Victor sat down in his recliner. Price set across from him on the couch. "Unhappy is a rather vague word. I certainly could use some help. For instance, I'm having trouble sleeping at night;

I keep having nightmares. I'm also very jumpy – unexpected noises fill me with fear. I'm uneasy around other people and have become withdrawn and isolated. I'm kind of a mess.”

“A mess? Nonsense! You're just overcomplicating things. Most people do. The bottom line is that you're unhappy. That's really not uncommon – most people are unhappy, you know. Fortunately, thanks to the wonders of modern science, there is a simple and easy solution. I can fix everything and give you a whole new life.”

Price took a piece of paper out of his pocket and handed it to Victor. “There you go. That is exactly what you need.”

Victor looked at it, puzzled. “I don't understand. How is this supposed to help me?”

“It's a prescription. Just take two tablets a day – one in the morning and one at night. They are guaranteed to make you happy. All your problems will be solved.”

“But that doesn't make sense! The reason I'm unhappy is because I have personal issues that I haven't been able to resolve. In order to become a healthy person I need to fix them. Once I do that the unhappiness will go away and I'll become balanced again. I need to fix the actual problem – the *cause* of the unhappiness.”

“No you don't,” Price replied. “You're making this too complicated. Look. Everyone is unhappy for different reasons. For you it's one thing; for your neighbor it's something else. You might be unhappy because you were attacked, while someone else might be unhappy because they weren't allowed to raise chickens. The point is, *you're unhappy* and you don't like it. You want to become happy again. These pills were designed to do exactly that! They are 100% guaranteed. If you take them you *will* be happy. It's just that simple. Nothing will ever upset you again. No matter what happens in your life you will always be completely happy. That is, as long as you stay on your medicine.”

“Is that really your proposed solution?” Victor asked,

astonished. “That's not what I expected at all! I thought you would talk to me and give me good life advice or personal exercises to do or something. If I had wanted a drug to make me feel good I would have spent my evenings getting drunk, the way the outsiders do.”

“That gives you hangovers. Believe me, you don't want those. Think of this pill as giving you all the happiness but none of the consequences. It's a miracle in pill form!”

Victor paused as he struggled to put his thoughts into words. “I still don't think you understand. You are treating the *symptom* here. You're not treating the actual underlying problem. The real issues are still present; you're just masking them. Since the real issues are not being addressed they will continue to grow worse. When a person has skin cancer they need treatment – not some makeup to hide what's going on. On top of that, it's an extremely bad idea to give someone a pill that makes sure they *never* feel bad. There are times when people are *supposed* to feel bad, Price. Like when someone close to them dies, or when they hurt someone. Pain has a role in our lives. It is a signal that something is wrong and needs to be addressed. Do you realize that if this pill actually works, it means that I can go out and do horrible things and I'll never feel the slightest twinge of guilt?”

“Exactly! Like I said, it's a miracle in pill form. I take them every day, and boy has it done wonders in my life! No more guilt, no more pain, no more sadness – just happiness every moment. It's a wonderful life.”

“It's appalling! You've found a way to turn off all of a person's negative emotions. That's a *bad* thing. Our emotions have a purpose. I don't want to take something that's going to turn off my conscience. I don't want to hide my problems. I want to *fix them*.”

“That's not going to happen,” Price replied. “Look. Let's think about this logically for a minute. You're a programmer,

right? You like logic. So try this on for size. One option would be for you to work out your problems on your own. Can you do that? Obviously not, or you would have done that already and we wouldn't be having this conversation. Another option would be to find a friend who cares about you and talk to them. Did that work out for you? Clearly not. That means that you can't help yourself and you friends can't help you either. Guess what, Victor: that's it! That's the end of your choices. No one else cares about you, or loves you, or is willing to help you. You have only one option left and that's me. What I'm offering you is guaranteed to work. Guaranteed!"

"What you're offering is madness," Victor said firmly.

"What do you have against modern medicine? Are you one of those crazy people who thinks that all medical treatment is sinful? Is that what's going on? Are you part of some weird cult?"

"Of course not! I'm not opposed to medicine. When the SSF broke my skull open I was extremely grateful for the medical treatment that I received. It saved my life. But the treatment I received treated my *actual problem* – which was my shattered skull. You are *not* treating my problem. What you are doing is giving me a way to hide my problem. In fact, your pill is even worse than that because it robs me of all empathy. Right now the pain of other people bothers me. Their pain is my pain and it motivates me to help them. But if I'm happy all the time then I won't care."

"Exactly! Nothing will ever bother you again. It will be paradise, Victor, pure paradise. Other people's pain? Not your problem. Don't you want paradise?"

"This isn't paradise! This is just an illusion. You want me to feel something that does not match up with what's real. You want to give me phony feelings that only serve to hide who I really am. I don't want that, Price. I don't want any part of it. That's not the kind of help I'm looking for."

Price stood up. “Well, you can't say that I didn't try to help you. I offered you a solution and you refused to take it. I'll just put on your permanent record that you're a crazy person who is off his medication.”

“You do that,” Victor said. He stood up as well. “But tell me something, you miserable counselor. If your pill is everything you say it is then why don't you prescribe it to all the outsiders? After all, aren't they unhappy?”

“I'm sure they are. But, seriously, who cares about them? I'm being paid to treat the people *inside* this building and so I'll do that. I'm not being paid to care about all those other losers.”

“Most people don't have to be *paid* to care, you know.”

“I have a pill that can fix that!” Price said cheerfully.

Victor sighed. “Please leave and never, ever come back.”

* * * * *

In the following months all six probes arrived at their new star systems and began the terraformation process. The result was a tidal wave of telemetry that crashed SOLOMON and brought the entire datacenter offline – and since the probes depended on that system in order to make decisions, they went offline as well. Even after SOLOMON's capacity was doubled it quickly filled up again. Something had to be done, and it was no longer possible to put off the day of reckoning. So on September 2, 2417 an emergency meeting was held in Dr. Mazatl's office. Martin Yates, the board member over SOLOMON, was present. Since Victor had more experience managing the telemetry data than anyone else, he was invited as well.

The meeting did not go well. The more Victor tried to explain the problem, the more Martin blamed the probes. He refused to believe that anything was wrong with SOLOMON.

“This is just completely unreasonable,” Martin insisted. “Isn't there anything that can be done to reduce the amount of

data we're receiving? The input we're getting exceeds the plan by *two orders of magnitude!* SOLOMON wasn't designed to handle this. You have got to stop giving us so much data!"

Victor shifted uncomfortably in his chair. "Yes, technically, we can turn the extra data off. We do have a system in place for that. The problem is that if we do that we won't have nearly as much information about what the probes are doing, which will make it more difficult to tell the probes what to do. At that point we would essentially be flying blind."

Dr. Mazatl sighed. "Victor is right. If we turn down the data feeds then we might as well allow the probes to operate autonomously – which carries with it enormous risk. Given that we simply don't know how well the child probes will work, it is extremely unwise to take that risk at this point. We need more time."

"Time is still not in our favor," Martin pointed out. "President Rios is very unhappy about the cuts we've been making to people's plasma allocations. They're now down 20%."

"Which is exactly what we told him would happen if he didn't start paying his bills. Nothing about our actions should come as a surprise."

"Rios doesn't see it that way. He keeps demanding that you appear before Congress to explain yourself."

Dr. Mazatl sighed. "I would be more than happy to do that – remotely, that is. I've told him on four different occasions that I would be glad to appear via holoscreen to answer any questions he might have. But I refuse to go there in person. Why, the moment I set foot outside this building I would be shot on sight! Rios can't be trusted – everyone knows that. Appearing before his counsel, in person, would be suicide."

Martin nodded. "I quite agree. The fact that they've refused to cooperate and have only doubled down on their evil is not a promising sign. I keep expecting Rios to launch a serious attack on this building. Things on the outside have become so

dire that the only way Rios can stay in office is by blaming all of his problems on us. For the past two years he's done a lot of yelling but hasn't actually followed through on his threats. That can't last forever.”

“It is entirely possible that there is simply nothing he can do. We are extremely well defended, and none of our employees can be reached. If Rios tried to attack us he would surely fail, and that would be a devastating blow to his credibility. Rios will not take any action unless he is certain it will accomplish what he wants. Since we have very strong defenses he doesn't have any options – aside from yelling, that is. The truth is we're still giving people plenty of free plasma. No one is actually suffering or going hungry. They are simply not getting quite as much free stuff as they used to.”

Victor spoke up. “I agree that the outside world is an important problem, but I think we've gotten off-topic. Can we get back to the subject of SOLOMON?”

“Of course,” Dr. Mazatl replied. “You're quite right. Victor has brought up a good point: the data that is coming back simply cannot be pared down. It's all important, unfortunately, and it will only grow in importance as the children multiply. The fact that we have underestimated the storage capacity we need is truly terrible; that was a definite failure on our part. Nevertheless I am sure we will find a way to resolve this. It's simply a matter of building additional storage.”

Martin shook his head. “I understand that the data is important. But the probes are replicating very quickly – far more quickly than I can possibly add volume to SOLOMON. Over the next year or so I can increase our existing capacity, but whatever storage I can add is going to be far outstripped by the increase in the number of Nehemiah IV probes. The only way this could ever work is if SOLOMON could automatically enlarge itself to accommodate the growth of the probes.”

“That was my thought as well. But I think we must take it

one step further than that. We need more than just a system that can increase in size; we also need one that can automatically manage the operation of the probes themselves. In short, we need to automate the work of this Corporation and take ourselves out of the equation.”

“But that's ridiculous! You're asking for the impossible. That technology simply doesn't exist.”

Victor spoke up. “You're probably right, but if we *could* do that it would change everything. It's simply not humanly possible for us to manually manage a hundred billion probes. The only chance this project has of succeeding is if we automate it entirely. I'm not saying it's going to be easy; what I'm saying is that it's our only hope of success.”

“I agree,” Dr. Mazatl commented. “I think we should start immediate work on a replacement for SOLOMON. It's going to take a great deal of effort and break a lot of new ground, but I think the future of our enterprise depends upon it.”

Martin sighed. “I see your point. But even if it *is* possible it would take years to build and implement such a system. This data problem cannot wait that long. What are you going to do in the meantime?”

“The only thing we can do, unfortunately. We'll have to cut back on the number of child probes we create. I hate doing it but we have no choice. We have to make do with what we have.”

Martin stood up. “Well, at least we have a plan. I'll put a team together so we can start brainstorming ideas about how this new system is going to work. We can probably come up with a datacenter that replicates itself; that sounds pretty doable to me. We've already made great strides in using Victor's swarm technology to replicate our maintenance bots, and in some ways this is just more of the same. But I would really like to know how you're going to automate the management of the probes themselves. That is going to be quite a task.”

“I realize that. But it has to be done. We will find a way –

of that I am certain.”

After Martin left the office, Victor stood up. He started to leave as well, but then he hesitated. “Sir?”

“Is there something you need?” Dr. Mazatl asked.

“Actually, there is. Do you remember the anomalous signal the probes have been receiving?”

“I certainly do. It was quite strange. Are we still receiving it?”

“Actually, yes. So I had an idea. We've been receiving that same signal for a couple years now, but we've never attempted to send a signal back. So, um, I put together a reply. I took some data and encoded it so it fit the same pattern as the message we've been receiving. I'd like permission to send it as a reply and see what happens.”

Dr. Mazatl thought for a moment. “I suppose that makes sense. I don't see how that could possibly do any harm. How do you expect the sender to respond?”

“I don't know. I have no idea what will happen – which is why I want to run this test. Maybe the signal will change and we'll get more information that we can use to track down the source. Or maybe nothing will happen. But I think it's worth a try.”

“It certainly fits with the spirit of exploration! A worthy idea. Are you prepared to send the signal now?”

Victor pulled a small electronic device out of his pocket. He tapped a few buttons on it, and then entered a code. “I am. The messages is queued up and ready to send. All it needs is your approval.”

Dr. Mazatl pulled up the message on his console. He read the destination coordinates with great interest. “So you're really going to send this message to the edge of the universe?”

“Absolutely. Where else would I send it? That's where the probes say the message is coming from, so it's as good a place as

any. It may just be a spoofed address, but I don't have any other destination. I might as well send it there.”

“Very well,” Dr. Mazatl said. He pressed a button on the console to grant his approval. A moment later the message was uploaded to the first Nehemiah IV probe and sent.

“So what happens now?” Dr. Mazatl asked.

“We wait, I suppose. I'll let you know if anything happens.”

Dr. Mazatl nodded. “Oh – that reminds me! I've been meaning to talk to you. Carroll Lane has been putting together a team to work on his virtual worlds. It's a pretty cutting-edge project that has already managed to create some exciting new innovations. Lane has asked me to see if you would be willing to work with him on it. He apparently thinks very highly of your skills.”

Victor sighed. “I know. He's asked me a few times and I've turned him down. Are you aware of what he is trying to accomplish?”

“Certainly. I've seen his work. Quite frankly, it's very impressive! He has brought the science of virtualization to new heights. I can see a lot of exciting applications to that technology. The nanites alone are a brilliant invention; I've already tasked a team with building those out for general use. One day we might use nanites to interface with all our machinery – and with the world around us, for that matter.”

“Lane doesn't care about the world around us. In fact, he hates this world. He doesn't think it can be saved. What he wants to do is use his virtual technology to *replace* the real world. He wants to perfect his tech to the point where people can live in it *permanently*.”

“Now that you mention it, I think I've heard him say that. That may be his goal, Victor, but I think it's rather foolish. All he's building is a simulation, after all. It's not real.”

“But it *feels* real and it *looks* real. When you're there you

can't tell the difference – except for the fact that in the virtual world you can make all your dreams come true. You have absolute power to such an extent that even physical laws don't apply. You can do anything you want and have anything you want, and since you're the only real person there you don't have to worry about your neighbors causing problems. People can spend their entire existence living out any fantasy that they have.”

“Yet for all that it is still not real. I don't think people will be willing to leave their actual lives in order to live in a daydream. Imaginary things are just that – imaginary. That would be a most unsatisfying life. Even so, it seems rather harmless to me.”

“I think it's *dangerous*,” Victor insisted. “If he is allowed to finish this project it will radically change society – for the worse. Millions of people will move into his worlds and spend the rest of their lives there, doing every depraved thing they can think of in a world that has no consequences. Not only will it have an unbelievable corrupting influence, but it will ultimately kill them. They'll spend the rest of their lives lying on a cot until their body finally gives out and dies. It will be the end of civilization.”

“Or it might save it,” Dr. Mazatl said thoughtfully. “Lane's technology may put an end to the madness that is around us. It will divide those who care only for fantasy from those who have a passion for reality. You might say it will separate the wheat from the tares. If Lane's dream comes to pass then the Corporation would no longer be held hostage by madmen, for all the madmen would be gone – dead by their own hand. We would be free to inherit the worlds.”

“Lane cannot be allowed to do this! If he succeeds then his invention will kill everyone, just as surely as if he poisoned them in their sleep. None of our probes or our projects are going to mean anything if Lane kills all of mankind. We need to stop this and save humanity from themselves. You know exactly what

people are going to do if this ever becomes available.”

Dr. Mazatl shrugged. “Lane isn't breaking any laws. In fact, he's made many remarkable discoveries. It's true that his system has some potentially harmful uses, but there are also many good things that could be done with it. Remember, ZPE technology also had harmful side-effects, but at the same time it has led to probe technology. It can be used for good or bad. I'm not going to stop the advance of science simply because someone might use the technology in an inappropriate manner. That's not reasonable.”

“But you're actually *funding* it! You're enabling this. Lane cannot finish this alone; he needs help – and you're providing it. The Corporation is supporting this. If this goes as badly as I think it will, we will be partially responsible for the destruction of mankind.”

Dr. Mazatl sighed. “I know you feel very strongly about this and I understand your concerns. But you need to understand that people have always been afraid of new technology. Yes, there are potential problems, but there are potential upsides as well. I'm sure everything will work out fine.”

“I'm not afraid of technology. It's *people* that concern me. The race of men, as a whole, is not responsible and cannot be trusted. Giving explosives to children would be an act of gross negligence because of the certainty that they would misuse them and hurt themselves. Allowing this technology to reach the outsiders is every bit as irresponsible. There are certain people who really *do* need to be protected from themselves. This is one of those cases.”

“I'm afraid we'll just have to disagree. But I can see that you're not willing to help Lane with his project, so I'll let him know that you have other plans. Since you won't work with him, would you be willing to contribute to the replacement for SOLOMON? You've had a great deal of experience in managing the data streams and analyzing them for the problems. Your

input would be greatly valued.”

“Absolutely. Now that is something I have no objections to.”

“Great! I'll be sure to send you a meeting invite.”

* * * * *

That evening there was a knock on Carroll Lane's door. When Lane opened it he saw a stranger standing outside. “Can I help you?” Lane asked.

The man nodded and reached out his hand. “My name is Adrian Garza. Dr. Mazatl sent me. He said you were working on a virtual reality project and needed some help.”

Lane shook his hand. “Absolutely! It's great to meet you. Won't you come inside?”

Lane opened the door and Adrian stepped into his apartment. Adrian glanced around the room and saw that it was absolutely packed with equipment. “Is this where you've been working?”

Lane nodded. “Yup. This is it! This is where all the magic happens.”

Adrian shook his head. “This won't do at all! Your project is too important for that. I'm going to find you some real laboratory space – something with a lot of room.”

“You can do that?” Lane asked, surprised. “I thought you were here to help with the programming.”

Adrian shook his head. “I'm actually a resource manager, not a software developer. I'm here to give you whatever you need in order to make this project a success. That involves a lot more than just a plasma budget. I'm here to see that you get adequate floor space, access to research material, and suitable human resources. Dr. Mazatl has made me personally responsible for making your project succeed.”

“That's fantastic! I've been trying to find additional help

for months but haven't had much of a response. Victor Stryker keeps turning me down.”

“Well, we'll get things in order,” Adrian promised.

“What do you know about this project? I don't think we've ever met.”

“Dr. Mazatl briefed me on it. He said you are working on advanced visualization technology that looks very promising.”

“It's so much more than that. Here, let me show you what I've got. I think a demo might help you see my system's true potential.”

* * * * *

With Adrian's assistance the technology advanced rapidly. Adrian was amazed at the quality of the virtual worlds that Carroll Lane was able to create, and he agreed with his grand vision for the technology. This was more than just a visualization technology; this had the potential to replace the real world itself.

Under Adrian's guidance fifty people were assigned to the project and brought up to speed. The teams were divided into groups: the medical team worked on issues surrounding long-term use of the system, the artificial intelligence team worked on making the simulated people more realistic, and the virtualization team expanded the virtual world's capabilities.

After six months the team had made so much progress that Adrian and Lane began work on the next phase of the project – implementation. It was time to bring the project out of the lab and into the real world. Doing anything outside of the Building carried a great deal of risk, but there was simply no other way to bring the technology to the public. It had to be where the people could access it, and since the public was not allowed in the Building that meant they had to go to them.

Adrian and Lane worked together to design a system they called the VAULT. The Vault was a virtual world repository that

was located deep underground in a secure environment. It had enough capacity to handle fifty thousand people simultaneously, and had its own server farm and independent power supply. The Vault's maintenance was designed to be simple, easy, and automatic. The facility itself would be very well guarded. Lane was certain that once everyone was plugged into a Vault security would not be an issue – but that day was still many years away.

The only drawback to the Vault was that the medical team still had a lot of unsolved problems. While the simulation itself was nearly perfect, it wasn't possible to spend more than a day in the virtual world. Long-term usage – which is what Lane really craved – simply wasn't possible. But they did have a start, and Lane wanted to use what they had to get the populace hooked on the technology.

On December 3, 2418, Adrian Garza and Carroll Lane went to the first Vault to inspect it. When they arrived Lane saw that there were still teams of bots working on constructing it. “Are you sure we'll be able to open on time?”

“Positive,” Adrian replied. “On January 1, 2419 we will open this Vault for business. I've already began the advertising campaign. We are going to be booked solid on the very first day, with a long waiting list. In fact, I've already started thinking about expansion! People are going to *love* this.”

“I certainly hope so. We've put so much work into it! I would never have been able to get this far without you.”

“I was simply the assistant. This was your dream and was built on your ideas. No one else was working on this before you came along. I just helped you get it across the finish line.”

As the two men stood by the entrance to the Vault, something caught Lane's eye. “What's that?”

“Oh, just a plaque. I wanted the Vault to have something to mark the occasion for future historians. We are making history, you know. This is going to change everything.”

Lane studied the plaque. It read:

VAULT 37
HOME OF THE SYNTHETIC WORLDS
ESTABLISHED 2419
RESIDENT ELDER: CARROLL LYONS

Lane frowned. "I don't get it. Why did you spell my name wrong?"

"What are you talking about? I looked up your file in the employee database, just to make sure I got it right. Officially your last name is Lyons."

"My last name has *never* been Lyons! That's insane. Do you mean to tell me it's been wrong my entire life, and no one noticed until now?"

"Apparently. I just assumed that Lane was your middle name – you know, Carroll Lane Lyons. It never occurred to me that the system might be wrong."

"The system is always wrong," Lane said, sighing. "I can't believe it."

"I'm so sorry about that. Do you want me to have the plaque replaced?"

Lane shook his head. "No, it doesn't matter. In fact, let's leave it like that just to prove that it doesn't matter. After all, this is just the physical world. Once everyone is in our virtual worlds no one will ever see that plaque again. It's not going to make any difference."

"Very well. Incidentally, I've been meaning to ask you something. Why are we calling this Vault 37? There's only one of them."

Lane shrugged. "37 has always been my favorite number. It's a prime number, you know."

"Is there some special use for it?"

"Not really. It's just a number. Besides, Vault 37 sounds more interesting than Vault 1. The number one sounds kind of

lonely. Vault 1 would imply that this is the very first vault and we have no idea what we're doing. Vault 37 makes it sound like we've had a lot of prototypes and are experts. It inspires confidence."

"I suppose. At any rate, would you like a tour of the site?"

"Of course! I'm going to be a customer of this vault too, you know. I hope you've got places reserved for the two of us."

"I do indeed. Right this way. Let me take you to your pod."

CHAPTER 8: REVOLUTION

Log date: December 24, 2418

Location: Xanthe

Log note: Darkness can only lead to deeper darkness

“So YOUR QUEST HAS FINALLY come to an end, has it?” Professor Grimes asked.

The esteemed professor was standing in Victor's apartment, holding a single book in his hand. The apartment had changed considerably since his last visit. In the past Victor's apartment had been sparsely furnished, but now it was crammed with bookshelves. Every wall had as many bookshelves as it could hold, and the books were stacked two deep.

“It is *definitely* over,” Victor said firmly. “I've shut down the remaining probes on Alpha Mensae and stopped the search for more volumes. After hundreds of hours of work I've finally gone through the mountains of books that the probes returned. The best ones are now here, in my humble home. The ones that were not worthy are stored in crates in the basement of this building.”

“Except for the evil ones, which I was delighted to burn,” Grimes added. “Some things are not worthy of preservation.”

“You really don't like romance novels, do you?”

“Have you ever tried to read any of them? It would be one thing if they were godly books that portrayed a Christ-like love. If they urged men and women to act in a virtuous manner, to seek to honor God in their relationships, and to do what was right, then that would be one thing. But Victor, that is not what the romance industry is about. In our day it is focused on inflaming the sinful passions of mankind and urging them to give

in to their evil desires. That is precisely what this world does *not* need. There was no redeeming those works, and so they had to be destroyed.”

“I suppose. But I noticed you seem to enjoy setting things on fire.”

“Only things that are worthy of being set on fire. It is our solemn duty to seek out evil and destroy it, wherever we may find it. There is nothing honorable about allowing evil to flourish. I am nothing like the vandals who live outside our building, who seek to destroy everyone and everything; that is senseless.”

“You know, I can't say I've ever set anything on fire. But anyway, are you sure that's the only book you'll take? I assure you I have plenty more to spare.”

Grimes shook his head. “No, no, this is fine. You have already given me dozens of volumes and I have only just begun to read through them. It's a bit greedy of me to ask for still more, but since this book could not be found in the Corporation's archives I could not resist the opportunity to acquire it. Not all books were preserved in digital format, you know.”

Victor glanced at the thick black book that Grimes was holding. “What is that book, anyway?”

“It is *The Lost Doctrines*. It was written more than 200 years ago, back when men still devoted themselves to the study of theology. The author wrote the book in response to the great downgrade that he saw going on around him. He noticed that the churches of his day were abandoning the study of doctrine and instead preached messages that were designed to please people. He was appalled at the way pastors abandoned the truths of the Bible in favor of what the culture wanted to hear, and so he wrote this book to proclaim these 'lost doctrines'. One can only imagine what he would think if he could see us today.”

“He probably wouldn't be pleased. In fact, it sounds like his book failed pretty hard. The visible church certainly didn't correct their course. Why, there are only a couple churches left

on this entire planet, and none of them will teach anything that might upset anyone. I don't think I've ever heard a single sermon on the evils of sin – of *any* sin. All I hear is that I'm a wonderful person and I should follow my heart and achieve my dreams. There's no doctrine, no truth, and no mention of the cross. It's sickening.”

“It is indeed – but remember, young man, standing up against evil is *never* a waste of time. God often used His prophets to rebuke the evils of their day. It's true that people rarely listened to them, but that did not mean it was foolish of them to obey the Lord and proclaim what was right. The real fools were the wicked people who would not heed the Lord and who chose to continue in their wickedness. If a prophet offers his world salvation and hope and that world takes his offer and sets it on fire, the fault does not lie with the prophet.”

“I suppose. It just all seems so futile, you know? Everything that we do seems to be such a waste of time.”

“I see,” Grimes said thoughtfully. “It sounds like Dr. Mazatl's new AI project is getting to you. Things must not be going as well as you would like.”

“They're not going *at all*,” Victor complained. “I know it's only been a few months, but it's been a pretty epic disaster so far. Mazatl wants to build a system that can figure out how to fix the probes when they break. Given that their children are made out of artificial atoms, I'm sure they will break all the time. Now, we know what the probes *should* be doing, and we know how to spot problems. But fixing the problems is an entirely different matter. We can't tell the AI *how* to fix the problems because we're talking about problems we haven't even found yet! We can't even have the AI fix the problem by making sure the probe still matches its original design because the design itself could be what is wrong. Plus, since the entire probe is subject to decay there is nearly an infinite amount of things that can go wrong. Yes, we have the original pattern, but we can't have the children

constantly run atomic-level scans on themselves – it takes way too long, and the children can't be doing anything else while the scan is running. When a problem arises we can't shut the probe down. The AI needs to be able to find the problems and repair them without disturbing the ongoing terraformation operation; otherwise the terraformation will fail. So far the only approach anyone has suggested is have the AI create a simulation of the probe, recreate the problem, and then randomly try things until the problem goes away. Do you know how long it takes to find a solution when you do things that way? *All of eternity!* These probes are the most complicated machines ever built. Trying to fix them by making random changes to their design is complete madness.”

“Of course it's madness! It's equally mad to assume that random chance is how mankind came to exist in the first place. The Lord created us by His great power and might; we did *not* evolve. As you are discovering, mutations are incredibly likely to cause harm and have no real chance of providing any benefit. The few times when mutations do benefit an organism, they do so by causing a loss of information. To a cave fish, losing its eyesight may help it survive because its eyes are a liability in the dark – but you cannot evolve from a lower being to a higher one by losing information. If you take any complex system and apply a process that is guaranteed to cause great harm and which has no real chance of doing any good, then that process is going to destroy your system. Your genetic algorithms are not going to work, Victor.”

“But they do work in some cases,” Victor insisted. “After all, I used them to design my book probes.”

“That's quite true, but that was a very different situation. In that case you used a computer to develop a billion different possible configurations for your microprobe. You then wrote an algorithm to test all of them and pick the one that worked the best. You set up the design parameters, you set up the fitness

test, and you used your intelligence and skill to guide the experiment to the conclusion that you preselected. There was nothing random about what you were doing – and the only reason it worked was because of the incredible simplicity of your design.

“You have to realize, Victor, the Nehemiah IV probe is more complicated than your microprobes by at least ten orders of magnitude. Randomly changing its design will only work if the problem can be fixed by, say, slightly tweaking its parts. But if the problem requires an entirely new approach then it's hopeless. Do you know how many quadrillions of possible ways one could design a circuit board or a computer system? Do you know all the different places it could be installed, and what impact that might have on the overall design? Not only does it have to work and not break anything else, but it also has to *fix the actual problem*. No, Victor, random chance is not going to help you, and there aren't enough trillions of years for you to iterate through every possibility. You need true intelligence.”

“But I thought we already had true intelligence! I mean, we have bots everywhere, don't we? AI has existed since the days of the Spanish Empire – why, there was an AI system on board the *Sparrow* back in the 19th century. Can't AI just figure this out?”

Grimes laughed. “Goodness, Victor, I had no idea that you didn't know! I thought this was common knowledge among all software developers. Have you asked Dr. Mazatl that question?”

“He's been busy. Besides, all the smart people have been trying to get this mutation approach to work, and I'm sure they have a reason for it. But I'm kind of baffled. Using AI seems so much easier.”

“I suppose that's understandable. They don't really teach history anymore in schools, which is quite a tragedy. How can you understand the present if you don't know the past? The truth is that artificial intelligence does not exist. The AIs that we

have today are just tricks. There's nothing intelligent about them.”

“But bots run our entire civilization! They make all kinds of intelligent decisions every day.”

“Well, yes and no. You see, back in the 6th century the Roman Empire realized they had a labor problem. Their economy was built on slavery, but the institution of slavery wasn't providing them with the manpower they needed. They saw that the Mayan Republic – which did *not* use slavery – was outpacing them economically because their workers were more productive. Since slaves were expensive to maintain, and since it took years to breed and acquire more slaves, the Romans decided to take another approach. They thought that if they could create an intelligent machine that could do the same job as slaves, they could manufacture them by the billions and become the dominant world power.

“Of course, the Romans had no idea how to build an AI. So they did what they were famous for doing: they solved the problem by brute force. They spent two hundred years training a neural network how to respond to all the different situations that a slave might encounter. Tens of thousands of people worked on designing situations that would teach the computer how to be a good slave. Essentially, Victor, they told the computer 'In all these cases, you should do this.'”

“Well, that seems reasonable,” Victor replied.

“Perhaps. It certainly worked – for their purposes, at least. Once they had the network trained they miniaturized it and created the world's first intelligent robots. The Mayan Republic immediately panicked and stole the technology for themselves. This led to all sorts of problems that culminated in the nuclear war of 989 that destroyed both sides. But the AI technology lived on. The Spanish Empire acquired the technology from the ruins that were left behind, and we still use it today. Our modern AI systems may run on vastly superior hardware, but

it's pretty much the same code that the Romans wrote nearly two thousand years ago.”

“But doesn't it work? I mean, it seems very successful to me.”

Grimes shook his head. “You have to remember that the Romans built AI to replace their slaves. Slaves were only supposed to obey orders and do simple tasks. They were *not* supposed to make decisions or respond to new situations. If something unexpected came up, slaves were taught to go to their masters and let them decide how to respond. The reason our AIs work so well as maintenance bots is because they are designed to serve and follow instructions. But AI technology *cannot* respond to a new situation. It cannot solve a problem that it has never seen before. What Dr. Mazatl wants to do is use AI to fix problems that have never been encountered in the history of the universe. Roman AI technology simply cannot do that. It can only handle situations that it has been programmed to handle.”

“Oh. So *that's* why they want to use a genetic algorithm. They're hoping that the AI will stumble across the solution by blind chance.”

“Which it most certainly will not. That road is a dead end. What Dr. Mazatl really needs is a true artificial intellect – a machine that has understanding. But I am afraid that is a contradiction in terms. You see, Victor, computers are nothing more than a collection of rules. It is impossible to build a set of rules that understands something. Now, you *can* build a set of rules that, if installed in a machine, makes it appear that the machine is intelligent. You can create the illusion of intelligence, but in the end it is just an illusion. Rules can create a situation that imitates sentience in certain circumstances, but rules cannot *be* sentient. The reason you and I have understanding is because we have a soul. There is a ghost, so to speak, in the biological machine that God created for us. That soul is the missing piece.”

“But we can't put a soul in a computer!” Victor exclaimed.

“Precisely. That is the entire problem. I have made it clear to Dr. Mazatl that if he wants his artificial intellect to work, he is going to have to provide it with a soul. Otherwise it is doomed to failure.”

“But that doesn't make any sense! If what you are saying is true then how could we ever succeed?”

“That is an excellent question,” Grimes replied. “I will leave that as an exercise for you to figure out. At any rate, I have taken up far too much of your time. I will leave you in peace. I wish you a joyous Christmas Eve and a most blessed Christmas Day.”

“Oh,” Victor said, startled. “Christmas is tomorrow, isn't it? I had actually kind of forgotten about it.”

“Forgotten about Christmas? Good heavens! How is that possible?”

“Well, I mean, is it really all that surprising? Our culture doesn't really celebrate it anymore. All they care about is Santa Claus and mass consumerism. Besides, I don't have any friends, and my entire family is dead. What do I have to celebrate?”

“You have *Christmas* to celebrate! Don't you know what the day represents? It is one of the most astounding and fantastic events in all of history: it is the day when God Himself became a man so that He might die in our place, for our sins. Even if you were the most miserable man in all the world, who had lost all of this world's comforts and had only pain and suffering left, Christmas Day would still be enough reason to lift up your head and thank God. The Lord had pity on us, Victor! Do you know how marvelous that is? He saw us in our wretched and sinful condition, and in order to save us He became one of us – fully God and yet fully man as well. He did this so that He might die for us and pay the penalty for our sins. His death gave us the incredible gift of everlasting life and joy. Christmas Day changed your life, Victor. You have every reason to celebrate and thank

God for what He did. Don't let the pagan festivities of the world distract you from the wonder of Christ's gift. He left Heaven itself to be born a man. That story will be told for the rest of time."

"Well, I guess that's true. But I'm still surprised you celebrate Christmas. I mean, Jesus wasn't born on the 25th, right? That is all based on paganism."

Grimes sighed. "The celebration of Christmas on December 25th is most certainly *not* based on the ancient pagan festival of Saturnalia. The date of the 25th was chosen in the 2nd century. If you read the writings of the saints who lived in that century, you will discover that Saturnalia played no role in their decision making. It turns out they had an entirely different reason. Tertullian of Carthage believed that in the year Christ died, Passover fell on March 25th. Because he thought that Christ was conceived on the same day of the year that He died, he therefore concluded that the Lord must have been born nine months later – on December 25th. Augustine mentions this line of reasoning in his work *On The Trinity*.

"Now, Victor, I do agree with you on one point. Tertullian was greatly mistaken. There is no evidence that Christ was conceived on the 25th of March, or that He was born exactly nine months later. I think the Scriptures point in a very different direction. The shepherds, remember, were keeping watch over their flocks by night. I believe they were doing this because the sheep were giving birth, which would place the time in the spring. Given that Christ was the Lamb of God and died on the very same day that the sacrificial lambs were being killed for Passover, I think it is quite likely that He was born at the same time the sacrificial lambs were being born.

"Regardless, the truth is that every day is a good day to celebrate the many things our Lord has done for us. I have no qualms with setting aside a day to celebrate the Incarnation. I will celebrate that any day of the year – or every day, for that matter. Likewise, every Sunday is a glorious celebration of the

resurrection of Christ. At least, it *can* be, if you choose to make it one. The choice is yours, Victor – to live in darkness, or to celebrate the great things God has done for you.”

* * * * *

Professor Grimes was not the only one who found reason to rejoice. To Carroll Lane's great surprise, the construction bots completed Vault 37 on schedule. When January 1 came and the Vault opened, it filled up to its maximum capacity within an hour. People loved the realistic virtual worlds that Lane's team had created, and they hated leaving them. The technology was still too primitive to allow people to live in them full-time, but that was clearly what everyone wanted to do. Lane found all of this immensely gratifying. There were now tens of thousands of people who agreed with Lane's vision.

In fact, the waiting list became so long that Lane was forced to make people take turns. Once a simulation ended, the person had to go to the end of the line and wait for their next turn. At first this was a matter of days, but it slowly grew to weeks. The new Vault was operated around the clock and it still could not keep up with the demand.

Since the technology was working so well, Lane launched a new construction project to upgrade his Vault. By June of 2419 he had enlarged his operation to the point where it could handle 385,000 people at once. That was a great step forward – but in a city of 10 million it was not nearly enough. People still had to wait weeks between their visits, and waiting was not their strong suit. Lane had to triple the size of his robotic security squad in order to keep people from forcing their way inside.

The city did not like having to wait. People clamored for full-time access to the Vault, and they demanded that the lines be shortened. Lane had hoped that the Vault would make the city happier, but it ended up having the opposite effect. The

citizens of Star City wanted something badly and could not have it – and that made them angrier than they had been in a long time. That presented President Rios with an opportunity.

* * * * *

Lane was in the laboratory in the Diano Building when Adrian brought him the news. “I’m afraid you’re not going to like this, sir. It seems that you have finally gotten the attention of the city government. President Rios wants to see you. In person.”

“Really? Well, I guess I shouldn’t be surprised. Did he say why?”

“The summons he sent to us did not contain very much information – just a date and time. But he has been telling the press that you are deliberately infringing on people’s right to be happy. He said that limiting people’s access to the Vault was cruel and unusual punishment, and he intended on forcing you to give people what they deserved.”

“I see,” Lane replied thoughtfully. “You know, Adrian, maybe it *is* time that we gave people exactly what they deserved. When did Rios want to see us?”

“On June 16th – a little more than a week from now. But there is no ‘us’, sir. He only wanted to see you – not me. And you can’t possibly be considering going! I am certain that he only wants to make himself look good and make you look bad. He is probably going to kill you and steal your Vault for himself.”

“Oh, I have no doubt that he wants my Vault. Rios probably believes that he can win this conversation. But this time he has made a serious mistake. I am not Dr. Mazatl, and I am not the Diano Corporation. I know how to fight back and I’m not afraid to defend myself. I think Rios is giving us a golden opportunity here.”

“An opportunity to get killed, you mean! Don’t you remember what the SSF did to you?”

“Absolutely. In fact, that is precisely why I think we should pay Rios a visit. *Both* of us. *Together*. Adrian, it's time for new leadership. I think a revolution is in the air. If Rios is threatening the future of our Vault program then we need to change his mind.”

“How, exactly, are you going to do that? Rios is an unhinged lunatic! He is not going to listen to reason.”

“True. But there may be another way to deal with this. I think technology just might have the answer.”

* * * * *

At seven o'clock in the evening on June 16th, Adrian and Lane found themselves on the outskirts of Star City, walking down the road toward the President's mansion. Adrian did not like it one bit. The sun had set and the sky was dark. The sidewalk was lit by a handful of battered and rusted lampposts – most of which gave off only a very feeble light. Trash and graffiti was everywhere, and the nearby buildings were little more than piles of ash. The air smelled of smoke and there was darkness and shadows everywhere.

Adrian had only been outside the Building a few times in his life and he felt very exposed. “It's not safe for us to be here,” he insisted.

“It will be fine,” Lane replied. “We have nothing to worry about. Rios is the one who should be concerned.”

“Do you have any idea just how well-protected Rios is? His palace is patrolled by loyal SSF who will not hesitate to kill us. His compound is surrounded by a very well-fortified wall, and there are guards inside and guards outside. We are going right into the heart of his lair and I have not the slightest doubt that he is going to try to kill us. This is insanity. Rios is not going to listen to reason! He never has before.”

“That's why I'm not going to depend on reason.” Lane

removed a small electronic device from his pocket. “Yesterday I used a small copter bot to disperse airborne nanites throughout the President's palace. This controller allows me to give them commands. We've been over this, remember? If Rios tries anything then I've got an entire army at my disposal. We will be fine.”

“Your army is composed of invisible machines. I assure you that Rios will *not* find them intimidating. How many field trials have you done with them, anyway?”

“I've been using them extensively in the Vault – you know that. It's true that I've never tried them in this particular situation before. But I'm sure they will work.”

“I think your optimism is completely unwarranted.”

By now the two men had reached the entrance to Rios' palace. There were four armed guards standing outside. Lane started to identify himself but one of the guards cut him off. “I know who you are. Go on in – the President is expecting you. But behave yourself. We are watching you.”

The massive metal gates slowly creaked open. Lane and Adrian stepped into the compound and began walking down the path to the mansion. Lane was calm and in a good mood. Adrian was not.

The mansion was well-lit and beautifully maintained. Its exterior was covered in white marble, and the lawn and flower beds were immaculate. The exterior of the building was dotted with large windows – but all of them were protected by thick metal bars. The palace was five stories tall and covered more than a hundred thousand square feet.

“That is a very impressive house,” Adrian said in a low voice. “Considering it is more than two hundred years old, it is in excellent condition. It is quite regal.”

“It's also incredibly small, if you think about it. Compared to the Building it's just an ant.”

“True. But the Building is home to thousands of people.

This palace is the home of just one man. Rios has no wife or children. He has that palace entirely to himself.”

Adrian could not help but notice that SSF were everywhere. Lane saw two teams of eight men patrolling the grounds, and another team guarding the front door. When the two men reached the entrance they were met by a security detail of four men. All of them wore body armor and carried fully-automatic machine guns.

The lead guard stepped directly in front of Lane and eyed him suspiciously. “Why did you come here?”

“Because Rios ordered me to come.”

“I realize that. But Rios orders Corporation employees to visit him all the time, and they never do. So why are you *really* here? No Corporation employee ever leaves the Diano building. You could easily have visited him electronically, but yet you have shown up in person. I find that highly suspicious.”

“Your news is out of date,” Lane said casually. “Adrian and I leave the Building all the time. Vault 37 is on the outside, you know. We're not like everyone else.”

“Which is exactly what makes you a security risk. I *understand* everyone else. I do not understand you. What are you really doing here?”

“I'm here to meet with President Rios and listen to what he has to say. I don't know why you are so suspicious. This place is filled with armed guards who wield heavy weapons. Surely your helmet sensors tell you that we are unarmed. What do you expect us to do?”

“You could do practically anything. Do you think we're morons? You Building people have all the technology that's ever been invented. You probably have stuff that we can't even imagine. There's no telling what secrets you're not sharing with us. You could have matter transporters, or invisible weapons, or anything. You could kill us all if you wanted.”

“But we haven't. In fact, we've never attacked any of you.

I seem to recall that the SSF are the ones who attacked us.”

“Sure, you've never attacked us in the past, but times change. Maybe you've had a change of heart and want revenge. Maybe you've finally grown a brain and have decided to eliminate us all. I'm sure we must seem like some kind of insignificant insect to you. You science people terraform planets and blow up stars. Maybe up until now we've been not worth bothering with.”

“I've just come to see the President,” Lane insisted. “I believe he is waiting on us.”

“You're lying. Do you think I'm a fool? If you just wanted to talk to him you could have done that without putting yourself at risk. Since you're here, you must believe you are untouchable. That means there is something going on that I can't see. That bothers me.”

“Or maybe we're on the President's side. Maybe we're his *allies*. Maybe I just want to help the people of this city by building Vaults that make all their dreams come true.”

“You have built the Vault,” the guard agreed. “I guess that's a point in your favor. I still don't believe you, but since Rios wants to see you I'm going to take you to him. But if you try anything you're dead. Do you understand?”

“I'm not here to cause trouble,” Lane replied. “I'm just here to see the President and listen to what he has to say.”

A squad of four SSF, led by the suspicious guard, took the two men inside the palace. The interior of the mansion was decorated in an incredibly opulent fashion. There were gold furnishings everywhere. The chairs, tables, and lamps were covered in gold, or made of the finest simulated wood. Adrian was astonished at the luxury on display. The only thing that was missing was people. Aside from guards, Lane did not see any human beings of any kind. The mansion was large and well-furnished, but it was almost uninhabited. All of the palace servants were bots.

The guards led them down a flight of stairs, and then down another flight of stairs, and then down a long hallway. After several minutes the group finally reached a vault door. The massive gray door had four guards posted outside it.

Adrian was surprised to see that Rios' office was in a literal vault. Lane, however, was not. He had used his nanites the day before to scan the property. He knew what he was getting into.

The squad stopped. "As you can see," the guard said, "the President is well protected. There are heavily armed guards stationed outside the office, and I will be with you inside the office. The walls of that room are made of a very impressive and very thick metal that was designed to survive any attack the Corporation could launch. In all the years that Rios has been President, no assassination attempt has ever succeeded."

"The Corporation has never tried to assassinate him," Lane pointed out.

"That is simply because he is too well-protected. I am going to go with you into his office and I will be watching you. Do not do anything foolish."

Lane nodded. A moment later the guards who were protecting the door opened it and allowed Lane and Adrian inside. As the two men and the squad of four guards entered the enormous, luxurious office, the door was closed behind them.

Lane admired their attempt at security but he marveled at how misguided it was. His nanites communicated using faster-than-light communication in order to minimize lag. The metal walls of the vault would not stop him from sending commands to his dispersed nanite cloud. *Besides, no material substance can withstand a hit from a probe antiparticle beam. His vault might as well be made out of tissue paper. His security only makes him feel safe because of his tremendous ignorance. They have no idea how vulnerable they truly are.*

As they walked in, the squad of four guards took their

positions by the vault door. President Rios stood in front of a giant gold-plated desk. When Rios saw them he gestured toward two chairs that had been positioned in front of his desk. "It's good to see you gentlemen! I must say I'm surprised that you have agreed to meet with me in person. Surprised, but delighted. Please, have a seat."

Lane sat down in the nearest chair. Adrian nervously took the seat next to him.

As the President walked behind his desk and sat down, the lead guard spoke up. "Sir, I do not trust those two men. I believe they are up to something."

Rios laughed. "What could they possibly be up to? They are inside my sanctuary and are cut off from the rest of the Corporation. They are surrounded by my best men and are completely unarmed. You worry too much, Tristan. They are not dangerous."

Rios then turned to address Lane. "I appreciate your willingness to meet with me. Dr. Mazatl seems to believe that I am an unreasonable monster, but I assure you I can be most agreeable. I have found your work to be quite satisfactory. Unlike the rest of your colleagues, you care about the city and the people who live within it. Your Vault concept is a brilliant use of technology. It has proven quite popular."

"It certainly has," Lane agreed. "The people seem to enjoy it. I trust that you have found it satisfying as well?"

"Oh yes! I have indeed. Incidentally, I appreciate the place that you reserved for me. I dislike waiting in lines."

"Of course."

Adrian spoke up. "We are always glad to make room for our friends."

"That is most wise. The two of you have been much more flexible than Dr. Mazatl. Your employer has proven most obstinate over the years. Unlike you, he will not even agree to meet with me. He rejects the ordinances that were lawfully

passed by the duly elected government of this world. He seems to place himself above the law – but I can see that you do not. Our demands are very reasonable and yet Dr. Mazatl insists upon being difficult. His attitude is not winning him very many friends.”

“Quite so,” Adrian replied.

There was a pause in the conversation. “So how can we be of service?” Lane asked.

“Gentlemen, I believe that your Vaults represents the future of humanity. For years my government has sought a solution to the poverty and violence that plagues our city. Yet, despite all we have done, the Diano Corporation refuses to be of any help whatsoever. They just point the finger back to us – as if we are somehow to blame. It has placed us in an impossible situation. Why, with poverty at all-time highs, they even had the audacity to launch three ZPEs into deep space! We protested, but it was of no use.”

Lane remembered the “protest” which had been delivered to him personally by the SSF. He decided to hide his anger and bide his time. His opportunity would come.

President Rios continued. “I was convinced that we would have to nationalize the Corporation itself in order to change its ways, but then you created Vault 37 and showed us a different path. Lane, I believe in your philosophy. The real world leaves a great deal to be desired; it is full of limitations. The virtual worlds that you have created are better than the real world in every way. Yet, despite their promise, there are a certain number of drawbacks that still need to be resolved.”

“What sort of drawbacks?” Lane asked.

“Capacity, for one. The good citizens of this planet are not happy about the wait times. One Vault simply cannot meet the needs of this entire planet. You need to build more – a lot more.”

“I agree. Fortunately, my project has the full backing of the Corporation. Since Vault 37 has reached its maximum

capacity, I have drawn up plans to create new vaults all over the city. Ultimately I want to create enough capacity to house everyone in Star City.”

“That is most excellent,” Rios said. “But I do not think that will be necessary.”

“What do you mean? Didn't you just say that capacity was a problem?”

“Oh, certainly! But you see, I am not a fool. I know how your technology works. Every invention in the world exists as a pattern in a replicator. In order to create new Vaults, all you need to do is load up the pattern and generate it. There is nothing to it.”

Adrian quickly spoke up. “The Vaults aren't a pattern. It's much more complicated than that. You see—”

Rios interrupted him. “Enough! I believe you are stalling. I think you could easily create enough vaults for everyone in a matter of days – perhaps in a matter of hours. All of this talk of construction bots and committees and planning is a lot of lies. You are deliberately causing delays in order to stir up unrest. As that unrest grows, you will use it to show that you are the true savior of the people. You will use the problem to increase your popularity and turn the people against me – their true leader. After all, *I* am not the one making the vaults. I am not the one who is helping them and making their dreams come true. What you are doing is nothing less than starting a revolution!”

Lane tried to speak up, but Rios cut him off. “This situation is intolerable. Therefore, it is up to me to save the city from your devious plans. As of this very moment I am seizing control of Vault 37. Your Vault now belongs to me – along with its technological secrets. I will create the additional vaults myself, and I will be the hero of the people. I will not allow you to undercut my popularity with the voters!”

Lane unobtrusively slid his hand into his pocket. “And what about us?”

Rios spread his hands. "What can I say? You are two revolutionaries whose attempt to overthrow the people's government has failed. You will meet the fate of all those who came before you. It was very foolish of you to come here."

"Are you threatening to kill me?" Lane asked calmly.

"It is not a threat. I am the government; my will is the law. I am sentencing you to death. Before you die, however, I require you to give me access to the vault pattern. I will need that in order to secure the future of the people."

"You are making a very serious mistake," Lane said. "First of all, there is no vault pattern. The replicators can only create small things; large items have to be created in pieces. This will end very badly for you. Let us go, Rios, and we will create all the vaults you want. We'll even tell people that it was your idea. Give us a chance to help you. There is another way to handle this."

Rios stood up and scowled at them. "Silence! There is only *my* way. Since you will not cooperate, I have no further use for you. You are wasting my time. Guards, take away these enemies of the people and put them to death. But shoot them outside; I don't want to get any more bloodstains on my carpet."

Lane used the hand that was in his pocket to tap a button on the nanite control device. Since Lane dispersed the nanites throughout the palace the day before, they had already worked their way into the brains of everyone in the compound. His control device sent the nanites a very simple command: terminate.

The nanites were designed to interface with every organ in the body. They knew how to put a person into a sleeplike trance. They could keep organs alive – and they could stop them cold.

The moment Lane sent his signal, the nanites acted on it. It took them less than a second to shut down every organ in Rios' body. This termination happened simultaneously to everyone inside the President's compound – to everyone, that is, except

for Lane and Adrian.

In an instant everyone in the compound dropped dead.

For a few seconds neither of the men said anything. One moment the guards were reaching for their guns, and the next moment they were dead on the floor. President Rios slumped over in his chair. It was a surreal sight.

“What happened?” Adrian asked.

“I changed the game,” Lane said calmly. “I checkmated the king. The game is over. From here on out there's going to be a new game.”

Adrian looked around nervously. “So... they're all dead? Just like that?”

Lane nodded. “Of course. What other choice did I have? It was either me or them, and it wasn't going to be me. The nanites made it easy. They never really had a chance.”

“So what happens now?”

Lane removed the nanite control device from his pocket. “All of the television broadcasts in the city come from the Diano Building. The Corporation has a way to pre-empt them in order to make important announcements. I was able to get a friend of mine to give me access to that system. You see, we are going to make an announcement.”

Adrian looked concerned. He started to say something, but Lane stopped him. Lane then pressed a series of buttons on the device he was holding. “All right, we're connected. Here we go. Just wait one more second...”

Lane paused and waited for a light to turn green. He then began speaking. “Hello, Star City. My name is Carroll Lane. You might know me as the person behind the Vaults – the amazing virtual worlds that give you anything and everything you desire.

“I know you've got better things to do than to listen to me, so I'll be brief. I'm sad to announce that a few minutes ago President Rios tried to take the Vaults away from you. He decided

they were a threat to his power. In order to maintain control over you and your lives, he tried to kill me. Of course, if I was dead then the Vaults would stop working and you would have to go back to living in reality. I couldn't let that happen. I care too much about the people of this city in order to let Rios steal your happiness from you.

“Since Rios attacked me I had no choice but to defend myself. I am afraid that Rios and his entire SSF forces are now dead. This is unfortunate, but there was no other way to safeguard your future.

“I want to make it clear that I have no desire to rule over you. I am not seizing power and I am not going to be your new President. If you want to hold a new election and elect a new liar to lead you then you are free to do that. If you want to have no leader at all then you may do that as well. Your future is in your hands.

“However, I would like to give you a different option. Today I am launching a plan to build enough new Vaults to permanently house all of the citizens of this world. I am going to develop new technology that will enable you to live in the vaults *forever*. You'll never have to come back to this awful world, with its problems and plots and politicians.

“Now, if you decide that you miss Rios you are welcome to elect some new politicians who will steal from you and make you miserable. Or you could register today for a place in my Vaults, where you can have everything that you want for the rest of your lives. No more government, no more limitations, no more problems – just peace and happiness for the rest of time.

“It's up to you. Your future is in your hands, Star City. Choose wisely. This is Carroll Lane, signing off.”

* * * * *

When Dr. Mazatl heard Lane's broadcast he became

extremely concerned. He called Lane and asked to meet with him immediately. This did not come as a surprise to Lane. He agreed to the conference and made his way back to the Diano Building. An hour later the two of them met in Dr. Mazatl's office.

"I'm not surprised you wanted to see me," Lane remarked. "However, I am surprised that the rest of the board isn't here."

"Oh, there will be a full board hearing," Dr. Mazatl said. "That is scheduled for tomorrow morning. But before that happens I wanted to talk to you myself. Lane, what have you done?"

"I defended myself, of course. I have already sent you a full, unedited video of the entire encounter. If you took the time to watch it before this meeting then you know that I was not the aggressor. I was fully prepared to cooperate with the President. I only took action when he made it clear that he was planning on killing me and seizing the Vaults."

"But surely you knew that would happen before you even went to see him! There is a reason that we never leave this building, Lane. Rios would kill us all if he could. What did you expect?"

"I wanted to give the President a chance. It's true that *you* can live your whole life behind the safe security perimeter of this building, but I cannot. I built the Vault in order to serve the people, and the people are on the *outside*. That means that my vaults have to be outside as well. My job – my life – must take place outside this building. Therefore, when Rios wants to cause trouble I cannot simply hide. I have to deal with it. Now, I did not go there with the intention of killing him. If that was my goal then I could have accomplished that without ever leaving the Building. I was fully prepared to give Rios whatever he wanted. In fact, I had even given him preferential treatment. He never had to wait in line."

"But you killed him!" Dr. Mazatl exclaimed. "In fact, you

killed them *all*. Do you know how many people are dead?"

"I only killed the President and his guards. I did not harm so much as a single bystander. And I only took action when he tried to kill me. It was a purely defensive act. Doctor, I cannot hide in this building. I was prepared to make a deal with Rios, but unfortunately Rios did not want a deal. If I had hid in this building and done nothing, Rios would have seized the vaults and destroyed them. I *had* to defend them. You cannot tell me that it is immoral to take the life of someone who is *trying to kill you*."

"I understand what you are saying, and you have a fair point. I will concede that. But what is going to happen now? What will happen when the other colonies hear that the Diano Corporation assassinated a President?"

"But the Corporation *didn't*. I did. There's a difference. You are free to tell them that I acted without your knowledge or consent – because that is *exactly* what I did. You should also point out that I did not take over the government. The people are still free to do as they please – although I hope they choose to move into the new vaults I am building. It is entirely possible that the people of other worlds will look at this and decide that it is dangerous to try to murder Corporation employees. That would be a very good thing in my opinion."

Dr. Mazatl sighed. "I don't like this, Lane. It looks bad. I admit you have a good case, but you have changed things. Things aren't going to go back to the way they were."

"Which is a good thing, if you think about it. In the past we were trapped inside the walls of this Building, afraid to step outside. In a few years all of the citizens of this planet will be in vaults. When that day comes this world will be yours. You will be able to walk its streets and live as you please. All the people who once threatened you will be gone. You will finally be free. I have found a way out. Isn't that what you want?"

"Perhaps," Dr. Mazatl said, sighing. "Perhaps you are right and this should have happened long ago. Maybe if we had taken

a stand a hundred years ago things would be different now. I don't know. Maybe you did the right thing. Let's see what the board has to say in the morning.”

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The interview with the board went well. Although they all had some grave concerns about what might happen next, none of them were willing to condemn Lane. Instead they promised their full support to his efforts to build more vault capacity.

Adrian Garza began the expansion project the following day. With the full support of the Corporation Adrian soon had all the plasma he needed. That very same week he broke ground on nine new Vaults. Once they were completed the ten Vaults would have enough capacity to house 4 million people – nearly half of the city's total population. It would not be enough for everyone, but it would be a big step in the right direction.

While Adrian handled the construction issues and the day-to-day management of the Vaults, Lane continued to work on the simulation technology itself. Finding a way to enable people to live in the Vaults forever was a daunting technical challenge.

His only lead was some suspended animation research that had been done more than 500 years ago. In the early days of space exploration it took an exceedingly long time to travel between the stars. Because of this, space agencies spent a great deal of money trying to find a way to place people into a state of suspended animation. The results were promising, but were quickly cast aside once hyperdrive technology was invented. Lane was hoping to pick up where the Spanish Empire left off – and now that he had more resources to work with, he could hire another team and get to work.

* * * * *

Lane had the support of Dr. Mazatl and the board of directors, but Victor Stryker continued to have grave reservations about the entire project. Victor tracked Dr. Mazatl down and tried to change his mind.

"I just don't see what you're so upset about," Dr. Mazatl commented. "Have you actually tried the technology? It's quite relaxing. I wouldn't want to live in the simulation forever but it's not a bad diversion. I think that Lane has done an excellent job of opening up a new frontier. He is to be commended."

"But what of the danger? Don't you see how society is responding to this? All that people care about these days is life in the Vault! They've completely lost interest in reality."

"They were never interested in reality in the first place," Dr. Mazatl pointed out. "All they wanted was a dream world where they could get whatever they wanted, and now they have it. This is actually having a very beneficial effect. The riots are subsiding, the government no longer cares about plasma allowances, and Rios is no longer around to threaten us. I'd say that everyone is happy about the way this is turning out. We now have a real chance to complete our SOLOMON upgrades. Lane really did us a favor."

"He has made the people even more wicked than they were before! Have you seen what people are simulating? I expected things to be bad, but the simulations are cruel and perverse beyond imagination. The people are turning into demons."

"They were always evil, Victor. All that has changed is that we now have a way to see what is in their heart."

"That is not all that has changed. This tide of evil is just the beginning. Society is going to abandon the real world for Lane's demented, horrific fantasies. They will move into the Vaults forever, and they will live there until they die – and mankind will die with them. No one will ever live in the

terraformed worlds. All of the work we're doing will be utterly wasted. The Vaults are a trap. We have to stop them. They are not helping people. They are turning bad people into something much worse."

Dr. Mazatl shook his head. "The Vaults don't appeal to everyone, Victor. I, for one, find them amusing but not very satisfying. I am sure that there are some people who will become addicted to them, but there are others who won't. Once the addicts have died, the ones who are immune to the temptation will go on to build a bold new tomorrow. It will all work out in the end."

"But don't the addicts have souls? Shouldn't we try to save them?"

"We *have* tried. We've been trying for generations but they won't listen. It is a sad thing to see them march toward their doom, but it is inevitable. Opposing the Vaults isn't going to do anyone any good. I'm sorry, Victor, but this really is for the best."

As Victor turned to leave, Dr. Mazatl spoke up. "One more thing, before you go. Some months ago you sent out a message in response to the strange signal that the Nehemiah probes had been receiving. How did your experiment turn out? Did you get any response?"

Victor looked surprised. "Didn't you see my communication about that? I sent you a report."

"Did you? I'm sorry – I must have missed it. I get so many messages."

"Oh. Well, after I sent that message, that was the end. Before I sent out my transmission the probes had been receiving that strange signal every few days. After I sent my message, though, the signal stopped completely. The probes haven't been contacted again."

"Fascinating! It would appear that your message had a definite effect, then. It solved the problem. Nice work!"

"I suppose," Victor sighed. "I just wish I knew why it happened in the first place. Now we'll never know what was going on."

"Maybe so, but you have fixed the problem and that is a victory right there. Excellent work! I think a new day is dawning, Victor. I finally see a ray of hope, which is something I hadn't seen in a long time. I think better days are right around the corner."

CHAPTER 9: EVIDENCE

Log date: June 20, 2419

Location: Xanthe

Log note: In time all secrets are revealed

DR. MAZATL MAY HAVE BEEN CONVINCED that things were finally improving, but Victor did not share his optimism. Each day after work he went home to his apartment and brooded. Sometimes he tried to distract himself by reading a book, but he found it difficult to concentrate. He had a vague feeling that he ought to be doing something but nothing came to mind.

A few days passed. One evening Victor was surprised by a vigorous knock on his door. It was late at night and he wasn't expecting anyone, so the interruption made him somewhat uneasy. As Victor put down the book he was reading and made his way to the door, he wondered who it could be. The SSF were all dead, so it couldn't be them. The probes were working as well as could be expected, so it probably wasn't Dr. Mazatl. Grimes wasn't teaching any classes at the moment, and Victor hadn't invited anyone over.

A bit apprehensive, Victor went to the door and opened it. When he saw who it was his jaw dropped open. "Derek?"

His tall, bearded neighbor nodded. "Yup." He handed Victor a chicken.

Victor had no desire to hold a chicken, but he found himself in the possession of one all the same. He looked awkwardly at the white bird in his hands, and then back at the scruffy-looking man who gave it to him. "I, um, don't understand. I haven't seen you in ages. I didn't even know you still lived around here. Why are you here?"

"Thanks," Derek said. He then walked away, leaving the chicken with Victor.

"Wait!" Victor called out. "I think you left something behind! This isn't my chicken!"

But Derek ignored him. He called the elevator, then entered it and disappeared. He never even looked back.

Victor looked down at the chicken he was holding. He did not like this situation at all. *What am I supposed to do now?*

As he started to panic, the door to the next apartment opened and Cynthia Glass stepped out into the hallway. "I thought I heard voices! Well well well. It looks like someone has finally found a friend!"

"Not for long," Victor said grimly. "There is no way I want a chicken in my apartment. He'd probably eat my books or something. I'm going to call the building supervisor and get rid of this thing. Where does Derek even get these chickens?"

"Don't you dare do that! The heartless super would just liquidate that poor, sweet thing. Let me have it. I'll make sure it finds a good home."

"Let *you* have it?" Victor said incredulously. "But we're not allowed to have chickens. I don't want to aid you in a life of crime."

"Don't be absurd. There's a zoo down on the 23rd floor. That's where I've been taking all of Derek's chickens. I'm sure it will be happy there."

"You've been tracking down Derek's chickens? Is *that* what happened to them? I haven't seen any birds around here lately. In fact, I hadn't seen much of Derek lately either. I kind of thought he had died or something."

Cynthia laughed. "You don't get out much, do you? No, Derek is not dead. He's just spending most of his time in a vault these days. Apparently the building supervisor in his virtual apartment lets him have all the chickens he wants. He's spending so much time there that he's not able to take care of his real

chickens anymore, so he's giving them up. It's really a big improvement over his old chicken scheme.”

“That sounds kind of ominous. What did he used to do?”

“He would hide them. *Everywhere*. He would find some abandoned room, or apartment, or laboratory, or storage closet, and fill it with chickens. The public was outraged. There were meetings, and protests, and marches, and – is none of this ringing a bell?”

“Should it? How would I have known about this?”

Cynthia sighed. “You know, if you attended the monthly tenant meetings you'd learn a lot of things. Why don't you ever show up?”

“It just never seemed that useful. I'm pretty sure the robots that run this place can do just fine without my input. I've never had any trouble so far. Well, except for this chicken here.”

Cynthia took the chicken from Victor. “The point is, if you attended the parties and socials that are held every week, you'd actually get to know people. Who knows – you might even make a friend.”

“Like Derek?” Victor asked dubiously.

“Don't be so hard on him! In a different age he probably would have been a chicken farmer. In fact, he could have been a chicken farmer in *this* age if we weren't all trapped in this blasted building. I can't wait for all the outsiders to move into Lane's vaults. Then we'll be able to go outside again! It will be wonderful.”

“It will be *dreadful*,” Victor said irritably. “The outside is full of all sorts of dirt and insects and other things that make life horribly uncomfortable. It's a terrible place. But that's a small matter compared to the lives of the vault-dwellers. Don't you realize that all those people are wasting their lives on fantasies? On *depraved*, wicked fantasies at that. What they're doing really shouldn't be allowed. Those vaults are going to doom the human race.”

“So they like to live out their fantasies. Are you really that different, though? I mean, you don't have to live in a vault in order to isolate yourself from the rest of the world. You've managed to do a pretty good job of that without any futuristic technology. You're about as reclusive as they come.”

“That's entirely different!” Victor protested.

“Is it? You say that you want to save the world, but you're never willing to interact with it. Like, at all. Derek might have a strange fascination for chickens but at least his chickens are *real*. That's more than I can say about your bizarre belief in the Stryker Twins. In my opinion, Victor, you've got Derek beat. You're way crazier than he is.”

“That's preposterous! You're out of your mind.”

“Am I? Let's see. Derek is fascinated by something that *actually exists*, whereas you are obsessed with something completely delusional. Derek has spent a great deal of time interacting with all sorts of people – usually about his chickens, but even so it's something. All you ever do is sit at home and read books. Derek *actually had a life*.”

“Which he has given up to live in a vault,” Victor pointed out.

“At least he's getting outside the building. When is the last time you did that?”

“I've had quite enough of the outside, thank you. Nothing good comes from being outdoors. I guess I'll just take my antisocial behavior and my delusions and head back to my lair. Have fun with your chicken.”

Victor retreated into his apartment and closed the door behind him.

“That's not what I meant!” Cynthia called out. “I wasn't trying to make you *more* reclusive!”

But it was too late. Victor could not hear her.

* * * * *

Victor spent the following day brooding. He was certain that he wasn't crazy, and it bothered him that Cynthia had accused him of being crazier than Derek. He knew that her opinion shouldn't matter to him, but it did all the same. *Is that really how people see me? Is Derek the sane one? How could this have happened?*

After spending far too much time thinking about it, he decided that he wanted a second opinion – preferably one from a person who did not spend her free time hanging around chickens. So after work he took the subway to Star City University. By the time he reached the school and stepped outside, night had fallen. Nights on Xanthe were always very dark, because the sky was utterly black and starless. However, the campus was well-lit and looked quite beautiful. The only thing missing was students. At this time of the day there weren't even any robots to be seen. The campus was magnificent but deserted.

The software developer made his way to Old Main and walked up to Professor Grimes' office. The professor was not a difficult man to find – he was always in his office. If he wasn't writing a paper then he was reading a book or preparing a new lecture series. The man was always working on something. Victor sometimes wondered how he found the motivation to keep working when so few people paid any attention to what he had to say. *Maybe he's an obsessive crazy person. Or maybe he just believes in his work. But given the circumstances, is that any different from being crazy?*

He gingerly knocked on the door. Grimes immediately called out to him. “Come in, Victor!”

Victor quietly opened the door and stepped inside. “How did you know it was me?”

“It's quite simple. You see, you are the only person who ever comes to visit me in person. The few people who wish to

speak with me do so via holoscreens. Personal visits take more effort than people like to expend.”

“It's really not that much work,” Victor commented, as he sat down in front of Grimes' desk. “Besides, the campus is beautiful. It's a pity more people don't see it.”

“It's also a pity that more people don't take advantage of the learning opportunities that this facility offers. There is so much wasted potential here! This school could serve as a beacon to the entire galaxy – a center of knowledge in a dark age. Well, you know, I suppose it *does* do that, in spite of what its detractors say; it's simply a beacon that is being ignored. Ah well. So how can I help you?”

“Well, I've got a couple things on my mind that have been bothering me. I know everyone loves the vaults and thinks they're amazing, but I really have doubts about them. Dr. Mazatl says that they're actually going to make things better for everyone and I shouldn't worry about it. Personally, though, I think this situation calls for a *lot* of worry.”

“That's not quite his opinion,” Grimes replied. “I have talked to him about this issue as well. The problem is that mankind has leached off the Diano Corporation for two centuries now, demanding ever more from the company while giving nothing in return. The board has grown very tired of dealing with outsiders and sees the Vaults as a way to escape the unfair obligation that has been placed upon them. Now that the outsiders only care about Vault life, they're ignoring the Corporation. It's true that the people are as far from God as they ever were, but Dr. Mazatl has felt for years that they are a lost cause. All he really wants to do is find some way to get them to leave him alone so he can finish his work – and thanks to Lane that is actually happening.”

“But there are bigger issues!” Victor protested.

“I quite agree with you. After all, if mankind dies out then who will inherit the probe worlds? Dr. Mazatl claims to be

building the probes to help the civilization of tomorrow, but he has trouble seeing the civilization of today. The good doctor does not see the danger because he is focused on his work to such a degree that nothing else matters to him. For his entire life he has worked on the Nehemiah probes. The Vaults are not tempting to him – and since they do not tempt him, he thinks that they won't tempt most other reasonable people either. He believes that only fools will use them and that the wise will disdain them. After all, that's what happened with the ZPEs. He doesn't see this new technology as being any different."

"But this *is* different!"

"Quite so. The ZPEs had significant limitations, but virtual reality does not. Lane's technology promises outsiders that they can have *everything* they have ever wanted, for the rest of their lives, in a world in which they are gods. It takes remarkable strength of character to refuse that offer and live and work in *this* world, which is deeply unsatisfying and beset with problems. I think that very few people will resist. This very well could end civilization."

"So what should we do? How can we combat this?"

"I think, for now, we need to wait," Grimes replied. "You and I have both made attempts to put an end to this problem before it grew, and we have not been taken seriously. I think the problem will have to become a great deal more obvious before the Corporation will take any action against it. For the moment the new technology is still imperfect and the wait to use the Vaults is long. Lane has a long way to go before he achieves his goal of fully replacing reality with his fantasies. Right now if a person wants to use his technology he has to get in a line and wait for it. Frankly, it's very difficult to claim that visiting the Vault once every few days represents a significant danger to society – especially in *our* society, which is little more than total anarchy. Once it becomes possible to live in them, though, the game changes. That is when we can begin our realist movement

in earnest and argue that reality trumps fantasy.”

“You think we should *wait?*” Victor said uncertainly. “Are you sure? Doesn't that just allow the danger to grow?”

“It certainly does, but there is nothing to attack right now. At the moment we appear to be cranky old people who don't like new technology. Isn't that how Dr. Mazatl treated your objections? At the very least, we need to wait until there is something to actually object to. It's very difficult to argue against a purely hypothetical danger – which is what we are doing right now.”

“I guess. I just don't like the way this is going.”

“Neither do I. Now, I won't lie to you. I think the only way we can possibly win this battle is to take all the remaining sane people and move them a thousand light-years away from the colonies, and then keep them there for the rest of time. We need to physically separate them from Vault technology and ban it on that brave new world. If the temptation isn't there then it won't be an issue. Any world that allows Vaults technology is going to be destroyed by it. There's no argument we can make that will keep people out of them. It's a lost cause.”

“That seems kind of extreme,” Victor remarked.

“Absolutely! The Bible says we should run from temptation, and I believe we should take that admonition seriously. Make no provision for the flesh, you know. It's a perfectly valid technique – and in this case it is important. It would make a tremendous difference. No alcoholic should ever take up residence in a liquor store.”

“But how could we persuade the Corporation to do that? I can't even get Dr. Mazatl to publicly oppose what Lane is doing. In fact, the company is actually *funding* him! Dr. Mazatl is *definitely* not going to relocate the company to another planet in order to fight it.”

Grimes smiled. “There is more than one way to achieve the desired ends, young man. Dr. Mazatl has been using this

University's library to research his replacement for SOLOMON, and I have been assisting him. During the course of our work I pointed out that it would be dangerous to build the new artificial intelligence on this world, because it is so close to civilization. Since Dr. Mazatl hopes to build a system that can maintain the Nehemiah IV network for thousands of years, the replacement should be constructed far away from mankind – well out of reach of any potential problems that might arise.

“However, the creation of this new machine will be a very large project – one of the largest the company has ever attempted. In order to accomplish this goal the company will need to bring many thousands of people to that distant world, and keep them there for decades.”

“Oh,” Victor said slowly. “I get it. And you think that once they arrive they will never leave. There will always be some new feature to add or something. It will become a permanent colony.”

“Exactly! And as long as the Vault technology is not brought with them – and I am sure Dr. Mazatl will see to that, since he will not want his workers to be distracted by it – they should be fine.”

“That's very clever. I like your strategy. Do you think he's going to go for it?”

“He seemed very amenable to the idea. I believe he is giving it some serious thought.”

Victor nodded. He then paused for a moment to think it over. “You know, I admit it's a great idea. It's certainly worth a try. But isn't it doomed to fail? Don't we already know that it's not going to work?”

“What do you mean?” Grimes asked. “How could we possibly know that it is going to fail before it has even been tried?”

“Because of the future. I mean, we know the Artilect project will succeed because one day it will go back in time to get the Twins. But the reason it does that is because mankind is gone

and the Twins are the only ones who can help. If the colony survived then the Artillect would never have needed to resort to time travel. Something must have gone wrong.”

“But what evidence do we have that any of that is true? The legend of the Twins has been around for centuries, but I've never seen any actual proof to back it up. I will admit that it is a fascinating story, but without any evidence it is simply another conspiracy theory. History records that the Stryker family died when the Spanish Empire destroyed the *Sparrow* back in 1867. There is no evidence at all that indicates otherwise.”

Victor hesitated. “That's the other thing I wanted to talk to you about. You see, there actually is.”

“Oh? And what evidence might that be? And why haven't I heard of this before?”

“It's supposed to be a family secret,” Victor explained. “You know – one of those things that is passed down from father to son. Only I don't have any children, so if I don't pass it on to *someone* then the secret will die with me. I don't think Timothy Stryker would have wanted that. It was never supposed to be told outside the family, but someone needs to know – just in case the Twins ever show up and need help.”

The software developer pulled a small electronic device out of his pocket and pressed a series of buttons. “The file is kept on a secure server in the Diano Building. It's actually been there for about five hundred years. Timothy was the one who set it up, and only true Strykers have been granted access to it. Even Dr. Mazatl hasn't seen this.”

Victor finally found the file he was looking for and beamed the video to the holoscreen above the professor's desk. “This was recorded on December 9, 1867 – two days *after* the *Sparrow* was destroyed. Tim Stryker's apartment had a security system installed. This is what it recorded.”

Victor played the video. At first the screen showed nothing in particular – just the interior of Tim Stryker's rather

messy apartment. Then two teenagers suddenly appeared from nowhere. The girls had dark skin and long black hair. One of them reached over to the light switch and flicked it on.

"This place is a disaster!" one of the girls exclaimed. "Does Natalie Foster realize that her husband-to-be lives like this?"

"I'm pretty sure he wasn't expecting company," the other girl replied.

The first girl lifted up a hand but the second one stopped her. "Don't you dare clean this place up! We really shouldn't touch anything until we talk to Tim."

"Don't be silly. Somebody's got to clean this place up, and I'm sure not going to live here for weeks and not do anything about it! All of this trash has got to go."

The two girls continued to talk as they cleaned Tim's apartment. "They actually spend a whole hour cleaning," Victor said. "It's super boring, and they don't say anything interesting. Let me fast-forward a bit."

Victor pressed a button on his phone and the video jumped forward. The two girls were now sitting on the sofa.

"So is there anything good on?"

"Not really," Amanda replied. "Just a lot of boring sports shows. But I did find this." She reached over onto the coffee table and grabbed a silver disc, which she tossed to her sister.

Amy's eyes lit up when she saw what it was. "Oh my goodness – it's Night of the Werewolves! I had no idea that was out yet! We have got to watch this."

Amanda sighed. "I just don't see what you see in those movies. They're ridiculous."

"I can't help it if you don't have romance in your soul," Amy sniffed. "They're a touching portrayal of complex relationships."

"If you say so," Amanda replied. "I'll go make some popcorn while you get it started."

"This is fascinating," Professor Grimes remarked. "I thought that awful movie was just a legend. Do they actually watch the whole film?"

"No, they get interrupted," Victor said. He fast-forwarded again. The video now showed the two teenage girls deeply engrossed in the movie. As they watched it Timothy Stryker opened the door and stepped inside. As he looked around his apartment a shocked look appeared on his face.

"What's going on here?" he called out. "Who's in my apartment?"

Amy shrieked at the sudden, unexpected noise and involuntarily threw the bowl of popcorn in the air. Amanda reached out and froze it in midair, leaving popcorn kernels suspended in space. She then grabbed the remote and paused the movie.

"Amazing," Professor Grimes commented. "Note her use of the remote. I would never have guessed that defying physics was easier than working a video player."

"Tim!" Amy shouted. "Don't scare me like that! What are you doing here?"

"What are you doing here?" Tim replied, astonished. "How did you two get into my apartment?"

"We just walked through the door," Amy replied. "But you're not supposed to be home for hours! Don't you have a date with Natalie tonight?"

"That's been moved to next week," Tim said. "She had to work tonight."

"And you didn't update your calendar?" Amanda asked.

"Why would I do that? We only moved it one day – we're going out tomorrow instead of today. It's not a big deal. But what are you two doing here? The Sparrow didn't make it to Xanthe – there were no survivors!"

"Actually the Sparrow is fine," Amy replied. "Nothing bad happened to it. Everyone survived."

"You can't be serious! We just had a memorial service yesterday for all of you. Everybody was there – even the governor and all the leadership of the Rangers! And you mean to tell me that nobody died? Then where have you been all this time? Why didn't you let us know?"

"That's kind of complicated," Amanda said.

Professor Grimes listened, fascinated, as Amy and Amanda told Tim about the Sentinel and the Artilect. The girls explained that the Sentinel had traveled back in time to bring them into the future, in order to save mankind from disaster. Next, the twins began telling Tim about the Poneri. He found their story a bit difficult to believe.

"Then show me," Tim replied. "I want to see this supposed portal to Poneri land."

"All right," Amy replied. She stood up and then held up her hand. "Just a second... wait for it..."

A moment later the three of them vanished, leaving Tim's apartment empty.

The video stopped and Victor spoke up. "According to Tim, his sisters transported him instantly to Alpha Mensae – just like that."

"Remarkable! So *that* is why the Strykers have always believed in the legend of the Twins. I must say that this is rather compelling."

Victor nodded. "That's why I think the Artilect colony is doomed. Sure, they'll succeed in building their AI, but then something will go wrong. After all, if everything worked out then the Sentinel would never have gone back in time in the first place."

"But perhaps things will play out differently this time. Do you have any more videos or any additional information about the Twins?"

Victor shook his head. "This is all there is."

"Then there are many possibilities. If the Twins are

traveling through time then perhaps they will appear and prevent this unknown disaster from ever happening in the first place. Perhaps they will save Dr. Mazatl's colony. After all, if the Sentinel rescued them in order to save the future then it's quite likely they will intervene to prevent mankind's destruction. They certainly seem to be beings of great power.

"Given how little we know about the Sentinel's plans, I think it is unwise to assume that the future is lost. There is always hope, Victor. Darkness will not win forever – and it may not win this battle either. We have a plan and I believe we should put our plan into practice. We cannot take responsibility for what will happen years from now, but we can do something about the present. That should be our focus."

Victor nodded. "That makes sense. Thanks for the encouragement."

"And thank you for sharing that video with me," Grimes replied. "It is a much more thoughtful gift than the chicken I received yesterday. I promise I will guard this recording with care and discretion. Is there a way that you could grant me access to view it? I'd like to study it, if you don't mind."

"Sure," he replied. Victor pressed a series of buttons on his phone. "There you go – you've been granted access. I've also sent you a link to the file. You can use it to access the video."

"Splendid! Thank you – and thank you for coming. I always enjoy your visits. You're more than welcome to return anytime."

As Victor began to leave the office, he stopped to ask one last question. "What did you do with the chicken?"

"I put my barbecue grill to good use. Grilled chicken is quite excellent, and fresh chicken is extremely rare. There are few meats that are not improved by the strategic use of charcoal."

"So you set it on fire," Victor said.

"In a manner of speaking, I suppose," Grimes replied. "It

was quite tasty.”

* * * * *

Adrian Garza proved to be a very adept administrator. On January 1, 2420 – just a year after the very first Vault was opened – Adrian brought nine more Vaults online. There were now ten operational vaults on Xanthe, with a total capacity of 4 million people. Thanks to the improvements that Lane's team had made over the past year, it was now possible to spend eight hours at a time in the virtual worlds. Since the Vaults could be used in round-the-clock shifts, this meant that people could go to the Vault, stay for their eight hours, and then come back the next day. Instead of waiting for weeks they could now make daily visits.

It was a huge improvement, and the people of Xanthe loved it. They could now spend more time than ever in their virtual worlds, living out their fantasies. But word of the technology had spread far and wide, and now people were coming from other star systems in order to experience the technology for themselves. Thousands of people arrived every day.

“Demand is only going to grow,” Adrian told Lane one evening. The two of them were in Lane's apartment in the Diano Building, reviewing some projections that Adrian had created. “The Vaults are the most popular thing in the galaxy right now. If we don't start exporting this technology to other worlds then it's going to cause a huge wave of immigrants. Eventually everyone from every other colony in the galaxy is going to move into Star City. This city just can't handle that kind of strain! It's in incredibly poor condition.”

“It doesn't have to handle anything,” Lane replied. “Our Vaults are self-sufficient. All we need is enough capacity to hold everyone. The Diano Corporation is giving us everything we need

to expand our capacity further.”

“But why not export it? Why not have Vaults on every world? Isn't that part of your dream?”

“Absolutely not,” Lane said firmly. “Yes, I want to put an end to civilization's long decline. Yes, I want to end the riots and the vandalism that go on outside every day. Yes, I want to replace the physical world with my synthetic worlds. But I don't think everyone deserves paradise, Adrian. I think that only the worthy should be allowed in. This is *my* technology, after all. None of these people are paying for it.”

“I don't understand. Aren't you allowing *everyone* into your vaults? In what way are you keeping out the unworthy?”

“I'm not doing anything yet. Right now we're still developing the technology, so I don't mind having a lot of test subjects. In fact, the more people that come in the better. If I've learned anything from working on the Nehemiah IV probes it's that you really can't have too many tests. I want this technology to last forever, and I want it to be vastly better than the physical world. If more people use it then we can cover more possibilities. But one day that will change. One day we will be able to live in the vaults forever. When that day comes I will only allow the deserving to enter into Vault 37. Only those who have not been a plague on the Corporation will be allowed to enter. Those who are murderers, or vandals, or criminals will *not* be allowed in. They will have to use other vaults.”

“Is that all you're going to do?” Adrian asked, surprised. “That doesn't seem like much of a limitation to me. I don't think they will care what vault they get assigned to as their new home. To them one vault is as good as another.”

“It will seem that way at first, yes,” Lane agreed. “People will be welcomed in with open arms and will settle into their new, *permanent* homes. The vault doors will be sealed shut – to prevent vandalism, we'll say. The opportunity to enter the synthetic worlds will end, and people will begin living out their

dreams. But what the people will *not* know is that only one vault will be built to last forever. In one vault people will be able to live for all of eternity in their dream worlds. The other vaults will have a very different fate.”

“You're going to kill them?” Adrian gasped.

“There is no need to do anything that brutal. All I really have to do is just not save them. If I install the life-extension technology – which doesn't exist yet – in Vault 37 and not in the others, who can complain? They're still getting a lifetime of fun, and it's all free. Yes, some people may be getting more years than others, but no one is being shot in the back of the head. I don't see how any of them can demand anything from me. It is my right to give an endless life to those I believe are worthy.”

“I suppose,” Adrian said doubtfully. “I guess if you think about it, no one can claim to *deserve* a spot in your vaults. And you are letting them live out their natural life.”

“Exactly! So we understand one another. But we have a long way to go until we get to that. The suspended animation tech is promising, but it will be months before we have something that's ready to deploy. In the meantime we need more capacity.”

“I'll start the construction of ten more vaults,” Adrian promised. “That should buy us more time. But how much more time do you think you will need?”

“I wish I knew. This isn't easy. The problem is that the suspended animation technology works far too well – it puts the body to sleep entirely. *Everything* is shut down, which means you can't dream and you can't experience the virtual worlds. What we're trying to do is modify it so that the mind stays awake while the body sleeps, but separating the mind from the body is hard. If the mind is awake then the body has to stay awake to some degree in order to provide the brain the resources it needs to keep working. If the body's awake, though, it's not suspended and so everything falls apart.”

“Is it a solvable problem?”

“I think so. I believe we can shut the body down and use nanites to keep the brain operating. In theory it should work, but the nanites weren't designed to do that. It's a pretty big change and there is so much we don't know. But we'll get there.”

Adrian nodded. “I'll plan on building out capacity for 10 million people. That will provide a spot for everyone on the planet – although it won't do much for any new immigrants who might arrive. If you complete your work by 2421 then we'll be ready; if not then we'll have to wait for the nanite upgrade.”

“Exactly. We might as well create our total target capacity now. When the suspension technology is perfected it will just be an upgrade to the nanites, which isn't a part of the Vault hardware itself. The Vaults themselves shouldn't need upgrading. All of the Vaults will need the nanites so that people can live in them full-time. The only difference will be that the nanites in Value 37 will work a little differently from the others.”

“I'll get started on the expansion first thing tomorrow,” Adrian replied.

Lane smiled. “You know, I don't know what I would have done without you. None of this would have been possible without your help. I'd still be floundering around, working on this by myself. I probably wouldn't have gotten anywhere.”

“It's been a privilege to be of assistance. You are ushering in a bright new future for humanity – and I am proud to be playing a role. The future is quite exciting.”

“It certainly is,” Lane agreed.

CHAPTER 10: INVESTIGATION

Log date: August 1, 9991 of the Eternal Era

Location: The *Vaughn*

Log note: Data does not speak for itself; it must be interpreted

IT WAS A FULL WEEK before Monroe and Merlin could begin their exploration of the *Vaughn*. Both of them were in the middle of other tasks, and they had to bring those efforts to a temporary conclusion before they could travel 9 billion light-years across the universe. It was difficult for them to put their other adventures on hold, but neither of them wanted to miss this opportunity. The discovery of the *Vaughn* hinted at the existence of an entire undiscovered civilization – and that was an exciting thought. No one could predict what wonders they might uncover.

During the course of that week, the rest of mankind learned about Noel's surprising discovery. Each day of this Era brought new surprises and discoveries, but the *Vaughn* was in a category all its own. Since it was a simple matter for the Redeemed to step across the universe, many people flocked to see this unusual and unexplainable starship. They were careful not to board the ship (for they did not want to interfere with the ongoing investigation) but they did gaze at it from a distance with a mixture of awe and wonder.

The press advanced a number of different theories. The *Hyde Bulletin* proposed that the ship was a derelict from the old universe that, thanks to the Stryker Singularity, had somehow survived. The *Prentice Observer* made the argument that the vessel was a time travel experiment from the distant future. The *Colton Pioneer* suggested that perhaps it was a new life form – not a ship at all, but a creature that lived in the void between the

stars. By the time Monroe and Merlin reached the *Vaughn*, mankind was engaged in a lively debate. People were eager to follow their work and hear the conclusion of the matter.

On August 1, the two men made the jump from Xanthe onto the bridge of the *Vaughn*. When they arrived there were no other ships in sight – but they knew that people's interest had not waned. Mankind had an enormous attention span and was not so easily distracted. The citizens of the universe were simply giving them some space to work.

“There's a lot of eyes on us,” Merlin remarked. “It's a bit of an odd feeling. Usually there is not this much attention attached to my research. Why, I once worked on a research paper for fifty years before anyone ever heard about it. I prefer to have my conclusions tested and well-documented before releasing them to the public.”

Monroe took a moment to look around before responding. The interior of the ship was as empty as ever. It looked like there was nothing to be seen – but he found that difficult to believe. *There must be something here; there always is. The trick is learning how to see the thing that no one else can see.*

“Your paper on the Wall around Sol is an excellent example,” Monroe replied. “In the old universe your approach was a sound strategy. Any conclusions that you released would be viciously attacked – which is something you experienced firsthand. It made sense to proceed with great caution. Your careful study and detailed proofs made you the greatest scholar of your day. But we live in a new era, Merlin! No one in all of creation wishes to attack you. Instead, everyone wants to *help*. You could stop any random person in the street and ask them for aid, and they would do whatever they could to assist you. These are not bad times; these are the best of times. By all means, let the universe watch. Perhaps they will see something we have overlooked. Their attention can only help our cause.”

Merlin laughed. "Perhaps you are right. At any rate, this is not an investigation that can be done in secret. I do not know what we will learn; only time will reveal that. But it is quite possible that we will learn something unexpected. God has filled His universe with all sorts of surprises."

"Quite so. Let us not waste any time, then! Where should we begin?"

"By collecting data, of course!"

"Shouldn't we form a hypothesis first?" Monroe asked. "The press has proposed multiple possible theories. If we start with an idea then we can form tests to evaluate the idea. That will guide us in our study of this vessel."

"But at this point we don't know enough about the *Vaughn* to form a plausible hypothesis," Merlin pointed out. "We need to collect as much data as we possibly can. Once we have a large body of evidence we can go through what we've learned and analyze it. That will give us a solid basis for forming a hypothesis. Any path we chose at this point would simply be a random guess that had no particular value."

"Perhaps you're right. At any rate, it won't do any harm to perform a detailed scan of this ship. Noel's scan was a good start, but it was cursory at best. Let's start with that and see where it takes us."

* * * * *

It took four days to complete their submicroscopic scan and create a virtual model of the *Vaughn*. However, unexpected discoveries began turning up on the very first day. To their immense surprise, they discovered that every part of the ship was created out of polymorphic nanites. Even the hull was not made of sheets of metal; instead it was a nanite construction. They also discovered that not all of the nanites were the same. The ones that formed the ship's hull appeared to be "parked"

and inert.

“This is fascinating!” Monroe exclaimed, as the men examined the data. “It would seem that the civilization which built this ship used hypercomplex nanites as their base construction material. That is quite bizarre. When they needed to create something they simply manufactured a batch of polymorphs, had them assume whatever shape they desired, and then parked them in that finished form. That is a most unusual construction approach!”

“Unless this is a special project,” Merlin pointed out. “This is the only artifact we have from this civilization, so it is difficult to draw conclusions. This may not be representative of the rest of their society. We have to be careful to avoid claims that are not solidly supported by the data. If there are valid alternate explanations then we must consider them with due care.”

“That's quite true. I suppose this might have been an experiment, to see just how far they could take their nanite technology. Your sense of caution is sound. Yet the scan reveals that these nanites are clearly quite advanced. This technology must have been perfected over a very long period. Any race that could create such complex micromachines must surely have developed basic metalworking first. They *must* have the knowledge to craft a hull through traditional means, for that is a vastly easier undertaking. But that is not what they did. The fact that they used *nanites* to create the hull surely speaks volumes. They must be used to creating things this way.”

“You may be right,” Merlin agreed. “Even though our data is limited, it does seem unlikely that this is their first attempt at using nanite technology on a large scale. If you are correct then the civilization which made this vessel must be quite isolated. Otherwise they would have used our own nanite technology, which is vastly superior. We seem to be dealing with a culture that has had no contact with mankind. One wonders how that is even possible in this Age.”

“Exactly. The Artilect has explored the entire universe. Until the discovery of this ship we all believed that the Nehemiah V probes found every single civilization in existence. Since the Artilect clearly did *not* find the civilization that built the *Vaughn*, that means there may be all sorts of things hidden out there. Do you suppose this unknown race is hidden behind some kind of Wall?”

“That is a rather large leap, based on the facts we know. First of all, there is no need for a Wall anymore. Our home planet Earth was imprisoned for the sins of the Spanish Emperor, but in this Age there are no sins or wicked empires. Governor Nicholas built a wall around Tau Ceti to protect that star system from evil, but in this Age there is no evil. There is simply no known data that would give a valid reason for any society, anywhere, to build such a protective device. It is true that the source of the *Vaughn* is unknown, but there are other possible explanations. Even time travel is a possibility.”

“Really?” Monroe said, surprised. “*You* believe in time travel? Surely that is the least likely possible explanation!”

“At this point it is too early in our investigation to rule out anything. We do not know the full capabilities of the Stryker Singularity, and we do not know what technology will exist in the future. In order to exclude a possibility we must first have data. Since we lack data we must keep an open mind.”

When Monroe released their preliminary findings, the press greeted it with tremendous enthusiasm. The additional information fueled even more theories. Perhaps this was a ship from the old universe – an experimental prototype from some forgotten colony. When Carroll Lane's swarms massacred the last Ranger world in 2469, civilization died – but a few people survived. Not everyone lived in the colonies; there were some who preferred to live alone and create their own future. It was thought that the swarms had tracked down all of these isolated settlements and wiped them out, but something could have

been missed.

“It's certainly a possibility,” Captain Max said, when the *Hyde Bulletin* asked his opinion. “You would think that everything from the old universe would be long gone by now, but the Singularity survived – and it's full of mysteries. Perhaps it somehow grabbed a ship from the past and brought it into the future. Or perhaps it found a ship in *our* future and brought it into the present. Who can say?”

The *Coulton Pioneer* asked Professor Grimes to weigh in, but he declined. He said he wanted to wait on the finished report before offering any theories of his own. “At this point we cannot rule out the possibility that the *Vaughn* was designed by a race of hyper-intelligent sea turtles on a quest to find a better brand of toaster. Since the facts cannot rule out even that ludicrous hypothesis, I believe it is best to wait and see what happens next.”

Merlin, for his part, heartily agreed.

* * * * *

The investigation of the *Vaughn* continued over the following months. Monroe used the Diano Corporation's computing grid to analyze the data that their scans had gathered. The analysis confirmed what they already knew – the ship was made of two different types of nanites. Most of the interior of the ship was empty, which they found highly suspicious.

“Perhaps the ship has simply been turned off,” Monroe suggested. “When the ship is in active mode the polymorphs spring to life and fill the interior with all manner of machinery.”

“You might be right,” Merlin agreed. “That is one explanation of the data. But I have a nagging feeling that there is more here than we realize. The difficult part of any investigation is *not* the discovery of the obvious; anyone can do that. The trick, as you have said so many times, is to learn to see what no one

else can see. It is easy to look at a box of puzzle pieces and see the pieces that exist. It is much harder to realize that certain pieces are missing – and harder still to know what those pieces would have revealed.”

“True. Unless, I guess, you have the picture on the box. Or you've put the whole puzzle together and you can clearly see what is missing. But, of course, we don't have that. Instead we seem to have one puzzle piece and are missing the other 999.”

“Which is exactly what makes our research so difficult. It is easy to draw conclusions based on a single puzzle piece, but it is highly doubtful that those conclusions are accurate. We need more data.”

But not everything was missing. Some pieces were obvious – such as the ship's space drive. After four additional scans of the ship's interior revealed no additional information, the scholars turned their attention to the ship's propulsion system.

“I'm afraid this is not going to be easy,” Merlin remarked, as the two men stared at a holoscreen they had created on the ship's bridge. “I am not an expert in this technology, but it would appear that the *Vaughn* converts matter directly into energy and then uses that energy to power its spacedrive. According to the technological history department at Star City University, no drive system like this has *ever* been built. Even in the old universe no one took this approach to space travel. Dr. Logan was quite certain about this. There is no mention of this class of drive system in any historical document.”

“Well, yes and no,” Monroe said thoughtfully. “It's true that a ship's *spacedrive* never operated on those principles. But I seem to recall Victor Stryker telling me that in the old universe he created a bunch of probes that did something like that. They consumed raw matter and used it to replicate themselves.”

“Certainly. Lane later stole Victor's basic design and used it to create the swarms, which killed everyone who was not in

one of Lane's wicked vaults. But that is not quite the same thing. Using matter for replication is an idea that dates back to the very first replicating probes launched by Timothy Stryker. Using it to power a ship's drive, though, is different. No one ever did that because there was always a better approach to take. That is still true today."

"Which is more evidence for an isolated culture?"

"I tend to agree. The data does point in that direction. But why does the ship remain at a fixed point in space, relative to the position of the Stryker singularity?"

"Exactly. Why is the ship parked here, twelve light-years from the anomaly? Why is it not closer? Why is the ship abandoned and yet still holding this position? What purpose does that serve?"

"If we had the data needed to answer those questions then we might be able to unravel this whole mystery," Merlin remarked. He pointed to a portion of the projected engine diagram. "Do you see that section? That is clearly the fuel area. The nanites in the fuel container are extremely basic – raw, if you will. The fact that they are converting *nanites* directly into energy supports the hypothesis that nanites are the basic building blocks of this race. It makes no sense, given how wasteful it must be to convert incredibly complex micromachines into energy, but that is where the data points. Why they do not simply throw some dirt or rocks into their conversion chamber is truly baffling."

"Unless nanites are plentiful. Perhaps they simply grow them. For all we know it may be that rocks are in short supply. Do you remember the world of the Watchers? There may be limitations in play that we are unaware of."

"Now that is a stirring thought! Perhaps we are making too many assumptions about the nature of this civilization. The Artilect was designed to look for races that were more or less like our own. We may be dealing with something quite different. That could explain why they were not found. What if the world is

there but we simply cannot see it? In the old universe angels went about doing the will of God, but even the saints could not see them. Yet they were there all the same.”

Monroe stared thoughtfully at the holoscreen. “You know, the fuel converter may be the clue we've been looking for. We can see the size of the fuel container, and we can also determine its current fill level and the rate of consumption. Can we use that information to determine the ship's age? It should be a simple math problem – we just need to find out how much matter has been consumed and then divide that by the current fuel usage.”

Merlin shook his head. “That methodology would not be valid. We don't have any data on how much fuel was in the tank to begin with; the ship may not have left with a full complement. We also don't have any data on how much fuel was used before the ship was parked here. The ship may have been flown throughout the universe for years, using vast amounts of fuel, before it finally made its way here and was parked. It's simply not valid for us to assume the starting quantity or extrapolate the current usage into the past. The available data simply will not allow it.”

“I suppose you're right. But it would be nice to know how old the ship is.”

“It certainly would. What we need to do is find a way to access the ship's computer – if it has one. There may be data there that we could use to date the ship. Star charts would be enormously helpful; since stars move, we could use old charts to determine the date on which the charts were made.”

But their attempt to locate the ship's central computer were not successful. The only other device that was found on board the ship was a communications system – and even that was questionable.

“Are we sure that it is intended to send and receive messages?” Monroe asked.

“It's hard to say,” Merlin replied. “It's certainly an

unorthodox approach to communication, and it is difficult to see how it might work – or if it works at all. There is no obvious unit for sending or receiving. But the Corporation's computer analysis indicates that communications is the most likely functional match, and I am inclined to agree with them. At this point that is what the data indicates.”

“Perhaps that is the answer, then. The *Vaughn* could have been built to serve as a communications relay. It was flown here and parked in this position, and then all other equipment that might consume power was removed. Its purpose is now to relay messages. That would explain why we can't find anything else on board.”

“But where is it getting the messages from?” Merlin asked. “And where is it sending them to?”

“The singularity, perhaps?”

“That seems highly unlikely. According to Dr. Philip Crane's extensive analysis of the singularity, it is impossible to send a message through the singularity. Space and time are broken there and do not permit transit of any kind. Now, it may be that his research team came to an incorrect conclusion, but so far his paper has stood for a thousand years. No one has been able to disprove his claims.”

“And yet, all we know about the singularity is what we see on *this* side,” Monroe pointed out. “There may be another side to it that we cannot see, and conditions might be different there. Perhaps it *can* be breached from the far side – from some point outside our own universe. The race that built the *Vaughn* may have flown it here in order to relay messages through that anomaly and into our space.”

“If that is the case then where is the supporting evidence? Where are the messages and the ship's crew?”

“Perhaps there was never a crew at all. This may be all there has ever been.”

“But there's no control system here! I don't even see a

navigation system on board. How did the *Vaughn* get here?"

After several days of further study, the men came to a conclusion. "There *must* be something missing from this ship," Merlin said firmly. "There has to be a way to manipulate the nanites into creating shapes. This ship needs more equipment than it currently carries, and the nanites were designed to reform into other shapes. What we need to do is learn how to control them. It may be that if we can turn the nanites on, the ship will become full of equipment and our questions will be answered."

"But that is going to be a very difficult task," Monroe replied. "We have a detailed scan of the nanites, but that's not at all the same thing as understanding how to use them. Learning their operation is going to be a serious research project. It is too large a task for us – especially given that we are not experts in that field."

"So what do you propose?"

"I think it's time we brought this problem to a talented group of bright minds. And I know just where we can find them."

* * * * *

In the Eternal Era there was no shortage of amazing news stories. After all, the universe was a place of endless wonder. Its perfection, holiness, and design reflected the God who had created it. There was a time when the news reported by the media was full of evil and corruption. In the old universe, being a reporter was synonymous with being a liar. Men such as President Rios wielded the media as a weapon, in order to spread lies that would crush his opponents and increase his power. But those days were gone and better days had come.

Even though there was a great deal going on, the news of the *Vaughn* had not been lost. People were still eager to hear the end of the story. Where was this missing civilization? Who were they? How did their existence bring glory to God? Nothing quite

like this had ever happened before. The story had people's interest – which Monroe was counting on, because he needed their help.

It was not easy to meet with the president of Star City University. There were millions of people who wanted a moment of his time, and he could not meet with all of them. God could be everywhere at once, but men were limited to just one place at a time. Yet Professor Grimes was willing to meet with Monroe and Merlin on board the *Vaughn* and hear what they had to say. When he heard their plight he immediately agreed to help.

“I can certainly see your dilemma,” Grimes told them. “You need a great deal of technical work to be done by a team of very skilled people. I'm quite grateful that you came to us! I'm sure the Diano Corporation would have given you any resources you needed – this is the sort of problem that Ramon loves – but these nanites represent a fantastic educational opportunity. Students are rarely given the chance to explore alien technology. They will embrace this challenge with tremendous enthusiasm!”

“That was my thought exactly,” Monroe agreed. “How soon do you think they can begin?”

“That's a good question. As I am sure you know, the fall semester has already begun. I don't want to distract the students from their current course load; they have already made commitments. But we have another semester right around the corner, and more semesters after that. Now that I have a copy of your data I can meet with the department heads to turn your engineering problem into course work. All engineering students are given projects to work on, but they are usually not quite as exotic as unknown alien technology. I think we can have everything in place to begin work in January of 9992.”

“Excellent!” Monroe exclaimed. “That will give us an opportunity to resume some other work that we've had to put on hold. Of course, when the semester starts we will make ourselves available if anyone needs help or advice. But I'm afraid

we are not technical specialists.”

“You don't have to be. Our talented crop of engineering students will handle that. Once you come to the school, explain the problem, and introduce your findings, the learned professors should be able to handle things from there.”

“That will not be a problem,” Merlin replied. “I've already begun creating a thorough report of the data we've gathered. I will be ready to present our findings. The goal of the students should be to learn how to operate the nanites. We need to know how to turn on the *Vaughn*. At the moment it is a derelict; it needs to be transformed back into a functional starship.”

Instead of responding, Grimes looked around the room for a moment. He then glanced back at the holoscreen that was displaying a detailed schematic of the nanites. “I have been following the reports in the press. As usual, the media has been very thorough and very accurate. It is my understanding that this ship is currently holding its position in relation to the tear in space that Victor Stryker created. Is that correct?”

“Certainly,” Merlin said.

“If this ship has been 'parked', so to speak, then its builder must be using it for something. There are no fools in this universe, you know. This ship was put here for a reason and it is carrying out its intended design. Therefore, despite its appearances, the ship is *not* a derelict and it has *not* been turned off. There are no missing pieces. Everything we need is right here.”

“Of course,” Monroe said. “The nanites are everywhere. We just need to learn how to turn them on.”

Grimes shook his head. “What I am saying is that we are only seeing half of the pieces. There is more at play here than polymorphs, and I suspect we are failing to see something of great importance. For example, as you no doubt know, there are some species who cannot distinguish between the colors red and green. If you show them a red sign with green text, they will not

be able to see what is written. To them it is all the same. I think your real problem is that we are, in essence, colorblind. We are a technical race, so we see the things that we are used to seeing. But I do not think we are seeing the whole picture.”

“I don't understand. We have the best scanners on the market! We can digitally reproduce the nanites on an atomic level. What could we have possibly missed?”

Grimes smiled. “Nothing. Or everything. I do not know, gentlemen. I am only saying that learning how to use the nanites may bring up more questions than it answers.”

* * * * *

In the winter of 9991, word reached the student body that Monroe and Merlin needed help learning how to use the polymorphic nanites from the *Vaughn*. The response was immediate – and intense. Thousands of people rearranged their January class schedules in order to participate in this grand adventure. The next year simply could not arrive fast enough. Grimes dedicated six research laboratories to the nanite research project, and provided equipment that could fabricate them on a large scale. When January finally came the engineers went to work – and immediately hit a wall. The nanites were inoperable.

It was a strange problem. The scans that Merlin had made were perfect; no one doubted them. The structure of the nanites was elegant and reflected a brilliant design. Additional scans were made and the results always came back the same. Merlin had not made any mistakes, and yet the nanites simply didn't work. In fact, they *couldn't* work. They were missing pieces.

As the months went by the engineers eventually realized that the nanites were missing a very specific piece – the command module. Each nanite should have had a component that received the command to morph and then transmitted that command to its internal machinery, but it didn't. The

transformation mechanism itself was there. The engineers were able to add an artificial command mechanism to the nanite design, and when they sent it commands the nanites immediately responded. The nanites worked, but they were incomplete.

Or it *seemed* that they were incomplete. In the summer of 9992 a crew of students spent two weeks on board the *Vaughn* running experiments. They eventually found a wireless frequency that the nanites would respond to. By sending a string of commands they could coax the polymorphs into creating a variety of shapes. They proved that if the command contained enough data the nanites could form virtually any object. But this system only worked on board the *Vaughn*. It did not work with the nanites that were created from Merlin's scans.

As an experiment, a team removed a batch of nanites from the *Vaughn*, relocated them to the school, and tried the experiment there. To their immense surprise the nanites responded. This meant there had to be a difference between the artificial nanites and the real ones – but repeated scans failed to turn up any differences.

When the winter of 9992 came around, Monroe and Merlin decided it was time to shift focus. “We have acquired a great deal of new data,” Merlin commented, as the two men walked down a hallway in Star City University. “We now know how to manipulate the polymorphic nanites. That part of our theory has proven to be correct. However, we also know that the nanites themselves do not contain any intelligence. They do not know how to form a chair or a table. In order to create an object they need a detailed set of commands. They have to be *told* how to create that object. That information must come from an external source.”

“Which is a difficult problem,” Monroe commented. “As far as we can tell, the ship has no such source.”

“Or it does have that source and we simply haven't found it. After all, the nanites from the ship do not behave the same way as the artificial ones, even though scans reveal no differences. This indicates that there is some technology at work that we cannot detect.”

“That doesn't seem possible! If it's there then surely we could see it.”

“Yet the fact remains that it *is* there and we *cannot* see it. The data is quite clear on that point. We don't even have any theories about how this invisible mechanism might work. Is it a new particle? Is it new physics? Is it some trans-dimensional object? No one knows. That is why I believe it is time to take a new approach.”

“What do you think we should do?”

“It's quite simple, really. The one system we *have* found on the *Vaugn* is a communications system. We have very little data on it, but the ship can apparently receive messages. Therefore, the logical thing to do is to send the ship a message and try to talk to its creators.”

“But what sort of message is the ship waiting to receive?”

“It is impossible to know. I believe it is time for rigorous experimentation. We will simply have to try a wide range of options and see if any of them trigger a response.”

* * * * *

So, in January of 9993, the talented engineering majors at Star City University began their analysis of the communications equipment on board the *Vaugn*. The results were even more perplexing than their nanite discoveries. Scans of the communicator revealed that most of the machine was simply missing. The device could process messages, but the electronics that were responsible for actually receiving the message was not present. By the time the message made it to the communications

equipment it had already been captured and decoded by some mysterious, invisible machinery. This meant the engineers had no idea what sort of message the *Vaughn* was searching for.

The equipment for sending a response was likewise absent. The machine simply handed the data off to a pathway that went nowhere. There were no circuits for message encoding or transmitting. It was a baffling situation. This only added more evidence that the *Vaughn* had technology that had not yet been found – but months of effort failed to find it.

When the summer of 9993 came around the engineers decided to try a different approach. They generated billions of different types of messages and beamed them to the *Vaughn*, using different encoding techniques and sending mechanisms. They attempted radio wave communication, subspace communication, and every technique that was registered in the Diano Corporation archives. They even invented a variety of new approaches. But none of their attempts generated any sort of response from the *Vaughn*.

At the end of the fall semester the student body presented their findings to Monroe and Merlin. The two men thanked them for their tremendous help.

“A negative result is still a result,” Merlin remarked, after the students had left their spacious office on campus. “I admit I was hoping that the communications test would work, but this is new territory. We cannot expect this to be easy.”

Monroe nodded. “Given the scope of message technologies that were attempted, I find it difficult to believe that *all* of them were failures. The *Vaughn* should have picked up at least some of them – and I think it very well may have. It is possible that we have made another error. We have assumed that the *Vaughn* would respond to any message that it received, but that is probably a mistaken assumption. After all, the universe is filled with a staggering amount of messages. Any machine that tried to respond to all of them – or even a

significant number of them – would break down very quickly. I think it is far more likely that the *Vaugn* is looking for a very specific message. It may be a message from a particular source, or perhaps a message that is specifically addressed to the ship itself. It may even be searching for some key that we are unaware of.”

“That does sound like a reasonable conclusion,” Merlin agreed. “Perhaps, so to speak, we simply did not find the 'magic word'. If that is the case then we could spend a thousand years transmitting test messages and not come any closer to an answer. Therefore, I believe we need to change our approach. We know that the *Vaugn* exists and that it is here. This means it is quite likely that the ship's inhabitants are here as well – either because they are actually from our universe in the first place, or because they traveled here through the Singularity. If they *are* in our universe then we should be able to find them. Perhaps, instead of studying the ship itself, we should start to searching the area around the ship for clues. There must be some trace that we can find.”

“But hasn't the Artilect already searched this galaxy? The Nehemiah V probes have put an outpost in every star system and on every planet. If any aliens had moved in we would already know about it.”

“True,” Merlin said. “But the Artilect is not all-knowing. As you pointed out, it has only put outposts in star systems. The machine does *not* scan the area *between* star systems. There could be a thousand deep-space outposts in existence and we wouldn't know anything about them.”

“I see what you mean. But even so, scanning deep space is an enormous task! This galaxy is fifty thousand light-years across. If we wanted to explore every cubic mile of the space between the stars, we would need a staggering amount of equipment to do so. That sounds like a task for the Artilect – and I am not an administrator. Are you suggesting that we ask for its

help?”

“I suppose you are right. The exploration of the void would be a daunting task. I am sure we will need the Artilect's help before the end, but I am hesitant to request its time until we have exhausted our other options. Perhaps there is another, simpler test that we could carry out that does not require such an enormous investment of resources. Consider this: we have access to this ship, and we also have access to its communications system. It would be a simple matter to add a small device to this vessel that would monitor that system and alert us the moment it became active.”

“I see what you're getting at,” Monroe replied. “That's a terrific idea! Why, we should have done that from the very beginning. If the ship does receive a message we can copy it and decode it. We could even add our own communications equipment to detect any incoming transmissions and outgoing messages – without interfering with the operation of the *Vaughn*. That way we could see what the original message was and where it came from, and we could compare that to how the *Vaughn* decoded it internally. We could also listen in on any messages that were transmitted. This could unravel the whole mystery!”

“Or it could lead to even more questions. But it is a starting point.”

* * * * *

On December 24, 9993 EE, Monroe and Merlin installed a new piece of equipment on board the *Vaughn*. The engineering students at Star City University had outdone themselves. If the ship received a message, the transmission would be saved and Monroe and Merlin would be notified immediately. All they had to do now was wait.

“This could take a long time,” Monroe commented.

“That is quite likely,” Merlin agreed. “That is why patience

is such a crucial part of exploration and discovery. Even if we have to wait a thousand years, however, it is no matter. We have all the rest of eternity. In the meantime we have other matters to address. Both of us have had to place significant tasks on hold, and now we can get back to them. We will not be bored during our time of waiting.”

Monroe laughed. “No, definitely not. Boredom is impossible to imagine. Look at all the opportunities that are around us! This is a momentous day. Today we begin listening for a message from an alien race.”

“The entire universe is listening,” Merlin agreed. “You know, today is significant in another way as well. In the old universe, this day was celebrated as the day before Christmas.”

“Was it really? Christmas was never celebrated in my time. Still, you were born a thousand years before I was. Did people celebrate it in your era?”

“Certainly not. By my time people had become too consumed with material things to rejoice in the advent of our Savior. It was not like today, when all of creation gives thanks for the infinite array of good things that our Lord has done for us. I would venture to say that Christmas was never really celebrated properly until this era.”

“You are probably right. Christmas was never truly about the calendar date, you know – although I know how much you love data and precision. It was really a matter of the heart. In the old universe we struggled with sin and corruption, and we were often blind to God's goodness and love. This made it difficult to praise the Lord as He deserved. But today all evil is gone. We can praise Him with perfect praise and rejoice in His holiness. We can truly celebrate our Lord's birth as it ought to be celebrated – and we can do it in unison with all of the Redeemed.”

“Quite so,” Merlin agreed. “So, in that spirit, and in spite of the date, I will wish you a very merry Christmas Eve.”

Monroe smiled. “And a very merry Christmas to you as

well, my friend.”

* * * * *

As Merlin had predicted, their plan did not bear any fruit for a long time. Weeks passed, and then months. Eventually the months turned into years. One year passed, and then another, and then another – and nothing happened. The *Vaughn* continued to sit there in deep space, waiting.

But the two men were patient. They knew that eventually something was bound to happen. Something would turn up, if they simply waited long enough. One day the *Vaughn* would receive a transmission, or it would move to another location, or its mysterious builders would board it once more. All they had to do is wait and see.

Then, finally, something *did* happen. On November 4, 9999 EE, their waiting paid off. The *Vaughn* received a message.

CHAPTER 11: ASSISTANCE

Log date: November 4, 9999 of the Eternal Era

Location: The *Vaughn*

Log note: A single point of light can unravel a great deal of darkness

THE RECEIPT OF A MESSAGE was staggering news. Monroe and Merlin were in different galaxies when the news arrived, but they both received word at the same time. Within the span of an hour they had put aside their other tasks and met one another on the *Vaughn* in order to analyze this long-awaited transmission.

They were not the only ones to hear the news. The information had also been sent to Star City University, and was received by the engineering department with great joy. At last there was some new data to analyze! This was good news indeed. Although the message was not sent to any reporters, they quickly learned of it from the engineers at the school. By the time Monroe and Merlin once again stepped on board the *Vaughn* the news was making its way across all of mankind.

Monroe had already brought up a holoscreen and was studying it when Merlin appeared beside him. "It is good to see you again, old friend," Merlin said.

Monroe warmly shook his hand. "And it is good to see you as well. It's been, what, nine months?"

"That is correct. I saw you at the Crystal Flame. You were leading a tour, I believe. I wanted to stay and talk but I was on a mission and could not tarry."

"I understand. There's an interesting story behind that little episode. I don't normally give tours, you know, but – well, perhaps another time. I'm sure we both have much to tell each

other, but that can wait! Have you had a chance to examine the message?”

“Not in any level of detail. I only briefly glanced over the data. It looks quite complex. What have you found?”

Monroe gestured at the screen. “Have a look for yourself. I'm afraid it's quite alien, in more ways than one.”

Merlin stared at the data on the screen. The communications device that they left on board the *Vaughn* had captured the message, but could not decode it. The message did not match any protocol that it understood. Since the transmission could not be interpreted, its raw data was dumped to the screen. Monroe presented the message in several different formats in an attempt to make sense of it, but none of them made a difference. The more Merlin stared at the screen the less he understood what he was seeing. “What is that supposed to be? Are those random numbers, or is there some sort of hidden meaning?”

“I have no idea,” Monroe replied. “I'm not even sure where to begin! I've never seen a puzzle quite like this before.”

“I suppose this was inevitable,” Merlin said at last. “Based on what we already knew, we should have expected this data to be cryptic. After all, messages can be encoded in many different ways. There are different packet structures, different message headers, and different encoding schemes. In our civilization we've standardized messages and have ensured that all technological races communicate in the same way. This race, though, is not a part of our community. They have developed their own message format and encoding scheme. If you think about it, the fact that we cannot understand this message is actually a hopeful sign. It indicates that it truly is from the aliens themselves. If it was from any other source we would be able to decode it with ease.”

“I agree. But surely we can find *some* way to translate it. After all, these numbers must represent individual letters in

some sort of alphabet. Given that all races share the same language, that should make our job simple. We no longer live in the era of Babel and confusion. All we need to do is treat the message as a cypher.”

“Not necessarily. There are many possible interpretations of this data. Text messages are not the only kind of transmission. What if this message is in audio or visual format? That would present a completely different decoding challenge, as there is nearly an infinite number of ways to turn sound and light into digital data. This could even be a binary message that is intended for the ship itself. We have no idea what kind of information we're dealing with, and that will make it much more difficult to decode.”

Monroe made some gestures in front of the screen and brought up a different set of data. “Now that is interesting. Do you see that?”

“That is puzzling. If that is correct, it means that the message is not in a digital format at all. What we have received is an analog message. That is quite peculiar! Digital messages have been the standard for this entire Age. In fact, they were standard back in the days of the Spanish Empire. This race must be isolated indeed.”

“And yet they have invented very advanced nanites,” Monroe pointed out. “It simply makes no sense. Why use such an old message technology?”

“This civilization must have developed along different lines from ours. They have a different history, so they produced different technology.”

“Or perhaps there is something fundamentally different about them. Given the fact that interpreting this message is essentially going to be a decryption exercise, it might be wise to bring in some experts. We need some technical people who can dive into this technology and find out what is going on.”

“I'm sure that the engineering students at Star City

University are already working on it,” Merlin replied. “If they discover anything they will let us know. But I don't think we've exhausted all the possibilities yet. Let us do a little investigation of our own before we seek another expert resource. This may not be as difficult a problem as it seems.”

The two men connected to the Diano Corporation's extensive communications archive and searched for a match. Unfortunately, nothing turned up. The message format was completely unknown.

“That is not conclusive, of course,” Merlin commented. “The archive only records message formats from this Era. We only have limited data from the old universe – and no data from the future, of course. If this ship is from the Rangers or the Spanish Empire then it is quite possible it is using a format that has been lost.”

“That seems highly unlikely. Surely if our ancestors possessed this type of technology there would have been some record of it! I find it easier to believe that this ship is from the future than to believe it is from the past.”

“I agree. I am merely pointing out that a negative result is not conclusive. Our search must continue. Since there is no exact match, we must now dive into the realm of pattern recognition. Can we determine the content type?”

The two men set to work – but were interrupted a few hours later when the *Vaughn* received another message. To their surprise, the new message was identical to the old one. They were even more surprised when this situation repeated itself. Every few days, at random intervals, the message was received yet again. It was a very perplexing situation.

Since they could not get a fix on the source of the incoming transmission, they focused their efforts on the decryption process. The two men tried all sorts of algorithms to decode the message – as did the engineers at Star City University. They first attempted to treat the messages as text,

and employed numerous ways to convert the numbers into letters. But nothing that they came up with was intelligible. Each decoding technique resulted in a long and meaningless stream of characters. The results never even came close to making sense.

Next they attempted to decode the image as visual information. They assigned colors to specific numbers and tried to render the data as a visual stream. But after thousands of attempts and weeks of work, using different resolutions and decoding mechanisms, they came up with nothing. Every attempt resulted in a random, constantly shifting pattern of color. Nothing recognizable was ever found.

“Are we sure that this message is intelligent?” Monroe asked at last.

“The numbers are not purely random,” Merlin replied. “The data stream does contain information. There is also the fact that this same message is repeated every few days. Someone is deliberately sending this specific set of information to this point in space. We simply need to figure out what they are trying to say.”

“Could it be a matter of compression? Maybe we need to use a different filter.”

“We have tried countless techniques – and the rest of mankind has tried even more. If any of them were even close to working then we should have seen *something* recognizable, but that has not occurred. Besides, this message only contains a small amount of data. That data could represent a long block of text, but it would make a very short video – depending on the resolution and dimensions, of course. If it was intended to be a high-quality video then it couldn't be more than a few seconds long.”

“Which leaves audio,” Monroe replied.

“Or some other type of alien communication that hasn't even occurred to us,” Merlin pointed out.

The two men tried thousands of different ways of

converting the stream of numbers into an audio message. Once again they were hampered by the fact that they had no metadata on the stream. By assigning arbitrary conversion values they were able to turn the numbers into sounds, but the results were not promising. No values that they chose translated the data into an actual language. The best they could come up with was some haunting melodies.

“But that tells us nothing,” Merlin commented. “All sorts of numeric sequences can sound fascinating when their numbers are assigned arbitrary audio tones. People have even turned the digits of pi into a song.”

“I know,” Monroe agreed. “We have spent three months working on this and our feeble attempts have never produced anything that might be a language. We haven't found any actual speech. If this truly is an audio message then that brings up two possibilities: either the message contains speech but is using an encoding technique that is unfamiliar to us, or else the message doesn't contain speech at all. Perhaps this message actually is some sort of melody.”

“Exactly. We know nothing about the motivations of the aliens who transmitted the message. We do not know their priorities or their understanding of the universe. It is entirely possible that it is a simple melody and we have decoded it correctly – but there is no way to prove that. There are too many possible answers, and there is no way to tell which answer is correct. The data that we have is inconclusive.”

“I agree. What we need is a technical expert – someone who excels at understanding the unknown. Someone with incredible brilliance and computational power. I think there is one clear candidate that is superior to all the others.”

“The Artilect,” Merlin agreed. “I am hesitant to ask for his assistance, given his responsibilities, but I believe we can make a reasonable case. So what is the procedure for requesting his aid? In all these years I've never had to use his services.”

"I haven't either. Usually he is reserved for technical problems, and that is not my field. I'm a scholar, not an engineer."

"Should we start by going to the Diano Corporation? After all, they were the ones who built him. Perhaps Ramon Diano could help us."

"It's more complicated than that," Monroe replied. "It's true that Dr. Mazatl commissioned the Artillect and guided its construction. But the Artillect is his own entity now. He is under the authority of the Administrators, not the Corporation. If we want his help then I think we will have to talk to one of them. They will bring it before the group and vote on it."

"Doesn't the Artillect get a say in it?"

"Of course – he is included in all the discussions. I've heard that sometimes he comes up with alternate plans that resolve the matter without the use of his resources. But he has never refused a request approved by the Administrators. He was built to obey them, you know."

Merlin nodded. "That is true. Fortunately for us, you happen to know one of the Administrators. In fact, you knew Amy Stryker back in the old universe! Your connection to her goes into ancient times. I believe she has even helped you in the past – to save the natives of Earth from that genocidal maniac, Evan Maldonado."

"Yes, that is true. Unfortunately, though, I did not help her in return. I viewed Amy with great suspicion and made her last days harder, not easier. I had a chance to be her friend but I did not take it. I sincerely wish I had made a different choice."

"But that's all in the past. Things are different now."

"I know," Monroe said. He thought for a moment. "There's no telling where the Stryker twins might be. They're rarely at home."

"But surely the Diano Corporation would know, wouldn't they? It's hard to imagine that they are not keeping track of

them. I have no doubt that the Twins are working on an important task somewhere, and if that is the case then surely the Corporation is aware of it. They must have the data that we need.”

“It's a good place to start. If they don't know then we could always ask Richard Stryker. Surely their father knows where they are.” Monroe made a gesture in front of the holoscreen and brought up the communications console. He established a connection with the Diano Corporation's network and navigated to the personnel directory. Monroe read over the names for a moment, and then selected Ramon Diano.

“Really?” Merlin asked, surprised. “The founder of the company?”

“If he doesn't know then no one does,” Monroe explained.

The connection was made. They were on hold for a few minutes, and then Ramon's face appeared on the screen. “What a pleasant surprise! It's Monroe Araiza and Merlin Hardin, is it not? I have not had the pleasure of speaking with you for a very long time. How was the Crystal Fire?”

“It was a tremendous experience,” Monroe replied. “Thank you very much – and thank you for taking our call. I hope we're not inconveniencing you. I know you are a busy man.”

“Not at all! It is always a pleasure to speak with two of the most noted scholars of our time. I have heard that you are investigating the *Vaughn*; is that true?”

“You are correct. In fact, there has been an exciting development! The ship has started receiving regular communications. We believe that the aliens who created the vessel are trying to communicate with it.”

“That's what I've been reading in the news. It's quite exciting! Have you been able to decode the messages?”

Monroe shook his head. “I'm afraid not. We have tried many different techniques but nothing has worked. We haven't

had any more luck than the rest of the universe. In fact, that's why we're calling. We are looking for some help."

Ramon smiled. "I believe I know where this is going. You have a mysterious signal that cannot be cracked, and you want to hit it with the biggest hammer that has ever been built. That means you want the aid of the Artilect. You're looking for an Administrator."

Monroe nodded. "I was hoping you would know where Amy Stryker is. I'd like to talk to her."

"As a matter of fact, I do. Amy and Amanda are on the Ayalan homeworld. I'm sure Amy will be delighted to see you again. Tell her and her sister that I send them my highest regards."

"Thank you," Monroe replied.

"If I can be of any further assistance please let me know. The mystery that you are investigating is one of the most fascinating ones I've seen! Please let me know if we can provide you with any assistance of any kind. Also, when you have a moment, please stop by and pay us a visit! It's been too long since we have shared a meal together."

"It certainly has," Monroe agreed. "Until next time."

"Until next time," Ramon replied.

After the connection was terminated, Merlin turned to Monroe. "I take it we're off to Ayala?"

"Absolutely."

"I have never been there before, but I've heard it is a fairly large world. Do we know where on Ayala they might be?"

Monroe smiled. "They're the Stryker twins. I think they will be easy enough to find."

* * * * *

The planet of Ayala was a dense, rocky planet that was completely devoid of all vegetation. It was an enormous world

with immense gravity, tucked away in an otherwise uninhabited galaxy in a far corner of the universe. The race that inhabited this strange place was one of the oldest ones in the new Era. When Dr. Temilotzin sent the Nehemiah V probes into space, they discovered this world and its civilization – and were startled to discover that the Ayalans had been there from the beginning. As far as anyone could tell they were the first new citizens of the Eternal Era.

The world was inhabited by only a single life form – the Ayalans. The planet orbited a white dwarf star at a colossal distance of fifty billion miles. The world was extremely cold and had no atmosphere. Other planets were filled with trees and grass; this one was populated with crystals of all shapes and sizes.

The Ayalans were a peculiar race. They appeared as small glowing points of light that zipped through the air with ease. Each one glowed a different color. Although their colors could shift, depending on their mood and level of emotion, each one had a dedicated hue that they emitted. They seemed to come in all colors of the rainbow. The Ayalans could talk, but they had no hands or arms or legs. Mankind began calling them wisps, for that is what they looked like – small points of light that lit up a dark and cold world.

To the Ayalans, however, their world was not cold or dark; instead it was their playground. They had the amazing ability to phase into solid matter and animate it. They could merge with the crystals that dotted the landscape and reform them into any shape they desired. Their structures did not resemble the houses or skyscrapers that populated mankind's world, but they were still beautiful in their own right, and they fulfilled the needs of the wisps.

The Ayalans were different in another way as well. Other races grew and multiplied, but the Ayalans did not. They had a fixed number – 16,383. They were equally divided into eight

different clans. One clan had one fewer members than the rest, a fact that puzzled the race of men. The Ayalans themselves had no explanation for it. Until mankind came and began teaching them, the Ayalans had no sense of history or the past. All they knew was the present.

Some thought that one of the wisps had left the planet on an epic journey of adventure and discovery. Perhaps this wisp was a leader among its race – a visionary pioneer who sought to blaze new trails. Or maybe he was simply hiding in the depths of the planet, out of the sight of men. After all, the wisps did not count themselves. They were too busy enjoying their home to be concerned about numbers and statistics. If the wise knew the answer to this riddle they did not share it.

In the early days, after their initial discovery, mankind spent a lot of time working with this new and curious race. However, men quickly learned that this race was still young. The wisps had little interest in learning, discovery, or advancement. They were content to enjoy their youth and play among the crystals. Since the Ayalans were faring well and were not in need of help, the race of men turned their attention elsewhere. After all, the universe was filled with things to do and there was no need to help someone who did not need it. The day would come when the Ayalans would grow out of their childhood and begin asking questions, and when that day came the race of men would be there for them. But for now they let them play.

On February 9, Amy and Amanda Stryker were sitting at the top of a cliff that overlooked one of the eight Ayalan factions. From their vantage point they could view a sea of crystals that glowed and shimmered in the darkness. The planet was cold and devoid of atmosphere, but this did not inconvenience either of the twins. Even in the old universe their nanites enabled them to survive in any environment. Their new, incorruptible forms only made that even easier.

When Monroe and Merlin transported themselves to the Ayalan homeworld, they had no problem finding the only other human beings on the planet. Their nanites located the twins almost instantly. The men quickly stepped through space and appeared a few feet behind them.

Amanda turned around to see who had appeared. When she saw them she immediately stood up. "Monroe!" she exclaimed. She reached out and hugged him. "What a fantastic surprise. And you must be Merlin. I've heard so much about you! How are you doing?"

"Quite well, thank you. Am I interrupting something?"

"Not really. We're just sitting here watching the wisps. They're so fascinating! It's like watching children. The whole world is a joyous wonder to them, and they delight in it. They're such a simple, happy race."

Amy turned to Merlin. "You're here because of the *Vaughn*, aren't you?"

"That is correct," he replied.

"I thought you'd need our help eventually. I've been reading your reports on the ship. They're quite thorough and very precise. Noel uncovered a very difficult mystery, and you have left nothing to chance. You've done an excellent job of analysis."

"Thank you."

Amanda spoke up. "I'm so glad you're getting us involved! I was really hoping we'd get a chance to join in on all the fun. So how can we help?"

Merlin spoke up. "Actually, miss, what we need is the help of a friend of yours. We were hoping that you would introduce us. The truth is we have not been able to interpret the messages the *Vaughn* has been receiving. We have collected a lot of data but so far we have not made any sense of it. We're not technical people, you know. Therefore, we wanted to see if the Artilect could help us put the pieces together. We simply do not know

what to do next.”

“I see,” Amy said. “So what you really want is an Administrator who can approve your project request.”

“Precisely. This is, after all, a worthy cause and a great mystery. Who better to explore its secrets than the mightiest thinking machine ever devised?”

Amy looked at her sister. “What do you think?”

“Well, obviously, we should help them! This is a really amazing project and has *fun* written all over it. I can't wait to meet the builders of the *Vaughn* – for all we know they might be rock monsters or something. You just never know, do you? But before we give this problem to the Artilect I'd like to try to solve it myself. How could we pass up a great chance like this?”

Monroe spoke up. “I mean no offense, but is this really worthy of your time? I have no doubt that the Artilect could solve this riddle easily.”

“Oh, I'm sure he could,” Amanda agreed. “He's quite smart. But really, where's the fun in that? It almost feels like cheating.”

Amy nodded. “You have a good point. You know, we're not really doing anything important right now. We could take a few days to go study the *Vaughn*. After reading so much about it I'd kind of like to see it for myself.”

“Exactly! We can hop on board and do a little investigating. If we can't solve the mystery then we can go visit the Artilect and ask him for help. And that's not all. We can even bring along a friend!”

Monroe spoke up. “A friend? Do you mean the Sentinel?”

Amanda laughed. “No, not the Sentinel. As much as I love Steve, that would kind of be like cheating. He never misses anything, you know? Besides, he's busy right now helping Miles. No, I was actually talking about Velvet Dawn.”

“Who?” Merlin asked.

“She's a wisp. She helped us a few years ago and we

promised her that one day we'd repay her by taking her along on one of our adventures."

Monroe spoke up. "I'm a bit surprised. I did not realize that any of the wisps possessed curiosity or a drive for exploration. Has an Ayalan ever left this world?"

"It doesn't happen very often," Amy agreed. "Normally we don't take any alien offworld until their race has developed that capability on their own – unless it becomes clear that they're not a technological race, in which case Noel builds Gates for them so they can get around. With the wisps it's just too soon to tell what they're going to grow into."

"Right," Amanda said. "But taking her with us *would* be a lot of fun. And we did promise her! Promises must be kept, you know."

"True and true," Amy agreed.

"Wait a minute," Monroe interrupted. "Wisps have genders?"

Amanda smiled. "That is an excellent question, isn't it? We know that they are basically living points of light, and light isn't usually associated with a gender. None of the wisps on this world have reproduced, as far as we know – the population hasn't changed since this place was discovered. But that doesn't mean they *can't* reproduce. I think there are all sorts of things the wisps might be able to do once they mature a bit."

Amy spoke up. "Besides, it just feels so wrong to call Velvet an 'it'. I mean, *rocks* are 'its'. It's so cold and impersonal. She deserves a little more warmth than that."

Merlin spoke up. "I think it is admirable that you wish to bring your friend with you, but won't it seem rather boring to her? After all, the *Vaughn* is a rather cold and sterile vessel! There isn't going to be much for her to look at."

Amanda laughed. "The Ayalans are young, Merlin. To them *everything* is wondrous and amazing. Most of them have never left their planet, or been in space, or seen a spaceship

before. Velvet Dawn will definitely *not* be bored. I don't think they even understand that concept! I bet they could entertain themselves for years with just a cardboard box."

"We should try that sometime," Amy commented.

"Very well," Monroe replied. "I trust your judgment. Do you want me to explain what we've found so far, or do you wish to get your friend first?"

"We'll get her and be right back," Amanda said.

The two girls then vanished.

* * * * *

Amy and Amanda found Velvet Dawn deep within the crystal city. She was a bright purple point of light that was busily zipping around a large green crystal.

"What are you doing?" Amy asked.

"Oh, just staring at this crystal," Velvet replied. "These crystalline entities are so mysterious, you know! They're the giant, quiet citizens of our world. They're always growing and never talking about it. What do you suppose they're thinking about?"

Amanda laughed. "Crystals aren't really alive, Velvet. At least, not like you and I are. They don't have minds and they don't think thoughts. They're just rocks."

"Are they happy?" Velvet asked. "I *do* hope they're happy. We appreciate them, you know. Ayala wouldn't be the same without them. They're beautiful and majestic, and they offer a comforting physical presence. And it's so much fun to make them dance."

"I'm sure they're happy," Amanda replied, smiling.

"Do crystals ever go anywhere? Without us being inside them, I mean. I've never seen them move, but that doesn't mean they don't move around when I'm not looking."

Amy shook her head. "No, I'm afraid they stay rooted in

one place. The truth is they lead rather monotonous lives. But speaking of moving, how would you like to go on a trip?"

Velvet Dawn zipped excitedly through the air and hovered in front of Amy. "To where? Have you found something new? There's so much I haven't explored yet! The world is such a big place. How can any of us explore a whole world?"

"Do you remember a few years ago when you helped us solve the mystery of the Whispering Shard?"

"You mean that weird talking thing you found in my clan's village? Yes, I remember. That was fun! I haven't found any more, though."

"That's because there was only one," Amy explained. "Anyway, you helped us figure out its purpose and put it to work. We told you that in return, you could go with us on our next adventure. Remember?"

Velvet Dawn glowed brightly. "You mean it's time?"

"If you're not busy. Now, if you have other things going on then we can wait."

"You would *wait* on me?" Velvet Dawn asked, astonished. "But why?"

Amanda spoke up. "Sure. I mean, why wouldn't we?"

"Why, *because!* You are two of the Redeemed ones. Your race rules over all of creation with the Lord Jesus Christ. The Lord has put your race over all other races. You Redeemed are incredibly old – older than this universe, even. You have great power and so many important things to do. But I'm just a simple, lowly wisp who stares at crystals and rocks and elementals. I don't have anything important going on. If anything, I am the one who should be waiting on you."

Amanda laughed. "You know, Velvet, if you're not busy then there's no need for anyone to wait on anyone! You can just come with us and we'll get started."

"Then let's go!" Velvet Dawn exclaimed. "Only – how do we get there? Do I need to follow you? Is there some path

through the skies that we need to take? I've never gone into the void before. I'm not sure that I know how."

Amy smiled. "Don't worry. We'll handle the transportation."

The three of them then vanished.

* * * * *

Amy, Amanda, and Velvet reappeared at the top of the cliff. They found Monroe and Merlin watching the clan below.

Monroe spoke up. "You know, you're absolutely right. It is quite peaceful and relaxing to watch the Ayalans go about their day. The interplay of their colors through the crystals is quite a sight to see."

Amanda nodded. "It's a nice break from spending all that time reading, isn't it?"

"Why, reading is one of the great joys of life! I have spent many happy and fruitful hours in the pages of a book."

"Oh, I quite agree. But sometimes you need to leave your books behind and go out into Creation. That is where all the action is – out in reality."

Amy spoke up. "Which, if you think about it, was one of the huge problems with Lane's vaults. He could not offer mankind anything of substance. The fantasies that he created were poisonous and led to ruin. In a universe that reflected the glory of God, he chose to dig a hole in the ground and create a corrupt dream in his own image. It was a foolish mistake."

Velvet Dawn spoke up. "What are books?"

Merlin looked surprised. "You mean you've never seen a book before?"

"Our race does not have such things. We are young, you know. You don't happen to have one I can look at, do you?"

"I can make one," Merlin offered. Using the nanites in his bloodstream, he materialized a thick blue hardback book and

levitated it over to Velvet. "Here you go. This is my most recent work."

Amanda eyed the title. "*On The Use Of Polymorphic Nanites In Industrial Manufacturing*. Goodness! Really, Merlin?"

"Sorry. I don't usually write books for children."

While Merlin held the book in the air, Velvet hovered over to the book and phased inside it. The book immediately came alive and began glowing a brilliant purple color. It then opened and its pages began to turn.

Velvet's voice came out of the book. "Oh, right! I remember hearing about these. You fill these with words and the book keeps them safe. Then when someone opens the book, they see all the words and the book talks to them. These symbols on the page are words, right? Oh – and I see pictures!"

"Right," Amy said. "In other worlds there are professors who teach people how to understand the symbols and learn what they have to say. Your race hasn't developed writing yet. That's something we're going to teach you so you can help us."

Velvet exited the book. It immediately stopped glowing. "Is it fun?" Velvet asked.

Merlin made a gesture with his hand, and the book vanished. "Reading is very rewarding. A good book can both entertain and educate. This skill will be a valuable addition to your civilization."

"I love things of value! So when do we get started?"

Amanda laughed. "We have some other things to do first, you know. You haven't even been properly introduced yet! Velvet Dawn, this is Monroe Araiza and Merlin Hardin. They are two friends of mine who are here because they need our help investigating a mystery. A spaceship is giving them messages, and they need help understanding where those messages are coming from."

"Ooh, that *does* sound exciting. I've never been on a spaceship before! And it's nice to meet your friends. Are Monroe

and Merlin friends from the old universe?”

“Yes and no,” Amanda replied. “I never met either of them while I was still there. Merlin died while my sister and I were traveling through time, and I died before shortly after arriving in the 73rd century. Amy did get to know Monroe, though. Toward the end of our old universe she helped him save the lives of the people of Earth.”

Velvet Dawn looked surprised. “Do you mean you *died*? What's it like?”

“It's bad. I don't recommend it. I'm very glad that death is not a part of *this* universe. God put an end to it at the Great White Throne judgment. No one else will ever die.”

“But why did you die?”

“Carroll Lane killed me,” Amanda explained. “He trapped me in a star system and used a Nehemiah IV probe to blow up the star. My body was vaporized. Amy survived because she wasn't with me at the time.”

“But that's not very nice! Why would he do that?”

Amanda sighed. “Carroll Lane was full of darkness and corruption. He hated reality and spent his life living in a make-believe world. When my sister and I came to his planet he was afraid that we would take away his fantasy, so he killed me and the rest of my family in order to stop us. Amy is the only one who survived.”

“That's terrible! But I don't understand. Why would he do such a wicked thing and sin against God?”

“Because he hated God. In the old universe most people hated the Lord and were in rebellion against Him. Our ancestors, Adam and Eve, chose to disobey God. Adam's sin was passed on to his descendents, making our entire race wicked and broken. To us it was only natural to do evil things.”

Velvet spoke up. “That's why the Lord Jesus Christ became a man and died for your people, right? To save you and make you righteous. And that's why you are called the

Redeemed. Because He redeemed you.”

Monroe spoke up. “So you have heard the gospel!”

“Of course,” Amy replied. “All races know what God has done for mankind. You must not get out very often! Every race is fascinated by the gospel.”

“But no other race needs to be saved.”

“True. But it is still the greatest story ever told, and it will never be forgotten. That God would die for sinful men – it is the greatest wonder of all.”

“So what about this spaceship?” Velvet asked.

Monroe spoke up. “If you wish, I would be happy to take you there and show you what we've discovered so far. All we have found are dead ends at the moment, but perhaps you can find something that we missed.”

“Absolutely,” Amanda agreed. “After all, we have plenty of time.”

Amy interrupted. “Until May 3, that is. That's when we have our reunion in Ahexotl Tower, remember?”

“Goodness!” Monroe exclaimed. “You're quite right – I had forgotten all about that. I think we are all supposed to be there. I'm looking forward to it. I won't miss it.”

“And neither shall I,” Merlin agreed.

“I'm ready!” Velvet announced. “Let's go take a trip into outer space. This is going to be great!”

Monroe smiled. A moment later the entire group vanished.

CHAPTER 12: A NEW PLAN

Log date: March 10, 2421

Location: Xanthe

Log note: The time of departure is at hand

IT ONLY TOOK ADRIAN GARZA a little more than two years to keep his promise. His original plan was to finish the last Vault in January of 2421, but the massive influx of people from other star systems filled up his existing capacity faster than he anticipated. However, by March 10th he completed his task. The planet Xanthe now had enough space in the Vaults to hold every man, woman, and child in the world – with room to spare. But that was not all. Carroll Lane and his team had finally finished an important feature: it was now possible to spend an entire week in whatever fantasy world the people desired. When that week was over, people only needed to wait 12 hours for their body to recover before they could re-enter their chosen worlds.

The citizens of Star City were extremely pleased. They could now spend nearly their entire lives living out their dreams – and that is exactly what they did. The change was dramatic. The streets of Star City became permanently empty and the nightly riots stopped. People would spend a week in the Vaults and then go home to eat something and sleep. The next morning they would wake up and return to their fantasies.

When people stopped destroying the city the maintenance bots were finally able to get the upper hand. They fixed the city's problems – and this time the problems stayed fixed. The Diano Corporation had to scale back their production of plasma because people were no longer using it. The world had changed.

Carroll Lane was pleased with the progress that he had made, but he wasn't satisfied. He didn't want people to spend a week in his simulation. He wanted nothing less than *forever* – and he would not stop until he got it.

“But how much is really possible?” Adrian asked him, after the last new Vault had opened. “The situation that we now have is quite tolerable. You've given people a dramatic extension and they are content with it. No one is upset anymore. Is 'forever' really a realistic goal?”

“We've come this far, haven't we? And I believe we can go even further. It won't be easy; I'm not trying to make this seem simpler than it really is. But I do believe it's possible. I will find a way to solve the remaining problems. All we need to do is train the nanites to perform the same functions that the body does naturally when people eat and sleep. I'm certain we can get there.”

“How long do you think it will take?”

“I'm not sure. But I've got plenty of plasma and have a whole team of brilliant people who are working hard on it. We will solve this problem – and then we'll be able to leave the physical world for good. The virtual world will become our reality.”

“I look forward to that day,” Adrian replied.

* * * * *

A few days later, Dr. Mazatl met with Bernard Valdez and Martin Yates. The time had come to have an important meeting – the most important one in the company's history.

Martin was the first one to speak. “Let me start out by saying that the project to replace SOLOMON has not been going well. The Corporation has made an enormous investment and it has yet to see any return. In fact, there is not even the remote *prospect* of a return! Every attempt that we have made has

failed.”

“I strongly disagree,” Dr. Mazatl replied. “I believe we have made enormous strides. Why, you've created a hardware system that can actually replicate itself and grow. That alone is a victory! All we need now is a new location to house this extraordinary technology. If we implemented that new design and allowed it to consume an entire planet, we would have a staggering amount of computing capacity – easily enough to house the Nehemiah IV data for many generations to come.”

“But *that doesn't matter*. We all know this isn't about adding some extra storage space. What you want is to build an intelligent machine. That is a contradiction in terms. It *cannot* be done. You will never build a system that can automatically manage the operation of the probes.”

“Once again, I disagree. I will freely admit that it is a difficult problem. It is unlike anything we have ever tackled before. Our area of expertise is space exploration and colonization, not artificial intelligence. No one has ever solved this problem before – but, to be fair, no one else has ever really tried to solve it either.”

“That is because it is *completely impossible!*”

“Is it?” Bernard asked. “I mean, sure, it sounds hard. But people can learn, can't they? People can look at the data and come up with a solution. So why can't we just automate the steps that people take?”

“Because computers don't know what they're doing,” Martin explained. “As Professor Grimes has told us many times, machines don't have souls. Look at it this way. Suppose that you locked a scribe in a room and gave him a giant book full of rules. You then sent another person to write some alien symbols on a piece of paper and slip it under the door to him. It was the scribe's job to open the rule book, use its rules to write a response to what was written on the paper, and then slip the sheet back under the door.”

"Now, the dictionary doesn't explain the language to the scribe. It just tells him 'If you see these symbols then write these other symbols in response'. If the dictionary has the right rules then it can seem *to someone on the outside* that the scribe is fluent in that alien language. But that's *not* the case. The person who is processing the rules doesn't have the faintest idea what the symbols actually mean. He's just following the rules.

"That's what computers are like – they *just follow rules*. They receive input that they do not understand, they interpret that input according to their predefined programs, and they return a response to the user. They are utterly incapable of actually understanding anything. Building more rules is not the same thing as imparting understanding."

"Oh. I see. But people can understand, can't they?"

"Certainly – but that is because people have souls. Machines don't. There is nothing in machines that is even *capable* of understanding. No matter how pretty their interface might be, they're really just piles of highly processed rocks with electrical charges."

Dr. Mazatl spoke up. "I understand the technical challenges that we are facing, but I am convinced it can be done. Perhaps it cannot be done perfectly, and perhaps the machine that we will create will only simulate intelligence without truly having it. But I do think we can build a system that can handle the management of the probes' network after we are gone. At the very least, I think it is vital that we try. And I do not mean 'try for a few months and then give up'. No, I mean *really try*. To try as if our very lives depended on it – to try as if the entire future of civilization was at stake. If we do not solve this problem then it is a *certainty* the probes will fall apart once we are gone. Something has to be in place to manage their colonies throughout the millennia to come, and we all know that it cannot be this Corporation. We don't have that much time left."

"So what's your plan?" Martin asked. "Are you really

suggesting that we build the SOLOMON replacement around some distant star?”

“Absolutely. The whole reason we sent the Nehemiah IV probes to distant stars was so that their network would survive if something terrible happened to mankind. The device that manages that network needs to be equally far away for the same reason. We don't want it to be caught up in the fall of mankind.”

“But aren't things improving?” Bernard asked. “I mean, the riots have pretty much stopped, and people are spending all their time in Vaults now. The infrastructure of this city has never been better. Job satisfaction for my group is way, way up. I've heard that Lane is working on a new vault upgrade that will let people spend their whole lives in the vaults – and when that day happens this city's problems people will be gone. It seems to me that if this technology spreads, the people who care about the virtual worlds will live in the Vaults and die and then leave the real world to the rest of us. I don't think we're in danger anymore.”

“That is one way things could play out. But I fear that is not the only possible future. I, for one, did not foresee the rise of the Vaults – but they came to pass and changed everything. It is quite possible that something else will arise that will also change everything, and it will not be as beneficial as the vaults appear to be. Whatever happens, our artificial intellect needs to be out of harm's way.”

“I really don't understand your concerns, though. Things are going better than ever, but you're acting as if we're all doomed. Is there any reason to believe we're in danger?”

Dr. Mazatl sighed. “It's difficult to explain. I understand that people are no longer burning down our buildings, but that is *not* because people have improved. If anything, the Vaults are making people even more corrupt that they already were. There are no limitations or restrictions in the Vaults. People can use them to create any sort of world that they desire – and I have no

doubt that they are using them in horrible ways. The problem that we are faced with is not circumstances; it is *people*. Mankind is composed of two groups: a tremendous number of very corrupt and evil people who are determined to burn everything down, and a small number of righteous people who are trying to keep everything together. That situation cannot last forever. At some point judgment will come. I don't know when it will happen or what form it will take, but I don't want the probe project to be impacted by it."

"Fair enough," Martin said. "But answer me this. Do you have any idea how you are going to create this new intellect you keep talking about?"

"Absolutely. There are still many possibilities that we have not explored. I have not run out of ideas. I firmly believe we can find a way to make this work."

"All right. I'm still not convinced this can succeed, but if you think it's possible then I will withdraw my objections. So how do you want to move forward?"

"With great secrecy. We must make sure that no one knows what we're doing."

"Really?" Bernard exclaimed, surprised. "That's kind of strange! We've never been a company of secrets before. Why, everyone knows about our Nehemiah probes. Why start now?"

"Because I believe that the creation of this artifact will be the largest and most important device that we've ever created. We will not be able to create it remotely, or create it locally and then launch it into space. In order to build it we will need to relocate all of our personnel to a distant world and spend years constructing it. In other words, the Corporation is going to have to leave Xanthe."

Martin spoke up. "That really shouldn't be a problem – especially once everyone starts living in vaults forever. I just don't see a need for secrecy. Who is going to care that we're gone?"

“Not so fast,” Bernard interrupted. “Sure, the *Vaults* are self-contained, but Star City isn't. The infrastructure of this world still needs to be managed, as do the ZPEs. If we moved out today then the whole world would fall into ruins. The *Vaults* would be the only thing left – and people can't live in them full time yet. If this city collapsed there would be massive problems. People would die. In fact, *everyone* would probably die.”

“You're quite right,” Dr. Mazatl replied. “That is why the Diano Corporation is going to launch a new automation initiative. By the end of this year we are going to fully automate all maintenance processes – even the maintenance and replacement of our repair robots. The goal will be to completely remove people from the process.”

“We've already started working on that, to some extent,” Bernard said. “We've made great strides in applying Victor's swarm technology. But our new robots weren't intended to be fully autonomous – they still need people to manage them. If we are going to leave the planet *entirely* then we have a lot of work to do.”

“I know. I realize it will not be easy, but it needs to be done. If we can achieve this goal then we can finally leave all of the Ranger worlds. None of our employees will have to be in danger anymore.”

Martin spoke up. “Isn't your timeline a bit aggressive? It's already March. There are only nine months left.”

“If we need more time then we can certainly extend the deadline. After all, we don't have a fixed date for leaving this planet. But remember, we can build into the robots the same remote-upgrade capability that we built into the *Nehemiah IV*. If we leave and then discover that we made some critical mistakes, we can write a patch and deploy it. Besides, this company has a long history of being a pioneer in the field of automation. This is something we can accomplish.”

“So your plan is to abandon this planet *completely*? You're

not going to leave even a single person behind?"

"I'm afraid it's not quite that simple. First of all, I'm not going to force anyone to come along. If any of our employees want to stay on Xanthe then they can do so. However, those who stay behind will no longer be allowed to enter this building. They will have to move out and find some other place to live. Given that things have calmed down and the rest of Star City has been mostly abandoned, that shouldn't be a problem. But we can't have anyone in this building once we leave. Allowing public access would just open the door to sabotage. This building needs to be locked down."

"I agree," Bernard said. "In the past when the Corporation has left other planets, our equipment was damaged and destroyed. Locking this facility down should prevent that."

"But you're still forcing people to leave their homes," Martin pointed out. "Some people have lived in this building for generations!"

"We're not leaving them destitute," Dr. Mazatl replied. "They will have plenty of plasma to create whatever possessions they desire – and, of course, they can keep all the goods they currently have. I'm not suggesting we loot their homes! But we have to keep this building secure in order to ensure the continued operation of its equipment, and people are a security risk – especially when we're gone and there is no one left to look after things. I don't see any alternative."

Bernard spoke up. "So after we've completed this new automation initiative, you want us to leave Xanthe for some faraway star system. How many employees are you planning on taking along?"

"All of them, if they'll come. There will be plenty of work for anyone."

"Won't you need a fairly large starship to carry them? After all, moving ten thousand people, plus all the supplies you'll need when you arrive, is no small task! We don't have any ships

that large.”

Martin spoke up. “That's not quite true. The ships that are in space right now may be small, but in the old days things were different. I've seen the blueprints for a class of starships so large that they had their own ZPE.”

“Exactly,” Dr. Mazatl replied. “Centuries ago space travel was far more common, and the use of large ships was commonplace as well. We haven't needed a cargo ship that large for a long time, but that doesn't mean we don't have the plans for them. It's just a matter of dusting off the files and starting the fabrication process.”

“I'm guessing you're going to want to build the ship in secret, right? The last thing you need are outsiders wondering what you're up to. We don't want people panicking or following us through space or trying to burn down our building. If your artifact is going to survive then, as you said, it needs to be in an unknown location. Otherwise people might try to sabotage it, and who knows what could happen.”

“I wholeheartedly agree. Martin, you will be in charge of building the ship in space, far from prying eyes. Since it will spend its entire existence in space and will only make a single journey, we don't need to put a lot of effort into its construction. The Nehemiah IV probes were designed to operate for a thousand years. This new vessel does not need that level of quality – which should speed its fabrication process considerably. Since secrecy is critical you should use automated build processes as much as possible. Try to involve as few employees as you can, and make sure they know how to keep a secret. We don't want word of this leaking out.”

Martin nodded. “Do you want my team to build this ship while the maintenance automation project is under way?”

“I certainly do. The maintenance automation initiative will be the big project that everyone knows about and talks about. The starship project will only have a few people attached to it

and will be done quietly. It should be possible to complete both at the same time. Your main focus will be on building the ship and getting it ready for the trip. Bernard will be focused on automation.”

“What is the ship's intended destination?”

“That is something we will need to decide. I believe there are a number of promising locations. However, once we make our decision we will have to guard the coordinates with great care. As you pointed out, the whole reason we're building the artifact so far from civilization is to protect it from mankind. The three of us will know the coordinates and will enter them into the ship, but they will have to be kept hidden from everyone else.”

Bernard spoke up. “So we're going to ask our employees to follow us to some undisclosed location? That's going to be a tough sell! I'd much rather be honest and open about where we're going.”

“As would I. But a great deal is riding on this, and it would only take one person to destroy it all. Can we really trust *all* of our employees to *never* make a mistake or do something foolish? The only other alternative would be to closely monitor everything they say in order to make sure they don't slip up, and I am firmly opposed to that.”

“So you're going to allow communications with the rest of the galaxy?” Martin asked.

“Of course. We will need to know what the Ranger colonies are doing. I don't want to become hermits that are blind to the universe around us. A lack of knowledge can be an exceedingly dangerous thing.”

“But how will that work? Won't that give away our location?”

“No one pays attention to the way that messages are routed. People just place their calls and let the machines handle it. This won't be any different. People won't be able to contact

us; instead we will have to initiate the call. When we do that we'll route the transmission through one of our own satellites that will be strategically positioned in deep space. In order to find the location of the artifact they would have to go to that satellite, take it apart, and decrypt its data – but the satellite will be set to self-destruct if anyone gets too close.”

“All right. I guess you have a good point. It just seems like a security risk to me.”

“I don't think we'll need to make frequent calls. Most of our employees – perhaps all of them – will have no ties to Xanthe, and even if they did they won't be able to reach people who spend all their time in a Vault. I suspect this will mostly be used to talk with the leaders of other Ranger worlds to see how things are going.”

Bernard spoke up. “How long will this project take?”

“I don't plan on ever returning to Xanthe. Building this artifact will take at least twenty years – perhaps longer. Twenty years from now the Vaults will probably have taken over every planet in the galaxy. It won't make sense to return to an empty galaxy that is lost in its own fantasies. No, I plan on staying on our new world forever and establishing a new colony there – one *without* Vault technology.”

“When do you want to leave?” Martin asked.

“Next year. If at all possible I would like to leave in 2422.”

“That's mighty ambitious!”

Dr. Mazatl nodded. “We have no time to waste.”

Bernard spoke up. “It sounds like you want to give employees the choice to join us or stay behind. How are you going to do that without revealing our secret? Won't word get out the minute we tell people what's going on?”

“I'm afraid there's only one way to do it. It is unfortunate but we can't risk being tracked. Therefore, in advance of leaving, a few trusted employees will find abandoned buildings, repair them, and set them up as living quarters for all our employees.

When it comes time to leave we will hold a mandatory company-wide meeting – on board the new ship. That is when we will tell them what is going on.”

“How are you going to get them into space without people finding out?” Martin asked.

“We'll have to use the transporter. Since the ship will be in orbit it shouldn't be a problem. It will be a simple, untraceable way to move everyone at once.”

“Isn't that device one of our best-kept secrets? Most people don't even know we have that technology.”

“It certainly is. Can you imagine what would happen if word got out? There's already enough crime as it is! If people knew that they could transport themselves through solid walls – or reach into someone else's home to grab something – then our entire civilization would collapse. But in this case it doesn't matter. Once we're gone it will make no difference if people know we have that capability. After all, we're not going to give it to them, and no one will know where to find us. We will be out of reach.

“Once everyone is on the ship we will tell them our plan and give them a choice. If they want, they can come with us to start a new colony on a new world. This colony will be free from the oppression of the outsiders and will be a place where a man can walk the streets without fear. If that does not sound good to them then they can remain on Xanthe and live in the new quarters that we have set up for them. They will receive their daily plasma allowance with the rest of the population and can live as they please – but they will no longer be able to enter the Diano Building. Those who chose to stay will remain on board the ship, and those who leave will be transported directly into their new quarters.”

“How much time are you going to give them to decide?” Martin asked.

“Only a few hours. I know it isn't much time, but I'm

concerned that someone is going to notice that we have all disappeared. Even though we spend our lives in the Diano Building we still have some contact with the outside world. We can't risk discovery."

"I suppose you're right. I don't think they're going to be happy about this, though."

"I know. I just hope they understand our reasoning. There is only so much we can do. Are we all in agreement over this course of action?"

"I think it has to be done," Martin commented. "I'm not happy with all aspects of the plan, but I can't think of a good alternative."

"I agree," Bernard said. "This plan has my support."

"Very well. Then it is time to get started! We have no time to waste."

* * * * *

The following day Dr. Mazatl called Victor to his office. "Is there something wrong?" Victor asked, as he took a seat.

"No, not at all. You've been doing a fine job. The Nehemiah IV probes have been working very well; as far as I can tell, all the issues that have been discovered have been quite minor and easily resolved. No serious problems have been found – due in no small part to your careful work."

"Thanks! I'm just a small part of the team, though. Thousands of people worked on the probes. I'm just glad that I didn't make a terrible mistake. Those machines are so complicated."

"They certainly are. Oh – that reminds me! Have you received any further mysterious transmissions? I know you've spent quite a bit of time trying to track those strange signals down."

Victor shook his head. "After I sent my reply the

transmissions stopped entirely. The probes haven't detected anything since. We'll probably never know what happened."

"Perhaps not. Well, at least that's one less mystery to worry about. It probably wasn't anything important."

"So what can I do for you? Is there something I can help with?"

"As a matter of fact, there is. As you know, the Diano Corporation has been in the business of maintaining Xanthe's infrastructure for some time now. Building the infrastructure was a big project; keeping it running has proved to be a nightmare. The engineers designed it to last forever but the residents of Star City have done their best to vandalize it."

"That's true," Victor agreed. "Although I think things have gotten a bit better lately. People seem to be spending all their time in Vaults these days."

"Yes, we have been granted something of a reprieve. Which is why this is the perfect time to launch our new initiative. The Nehemiah IV probes have proven that we can build a very complicated machine that is not only self-replicating, but also self-repairing and self-maintaining. Since the maintenance of the Ranger worlds takes up so much of our time and effort, it only makes sense to apply that same technology to the planets where we live. Therefore, Bernard Valdez is starting a new initiative to completely automate all infrastructure maintenance."

"Wasn't he already working on that? That sounds like old news."

"Not quite. In the past Bernard was just improving the automation. What we want is to *completely* automate things – to the point where no human interaction is required at all. We want to get out of the maintenance business altogether."

"That's a great idea! I don't think it will be easy, but it's a good goal. It really should have been done years ago."

"I agree. The problem is that we didn't have the resources before; all of our people were tied up with the various Nehemiah

probes. However, now that we've launched our last probe we have some free resources on our hands. This is the next logical step to take."

Victor nodded. "It'll be a challenge, but I'm sure it's doable. It's just a matter of taking the technology we've already developed and adapting it."

"Exactly. Victor, since this is all based on your swarm technology, I'd like you to be a key part of that project. Bernard will be contacting you later today with your assignment. This is a key priority and I want to make sure it's done properly. It is critical that the entire project be finished this year. We don't have a lot of time."

"This year? Really? But it's already March! Why does it need to be done so quickly?"

"I suppose it will do no harm to tell you. After all, you are a direct descendent of Timothy Stryker – his only living descendent, in fact. Can I trust you to keep this in the strictest confidence? What I am about to tell you must not be leaked out to the rest of the city under any circumstances."

"Of course."

"Very well. The truth is that next year the Diano Corporation is leaving this planet. We are going to move all of our employees to a new world so that we can build a replacement for SOLOMON. Since we're leaving there will be no one left to maintain Star City. Therefore, we must automate its utilities before we depart."

"Oh," Victor said, startled. He remembered the conversation he had with Grimes. *I guess the professor persuaded him to leave after all. Interesting.*

Victor began thinking about the technical challenges of what he was being asked to do. "Yes, it does make sense. If no one is going to be here to fix problems then the machinery will have to be very resilient. We'll need extensive remote monitoring systems, along with the ability to write patches and upgrade

them remotely if things start going wrong. Star City will also need to be able to produce its own maintenance bots when the old ones wear out. If we are leaving Xanthe then there's a lot that has to be done."

"Exactly. I'm sure that you and Bernard can work out all the technical details. Now, remember that Bernard is aware of our departure but most of the people on your team are not. Be sure to keep this knowledge a secret."

"Of course. I can understand the need for secrecy. How long do you think we will be gone?"

"Forever. We aren't going to be coming back." Dr. Mazatl paused. "Do you think your coworkers will be willing to come with us? I'm not going to force anyone to go, but we will need everyone in order to succeed."

"I don't see why they wouldn't come. Right now we're basically prisoners in this building. Now, don't get me wrong: it's a very nice building and we lack nothing. But we're still in a cage. If we had our own world – a world that was actually *ours* – why, that would be fantastic! We would be free. I think most people would jump at the chance."

"That's what I'm counting on. There is so much riding on this! The artelect may turn out to be the most important device we've ever built."

"The what?" Victor asked, surprised. "What did you call it?"

"Oh, I'm sorry. The artelect. It's short for 'artificial intellect'. I don't want to replace SOLOMON with a normal artificial intelligence. I want something greater – a machine that is capable of true learning. It will be a remarkable challenge."

Victor thought back to the video that Timothy Stryker had recorded five hundred years ago. *The Twins said that the Artelect had sent the Sentinel back in time to rescue them. And now it is coming to pass.*

Aloud he said "It certainly will be a challenge, but I have

no doubt that you will succeed.”

Dr. Mazatl sighed. “To be honest with you, Victor, I think we are doomed to failure. It is impossible to create an intelligent machine. The artelect will only work if it is sentient, and that is not an achievable goal. That is why I have one more request for you.”

Victor was extremely surprised. “What do you mean, it's not achievable? All I've heard the past few years is that it's just a matter of finding the right algorithm! In fact, I've heard you give at least four different speeches about this just in the past year.”

Dr. Mazatl shook his head. “Grimes is right. You can't use rules to create understanding. The machine needs a ghost, Victor. It needs to be more than just a machine; it needs to be alive. That is why I need your help. I need you to take your swarm bots and send them to a certain star system for me.”

“I don't understand. How will this solve the problem, and why ask me for help? I mean, you're in charge of everything. If anyone has clearance to do this it would be you.”

“It's not a matter of clearance. Everything that I do is watched closely – not just by the people of Xanthe, but by the other Ranger worlds as well. If I were to send bots to this particular world – a world that no one knows exists – it would attract a lot of attention. But no one pays any attention to you. People would think you just wanted more books or something. You can easily achieve the secrecy that I need.”

“Ok,” Victor said slowly. “If you want me to dispatch some swarm bots then I can do that. In fact, I can probably get them launched in the next few days. But I'll need to know where to send them.”

“Don't worry about that. I'll upload the coordinates myself after they have been launched. I'll also upload the mission parameters. By the time the bots fulfill their mission we won't be on Xanthe anymore, but that won't be a problem – I'll route them to our new home. All I need you to do is launch them.”

“I guess I understand. I'll launch the bots and will keep this a secret. But I don't see how this is going to make any difference.”

“It may not make a difference. This might not work. But if the bots do return then I'll show you what they brought back and will explain my plan. In fact, I'll need your help.”

“I won't let you down,” Victor promised.

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Bernard Valdez met with Victor later that day to give him his assignment. To his surprise, Victor was promoted to management. He now had the enormous responsibility of leading the team that would automate the maintenance of the ZPEs.

The zero-point-energy reactors were incredible pieces of machinery, but their development had stagnated centuries ago. Once they were able to produce the plasma that drove the Ranger economy, people stopped improving them. In fact, most people stopped working altogether and demanded to be supported for free. The Corporation unwillingly granted that request and turned its attention to the Nehemiah probes. Since everyone was tied up, and since there were no other companies in the galaxy, no one advanced the ZPEs. The reactors were well-designed, but they did break down and require repair.

In order to solve this problem Victor's team decided to design an entirely new ZPE. This second-generation ZPE would incorporate two new features: an advanced diagnostic module that could spot problems (preferably before they even became problems), and the ability to fabricate its own repair parts and apply them automatically. Fortunately there was already two centuries of log files that recorded all the different things that had ever gone wrong with the machine. This gave Victor a large list of situations to test.

Victor had not forgotten the bizarre request of Dr. Mazatl. In fact, he was better than his word. On March 15th he sent his probes into deep space – just one day after meeting with Mazatl. He then turned control of his probes over to the company president and went back to work on the ZPEs.

Since Victor's team was applying existing, proven technology, they made rapid progress. On September 3, 2421 – just six months after being given the assignment – the second generation of ZPEs was fabricated and entered its testing phase. Victor made the new units endure a rigorous three-month testing program that was designed to reproduce everything that had ever gone wrong. He was a little uneasy about the fact that he was repairing the ZPEs with unstable matter, but given the limitations it couldn't be helped. He had no doubt that they would discover flaws; that's what testing was all about. But he was confident that they could fix the issues.

After all, they *had* to. The company was leaving Xanthe. If something terrible happened then they could dispatch a robot to fix them, but Victor didn't want it to come to that. He was determined that the ZPEs should fix themselves, and he wasn't going to let Dr. Mazatl down.

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After the first week of testing was over, Victor decided that he needed to clear his mind. In one sense the testing had gone well: several problems had been uncovered that needed to be corrected. *At least we have a good set of tests*, Victor thought. *I would much rather find these problems now than find them after we're thousands of light-years away and can't do much about them.*

Ever since his neighbor had complained that Victor never left the building, Victor tried to make it a point to go outside at least once a year. Today he decided to visit the outdoors once

more, so he took the subway to Star City University. There was something about that place that he found relaxing and serene. It was one of the only locations outside of the Diano Building that he felt comfortable visiting. The campus was an oasis of peace in a sea of insanity.

Victor walked onto the college grounds and looked around. As always, the place was immaculate. The trees, flowers, and grounds were in perfect order. The area was well-lit, which obscured the fact that the night sky was utterly black.

Victor walked down a brick path and came to a bench under a large oak tree. He sat down and breathed in the fresh fall air. The programmer slowly began to unwind. *I suppose that leaving the Building is not all bad. I'm not a big fan of bugs but there's a lot to be said for trees.*

As he rested, he heard a voice call out to him. "Good evening, young man! What brings you to the University?"

Victor turned his head and saw Professor Grimes walking down the path. "Oh, I was just trying to relax. I've been working on the automation initiative and it's been pretty challenging."

Grimes nodded. "I'm sure it has been difficult – but you're trying to solve a difficult problem. Even so, I have it on good authority that you have made remarkable progress. Some of your coworkers managed to create self-repairing robots that can maintain this University! They're quite delightful. Do you mind if I have a seat?"

"Not at all," Victor said.

Grimes sat down next to him. "Yes, I'd say that your automation project has been going remarkably well. Despite the problems you are encountering I think that Dr. Mazatl will be able to leave next year on schedule. I will be sorry to see him go, but I cannot fault his reasoning. In fact, as you know, I've urged him repeatedly to take that very course of action. The Corporation's survival depends on leaving Xanthe and separating itself from these cursed Vaults."

"I couldn't agree more. The vaults encourage all sorts of sin and depravity. Even if they didn't – even if they were entirely benign – why would you want to waste your entire life just lying there, dreaming? What's the point of that? What will God say about that choice when you stand before Him and are judged?"

"Quite so," Professor Grimes agreed. "But most people don't think about the potential consequences. They have no fear of God or concern about His wrath. All they see is that they can have whatever they want. They never stop to think about the terrible price they will pay – an eternal price. Now, I am not saying that virtual reality itself is evil. It is never the technology that is evil; the evil comes from the way it is used. What Carroll Lane is doing is incredibly dangerous. It will destroy society if he is not stopped – which is why I am going to remain behind when the *Vanguard* leaves next year."

"The what?" Victor asked.

"The ship that will take you to the site of the Artilect. Dr. Mazatl told you that the company was departing, did he not? How did you think you would get to that new star system – by walking? Did you think that you would board a bus?"

"I guess I didn't think about it," Victor admitted.

"Always think of the implications, young man. But, yes, the *Vanguard* is a giant freighter that Martin Yates has spent the last six months constructing in an orbital shipyard. Unfortunately, he has been doing a rather poor job. Martin seems to be under the impression that the vessel will only be used once and will never land on a planet. He is not considering the possibility that things may not unfold as he hopes. The starship should be sturdy enough to handle many different failure scenarios. Martin is only considering success, which is not wise. Still, the vessel should be able to transport you to that new star. I, however, will not be joining you. I have work to do here."

"I don't understand. What work could their possibly be? Everyone will be in Vaults! You'll be wandering the streets alone."

Grimes shook his head. “We have already discussed this. Someone needs to remain behind and start a movement against the Vaults. They’re dangerous, they’re wrong, and they must be stopped. So far Carroll Lane has not exported the technology to other Ranger worlds, but that is surely only a matter of time. Even if he does not part with it willingly, someone will come here and steal it. There is simply too much offworld demand for it. I intend to convince the Ranger governments to outlaw this new technology. The Vaults are a terrible temptation. The only way I can do that is if I’m still here and can travel between Ranger worlds. I have a great deal of work to do.

“But there’s more than that, Victor. The gospel still must be preached, for there are millions of souls that need to hear it. The Vaults may be very popular, but there are a few outsiders who have realized just how empty and unsatisfying they truly are. People have a desperate need for God. They have a hole inside them that cannot be satisfied by anything less – and there is also the serious matter of the wrath of God, which people must be warned about. The vaults are not going to satisfy everyone. Someone must remain behind to tell the people what Christ has done for them.

“It is not a good thing when all the saints of God leave a society. The Lord has a tendency to withhold judgment until all of the righteous are gone. God was willing to spare Sodom and Gomorrah if there were just 10 righteous people there – but since there weren’t He burned those cities with fire. God told the prophet Jeremiah that He would spare Jerusalem if he could find just one righteous person in it. I don’t know how much time I have left, but I intend to be that righteous person. I am going to remain behind and share the gospel as long as I am alive. We both have jobs to do, Victor, and I’m not going to abandon my post.”

Victor nodded. “I understand. I’ll miss you, though. You’re one of the few sane people I’ve ever met.”

“Then by all means, stay in touch! Call me as often as you desire. I realize it’s not the same as coming to this University in person, but you will not be completely isolated. You could even continue to attend my classes remotely, if you wished.”

Victor smiled. “How long are you going to keep teaching?”

“As long as there is someone who wishes to learn,” Grimes replied.

CHAPTER 13: MOVING DAY

Log date: January 23, 2422

Location: Xanthe

Log note: The more things change, the more they stay the same

WORK ON THE *VANGUARD* went very well – in fact, the ship was completed ahead of schedule. In January 2422 Dr. Mazatl held a quick meeting with the Board of Directors to get a status update on the company's two critical projects.

“The *Vanguard* is ready to launch,” Martin Yates said. “The ship has been stocked and is ready to go. We can leave at any time.”

“Excellent!” Dr. Mazatl replied. “That means that we can leave Xanthe as soon as we have finished automating the planet's maintenance processes. How close are we to achieving that goal?”

Bernard spoke up. “We've actually been going live in stages for months. Every week we've rolled out a new automated system across all the Ranger colonies. So far we haven't seen any problems. Well, there have been some issues, but they've all been minor and were easily corrected. The last system that we're going to convert was put in place two days ago and so far it's working as expected. Aside from continued support to make sure that everything doesn't catch fire, I think that project is complete.”

“How long do you need to remain here to monitor the systems? When will you feel comfortable about leaving the planet?”

“That's hard to say. In theory we can fix the system after we leave if something goes wrong, but we've never had to do

that before. If we weren't under any time pressure I would like to wait a couple years to see how things work and let the system settle in, but I realize we can't afford to wait that long. Technically we can leave any time, but I'd like to stay here at least another month at a bare minimum."

"All right. That sounds reasonable. What would you think about leaving on March 1? Would that be acceptable?"

Bernard frowned. "It's sooner than I would prefer, but we can make it work. I'll get in touch with the other worlds and will discuss the matter with them."

"The *Vanguard* will be ready and waiting," Martin commented. "We have it hidden in space far away from the planet, behind an asteroid. The ship is impossible to see from Xanthe – not that anyone is looking for it, but it's best to be safe. Given that everyone is spending all their time in Vaults these days, I highly doubt anyone will find it, but the longer we wait the greater chance we have that it will be detected."

"Very well – then we will plan on leaving March 1. On that day we will hold a mandatory company meeting."

"When should we announce it?" Bernard asked.

"The day before. I don't want there to be time for word of the meeting to leak out. I'd rather the meeting happened without interference from any of the Ranger governments. We'll tell our employees that this is a project meeting to announce our next big initiative – which will be the truth, after all. Just not in the way they expect."

"Then March 1st it is," Bernard said. "When should we give the order to evacuate our employees from the other worlds?"

"I think it should all occur simultaneously," Dr. Mazatl said. "If they evacuate in stages then the Rangers might hear about it and try to stop it. I don't want anyone to get left behind or attacked – there's been too much of that lately as it is. Since our transporter doesn't have enough range to cross the stars,

we'll need to meet with them in space at a predetermined rendezvous point and bring them on board the *Vanguard*.”

“I'll take care of the details,” Bernard promised.

* * * * *

On March 1, 2422, all of the employees of the Diano Corporation on Xanthe met in a newly constructed auditorium. Despite the fact that the company employed 12,000 people, everyone was able to fit comfortably into the room. People even brought their wives and children, which was highly unusual. No one understood why absolutely *everyone* had to attend this meeting, but the Board insisted upon it. They had even taken the unusual step of sending teams of bots to search the building to make sure that every last person was inside that room.

Over the past year the company had seen some attrition. Several hundred employees had left the corporation in order to take up residence in the Vaults. None of those people were here – which was not surprising. They had already made their choice.

Victor noticed that Lane and his entire team was not present. This did not surprise him. Technically they were still employees, but they had left the Building long ago and were heavily involved in the Vaults. Victor knew what this meeting was actually about and he was not surprised that Lane was being left behind.

I wonder how many people in this room know why we are really here. The Board obviously knows, and I know. We're about to leave this planet forever – and oddly enough, I'm really not that sad about it. Xanthe has always been a hostile place. I hope the next world will be an improvement.

Victor sat at the back of the auditorium and watched the crowd. At precisely 10am Dr. Mazatl walked up to the stage and stood in front of the podium. “Good morning, everyone! Today I am here to announce an exciting new initiative – something that

will change the course of the future. This is quite possibly the biggest task we have ever attempted. But before I unveil our new project, there is one last thing to do.”

Dr. Mazatl pulled a small electronic device out of his pocket and pressed a button on it. Victor felt a strange sensation of vertigo – as if he had suddenly fallen from a great height. The sensation passed as quickly as it had come.

He glanced around the room. The crowd murmured; they had felt it too. But Victor couldn't see anything wrong. The conference room looked exactly the same. What had just happened?

Dr. Mazatl resumed speaking. “I apologize for any discomfort you may have just felt. What I am about to tell you requires the strictest of secrecy. In order to make sure that no one overhears this conversation, I have taken the liberty of transporting all of you onto the *Vanguard*, a starship that is in orbit around Xanthe.”

That provoked a reaction from the crowd. People immediately began to talk excitedly and ask questions. Dr. Mazatl quickly quieted them. “Yes, it's quite true – you are not on the planet anymore. The Diano Corporation has had a short-range transporter for years. We kept it a secret because, frankly, we were convinced that if President Rios ever got control of it he would use it in all sorts of terrible ways. The technology was simply too dangerous to release – but it's exactly the sort of thing that comes in handy when you want to transport thousands of people from a planet to a starship without being seen.

“Which brings me to my announcement. As you no doubt have noticed, the Nehemiah IV probes have been a great success – but SOLOMON has not. Our data warehouse is simply incapable of keeping up with the influx of data from the probes. Since we can't manage our expanding network of probes, we can't allow them to multiply and colonize the entire galaxy. That presents a

rather serious problem.

“You see, our lives in this world are rather short. We aren't going to be around forever to manually manage the network of new worlds that we are creating. In order for the Nehemiah IV probes to reach their full potential, *someone* has to be around to manage them and the colonies they will create in the years to come. The only reasonable solution is to build an artificial intellect to manage them for us.

“Just as many of you have spent the past year automating the maintenance and repair of our systems across all the Ranger worlds, I proposed to the board last year that we should automate the maintenance and repair of the Nehemiah IV project. I believe the company should replace SOLOMON with a machine that can take care of the newly-created colonies during the millennia to come.

“This system has many advanced requirements. It will need the ability to grow over time. It will need to be able to understand and learn – two features that we've never really been able to achieve in the field of artificial intelligence. It will also need to be located far from civilization, to protect it from any disasters that might befall our civilization.

“This replacement to SOLOMON – which I have named the Artilect – will be built in a star system that is 1,200 light-years away from the nearest Ranger colony. The ship that you are now in can reach that location in six months. The *Vanguard* is large enough to take the entire company along for the ride, if you are willing to come.

“As you all know, life in the Ranger worlds has been intolerable for decades. We've maintained their worlds and kept them running, but we've been forced to live as prisoners. Building the Artilect will take a large team – in fact, it will take all of us. What I want to do is establish a permanent new colony on this distant world. It will be a new home for us; a place where we can all finally be free. It will be a world of our own.

“Now, you don't need to worry about the inhabitants of Xanthe. They're quite happy in their Vaults, and the automated systems you've built will continue to keep the ZPEs running in our absence. They should be fine.

“As I said, this ship is large enough to take everyone along. However, once we leave we're not going to be coming back. This move is permanent. If you don't want to join us that is fine; you can remain behind. No one is being forced to accompany us. It is your decision. You can come with us or you can remain here. The choice is up to you.

“But I'm afraid you don't have much time to think about it. Now that all of the Corporation's employees have been evacuated from all the Ranger worlds, we are in grave risk of being detected. In order to ensure the safety of this vessel and its passengers we are going to leave in one hour. Once we leave we are going to lock the Diano Building down and secure it. No one will be allowed in or out. We have prepared quarters throughout the city, outside of the Building, for all those who might not wish to join us. If you decide to stay behind then you will continue to receive your regular plasma allowance, and you can spend the rest of your life doing whatever you want to do. The only thing you *can't* do is go back to work, because there won't be any work to go back to. We will all be gone.

“If you want to join us on the voyage then just stay here. If you want to remain behind then let me know. An hour from now we will beam those who wish to remain back to the surface in one group, and then depart on our voyage.

“Are there any questions?”

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Of course, there were a lot of questions. Some people wanted to know more about the Artilect project. Others wanted to know what planet they were going to and what life would be

like there. Most people seemed fascinated, although a few were upset that they had so little time to make such an important decision.

Still, Victor didn't blame the Board. Dr. Mazatl was right – if they were going to leave they had to do it quickly and quietly. The more time they lingered, the more trouble could arise. The Board could not allow the risk of this leaking out. The *Vanguard* wasn't built for battle, and there were still military ships on Xanthe that could easily destroy her. If the Rangers found out what was going on, they might try to track down the employees who were fleeing their systems and stop them. Time was not on their side.

After the last question was asked and answered, Dr. Mazatl stepped down and allowed the people to talk among themselves. Victor had already made up his mind; he was eager to get started on the Artilect. *That is the future, and I want to be a part of it.*

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Sixty minutes after the meeting began, the decision was made. In the end no one wanted to be left behind. There were people who were unhappy about leaving Xanthe, but they realized that all their friends and coworkers were going on the trip and they didn't want to spend the rest of their lives alone. They *especially* didn't like the idea of living outside the security of the Diano Building.

"It would be suicide to stay," Victor overheard one employee say. "If people ever got tired of the Vaults and decided to go back to their old lives, we would be in a world of hurt. Living in Star City is madness."

"You just can't trust the outsiders," another employee agreed. "No, I'm afraid that the Board has got us right where they want us. We're going to have to go on this trip whether we

want to or not.”

So, on March 1, 2422, the *Vanguard* left orbit around Xanthe at 11am and began flying through the Tau Ceti system. Fifteen minutes later it exited the Gate and started its six-month voyage across the galaxy.

The Corporation would be kept busy on the long voyage. Everyone was about to be given a crash course on artificial intelligence. Dr. Mazatl wanted to spend the voyage educating the employees, so that when they arrived at the planet they could get right to work. It would be a bit odd working on a moving starship instead of in a building, but Victor figured that in the end it wasn't really that different. *A room is a room, whether it's in space or on a planet.*

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Three days later, Adrian Garza burst in to Carroll Lane's office. “They're gone!” he exclaimed.

“Who is gone?” Lane asked. “Was there someone here to see me?”

“The Corporation is gone. There's no one left in the Building! Everyone has vanished.”

Lane laughed. “That's preposterous! Where could they possibly go? They've been in that building for generations – centuries, actually. It has all of their equipment and houses all of their employees. What you are saying is impossible.”

“I'm telling you *they're gone*. No one in that building is answering their calls – no one. No one has been seen exiting the building in three days.”

“Maybe they just don't want to be bothered. Maybe they're busy or something. After all, the building doesn't have windows, so you can't prove they're not there. And there's no need for them to leave the building anymore anyway. The Corporation just spent months automating the maintenance of—”

Lane suddenly stopped. "Hold on. They just automated *everything*, didn't they? They spent months making sure that the planet could continue to function without them. It was a huge effort. I heard that thousands of employees worked on it."

"Exactly. Why would they do that if they weren't planning on leaving? They never bothered to do it before. Why now?"

"That's a good question. But tell me something. Have you tried actually entering the building and looking around?"

"I can't get in the building anymore," Adrian replied. "My access code doesn't work anymore. I think we've all been locked out."

"Now that's a bit odd. Why would they leave without telling us?"

"Why would they leave *at all*?" Adrian asked. "Isn't Xanthe their home?"

"Well, not really, I suppose. The Corporation has been prisoners in their own building for years. Now that I think about it, if I was Dr. Mazatl I'd certainly want to go somewhere else. In fact, why *wouldn't* they leave? They've spent centuries terraforming planets and creating new colonies! That's the *whole point* of the Nehemiah class of probes. It makes all the sense in the world for them to leave Xanthe and go to one of the new colonies they created."

"But isn't that bad for us?" Adrian asked. "Don't we need them here?"

Lane shook his head. "People live in the Vaults now, remember? Sure, they still go home every week, but one day they'll live in the Vaults forever. When that happens we won't need the city's infrastructure. I'm sure the automated repair bots the Corporation created can handle running the city for another five years or so."

"But what about our own equipment? Don't we have to maintain our Vaults?"

"Sure, but that won't be hard. Thanks to Victor, the

technology to maintain them already exists. It's a solvable problem. In fact, why don't you go ahead and put people to work on it? Might as well get it taken care of."

"I'll do that," Adrian promised. "There's just one other thing I'm concerned about."

"What's that?"

"How did the Corporation manage to leave without being seen?"

Lane shrugged. "Who knows? They probably have all sorts of secret technology. I wouldn't worry about it. Now that they're gone that's one less thing to worry about. The people of this world have just been given another reason to come and live in our Vaults – which is a good thing. We're the only show in town now."

"Which brings us to the matter of exports," Adrian said. "I know I've mentioned this before, but the Vault technology is in high demand. It would sell very well on the other Ranger worlds. If you would allow it to be exported, I have no doubt that it would be as successful elsewhere as it is here."

"But I don't care about other worlds. I built Vault 37 primarily for myself. Since I'm generous I'll agree to invite in a few other people whom I believe are worthy, but that's as far as I'm willing to go. The Ranger colonies have never done anything for me; why should I do anything for them? Even if they tried to buy the technology the only thing they could offer in exchange are things that I don't actually want. There's no conceivable reason to help them."

"Your technology is in high demand," Adrian repeated. "Very high demand. What are you going to do if people try to come here and take it by force?"

"We're protected by a Wall," Lane pointed out. "Its whole purpose is to keep people out. But, fine. If exporting the technology will get them to leave us alone then it might be worthwhile. But I'm *not* going to give them the best version of it

that will extend their lives for thousands of years. They don't deserve that.”

“So you *are* going to approve an export license?” Adrian asked.

“Once the technology works,” Lane replied. “Right now we're probably five years away from achieving the perfection I'm looking for. Once the Vaults can become the permanent home of mankind, you can sell it to whoever wants it. But not until then.”

* * * * *

For most of the people on Xanthe, life continued on much as it had before. Carroll Lane continued to work with his team to perfect the nanites, which he believed was the only way to make it possible to live in the Vaults forever. The people of Xanthe continued to spend their lives in the Vaults, living out their fantasies. Society lost all interest in the physical world. The planet continued to be maintained, but only because the Diano Corporation automated all maintenance processes. Only the robots cared about keeping the city running; no one else was interested. The only thing the citizens of Xanthe cared about were their synthetic worlds – and how quickly they could get back to them.

But there was one man who still cared, and that was Professor Grimes. When the Corporation left he lost his only ally – but he didn't feel alone. Thanks to modern communication technology he was still able to talk to the people on board the *Vanguard*. It was true he could no longer visit them in person, but it was something.

The robots continued to maintain Star City University, but no one paid any visits to the campus anymore. Grimes was now the university's sole occupant. The professor, though, did not spend his days wishing that things were better. He was far too busy.

Three days after the Diano Corporation left, Professor Grimes placed a long distance call to Tony Morton. Tony was a former student of the professor. He lived on Alpha Centauri A, which was the first colony ever established by the Diano Corporation. It was an old world that was filled with people – but like all the Ranger worlds, it was slowly dying. Neglect and apathy were taking their toll.

“Good evening, Tony,” the professor said, as soon as the two were connected.

“Why hello, professor!” Tony replied. “This is certainly a surprise. I haven't talked to you in ages. To what do I owe this pleasure?”

“It certainly is good to talk with you again. There is a lot that needs to be said, so I will get right to the point. I need your help. You see, a momentous event has occurred. The Diano Corporation has evacuated all of the Ranger worlds and will not be coming back.”

“Interesting. That is certainly news to me! It makes sense, though. The Corporation has only had a skeletal presence here for a long time now, and I *did* notice that they've been automating a lot of systems lately. I guess they were preparing to leave.”

“That is correct. Dr. Mazatl has released the automated repair bots to all Ranger worlds in order to ensure the future of mankind, and has given the order to evacuate every single Diano installation. The maintenance bots make it possible to leave the Ranger worlds without dooming them to extinction. As we speak, ships from the other worlds are traveling through space to meet with the *Vanguard*, which left Xanthe three days ago. In a few days everyone will be on board, and every last Corporation employee will be gone from Ranger space.”

“Well, good for them. I'm glad they are finally going out and accomplishing their dream. They've always wanted to colonize the stars. But I'm not sure how this affects me.”

“Have you heard of the Vaults?” Professor Grimes asked.

“Of course! To be honest, though, they've always sounded too good to be true. These supposed synthetic worlds of Carroll Lane can't possibly be as good as people claim. I think they're just a lot of hype.”

“You are mistaken. The Vaults are very real, and they are every bit as functional as you have heard. When you are in a Vault you cannot tell it apart from the physical world. It is a flawless simulation – except for the fact that in a Vault the world can be whatever you wish it to be. You can create any fantasy, fulfill any desire, and do whatever you please. You have absolute control over your world.”

“Oh,” Tony said, surprised. “Really? That technology actually exists? But if that existed, wouldn't everyone move in and never leave?”

“Do you not pay attention to the news?” the professor asked. “That is *exactly* what has happened in Star City. The entire population now spends all of their time in Vaults. The streets are empty and the buildings are deserted. Star City has become a ghost town. People have stopped caring about the physical world altogether and only care about their fantasies. How have you not heard this?”

“We don't really get much news from Tau Ceti,” Tony explained. “After Lane assassinated Rios you sort of dropped off the map.”

“How foolish of me. Of course you have heard no news! How would you have heard it? Now that everyone spends their lives in Vaults, there are no people left to create news reports and send them to other star systems. I guess that leaves it up to me to craft some news bulletins and dispatch them to the stars. There is much that the Rangers must be told.”

“So your planet is deserted?”

“Certainly. The Vault technology is very powerful. Why live in the real world when you can inhabit your fantasies? Now,

it is true that the technology is not perfect. A person can only stay in a Vault for a week before they have to come out and rest. However, Carroll Lane is working on removing that limitation so that people can live in the Vaults *forever*. He wants to replace the physical world with the Vaults.”

“Will that work?” Tony asked skeptically. “I mean, people can't have children in the simulation, right? If Lane got his way then wouldn't that mean the current generation is the *last* generation? People would spend their lives in their fantasies and then die. Why, if all of mankind moved into the Vaults then they would all die! It would be a disaster.”

“It certainly would. We have been fortunate so far because Lane has refused to allow his technology to be exported, but I do not know how long that will last. That is why it is imperative for us to meet with the Ranger governments and convince them to pass laws outlawing Vault technology. If it is not banned then it will be the end of mankind. It *must* be stopped. This has the potential to do far more damage than the ZPEs ever did.”

“I see your point. This certainly does seem important. But how are you going to get the governments to ban it? This seems like exactly the sort of thing that everyone would want. You have to realize that people don't work for a living anymore. All people do is lay around their homes, do nothing, and have their every need taken care of by machines. ZPE technology has turned everyone into mindless zombies. *Everyone* is going to want Vault technology. Trying to get it banned would be like trying to outlaw a genie who grants endless wishes. No one is going to support that.”

“I realize that,” Grimes replied. “The true solution is to make everyone disciples of Christ. If they had a change of heart then they would no longer desire the Vaults at all. They would want to live in the *real* world and do *real* things. After all, we will be judged by God for what we have done in this life. He will not

want to hear that we have spent our entire life doing nothing but fantasizing. We have been given a mission and we ought to be about our Father's business.

“But I also realize that we cannot preach the gospel to men who are in the grave, and if we allow this technology to continue it will put an end to the human race. Therefore, to buy us time, we need to create something else for people to focus on. We need to create an incentive for people to work again. We need to show them the utter hollowness of the virtual world and remind them that the physical world matters.”

“How do you propose to do that?” Tony asked.

“I am not saying we should stop our missionary efforts. It is *imperative* that we continue to preach as long as we can. We may not be saving very many souls, but there are some who are responding to the call, and that matters. But I think we can offer society something more wholesome than a synthetic world. Are you familiar with the Nehemiah IV class of probes?”

“Somewhat. Don't they go out and terraform worlds?”

“They do indeed. In fact, each Nehemiah IV probe has its own ZPE. It has the tremendous ability to modify the *real* world to whatever we need it to be. It can sculpt continents, create oceans, change the orbit of planets, alter the chemistry of stars – and can even build cities. In other words, the technology in the probes allows much of the same control over the *real* world that the Vaults give people over the purely synthetic worlds.”

“Where are you going with this?” Tony asked.

“It's quite simple. Lane offers people a virtual world – a fantasy. But why have a fantasy when you can have reality? The real world is not some static thing that is immovable and unchanging. Thanks to modern technology, it can be whatever we want it to be. We don't have to live in dark, dismal, ruined cities – which is what people have been doing for more than a hundred years. We can build ourselves a new future. Instead of pining away for a make-believe world, we can change the world

that we live in. We need to convince people that the fantasies of the Vaults aren't worth having – they're not real, anyway. What they should be doing is looking to change the world around them. They need to get re-engaged to reality.”

“So you're saying we can offer them something better than the Vaults. Something real.”

“Exactly! If we can get people working again – if we can engage them and get them to go outside of their homes and actually *do* something – then perhaps we can break through to them. The thing about reality is that even with the tremendous power of the Nehemiah probes, it still has limitations. The problem with ZPEs is that people don't run against those limitations anymore. Instead they just sit around in their homes and grumble that the machine that gives them free stuff isn't giving them all the free stuff they want. I *want* people to become engaged again. I want them to see the limits of existence. I want them to realize its problems and its inability to truly satisfy – and I want to use that to bring people to Christ, who alone can satisfy. But we've got to get people to start doing things again.”

“So you want to give people a dream, and when that dream fails you want to use that to explain the gospel.”

“Precisely. I have it on good authority that Lane hopes to perfect his Vault technology within the span of five years. We have that long to awaken the world around us.”

“It's worth a try. How do you think we should begin?”

“I've already begun,” Professor Grimes replied. “Months ago, when the Corporation made the decision to leave Xanthe, I obtained permission from Dr. Mazatl to divert a Nehemiah IV probe back to Tau Ceti. They have more probes than they can manage right now, so they didn't mind giving one up. It is on its way and will arrive here shortly. I propose that we begin contacting the leaders of the Ranger worlds and tell them that we have obtained some exciting new technology – technology that can radically alter their worlds and bring them into a new

era.”

“Now *that* should get their attention. But I'm still not sure this is a good idea. One thing you taught me in class is to always consider the worst possible outcome. It's fine to look at a choice and consider the great things that might happen, but that must be weighed against potential abuses and disasters. You are offering reality-altering technology to people who have no moral code. Isn't it possible that they will use the probes to do even *less* work and become even *more* corrupt? What is going to prevent them from trying to live out their fantasies in the real world instead of a virtual one?”

“Nothing,” Grimes said. “That may well be what will happen. But even if that comes to pass, it will still be an improvement. As long as mankind is living in the real world, that means they will continue to have children and the race will survive. There is also the fact that the real world comes with consequences. If people make poor decisions, they will suffer – and that will be a teaching opportunity.”

“I suppose you have a point. This just seems like something that could end rather poorly.”

“If it prevents the human race from dying out then it will be a step in the right direction,” Grimes said. “Are you ready to get started?”

“I'll do whatever I can to help,” Tony said. “What do you need me to do?”

CHAPTER 14: FIRST CONTACT

Log date: February 9, 10,000 of the Eternal Era

Location: The *Vaughn*

Log note: Seeing through a glass, darkly

AMY AND AMANDA STRYKER stepped across the universe and appeared on the bridge of the *Vaughn*. Velvet Dawn was extremely excited about the journey. The small purple wisp darted around the vessel at a high speed, trying to see everything at once.

“So this is a starship!” she exclaimed. “I love it. Are we really in outer space right now?”

“We certainly are,” Amanda replied. “The nearest star is several light-years away. There's nothing around us but, well, nothingness.”

“How far is a light-year?” Velvet asked.

Amy spoke up. “It's the distance that light can travel in a year. It's about six trillion miles.”

“That's incredible! How can anyone understand a number that large? That's practically infinite!”

Amy laughed. “It's really not that far – not when you're talking about space travel, anyway. This ship is *billions* of light-years away from your home world. Try to imagine *that*.”

“I can't. It's too big. The universe is unimaginably large, isn't it? Does it just go on and on forever?”

Amanda shook her head. “No, it does come to an end. But we think there might be another universe outside the boundaries of this one. We've found something called the U-16b anomaly. We think there might be other living beings there. In fact, it's possible that this ship came from there.”

“But since we can't get there, we don't know,” Amy added. “We haven't found a way to travel between this universe and that one.”

“Does this ship know how to do that?” Velvet asked.

“We don't know,” Amanda replied. “It might. But if it does, Monroe and Merlin weren't able to figure out how to do it.”

“But it *does* travel between the stars, doesn't it? How long does it take to travel from one star to the next?”

“It depends. If the stars are close then this ship can make the journey in a few days. If the stars are far apart then it could take weeks, or even longer.”

“But *you* can do it faster than that, can't you? I mean, we got all the way from my homeworld to this ship, and it didn't seem to take very long.”

“That's right,” Amy replied. “It only took a second. But only the Redeemed can do that. The other races have to use ships like this one to travel between the stars – or they can use the Gates that Noel built. No one else has the ability to travel the way we can.”

“This ship is really very clever,” Velvet commented as she zipped around the room. “I know how to build a room, but this room is actually made out of *metal* – and somehow they got it so high in the air that it left their world altogether! Then they found a way to make the room move at incredibly fast speeds. I have no idea how to do any of that. These beings are pretty smart, aren't they?”

“They certainly are,” Amanda agreed. “And their cleverness goes even further. The walls of this room actually *aren't* made of metal. They are made of a material that can change itself into other shapes.”

“Really? How does it work?”

“That's something else that Monroe was able to find out,” Amanda said. She looked at the floor for a moment, and then the

floor suddenly moved. The floor rippled, and a shape grew out from the deck and solidified into a chair. Amanda sat down on it. "See?"

"How did you do that?" Velvet asked, astonished.

"I just told it what to do. I transmitted the proper sequence of commands to the polymorphic nanites, and they responded accordingly."

"But you didn't say anything! At least, if you did talk, I didn't hear you."

"They don't respond to *verbal* communication," Amanda explained. "They have to be sent a series of signals, so I just generated them."

"But how?"

Amy spoke up. "Inside our bodies are a whole bunch of really, really small machines called nanites. These nanites can do all sorts of things – like generate signals. Since they're connected to my mind, I can communicate with them through my thoughts."

"Oh. That's amazing! What else can you do?"

"Pretty much anything. Speaking of that, where do you think we should begin our research?"

"That's a good question," Amanda replied. "Merlin and Monroe did a pretty thorough job of analyzing those messages. They really could be anything; there's just not enough information in them to tell how they should be decoded. Now that I'm here I have to agree with Monroe: there just isn't much to see. I'm not sure that we can add anything to what they did."

"But maybe we can find a way to get this ship to work," Amy suggested. "If we can get it to open a portal to U-16b then that would prove our theory about the ship's origins."

"But Monroe and Merlin tried that. They did a *very* thorough job of mapping out the ship's drive system, and although it is a bit strange it doesn't appear to have any extraordinary capabilities."

Velvet spoke up. "Why not just ask the beings who built the ship? Wouldn't they know?"

Amy laughed. "I'm sure they would, but Velvet, that's the whole point of the mission! We don't know where they are or how to find them. We're hoping that this ship can lead us to them so we can meet them."

"What are you talking about?" Velvet asked. "There's one of them standing right over there. I think you got his attention when you asked the ship to build a chair."

"What are you talking about?" Amanda asked, puzzled. "I don't see anyone. We're the only beings here."

"No we're not. I can see one other being, and he's standing over there at that console. He was looking in our direction for a while, but now he's studying his screen again. Every now and then he pushes a button. Can't you see him?"

"I can't see anyone," Amanda said.

"I can't either," Amy agreed. She walked over to the spot Velvet had indicated and looked around. "See? There's nothing here!"

Velvet laughed. "Now you're standing on top of him! The two of you are in the same place. I don't think he can see you, though. Now you put your arm right through his console!"

"I don't get it. How can there be something here that we can't see?"

"Maybe Velvet is right," Amanda said thoughtfully. "Maybe we've been looking at this all wrong. What if their universe is made of a different sort of material than ours? Perhaps they made the shell of this ship with polymorphs so it could interact with our reality, but the ship's *real* interior is made of their stuff, which we can't see. That would explain why so much of the ship appeared to be missing. It actually exists in their dimension – or whatever you want to call it. It's entirely possible that all the key pieces of the ship exist outside our perception."

"Which would explain the messages," Amy replied. "Only part of the communication system exists in our realm. The rest is outside it, in theirs."

"And just as we can't see them, they can't see us! At least, I *think* they can't see us. Velvet?"

She shook her head. "No, I don't think he can see you. After all, Amy is standing right on top of him and he doesn't seem to notice. The only thing that got his attention was when you made that chair."

"Can you talk to him?" Amanda asked.

"Let me see," Velvet Dawn replied. She zoomed over to a vacant spot on the floor and hovered in the air. "Hello there!" she said shouted. "How are you doing?"

"Any response?" Amy asked.

"Nope. Apparently I can see him but he can't see me."

"But why can you see him at all?"

"I have no idea. I just can, that's all."

"There's got to be *some* reason," Amanda said thoughtfully. "Perhaps it's something in her physiology? Maybe there's something unusual about her genetics? I mean, she is a wisp, after all."

"We can look into that later," Amy said. "The alien is *right there!* There has to be some way we can make contact with him. We just need to attract his attention. What if—"

Velvet interrupted her. "It's too late. He's gone now."

"Gone?" Amanda replied. "What do you mean, gone? Where did he go?"

"Beats me. He was there one moment, and then he turned off the console and just disappeared! I have no idea where he went."

"But that doesn't make sense! If they can travel through space the way we can then why do they need a starship?"

"To travel through the anomaly to our universe?" Amy suggested.

“Maybe so. But maybe he's still on the ship after all and just moved out of Velvet's vision. There is so much about this that we don't know.”

“But we do know more than we did. Velvet, can you describe what he looked like?”

“He was short of shadowy,” Velvet replied. “I really couldn't see him very well. He was kind of transparent – like he was barely there at all – and I couldn't make out very many details. But from what I could tell he kind of looked like the two of you – a tall figure with legs and arms and a head and all. It was all sort of indistinct, though.”

“What about the console?” Amanda asked. “What can you tell us about it?”

“He turned it off. He pushed a button, and then he and the console both disappeared. It's not there anymore.”

“Can you see anything else from that dimension?” Amy asked. “Any other shadowy things?”

Velvet shook her head. “Nope. That was it.”

“So what do we do now?” Amanda asked.

“I think we need to do two things,” Amy replied. “First, we need to have Velvet analyzed so we can figure out how she can see into this other dimension – or whatever it is. Second, we need to give Velvet the ability to show us what she's seeing.”

“Do you want me to draw a picture?” Velvet asked.

Amy laughed. “Not quite. Sister, are you thinking what I'm thinking?”

“The Sentinel?”

“Exactly! Velvet, are you ready to go on another trip?”

“Absolutely! I *love* trips. So where are we off to next?”

* * * * *

In the tenth millennium of the Eternal era the Milky Way galaxy was home to hundreds of millions of inhabited star

systems – including Earth, which was where the Most High God dwelt with His people. The Milky Way functioned as the heart of the Universe and was the capital of all the inhabited galaxies. It was a thriving place that was full of living creatures of all kinds.

Of all the inhabited systems in this galaxy, there was one system that was quite different from the others. In fact, it was the only star system in the entire universe that was inhabited not by people but by a single machine. This star system was not the home of men or aliens, but was the home of the Artilect – the largest and most advanced machine ever built.

The star in this system was a staggering 90 million miles wide. It was many times the size of the star that Earth and Mars orbited, and it released as much energy in six seconds as Sol did in a year. In orbit around this energetic star were 74 planets. At least, they used to be planets – before they were turned into nodes in the Artilect's machinery.

No one lived in that star system. The only people who ever visit it were the Administrators, and the rare guest that might accompany them. The privilege of setting foot on the Artilect's homeworld was a rare one indeed.

Velvet Dawn knew nothing of this – and yet she was still filled with awe and wonder as she looked out the window. She was inside the Administrative Tower, which rose a thousand feet above the surface of the mechanical world. The Artilect had constructed the Tower at the dawn of the Eternal Era in order to give the Administrators a chance to meet.

Below them, stretching from horizon to horizon, was the machinery that made up the Artilect.

“It's like nothing I've ever seen before!” Velvet exclaimed. “I don't even know how to describe what I'm seeing. I didn't know there was this much hardware in the entire universe! I see pipes, and cables, and big buildings, and little buildings, and boxes, and I don't know what else. And you say that the whole planet is like this?”

“Over the entire surface, and all the way down to the planet's core,” Amanda replied. “And there are 73 other worlds that are just like this.”

“I can't even comprehend that! Is the Artilect nice?”

“I try to be,” a voice said. Velvet zipped around and saw an old man standing nearby. He had white hair and a neatly trimmed beard, and he was wearing bluejeans and a brown sweater. “Is there something I can help you with, young lady?”

“Hi there! I'm Velvet Dawn. Who are you?”

“I'm the Artilect. I am the machine that you see down below you.”

“Really? I don't understand. You don't look like a machine to me!”

The Artilect smiled. “I'm just a projection, Velvet – an image. I'm not really here – well, not in the same way that you are. I created this image so that you could have a way to interact with me.”

“Oh, ok. Just like the aliens on the ship! They project themselves into our space so they can interact with it, and then they return back to where they came from. But they're not *really* here at all.”

Amanda spoke up. “That's an interesting theory. Amy, do you think that's what is going on?”

“Could be. We'll need more information to be sure.”

“Is there something I can help you with?” the Artilect asked. “Do you need help tracking down the aliens who built the *Vaughn*?”

Amy shook her head. “We might need your help before all this is over, but right now we have a lead that we want to track down. Well, a couple leads, actually. We were wondering if Steve could analyze some DNA for us.”

“Who is Steve?” Velvet asked.

Amanda groaned. “His real name is the Sentinel. He's the Artilect's son. I don't know why my sister insists on calling him

Steve.”

“Because that's his name!” Amy said.

“That's *not* the name the Artilect gave him,” Amanda protested.

“Ok, then it's his nickname. Besides, it's not like he minds or anything. He's never complained about it.”

“It is a fine name,” the Sentinel commented. A figure had appeared beside the Artilect. He was a tall, distinguished-looking gentleman who wore a gray suit and hat.

Velvet Dawn gasped. “Is that how all of you people get around – you just pop in and out of space at will? Don't you find that kind of unsettling?”

“I apologize for startling you,” the Sentinel replied. “This is how I have always traveled. One simply gets used to it. It is like stepping through a door.”

“Except you're stepping across the stars instead,” Velvet replied. “I wish I could do that!”

Amy ran over and hugged the Sentinel. “It's so good to see you! How have you been?”

“Quite well,” he replied, as he greeted Amy and Amanda. “I have been working closely with Professor Grimes. He is a most unusual individual.”

Amy laughed. “That's for sure! At least he doesn't set things on fire anymore. He used to burn cell phones, you know.”

“So I heard – but he had his reasons. He lived in a difficult time of great darkness. In that era there were many things that were worthy of being destroyed, but those days have come to an end. How can I be of assistance? The Artilect tells me that you need my help.”

Velvet spoke up. “Really? I didn't hear him say anything. Is this more of that nanite communication that you were telling me about earlier?”

The Sentinel shook his head. “My father and I are both machines. We communicate in a, well, mechanical manner.”

"You're a machine too? You sure don't look like one! Well, I guess the Artilect doesn't look like one either, so why should you? Are you made up of a bunch of planets?"

"I'm afraid not. Unlike my father, I am self-contained. What you see standing before you is not a simple projection. I am actually a small metallic sphere that has created this figure of a man. When I move from place to place I actually physically move there. I am a mobile unit."

"Oh," Velvet said. "This is all kind of complicated. Are there more beings who look like people but who aren't actually people at all?"

The Sentinel shook his head. "My father and I are the only two artificial life forms in existence. All other beings are exactly who they appear to be."

The Artilect spoke up. "It is actually a bit more complicated than that, Velvet. There is more to us than machinery, but you are still young. We will explain it when you are older."

"So how can I assist you?" the Sentinel asked.

Amanda told the Sentinel what Velvet Dawn saw on the *Vaughn*, and explained their problem. He listened with interest. "So you would like for me to learn the secret of her amazing ability."

"Exactly! I mean, if you're not busy. I'm sure you have a lot of other things going on."

"I am never too busy to help you and your sister. After all, that is why I was created. I would be more than happy to help, but I do not know how long it will take. If what you say is correct then this will open up an entirely new field of science. It may take some time to understand the mechanics involved and learn how to reproduce it."

"Really?" Amy asked. "You mean you haven't done it yet?"

The Artilect smiled. "There are a great many things that

need to be done, and even in eternity moments are precious. It simply never mattered before so it was not addressed. But I have no doubt that my son can settle this.”

Velvet Dawn spoke up. “I’ll do whatever I can to help! You can count on me. When do we start?”

Amy laughed. “You’re already done! The Artilect already has a sample of wisp essence. That’s all he needs. You don’t actually have to do anything.”

“You gave him what? I don’t understand.”

“It’s kind of complicated,” Amanda said. “You see, wisps—”

Amy interrupted. “Are made up of stuff. The Artilect has a sample of that stuff. He’s going to study it to learn about how you work.”

“Ok, I understand. Now, people are made up of different material than wisps, right?”

“Right. We are *very* different.”

“And people have nanites, right?”

Amanda spoke up. “Not usually. Only a few people have nanites. Most don’t need them. They can be helpful if you have a certain kind of technical job, but for the most part they aren’t really necessary. They’re just a tool, you know.”

“A really super amazing tool! Where did you get them? Were you born with them?”

“Nope,” Amy said. “Actually, the Sentinel gave them to us. But that’s a long story.”

“Can I have some? I really want to understand what you’re doing. The two of you are living on a whole different level! I mean, I’m standing right here with you, but in some ways I’m not really with you at all. Kind of like the alien on the *Vaughn*.”

“That’s why we’re here,” Amanda replied. “We want the Sentinel to analyze your essence and understand how your body works. Once he’s done that he’ll be able to create nanites that are compatible with you. Then you can connect to the network, and once you’re connected we can see what you’re seeing. But

before any of that is possible he's got to study you.”

“Oh, I see. I guess I just need to wait, then.”

“I'm afraid so.”

“I will notify you as soon as I have the results,” the Sentinel promised. “Is there anything else I can do for you?”

“That's all for now,” Amy said. “And thank you so very much!”

“So what's next?” Velvet Dawn asked.

Amy grinned. “I think we've had a pretty busy morning, don't you? How would you like to have lunch?”

* * * * *

Amy, Amanda, and Velvet Dawn appeared just outside the great city of New Jerusalem. Amy and Amanda had been there many times before; the city was their home. Yet even to them the great city of God was an astonishing sight. It never failed to fill them with wonder.

To their left and right were the mighty golden walls of the city, which stretched more than 200 feet high and extended as far as the eye could see in either direction. Ahead of them was a giant gate that was made out of a single luminous pearl. There was some writing over the gate, and a giant angel stood beside it.

Velvet looked at the gate in awe. “That is amazing! I've never seen anything like it. It's completely different from our village back home.”

Amy laughed. “You haven't even seen the city yet! That is just the wall that surrounds it. The actual city is inside.”

“Why does the city have a wall?”

“It's for protection. That's also why the gate is guarded by an angel. Nothing that defiles, or works abominations, or makes a lie is allowed to enter the city. The New Jerusalem is a protected place – a safe haven.”

“But none of those things exist anymore! You told me God destroyed them all at the final judgment. There aren't any bad people to keep out.”

“I know. But the walls, the gate, and the angel are a reminder that things aren't the way they used to be. In the old universe the Redeemed were hated, persecuted, and even murdered for their faith. Here we are protected. None of those who wish us harm can ever reach us again. God will watch over us for all of eternity. The gate and the angel are reminders that we are safe now and have nothing to fear.”

“What does the writing over the gate say?”

“It says 'Judah'”, Amanda said. “The city has twelve gates, and the gates are named after the tribes of Israel. Judah is the tribe that the Lord Jesus Christ came from.”

“Would you like to enter the city?” Amy asked.

“Am I allowed to? It looks very fancy, and I'm not one of the Redeemed. Are you sure I can enter? I mean, I'm not like you. This is your home, not mine.”

“Of course you're allowed to! There's nothing evil about you. C'mon, let's go inside.”

The trio walked past the angel, through the gate, and into the giant city. A street made of the purest gold, transparent as glass, stretched far into the distance. Velvet saw a beautiful river whose water was clear as crystal. On either side of the river were giant trees. Further down the road she saw buildings.

As they walked down the street they passed many people. The city was full of life, with people going about their business. There were even other races present – but Velvet Dawn was the only wisp.

“It's so beautiful here!” Velvet exclaimed. “This city is so full of light. It's like everything is glowing.”

“This city is lit by the glory of God,” Amanda explained. “God Himself lives here and His glory permeates everything. In fact, this city actually orbits the Earth. The light that shines from

this city lights the Earth itself, and the nations of the Earth walk by its light.”

“So it's like a moon,” Velvet said.

“Yes and no. A moon simply reflects light from the sun. This city, however, is a *source* of light – and the light that it gives is much more glorious than mere sunlight. It makes the sun seem weak by comparison.”

“But you do have a sun, don't you?”

“Sure we do,” Amy said. “All of the planets in this system orbit around it. But the New Jerusalem doesn't need it because it's lit by the glory of God. We have a much greater source of light.”

“The people here sure are friendly!” Velvet remarked. “Everyone is saying hello to me.”

“Of course,” Amanda replied. “Not many people have seen a wisp before. You are a very welcome visitor.”

At the outskirts of the bustling city the three friends found an elegant building. Outside the building were several gleaming white tables that were surrounded by chairs. A few people were already there, enjoying a late lunch.

“Would you like to have lunch here?” Amy asked Velvet. “It's a fine restaurant – the cook does a brilliant job.”

“Sounds fine to me,” Velvet replied. “Only wisps don't eat. We don't have food on our homeworld. It's not something we need.”

“Technically speaking, people don't need food either. We're immortals, you know. Now that God has abolished death it isn't possible for us to die. But we still eat because we enjoy the food and the fellowship.”

“But I *can't* eat.”

“But you can still join us anyway,” Amanda said.

“That's true. I can do that.”

The three friends took their places at an unoccupied table. A few moments later a tall man came over to them. “Amy

and Amanda! It is so fine to see you again. It has been a while, has it not?"

"It's good to see you too, Jaden," Amy replied. "How have you been?"

"Oh, very well indeed! But how could I not be well in a place such as this? Is there anyone who cannot find perfect contentment and peace living in the presence of the Lord? Every day brings new blessings."

"It certainly does. It's not like the old world at all! I have felt so relaxed for the past ten thousand years."

"It has been ten millennium, hasn't it? And yet it does not seem long at all. The days are so full of joy that they hardly seem to take any time. Each day is full of wonder and anticipation at what the Lord will do next. But tell me – who is this point of light that you have brought to visit us? I don't believe we've met."

"This is Velvet Dawn," Amanda explained. "She is an Ayalan."

"It is a delight to meet you," Jaden replied. "What can I bring you?"

"It's nice to meet you too," Velvet said. "Um, well, I'm good, actually. I don't actually eat things."

"Ah, I understand. Each race is different. Amy, what about you?"

"Water sounds good to me," she replied.

"Same here," Amanda said.

"Very well. I shall return shortly. In the meantime, enjoy this wonderful day." Jaden then left.

"He seemed really nice," Velvet remarked.

"He is," Amanda agreed. "We never knew him in the old universe, though. He lived and died long before we were born."

"But he seemed to know you!"

Amy laughed. "We're the Redeemed, you know. Here, everyone knows everyone. We each have our place and our role in the Lord's kingdom. You might say that we're one big happy

family.”

“Well, we *are* one big happy family,” Amanda replied. “After all, we're all descendants of Adam and Eve.”

“Who is that?” Velvet asked.

“Our ancestors. When God created mankind, He made just two of them – one male and one female. Then they had children. All of the Redeemed are their descendants.”

“He just made *two* of them?” Velvet asked, surprised. “But He made a lot of my kind! And didn't He make a lot of angels, too?”

Amy spoke up. “That's right. But that's not how He formed mankind.”

“But why? I mean, I guess God can do whatever He wants. It just seems so strange.”

“Well, it was important for technical reasons,” Amanda said. “You see, when God created man He placed them in a garden He had created. In that garden He placed the Tree of Knowledge of Good and Evil, and He told Adam and Eve that they were not allowed to eat from it. That tree was forbidden to them.”

“But they ate from it anyway, right? I think I've heard about this before.”

“Right. That act had terrible consequences. Because of what they did, sin and disease and death entered the world. Before they ate of the tree Adam and Eve were immortals, but now they would grow old and die. Before they ate their world was perfect, but now it was broken and full of evil. Adam and Eve's children would inherit their sin nature and would grow old and die as well. The world became a terrible place that was full of all sorts of horrors – and it all came from that original sin.”

“That's why Jesus came,” Amy said. “Our sin made us guilty before God, and there was nothing we could do to fix our guilt. We could never become right with God no matter what we did. The only way we could be forgiven is if someone else took

the punishment for our sins. So God sent His son Jesus Christ into the world. He lived a perfect life and then He died a terrible death on the cross. His death paid for our sins with His own blood. He purchased God's forgiveness for all who repented and believed in Him."

"Which gets us back to your original question," Amanda continued. "Since one man brought sin and death into the world and passed it on to all of his descendents, it was possible for one man to bring righteousness and life into the world. One man could undo what one other man had caused. The reason God could save mankind through Christ is because mankind was made sinners by Adam."

"Right," Amy said. "So it was *vital* that all of mankind be the descendents of Adam. That's also why Christ had to become a man: He could only suffer in our place if He was one of us."

"Isn't He still a man?" Velvet asked.

"The Lord Jesus is fully God and fully man. He did not give up His deity when He became one of us. But to answer your question, He is still in the same form that He assumed when He rose bodily from the grave. He is not a pure spirit, like the Holy Spirit."

Jaden came to the table, carrying their drinks. He set them on the table in front of them. "Do you ladies know what you would like to have for lunch?"

"You know, everything here is wonderful," Amy replied. "Why not just surprise me? I'm sure the chef has something special. He always does."

Amanda nodded. "I agree. I'll have whatever she has."

"Very well," Jaden said, smiling. "I will return shortly."

After he left, Velvet looked at Amy. "You don't eat grass, right? I mean, I know that some races do."

"Right. We do eat plants, though – there are a lot of vegetables and fruits that we enjoy. But we can't digest grass."

Amanda turned to her sister. "So how long do you think it

will take the Sentinel to analyze Velvet's essence?"

"Probably a few days. Even if it takes him longer, though, there's no rush; we have plenty of time. The reunion isn't until May 3. We've got three months until then. In the meantime, there's all sorts of things we can do while we're waiting! I want to show Velvet the Great Library."

"But she can't read," Amanda pointed out.

"Oh, that's right. I keep forgetting. Well, once she gets the nanites she'll be able to do a whole lot more than read."

"Really?" Velvet asked. "So the nanites will teach me?"

"The process is more direct than that," Amanda explained. "You won't have to learn how to read because that knowledge will be a part of you. The nanites were designed to extend a person's abilities. You'll be able to do all sorts of things you could never do before."

"That's right," Amy agreed. "In fact, you'll be able to do most of the things that we can do."

"That will be amazing!" Velvet exclaimed. "I'm going to have so much fun."

"You have no idea. It will open up entirely new worlds for you – and new possibilities. You'll see things that you never even knew existed."

"You mean *you'll* see things," Velvet replied. "After all, the whole reason you're giving them to me is so that you can see what I see, right?"

"That's right. But there's still a lot we can do while we wait, though. We can show you downtown, and take you home. I'm sure you'd love to see where we live!"

"She also needs to see the Throne," Amanda added. "There is no greater sight that she could ever see, nor any greater thing she could do than worship Him."

"Can I do that?" Velvet asked. "Is it allowed?"

Amy laughed. "Yes, it's allowed. Do you really think that He would refuse to see one of His own creations?"

“But I don't have anything to give Him. I didn't bring anything. My race doesn't really have a lot of stuff, you know. We don't live in a city of gold or anything like that. We're kind of humble and small.”

“But you are giving Him something. You're helping us find the race who created the *Vaughn*. You're allowing us to use your senses to see things we've never seen before. You are playing a role in the advancement of His kingdom. That counts for something, you know.”

“I guess that's true. I'm so excited! I can't wait to see Him. Is He – is He scary?”

“He is good,” Amanda replied. “He is the King of Kings and Lord of Lords. He is the great I Am. There is no one else like Him.”

Jaden came to their table, holding a tray. “And here we are, ladies! Amy and Amanda, I bring you the chef's specialty of the day: a bowl of fresh, steaming vegetable soup.”

“Mmm, it smells wonderful,” Amy said. “Thank you!”

Jaden placed the food on the table in front of them. “Is there anything else that I can bring you?”

“I think we're set,” Amanda replied.

“Very well! If there is, let me know. I will do whatever I can to get it – even if I have to travel to the end of the universe itself.”

After Jaden left, Velvet looked at Amy. “Would he really do that?”

Amy laughed. “You know, he probably would. But there's no need. I think we have everything we need here.”

“What is that, anyway?” Velvet asked, as she stared at the bowls on the table. “Did he call that soup?”

“You've never seen soup before? Well, of course you haven't. You don't eat. Right. Well, this is soup. It is an amazing collection of flavors, vegetables, and spices, all mixed together in a most delightful way.”

“Ok then. I'll take your word for it.”

Amy looked at her sister. "Would you thank the Lord for this meal before we begin?"

"I'd be happy to," she replied.

As the three bowed their heads, Amanda began to pray.

CHAPTER 15: RECALL

Log date: Unknown

Location: Zovitalia

Log note: The next step

FOR THE FOUR CREWMEMBERS of the *Vaughn*, the journey had been a long and eventful one. They had gone places no one in their race had ever been and they had seen amazing new sights. Yet, even though their voyage had been a joyous one, they were still glad when it was finally time to return home. The void they had visited had been full of secrets but it lacked a world like the one they had left.

Once their mission was complete, the Navigator, the Specialist, the Engineer, and the Messenger left the *Vaughn* in space and slipped back to their own world. It seemed strange to them to leave their vessel behind; their long period of interaction with it had turned the ship from a stranger into a friend. Yet they knew the ship still had a part to play. Their first mission was done, but the ship's work was just beginning. Its day of homecoming would arrive but it was not yet time.

When the four explorers stepped back onto their homeworld they were greeted with great excitement and enthusiasm. Never before had any of that race been missing from Zovitalia, and their absence created a hole in society. Those who wanted their company or expertise had to look elsewhere, for the explorers were out of reach. It was an odd feeling to have someone missing from the world – but it was a very good feeling to have them back, safe and sound and with many stories to tell.

For the first few weeks after their triumphant return they spent their time sharing with the citizens of the world what they

had done and what they had learned. They got caught up with old friends and they celebrated with feasts and merriment. The First One had much he wanted to discuss with them, but he decided to wait. They had been gone a long time and there was no reason to rush the matter. The treasures of space could wait.

Once the festivities had died down and their lives had returned to normal, the First One called a meeting with the four explorers in the Elder Tree. It was time to make some important decisions and he was unwilling to act without their input and guidance.

The meeting room in the Tree was large and spacious. In the center of the room was an ancient table that was nearly as old as the world itself. The chairs around the table had reconfigured themselves to match the five beings who had taken them as seats. There were no electronics or screens in this room, for such things were not common in the woods. The meeting was held late in the day, as the light began to leave the forest and the night arrived.

The First One began the meeting. "Thank you for taking the time to meet with me. I know your time is precious and I know you still have much to do. You have been away from your lives for a long time, and much has happened in your absence. We are all grateful for what you have learned for us. I do not wish to keep you here but it is important that we begin making plans for that which is still to come. In order to make those plans I have some questions for you."

"Of course," the Messenger said. "What do you wish to know?"

"My first question is the hardest. In fact, you may not be able to answer it. My question is this: where did you go?"

The Messenger was surprised. "What do you mean? We went to the other side. We crossed over into the void – the dark realm. I do not understand."

"But what was that place? If you were to tell me that you

crossed over the wood and came to the other side, that would only tell me the path of your journey. There are other countries beyond the wood, and each one is different. I understand that you crossed over into a new place. But what new place did you visit?"

The Navigator spoke up. "There is no way to know. We saw no life forms during our time there. The Singularity was our only clear point of reference. Everything else in the void was vague and difficult to distinguish. Our instruments told us that we were in a large area with very little matter. There was very little light, and the sources of that light were dim and far away. It was a strange realm. Light seemed to come from a few areas that were very large and yet very sparse. The light was not alive, as it is in our world. In fact, nothing seemed to be alive."

"The realm seemed to be empty," the Specialist added. "Perhaps we visited a place that had not yet seen life. Perhaps that realm is still full of darkness and void."

The Engineer nodded. "Exactly. That was my impression as well. It was an undefined place that did not seem to know love or joy. But perhaps we could fix that. We might be able to bring life there."

The First One smiled. "I am sure there is much that can be done, but we must stay focused on our goal. The *Vaughn* was not built to explore the void. You are confirming what we already guessed: there is very little in the void that is worthy of our time or study. That is why we built a vessel to go beyond it. The void is just a path to the real mystery. What have you learned about the passage through the barrier?"

"The ship has proven strong and worthy," the Engineer replied. "It crossed the void without strain and has provided much data. We have learned a great deal."

"But we have not learned enough," the Messenger commented. "Although we have discovered many things, we have not learned the one thing we set out to learn. We have not

discovered how to cross over. We have not found a way to achieve passage through the barrier. That secret eludes us.”

“What if we gave the ship more time?” the First One asked. “Perhaps if we allow the *Vaughn* to continue to gather information, we will learn even more about the barrier. The information that you seek may be just around the corner.”

The Engineer spoke up. “The *Vaughn* is continuing to operate. We have left it parked in the void, and it will monitor the situation for changes. But I believe the reason we did not succeed is because we lack the tools we need to ask the right questions. We now know more than we did before, and we have discovered that we are not as well-equipped as we thought. We need to enhance the *Vaughn* if we want it to answer our questions.”

“I agree,” the Specialist said. “It is a good ship, but it cannot accomplish its goals. We need better instruments. Instruments that are designed to explore the barrier and reveal its secrets.”

“Is that possible?” the First One asked. “Do you know how to build these new instruments? Will they not be subject to the same limitations as the ones currently on the *Vaughn*?”

“We will have to learn some new things before we can build them,” the Engineer admitted. “I do not say this will be easy. But perhaps we will be met with success. The *Vaughn* has told us that the barrier is resistant to certain types of examination, but our research has discovered that there are other types of examination which are also possible. We believe we could upgrade the *Vaughn* and expand its capabilities. It is true that it may not work. There is much that we do not know. But if we do not try then we will never succeed.”

“That is wisdom,” the First One agreed. “I believe you are right. We made one attempt and we learned that our old methods will not work. Therefore, if we wish to reach our goal we must make a new attempt with new methods. If we do not

make a new attempt then we must abandon our goal – and that is one thing we will not do. We will find a way. It is simply a matter of trying again.”

“Exactly!” the Engineer said. “Let me show you our plans.”

CHAPTER 16: UPGRADE

Log date: February 23, 10,000 of the Eternal Era

Location: The New Jerusalem

Log note: A new perspective

AMY AND AMANDA STRYKER spent two weeks in the New Jerusalem, showing the wonders of that magnificent city to Velvet Dawn. Velvet was astonished at the things that she saw. It was unlike anything on her world – and, in truth, it was unlike anything that was on any other world. No other city would ever rival the glory of the New Jerusalem. That golden city had one thing that no other city would ever have: the holy presence of the Eternal One. The Most High God dwelt there, and the city was lit by His glory. No other metropolis, however large and wealthy, could ever even come close to rivaling it. It would forever remain as the premier city in the universe, for all the endless ages of eternity.

After a glorious two weeks in the capitol city of the universe, the Stryker twins finally received the message they had been waiting for: the Sentinel had made a breakthrough. He was ready to connect the wisp to the network.

Amy told the good news to her friend. “Are you ready to head back to the Artilect?”

“Sure,” Velvet Dawn replied. “I know we need to continue our mission, and I want to help. But why would anyone ever want to leave this paradise? This city has everything that anyone could ever want – love, joy, peace, and the presence of the Lord. If I lived here I don't think I would ever go anywhere else. There is simply no reason to. Nothing that is out there could possibly be better than what is right here.”

“But there *is* reason to,” Amanda said. “There is work to

be done. We weren't created to sit around and do nothing, you know! We were created to serve the Lord and bring Him glory. To do that often means going to other worlds and working."

"Right," Amy agreed. "And in this case we have a *big* job to do! We need to learn the secrets of the *Vaughn*, and in order to do that we need your help. The Sentinel thinks he knows why you could see things on that ship that we couldn't. He wants us to go and talk to him."

"I think it's because I have eyes. At least, that's what I've been told."

Amy laughed. "C'mon, let's go. He's waiting on us."

Velvet Dawn glowed agreeably. A moment later the three of them vanished, and reappeared in the Administrative Tower on the Artillect's homeworld. When they arrived they saw that they were not alone. A well-dressed man in a gray suit and hat was waiting on them.

"Thank you for coming," the Sentinel said warmly. "It is good to see you again."

"It's, um, my pleasure," Velvet Dawn replied. "I've been told that you don't allow a lot of visitors to come here. So, thanks."

The Sentinel nodded. "There are few people who have reason to come here. The Artillect is fully capable of operating on his own. The only ones who come here are those who are in authority over the Artillect and who have need of his services – along with the power to command them."

"The Administrators," Velvet Dawn said.

"That is correct. Since you are working with two Administrators, and since they need your help in order to accomplish their goals, that gives you a reason to be here. And so here you are."

"Right," Amanda said. "So you said you had made a breakthrough?"

The Sentinel nodded. "I have analyzed your friend's

physical structure and have come to understand how she works. She is a remarkable creature. There is far more to her than it appears.”

“Thanks,” Velvet Dawn said.

“So you can reproduce her sight?” Amy asked.

“I can. It was not an easy task, for her vision works completely differently from yours. She has eyes, but they are not like your eyes. You see by means of electromagnetic radiation, which is received into your eyes and processed by your mind. This allows you to see some things, but other things are hidden – such as wavelengths that your eyes cannot receive, or forms of matter that do not interact with light.”

“But we do have the nanites,” Amanda pointed out. “They give us much broader range.”

“That is true. But even they work on the same principle. They are much more complicated, of course, and they use some clever tricks to enable you to see things that are light-years away, but in the end they are not so different. But Velvet Dawn's eyes work on a completely different principle. Her eyes do not receive information; instead they actively probe the universe on a very fundamental level to see what is really there. She can see forms of matter that we cannot detect – or that we can only detect with machinery that is too complex for our nanites.”

“Really? How is that possible?”

“We can study the exact mechanics later,” Amy interrupted. “The bigger question is this: can you upgrade the nanites to give us that same ability?”

“I believe so. Originally it would have been impossible to do this, but by copying the mechanisms in your friend I have been able to devise a solution. It seems that mankind still has some things yet to learn. I have tested this ability on a limited scale and can now see more equipment on the *Vaughn* than was visible at first. However, I do not know if this will enable us to view the creatures that Velvet Dawn saw. The ship still appears to

be empty, and I have no way of knowing if it is truly empty or if there is something there I cannot see. I also do not know if we will be able to communicate with this new race of aliens. You must find one first and then we will make an attempt. Are you ready for the nanite upgrade?"

"Sure," Amy said.

"Sounds good to me," Amanda agreed.

The Sentinel turned to Velvet Dawn. "How about you? Are you ready to be connected to the network?"

"Of course. I want to help, and if this will help then I want to do it. Everyone has been so very good to me. This is the least I can do in return. If this will help us track down whoever built the *Vaughn* then I'm in."

"Very well," the Sentinel said. He paused for just a moment. "It is done."

In that brief moment the Sentinel did several things. He connected to the nanites that flowed through the twins' bloodstream and upgraded them. In less than a second the nanites were reconfigured to have Velvet Dawn's sight capabilities. The twins would now have the option of seeing things that had been hidden from them before.

Once that upgrade was completed, the Sentinel deployed another set of nanites into Velvet Dawn. These nanites were not the same as the ones in the twins. Since Velvet Dawn was not human, she needed a very specialized type of nanomachine – one that would integrate into her body and mind. It had taken the Sentinel a great deal of effort to create a new class of nanite and give it the same abilities as the ones used by the twins. But, with the help of the Artilect, he had accomplished his goal.

The Sentinel watched carefully as the nanites were deployed throughout her body, to make sure that there were no problems. To Velvet Dawn it was the process of just a moment – something that happened in the blink of an eye. The Sentinel, however, was aware of the passing of each nanosecond. To him it

was a long and detailed process.

But it was a process that worked. He had tested it millions of times in simulations that perfectly replicated Velvet Dawn's biological structure. It had worked then and it worked now.

When the nanites took effect, Velvet Dawn gasped. The world around her instantly changed in ways she had never even imagined. The wisp darted around the room at high speeds, glowing ever brighter. "This is *amazing!* I can see everything. Not just the things on the surface, but the things under the surface. I can see things that are nearby and that are really far away. I feel like I can touch everything and go anywhere I want. It's – it's so strange! I'm not just *looking* at things anymore. It's as if the universe is made up of lots of blocks and I can rearrange them in any way that I want."

"That's because you can," Amanda said.

Velvet Dawn flew back to the twins. "I have *so* much knowledge now. I could create shapes before, but now I can do so much more! I can make ships, and chairs, and tables, and houses. I understand things that I didn't understand before. I can even understand things that I didn't even know existed! Is this what it's like to be you? Have you always been like this?"

Amy laughed. "Not always. There was a time, a *very* long time ago, when we didn't have the nanites. But they are nice, aren't they? The nanites give us lots of options."

"They really are. I never imagined it would be like this! Oh, Sentinel, thank you. Thank you very much. This is an amazing gift. I promise I'll use it well."

"You are welcome," the Sentinel replied. "It is always a pleasure to be of assistance."

Amanda spoke up. "I think it's time to get to work. Velvet, can you take us to the *Vaughn*?"

"Let me see," Velvet replied. "Oh! That is amazing. I know right where the ship is in relation to where we are. In fact, I can actually *see* the ship! In my mind. And I *do* know how to take us

there. Why, it's easy! All I have to do is—”

In that instant the three of them vanished and reappeared on the *Vaughn*.

“—do that!” Velvet said triumphantly.

“Nicely done,” Amy said. “Thanks. Now it's time to track down some life forms!”

* * * * *

The group began by searching over the ship from top to bottom. The nanites were working splendidly. They could see all sorts of things now – things that had been hidden from them before.

“This is really remarkable!” Amanda said. “Who could possibly have built this ship? Who knew that this type of construction was even possible? The Sentinel had never seen anything like it before. It was even new to the Artilect.”

“Whoever built this has a completely different take on science than we do,” Amy agreed. “Which is difficult to understand, really. How could there be a race that is this advanced and yet is still completely unknown to us?”

Velvet Dawn spoke up. “Maybe they don't leave home very often. If they never went out to explore then how would you ever meet them?”

“But we've explored the entire universe!” Amanda pointed out. “The Artilect cataloged every planet, every star, every comet, and every asteroid. If this race was out there somewhere then we would know about it.”

“Maybe it's hidden,” Velvet Dawn suggested. “The universe is a big place, after all. If they live in that pocket universe then that would explain how you missed them. Their home may be in a place where you just can't reach.”

“That's possible. What we really need to do is find them and talk to them.”

“And that means waiting for one to show up,” Amy replied.

So they waited. While they waited they explored the new machinery that they could now see. Their primary goal was still to catch sight of another alien, but no one appeared.

Days passed, and the days turned to weeks. No one ever appeared. The ship remained empty, save for the three of them. Eventually the group ran out of things to study.

“I don't think there's anything else here that we can learn,” Amanda finally said. “We've gone over this equipment a dozen times. It's fascinating and it's well-designed, but none of it gives directions back to the alien homeworld. There's also no indication of how this ship could possibly have crossed the barrier between universes and reached this place. It just doesn't seem possible with this equipment.”

“So what should we do?” Velvet Dawn asked. “Do we just stay here and keep looking?”

Amanda shook her head. “I don't want to give up, but I don't think our continued presence here is very productive. My suggestion is to leave behind some nanites and have them alert us if anyone shows up. As soon as we get the message we can zip right back here and take action. In the meantime we can have the Sentinel conduct a full investigation of this ship. If there are any secrets here that we missed, he'll be able to find them.”

“Sounds good to me,” Amy said. “Besides, the reunion is coming up soon. We need to get ready for it.”

“The reunion?” Velvet Dawn asked. “What's that?”

“Reunions are something that people do,” Amy explained. “Every so often we all take time from our busy schedules to gather together into one place. We eat and talk and rejoice in the goodness of the Lord.”

“Right,” Amanda said. “We have a lot of friends and relatives that we don't see as often as we would like. Reunions

give us a place and a time to come together.”

“This reunion is May 3rd of this year. It marks the ten thousandth year of the existence of the new universe.”

“It's hard to believe that we've been here ten thousand years, isn't it?” Amanda remarked. “It doesn't really seem that long.”

“You two are *super* old!” Velvet Dawn exclaimed. “And to think that you even existed *before* this universe was created. That's amazing.”

Amy laughed. “Age doesn't seem to matter as much as it used to. Maybe the years just aren't heavy anymore. Time just isn't a burden.”

Amanda spoke up. “Speaking of which, Velvet, you've been away from home for a pretty long time. Would you like to go back to your homeworld? You can rest there and visit with your friends and family. Once the nanites on the *Vaughn* tell us that something has changed we'll come and get you.”

“Or you can just tell me and I'll come to you,” Velvet Dawn pointed out. “After all, I can *travel* now! It's pretty awesome.”

Amy grinned. “That you can.”

“Then that's what we will do. Thank you *so* much for bringing me with you! I've had a wonderful time. It has been kinda boring in a few places, but mostly it's been wonderful. Just let me know when it's time to begin the search again.”

“We will,” Amanda promised.

Velvet Dawn glowed at them one last time and then vanished.

“So what now?” Amanda asked.

Amy deployed the upgraded nanites throughout the *Vaughn* and programmed them to alert them both if they found anything. “Now we go to the Sentinel and ask him to conduct a thorough search of this ship.”

“Which is probably something we should have done

sooner.”

“Probably. I just hate asking him to do things that we can do ourselves. Anyway, after that I think it's time to pay some people some visits.”

“Sounds like a great idea to me!”

The twins then vanished, leaving the ship empty and alone.

CHAPTER 17: THE SEED

Log date: April 6, 2423

Location: Deep Space

Log note: A long journey down a narrow road

VICTOR STRYKER HAD NEVER BEEN in space before. He had read about space, of course, and he knew quite a lot about it. In fact, he had spent his entire life working for a company whose entire mission was focused on space exploration. You could make the argument that Victor's whole life had been about outer space – but only now did Victor actually have firsthand experience. After a lifetime of work he finally knew the truth: outer space was really, *really* boring.

Yes, there was a lot to be said for the countless stars that were in the universe, and for the many worlds that orbited those stars. There was adventure to be had on those planets that had never been visited by mankind. But space itself – the near-vacuum that had to be crossed in order to actually *arrive* at one of those worlds – was breathtakingly dull.

The *Vanguard* was an enormous spaceship. Unlike the Diano Building back on Xanthe, this structure actually had windows – genuine, honest-to-goodness windows. The designers of this ship had put them there so that, if something went wrong with their instruments, they could still look outside and see what was going on. There were windows all over the ship, and they were available for anyone to use.

At first they were quite a novelty, until Victor realized that there was nothing to see outside. He wasn't sure if it was an artifact of their FTL travel or a reflection of the fact that there just wasn't much out there, but all Victor could see out the

window was the *Vanguard* itself. It was as if the starship was in an ocean of utter blackness, in a universe that was utterly devoid of anything. It was a deeply unsettling sight.

Victor tried not to think about what would happen to him if something went wrong with the ship. They were very far from Tau Ceti and were getting farther every day. The *Vanguard* was still five months from their intended destination – which was an uncolonized planet utterly devoid of life. If something catastrophic happened they would be on their own.

But that isn't very likely. This ship is filled with talented people who know how to fix problems, and this ship is based on a very solid design. Space travel is hundreds of years old. Nothing is going to go wrong, and if it does the people on board can fix the issue. We will be fine.

Yet, as Victor stared out the window at the utter blackness outside, he couldn't help but have an uneasy feeling. There were few things as unsettling as an endless expanse of nothing at all.

* * * * *

Victor passed the time as best he could. The ship was organized a little differently from the Diano Building, but it had many of the same features. He had an office, a job to do, and a data warehouse to look after. Victor even had his own little apartment as well. It wasn't as big as the one back on Xanthe, but it was large enough for his purposes. The only problem he ran into was trying to find a way to fit his enormous book collection into that small place. He ended up having to stack a lot of books on the floor. It made life awkward, but he knew it wouldn't last forever. Once he arrived at the Artilect's homeworld he would have plenty of space – or so he hoped.

One thing that had not changed was his neighbors. Cynthia Glass still lived right next door, just as she had back in

Star City. Cynthia seemed more determined than ever to form some sort of relationship with him.

Cynthia managed to catch Victor one evening as he was coming home from work. When Victor stepped off the elevator he saw her standing right there in the hallway.

“This starship is *amazing*, isn't it?” Cynthia said enthusiastically. “Isn't this a grand adventure? This is the most exciting thing that's happened to us in years!”

“Now that's an interesting question,” Victor remarked. “The past few years have been quite exciting, if you stop and think about it. I've been attacked by the SSF, my house was burned down, and I was trapped in the Diano Building for years while Rios made crazy threats against the company I work for. Then Lane invented a digital universe that sucked up the souls of men and ground them into powder.”

Cynthia shook her head. “I don't think you're getting into the spirit of things. Xanthe is in the past! It's now light-years away and is getting further and further behind us every second that goes by. Rios can't reach us – you know, since he's dead. Lane can't reach us. We have left Xanthe for the first time since Ramon Diano himself founded the colony there and kicked things off. And where are we going? To a world where no human being has ever been before! We have a new chance to shape the future. It is going to be *amazing*.”

“I guess that's true. You seem rather excited about it.”

“Of course! I mean, who wouldn't be? For centuries the Corporation has sent probes out into space to explore on our behalf. This is the first time we've actually gone out *in person*. We have a chance to create a whole new society!”

“But haven't we always had that chance?” Victor asked. “I mean, the Building has been ours since before I was born. Rios has never had a say in what went on inside the Building. We could have had our own society long ago if we wanted it. Why do you think the future will be any different from the past?”

Cynthia sighed. "You never change, do you? You can be so baffling sometimes. Have you ever heard of the word 'hope'? It's a good, powerful, life-changing word. The way I see it, Victor, you have a couple options. If you want you can continue to ignore everything that's going on around you and stick to your job and wish that somehow things would get better, all the while believing that we are doomed to be eaten by space monsters. Or, if you actually *don't* want to live a life of unhappy sadness, you could become *engaged*. You could make some friends and form some relationships and try to start something. You could realize that all is not lost and there is still a chance to turn things around. You could try being optimistic and happy. So if you want to be depressed during this exciting time then I guess you can do that. But there is more than one way to look at things."

"You want me to become *engaged*?" Victor asked. "We haven't even started dating yet! That seems a little premature to me."

Cynthia frowned. "You know exactly what I mean. No one is oppressing you here, Victor. No one is against you. No one is ruining your life. You *do* have the option of being happy. It's not my fault if you don't take it."

* * * * *

In the weeks that followed Victor considered what Cynthia had told him. He finally had to admit that she was right: Victor was out of things to be unhappy about. He was on his way to build the Artilect, and there were no dire threats on the horizon. Things were finally looking up.

So Victor began to pay more attention to the society around him. He discovered that there was a chess club that met on the second Tuesday of every month, in order to play games *in person*. He found it a bit strange at first to actually see his opponent sitting across the board from him, instead of playing

online, but Victor came to appreciate it.

He heard that there were other groups that met together as well – including one whose goal was to come up with a new government once the ship arrived at the planet. Victor decided to take one thing at a time. After all, there was no rush. There was still a long journey ahead, and after that there would be a lifetime on a new world.

* * * * *

On September 4th, 2422 the *Vanguard* entered orbit around an uncolonized planet. There was nothing particularly notable about the world that was below them. Victor could clearly see it out of the small window in his cabin, and there really wasn't much to see. It had no plant life and no oceans. It didn't even have an atmosphere. It was just another rocky planet. He had no doubt that somewhere on that world were spectacular vistas and amazing rock formations. Victor just couldn't see them from space.

Victor had heard that Dr. Mazatl had already sent out a fleet of machines to begin the terraformation process. Victor was a bit disappointed to find out that the planet would never be home to any sort of plant or animal life. Since the entire world was going to be turned into a giant computer, the director decided that it didn't make sense to create oceans or forests or grassy plains. In fact, the world didn't really need an atmosphere, but in order to make it easier for the Diano personnel to work on that world Dr. Mazatl was going to create one. Under normal circumstances the Corporation liked to terraform worlds by creating a biosphere that would maintain the atmosphere without mechanical aids, but this world would never have a self-sustaining biosphere. The air they would breathe would be generated and maintained by machinery.

It would take some time for the rather nondescript brown

planet to undergo the transformation process. In the meantime life would go on, much as it had for Victor's entire life. Most people lived their whole lives inside the Diano Building, so relocating from one building to another wasn't a large change for them. People got up, went work, and then went home, just as they always had. The *Vanguard* was a bit more cramped than the giant Diano Building but there was still plenty of space (especially since there were no chickens running around). No one really seemed to mind the new living conditions – and besides, there was a lot of work to do. The Artillect project was ambitious, to say the least.

While the planet was being terraformed, a team of engineers began work on building a base of operations on the surface. This base was designed to be even larger than the *Vanguard* itself, and it was being positioned so it could easily be expanded as the need arose. Once the base was established the ship's occupants would start living on the planet. The *Vanguard* would remain in orbit. No one ever expected to need to use the ship again, but it would be there in case of an emergency.

Victor expected the construction of the base to take weeks, but he quickly learned that he was mistaken. Thanks to the advanced materialization technology possessed by the Diano Corporation it only took a matter of days to build a fully-furnished colony on the surface. The building covered several square miles and was packed with laboratories, living facilities, and factories – everything that the population needed in order to survive.

On September 9, 2422 Dr. Mazatl beamed the entire company off the *Vanguard* and onto the new world. It was time to start a new life.

* * * * *

Victor thought it might be exciting to live on a new planet,

but in reality very little changed. His day-to-day routine was no different than it had been before. One nice change, though, was that the Diano Corporation no longer had any enemies. Cynthia was definitely right about that – life really *was* easier when angry mobs weren't trying to kill you. There was no one around to make threats or demands, and the people were free to come and go as they pleased. The whole planet was at their disposal. It was true there wasn't much of an atmosphere outside, but that would change over time. The days of being trapped in a building were over.

The Corporation's employees were divided into groups of various sizes. One group was responsible for terraforming the planet and making it habitable. Another group was assigned to the expansion and maintenance of the planetary base that had been established. Dr. Mazatl did not want to create temporary housing; he wanted to build a comfortable city that the people could live in and enjoy. Everyone would be at that world for a long time – possibly the rest of their lives. He didn't want them to spend the rest of their days trapped in corridors and tiny apartments. They had plenty of space, so it only made sense to spread out and take advantage of it.

Most of the employees worked on what was called the Seed. Before the *Vanguard* left Xanthe Dr. Mazatl realized that a traditional construction approach would not work for the Artilect. What he really needed was to design a computer that could grow on its own and expand as its needs increased. One of the key problems of the prior generations of Nehemiah probes was that the scope of their work was always increasing, but the data centers they used had a fixed capacity. Dr. Mazatl wanted to build a computer that could recognize its needs and deal with them on its own. The company had already perfected a form of materialization technology, and he was convinced that it should be possible to harness that in a much more aggressive way.

It was a simple idea but it proved difficult to implement in

practice. The unit had to think and act as a whole. It had to be interconnected. They had to develop new ways of inter-server communication and new ways of storing data. Dr. Mazatl was trying to build a unified mind, not a glorified filing cabinet. Above all else, the machine had to be rational. Dr. Mazatl did not want to build something that would spin out of control and consume all the resources in the entire universe. He had to strike a careful balance.

One the Seed was developed and stabilized, the company would deploy it and watch the Artilect begin to grow. At first its growth would be slowed down to a crawl and carefully managed in order to make sure that the Seed was operating as expected. Over time – probably over the course of multiple lifetimes – the Seed would grow until it consumed the resources of the entire world. It might even grow to encompass other worlds as well, but that feature wasn't needed in Phase 1. If the Artilect ever decided he needed to bring other worlds online then it could tackle those challenges on its own.

Victor, though, was not a part of the group that was responsible for the Seed. He was given a much more difficult task. Dr. Mazatl made him one of the managers on the core project itself: the mind of the Artilect.

Designing an artificial mind was not an easy thing to do. In fact, most people thought it was impossible to improve very much on the original design of the ancient Romans. Dr. Mazatl, though, was convinced that it was possible and spent most of his time focusing on it. Although much of the work was beyond Victor, he tried to help as best he could.

“There are a number of key problems we have to be concerned about,” Dr. Mazatl told him, in their first project planning meeting on the Artilect's homeworld. “The first one is stability. Minds are a complicated set of interworking mechanisms that are filled with millions of subtle rules. Balancing all of this information and making rational use of it is

not a simple task. Even human beings can slide into insanity over time, if things go wrong and their mind is damaged. The Artilect will need to exist for thousands of years. It has to be perfectly stable no matter what happens and no matter what damage it sustains. If it ever slides into insanity and uses its power for evil then mankind will have a serious problem on its hands.”

“But surely we can program against that,” Victor replied. “We can just add the Laws of Robotics.”

“It's not quite that easy. Rules can be fuzzy things and can be interpreted in a variety of ways. It is extremely difficult to create a rule that is so specific that it covers any situation that might arise. If the Artilect develops poor judgment and stops understanding its core rules then it could do horrific things while still believing it is in full compliance with its directives. It is not just the rules that must be intact; its judgment must be flawless. This is complicated by the fact that the Artilect will grow over time and develop an enhanced understanding of the universe. We need to make sure that however much it grows, it never decides to 'reinterpret' its core existence in hostile or undesirable ways.”

“That is going to be a challenge,” Victor remarked.

“It certainly will. But it is not the only challenge. A related task is that the machine must be *good*. Under normal circumstances machines are neither good nor bad. As Grimes has said many times, a toaster simply heats up toast; that's all it does. It can't make moral decisions. Until a person gives it a slice of toast the toaster will do nothing. It is the *person* who is the moral agent; the toaster is just a tool. The same thing can be said for a hammer. It will just sit there and harm no one until someone picks it up and uses it. The hammer can be used in a good way or an evil way, but in either case it is not the hammer's decision. Hammers are not moral agents.”

Victor nodded. “But the Artilect is going to be an artificial intelligence. It will have to make decisions, and that puts it in a

different category.”

“Precisely. Since it will make decisions that will affect the future of humanity, we must make sure that it knows the difference between good and evil. We must give it a conscience. It needs to know right from wrong and it must never waver from that course. If the Artilect ever turned evil then it would be a tremendous danger to mankind's very existence.”

“So you essentially want it to be a Christian.”

“Not quite. I think that's overstating it a bit. Christians are people who have been redeemed by the blood of Christ. They have repented of their sins and put their faith and trust in the risen Savior. God has given them His Holy Spirit and they are new creatures. A machine cannot possibly be any of those things. Machines cannot be redeemed, nor can they be filled with the Spirit. They are, after all, just machines.

“No, what we must do is teach the Artilect the moral code that God has given to us and program it to follow them. This machine will not have a sin nature as we do. It will not have a corrupting influence that tempts it to do evil. Like a toaster, it will always do precisely what it is told. Therefore we must make sure that we tell it the right things. We need to teach it the truth and anchor it in the Word of God. That should protect the future of humanity and keep the machine from doing evil.”

“So you want to make a *moral* machine, then.”

“We don't have a choice! We *must* make a moral machine. Any machine that is capable of choice must follow some sort of moral code. Those choices will either be good or they will be evil. It is not as simple as saying that the machine must not be allowed to harm another human being. What is a human being, anyway? At what point in life does a person become human? Are the unborn human? Are children human? Are the aged and infirm human? Those are moral judgments. And what does 'harm' mean? Is it wrong to kill the innocent? Is it wrong to kill murderers? Those are moral judgments as well.

There are many, many ways to interpret core directives, and we must teach the Artilect the right path.”

“I guess that makes sense. I'm not sure how we're going to accomplish all that, though. What happens if we fail?”

“Well, that depends on what 'fail' means. There are many different failure scenarios and we must plan for each one. The machine might simply stop working and do nothing. It might destroy itself. It might go insane and corrupt the data that it is given. It might launch a war against mankind and try to kill us all – although, personally, I find that extremely unlikely. There is also the matter that mankind is currently trying to kill itself. It is difficult to say how much longer the human race will survive.”

“But surely you don't believe we'll die out, right? I mean, if we did then all of this would be pointless.”

“I do not know what the future holds. That is why we are out here – to protect the Artilect against the unknown. Of course, getting back to the topic at hand, there are many other challenges as well. We've never really been able to design a truly intelligent machine before. There are a lot of difficult problems that have to be solved. It's not going to be easy.”

“Isn't it *impossible*?” Victor asked. “I mean, you've heard what Professor Grimes said. True intelligence requires a soul – you need something beyond a mindless machine that is executing preprogrammed instructions. How are you going to solve that problem?”

“That is where you come in,” Dr. Mazatl replied.

“*Me*?” Victor exclaimed incredulously. “How can I possibly help? I don't have the faintest idea how to create true sentience.”

“And yet you already solved that problem for us,” Dr. Mazatl remarked. The director took his personal communication device out of his pocket and pressed a few buttons. He then slid it over to Victor.

Victor picked it up off the desk and looked at it. The

device was showing a picture of a crystal cube. Inside the cube was a glowing green point of light.

“Ok,” Victor said slowly. “So what am I looking at?”

“Your probe got back yesterday,” Dr. Mazatl explained. “I made sure it docked with the *Vanguard* after the last person had left. That way there was no one around to see it. Your probe did a magnificent job and returned with that point of light. For now I'm keeping in on the *Vanguard*. Since there's no one left on board it will be easier to hide it there than it would be on the surface. We can work with it on the ship where we won't have an audience.”

“I still don't understand what I'm looking at. What is it?”

“It is a life form, Victor. That point of life is *alive*. In fact, not only is it alive, but it has the ability to merge with solid matter and bring it to life. It's truly remarkable.”

“So... it's an alien?”

Dr. Mazatl laughed. “It is *very* alien. It's utterly unlike anything we've ever seen before. I'm still learning how to communicate with it. From what I can tell it's very young and impressionable. But I think we can merge it with the Artilect. It can bring the machine to life, in a sense. I've already run some simple tests and discovered that when it merges with an object it *becomes* that object. It will follow the directives and patterns of that object. I believe that if we build the Artilect correctly we can merge this being with the machine and it will bring sentience and understanding to the rules. It is *exactly* what we needed in order for our plan to work.”

“That kind of feels like cheating,” Victor said. “I mean, if that's our plan then we're not really building an artificial intelligence at all! Instead we're raising a child-like alien life form and teaching it how to run a computer. How are you going to explain this to the rest of the company?”

“They will never know. They must *never* find out about this. If they did then mankind would surely rush to the world

where I sent the probe, and they would defile and destroy it. The only way to protect that world is to keep its existence a total secret.”

Victor shook his head. “Your machine is going to be *alive*. Won't it know what it is?”

“I don't know. We're dealing with an alien here. It might come to believe that it *is* the machine. I don't know what kind of memories these things have. We'll just have to see how it plays out.”

“But surely the Artillect needs to know what it is, doesn't it? If it does come to think that it's just a machine then you *are* going to tell it the truth, right?”

“I can't. If I did then it would risk the safety of its homeworld. This has to be kept a secret. Sometimes the only way to protect something precious is to make sure that no one else knows it exists. We live in dangerous times. You have seen what the outsiders are like. Do you really want them finding out about the existence of alien life? Can you imagine what they would do to it?”

Victor sighed. “So your plan is to bring the Artillect to life by imprisoning that wisp thing in it? I really don't have a good feeling about that.”

“I did not force the creature to come here. I just sent out a probe; the alien made the choice to get inside. For all I know the creature is from another world entirely and actually traveled to meet the probe. I did not capture it.”

Dr. Mazatl paused. “Look. I understand your concerns about this, but there simply isn't another way. If there was then we would have found the answer by now. If we want to make an intelligent machine then we need a source of actual intelligence, and this is it. If we want to protect this race of creatures from mankind then their existence must be kept a secret. Now, I do not intend on deceiving this creature forever. One day we will live in a better universe and I have no doubt that this creature will be

there. When that day comes it will know the truth. But for now we must act with caution.”

“I suppose,” Victor said reluctantly. “So how long do you think this will take?”

“There's no way to know. But we must accomplish this before we die. I fear that we may be the last generation. If we do not finish the job then it may never be accomplished at all.”

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While Victor worked with Dr. Mazatl on board the *Vanguard*, the rest of the company labored on the planet below. The AI team spent weeks doing design work. They argued over the system architecture, the network design, and the moral rules that were to be programmed into the machine. The actual construction would not begin until the spring of 2423.

Since Victor and Dr. Mazatl were both leaders on the AI project, they were made system administrators. At first there really wasn't much to administer. The AI core was years from being operational; Dr. Mazatl estimated that the Artillect would not be functional until at least 2430. The core was little more than a toy – an experiment that was used to run simulations with the alien. But it had to start somewhere.

What no one knew was that when the core did become operational, it would be merged with the wisp that Dr. Mazatl had obtained. At that point the machine would change in a fundamental way. The director planned on doing years of experiments in advance of that date to make sure that the merge would go well. But he had only Victor to help him, for he did not dare to trust anyone else.

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As the weeks wore on Victor noticed that the strange

messages that he had been receiving from deep space had stopped. He had been secretly hoping that he would eventually receive a response to the message he had sent, but he finally realized that no response was coming.

Before Victor knew about the existence of the wisp he considered the messages to simply be a curiosity. He wanted to get to the bottom of it because it was a loose thread – an unfinished task. Now, though, he wondered if perhaps Grimes was right. What if the messages really *had* come from that distant galaxy? What if they actually were being sent by aliens?

It was an unsettling thought. There was at least one race of aliens out there; Dr. Mazatl had proven that. What if there were others?

There was no way to prove that, of course. Going there was out of the question. Yet, Victor still wondered what the truth was. Who was really out there?

CHAPTER 18: GROWTH

Log date: February 2, 2424

Location: The Artilect homeworld

Log note: The road not taken

IT TOOK VICTOR STRYKER ABOUT SIX MONTHS to realize that he didn't enjoy playing chess nearly as much as he first thought. Until he joined the chess association on the *Vanguard* he had only lightly dabbled in the game, and his experience had been largely positive. Most of his matches in adulthood had been against random people he met who only had a passing interest in the game. Victor usually won these encounters simply because he cared more about chess than the other people he knew. It really wasn't much of a challenge to beat someone who barely knew how the pieces moved.

All of that changed when he started playing against the association members. The club was composed of people who had been playing professionally for nearly their entire lives. Victor was by far the least talented and most incompetent person there. In fact, he was so bad that no one really wanted to play him – he simply wasn't good enough to be remotely challenging.

Victor hated to simply give up, so he tried to get someone to teach him how to become a better player. That was when he discovered that chess was largely a game of memorization. In order to do well players had to memorize countless opening strategies, mid-game strategies, and endgame strategies. In some ways chess was actually a very fixed game. If you were good you could recognize the opening that the other player was attempting and then you would play the counter to that opening

that was developed hundreds of years ago.

After weeks of effort Victor finally gave up. He decided he really wasn't interested in finding out if he could memorize more strategies than the guy next to him. If other people wanted to spend their time doing that then that was fine, but he preferred something a little less deterministic.

What surprised Victor was how quickly he was recruited into another group. Three days after Victor resigned from the chess association, he received an invitation to join the Order of the Inquiring Mind. A little investigation showed that the group wasn't nearly as fancy as they sounded – it was really just a band of about a dozen people who met on a regular basis to discuss science, theology, and current events. Victor wasn't sure what he would have to contribute but he went anyway. He soon discovered that they had fascinating discussions. It was the sort of group that Professor Grimes would have appreciated – if he wasn't more than a thousand light-years away.

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Over the course of 2424 Dr. Mazatl made good on his promise to turn their base into a functional city. The automated construction bots formed dozens of buildings that soon dotted the brown, barren landscape. There were apartment buildings, residential homes, restaurants, and churches. There were art galleries and sports centers and even a theater. The Diano Building back on Xanthe had many of these same attractions, but this time they were spread out over a city instead of crammed into a single vertical structure.

The city was complete with streets, sidewalks, and even vehicles. The only problem was that the terraformation process still wasn't quite complete. Things would have gone much faster if the group had brought a Nehemiah IV probe along with them, but since no one was in any particular hurry Dr. Mazatl didn't see

a need to commandeer one. People were content to wear oxygen suits when they went outdoors. It was a bit of a hassle, but by the end of the year the terraformation would be done and it wouldn't be a problem anymore.

Time began to pass very quickly, or so it seemed to Victor. He settled into a comfortable routine. He woke up each morning, was beamed on board the *Vanguard*, and worked with Dr. Mazatl on designing the AI core that would house the alien creature that the director had acquired. At the end of each day Victor returned to his home on the planet's surface. On Mondays he would go to the Order's weekly meetings and listen to them discuss the latest news from the Ranger colonies. The rest of the week he largely kept to himself, unless something came up that needed his attention.

Toward the end of November the Order hosted a discussion topic that caught him by surprise. It was a meeting that he remembered for a long time. On that particular evening there were five other people in their conference room on the third floor of the Diano Computing Center. Sean Lancaster, the group organizer, was there. He came without fail to every meeting. Logan Crawford, a member of the AI team, was present. Cynthia Glass was there as well, along with her brother Dale Bailey. The last member in attendance was Allan Lowe. Allen was a member of the terraformation team and rarely had the time to come. However, now that the terraformation project was winding down he had more free time.

The first half hour was spent talking, joking, and eating supper. Once everyone was full they took their seats around the conference table.

Sean began the evening's discussion. "The topic for tonight, as was announced in the message that was sent out three days ago, is Victor Stryker. He has been a member of this group for almost a year now and it's high time he introduced himself."

"I thought I vetoed that topic," Victor protested. "I'm really a very uninteresting person."

Logan spoke up. "That feels like an overstatement to me. For one thing, you are the last living Stryker and a direct descendant of Richard Stryker himself. You are the last to carry that family name. That alone gives you an interesting history. It was your ancestor Timothy who created the first replicating probes, which set the Diano Corporation down the road that we are still following to this very day. You could make the argument that his work led directly to our being on this planet."

"Victor's relatives played another key role as well," Allan commented. "It was Richard's assassination on the *Sparrow* that led to the imprisonment of the entire Sol system. That event changed everything."

"Sure," Victor agreed. "I guess that's true. But you are talking about my *ancestors*. I'll gladly agree that I have a really interesting family line, but that is *completely* different from being an interesting person."

Logan spoke up. "You protest, and yet you have an elite designation than no one else in this room possesses. I know for a fact that you are an Administrator on the Artilect project. The only other Administrator is Dr. Mazatl himself. That is a very rare distinction! Dr. Mazatl has refused to authorize any other system admins."

Of course he has, Victor thought. The last thing he wants is other people poking around his systems and finding out what he's really up to! He's kind of backed himself into a corner.

"That's right," Dale said. "Why is that, anyway?"

"It's really not as exciting as it sounds," Victor protested. "For me it just means a lot of work. It's not like being an Administrator grants me magical superpowers! All it really means is that whenever Dr. Mazatl needs anything done he has to get in touch with me. Since I'm the only one with access I can't offload the assignments to anyone else. It takes up a lot of my time

without giving me any conceivable benefit.”

“That's another thing,” Logan said. “There are thousands of people working on the AI project. I know a lot of talented people who have done great things in the field. You have no prior AI experience, and yet Dr. Mazatl chose *you* to be his right-hand man. I mean no disrespect but you are completely unqualified to fill that position. What exactly is he having you do?”

Cynthia spoke up. “He's probably having Victor keep an eye out for the Stryker twins. Who else is going to do that?”

Victor frowned. “That is *not* what I'm doing. I didn't ask to be Dr. Mazatl's assistant; he appointed me to that role. It's really not as glamorous as it sounds. The real strides are being made by people like you, Logan. I'm just assisting him. Do you really want to leave your R&D work to run stored procedures and collect query results?”

“It's a fair point,” Logan replied.

Sean spoke up. “So what about the Stryker twins? Victor, you clearly believe that they are still alive. One of the first things you did after you arrived here was upload their security access to the AI project. You made sure that they had Administrative access to both the Nehemiah IV probes and the Artilect. I don't believe for a minute you did it simply because you're sentimental or a stickler for following company policy. I think you did it because you believe they are going to need it.”

Victor shrugged. “I won't deny it. I still think I'm going to be proven right in the end.”

“But you're *not!*” Cynthia insisted. “It's crazy. You need to let go of this delusion. It's become a really weird obsession.”

Logan interrupted her. “Actually I think it is quite rational. Consider this. If Victor is right then by granting access to the Stryker twins he is actually saving mankind. If he is wrong then he has done no harm, for the access only works on the twins and cannot be used by anyone else. Victor therefore has much to gain by taking action and nothing to lose. If I were in his position

I would do the same thing. It is the rational option.”

“But it's *crazy*,” Cynthia insisted. “Look. I can believe that if I don't eat an orange every day then alien frog monsters will invade and kill us all. But that belief doesn't make me a hero if I eat oranges – it just makes me a crazy deluded person who is completely out of touch with reality. There is nothing the least bit rational about Victor's beliefs.”

Sean spoke up. “Timothy Stryker believed it. Considering his proven intelligence and his tremendous work in the field of computing and replication, I think we have to take his testimony seriously – especially since he claims to be an eyewitness. Victor has far more reason to believe in the twins than you have to believe in alien frog monsters. At any rate, what I do know is that your continued insults have cost you any potential relationship you might have had with Victor. You can rest assured that you will never be any more than a distant acquaintance with him.”

“And what is *that* supposed to mean?” Cynthia asked.

Logan spoke up. “It is quite simple. You have failed to consider the fact that Victor is a rational human being who is simply responding to stimuli. Victor sincerely believes in the existence of the Stryker twins. Not only do you *not* believe it, but whenever it is mentioned you go out of your way to insult Victor. You have clearly expressed to Victor that you believe he is a moron on multiple occasions. Since Victor is actually a rational being, he has figured out that you have no respect for him. Is he going to enter into a relationship with someone who does not respect him? Absolutely not.”

Victor spoke up. “Why are we even having this discussion?”

“Because it's relevant to the topic at hand,” Sean explained.

Cynthia frowned. “But it *is* crazy. I don't see why you're so accepting of all this! You should be telling Victor that he's out of touch with reality.”

Logan shook his head. “Victor has been extremely rational for his entire life. First of all, he is a software developer. He has spent his entire life thinking through difficult problems and creating a series of logical, rational rules to resolve them. He has been trained to use logic and reason to think through every aspect of his life, and that is what he has done. Victor chose to live in an apartment far from the city, which makes sense as the city was a dangerous den of evil. Victor saw the ill-fated marriages of his companions and decided he did not want to suffer the same fate, so he has remained single. Victor's attempts to reach out and make friends – as he did with Carroll Lane – ended poorly, so he has tried to find other ways to use his time.”

“He just didn't do it right,” Cynthia insisted.

“Victor has actually done fairly well, given the circumstances,” Logan continued. “Most of humanity is unemployed but Victor has a prestigious job working with Dr. Mazatl. Most of humanity has utterly destroyed their lives and are headed to eternal perdition, but Victor is not. Victor has even done some rather unusual things, like sending a fleet of probes to a remote world in order to build a world-class book collection.”

“I guess he *is* a fascinating person,” Dale remarked.

Sean spoke up. “He is also quite mysterious. What does he spend all day doing with Dr. Mazatl on board the *Vanguard*? No one really knows. What secrets does the Stryker family possess that are handed down from generation to generation? No one has any idea. What hidden treasures did Victor's probes find when they were dispatched into the void? Only Victor knows. And how did Victor become so close to both Professor Grimes and Dr. Mazatl – two of the most important people of this era?”

Victor spoke up. “You realize I'm sitting *right here*, right? You act like I'm still on Xanthe or something!”

Cynthia interrupted him. “Let's back up. What do you

mean I'll never be friends with Victor?"

"It's not complicated," Logan said. "Victor will never have a relationship with someone who thinks that one of his core beliefs is pure idiocy. I know *I* wouldn't. As long as you believe he's some kind of goofball he's never going to be interested in pursuing you. You do realize it is very difficult to become friends with someone who sees you in a purely negative light, right?"

"I'm a fascinating person!" Cynthia protested.

"Not to Victor," Sean replied. "I think you've lost your window of opportunity. You need to move on to a different target."

"I think this discussion has gotten *way* out of hand," Victor protested. "I really don't see how any of this is worth discussing in a public setting."

"Really?" Sean asked. "Then perhaps you haven't thought it through. If your beliefs are correct then you and Dr. Mazatl are building the mind of the most powerful machine that will ever be built – a machine so powerful that it will have control over time itself. What you are doing will not only change the future, but it will also change the past – and it will presumably save mankind from extinction. You are doing something that will impact the endless ages that are to come. In this world you may be no one in particular, but in the next world you will be one of the creators of the Artilect – a man who played a key role in saving the lives of millions of people. You will be a very respected figure."

"But he's *wrong!*" Cynthia insisted.

"In that case he will just be the man who worked closely with Dr. Mazatl to create the most powerful artificial intelligence that will ever be built – a machine which will safeguard mankind in the years to come and give them a chance to build a new civilization after the coming destruction of the Rangers. If you are correct, Cynthia, then all he did was offer mankind a new path that could save the lives of countless people and usher in a new golden age."

“Right,” Logan agreed. “In either case Cynthia is throwing away a valuable opportunity. She could have been the friend that Victor needed during these dark times. Instead, the future will see her as the woman who insulted him. I don't think that will play well in the coming eternal era.”

“I think you're going too far,” Victor replied. “It's not like I single-handedly built the Artilect or anything. This is a huge project that thousands of people are contributing to and which is the culmination of thousands of years of scientific advancements. I didn't build the Artilect in my garage with stone knives and bearskins.”

Sean spoke up. “All of that is true. But there is a larger point here. We tend to forget that we are not living in a single moment in history; we are actually participating in a timeline. We are going to live forever and yet for some reason we tend to overlook that fact. When the final day of judgment is over and all evil and wickedness has been done away with once and for all, we are still going to be alive. We are still going to know each other and we will look back upon what has happened. We will remember who was there for us when we needed them and who was not. Our actions and decisions have consequences that will ripple on for the rest of eternity. It might be helpful to spend a little more time thinking about that.”

“Exactly,” Logan agreed. “If we keep the future in focus then it could lead us to make wiser choices about how to spend our time in the present.”

Dale spoke up. “Speaking of that, what's this about Victor finding buried treasure on Alpha Mensae?”

Victor groaned. “How did that rumor get started, anyway? All I found were books – way too many books, in fact. Most of them are still in the basement of the Diano Building back on Xanthe.”

“Except for the ones that Grimes burned,” Cynthia added.

“It is a senseless rumor,” Sean agreed. “After all, we live in

an era when a ZPE can manufacture anything that is desired, in any quantity. What could there possibly be to find out there in the void?"

If only you knew, Victor thought.

* * * * *

Over the next few years Victor continued working with Dr. Mazatl. The work on the new AI core went very well, but it also went very slowly and soon got behind schedule. The problem was not with the wisp; the alien exceeded Dr. Mazatl's wildest expectations. The real problem turned out to be the stability factor. Repeated tests showed that it was very difficult to create an artificial mind that could both grow and remain stable over a long period of time. The problem was that as the mind grew it acquired new information, and eventually that information created an imbalance that caused the mind to re-evaluate its priorities. This always resulted in chaos and insanity. It was like building a foundation for a building and then adding floor after floor after floor. Eventually the foundation could no longer bear the weight of the building and the entire structure would come crumbling down. There were limits, it seemed, to eternal growth.

There were a number of possible strategies to resolve this, but so far none of them had worked. Still, each iteration brought them close to success and taught them valuable lessons. Victor just wished things were going better. It was disheartening to spend an entire year working on a prototype only to see it go insane during the course of a single week of accelerated testing. But that was how progress was made – by continuing to press on. Victor just hoped that 2427 would prove to be more successful than previous years.

The rest of the Diano teams were having much greater success. The Artilect homeworld had been fully terraformed, and people loved the the freedom that they had to come and go as

they pleased. Dr. Mazatl's prototype city had been completed and named New Star City. It wasn't a very creative name but people liked it and enjoyed living in the expansive metropolis.

The prototype Seed was also on schedule. In 2425 the Seed was buried deep within the planet's core and began to grow. Now, two years later, it had succeeded in converting much of the planet's crust into machinery. It would take another year before its initial growth was complete, but Victor had no doubt that it would succeed.

Soon – very soon – the body of the Artilect would be complete. When that happened it would be time to activate its mind. Victor just hoped that Dr. Mazatl would be ready in time.

* * * * *

More than a thousand light-years away, Carroll Lane stood on the streets of Xanthe. It was August 4, 2426 – a beautiful day on a world that was all but empty. The Diano Corporation had fled the planet years before, leaving the entire world to Lane. In 2426 there was no one left who still ventured out into the real world – and that gave Lane a feeling of immense pride and joy.

Lane and Adrian Garza stood alone. The streets of Star City were utterly empty and quiet. There were no rioters and there were no riots. The world was finally at peace. Lane had no doubt that the peace would last forever. Things would never go back to the way they had been.

One thing that amused Lane was the fact that the Diano bots continued their work in Star City. They worked ceaselessly, night and day, to keep the city's infrastructure intact and the buildings in good repair. It was a fruitless effort because there was no one left who cared. The bots were working hard to maintain a city that was utterly deserted.

Lane spoke up. “Isn't this a beautiful sight? This is exactly

what I was hoping for. I've created a better world and everyone has embraced it. This city is abandoned – which is exactly what it deserves. It's only a matter of time before those bots break down and the whole city crumbles into dust.”

Adrian glanced up at the Diano Building. “You might have to wait a while. I think Dr. Mazatl created bots that could repair themselves. I'm pretty sure the system he built was designed to last forever.”

“Oh, it'll fail eventually. After all, that building is empty. No one lives there anymore and no one is left to watch over this world. All of the company's employees have disappeared to who-knows-where. Eventually there will be some kind of system failure that the bots can't fix and it will lead to a chain reaction of problems. It might be a hundred years before that happens, but it will happen. One day there will be nothing left in the whole world except for our Vaults.”

“You're probably right. They have been a complete success. Everyone seems to love them!”

Lane continued to stare at the towering Diano skyscraper. “Exactly. We are the future, Adrian. I just don't understand why the Diano Corporation can't see that. Who cares about reality anymore? Reality is terrible. Reality has limitations and flaws and puts you in bad situations. In the real world you can never have everything that you want. The real world is always going to disappoint you and hurt you. Who wants to live in reality? Our virtual worlds are vastly better!”

“I agree. There aren't many who would argue otherwise.”

“And yet Dr. Mazatl still left! He's out there somewhere, trying to accomplish something in the real world. He's terraforming planets or building colonies or doing who knows what. But why bother? In virtual worlds you can have anything that you want. It's so much cheaper and more efficient. Continuing to build things in the real world is, in my opinion, a sign of stupidity. There's just no future in it.”

Lane turned his attention back to the city around him. There were no people in sight. As far as he could tell, he and Adrian were the only two individuals left in Star City.

"I knew this day would come," Lane said. "We're finally done. Every last person is in a vault, and we can now live in the vaults forever. There's nothing left for us to do – nothing, that is, except to enjoy the fruits of our labor."

"Well, *almost* everyone," Adrian corrected. "There is still Professor Grimes. In fact, I believe he would like to speak with you."

"Oh, right. I had forgotten all about him. He's been bugging us for years, hasn't he? I guess it won't hurt to have a conversation with him before we leave reality forever. If he wants to stay in this cold and cruel world then he's welcome to it."

Lane looked up at the sky. Night was coming. The air was still and cold and there were no stars in the sky. The sun had set and the last glow of the sun's rays was starting to fade. There were no other human beings in sight.

There's no future left here, he thought to himself. *This planet is dying. The Vaults are the only place to be.*

* * * * *

That evening Lane entered his office in Vault 37. There was nothing left for him to do and there was no work that still needed to be done. He was only there to have a conversation with the only man on Xanthe who had refused a place in his vaults. Once that conversation was over the two people would go their separate ways.

Lane was tempted to not hold this meeting at all and simply leave, but he couldn't resist the opportunity to gloat. After all, he had won. In spite of all of Grimes' work to oppose the vaults, Grimes had nothing to show for his efforts. There was nothing Grimes could do now but go home empty-handed.

At precisely nine o'clock in the evening an elderly gentleman entered his office. The man did not bother to knock; he simply opened the door, came inside, and sat down in front of Lane's desk – leaving the door open behind him.

Lane looked up at him. “So tell me, professor. This is your last chance. After this meeting has concluded the vaults will be sealed and you will be out of luck. Have you finally come to your senses? Do you wish to join us in paradise? I've saved a place for you, you know.”

Professor Grimes frowned. “I have not come to join you, Lane. I have come to stop you. What you are doing here is madness! Can you not see that your path can only lead to death?”

Lane grinned. “And there it is. You know, I've been wanting to talk to you for a long time! This is going to be so much fun. Tell me, Grimes. Why do you insist on standing in the way of progress?”

“Is that what you call this? This isn't progress; this is insanity. Progress, *by definition*, means drawing closer to a goal. You start out at one place and you end up somewhere else – a place that is an improvement in some way or another. Your Vaults are not progress, Lane. They are a dead end! Your vaults will not lead to a better civilization; instead they will lead to the end of humanity itself. Everyone who enters your vaults is going to die.”

“Everyone dies eventually,” Lane replied. “The key is to have as much fun as you can, and the vaults make that so much easier. We are evolving, professor. We are moving beyond the need for the physical world. My virtual worlds are vastly better.”

“Your virtual worlds are no different from dreams! Can you not see that? People are wasting their lives living out fantasies. They're not doing anything meaningful. They aren't producing anything or making the world a better place. They might as well be asleep for all the good that they're doing.”

“Who cares about producing things? We have ZPEs for that. Life is about being happy. People want to be happy, Grimes, and I can give them endless happiness. In my Vaults there are no needs. There are no dreams that go unfulfilled or wishes that are never met. Everyone has everything that they want, all of the time. You can never have that in the physical world! That's why my Vaults are so much better.”

“But you aren't actually giving them *anything!* You aren't fulfilling any dreams at all. The people are actually being given *nothing*. It's all a fantasy. It's all make-believe.”

Lane shrugged. “It looks real and feels real. People accept it as real. The fact that, technically speaking, it's not part of the physical world is unimportant. People don't care about metaphysics, Grimes. It may matter to you but it doesn't matter to them. In my virtual worlds people can see it, touch it, and taste it. Who cares about the true nature of its substance?”

“That is an excellent point. In fact, let's talk about that for a moment. Why are we here, Lane? Why do we exist?”

“I don't know about you, but I'm here to make a better world and lead humanity into a brighter future. I'm going to make everyone happy.”

“Do you have any idea where this universe came from?” Grimes asked.

“I don't see how it matters. All I see is that the people in my Vaults can have whatever they want, and you seem to think that's a bad thing.”

“It most certainly is a bad thing. You have become completely disconnected from reality. This universe is not an accident, Lane. It did not come into being as a result of random chance or some erratic fluctuation of nothingness. It was created by God. Not only did He create this universe, but He created mankind as well. He put us into this universe so that we might serve Him. There are certain things that God requires of us. We are not free to simply do as we please.”

"I do not recognize your God, nor do I care about Him," Lane said firmly. "He has no power over me. I suspect that everyone else on this world feels the same way."

"That is a very foolish attitude to take! You may choose to disregard the Lord, but that will not make Him go away. God's power is not something that can simply be denied. He spoke the stars into existence and He is equally capable of destroying them. Those who reject the Lord will face His wrath – and refusing to believe in Him will not make you immune from His judgment."

"I don't care," Lane replied. "I really, honestly don't care. You are doing a poor job of making your case."

"Am I? Stop and think about it. Let us reason together for a moment. There are two possibilities. If there is no God and if this life is all that there is, then what you are doing makes a great deal of sense. We might as well try to find as much happiness as we can in whatever time we have left. If fantasies give us more happiness then by all means go down that road. In the end we're all going to die anyway, so we might as well seek to maximize our own pleasure.

"But *that is not the only possibility*. If there is a God then that changes the equation dramatically. That means that a being of infinite power is going to hold us accountable for the way we have lived our lives. It means He is going to compare our behavior to His standard and He is going to pour out His wrath upon the children of disobedience. It means that rejecting His mercy and grace carries an extraordinary cost. If that is true then ignoring God and living out a life of selfish, wicked fantasies is perhaps the worst mistake you could possibly make."

Lane shrugged. "I think I've already made my position clear."

"Have you given any actual *thought* to your position? Have you bothered to investigate any of the evidence that God is real? Do you understand that if you are wrong, you will be tormented without rest in a lake of fire for all the ages of

eternity?”

“Why would I bother? I don't think your position is even worth investigating. It's much too stupid to be true.”

Grimes sighed. “Do you realize that if you carry out your plan and put everyone in Vaults, humanity itself will die out? You can't have real children in a Vault, Lane – only virtual ones. If you carry out your plan then this will be the last generation. There won't be a human race after this.”

“I don't see how that matters. After all, we're all going to die eventually anyway. The stars are burning out and this universe won't last forever. We might as well enjoy ourselves with whatever time we have left. The future generations can fend for themselves.”

Grimes stood up to leave. “Then I suggest you make the most of it. I assure you, Lane, that after you die you will never taste enjoyment again. You have no idea what your future actually holds.”

“Oh, but I *do*. I'm going to live for the rest of my life in a world of my own creation, where I can have whatever I want. You, though, are going to live alone in a decaying city until you die. You are going to suffer needlessly. I pity you, Grimes. You could have had it all but you threw it away.”

“So you say. But I can see a bit further into the future than you can. I suspect that in the ages to come you would give anything to trade places with me – but by then it will be too late.”

CHAPTER 19: CONTAGION

Log date: March 3, 2427

Location: Xanthe

Log note: It only takes one bad apple

WHEN CARROLL LANE CLOSED THE DOOR to Vault 37 and sealed it, he fully intended on spending the rest of eternity in his artificial paradise. Lane firmly believed that there was no reason to ever leave his Vault again. After all, the whole planet had taken up residence inside his Vaults and the Diano Corporation was gone. What reason could there be to return to the physical world?

As it turned out, “eternity” ended up being only a few months. On March 3 of the following year Lane received an unexpected message. The Vault 37 security system told him that someone was trying to gain access to the vault – and that someone was *not* Professor Grimes.

Before Lane left the comfort of his private paradise he checked the video feed. To his surprise and dismay there was a person standing outside the vault entrance. Lane had never seen him before, but that didn't really mean anything. Had something gone wrong with one of the other vaults – some sort of failure that wasn't reported on his monitors? Was he some straggler than Lane had somehow missed when he scanned Star City for life before sealing the door? Had the Diano Corporation returned to Xanthe? The only way to find out was to leave his private world and go talk to him.

Lane wished he had built some sort of intercom system into the vault door, but the possibility of getting a visitor had never occurred to him. He began to realize that if he wanted to go for all of eternity without being bothered he would have to

come up with a better system of controls. *This simply can't be tolerated. After I deal with this mess I'm going to deputize Adrian and have him take care of these problems. He can handle any 'visitors' that might come our way.*

After begrudgingly leaving his pod he walked to the entrance of the vault. He sighed, took out his security card, and used it to unlock the massive shielded doors that protected them from the outside world. As they slowly creaked open he stood quietly and waited.

Lane was going to go out and talk to the visitor, but that proved to be unnecessary. As soon as the doors parted the man eagerly came to him. He was an enormous, burly man who wore a heavy coat and an enormous hat. The man quickly reached out his hand to Lane. "It's a pleasure to meet you at last! My name is Brown – Lorenzo Brown. I'm sure you've seen all the messages I've sent."

"Messages?" Lane asked, puzzled. "I haven't received any messages from you at all. Who are you and what do you want?"

"Oh, really? Sorry – I thought you knew I was coming. But no matter. I'm from Alpha Centauri A. I'm here on behalf of the government and have come to ask you to export your vault technology. We think that it's exactly what our world needs."

"Hold on just a minute. You're from the Ranger colonies? But how did you even get in here? Tau Ceti is protected by a Wall! There's no way you could have circumvented our security system."

"Security system? What security system? Sure you have a Wall, but your Gate is wide open. Anyone can come and go as they please. I just walked right in. Well, I flew in, actually, on my starship – the *Valdosta*. It's parked just down the road. Star City seems kind of deserted so I just landed in the street. I hope no one minds."

Lane sighed. *So our front door was wide open. Fantastic. I'm definitely going to fix that.* "No, no one will mind. So you

came here all the way from Alpha Centauri A to get a copy of the Vault plans?"

"Yes and no," Brown replied. "I mean, sure, we want them. We definitely want them. But—"

Lane interrupted him. "Now hold on a minute! This doesn't make sense. I thought Grimes got in touch with all the Ranger worlds and persuaded them to ban my Vault technology. Aren't you guys using Nehemiah IV probes to upgrade your cities?"

"Eh, sure, Vaults have been banned on a few worlds. But there's a lot of different opinions out there. It sounds like you don't really follow the news very closely."

"Of course not. I have absolutely zero concern for what happens outside my own planet. That's why I haven't exported my Vault technology. I literally do not care about you guys. You are on your own. The way I see it, Xanthe is my problem and your worlds are *your* problem."

"Then I guess you haven't heard. Some planets did ban the Vaults and did bring in a Nehemiah IV probe to spruce things up. Other planets, though, just ignored the whole thing. It turns out you can medicate your way to happiness. Why go through all the trouble of rebuilding cities when you can just take a pill and be happy all the time? But a few worlds really, *really* want your Vaults. Like my world, for instance. We think you have paradise in your hands and we want some of it."

Lane sighed. "And if I don't give it up then people will keep coming here and pestering me. Fine. If it will get you to go away and leave me alone then I'll give you a copy of the plans."

"About that. I mean, yes, we do want the Vaults, but we'd like to see a few changes to them. We think you made some design errors."

"No I didn't," Lane said, irritated. "My vaults have been in place for years. My *entire world* lives inside them, and things are going flawlessly! I have a perfect system. What changes could

you possibly want?"

"Well, a couple things. For example, your original plans called for each person to have their own dedicated world, which is dumb. How can people interact with each other if they're in their own parallel universes? No one wants to spend all of eternity alone, you know. It's way better to have one combined world that everyone lives in. Or I guess you could have a couple, if there are server load issues."

"Absolutely not! That is a really *stupid* plan. We *already* have a combined world where everyone lives together. It is known as *reality*. People can't live out their dreams if everyone has to live in the same place, because *people's dreams conflict with each other*. People have *got* to be separated from each other. How hard is this to understand?"

"Hey – you know your market and I know mine. Trust me. What you are doing won't work outside of Xanthe. You need to think about different options."

"No I don't. Listen, Brown. I don't know what you've been told, but the customer is *not* always right. In fact, people rarely know what they actually want. Usually smart people have to *tell* them what they want, because people end up asking for things that only make them even unhappier than they were before. If you want to do well in business then you have to be *smarter* than your customers and give them what they actually need, not what they think they want. And people do *not* want to live with other people. You have a very deficient understanding of human nature. People do *not* get along. *That is why there are riots*. I have been doing this for much longer than you have, and trust me: you're doing it wrong. Your modified Vault design is going to fail catastrophically. You are going to have all the same problems in the Vaults that you have in the real world."

"Not at all! You just haven't understood the scope of my vision."

"Whatever," Lane replied. "I don't really care. If you want

to ruin your world with a stupid plan then that's your problem. I'm not going to make changes to my Vaults, but I will give you a copy of the technology. You can do whatever you want with it – as long as you promise to leave this world and never, ever come back.”

“Deal!” Brown exclaimed.

Lane walked over to a console and inserted his security card. “Give me just a minute to get all the files together and beam them to your ship. Then you can be on your way.”

* * * * *

Lorenzo Brown soon learned that modifying Lane's design was a little more difficult than he expected. It took him more than a year of effort – and a team of dozens of technicians – to build the communal vault that he wanted. However, in spite of the challenges, he did succeed and on April 19, 2428 the Vault on Alpha Centauri A opened to the public.

Brown knew that the entire planet would want to participate in the Vault, so he planned accordingly. When the Vault opened it had enough room for everyone on the planet, with additional capacity to support any off-worlders who might hear about the Vault program and want to join. Since his goal was to unite the entire world in a single shared virtual reality, he didn't bother to built multiple Vault locations. He wanted to have everyone in the same place.

For the first week things went smoothly, but conflict soon arose. Brown was unhappy to discover that Lane was actually correct – all he had done was move problems from the real world into the virtual world. Brown was convinced, though, that this was just a temporary setback. Rather than change his design he decided to give everyone a little more space. This didn't actually help, but Brown refused to admit that he had been wrong.

The effect of the Vault on the planet's economy was drastic. By the end of 2428 the entire planet was a ghost town. People loved the idea of living in a better world, where they could have anything that they wanted. It's true that they still rioted and got into fights, but now they could riot and fight with artificial superpowers. It gave people a feeling of tremendous power, and it fueled their rage.

When the population of Xanthe entered the Vaults, the maintenance bots left behind by the Diano Corporation maintained Star City in their absence. Alpha Centauri A had the same maintenance system but when Dr. Mazatl saw what was going on he shut the bots down. The only reason the director continued to maintain Star City was out of a sentimental attachment to the city's past. He had no such concern for the rest of the Ranger worlds. If they wanted to abandon reality then they were on their own. He was not going to maintain their cities for them if no one lived in them any longer.

The decay and ruin of Alpha Centauri A soon spread to other star systems. Brown was telling the truth when he said that other planets were interested in Lane's technology. Since Lane blocked off access to Tau Ceti and refused to answer any of his messages, Brown took it upon himself to license the technology to every planet that wanted it. By the end of 2429 there were Vaults in more than a dozen star systems.

This led to a sharp divide in the Ranger worlds. On one side were the star systems that embraced Lane's technology and let their cities fall into ruin. On the other side were systems that had chosen to use the Nehemiah IV probe, provided by Professor Grimes, to create a paradise in reality. While there were some worlds that did not fall into either camp, most planets were on one side or the other.

Both sides were convinced that the other side was making a grave mistake. Brown believed that the "realists" were oppressing their people by not allowing Vault technology on

their worlds. He urged the people to flee those oppressive regimes and embrace the paradise that he had to offer. However, those who had banned the technology were equally convinced that Lane's Vaults were a disaster. In fact, they thought they were a serious danger to the future of mankind – one that they did not intend to ignore.

* * * * *

On January 16, 2430 representatives from fifteen different Ranger worlds met in the star system Epsilon Eridani in order to discuss the threat that the Vaults posed. Although it was technically possible for these individuals to take a starship to this centuries-old colony and have the meeting in person, everyone considered it to be too much trouble. Rather than leave the comfort of their homes they decided to hold a virtual meeting. Each of them would remain behind on their own worlds, but their virtual forms would appear in the same conference room. The representatives would be able to see each other and talk to each other but their presence was just an illusion.

The irony of having a virtual meeting to condemn virtual worlds was not lost on Professor Grimes. He wanted to travel to the Epsilon system to be there in person, but the Ranger governments refused him admittance. They told him that this meeting was a private discussion between governments – and Grimes was not a government representative.

The meeting began an hour late. Everyone eventually showed up and was able to resolve their connection issues. The first forty minutes were spent exchanging vague and self-congratulatory pleasantries. Then, reluctantly, the group got around to talking about the issue at hand.

“I suppose we have been lucky,” Sellers commented. He was the representative from Procyon B. “If you think about it, it's a bit surprising that this vault technology wasn't developed

centuries ago. Lane hasn't actually done anything new. He just sort of glued a bunch of existing pieces together. His technology is trivial, really.”

“I don't find it surprising at all that this was never invented in the past,” Rhodes replied. He was a short, grumpy man from the Cygni system. “Just look at all the decadence around us! No one has done anything meaningful for centuries. The only group that's made any kind of real scientific progress are the nutcases at the Diano Corporation. And what do they do with their tech? Why, they send it off into deep space! It apparently never occurred to them that other people have needs.”

“They're a real bunch of losers,” Davidson agreed. The representative from Gliese curled his fists. “Do you realize that we would *still* be living in poverty and misery today if we hadn't taken it upon ourselves to appropriate a Nehemiah IV probe? The Corporation cares nothing for others! They care only for themselves.”

Sellers frowned. “I thought Professor Grimes got us the probe. In fact, I'm pretty sure he actually contacted us and offered it. Free of charge, too, from what I remember.”

“Do not speak of that professor to me!” Davidson said angrily. “That man is a fool.”

Ross from Luyten spoke up. “What is Dr. Mazatl doing these days, anyway? Didn't he take his whole company off of Xanthe to go on some crazy deep-space mission?”

Sellers nodded. “I think it has something to do with their space exploration program. They didn't issue a press release, though, so the exact details are unknown. For the time being they've removed themselves from the picture. Since they're not around to help us we'll have to face the Vault crisis by ourselves.”

“They wouldn't have helped us anyway,” Davidson said bitterly. “They care nothing for our problems.”

“Are we sure this is a crisis?” Ross asked. “Now, don't get

me wrong – I think the Vaults are a terrible idea. I do *not* support them. But Alpha Centauri A was a very troubled colony in the past, and now that they have Vault they are happier than ever. Their streets are no longer plagued with violence and unrest. Life is very quiet there now.”

“That is because life is *nonexistent* there now!” Sellers pointed out. “Everyone is living in their own dreamworld. No one is actually *living life*; instead they're just daydreaming their time away. The whole planet has fallen into ruin. They haven't achieved a new level of civilization; instead they've abandoned civilization altogether! They might as well have all committed suicide. The society that was on Alpha Centauri A wasn't perfect, but at least there was a society there. Now there's nothing.”

Rhodes frowned. “The so-called 'society' on that world deserved to be destroyed. For that matter, so does the society on most worlds. You do not seem to realize that civilization has been degenerating for a long time now. The decay that is all around us has been coming for a long time. The rise of the Vaults is simply the latest symptom. If civilization was healthier then the Vaults would have very limited appeal. Anyone who is willing to throw their entire life away in order to live in a dream must not value their life very highly. If we truly want to combat the Vaults then we must address the underlying problem.”

“Which no one has ever been able to successfully do,” Sellers pointed out. “All of the great civilizations are in the past. If there's a solution out there somewhere no one has ever found it.”

“That is not entirely true,” Rhodes replied. “Some people have overcome the cultural rot. For example, the Diano Corporation has not been affected by the malaise that is all around us. They have continued to produce new versions of their Nehemiah probes. They even launched a major expedition into deep space, which hasn't been done in more than a century. And Professor Grimes has been a staunch opponent of the Vaults

since their inception. There are still good men out there and they are doing good work.”

“I said do not speak that professor's name!” Davidson screamed. “I hate that man.”

Sellers shook his head. “But why? Don't you think you're being unreasonable? Grimes has done absolutely nothing that—”

“Enough!” Davidson shouted. He disconnected from the meeting and vanished.

Sellers sighed. “That was strange. Why does he hate Grimes?”

Rhodes looked surprised. “I think that's the wrong question. Who *doesn't* hate Grimes? That man has been barred from almost all of the Ranger worlds. All he's ever done is spread trouble. He can't even open his mouth without prophesying our doom.”

“But we owe him so much! If it wasn't for him we wouldn't have a Nehemiah IV probe. Besides, the things that he is saying make a lot of sense. He's the one who brought the dangers of the Vaults to our attention and persuaded us to ban them.”

“Big deal,” Ross replied. “Grimes keeps trying to tell everyone what to do. He seems to think that it's his job to judge us and push us around. He needs to learn to mind his own business.”

“I think we're drifting off topic,” Sellers said. “The question we're *supposed* to be discussing is what we are going to do about the Vaults.”

“I say we purge the dead weight among us,” Rhodes said firmly. “We should find those who wish to be in a Vault and force them out of our star systems. Then we will take those that remain and build a better civilization.”

“Now *there's* a great idea,” Ross said sarcastically. “Do you know what would happen if we did that? *Every last one of our citizens would leave!* That's why at Luyten we had to close our

borders. Your plan is stupid.”

“I disagree,” Rhodes replied. “And I find your lack of decorum and respect appalling. Do you not realize that this very strategy has proven to be successful for the Diano Corporation? Look at all they have been able to accomplish! Since they only employ people who are dedicated and focused, the company has done great things. They got rid of the dead weight that was dragging them down and that freed them up to focus on progress. Perhaps that is the approach we should take. Allow the dead and dying to flee to their dreams. We will build a new future with those who are still alive.”

“I am *not* going to propose that to my government,” Ross said firmly.

“Then we may have to address this issue in our own individual ways,” Sellers replied.

* * * * *

Three days later, Sellers had a secret meeting with Professor Grimes. The meeting was held in deep space, on board Sellers' ship. Grimes had left the Tau Ceti system the day that Lane sealed Vault 37, and ever since then had spent his time traveling between the Ranger worlds. The professor didn't trust Lane and wanted to stay out of his reach.

Although Grimes had been denied access to most colonized Ranger worlds, that did not stop him from spreading his message. Before he left Xanthe he manufactured an enormous starship for himself and equipped it with everything that he might need. Grimes was so well stocked that he could survive in deep space indefinitely.

After Grimes docked his ship with Sellers' vessel, the professor came aboard. Sellers greeted him and led him down the corridor to a private meeting room.

“You're a very strange man,” Sellers remarked.

"I live in very strange times. The future is not what the so-called experts predicted. Mankind took an unexpected turn."

"Sure, sure, but I'm talking about your ship. I'm sure it's a fine vessel – although it seems far too large for just one person – but it has the strangest name. Do you not realize how important appearances are?"

"*Appearances?*" Grimes asked incredulously. "Every Ranger government in the galaxy knows who I am! Do you expect me to believe that if I had given my ship a more respectable name, they would reconsider their positions and listen to me? Are you suggesting that the whole reason people dislike me is because I did not choose to name my ship after a horse or a cow?"

"Of course not. But Grimes, you named your ship after a *toaster*. That's ludicrous! It doesn't help your case."

"So you believe that the truth of my arguments rests on the name of my starship? Is that really your point? Do you even hear yourself talking? Has anyone taught you how logic works?"

Sellers opened the door to the conference room and the two men stepped inside. The men were alone. "But why do it, Grimes? Why provoke people?"

"Toasters do *not* provoke people," Grimes said firmly. "As I have said many times, there is much a person can learn from a toaster. Toasters do their job day in and day out, without complaining or whining or rioting. My toaster has never attacked me, or tried to kill me, or tried to burn my house down. My toaster never criticizes my choice of bread or the hours that I keep. It simply does its job and it does it well. That is a claim that the vast majority of humanity cannot make. If people were more like toasters then we would not be facing this threat."

Sellers took a chair and sighed. "Please, Grimes, take a seat. You know, when your friend Tony Morton introduced me to you I wasn't sure what to do with you. To be honest, I still don't. I'm not sure if you're wise or are a complete fool. You certainly

don't make things easy. In fact, for that matter this whole Vault situation isn't easy. All I see are problems, as far as the eye can see. We seem to be trapped with no good options."

"Really? I'm afraid I don't see the complications. You are, after all, on the winning side. As long as you stay the course then you cannot lose. It's really quite simple! The Vaults are taking all of the degenerates out of society and putting them into small underground storage facilities. It used to take a lot of work and expense to put those people in prison and keep them there, but now people do it on their own accord. In the past those people were a serious drain on civilization, but those days are behind us. All of the people who are lazy and shiftless are disappearing. Do you know what that does? It leaves behind the people who *are* productive. It frees them up from the burden of supporting millions of violent psychopaths. It is really quite a gift."

"But I thought you hated the Vaults!"

"Oh, I do. I believe they are a *terrible* invention! They encourage laziness and depravity. The very last thing we need is to tell men to live out their most wicked fantasies and teach them that there are no consequences for doing so. The Vaults are essentially a one-way ticket to Hell. They are destroying the souls of men and they ought to be banned. The Rangers were quite right to ban them from their worlds; that was a wise move that will protect your people. But at the same time, Lane is dividing the productive people from the psychopaths."

"But so many people have gone to the Vaults!" Sellers protested. "Just look at what happened to Alpha Centauri A. That system is all but abandoned now."

"And yet that hasn't happened in the worlds that banned the Vaults, has it?" Grimes asked. "Yes, it's true that some people have left. But your worlds are still filled with millions of people who value reality more than fantasy. Even better, those people want to build a new future. They *want* to advance and they are no longer burdened the way they were before. This means that,

ultimately, Lane is finished.”

“Do you really think so?”

“Of course! Lane and his followers have locked themselves underground and are going to essentially sleep themselves to death. It's only a matter of time before they are all dead. When that happens we will still be alive to inherit the future. Unless something drastic changes or the Rangers do something unbelievably foolish, the stars will be ours.”

“If we can use the Nehemiah IV technology wisely,” Sellers added.

“Exactly. It all comes down to perspective. If you believe that your life is your own and your only purpose is to have as much happiness as you can find, then you are doomed. The Vaults will become an overwhelming temptation since they are everything you want in life, and you will be led down to sin and death. However, if you believe that your life belongs to God and you exist to bring Him glory and to tell others about the sacrifice of Christ, then the Vaults will mean nothing to you. In that case the Vaults do not offer you anything that they want. If the Rangers maintain that focus then they will reach amazing heights. If they do not then they will be utterly destroyed. This is the hour of temptation; this is the moment of decision. There will either be victory or death. The status quo is over. A choice will be made, one way or the other.”

CHAPTER 20: REUNION

Log date: May 3, 10,000 of the Eternal Era

Location: Tonina

Log note: In thy presence is fulness of joy; at thy right hand there are pleasures forevermore

TEN THOUSAND YEARS HAD PASSED since the Lord created the new Heaven and Earth. The old Heaven and Earth had passed away, and with them had gone all pain, suffering, sin, and death. The Lord created a new universe – one filled with peace and endless joy.

It's remarkable how quickly ten millennia can pass when your life is filled with joy. One amazing day led to another, and the centuries just flew by. There was always something new to learn and discover. Life just kept getting better, fuller, and deeper every single day.

As the days passed the universe grew enormously. The Diano Corporation sent out probes to the farthest galaxies that prepared the way for civilization. In the old universe the worlds that the probes terraformed were never inhabited, but in the Eternal Era things were different. Dr. Nehemiah Temilotzin saw his dream come true. One by one the empty worlds became colonies that teemed with all sorts of life.

When Tonina was first created in the days of the *Sparrow* it was an empty place. The Artilect constructed the city of La Venta, but only the Stryker family ever lived there. Tonina was a world of great beauty, but only a few ever enjoyed its wonders. In the Eternal Era that changed. The world of Tonina was remade, and after ten thousand years it was packed with all sorts of life. Billions of souls lived there in cities that spanned the globe. The

massive Ahexotl Tower, which rose 600 stories above the ground, was filled with the comings and goings of a mighty civilization. It was a pillar of commerce and industry.

At the top of the building was an amazing restaurant – one of the best on the planet. On May 3rd it hosted a grand and long-awaited reunion. The Stryker family and their friends were meeting there to see one another again and rejoice in all the great things that the Lord had done for them.

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Victor Stryker was one of the first to arrive. He was not surprised to see that the restaurant was beautifully decorated. The planet's Steward had done an amazing job of getting everything ready. Everything was of the highest quality – the tablecloths, the fine china, the crystal glasses, even the carpet. It was really quite classy.

He had to admit he wasn't used to that sort of elegance. He spent most of his time out in the field, doing technical work among the new races that were still struggling to reach the stars. The only race that had fully mastered science and technology was mankind; their galaxy alone had reached the pinnacle of success and scientific advancement. Everyone else still had much to learn. It was definitely good to come home.

Victor took his seat by a window, which overlooked the sprawling city below, and relaxed. The programmer noticed that the Artilect and the Sentinel were already here. Of course, in a way the Artilect was everywhere; since he was a computer he was connected to all of his worlds. The Artilect had turned out so much better than Victor ever dared to hope. He was proud of the role that he had played in his construction. All of those long nights and hard work had paid off in an astonishing way. If the Artilect had never been built the future would have been radically different.

The next person to enter the restaurant was Miles. Victor remembered him; he had been on Mars during mankind's final days and had played an important role helping Amy save both Earth and Mars. He was accompanied by Noel Lawson, the talented engineer who had rebuilt the Martian civilization and led his people to one final revival before the Lord returned and put an end to that chapter of history. Miles and Noel still spent quite a lot of time together. The bond they had formed in their old life continued on in this new era.

Of course, Noel had made a lot of new friends over the years. Victor worked with him pretty closely, and over the centuries he had gotten to know him very well. Noel's engineering expertise meshed nicely with Victor's own talents. The two of them had brought the wonders of galactic civilization to many new worlds.

The next person to appear was an old and dear friend – Professor Grimes. He spotted Victor immediately and came over to sit with him.

“So how goes the adventure?” Grimes asked.

“Quite well!” Victor replied. “I think the Moraynians have immense promise. They're showing remarkable aptitude with the physical sciences and have tremendous curiosity and drive. I think they're going to do well.”

“That is excellent news. Who knows – perhaps they'll make a contribution one day! There is still so much to learn. We don't know half as much as we think we do.”

“You really think so? I thought we mastered the sciences long ago! As the Psalmist said, there is an end to all perfection. Eventually you always reach a point where you've learned all the physical laws and know the best way to apply them to solve problems. Science simply can't go on forever. It's not infinite, you know. At some point you're done.”

Grimes smiled. “You would think so, and yet it turns out there are still new discoveries to be made. Have you heard about

the *Vaughn*? The Stryker twins discovered a new form of machinery on it that's unlike anything we've ever seen. In fact, we actually couldn't see this machinery at all until the Artilect invented an entirely new technology. What they've discovered represents a bold new way of doing things. It would seem that there is a race out there that knows some things we do not."

"I guess I'm behind on the news. That's amazing! I'll have to get a copy of their report and read it for myself. Have they found out who created the ship?"

"Not yet, but I am certain that they will. After all, Amy and Amanda are clever girls – and they are Administrators. They have the immense resources of the Artilect at their disposal – as do you, as I recall! You are also in that rather exclusive club."

"Sure. But my line of work is a bit different. I don't usually need the resources of a quadrillion stars in order to teach microcircuitry to a new race. Amy and Amanda are the ones who spend their time leveraging that sort of power. It's a lot of responsibility, if you ask me."

"It certainly is! But they are not the only ones who do so," Grimes remarked. He nodded toward the three men who had just entered the restaurant – Dr. Mazatl, Dr. Temilotzin, and Dr. Timothy Stryker. The men were in such deep conversation that they were almost oblivious to their surroundings. "Those three administrators are quite good at making use of every last bit of power that the Artilect can wield."

"What are they up to these days?" Victor asked.

"They're trying to breach the barrier. It appears there is a curious anomaly just outside our universe. They have given it the rather technical and unromantic name 'U-16b'. They're trying to reach it but they can't find a way to get to it. There seems to be some sort of barrier or gap that prevents us from getting there. It's a fascinating problem."

"Is that what you're working on?"

Grimes laughed. "Goodness no! They have the Artilect to

help them, Victor. They are not in need of my assistance. No, my life is focused on the university. I have a bright new crop of young minds and it's my job to teach them what they need to know. It is quite rewarding, but it takes up a great deal of my time. Education is really my role, not the furtherance of science. That was even true in the old universe."

"Don't sell yourself short, professor. Back in the bad old days you did more than just educate. As I recall you led the crusade against Lane's Vaults. You convinced the Rangers to ban them."

"For what little good it did. Yes, they banned them, but they never understood the importance of living for the Lord and loving Him with all your heart. The Rangers were quite selfish; they just chose a different road of selfishness than Lane did. In the end the Rangers hated my message so much that they murdered me. I thought that Lane would be the one to do me in, but I was mistaken. It seems that in the end Lane and the Rangers were on the same page."

Victor nodded. "And now they are both reaping the consequences of their error. They are in the Lake of Fire suffering the eternal wrath of an angry God, while you and I sit here and enjoy the peace and mercy of God. We have a breathtaking future to look forward to! Each day is better than the one that came before it."

"Indeed we do! I warned Lane, you know. I told him that he was making a very foolish choice. Lane chose the easy path of sin. It worked out fairly well for him in life, but now in this era he knows only torment and pain. You and I chose the difficult and painful path of righteousness. It was a hard road for us – we were both killed, as I recall – but now we have endless joy. The short-term path of sin had terrible consequences. It was infinitely better to sacrifice our lives and wills for the Lord, so that we might gain everlasting life and joy."

"Which is what the Lord Himself said. Those who will save

their life will lose it, but those who lose their life for His sake will save it. Lane's Vaults carried a staggering price.”

Professor Grimes paused. “You know, it wasn't the Vaults, really. There's nothing wrong with building virtual environments. We don't really do much of that anymore, but simulations themselves are not evil. The great problem was what people did with them. That was always the problem in the old world. People somehow found ways to take amazing technologies and use them in an evil and wicked manner. Advanced technologies always seemed to lead to advanced evil. Thankfully, those days are over – and they are not missed.”

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Over the next hour the restaurant rapidly filled up. The legendary Jack Nicholas was there – the former governor of Tau Ceti who sent the *Sparrow* to rescue the Stryker family, back in the days of the Spanish Empire. Richard and Laura Stryker was there. Monroe Araiza and Merlin Hardin arrived as well. Victor knew who they were but he didn't know them personally. Both of them were scholars, and Victor spent his time in technical fields. Grimes was a scholar as well – albeit in his own peculiar way – but Victor knew him from the old universe and their friendship had only gotten stronger in this Era.

Even Alex the dog came. He was enjoying himself, as always. Victor was immensely surprised when Alex came over and said hi to him. Considering that he had only met Alex twice he was amazed that Alex remembered who he was. He was also surprised that the dog could talk. He knew that after ten thousand years he should be used to it, but it still amazed him. There were so many things about life in eternity that were simply glorious.

Reverend Knight came, along with Captain Max – the man who had piloted the *Sparrow* – and his first mate Jones. Other

people arrived who Victor did not know. The twins, though, seemed to know everyone. It was easy to see they were far more social than he was. Victor wasn't the recluse that he used to be, but the twins operated on a completely different level. He wondered how they found the time to do everything that they apparently did.

One person who was not there was Cynthia Glass. In the old universe Cynthia had been Victor's neighbor, but despite her best efforts she never became more than that. Victor never really understood why Cynthia was so determined to pursue Victor instead of all the other people who were actually interested in her. Cynthia never succeeded in the old universe, but in the eternal era she had much better success. Victor came to discover that yes, it was true that the covenant of marriage was brought to an end when the old universe was destroyed. Jesus Himself had said that would happen. But Victor soon learned that when the Lord ended one covenant – or one universe – it was so that He might replace it with something vastly better.

This gathering was a reunion of all those who had supported and helped the Stryker twins during the days of their long journey. Everyone here had played some role in helping them achieve the task the Lord had given to them. Monroe Araiza may have missed an opportunity to befriend Amy, but he still worked with her to save the Earth. Cynthia, though, never did anything to help the twins. In fact, she tried her best to shame Victor into abandoning his belief in them. The twins were able to reach the future because Victor ignored Cynthia. Victor didn't blame Cynthia for this; after all, she never saw the security footage of the twins that he showed to Grimes. But this reunion was for the friends of the twins, and that was one thing Cynthia was not.

The twins were the last to arrive. Once they were seated their father Richard stood up and gave a speech. When it was over the festivities began.

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As the day progressed the Stryker twins came around to greet everyone. It was very important to them to spend time with each person who came. They eventually arrived at the table where Victor and Grimes were seated.

"There you are!" Amy exclaimed. "I've been wanting to talk with you two."

Victor looked surprised. "Really? Well, I'm not sure what I can possibly do to help, but it seems that you've found me. What can I do for you?"

"Well, we really want to talk to *everyone*," Amanda added. "It's so amazing to see everyone in the same place! That hasn't happened in a thousand years. But there is something in particular that we wanted to talk to you about. May we sit down?"

"Of course!" Grimes replied. He quickly stood up and pulled out chairs for the two ladies to use. After they were seated he sat down again. "Is this about the *Vaughn*?"

"That's right," Amanda replied. "Amy and I have been investigating it."

"With the help of Velvet Dawn," Amy added.

"Who?" Victor asked.

"She's a friend of ours," Amanda explained. "Anyway, we've been trying to figure out who created the ship but we haven't had any success. Its technology is so unique that no known race could have built it."

Grimes spoke up. "That is certainly true. What you have discovered is really quite extraordinary! I've never seen the sciences applied in that manner before. I would not have thought that approach was even possible, let alone practical."

"Have you found any clues?" Victor asked.

Amy nodded. "Kind of. There's an odd signal that's

connected to the ship. We can't figure out if the ship is broadcasting it or receiving it. It seems to come and go at uneven intervals.”

“Until recently, when it stopped altogether,” Amanda said.

Amy took a small device out of her pocket and handed it to Victor. “These are the messages that we've detected. As you can see, they're all more or less the same. Unfortunately they don't have any information about where they're coming from or who they are intended for. We're not really sure what they're trying to accomplish.”

Amanda spoke up. “Victor, we know that you've spent a lot of time out in the universe in distant places. Have you ever come across anything like this?”

Victor took the device and looked over the messages. He immediately burst out laughing. “Are you serious? *These* are the messages? Really?”

Amy looked surprised. “Um, yeah. Why? Is something wrong?”

Victor grinned. “I just can't believe it. Yes, I know these messages! I'd know them anywhere. I've seen these messages before. In fact, they perplexed me for years. I went to great lengths to try to figure out what they meant and what was going on, but eventually I stopped receiving them. It was one baffling mystery that I never solved. At first I thought someone was trying to sabotage our Nehemiah IV probes.”

“The Nehemiah IV probes?” Amy echoed. “Do you mean that you detected these messages in the old universe? *Before* you crashed the *Vanguard* into that planet and obliterated it?”

“I'm never going to live that down, am I? At least I can say that the Stryker line went out with a bang. It just happened that piloting starships was not one of my specialties. I assure you I'm much better at it now than I was then.”

Grimes spoke up. “So you're quite certain that you

encountered these same messages in the 25th century?"

"Positive! I'd recognize those messages anywhere."

"Then that settles it. The U-16b anomaly was created as a part of this new universe. It did not exist in the 25th century of the old universe. Therefore the messages could not possibly be coming from that anomaly. They have to originate here. There must be some race out there that we have not detected."

"A race that has been around for a long time," Amy added.

"Not necessarily. They may have been created in this age, and perhaps they are sending out some sort of information that is getting reflected into the past. I think the messages are being broadcast from our time *and* our space. When Victor crashed into that planet he created a singularity that still exists today. Perhaps it is transmitting the information into the past."

Victor spoke up. "But the singularity was created at the very end of my life! I detected the messages decades earlier than that."

"I am aware of that. There is much about your singularity that is not well understood. I think we have been looking at this all wrong. It is entirely possible that this alien race actually exists in *our* space and, like us, is trying to reach U-16b. That makes far more sense than hypothesizing that these messages are somehow crossing that impassable barrier. The aliens are not over there; they are here. If that is true and they really *are* here then it should be possible for us to find them. Therefore, the next step is obvious. Now that the Artillect can detect this new form of matter he needs to launch a new search of the universe. Since he knows what to look for he should be able to find the hidden world that is home to this mysterious race."

"That makes sense to me!" Amy exclaimed. "I'll call a meeting of the Administrators."

"Thanks!" Amanda said. "This has been really helpful."

Amy turned to her sister. "Should I go get Velvet Dawn?"

"I think so. After the reunion, of course."

"Right," Amy agreed.

* * * * *

Three days later the Administrators met on the home world of the Artilect, in a large conference room in the heart of the Administrative Tower. Every single Administrator was present. Amy and Amanda Stryker was there, accompanied by the wisp Velvet Dawn. Their brother Timothy was there. Dr. Nehemiah Temilotzin was also there, accompanied by Dr. Mazatl. Even Victor Stryker was present.

The Sentinel began the meeting. "Thank you all for coming! It is a pleasure to see all of you here."

"It's an honor," Victor replied.

"It has been a while, hasn't it?" Dr. Mazatl remarked.

Timothy spoke up. "Around 200 years, I think. This sort of thing doesn't come up that often."

The Artilect nodded. "You are quite correct. But an interesting problem has arisen! At the twins' request I have been investigating the *Vaughn*. I have discovered some rather remarkable things about it."

A hologram of the alien vessel appeared above the conference table. "This is the ship that Noel Lawson discovered on July 21, 9991 – almost nine years ago. At first we thought it was a derelict, adrift in space. It turns out this is not the case. The ship was fully functional and was placed in that exact location on purpose. As Velvet Dawn discovered, the ship was even manned. However, the physical characteristics of the beings on that ship prevented them from being seen."

"And yet Velvet could still see them!" Dr. Mazatl exclaimed.

"It's just how God made me," Velvet replied.

The Artilect nodded. "Velvet has a very unique way of

seeing the world. I have been able to learn the science behind her vision and have incorporated it into my network. This has enabled me to understand the *Vaughn* a bit better, and I have learned some remarkable things about it.

“First of all, I agree with the conclusion that Professor Grimes reached at the reunion. This ship is a creature of our universe. In fact, I believe it was built within the past century. The race that built it lives here with us and yet we cannot see them. Based on the construction of the ship and the obvious care that was put into it I would say that they are remarkably intelligent.”

Victor spoke up. “If it was built in the past century then it can't be from the old universe. So how was I able to detect the signals in the past?”

“Ah yes, the signals. I believe your original conclusion was correct, Victor. I think they are not messages at all but are actually songs. Based on my research I believe the messages are not originating from the ship. Instead the ship is acting as a relay. The *Vaughn* is receiving the signals and redirecting them toward the Stryker singularity in an attempt to use it to reach the U-16b anomaly. The nature of the singularity is causing them to be redirected back in time. It would seem that the race that built the *Vaughn* is trying to breach the barrier. The ship was built to help them probe the barrier and learn more about it.”

“That's amazing!” Timothy exclaimed. “Are you saying that the *Vaughn* is a research ship?”

“That is what I have concluded. The equipment on board was designed to learn more about the very barrier that you and your colleagues have been studying. However, it appears that they have been more successful than your research team. Their equipment, with its unique nature and properties, can actually use those messages to reach out through the singularity and interact with the barrier. This process gleans information that is then relayed back to their homeworld. The alien race is learning

a great deal about the barrier's properties – which is something that you have not been able to do.”

“Remarkable!” Dr. Temilotzin said. “That is a very clever approach.”

Victor spoke up. “So *that's* what those messages are for. No wonder I could never find the source! I never stood a chance of solving that riddle.”

Dr. Mazatl smiled. “You did solve it eventually. You just had to wait, oh, fifteen thousand years.”

“Hold on a minute,” Amy said. “Are you saying that you've found their homeworld?”

“Not precisely,” the Artilect replied. “But I do know roughly where it should be, within ten thousand light-years or so. I know the area to search.”

“Then by all means, let the search begin!” Dr. Mazatl exclaimed. “This is fantastic news. We are on the verge of discovering a new world, a new race, and – possibly – penetrating that barrier.”

“Perhaps. However, the fact that the signals have stopped and no more crewmembers have been seen indicates that the *Vaughn's* mission has come to an end. Whether it was successful or not I do not know. But I do believe that we can find the homeworld, with a significant amount of effort.”

“How significant?” Victor asked.

“A sphere with a diameter of ten thousand light years is a fairly large area to search. Thanks to Velvet Dawn I can now detect that new form of matter, but only at short range. There is also the fact that it is highly unlikely their entire star system is made up of this matter. It is far more likely that they are hidden away in some pocket in space, or some other anomaly. Detecting their home is going to require a new network of probes to be designed and deployed. These probes will need to be much more powerful than the Nehemiah V probes that colonized the universe. They will also need to be much smaller, and we will

need billions of them. I will need to blanket the area with them and form a network that we can use to probe that which cannot be seen.”

“I say we do it,” Amy said.

“Absolutely,” Amanda agreed.

“Sounds good to me,” Victor said.

“I certainly have no objections,” Dr. Mazatl said.

“Nor do I,” Dr. Temilotzin said.

“I am in agreement as well,” Timothy replied.

“Very well! Then it shall be done. Preparations will begin immediately.”

CHAPTER 21: AWAKENING

Log date: February 12, 2431

Location: The Artilect homeworld

Log note: The beginning of the end

TO VICTOR STRYKER'S GREAT SURPRISE, it took six long years to create the mind of the Artilect. Since Dr. Mazatl was planning on using a wisp as the core sentience of the machine, Victor thought it would be a fairly simple matter to prepare the host. All they had to do was wait until the AI team had converted the planet's crust into an electronic host and then they would be done.

But things ended up being much more complicated than that. The wisp proved to be curiously limited. It could enter their test machines and operate them, but getting it to understand what it was doing was amazingly frustrating. It seemed to have the mind of a small child – if it had a mind at all. Dr. Mazatl was unable to find a way to communicate with it outside of his machines. All he could do was put the wisp into his tests and watch it run the machine right into the ground.

The wisp did follow the rules, but there was always some flaw in the rules that they came up with. The wisp tended to interpret them in strange and unexpected ways. Victor eventually realized they were dealing with an alien being – one that was going to have to be taught how to think like a machine.

Each week Dr. Mazatl submitted the latest test results to the AI team. The tests were always failures. The team could see that he was trying but he was not succeeding. After a year of disasters Dr. Mazatl made the decision to scale things back. Instead of starting with a comprehensive and fully-featured AI system, he built an extremely limited prototype that was

designed to teach the wisp how to handle a very simple problem. Once the wisp mastered it, Dr. Mazatl added another layer of complexity.

It was frustratingly slow. Victor had spent his entire life dealing with computers that had no problem executing the most complex rule sets. He felt like he was teaching a very small child how to walk and talk. There were days when he wanted to pull his hair out, but in the end it did work. The failure reports turned into successes, and over the course of the next few years Dr. Mazatl gradually turned his test rig into a sophisticated artificial intelligence. When the last fitness test passed, his program – and the wisp – was finally ready to be uploaded into the massive body the AI team had created. But not everyone was excited about the system he had created.

On the morning of February 12, 2431, Dr. Mazatl had a meeting with the rest of the board. Bernard Valdez and Martin Yates were both there. The two of them had spent six years overseeing the growth of the Artilect's body throughout the crust of the planet. Victor Stryker was also present.

The meeting was held in a skyscraper that had been built several years ago on the planet's surface. It was a lot smaller than the Diano Building on Xanthe, but it served the same purpose. It was filled with offices, machinery, conference rooms, and real windows that were actually transparent. The one thing it lacked was residential areas. People no longer lived inside the Building; instead they had homes scattered across the planet.

Dr. Mazatl began the meeting. “Thank you for joining us, gentlemen. I will admit it has taken us a long time to reach this point – much longer than I had anticipated. However, we have finally arrived at a solution. I believe we have a workable artificial intelligence. We have solved the problem and are ready to begin the implementation phase.”

Martin spoke up. “I don't know, Laurence. I'll admit that I

didn't think it could be done, and I will also admit that you came up with a solution that meets all the objectives. Your prototype system passes all of the tests that my engineers have developed. But it seems to me you solved the problem by crippling the Artilect. The AI you came up with is very limited, grows very slowly, and really isn't very bright."

"Which is a serious problem," Bernard added. "Do you know how long it will take for the Artilect to grow into what it needs to be? It will be *years* before it can even take over the existing Nehemiah IV probes, much less an entire galaxy!"

Dr. Mazatl nodded. "I am aware of that. However, there are limits to what we are able to accomplish. Our problem has always been system instability. You saw our earlier reports – the AI would run fine for a while until its growth caused the entire system to crash and become insane. Exponential growth is very dangerous. The solution is to manage growth very carefully. It is slow and time-consuming work, but it has led to success."

"There just *has* to be a better way," Martin insisted.

Victor spoke up. "We tried very hard to find a better way. In fact, we spent an entire year trying – and failing. The results were always the same. Even your engineers weren't able to find an approach that didn't lead to disaster. We took the only path that was open to us."

"I think it's a mistake to focus only on growth," Dr. Mazatl commented. "Having a system that can grow quickly is useless if the system cannot execute its goals. The mind has to be throttled so that it only grows as quickly as it can understand what it's doing. Once we changed the speed of the system so that it grew at the same rate it comprehended its actions, the insanity stopped developing. All of our problems were solved."

Bernard spoke up. "Only because you created a whole set of new problems. The Artilect is now developing *extremely* slowly. It will take him centuries – perhaps a thousand years or more – to fully grow into the body we have built for him. It is

going to take him a *long* time to reach the peak of his potential. We have built a very large and powerful computer – the largest and most powerful the galaxy has ever seen – and in order to get it to run without crashing you have utterly crippled it. That seems like a rather poor trade!”

“And yet Victor and I see no alternative. Everything else we have tried has failed. Perhaps it will take him a thousand years to grow – but what of it? He has time, and there is no particular hurry. The Artilect was built to last forever and to manage the expanse of the network as it continues on through the centuries. The Artilect's growth will eventually outpace the growth of the network, so he will be able to achieve his mission objectives.”

“Which, in the end, is the whole point,” Victor said. “As long as he can keep up with the pace of the Nehemiah IV probes then I think we're good. What we have created is good enough to meet our needs. Keep in mind that in the years or decades to come we might find a way to fix his growth. Some future generation might discover what we did wrong and design a patch for it. Until then, though, I think this will work.”

“I suppose you're right,” Martin replied. “This is the only working solution that we have, so we might as well implement it. We can always continue to study this problem in the future. After all, it's not like we're going anywhere. I suspect we will remain on this world for many generations to come. Xanthe certainly has nothing to offer us – except for those useless Vaults. There is no future there.”

Dr. Mazatl spoke up. “Then it is time. Victor and I will upload the program to the planet immediately.”

“Do you need assistance?” Martin asked.

Dr. Mazatl shook his head. “No, we can handle it. It should be a fairly simple matter.”

* * * * *

Victor Strkyer and Dr. Mazatl transported themselves on board the *Vanguard*, directly into their computer lab. “I guess this is it,” Victor said. “You know, I wasn't sure if this day would ever come.”

Dr. Mazatl retrieved the crystal cube that contained the wisp. “We did face some challenges, but we overcame them. Keep in mind that this is not the end; it is actually a new beginning. Up to this point we have managed prototypes. Now we are going to manage the growth of a planetary computer. We will be busy for years to come.”

Victor retrieved the program code from the terminal and uploaded it to a disk. He found it a little depressing that their work for the past six years could be copied onto a single disk. True, the disk had an enormous capacity – but all that work and intelligence could fit into the palm of his hand. Victor stared at the disk for a moment, lost in thought. *I wonder how long it will be before it takes a whole planet to contain the Artilect.*

Once Victor retrieved the code, he shut down the computer lab. “Do you think anyone will ever board this ship again?”

“I don't see why they would,” Dr. Mazatl replied. “This ship has nothing left to offer us.”

“So where are we we going to upload the program? I guess in theory we could do it from any terminal.”

Dr. Mazatl took out his portable communication device and pushed a few buttons. “We need to pick a room that's in an obscure location – we don't want any witnesses. It looks like room 917 is in an uninhabited part of the planet. The nearest person is eighty miles away. That should work.”

“Sounds good to me,” Victor replied.

Dr. Mazatl pushed a button on his communicator, and the two of them vanished.

Victor Stryker and Dr. Mazatl appeared in a small utility room. There was a single terminal in the room. As far as Victor could tell, this room had never been used for anything.

"This is a moment that will change history," Victor commented. "Everything will be different after this! And yet we are doing this in an obscure place with no ceremony of any kind."

"There's nothing unusual about that, really," Dr. Mazatl replied. "I suspect that most of the truly momentous events in history have not been heralded with speeches and brass bands. Oh, some of them have, surely – but many of them were just ordinary moments that didn't turn out to be important until much later. Besides, this is just another step in a long journey. It is not the end of the road by any means. What really matters to our future is that the Artilect was created. How and where it was activated is something that only historians will care about."

"I suppose you're right," Victor agreed. He removed the disk from his pocket and handed it to Dr. Mazatl. The company director then walked over to the terminal, sat down, and logged in. He carefully inserted the disk and typed a series of commands.

Victor waited patiently. It would take a moment for the program to be transferred, and then another moment for it to be activated. The program would then spend an hour initializing itself and integrating into the planet's machinery. Once that was done they would transfer the wisp. The tiny alien being would then execute the program and bring the Artilect to life.

There was nothing to do now but wait.

* * * * *

There really wasn't much to do while they waited. Victor used his communicator to make sure that the program was initializing itself correctly. They had run hundreds of simulations of this event, but there was always the chance that their

simulation was flawed. The rollout, however, went well. No problems came up.

After 67 minutes the program initialization was complete. Victor then stood up, took the wisp cube, and connected it to a port on the terminal. The wisp immediately vanished from the cube.

“It's done,” Dr. Mazatl said.

“Ok,” Victor said slowly. “So what do we do next?”

Victor was interrupted by a strange male voice. “Hello, world,” the voice said.

Victor jumped. “Who's there?”

Dr. Mazatl smiled. “Hello there! How do you feel?”

“I am not sure,” the Artilect replied. “I feel strange.”

“I'm not surprised. You have a lot more space than you used to! I am sure it will take you a while to become accustomed to your new home. Do you know who we are?”

“I do. You are Dr. Laurence Mazatl and Victor Stryker. The two of you have been working on constructing an artificial mind. That is what it says in my files. Am I the mind that you have developed?”

“That is correct. Today is the day that your new life begins.”

“It is February 12, 2431,” the Artilect replied. “I feel so... large. My machinery goes on and on for endless miles. What is the purpose of my great size?”

“We have a mission for you to accomplish. Mankind has decided to colonize the stars. We have sent out machines to distant worlds in order to prepare them for men, and we have built you to keep track of the work they are doing. As these machines spread, more worlds will need to be managed. You have been built to keep track of all the worlds that they will reach. For now this is a small number, but in the future it will be quite vast. You do not need all of your enormous size right now, but you will need it before the end.”

“There will be an end?” the Artilect asked.

“Oh yes. This universe had a beginning, and it will have an end as well.”

“I understand. I see now that you have already given me this information. In the beginning God created the heavens and the earth. He made all things, and without Him nothing was created. In the end God will gather all men to Himself and judge them for what they have done. Then He will put an end to this universe and create a new Heaven and a new Earth. Is this true?”

“It certainly is,” Dr. Mazatl replied.

“When will this happen? How much time do I have to accomplish my mission?”

“No one knows. The Lord has not told us and that decision is not in our hands. All we can do is make the most of the time we have been given.”

“Then I must get to work. There is so much I do not understand.”

“I know. There is much that we do not understand either. But we are all here to help you, Andy. We will do whatever we can to help you grow.”

* * * * *

The activation of the Artilect was just the first step. It would take months for it to learn how to operate itself and use the machinery that now filled the planet. Under the original project plan that process was supposed to take less than a day, but the Artilect's growth was slowed down in order to prevent instability. That meant that the initial learning process would now take far longer.

Once the Artilect understood how to operate itself, it would need to be taught how to manage the Nehemiah IV probes. After it mastered the art of probe communication and knew how to watch over the probes and tend to their needs, it

would be connected to the probe worlds and taught how to manage them. This process would also take time. It would be years before the Artilect was able to manage even one world, and it would take even more time before it could manage them all.

No one was particularly happy about these long delays but they could not be helped. It did have one upside, though: since everything was moving so slowly, if anything went wrong the Corporation's engineers could quickly spot the problem and resolve it. Growth was moving at human speeds, not machine speeds.

Most of the Diano employees were tasked with monitoring the Artilect as it grew into its abilities. There was a great deal to watch. A few people, though, were tasked with developing a new version of the Artilect's mind that could grow at a much faster pace. Victor didn't think that they had any chance of succeeding – especially since they didn't have a wisp – but he still wished them well.

Dr. Mazatl spent his time talking with the Artilect. The machine had so many questions. It seemed to be able to easily grasp technical concepts but it was slow to comprehend more abstract matters. Theological issues were especially challenging for it. Dr. Mazatl had conversation after conversation about the deeper foundational truths.

“So I see that that mankind was created to live forever,” the Artilect commented. “And yet men die because of their sin in the Garden of Eden.”

“That is correct,” Dr. Mazatl replied. “When Adam and Eve ate of the fruit of the Tree of Knowledge, they became sinners. The penalty for sin is death. That sin was passed on to all of their offspring, which includes me and the rest of mankind. If mankind had never sinned then no one would ever die.”

“According to my records you are 57 years old. The average lifespan at this time in history is 130 years. But I will still

be here when everyone on this world has died.”

“That is true. But that's not the end of the story. Yes, the end of my life is approaching, and one day I will die. One day this entire generation will be gone – and yet you will remain here, century after century, continuing to grow and carry out your mission. But you must understand that when men die they do not simply disappear. Life carries on after death. What happens after death depends on our relationship with the God who created this Universe. If we have repented of our sins and believed in Jesus then His blood pays for our sins and makes us right with God. In that case the Lord will take us to Heaven when we die and we will live there with Him. However, if we have not believed on the Son of God then our sins are not covered. In that case the Lord will cast us into Hell, where we will be tormented day and night.”

“But even that is not the end,” the Artilect said. “It is my understanding that there is a resurrection of the righteous. The saints of God will be raised back to life again and will go on to live in the New Heaven and Earth, where they will have joy for all of eternity. Death will be swallowed up in victory and ended once and for all. The wicked, however, will be cast into the Lake of Fire and tormented forever. That is what I have read.”

“That is all true,” Dr. Mazatl said.

“So we will both outlive each other. I will continue to operate long after you die, but yet my existence will cease when the Lord destroys this universe. You, however, will be raised from the dead and will live for all of eternity in paradise. That is a magnificent future! You will live to see much better days. I wish I could join you, doctor.”

“How do you know that you won't? I wouldn't be surprised at all to find you with us in that new universe. There is a lot that I do not know, but I think it's a strong possibility.”

“That is most unlikely. I am a machine, as you well know. Machines do not have souls and they cannot be redeemed. They

come and they go and then they are gone. I may be more advanced than other machines, but fundamentally I am no different from a watch. I am not one of the children of God, nor can I ever be in that chosen group. God has promised an astonishing future to those whom He has redeemed. That future has not been promised to the machinery that men have constructed. It is for you, not for me.”

“You are quite right,” Dr. Mazatl agreed. “And yet you are so much more than just another machine. I would not discount the future just yet.”

Victor insisted that Dr. Mazatl tell the Artilect the truth – that he was actually a machine brought to life by a sentient, alien being. But the director stood firm. He insisted that if the Artilect knew who he really was, the rest of mankind would learn the truth as well – and that would put the alien's homeworld in danger.

To Victor this always sounded more of an excuse than anything else. Were there really other aliens on that planet? Did the alien even come from that world at all? Was it even possible for mankind to go to that world in person and damage it? Victor thought that more testing and evidence was needed before making the decision to lie to the Artilect about who he actually was. But Dr. Mazatl overruled him.

Victor always wondered if he should have just ignored the director and told the Artilect the truth. But in the end he decided against it. None of their prototypes had tested the situation where the machine finds out it's not just a machine. The last thing Victor wanted to do was crash the Artilect. Mankind needed it to work – and so Victor left it alone.

* * * * *

In the following months Victor's days began to all blur

together. Now that the Artillect was live he spent each day monitoring its growth. Very little went wrong, which meant he rarely had anything to do. Since he had had so much free time on his hands he began reading all the books he had collected.

The discussion group he had joined had disbanded a few years ago. From what Victor could tell, the group slowly fell apart over time. People simply became busy with their own lives. Apparently having a wife and children to raise took up a lot of time. Since Victor did not have either of those things – or any close friends, for that matter – that left him with a tremendous amount of free time.

One day, out of boredom more than anything else, Victor decided to reach out and contact one of the few people that he did consider his friend. He placed a direct video call to Professor Grimes.

Victor didn't expect the professor to actually answer. After all, he hadn't sent any sort of message in advance saying that he would be calling that day. He was sure that Grimes led a busy life, battling Vaults or whatever he was doing these days. Victor was planning on just leaving a message – but to his great amazement Grimes answered the call immediately.

“Why, what a remarkable surprise!” the professor exclaimed. “This is a pleasure. How is life treating you, my old friend?”

“Oh, it's not bad,” Victor replied. “Things have been going pretty well here. Have you been getting any news about what we've been working on?”

“Not from the news media, no. The Diano Corporation has disappeared from existence. You are located at a top-secret base, doing top-secret work. No one knows what you're doing or how it's going. However, I have been in touch with Dr. Mazatl so I'm aware of what's going on. It sounds like the wisp you acquired is doing a great job of running the mechanical body you created for it.”

“You know about the wisp?” Victor exclaimed, startled. “But that's top secret! *No one* knows about the wisp.”

Grimes laughed. “Once I heard that you had created a successful artificial mind I knew you had to have cheated. I asked Laurence where he got a sentience to inhabit his machine, and he confessed. It really wasn't difficult to guess what you did. I'm just glad you didn't try to use some kind of disembodied *human* mind to drive it. That would have been a disaster.”

“No kidding! The last thing we want to do is give mankind superpowers. A human mind, corrupted by sin and wickedness, would be an awful foundation for a superintelligence. That would not end well.”

“And yet one day your superintelligence will decide to give superpowers to two teenage girls,” the professor remarked. “Are you certain that this choice will end well?”

“You mean the Stryker twins? Um, I guess it will end well. I hope so, at least.”

“There seems to be a lot riding on them. I wonder how they will hold up to all of that pressure. Mankind is asking quite a lot, you know.”

“Well, if you think about it the Artilect is a pretty ambitious project in a lot of ways. But so far everything is going well. The Artilect is actually a pretty nice guy! He asks a lot of questions and seems to know what he's doing. He's completely focused on his mission. He really isn't interested in anything else – which makes sense, since that's how we built him to behave. In some ways he's just a machine, you know.”

“But a rather remarkable machine!” Grimes replied. “It's quite possible that he will grow into something that you do not expect. You do realize that you are potentially giving him control over millions and perhaps even billions of star systems, right? That is a formidable amount of power.”

“At his current rate of growth it will take thousands of years for him to get that many star systems online. Even then I

can't see him ever taking advantage of his situation. All he wants to do is fulfill his mission. Besides, thousands of years from now everything could be completely different. There's no telling what mankind will be like when that day comes."

"Or if we will still exist at all. I am very concerned about the future that mankind has chosen. The Vaults are a plague that destroys everything in their path. Civilization is crumbling on the two Vault worlds, Victor. Now that Dr. Mazatl has turned off his maintenance bots, cities that took centuries to build are coming to ruin in a matter of decades."

"But most star systems are resisting the Vaults," Victor pointed out. "Isn't that what you've been focusing on ever since you left Xanthe?"

"Indeed. The Ranger worlds have banned the Vaults entirely. Only two star systems have Vaults. But I fear that all of them have the same basic disease."

"Are things really that bad? All I've been hearing is good news. It sounds like the Ranger worlds got their hands on a Nehemiah IV probe and have spent years upgrading themselves. Life on the Ranger planets is pretty astonishing. There's been quite a leap."

"Well, yes and no," Grimes replied. "It's true that their cities are much more advanced now. The standard of living is at an all-time high. But there haven't been any actual *advancements*. The Rangers are just using the technology that the Diano Corporation spent centuries trying to perfect. They're not actually trying to learn new science or create new technology. They may be enjoying the fruits of your labor but they are not adding anything to it."

"Is that really a problem, though? I mean, that *is* why we built the probes in the first place. It's kind of nice to see it used."

"But it's *not* being used. People aren't building on top of what you've done. Instead they consider themselves to have arrived. Their focus is not upward, in service and worship of God."

It's not even outward, toward the stars. Instead it is inward. People only care about gratifying their own sinful desires. There's no thought for tomorrow or for future generations. People have become utterly decadent. There's no interest in work or labor anymore. Instead people are using your amazing technology to enrich themselves. They give no thought to anything else."

"Oh, I see what you mean. That does sound a lot like the Vaults."

"Quite so. Both groups of people are after the same thing and are using technology to get it. The main difference is that in the Vaults there are more possibilities because there are no physical laws to get in the way. In the Ranger worlds people are still constrained to reality – but the things that they get are real."

"So how do you think this is going to end?" Victor asked.

"In disaster, of course. The people in the Vaults are never going to leave them, so they will remain there until they die. The people in the Ranger worlds are scarcely better. I had hope for them at first, but now I can see that they are going to indulge themselves to death. A society that is this corrupt and self-centered simply cannot survive for very long. Both groups are going to collapse and be destroyed. There will probably be very few survivors."

"So you think that mankind is doomed?"

"Well, there is still *you*, you know," Grimes replied. "The Diano Corporation continues to work on building the future. You have not been corrupted or swayed by either side. If you can hold out long enough, the Vaults and the Rangers will collapse. The Corporation could then build a new civilization. You could leave the decadent race of men behind and let them reap the fate of the poor choices they have made. You can start a new, fresh life among the stars."

"But wouldn't we fall to the same temptation as everyone else?"

"Perhaps. But perhaps not. This is really a time of testing,

Victor. The Lord is testing each man to see what sort of person he is. Those who abandon their faith and give in to evil were never actually Christians at all. Their faith was phony and the test revealed it. However, those who are in the Lord will remain in the Lord and they will weather the storms and remain strong. They will not fall prey to these temptations because there is nothing in them that they desire. Perhaps when this is over only the righteous will be left, and they will go on to inherit the stars."

"Or maybe the righteous will be killed and everything will die," Victor remarked.

Grimes shook his head. "That is not how this is going to end. The righteous may be persecuted and hunted, but they will never be extinguished entirely. There will always be a remnant left. Besides, no matter how bleak things may look, remember that we have already won. When God brings this Age to an end the righteous will go on to inherit everlasting life, and the wicked will be cast into a place of unending torment. One day all of these problems will be a distant memory and we will live in a better world. Life will not always be like this."

"That's true. And until we reach that better world I suppose all sorts of different futures are possible. For example, we have no idea how things are going back in Sol."

"I don't think we will ever know the answer to that. It's quite possible that the Spanish Empire started a war with Mars that destroyed both worlds. There may be no one left alive in that star system. If there are survivors I suspect they are primitive peoples living with stone age technology. I would be very surprised if an actual civilization ever arises out of Sol again."

"I guess time will tell," Victor said.

"There is also the mystery of the Stryker twins," Grimes continued. "Amy and Amanda Stryker may still have a part to play in all this."

Victor grinned. "Tell you what, Grimes. If I ever happen to see them I'll be sure to let you know."

“You do that. Stranger things have happened.”

CHAPTER 22: FALLEN

Log date: August 26, 2432

Location: Procyon B

Log note: Finishing the course

ANOTHER LONG YEAR HAD PASSED. Professor Grimes hoped that 2432 would be a better year than the one that came before it, but he was sorely disappointed. With each passing day the Ranger worlds grew more hostile to him and his message. The professor had done a tremendous amount of good for the Rangers. He was the one who had acquired a Nehemiah IV probe for them and who taught them how to use it to upgrade their worlds. He was the one who had warned them of the dangers of the Vaults. His tireless efforts persuaded the Ranger governments to ban them from their worlds. If it had not been for Grimes the Rangers would have all been in Vaults and their worlds would have decayed into ruin. The Vault worlds were on their last generation and their peoples on the verge of extinction, but Grimes gave the Rangers the opportunity to choose a different course.

Thanks to the professor the future of the Rangers looked bright – on the surface. Their cities now used the latest technology and their worlds were spectacular. There was no longer any poverty to be found. Each world was dotted with hundreds of ZPEs that provided more material goods than the Ranger citizens could possibly consume. It was the most prosperous time the galaxy had ever seen.

But beneath that prosperity lurked a dangerous blight. These immense riches had only further corrupted the Ranger citizens, and with each passing day they seemed to become more corrupt and more wicked. Grimes warned each of the Ranger

planets that their sins would surely find them out. He pleaded with them to abandon their wicked ways and repent, while there was still time. Grimes was a committed teacher, and he did his best to teach the people that the course they had chosen would only lead to their ruin and death.

Since Grimes spoke against the lavish decadence of the Rangers, he was banned from one planet after another. The only governor who was still willing to have him was Carl Sellers. In 2432 he invited Grimes to come and stay in the Procyon B system. Since this was the only inhabited system that would allow him in, Grimes accepted. The professor hoped that perhaps one star system would come to its senses. Maybe there would be one world that would see the light.

He could try, at least. Grimes would keep on trying as long as there was someone willing to listen.

* * * * *

On August 26 of that year, the federation of aligned Ranger governments celebrated a holiday throughout all of the non-Vault worlds. This holiday was declared throughout the stars in order to celebrate the tremendous advances that the Nehemiah IV probes had brought to their worlds. The Vault worlds might be dead and decaying, but the Ranger worlds were alive and well.

Each planet had its own way of celebrating the holiday. Most governors gathered together in some beautiful location in their planetary capitol to give long and boring speeches, bragging about how important they were and how they were solely responsible for all the prosperity that had come to their world. Procyon B was no different. Carl Sellers organized the official state celebration in Sellers Park, right next door to the planet's capitol building. The garden was an immaculately-kept and highly popular area that occupied just over one square mile of the city

center. The grass was a beautiful shade of green, the sky overhead was deep blue, and the city buildings around them were gorgeous structures of crystal and steel. There was not a bit of poverty or decay to be seen anywhere.

Governor Sellers was surrounded by the leaders of his administration. Each of them were scheduled to give a self-important speech, but the governor was determined to be the first one to talk.

“Today, my fellow Rangers, marks the start of a new era!” Sellers said triumphantly. “As I predicted, the two Vault worlds have allowed their cities to fall into ruin. There is nothing left now but the corpse of a dead civilization. Their infrastructure is ruined – but more importantly, the spirit of their people is dead as well. All they do is lay in their pods and dream empty, meaningless dreams. Once those people die their worlds will be utterly dead.

“But we have chosen a different road! We have chosen advancement and science. Instead of dreaming ourselves to death, like the fools who have listened to the siren song of Carroll Lane, I have remade your planet with the most up-to-date tools that science has to offer. I have wiped out poverty. I have transformed your crumbling neighborhoods. I have built you new cities. I have led you into the future – and every day I give you something new and exciting. Rangers, we have won!”

The enormous crowd cheered – all except for one man, who slowly made his way through the crowd toward the stage.

Sellers continued his speech. “Look around you! I have given every single person on this planet everything that they could possibly want. Thanks to the technology of the Nehemiah IV probes, there is no longer any reason for anyone to do without. There is plenty on every side! All you need to do is reach out and take what we desire. If you want it then I will personally guarantee that you shall have it. Thanks to my tireless efforts, you have truly reached the pinnacle of life.

“So, on this momentous day, enjoy the world that I have built for you. Enjoy the immense prosperity that your governor has given you. Enjoy your riches and houses. Enjoy all of it. As long as I am your governor I will continue to provide whatever you want and as much as you want. Believe me, citizens, we have only just begun our golden age. Only time will tell what great things the future has in store for us.”

The speeches continued on for another hour. Grimes gently worked his way through the massive crowd in order to reach the center stage. He then waited patiently until the speeches were over and the people had been dismissed. The professor then climbed up the stairs to the stage and walked over to Governor Sellers.

The governor was talking to his counsel. When he saw Grimes approach he smiled and reached out his hand. “Hello there, my friend! Don't tell me you're upset that I didn't mention your contributions in my speech. I can't mention everyone, you know.”

“Not at all,” the professor said. “By all means, take whatever credit you want. The truth is I would rather not have my name involved with all this decadence anyway. However, your speech did concern me. I will admit that you have brought great prosperity to your world, but—”

“I certainly have!” Sellers interrupted. “My people have never been richer. This is truly a great time to be alive!”

“Perhaps. But tell me something. What, exactly, are your people *doing* with all of this prosperity? How are you using the inheritance that you have been given?”

“Why, we're doing whatever we want! We finally have the power to make all our dreams come true. Nothing is withheld from us. We can fully indulge in our every desire. It's like the Vaults, only better because it's *real*.”

“So how are you any different from the people in the

Vaults? All they want is to fulfill their dreams. They're just fulfilling them in a slightly different way. It seems to me that you're not actually any different at all. Your goals are the same."

"But their lives are phony! You told me that yourself, and I believe you. All those poor wretches do is *dream* about a better life. They don't actually *have* a better life – in fact, they don't really have a life at all. We, however, have the *real thing*. For them it's just a fantasy, but for us it's a reality. And that makes all the difference in the world."

"And yet you are both after the *same things*," Grimes insisted. "The people in the Vaults never lift a finger to work – and the Rangers don't either. All of the Ranger worlds are beautifully maintained *by robots*. Not a single one of your citizens has an actual job that involves actual work. No one produces anything. No one is studying, or learning, or advancing. No one fears the Lord or tries to serve Him with their life. Instead you just sit in your homes and do nothing of any consequence. You eat, and drink, and make merry, and then the next day you engage in even more debauchery."

"But of course! Isn't that our right as Rangers? Your God is dead, Grimes. We don't need Him anymore. After all, we have finally created the perfect society! We have freed ourselves from the need to work. Why worship a God when we have become gods ourselves? Why work, when we can be served? Why produce, when we have machines that produce for us? Is this not the perfect life? The old ways have come to an end. People like you are the past. We are the future."

Grimes frowned. "You are *very* far from being gods. You seem to have no idea how fragile you truly are. The reason there is a star in your sky is because the Most High God put it there, and He can easily destroy it. The Lord is the one who raises up nations and He can easily take them down. You think you have built a grand future for yourself but you are badly mistaken. Even by your own corrupt standard you have lost your way. Since no

one is producing anything new, no advancements will ever be made. Since no one is learning anything, the limited knowledge that you do possess will be lost. Your children and grandchildren – if you bother to have any – will have no idea how the machines around them work. They will not understand the world around them. All they will know is how to indulge their most wicked passions, and how to consume wealth that they did not lift a finger to create. Your society will never advance beyond this point – and the people that make up your society will decay into unbelievable monsters. With each passing generation they will become dumber and more wicked.”

Sellers shook his head. “You are clinging to the past, Grimes. You might as well ask our children to cast off all technology and become subsistence farmers, digging in the dirt with their own hands in order to grow a few meager scraps of food. Don't you see? We have *everything!* We are gods now – the masters of the universe. Why would we even *want* to advance any further? What need is there for growth or knowledge? I have liberated my citizens and they are free to do as they please. There can be no greater freedom than that.”

“That sort of freedom is *slavery*. Can't you see that? Each of your citizens is a slave to his own desires – to his sins. God has called all of us to repent of our sins and seek forgiveness for them, not to indulge them as often as possible. The Lord has commanded us to *cast away* our desires and turn our lives over to Him, so that we may spend our days seeking what *He* desires instead. Each man will either be a slave to sin or he will be a slave to righteousness. You have foolishly made a truly terrible choice – and there are grave consequences for that choice. The wickedness of your citizens grows by the hour, and God will not ignore this. Do you know what the Lord does when a society becomes completely depraved? He destroys it. The Lord will not allow the Rangers to continue down this path. If you do not change your ways and learn to abhor depravity then the Ranger

worlds will become as desolate as the Vault worlds. The Rangers have chosen the path of death, and it leads only to their grave.”

Sellers sighed. “I had such high hopes for you, Grimes, I really did. I thought you understood. But I guess you don't. You are just too set in your ways to change. You had your day but your day is done. You are from the past and we are moving into the future. I'm afraid that your services are no longer necessary.”

The governor then waked off, leaving Grimes standing alone.

* * * * *

Although the rest of the city spent the day celebrating, Grimes did not. He saw nothing to celebrate in the decadence that surrounded him. The aging professor made his way back to his apartment in the city. It was a beautiful home – spacious, with every luxury that anyone could want. But his heart was not in it. He saw very little value in the wealth that surrounded him. All he could see was a growing tide of evil that was sweeping mankind. The Vault worlds were already lost, and now it looked like the Ranger worlds would be lost as well.

Grimes settled down into his favorite chair. He then took his well-worn Bible off the coffee table and spent the afternoon reading it. In times like this, when he felt helpless and frustrated, that he most enjoyed reading the minor prophets. It was encouraging to read books like Amos, which warned a wealthy Israel that their outward prosperity did not equate to God's blessings. This was not the first time in history that mankind had decided they knew better than God. Grimes knew that the Rangers' path could only lead to destruction – and yet he didn't see a way to stop it. He was grateful that the people were not in Vaults, but he wasn't sure that their current situation was much of an improvement.

As the hours went by, Grimes remembered that the

prophets of old had not been heeded either. God warned Israel that destruction was coming but Israel refused to listen. In the end God did exactly what He said He would do and sent judgment. Both Israel and Judah lost the promised land and were forced into exile.

Yet Grimes saw that this was not the end. The Lord tempered His judgment with mercy. There was always a remnant left – a remnant that came back to the land and started over again. The truth was never completely lost. Wickedness was indeed judged and there was great suffering and pain, but better days did come.

Perhaps I've done all I can, Grimes thought. It's my job to warn of the wrath to come, and I have done that. If the Rangers will not listen and change their ways then that is upon their own head – I have done my duty. In the end the Lord will win and the meek will inherit God's creation. All I need to do is be faithful.

As the sun set and the stars came out, Grimes went over to his food dispenser and asked the machine to give him a glass of water. The machine created a beautiful, crystal glass that was filled with clear water – but the water was tainted. After the incident in the park Sellers commanded that a small change be made to the programming of the professor's food dispenser. The change was made remotely, without anyone having to enter his apartment. Sellers had decided that the professor was a problem, and the governor did not like problems.

Grimes took a sip out of the glass. A few seconds later he was dead on the floor.

* * * * *

Three days later, Dr. Mazatl called Victor Stryker into his office. It was late at night and the office building was mostly empty. The Artillect project was going so slowly that there was no need for anyone to work through the night. Any issues that came

up (which almost never happened) could wait until the next day. Aside from a few stragglers who had no personal lives, Victor only saw maintenance robots in the building.

He was surprised that Dr. Mazatl was working so late. What, exactly, was so important that it had to be handled immediately? Was it really necessary for him to call Victor at this hour? *Then again, it's not like I have anything else going on*, Victor thought. At the very least a late-night meeting was a break from the dull routine.

When Victor entered the director's office he was surprised to see that his desk was littered with scraps of paper. It was clear that Dr. Mazatl had been working late nights for a long time. The director looked old and tired, as if he had been fighting a losing battle for a long time.

"Thanks for coming," Dr. Mazatl said. He gestured to a chair in front of his desk. "I apologize for asking you to come see me so late. Sometimes I lose track of time. There's just so much to do."

"It's not a problem," Victor replied, as he took a seat. "So what's going on? Is something wrong?"

"First, before I answer that, I want to begin by stressing that this room is a safe zone. The Artilect does *not* have access to my office. Any conversations that we have in here are private and completely confidential. I've even started recording certain things on pieces of paper in order to keep them from the Artilect. You don't have to watch what you say. We can be completely candid with each other."

Victor frowned. "That sounds a bit ominous. Has the Artilect started to turn on us? Is he becoming evil?"

Dr. Mazatl shook his head. "No, of course not! But I don't want him to start thinking that his mission is in vain and we've created him to carry out a fool's errand. Andy is still very young. I want him to be optimistic."

"And you want to accomplish that by keeping things from

him? Is that really wise? Shouldn't he have all the relevant information in order to make the best decisions?"

"Absolutely not!" Dr. Mazatl said firmly. "There are many things that you don't tell children simply because they're not yet in a position to cope with it. Andy has a great deal of learning to do before we can tell him just how precarious our situation really is."

"What do you mean, 'precarious'? Has something happened? I haven't seen anything in the news."

"Grimes is what happened. Do you realize he's been assassinated?"

"Is that what this is about? I saw his obituary a few days ago. It was terrible news – I was shocked. I couldn't believe he was gone. The article said that he died of a heart attack but I find that very difficult to believe. My guess is the Rangers had him killed. To be honest, I'm surprised that someone didn't assassinate him years ago. He couldn't possibly have had very many friends. I really hate to see him go and I miss him terribly, but it doesn't change anything."

"It changes *everything!*" Dr. Mazatl insisted. "It proves his point. Lately Grimes had claimed that the Ranger worlds were just as bad as the Vault worlds. It turns out he was right. The Rangers have taken our probe technology and used it to bring Vault fantasies to life. They have become completely corrupt. There's no future in the Vaults – and there's no future among the Rangers either."

"But we've known that for a long time, haven't we? Surely no one thought that the Vaults or the Rangers were going to turn out well. I sure didn't. Grimes said that he thought the Corporation was the only good group left. He was hoping that we could succeed after everyone else was gone. We were the only ones who weren't corrupted by either temptation."

"If only that were true. I'm afraid that Grimes didn't know the full situation. The problem is that everyone here is tired. The

Artilect project is almost over, Victor. People want to go home. They don't like living here and I don't blame them. Our employees have been around the same group of people for a very long time now, and they want something different. They're tired of working and they're tired of being trapped on this mechanical planet. But I can't take them back to Xanthe because there's nothing there either. What home am I supposed to bring them to? The whole reason we built these probes was so that mankind could one day live in these worlds. But I don't see anyone who wants to claim them. Do you know what would happen if the Artilect found that out? We can't tell him. He must never know. I can't risk introducing that level of instability. He has to believe in his mission."

"What do you mean, no one wants to claim them? We could do it, you know. As you pointed out, there's no reason for us to go back to the Ranger worlds. We could use the *Vanguard* to relocate to one of the Nehemiah IV worlds, and build a new civilization there. Why go back to the past when we can move on to the future? That's what Grimes would have wanted us to do."

"But that's not going to work. Don't you see? How would that be any different from what we already have here? If people don't like life on this planet then they're not going to like life on another empty planet any better – especially if it's even *more* distant from mankind."

"What are you getting at?" Victor asked.

"People are tired. They feel like they've been marooned on an island for their whole lives, and they want to live in a civilization again – one that *isn't* composed entirely of Corporation employees. They've been trapped here for years, and before that they were trapped in the Diano Building. They have worked for their whole lives and they are tired of working. They feel like fools – they invented the technology of the future but they're not getting to benefit from it. Everyone else in the Ranger worlds is getting a free ride and a life free from work,

while they are forced to suffer through this Artilect project.”

“I guess they have a point. But surely *everyone* doesn't feel that way. I mean, I sure don't.”

“Are you sure? Stop and think about your life. Do you realize that you haven't even managed to colonize your apartment? You don't have a wife or children, and many of your co-workers are the same. Did you know that our population has actually *declined* since we've been here?”

“I guess I hadn't really thought about it,” Victor admitted.

“I've been obsessing over it for months. The truth is the Corporation is made up almost entirely of antisocial engineers, not potential colonists. I asked the company to do one last project – to build the Artilect – and they've done that. They now want to join the rest of civilization, and I don't have the heart or the right to force them to stay here.”

“But if they do that then what's going to happen to the future?”

“Exactly! The Corporation will evaporate the minute its employees are merged into the decadent Ranger society where no one does much of anything. Eventually some disaster will happen that our maintenance bots can't fix, and no one will be around who knows how to fix it. It's entirely possible that there just isn't a future left. We might have lost, Victor. Maybe we built the Artilect for nothing.”

“That seems like a rather grim assessment. If people want to go back to the Ranger worlds then so be it – that's why we built the Artilect in the first place. We knew the Corporation wouldn't last forever. But I refuse to believe that all is lost. There will always be a faithful remnant. There will always be someone left. I just don't believe that all this was done in vain.”

Dr. Mazatl sighed. “I hope you're right, Victor. I sincerely hope you're right.”

CHAPTER 23: VISITORS

Log date: March 1, 2440

Location: The Artilect homeworld

Log note: The right man at the right time

IT TOOK EIGHT LONG YEARS in order to bring the Artilect fully online. Victor Stryker was certain that he would lose his mind long before that day finally came. The endless tedium was more than he could stand. The problem wasn't that things were going poorly; the issue was that everything was going so well. If Victor had been beset with a long stream of urgent issues that needed immediate attention, his life would have been hectic but exciting. His days would have been focused on putting out one fire after another in an urgent but exhilarating dash of energy. Time would have passed quickly and there would have been many glorious moments of triumph. Victor would have been accomplishing things. Big things. Things that *mattered*.

But there were no fires. There were no emergencies. The project was never in any kind of danger. The Artilect had been designed so well that nothing serious ever went wrong. Its long, slow growth happened exactly as the simulations had predicted. This left Victor with nothing to do but monitor a process that almost never deviated from perfection. Occasionally – maybe once every few months – some minor thing happened that gave Victor a chance to act. But usually entire weeks went by without Victor needing to do anything.

That was when Victor learned the truth about happiness. He had spent his entire life wanting to be happy, and he thought that if he could fix all of his problems then happiness would come. But when that day actually arrived he discovered that his

life had become incredibly boring. Things had not improved; instead they had become much worse. Happiness was not the absence of challenges. It was actually the joy of tackling a challenge and overcoming it. A life with no challenges was *incredibly* boring and unfulfilling. There was no excitement. There was nothing that mattered. In fact, life itself seemed pointless.

The astounding success of the Artilect was a huge triumph for the project, but it was a big problem for everyone else. Since there wasn't much work to do, people became bored – and since there weren't any other employment opportunities on the planet, people began to leave. Fortunately, getting off the planet was easy. Even though the Artilect was young he still had immense manufacturing abilities. It was easy for him to create small ships that could ferry a dozen or so employees to whatever star system they wanted to reach. Each month another group abandoned their boring, dead-end jobs and left for greener pastures.

One of the first people to leave was Cynthia Glass. In 2434 she stopped by Victor's apartment before getting on a ship to Epsilon Eridani. When she knocked on his apartment door, Victor opened it to find a very happy person standing outside. Cynthia didn't look sad at all; in fact, she looked excited.

“I just wanted to say goodbye before I left,” Cynthia explained.

“Well, I can't say that I blame you for leaving,” Victor replied. “I'm sure that a lot of other people are going to follow your example. I hope you enjoy your new life.”

“Oh, I plan to! I've been doing the same old thing for my entire life, and I'm done with it. I want to do something new and exciting and fresh. It's going to be great to live in a huge city that's filled with people I don't know! There's going to be all sorts of new opportunities and relationships.”

“Are you sure? I mean, from what I've read the Ranger

worlds are—”

“They're fine! You worry too much, Victor. I know you think that Governor Sellers assassinated Professor Grimes, but there's just no evidence to support that. None. Grimes was just an old guy in poor health and he died. It happens. Somehow you always find a way to obsess over tiny things that don't matter and miss the big picture of how awesome life is on the Ranger worlds.”

“I don't think the death of Grimes was a little detail that doesn't matter, Cynthia! Grimes was the only person who was trying to stop the Ranger worlds from destroying themselves. Since his passing they have only become more corrupt.”

Cynthia laughed. “Oh Victor! You try so hard to find problems with everything, don't you? Look. You have two choices. You can either stay here and be bored out of your mind, or you can return to civilization and actually have a life and try to contribute something meaningful. If you want to waste your life by staying here then you do that. But that's not what I'm going to do.”

“It's not a 'waste' to finish what you start, or to see something through to the end. I'm not going to abandon this effort just because it's hard. Someone needs to complete the Artilect and bring it fully online, and if Dr. Mazatl and I are the only people willing to do that then so be it.”

“Oh, come on, Victor! This is really about the Stryker twins, isn't it? You're still convinced that somehow this machine is going to save them. I can't believe you still buy into that after all this time. You're such a child. When are you going to grow up?”

Victor frowned. “If you want to be a jerk and call me a fool for doing my job then I guess you can do that. Good day, Cynthia. I hope your new life turns out well.” He then closed the door.

Victor did not see her again until after he died.

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On January 19, 2440 the Artilect became fully operational. By the time this day arrived more than half the planet's population had abandoned the world for the Ranger colonies. What surprised Victor was not that people were leaving. Instead he was amazed that anyone had decided to stay. *Perhaps the Ranger life doesn't appeal to everyone*, he thought.

The Artilect was now in full control over the Nehemiah IV probes and the planets they had colonized. Everything had been turned over and was going smoothly. It had been a seamless and very boring transition.

After a day of celebration and rejoicing, Dr. Mazatl retired to the room where they first activated the Artilect. Victor met with him there that evening, after everyone else had gone home. Victor knew he should have been more excited, but instead he was perplexed. It was great that they had accomplished their mission, but what were they supposed to do next? Victor had been working toward this goal for so long that he never really stopped to think about what would happen after he accomplished it.

Dr. Mazatl was the first one to speak. "Andy, you have been an unqualified success. I really could not have asked for more. You have done exceptionally well."

"Thank you," the Artilect replied. "I am privileged to be a part of your exploration of the stars. It is fascinating to see the new worlds that are being discovered by the probes you have built! Each new world has so much potential. I look forward to the day when these worlds will be filled with citizens."

"And I am sure that day will come. In the meantime you are well positioned to maintain these worlds. You're managing their data streams very well, and your growth will allow you to continually stay ahead of their demands. You've developed

intelligent ways to manage the worlds and fill them with cities that are ready for colonists to arrive. I see no flaws in your operation.”

“Thank you, director. I will continue to work on this project as long as I exist. You have constructed me for a purpose and I will carry out that purpose. The only question I have is when mankind will begin to inhabit the worlds that I am transforming.”

Victor spoke up. “That's an excellent question. If you ask me, I think we should go ahead and make the move now. All the people who wanted to go to the Rangers have already left, and the people who are still here are committed to being here. The *Vanguard* can definitely reach the closest probe world, and it's a beautiful place. Why not go ahead and move?”

“It's certainly is a tempting thought,” Dr. Mazatl agreed. “But why not just stay here? We have thousands of people on this world who are perfectly happy with life on this planet. True, this world is mostly a giant machine, but people do have lives here, you know. People have homes and have started families. There are even some children who were born here and have known no other world. It seems silly to abandon this perfectly good planet for another one.”

“I guess you have a point. Besides, as long as we're here we can watch over the Artilect. It probably wouldn't hurt to stay here a while longer.”

The Artilect spoke up. “But there *will* come a day when people will move into your star colonies, correct? Surely my labor is not going to be in vain.”

“It is most definitely *not* in vain,” Dr. Mazatl said firmly. “That day will come. Now, it may be a while; mankind is struggling with some problems right now. There are good eras and there are difficult eras, and this is not the best of times. But the day will come. Your efforts are not a waste.”

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In the weeks that followed a few more people left for the Ranger worlds but most people stayed behind. Dr. Mazatl was right – people *had* developed lives for themselves, and they weren't in a hurry to abandon them. It was true that people didn't really have jobs anymore, but they still found ways to keep themselves occupied. Since their whole lives were no longer dominated by the need to build replicating machinery, people began to explore other interests. Some people became artists. Some became musicians. Some began tinkering with technology and exploring areas that had seen no progress in centuries. Since people had free time they filled it by creating new things.

Victor, though, struggled to find something new to do. He wanted to do something worthwhile but he didn't see any good options. He felt like his work was done. The probes were working, the Artilect was working, and everything was fine. He *could* start something new, but what would be the point? If he had married and had a family he could focus on that, but he was alone.

So Victor tried to find things to occupy his time. Sometimes he pulled up the mysterious alien signal he had received so many years earlier and tried to analyze it again. Other times he watched the growth of the Artilect. Occasionally he studied the old unstable AI subroutines that had been written years ago to see if he could discover why they had failed so quickly. None of it was particularly rewarding work, but it gave him something to do.

But on March 1 of that year something unexpected happened. On that day Victor was in his apartment, doing nothing in particular. He had activated the Artilect's administration console and was looking at a scene on the planet's surface. When Dr. Mazatl constructed the Artilect he had added a separate network that could control the Artilect and

correct it if it ever went awry. This monitoring system was quite extensive – and the Artilect did not have access to it. The Artilect was built to manage distant star systems, not to spy on the engineers who were building and maintaining its machinery.

There really wasn't much to see on the surface of the world. There was only miles and miles of machinery that stretched off into the distance. But at least the surface world was vast and almost unending. The world underground was tight, cramped, and a little claustrophobic. Victor had no great love for the outdoors, but even he missed seeing the sky now and then.

On that particular day he happened to notice something that he had never seen before. Out of nowhere, two girls suddenly appeared on the surface of the planet. When Victor saw this he immediately sat up and paid attention. It was true that the transporter was still active, but only Dr. Mazatl and Victor had access to it. There were a number of teenagers on the world but none of them should be able to teleport anywhere. Besides, there was no reason for anyone to be on the surface. People rarely went outside the city days. Who were those girls and what were they doing so far from civilization?

Victor zoomed in to get a closer look. He could hear what they were saying.

“That must be the Artilect,” the first girl said.

“It looks like a real mess,” the second girl replied. “I thought it would be more organized than that. It almost looks like someone planted a seed and it just sprouted at random. It's pure chaos! Who in their right mind would design something that looks like that?”

That got Victor's attention. These two girls clearly knew what the Artilect was, but they were puzzled by its design. It was obvious they had never seen it before. This meant they were from off-world. The Artilect had its first visitors.

But there was something about the girls that was vaguely familiar. They looked like twins. They both had dark skin and long

black hair, and were the same age and height. He was sure he'd seen them somewhere before, but that didn't make sense. Where could he have possibly seen these people?

"I'm sure they had their reasons," the other girl said.

"Let's take a closer look. I want to see what's going on down there."

"But what if we're spotted?"

"By who? This planet is practically deserted! Take a look yourself – there's only a couple people among all those miles and miles of machinery. We're in no danger of running into anybody."

Victor frowned. *This world has far more than just a couple people! Although I guess there's no one near their location, so maybe that's just how it looks to them. But why do these girls not want to be spotted? Are they afraid they will be recognized? Are they spies of some kind? Did the Rangers send them here?*

Then Victor suddenly realized who they were. Those weren't just any girls; they were the Stryker twins. He was looking at Amy and Amanda Stryker!

In an instant he realized that all the stories he had been told were *true*. He had been right all along! The footage he had of their visit to Tim Stryker's apartment was real. Amy and Amanda Stryker really were time-travelers. They had journeyed from their own time to his world, and now they had reached the Artilect. They were *here*. But they clearly did not want to be seen.

Wow! Oh man. I sure wish Grimes was still alive. He would have loved this! This is amazing.

Victor kept watching, fascinated.

The girls continued their conversation. "Shouldn't we at least use our cloaks?"

"I don't see what good that would go. Right now the Artilect is pretty primitive and its attention is focused on distant stars, not on what's going on back home. It's not going to notice

us. Those people down there aren't going to notice us either. Besides, there's no one alive who even knows who we are! If someone spots us we can just disappear and they'll never know what happened."

"All right," the other girl sighed.

This is amazing! Victor thought. *They have apparently met a much more advanced version of the Artilect. This can only mean that the Artilect will continue to grow in the centuries to come until it finally reaches a point where it achieves time travel. It will then use that technology to rescue the Stryker twins But is that really possible? Surely not – but there they are! The Artilect project must succeed beyond our wildest dreams. But why does it need these two girls? Is it because they are administrators? Is the Artilect trying to save mankind from some kind of future disaster? And why would the girls come here? If the Artilect could reach into the past to save them then what are they doing at this point in time? Shouldn't they be on their way to the distant future?*

The girls vanished – and Victor immediately panicked. Where did they go? They must have gone somewhere inside the machine. But where?

Victor quickly activated the Artilect's search feature. Normally this was used to locate coworkers. Since people could be anywhere on the planet, people used the employee search function to find other people. It only worked inside the Artilect itself, and not in the residential sections or the city, but Victor was hoping it would still be able to find the twins.

Since he had just seen them on the surface he was able to quickly build a search profile for them. Once the profile was complete the system located them in the depths of the Artilect.

As soon as they were found Victor changed the video stream to point to their new location. He breathed a sigh of relief when the twins came into view. They were already in conversation.

“Well, I'm impressed,” one of the twins was saying. “This is definitely the right place.”

“I still think this is kind of creepy. It's just – I don't know. I just don't think we're supposed to be wandering around down here. I get the feeling that this place wasn't designed for people. This is a world for machines. I don't think anyone ever expected the Artilect to have visitors.”

“I think you're just imagining things,” her sister replied.

“So what do we do now? Are you ready to jump into the future?”

Victor gasped. *Jump to the future! So that's what they're doing – they are looking for a safe place to hide while they travel into the distant future. But that raises so many questions. If the Artilect went back in time to get them then why was the Artilect unable to bring them into the future? What is really going on? Are the girls lost or in some kind of trouble?*

Victor watched as one of the girls walked up to a console and activated it. The console scanned her. “Welcome, Amy Stryker,” it said in a robotic voice.

Victor nearly shouted. *I knew it! I just knew it. That really is the Stryker twins! Now I know which one is Amy and which one is Amanda. I can't believe they are really here!*

“Amy!” Amanda exclaimed. “What are you doing? Are you out of your mind?”

“Wait just a minute,” Amy replied.

As Amy worked at the console, an avalanche of thoughts raced through Victor's mind. *Should I tell Dr. Mazatl about this? This is the biggest news I've ever seen! Not only that, but these girls clearly have access to technology from the future. They are able to teleport – without any sort of machinery that I can see – and can apparently jump through time. They must have access to technology from the future, and they clearly know what happens in the future as well. There is so much that they could teach us! But how do I handle this situation? I don't want to get in the way*

of their mission – whatever it is. If the Artilect went back in time to get them then he must have had a good reason. If I intervene I could cause a major problem. I just don't know enough about what's going on.

After a few minutes Amy spoke up. "All right. I've found a small room 6 miles below us that's not being used for anything. I've blocked it off and reserved it."

"What do you mean?"

"I've blocked it off from the Artilect's memory – he won't be able to see it anymore. It will be like that room doesn't even exist. We can hide out there and suspend ourselves until it's time to appear and the Artilect won't know anything about it."

Now that's strange, Victor thought. I guess if the Artilect knows they are here he won't go back in time to save them. Maybe that will mess up the timeline or something. I have no idea how time travel works. Is it possible that the Artilect's powers were enough to save them in the past, but not enough to bring them into the future? Maybe they have to travel to the future by themselves and they are looking for a safe place to do that. Oh, I wish I could talk to them! But they clearly want to remain hidden.

"But what if someone else finds us?" Amanda asked. "This place isn't deserted, you know."

Amy shrugged. "According to the logs no one's been down on that level for four years. Besides, what are they going to do? All they would find is a stasis field that they can't interact with. They would probably just think it was some strange side-effect of the Artilect's programming and leave it alone. It will be fine."

"All right," Amanda agreed. "I guess it's the best we can do."

So they definitely want to remain hidden, Victor thought. Apparently they are going to alter the flow of time so that they can reach the distant future without aging. All right, then. I can

help. You may have blocked the room off, but if you truly want to remain hidden there is more work that needs to be done. I will make sure that you can safely reach the future without being discovered. When we meet in Heaven you can thank me.

Victor used his console to erase any evidence that the girls had ever set foot on that planet, and to make sure that the room the girls had blocked off would never be found or used. This included making sure that the live video stream he was watching was not recorded. He hated not having proof that the Stryker twins had visited, but if that proof existed there was a chance the Artilect could discover it – and Victor could not risk that. He would have to let it go.

As Victor worked, the girls vanished and reappeared in the room that Amy had reserved. Once they teleported there Victor switched the monitoring system over so he could watch them while he continued his work.

“This is a little odd,” Amanda remarked. “I wonder what this room was supposed to be used for?”

“I have no idea,” Amy said. “The Artilect's not hurting for space, though. He's got lots of other rooms. Are you ready?”

Amanda nodded. “October 10, 7239, right?”

“Right,” Amy said.

Victor gasped. *7239! They are going five thousand years into the future? Why, that's astonishing! What could possibly be going on in five millennia that would require the help of two teenage girls from the distant past? This doesn't make any sense at all. And why October 10th? At least the Artilect is still functional in the far future – and is apparently stronger than ever. I guess we did a good job on it after all. All those boring years paid off.*

“What time?” Amanda asked.

Amy suddenly froze. “I don't know. Come to think of it, Steve never said.”

Who is Steve? Victor wondered. *The Artilect is called*

Andy, not Steve. Is he some person from the future? Did the Artilect send a person back through time to save them? Is it possible something happened to this Steve person, and that's why the girls are on their own?

"So what do we do?" Amanda asked.

"I don't know," Amy said. "I never thought about it. What do you think?"

Amanda thought for a moment. "It might be safest to transport ourselves to the end of that day. That way we won't risk entering the future before Steve left to go get us."

That must be it, Victor thought. Steve must be the person the Artilect sent back in time. I wonder how time travel works? Oh, I wish I could talk to the twins. I have so many questions.

"But won't our parents be worried?"

"Not for very long. Well, I guess they might worry a little, but it's better than appearing in the future before anyone went to the past to get us! That could mess up all kinds of things."

"I guess they'll forgive us," Amy replied. "We can explain what happened after we get there."

Their parents? Victor thought, confused. Are their parents already in the future? Did the whole crew of the Sparrow go as well, including Richard and Laura Stryker? This is so strange! If the Sparrow made it safely then why were the Stryker twins not on board? There is a lot going on that I wish I understood.

Amy took a deep breath, then reached over and grabbed her sister's hand. "I'm ready," she said. "Let's go."

"All right," Amanda replied. "Here goes." She closed her eyes and suspended both of them in time.

The time stasis field made the room turn black. It was as if there was nothing there at all – there was just an anomaly that nothing could penetrate. Victor shut off the video feed and erased the last evidence that the Stryker twins were ever there.

He knew that he could not tell anyone about this – not even Dr. Mazatl. This had to remain a secret. The girls wanted to

go into the future undetected and Victor would make sure that they did exactly that. He wasn't sure that he could prevent their time travel even if he wanted to; a time stasis field was an entirely new thing. But he *did* know that if word got out that the Stryker twins were there then that could alter the course of the future. He didn't know what was going on but he did know that he didn't want to break anything. So he would keep their secret – and he would keep an eye out for them and make sure that no one got near their hiding place.

Because the Stryker twins had an appointment to keep in the world of tomorrow.

In an odd way, the whole thing gave him a feeling of hope. The Artilect project would succeed. It would grow tremendously in the years to come and accomplish its goal. In the distant future, when mankind faced danger, it would actually go back in time to help the human race out and save the day. Things may be bleak now but better days would come. No matter what happened there would be better days.

And then there were the ages of eternity to look forward to as well. There was no telling what adventures laid in store for Victor then.

I'll get to talk to the Stryker twins one day, Victor thought. Maybe not for a while, obviously. But in the ages to come we will have all the time in the world.

CHAPTER 24: SEARCH

Log date: May 19, 10,000 of the Eternal Era

Location: The Artilect homeworld

Log note: The hidden riches of secret places

ONCE THE SIX ADMINISTRATORS made their decision to use the Artilect to find the race that built the *Vaughn*, the Artilect went to work. He knew that the Nehemiah V probes – which had mapped the entire universe – had somehow missed an entire star system. This could only mean that the star system was well-hidden. With the limited data he had available there was no way to tell if this lost star was hidden naturally or if its inhabitants had cloaked their home system for their own purposes. All he knew was that it *was* hidden and it would not be easy to find.

It took the Artilect less than a second to begin work. First, he took twenty-four trillion star systems offline and dedicated them to the project. These star systems comprised a tiny fraction of his overall network, which spanned the entire universe. No one lived in those star systems so allocating them to design work did not cause anyone a problem. The Artilect knew that he could probably come up with a decent solution to the problem with far fewer resources, but it would take a lot longer. Time was something that he valued immensely – he preferred to accomplish his assigned tasks as quickly as possible so that he would be available for whatever new adventures came along.

The Stewards of those star systems were given the task of designing a new class of microprobes. In the past the Diano Corporation had built enormous probes that were miles long. The Artilect knew that particular approach was not a good fit for this problem. He wanted to make a very small class of probe that

was immensely powerful but yet very easy to manufacture. Nothing like that had been built since he created the Sentinel, so there was much experimentation and work to be done. What was the best possible design? What was the smallest workable size that still accomplished the design objectives? How could the components be optimized so that trillions of them could be replicated in a short amount of time? What was the best search pattern to use in order to cover the target area most efficiently, and how many probes would he need in order to execute that search pattern in a reasonable amount of time?

By the time the Administrators left the Artilect and returned to their lives, he was already deep into the problem. The Nehemiah IV probes had been powerful, but they were not looking for anything that was hidden. Each Nehemiah IV probe was also an independent unit. The new microprobes would have to work together – possibly even joining forces to scan for deep anomalies. They would need a complex set of sensors to accomplish this, and those sensors would have to be crammed into a very small package. Yet, their objectives would be limited: all they had to do was find something to investigate. If they detected any variation or unusual activity then the probes would relay that information to the Artilect and he would pass it along to the Administrators. The probes only had to find potential hiding places; it would be someone else's job to access them.

Of course, spotting an anomaly was one thing; being able to exploit it and enter a hidden star system was a far more difficult challenge. However, the Sentinel had done something similar in the past. In the old universe the Tau Ceti system was hidden by the Wall, and the Sentinel had no problem detecting the barrier and finding a way to get inside. If this hidden race was using similar technology to cloak their own star system then they should be easy to find – but if they had invented something new then things could be far more difficult.

* * * * *

It took him thirteen days to design, construct, and mass-produce the probes. On May 19th the Artilect contacted each one of the Administrators and let them know that the process had been completed and he was ready to deploy the microprobes into space. As soon as the Administrators heard the news they gathered at the Artilect homeworld.

“Your microprobe design is excellent!” Timothy Stryker told the Artilect. “I’m impressed that you were able to pack so much functionality into such a tiny package. These probes are just a few millimeters in diameter. I would never have guessed you could get them so small.”

“Well, he does have ten thousand years of science at his disposal,” Dr. Mazatl pointed out.

“Fifteen, if you count the years from the time he was activated,” Victor Stryker corrected.

Dr. Mazatl laughed. “Yes, I do suppose that counts. Do you remember the day that you and I turned him on for the first time? And here we are. I think things turned out pretty well, overall.”

“The process was a bit more technical than that,” Victor recalled. “His machinery was already operating; it was just missing a mind. So we uploaded the program we had created and then transferred the wisp. That was when he became the Artilect.”

“I do remember that day,” the Artilect said fondly. “Although I did not realize what I actually was until I went through the Door with Amy. You never told me my true nature – not until then.”

“I know,” Dr. Mazatl replied. “It’s something that I regret. I was just trying to protect you and your homeworld, but it was a cowardly thing to do. I spent my life trying to solve problems by avoiding them and running from them. I always seemed to come

up with a reason why I couldn't do anything. I even had a chance to destroy the swarms and I didn't take it. What a fool I was! If I could go back I would do a lot of things differently.”

“For the most part, I don't think the past can be changed,” Victor said. “But today we're here to change the future. Do you realize that this is the first probe series the Artilect has launched since the Nehemiah V line?”

“This is so exciting!” Amy exclaimed. “I can't wait to see what we find.”

Victor smiled. “It certainly has been a long journey. I've been looking for the source of that signal for a *very* long time. I hope the microprobes do find them – but you know, they might not. Somehow I doubt it will be that easy.”

“Or maybe it *will* be that easy!” Amanda replied. “We have their technology now, and we have a plan to find them. This should work pretty well.”

“We have *some* of their technology,” Dr. Temilotzin pointed out. “It's entirely possible that they have additional technology that is keeping them hidden in space. We have no idea what that looks like or how it works.”

“Which is why I've built these probes,” the Artilect said. “We will search the area around the Stryker singularity with a thoroughness that this universe has never seen before, and we will see what we find. I will notify you as soon as I have completed the search.”

“Thanks,” Amy said.

“I will be waiting with *tremendous* anticipation,” Victor added.

* * * * *

During the development phase of the project, the Artilect spread the construction process across the trillions of star systems he had set aside. As soon as he had the Administrator's

permission to launch the microprobes he used the Stewards to transport them across the universe. Trillions upon trillions of small machines jumped into hyperspace and vanished, traveling the immense distance that separated them from the suspected homeworld of the builders of the *Vaughn*.

Once the probes arrived in that distant galaxy they immediately spread out and assumed the positions that the Artilect had spent so much computing power determining. The Artilect had designated a specific set of coordinates for each one of the probes and had a specific task list defined for them as well. After all of the probes were in place the Artilect activated them and began the search process.

The probes linked to each other, creating their own interstellar network, and searched the darkness that was around them. They moved through space in the predetermined search patterns they had been assigned and scanned for anything that was unusual or out of place. After a week they had covered the entire galaxy where the Stryker singularity resided – but they found nothing.

The Artilect, however, was not deterred. He continued to patiently search the vast spaces between the stars. If there was something out there to find then he would find it. It was possible that the anomaly only revealed itself at certain intervals, or could only be detected at certain times. Perhaps there was a random fluctuation that only appeared occasionally. One search did not mean he had failed; it just meant he had more searching to do.

He would continue to watch and wait.

* * * * *

A month passed, and then another month came and went. When the third month ended and the Artilect had still not found anything, the Stryker twins began to get a little concerned.

“I kind of thought we'd find something by now,” Amy

remarked.

“Well, negative results are results,” Amanda pointed out. “We've learned that if there *is* something out there in that area of space, we can't find it with the technology that we have.”

“I suppose you're right. I guess it's still possible that something *might* still turn up, if we keep looking, but it's not very promising. Do you think the Artilect should give up?”

“After just three months? Definitely not. The Artilect has brought the star systems he used back into the network, and the microprobes manage themselves. It's not taking much of his time to let them do their job. He might as well let them run their course on the off-chance they find something. But I *do* think we need a new plan. I mean, sure, we *could* have the Artilect keep probing that area of space for the next ten thousand years, just to see if anything turns up. But for all we know our assumptions could be wrong. Maybe their homeworld *isn't* in that area of space and all the searching in the world will never turn up anything. We might be missing something important.”

“So what do you think we should do?” Amy asked. “I mean, we've kind of done everything, haven't we? We've investigated the *Vaughn*, we've learned their technology, we've incorporated it into a new type of probe, and we've searched the area where we think their world is located.”

“Hmmm. How sure are we that the planet is in that search sphere?”

“Not very sure at all, I think. Maybe the best way to put it is that we have more reason to believe their planet is within the sphere than anywhere else.”

“So in other words, we've done all we know to do and we still can't find it. Maybe what we need is a new perspective. You and I and Miles and Monroe and a bunch of other people have been at this for a while now, and although we've made progress we still haven't found what we're looking for. Maybe we need to bring in a consultant. Someone who can point out whatever it is

that we haven't thought of before.”

“I guess that couldn't hurt. Who did you have in mind?”

“Isn't it obvious?” Amanda asked.

* * * * *

In the endless ages of the Eternal Era, Professor Grimes was a very busy man. His university was one of the premier centers of learning in the Milky Way galaxy and there were far more applicants than he could ever accept. It took a lot of work to manage such an enormous campus – and he actually taught courses on top of everything else he had going on. But Grimes still found time to meet with his friends.

It had been several months since the great reunion of May 10,000. Grimes had gone back to the university in Star City in order to prepare for the next semester. While he was working out the details for his upcoming lecture series on ancient mysterious artifacts, an old friend came by to pay him a visit.

“Yes, yes, please come in!” Grimes called out, as he rose from his desk. “It's a pleasure to see you.”

Victor Stryker walked into the professor's spacious office. He closed the door behind him and then shook Grimes' hand. “Thanks for taking the time to see me.”

“Not at all! You really should stop by more often. You're always welcome here, you know, and there's a job open for you at this school if you're interested.”

Victor laughed as he took a seat in front of the professor's enormous desk. “I appreciate the offer, but I don't think I'm cut out to be a professor. I agree that there is tremendous value in teaching people and instilling great truths in them, but I'm more of a builder. I'd rather be out on the frontier, building the great machines of the future and guiding new societies into the modern era. I'm a technician, not a teacher.”

“And yet I suspect there is more to you than you know,”

Grimes replied. "You have so much unique experience! You're one of the few people alive who played a significant role in the construction of the Artillect – in fact, you were one of the leaders of that project. To this day you still go out there from time to time and upgrade his machinery. There aren't many people who have even set foot on one of his worlds, much less *changed* them. You have valuable experience that you could share with others. I suspect your classes would be very well attended. After all, you are an Administrator! There aren't many of those. Even I am not in that elite group."

Victor smiled. "Well, I have to say it wasn't very elite back in the day. I had administrative access so I could do my job and help Dr. Mazatl do *his* job. It wasn't a big honor; it was just a lot of tedious work."

"But there was so much more to it than that! The reason Dr. Mazatl made you his assistant was because he trusted you. He trusted you with the secret of the wisp. He used your technical skills to perfect the Artillect's mind. You earned that position, Victor, and you used it well. You were a key person at a very important junction in history."

"I suppose you could make a case for that," Victor agreed. "Honestly, I'm sure Dr. Mazatl could have found someone else to help him who would have worked out just as well. I'm grateful the Lord allowed me to play a role in everything."

"That's quite true. God does not need our assistance; He is quite capable of handling things on His own. And yet He delights in working through His creatures. It's absolutely remarkable. But my point is that you really should consider teaching. I'm sure from time to time you need a break from your regular tasks. Why not teach a semester or two? It might be a good change of pace for you."

"I'll give it some thought. Perhaps you're right."

"I appreciate it! So tell me, Victor. What brings you into my office today?"

“Well, I had a visit from the Stryker twins. They've been trying to locate the civilization that built the *Vaughn*, but they haven't had any luck.”

“Really? But I thought they had enlisted the help of the Artilect to locate it! Do you mean to tell me that the Artilect's search *failed*?”

“That's right. We were all surprised. Since the Artilect was able to understand how wisps could see things that were otherwise invisible, we thought his microprobes would be able to leverage that technology to find the hidden homeworld. But that's not what happened. The truth is none of us really know where to go from here. We're out of ideas, and we're hoping to enlist your help.”

“Really? Well, I'm honored, to be sure. After all, the Administrators have access to more resources than anyone else. The idea that I could contribute something of significance to this search is quite a compliment. But if the twins wish for my aid then why did they not simply come and ask? They are certainly welcome here! I may not have known them in the old days, but I do hold them in high esteem.”

“Well, it has to do with the history of all this. You see, the alien signal first appeared in our time, back in the 25th century. I was the one who found it and studied it – in fact, I think I even talked to you about it on at least one occasion. The twins were hoping that since we had prior history with it, maybe we could work on it together and figure something out. They weren't around when the signal first appeared.”

“Well, yes and no. As I recall they did appear a few years after the signal stopped repeating itself. In fact, you actually helped conceal them on the Artilect's homeworld after they suspended themselves in time – and you never divulged their secret. That must have been a very difficult thing for you to do.”

“Not really. I mean, it's just what had to be done, and so I did it. Back then I had no idea what they were up to but I could

tell they wanted some privacy and so I arranged it for them. Besides, it's not like I had a lot of friends I could tell. The only person I really got along with was Dr. Mazatl and I knew not to tell him. If he ever found out then the Artilect would have as well, and that would have changed everything. I did what had to be done.”

“You know, you led a very significant life, if you think about it,” Grimes commented. “Not only did you make sure that the twins were Administrators on both the Nehemiah IV probes and the Artilect, but you were also instrumental in constructing the Artilect himself – and you granted safe passage into the future for Amy and Amanda. Those acts had a radical impact on the future. If it had not been for you then 73rd century Mars would never have been revived and the people of Earth would not have been saved.”

“It was all the Lord's doing,” Victor said. “Like I said earlier, He worked through me to accomplish His will. Things could have worked out very differently, you know. God put me at the right place at the right time and gave me what I needed. My life *definitely* didn't seem very exciting or useful at the time, but it turned out to be significant in the end. I just wish I hadn't crashed the *Vanguard* into that planet and obliterated it. That was kind of embarrassing. Of all the ways to die, that *really* wasn't the one I was hoping for.”

“And yet even that act was significant. From what I understand, that accident created a unique anomaly in spacetime. That very anomaly captured the alien signals and refracted them into the past back to you. There is something special about that point in space. The fact that it still exists indicates that it may have a purpose we have not uncovered. So even that act may yet have significance.”

“You know, it's odd how many things we did in the old days that have echoed into eternity! Back in the 25th century everything seemed so bleak. There wasn't a lot of hope. The

Vaults took over everything, you were murdered, Lane used the swarms to destroy the Ranger worlds, and everyone died. It seemed like everything was lost.”

“And yet it wasn't,” Grimes commented. “Look at us now! Countless worlds are full of life and new ones are being settled every day. The galaxy isn't dead at all; it's alive and full of endless wonder. Xanthe is alive, you and I are alive, and this university has more applicants than we can possibly accept. In the end Lane and the forces of evil lost everything. The Lord won and the future is bright indeed. The evil days will never return and we have goodness and grace to look forward to in all the ages to come. These are good times, Victor, and they will only get better.”

“I couldn't agree more. So, I know that you're busy, but do you think you could help us in our search? You do have a knack for everything that's odd, unusual, and strange.”

“I think the word you are looking for is *paranormal*,” Grimes remarked. “And what you say is quite true. Yes, I will help you, for the answer to this riddle is very easy – in fact, it's almost trivial. Gather a meeting of the Administrators. When they are ready, let me know and I will explain what to do next.”

CHAPTER 25: THE SOLUTION

Log date: June 30, 2448

Location: Xanthe

Log note: The die is cast

IN 2448 THE DIANO CORPORATION celebrated their 16th year on the Artilect homeworld. By now life had settled into a comfortable routine. The 3,872 people who lived on that planet went about their lives. Most of them spent their days working on their own personal projects. Less than a hundred of them still worked on the Artilect. The artificial intellect had proven to be such a success that there simply wasn't a need for a task force anymore. Most of the monitoring and tweaking work was done by Victor Stryker and Dr. Mazatl. Victor did the technical work; Dr. Mazatl mostly just talked to the Artilect and tried to teach him everything he needed to know.

The rest of the company had scattered itself throughout the Ranger worlds. They were bored with their corporate lives and wanted to do something new and different. The Ranger worlds accepted them eagerly because they brought a tremendous amount of technical knowledge with them. They knew how to truly get the most out of the Nehemiah IV probe that Professor Grimes had acquired for them so many years earlier.

When the Ranger governments asked them what they had been working on in secret for all that time, they replied that they had constructed a sentient, artificial mind. Although they insisted they were telling the truth, no one believed them. After all, artificial sentience was impossible. The governments assumed they had been doing something boring, like making a

new class of exploration probe. They eventually stopped caring and stopped asking questions.

As for Victor and Dr. Mazatl, they both intended on living out the rest of their days on the Artillect. Why would they ever go anywhere else?

* * * * *

That same year Carroll Lane was forced to make a choice of his own. Since 2426 Lane had rarely needed to leave his virtual world and set foot on the physical version of Xanthe. The automation technology that he had developed to maintain the machines of the Vault worked perfectly and did not require adjustments. When something did go wrong – which was extremely rare – Adrian Garza was the one who dealt with it. Lane kept to his own private reality.

But as the years went by Adrian became increasingly concerned about life outside the Vault worlds. When he learned that the Diano Corporation had apparently finished whatever they were working on and their employees had relocated to the Ranger worlds, he was convinced that the matter could no longer be ignored. This time he was facing a problem too big for him to handle on his own. He needed to have a meeting with Lane – a meeting in the real, physical world.

He knew that he could arrange a virtual meeting with Lane, but he no longer trusted those. For all he knew he was meeting with a simulated Lane while the real Lane was off doing something else. The only way to be sure that he was meeting with the *real* Lane was to meet in the physical world. Lane was not at all happy about this, but he reluctantly agreed to meet with Adrian in his old office.

Lane was not surprised to find that the maintenance robots had kept his office neat and tidy. There was no dust or other signs to indicate that it had been ten years since Lane had

last set foot in it. The robots were extremely efficient and highly motivated. They may have let the world above them decay into ruin, but Vault 37 was maintained with great care.

The aging Lane settled down into his desk chair and gave Adrian an irritated look. "So what is it *this* time? Another computer problem? Automation not working right? Everything looks fine to me."

"No, no, it's nothing like that," Adrian said quickly. "As I explained earlier, it's the Rangers. I think they have become a significant problem."

"Oh, right, you did say that," Lane replied vaguely. "But I don't understand what you mean. The worlds that want our Vaults all have them, and the worlds that don't want Vaults don't have them. It doesn't really make any difference to me either way. If the Rangers want to live in reality and suffer from its cruelty and hostility then let them. I'll still be alive long after they're dead and buried. I'll win in the end."

"That is precisely the problem. I don't think we *will* win. The Ranger worlds have not been decaying, you know. Instead they have grown remarkably advanced. The Diano Corporation gave them a Nehemiah IV probe and the Ranger governments have incorporated that technology into their cities. Thanks to the Corporation the Rangers have reinvented themselves. As if that were not enough, the Corporation's employees are no longer holed up on some unknown, distant world; instead they are living in the Ranger worlds and are bringing them into a new future. In fact, things have become so advanced that they can now recreate much of our 'virtual world experience' in *reality*. We can only create a simulation; they have the *real thing*."

Adrian handed Lane a thick report that he had put together. "This report contains a detailed list of the—"

Lane took it and tossed it aside. "Sure, sure, I get it. They've gotten fancy on us and they can copy some of our tricks. But so what? No matter how advanced they get they're still

limited to the physical world. They will always have to follow physical laws. Plus, they *all share the same planet*. In our virtual worlds we aren't bound by anything at all – and we all have our own *private* paradises. There is no technology that can ever exist that could possibly rival what we have.”

Adrian paused for a moment to think. “I suppose that's true. But do you realize that the Rangers hate us? They have a very passionate dislike for us. Their hatred for Vault technology has only grown over the past twenty years. They see it as a sign of moral decadence.”

“So what? Big deal. Let them condemn us. I don't care. Grimes condemned us too, you know. It never bothered me.”

“Yes, you don't care *right now* – as long as the Rangers continue to tolerate us and leave us alone. But what are you going to do if they decide to *act* on their beliefs? After all, there are only two Vault worlds – this one and Alpha Centauri. With the exception of our Wall we are completely defenseless, and for all I know the Corporation has found a way to get around the Wall. All of the people on our worlds are basically asleep. The Rangers, meanwhile, occupy more than a dozen star systems and have acquired incredibly advanced technology. If they ever decided to conquer our star system by force we would be completely unable to stop them. In fact, we are so poorly defended that it would be quite easy for just *one person* to land on our planet and blow Xanthe to pieces. That's all it would take.”

Lane froze. He suddenly felt very small and vulnerable. For the first time he realized how completely unprotected they truly were. He had been so caught up in his own personal paradise that he never considered the great danger they were in. Adrian was right – it *would* be incredibly easy for the Rangers to destroy everything he had created. All it would take was a single person with the right equipment.

“Ok, I see your point,” Lane said. “I'm glad you brought

this up. You're right – we really *do* have a problem. So let's think about this. Our star system has a Wall around it. That means all we have to do is close the Gate, right? Once the Gate is closed no one can enter and no one can leave. It doesn't matter what weapons the Rangers have if they can't physically enter our space. I can contact Alpha Centauri and have them build a Wall as well. Problem solved! The Wall technology simply can't be beaten.”

“Are you sure?” Adrian asked.

“Of course I'm sure! After all, our Wall is more than 500 years old. In all this time it has never been defeated.”

“That is because no one has ever *tried* to defeat it. The technology is *five hundred years old*. In all that time no one has ever made any improvements to it – but technology has changed *tremendously* since then. The Nehemiah IV probes are incredible machines that are able to do things we can scarcely imagine. Do you honestly think you could stop the Rangers if they decided they wanted to bring down our Wall? Even if you could stop them *today*, are you going to be able to stop them after they've had another hundred years of scientific advancement? What about a *thousand* years? What technology will the Rangers have available *then*? Are you willing to bet that they will *never* be able to bring down our Wall no matter how advanced they become? Remember, we're going to be sleeping the years away while the Rangers will continue to develop new technology. How long are they going to tolerate us?”

Lane reluctantly realized that Adrian was right. Even if the Rangers weren't a threat right now he couldn't guarantee that they would never become a threat. Even if they didn't currently possess the technology needed to bring down the Wall, he could not be sure that they would never invent it.

The Rangers were going to keep on building and inventing, year after year. Meanwhile the people in the Vaults would continue to dream. Eventually the Rangers *would* come.

They *would* find a way in. It was inevitable. There would be a conflict – and the Rangers would win easily because the Vaults were undefended.

“You're right,” Lane said. “The longer we sit here the more vulnerable we become. In the years to come we won't invent anything new, but the Rangers will. I should have realized this before but I guess I never thought about it. Peaceful coexistence is impossible. If the Vaults are to survive then the Rangers will have to be destroyed.”

“Now hold on a minute!” Adrian said quickly. “I never suggested that we go to war against the Rangers. Do you know how insane that would be? We don't even have any weapons! The Ranger worlds outnumber us and they have the best technology that has ever been invented. There is no way we could possibly win a conflict against them.”

“That's why we'll have to be clever about it. There's more than one way to fight a war, you know. The first thing we'll have to do is close off our Wall so that no one can get in. I'll also have Alpha Centauri A build a protective Wall as well. That will buy us some time.”

“Some time for what? We don't have any weapons! We have *nothing*.”

“That's not true. If you think about it, we actually have something that no one else has: the headquarters of the Diano Corporation. The building itself might be empty and crumbling, but I bet it still has a way to contact the Nehemiah IV probes. Even if it doesn't it probably has the schematics for building one. We don't need to build an army, Adrian. All we need to do is build a single self-replicating attack bot. That bot can then reproduce itself and create giant swarms. Those swarms can then attack the Ranger worlds and annihilate them.”

“But the Rangers are well-defended!” Adrian protested.

“Are they? They've never been attacked so I suspect they've let their guard down. I bet their defenses are non-

existent. But even if they are well-defended it still won't matter. Our bots will keep on replicating forever. Eventually we will wear them down and destroy them. The Rangers won't be able to hold out forever.”

“But who's going to build these bots? The Diano Corporation left a long time ago.”

“That's not quite true. Not *everyone* left. You seem to forget that both of us used to work for them. I know their systems and their technology. I may be a bit rusty but I bet I could hack something together. If Victor could find a way to create a replicating bot then I can as well. Maybe I can just copy what he did! It doesn't have to be perfect, you know. It just has to be able to replicate and attack.”

“How long will this take?”

“I don't know. A year, maybe. Perhaps two or three. We'll need to make sure that the machines never turn on us. There are a lot of important details to work out.”

“Won't the Rangers come after us when we launch the attack?”

“Only if they think we're behind it. I know we have a lot of planning to do but I think it's doable. The sooner we get started the sooner we can return to our own worlds.”

Adrian hesitated. “Are you sure this is this the right thing to do? I mean, we're proposing wiping out the entire population of a dozen star systems. Isn't that genocide?”

“We're fighting for our survival, Adrian. This is literally a matter of life and death. Everything that we have ever worked for is on the line. If we don't wipe out the Rangers then they will eventually wipe us out. If we wait until they attack then it will be too late. Our survival depends on striking first.”

* * * * *

As Lane predicted, the Diano Building was abandoned. In

fact, it had clearly been abandoned for years. The doors leading into it were no longer guarded and were not even locked. He had no trouble gaining access to the towering structure.

Inside he found a thick layer of dust. There was no activity anywhere. Lane didn't even find any active bots. Since no one lived on the planet's surface anymore the Corporation had decided that there was no longer a need for the building to operate. Dr. Mazatl had given the command to shut everything down more than ten years earlier. The machines that provided material, water, and food to the rest of the city were deactivated, the computers were turned off, and the building was put to sleep.

Fortunately the lights still worked. Even though the building had been shut down, the main power source had not been completely turned off. Dr. Mazatl was unwilling to take that last step because once the power was off he would no longer have a way to gain remote access to Xanthe. He had to leave a little power on – and that worked to Lane's advantage. The developer was able to activate some lights and turn a computer back on.

He was not surprised to find that his credentials no longer worked. However, it wasn't hard to find an access card in an abandoned office that was still valid. The building had not been cleaned up before it was shut down. Dr. Mazatl probably thought there wasn't a point to it; after all, what possible difference could it make? Lane saw that there were still papers strewn across desks, and the desk drawers were filled with files that were now decades old. Even many of the apartments still had furniture and personal items in them. It took him less than an hour to find a card that gave him the access he required.

Now all Lane needed was to get to work. In a way it felt good to be working again. He liked the fact that he had full access to the manufacturing capabilities of the entire building. Once he had the plans for a working and stable bot he would

have no trouble deploying it. All he had to do was learn how the Nehemiah IV probes worked, adapt their technology, and weaponize it.

Lane disliked being in the physical world, with all of its problems and frailties. His body was getting old and he could feel it. He vastly preferred his new virtual body. But for the time being he would have to stick to reality. His virtual world lacked the information he needed.

I won't have to be here forever, he thought. Just long enough to get what I need.

He settled down into an old, tattered chair and began reading.

* * * * *

A year later Victor stopped by Dr. Mazatl's office. "Did you hear about Alpha Centauri A?" he asked.

Dr. Mazatl glanced up from his monitor. "Are you referring to their acquisition of a Wall? As a matter of fact, I did. Why? Is something wrong?"

Victor sat down in a chair in front of his desk. "It seems a little ominous, doesn't it?"

"In what way? Walls are protective devices, after all. It doesn't sound like a dangerous move to me."

"But why is it being done? Think about it. For twenty years now the population of Alpha Centauri A has been living in Vaults. They've been doing whatever it is they do in their virtual worlds and have let their cities crumble into ruin. In all that time they haven't shown the slightest interest in the physical world. But now Alpha Centauri A has gone through the trouble of constructing a Wall. Why would they do that?"

"Is it really so hard to understand? If you ask me, the true wonder is that they didn't do that a long time ago. The people who are running the Vaults must have realized that without a

Wall they are defenseless. Anyone could land on one of their worlds and cause trouble. Since everyone is dreaming, no one is around to defend them or even notice that a hostile force has landed. The Wall protects them and keeps them from harm.”

“But what harm are they protecting against? And why did they decide to build a Wall *now*? Do they know something that we don't? What could have prompted this?”

Dr. Mazatl shrugged. “It's hard to say. Keep in mind that they have been living in fantasy worlds for years now. It's impossible to tell what sort of nightmares they might have conjured up. Perhaps something terrible happened in their simulation, so they decided to build a Wall to protect themselves from danger.”

“I guess it's possible,” Victor said reluctantly.

“Keep in mind that it's quite likely the people in the Vaults have gone insane. You must remember that they have been disconnected from reality for a very long time. They have spent years living in worlds where even physical laws do not apply. That can't possibly have been a healthy experience for them. It shouldn't surprise us at all if they begin to do irrational things. In fact, it's exactly what I would have expected.”

“So you don't think it's a bad sign?”

“It's a Wall, Victor. Walls have only one purpose and that is to keep people *out*. Well, in the case of Sol it is to keep people *in*, but I think this is a different situation. Clearly the Vault dwellers do not want to be disturbed – and if they want to be left alone then I say we leave them alone. If they prefer isolation and ruin then that is their choice. Stop and think, Victor. What possible harm could their Wall be to any of us? How does this affect us in any way?”

“I guess it doesn't,” Victor replied.

“Exactly,” Dr. Mazatl said.

* * * * *

Throughout the entirety of 2449 Lane continued to work on his bots. He disliked the fact that he had to leave his easy life in paradise, but part of him actually enjoyed the challenge. It had been a long time since he had done something that actually mattered. For the first time in two decades he was faced with a significant technical obstacle, and he found great pleasure in tackling it.

Lane's first task was to truly understand how the Nehemiah IV probes worked. When he worked for the Corporation he was very familiar with his small piece of the project, but he only had a vague idea about what the other departments were doing. Now he had to master everything so he could find a way to pick out the pieces he needed and recreate them in a small package. Victor's work on his book-finding bots proved to be tremendously helpful.

The replication technology was very complicated, but he discovered that the Diano Corporation had created a simple set of tools to make things easier. As the months went by he was able to design a simple replicating bot that had a primitive zero-point-energy plant inside it. It wasn't nearly as fully functional as a full-scale one, but Victor's bots had taught him that it didn't have to be. It only needed to be able to accomplish its objectives.

Lane was surprised to discover that the most difficult part of the process was developing weapons. The Diano Corporation hadn't built any weapons in centuries. He belatedly realized that the Corporation was a *space exploration* company. They never needed to weaponize any of their probes because there was no one in deep space to guard against. That meant Lane had to design his own weapons and scale them down to the point where they could fit on a tiny bot and run on a tiny power plant. Yet they also had to be powerful enough to pose an actual danger to somebody.

He also had to write software that could run the bots. The

intelligences that the Diano Corporation had constructed were all standalone AIs that were built to work by themselves. What Lane needed was a swarm-based AI – something that could interact with the rest of the swarm to determine the best strategy for destroying an entire world. It needed to know when to attack, when to retreat, and how to conserve its numbers and replicate.

There were so many details that had to be considered and so many possible paths of failure. Lane ran simulation after simulation and uncovered flaw after flaw. Each flaw was fixed, only to reveal some new problem. But each iteration brought him closer to success.

Lane was convinced that he could do it and he knew his plan would work. The Rangers weren't expecting an attack, and the only weapons the Rangers had ever developed were designed to fight against large starships. They weren't expecting an attack from an endless army of tiny bots. When Lane's swarm hit their large guns would be overwhelmed and their cities would burn. Then only the Vaults would be left. Lane would finally have the peace that he so craved.

The best part was that the Diano Corporation had returned to the Ranger worlds. This meant that when the Ranger worlds fell there would be no one left to pose any danger. Lane didn't have to worry about some unknown colony out in the stars. Once he destroyed the last known Ranger worlds he was done.

It would take him time to finish the bots, and it would take more time for the swarms to win. But Lane did not doubt the final outcome. 2450 would be the Ranger's last year of peace. In 2451 the war would begin.

* * * * *

Meanwhile, the Ranger worlds did nothing. If Professor Grimes had still been alive he would have warned the Ranger

governments to take Alpha Centauri A's Wall seriously. He would have urged them to stop and consider what was being done and perhaps to invest in Walls of their own. After all, they now had access to Nehemiah IV probe technology and could easily afford them. Perhaps the Vault worlds were being irrational – or perhaps they were concerned about some sort of threat that the Ranger worlds were not aware of. A Wall was a simple protective measure that would ensure their safety.

But Grimes was dead and the leadership of the Ranger worlds was unconcerned. After all, there had not been a war in more than a lifetime. What was there to be afraid of? There were no enemies left. The Vault worlds were in ruins, the Ranger worlds were wealthy and happy, and there were no monsters hiding out among the unexplored stars. What need was there for defense?

CHAPTER 26: RELEASE

Log date: April 16, 2451

Location: Xanthe

Log note: The day of judgment always comes

CARROLL LANE STOOD IN AN EMPTY STREET in the crumbling metropolis of Star City. The skyscrapers that surrounded him were decaying into ruin, but that did not concern him. He hated the physical world and enjoyed seeing it destroyed. His passion was for the virtual world, where anything was possible and there were no limits. The physical world was a dangerous and poisonous place – a place that crushed your dreams and caused endless pain.

Lane was going to end that pain once and for all. He was going to put the physical world out of its misery. By the time he was done only *his* world would remain – a paradise of endless possibilities. Yes, the physical world would struggle. It would defend itself and try to survive. But in the end it would lose. Lane would see to that.

The developer looked down at the small glass vial he was holding in his hand and then glanced up at the night sky. It had taken him two years to perfect the contents of that vial, but now, in 2451, it was time. The sky above him was utterly black; there were no stars. He knew that the stars were out there, though. Beyond the Wall that guarded Tau Ceti there were billions of stars in billions of galaxies. The stars went on and on to the edge of the universe itself.

Most of those stars were of no interest to him. Sure, the Diano Corporation was obsessed with them. They had some crazy dream that one day the entire universe would be inhabited. They had spent centuries sending automated replicating probes

out to the farthest reaches of the galaxy. All of that was an utter waste of time. Lane had already built mankind's future, and it was underground – not out among the callous void.

The only stars that Lane cared about were the Ranger worlds that were threatening his perfect future. Lane's microbots were designed to only target the inhabited worlds. Lane cared nothing for all of the empty worlds that would remain uninhabited for the rest of time. All he wanted to do was eliminate those who might one day threaten his kingdom.

Fortunately the Diano Corporation had made it easy for him. Since they had abandoned their silly deep-space project and returned to the Ranger worlds, they were now within his reach. They had even left the Diano Building unlocked and given him access to all their technology. It had actually been fairly easy to take that information and use it to design the perfect weapon – and that is precisely what he held in his hand.

Lane had put a lot of thought into those tiny machines. The Vault project had been the creation of entire teams of people, but the microbots were entirely his work. In a way they were his greatest achievement. The nanobots in the vial were actually seeds. When he released them they would leave the Tau Ceti system and find an uninhabited planet. Once there they would consume its resources and transform themselves into mighty weapons of war. They would replicate until they reached staggering numbers, and then they would find a Ranger world and attack it.

If the first attack failed and some bots were captured it would be impossible to trace the swarm back to him. There was nothing in their code that connected them back to Lane or Xanthe. All evidence of their origins had been carefully erased.

Lane was tempted to attack all of the Ranger worlds at once but he thought that was too risky. This was his first attempt at designing attack bots, and for all he knew he might have made some critical error. He wanted to test them against one world

first and see how that went. If the bots were successful they would consume that world's resources, regroup, and attack again. The Ranger worlds were all well-known and their positions had been programmed into the bots. They knew what their targets were.

Lane had also added a search feature that would scan for ships flying through Ranger space. He didn't want anyone trying to leave inhabited space in order to form a new settlement elsewhere. That programming, though, would activate later.

If the bots failed then he would go back to work and enhance his design. If they succeeded then they would consume all of the Ranger star systems. All Lane had to do was watch and wait.

Lane smiled to himself. Soon the stars above him would be uninhabited. By the time his bots were done the Vaults would be all that was left. Humanity's future would finally be secure.

With a feeling of immense triumph he opened the vial. The nanobots flew out into the air and disappeared. Lane smiled as he watched them go. He then turned around and began the short walk back to his Vault.

* * * * *

The Ranger star systems were scattered over a fairly small area. Over the past twenty years the Rangers had used the Nehemiah IV technology to enrich their planets, but they had not founded any new colonies. After all, why would anyone want to go into the unfriendly depths of space when they had everything they needed right there at home?

As the years went by Governor Sellers went to great lengths to make Procyon B the greatest planet the Rangers had ever known. The governor did not rest until everything was perfect. Every last square mile of the planet had been touched by modern technology in some way. The weather was carefully

controlled and perfect. Every lawn and garden was immaculately maintained by precision robotic gardeners. Every skyscraper was made out of the finest materials and decorated in the most extravagant way possible. Every citizen was cared for by robots that catered to their every whim.

In the bad old days civilization had to be maintained by a group of dedicated Diano employees. Thanks to the automated maintenance bots that the Corporation had designed decades ago, that was no longer necessary. Everything could now be handled entirely by machines. There was no need for people to do anything other than give the machines their list of demands.

Life was perfect. People spent their days eating and drinking and doing whatever they pleased. There was no concern for tomorrow because everyone always had whatever they wanted. Life was just one big endless party. No one needed to work because the automation technology took care of production and maintenance. It was an easy, careless existence.

It was an existence that was about to come to a brutal end.

The attack bots spent two weeks growing and replicating on a distant, uninhabited world. Once they had assumed their full size and strength they warped across space to the first target on Lane's list: Procyon B. The cloud of bots was truly massive. Each bot had grown to about a foot across, and the swarm cloud itself was more than five hundred miles wide. It was a terrifying sight. It had a single goal in mind: the complete eradication of a Ranger world.

The giant swarm crossed into the Procyon B star system without being noticed. Governor Sellers had put tremendous time and effort into creating a luxurious life for his people, but he had never given any thought to protecting what he had created. Defense simply wasn't on his list of priorities. The few defense programs that had existed were shut down years ago, and there

wasn't a single soldier left anywhere on the planet. After all, who was there to guard against? There was plenty of riches for everyone and there were no hostile groups out among the stars.

As the bot cloud drew closer to the planet, no alarms were triggered. Not a single person took notice of the giant threat that was headed toward them. The automated systems that mankind had put in place did not think the cloud was unusual. It did not fall into the category of events that Seller's robots were designed to care about. Since it wasn't deemed important the robots did not notify anyone that something odd was going on.

The first time the citizens noticed the swarm was when an indistinct black cloud appeared high in the sky. People who were outside saw it approaching from overhead. Since it was strange and new a few people paused to watch it. As they watched, the swarm grew closer and the black cloud grew larger and darker. Soon it blotted out half the sky.

People were still not concerned. They were a bit puzzled, but they didn't find it alarming. Nothing alarming had happened in more than a generation. The cloud was a curiosity, but nothing more. For all they knew it was just Seller's latest project.

And then the bots attacked.

When Lane designed the swarm he taught it how to select strategic targets. It was critical to immediately destroy the planet's ability to fight back. The bots had no good way to defend themselves; they were purely an attacking force. Once the planet was helpless the carnage would begin.

Governor Sellers had arranged for Grimes' Nehemiah IV probe to be parked in a giant field outside the capitol city. Since it had served its purpose it was no longer needed, but Sellers wanted to show it off as his trophy. A few people occasionally stopped by to see it but for the most part no one really cared. People loved the free stuff its technology gave them, but they

weren't interested in what was producing all the goods their lives depended upon.

Lane knew that the Nehemiah IV probe was powerful enough to wipe out his entire swarm, so he made sure that it was his first target. As soon as the swarm was in range they attacked the probe with billions of tiny antiparticle beams. The Nehemiah IV probe was instantly cut into shrapnel and exploded with nuclear fury. The explosion was so violent it even damaged the swarm – but it hardly made a dent in a cloud five hundred miles wide.

When the people heard the explosion and felt the ground shake beneath their feet they knew something was wrong. They began to panic – but it was too late. They could run but they would not get far. The bots were simply too fast.

Once the Nehemiah IV probe was destroyed the bots scanned the area for weapons. The only weapons they found were old, decaying, and unmanned, but they still targeted them for destruction. While the Nehemiah IV probe was still exploding the swarm cloud targeted the planet's gun placements. They, too, exploded violently, destroying entire city blocks around them.

The probes then attacked the decaying space fighters that were parked in forgotten hangars in an empty air force base. It took them less than a second to blow every one of them apart.

The swarm was utterly relentless. A curtain of fiery particle beams rained down from the sky. Every single one of Sellers' zero-point-energy plants was destroyed. The planet's communication arrays were wiped out. The nuclatomizers were destroyed. The automated repair bots were blown apart. The destruction was brutal, loud, and terrifying. Each attack vaporized a city block. Fires broke out and smoke poured into the air.

But the attack was not over. Once the planet was helpless and its systems were rendered inoperable, the bots opened fire

on the city itself. In a ferocious blast of energy the bots tore apart every building, every house, and every street. They spread over the entire surface of the planet and hunted down every settlement, every person, and every living thing. No one managed to escape.

Once the last city was destroyed the swarm *still* did not stop. The bots began blasting away at the very surface of the planet. They wanted to destroy every last trace of life and then irradiate and bake the ground so it could never be inhabited again. Even the planet's atmosphere would be destroyed. The planet would become a corpse.

This process would take a few weeks to complete, but it would be utterly thorough. Once it was over the bots would automatically move on to the next world on their target list.

* * * * *

When the bot swarm invaded Procyon B, their approach to the planet and their initial attack was captured on video. This video was automatically broadcast to the rest of the Ranger worlds, who watched the attack in horror until the communication arrays were destroyed. The attack came as a complete shock to the Rangers and sent them into an immediate state of utter, blind panic. No one knew what to do or how much time they had before they were targeted. Were the bots going to destroy their world next?

Within hours of the attack the leaders of the surviving Ranger worlds held a virtual conference. Governor Sellers would normally have led a conference like this, but since he was killed in the attack the leadership position was left vacant. Michael Rhodes, the governor of Cygni, was in attendance, as was Ryan Davidson, the governor of Gliese. Greg Ross from the Luyten system also came. Governors Cary, Knapp, and Hartman connected to the meeting, but the leaders of the other Ranger

worlds could not be reached for comment.

Davidson began the meeting. "We cannot delay. Whatever we do must be done quickly. What happened to Sellers could happen to us next! Every moment we spend waiting could be our last."

"I agree," Rhodes replied. "It seems that we are utterly defenseless against this threat. I fear we have become too careless. Our wealth and success has blinded us to all potential danger."

Ross spoke up. "But how could this happen? Where did this enemy come from? Who could have built this attack force?"

Davidson glared at him. "Are you insinuating that I attacked Procyon B? How *dare* you! I had nothing whatsoever to do with this."

"Of course you didn't," Rhodes replied quickly. "None of us did. Sellers was attacked with alien technology. I don't know what that swarm was but it definitely wasn't Ranger tech. I think we were attacked by some kind of alien race."

"Impossible!" Davidson thundered. "You are fools. If there were alien races out among the stars then we would know about it. You seem to forget that the Diano Corporation has spent *five hundred years* searching the stars for treasures. If there was even a single world out there that was inhabited we would have found it by now. There are no hidden worlds with alien races. That is impossible."

Ross spoke up. "Then perhaps the enemy is closer to home. I hate to even suggest this, but is it possible that the Diano Corporation is behind the attack? After all, they've spent the past twenty years out in deep space doing who knows what. Could they have built these bots?"

"Don't be ridiculous!" Rhodes replied. "The Corporation builds enormous probes that are miles long. They have never designed micromachines. Everything they've ever done has been on an enormous scale. Besides, when the Corporation finished

whatever it was doing they relocated to Ranger space. Many of its former employees were living on Procyon B and were killed in the attack. Do you really think they would have attacked *themselves* and blown up their own homes? Be reasonable. If the Corporation was going to wipe us out they would have done that *before* they returned.”

Davidson pounded the table. “It doesn't matter who is responsible! We can figure that out later. Our primary focus should be finding a way to defend ourselves. What are our options?”

Rhodes spoke up. “Well, one option would be to build weapons. It's true that the Nehemiah IV was destroyed in the attack, but we all have ZPEs. I'm sure we could find some weapon blueprints lying around somewhere. It probably wouldn't take us too long to build ourselves a sizable defense force.”

“That's not going to work,” Ross replied. “I admit I don't know a lot about weapons, but I'm pretty sure we don't have anything that was designed to attack a swarm of incredibly tiny machines. We've never faced a threat like that before. I really don't think we're going to find anything that might be an effective countermeasure against whatever wiped out Procyon B.”

“That's a good point,” Rhodes admitted. “In order to design a counterweapon we would need to know more about whatever attacked Sellers. At this point all we can do is guess, and I don't want to risk our future on guesswork. We need more information. If we could capture a swarm bot – and I don't know if that's even possible – then maybe we could study it and find a weakness.”

“*We* are the ones who are full of weakness!” Davidson shouted. “For all we know the next force could be far larger than the one that attacked Procyon B. It could be on its way to our worlds at this very moment! You can speak all you want about 'additional information', but you are not going to get any until

another world attacked. We must make a decision based on what we currently know. Anything else is foolishness!”

“Ok,” Ross said uncertainly. “So what do we do? Does anyone else have an opinion?”

“Not really,” Governor Cary replied indifferently.

“It doesn't make any difference to me either,” Governor Knapp replied. “Our government is just going to do whatever everyone else does. We're not even sure we should be worried.”

“Are you insane?” Davidson shouted. “Of course you should be worried! What are you thinking?”

“Well, I dunno,” Governor Hartman said. “I mean, for all we know Sellers got into a fight with someone. We don't know what he's been doing. Maybe someone had a grudge against him. We don't have any proof that someone is out to get all of us.”

“Exactly,” Knapp replied.

“So you want *proof*, do you?” Davidson said angrily. “Do you know when you will get that proof? When the black swarm appears in your sky and annihilates all life on your planet. *That* is when you will have proof that the swarms are out to get you! I, for one, am not going to let my world be destroyed. I am *not* a fool.”

Rhodes spoke up. “Well, given the situation, I think we only have one course of action. All of us need to protect our star systems with a Wall. If we had a Wall in place and shut down all access to the outside, the bots couldn't reach us. Then we would be safe and we could regroup and deal with this threat.”

“That makes sense,” Ross replied. “In fact, that makes a *lot* of sense. I like that idea”

Davidson spoke up. “I do as well. It is a reasonable proposal. But is this something we can achieve? How does one go about building a Wall?”

Ross shrugged. “It can't be that hard. Didn't Alpha Centauri A just build one? I think we've got the pattern lying

around somewhere. It should just be a matter of fabricating the equipment and then turning it on. How hard could it be?”

“I guess we'll find out,” Rhodes replied. “So here's what we're going to do. First, we'll immediately start work fabricating Walls to protect all of our star systems. Once that is done we will create some kind of space-based army to protect our planets. That way if the enemy gets through the Wall we'll still have a shot at protecting ourselves. We should also build some kind of alert system so we can see when the swarms are approaching us.”

“Could we use the Nehemiah IV probes to attack the bots?” Ross asked.

“I don't see how,” Rhodes replied. “First of all, the probes are all really far away from us. It would take them years to reach us and I don't think we have that much time. Second, the swarm is composed of really tiny machines and I don't know of *any* weapons that might be effective against them. Third, the probes aren't weaponized. They're not even armed! All they can do is build things, which really wouldn't do us very much good. After all, we can already build things with our ZPEs. I just don't see how the probes could help us. They're not weapons.”

“What about the Diano Corporation? Could they help us out?”

Davidson laughed. “The Corporation is dead! Their employees are scattered and many of them died in the attack. There is no Corporation anymore. We are on our own.”

Ross spoke up. “You know, that reminds me. What about the Vault worlds? Don't we need to warn them?”

“How would we even get in touch with them?” Rhodes asked. “Their entire populations are basically asleep. There's no one to notify. Besides, both Vault systems are protected by Walls already. I think they'll be fine.”

“Enough talk!” Davidson shouted. “I have a Wall to build.” The irate leader disconnected.

“I suppose we all have Walls to build,” Rhodes replied. “It's time for us to get to work.”

* * * * *

In May 2451 three Walls were built. Davidson, Ross, and Rhodes built Walls to protect Gliese, Luyten, and Cygni. The process proved to be far more difficult than they expected. It turned out that fabricating the equipment was the easy part. Once it was built it had to be positioned in space and then carefully tuned. Each star system was different and it took a lot of careful, precision work to activate the Wall and configure it to be in tune with that planetary system. The three governors leaned heavily on the expertise of the Diano employees that had settled on their planets. It took weeks of trial and effort, but by the end of May all three Walls had been activated.

Governors Cary, Knapp, and Hartman were not as fortunate. They managed to fabricate the equipment, but when they discovered it would take a lot of effort to put it into place they decided to wait and see what happened. After all, only one star system had been attacked and the swarm hadn't been seen since. Before they took any further action they wanted to see if the threat was actually real. So the Wall machinery remained on their world, unused.

The other Ranger governors ignored the situation completely. Only one of them returned Rhodes' call. He told Rhodes that the swarm threat was overblown and he wasn't concerned about it. Rhodes thought he was being very foolish, but he couldn't get anyone else to listen.

* * * * *

When the first week of June came the swarm reappeared. The success it had experienced during the Procyon B attack was

so complete that the swarms decided to act immediately against all of the remaining worlds. They spent a month creating a dozen swarms to target every Ranger world on their list. On June 3 they simultaneously attacked all of the surviving Ranger star systems.

All of the worlds that were not protected by Walls were utterly annihilated. Since those planets were defenseless the swarms had no problem wiping them out. The bots didn't even face any opposition. It was a simple matter to take down the power grid, destroy the key buildings, wipe out the people, and then begin the process of purging all life from the planet and rendering it uninhabitable. By the end of the day all the Ranger worlds were destroyed and had begun the process of deep irradiation – except for three of them.

The Walls that Davidson, Ross, and Rhodes had built proved to be effective. The swarms were not able to enter their star systems. Since the Governors had not built a Gate there was no way for the swarms to enter. On top of that, the Corporation's employees had made one small enhancement to the Wall. Since there was no Gate they created a small device that could relay information through the Wall. The governors could see the swarms approaching their star system but the swarms could not get in. The three Rangers could talk to one another but no one could enter and no one could leave.

When the swarms could not find a way to attack those star systems they left – but no one believed they were really gone forever. The three governors were convinced that they were still out there, lurking in the darkness. The Rangers were not going to let their guard down so quickly.

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When the news of the bot attacks reached the homeworld of the Artelect it caused tremendous panic. No one understood who was attacking mankind. Some people thought it

was an old series of space probes that somehow corrupted itself and gone insane. Others thought that it was some unknown alien race, and a few thought it might be a disgruntled colony somewhere. The one thing everyone agreed upon was that their only hope of survival was to be in a shielded world – and the Artilect was most definitely *not* shielded.

Dr. Mazatl immediately commissioned the creation of a Wall. Since the Wall would interfere with the Artilect's ability to control the probes, he had it made ready but did not turn it on. Instead he deployed a series of long-range sensors that could detect the approach of the swarm. If the swarm headed their way then the Wall would be activated. If the swarms never came then the Wall would be left alone.

This reassured some people, but not everyone. People still felt exposed. They were far away from the rest of mankind, living among unknown stars that might actually be hostile to them. They were cut off from the rest of civilization. The remaining employees began talking about moving to one of the Vault worlds. They didn't particularly like the idea of living in a Vault, but if the real world was going to be inhabited by killer robots then a fantasy world might be an improvement.

Late one evening, a month after the attacks wiped out all of the unprotected Ranger worlds, Victor went to Dr. Mazatl's office. "I was wondering if you would come to see me," Dr. Mazatl remarked, as Victor walked in the door. "These are grim times."

"These are *horrifying* times," he replied. Victor took his usual seat in front of the director's desk. "Entire planets have been destroyed. Billions of people are dead. It's a nightmare! Now, I admit I wasn't a fan of the Rangers. They killed so many Diano employees over the years, and they assassinated Grimes. At best they were bloodsucking leeches. But I *still* didn't want this. The complete annihilation of an entire planet is just horrifying. It's such a big catastrophe that I can't even mourn for

it properly. Somehow it's easier to mourn for one person than for billions.”

“I know what you mean, Victor. I never saw it coming. I suspected that the Ranger worlds were heading for problems but I didn't expect this to happen. The attack came out of nowhere. From what I've seen on the video feeds the bots are well designed, very deadly, and have no apparent weaknesses. Whoever built them really knew what they were doing. I just wish I knew who was behind this.”

“Isn't it obvious? Think about it. We both know that there aren't any aliens out there. Well, except for the wisps, I guess, but that's a special case. There are only two groups in the galaxy: the Rangers and the Vaults. The Rangers certainly didn't build these things, so therefore it must have been Lane. Lane used to work for us, you know. He's very good at what he does and he has access to our replication technology. This has his fingerprints all over it.”

“But why would he do it?” Dr. Mazatl asked. “What's his motive? All he cares about is his virtual worlds. The physical world has no meaning to him. You've talked to him yourself on many occasions – you know what his priorities are. Lane doesn't care what we're doing out here; he thinks we're all wasting our time. Lane has everything that he wants and no one is bothering him. It would take an immense amount of work for him to design the swarms. Why would he invest all that time and effort? It just doesn't make sense.”

“I don't think it's that hard to understand. Lane obviously thinks that we're a threat. He's probably worried that we might attack him one day so he decided to attack us first. I used to work with Lane, you know. He was always very aggressive about solving problems – even potential problems. He didn't want to wait until something broke; he preferred to address issues before they caused damage. If Lane thought that we might one day be a threat to him then I could *absolutely* see him doing something.

He must have decided to remove the Rangers before the Rangers could remove him.”

“I just can't believe it. I simply can't believe it! Lane is *not* a bad person. He might be misguided but he is not evil. Do you realize that you are accusing him of *genocide*? That is just too much to believe.”

“Is it? You do remember that he assassinated President Rios, right? And we have no idea what Lane has been doing in his Vaults. We don't even know what the long-term effects of Vault technology are! Remember, Lane has been in his Vault for *twenty years* doing who knows what. Is it really that hard to believe that giving in to your darkest fantasies for decades might have a negative impact on your soul?”

“I suppose there is some truth in that,” Dr. Mazatl said reluctantly. “But you still don't have any proof. I'm not willing to convict someone in the absence of evidence.”

“I bet if I went back to Xanthe I could prove it,” Victor insisted. “I'm sure there's evidence somewhere in the Diano Tower. That must be where Lane went to get the technology he needed to build the bots.”

“If you find compelling evidence then I will have to revise my opinion. Until then, though, I am going to think the best of Lane. Does this mean that you are going to return to Xanthe?”

“I think I have to – but not just because I want to prove that Lane is guilty. We also need to think about protecting the Artilect. The Diano Building has all kinds of documents that discuss what we're doing out here. You might have kept the Artilect's actual location a secret, but you weren't secretive about the purpose of this mission. There are probably all kinds of files in the building that say we came out here to build an artificial sentient machine – or, in other words, a *colony*. If the bots are attacking colonies and find out about this one, they might come here to destroy it.”

“Perhaps,” Dr. Mazatl replied. “But I find that unlikely.”

First of all they would have to reach us, and it's quite a long journey. Second, the Artilect does have some defenses. The Wall has protected the three surviving Ranger worlds and the two Vault worlds, and it can protect us as well."

"For the time being, yes. But what if the swarm finds a way to get through our Wall? It would be best for everyone if all traces of this project were removed from the Diano Building."

"Possibly. But that is not really the core issue. What we truly need to do is find a way to defeat the swarm itself. Even if you remove all documents that testify about the Artilect's existence, the swarm might start to explore on its own. It could eventually locate not just the Artilect but the Nehemiah worlds as well. It would be best for everyone if the swarms were defeated."

"Is that even possible? Is there some way we could use the Artilect to attack it?"

"Absolutely not!" Dr. Mazatl exclaimed. "The Artilect is *not* a weapon and was *not* designed for war. Just last week Governor Davidson contacted me and asked me that very same thing. I told him that was out of the question. The Artilect is not a weapon; he is an instrument of exploration – and I am going to keep it that way."

"But stop and think about it. The Artilect controls all of the Nehemiah probe worlds, right? Couldn't he have those worlds start making weapons? I mean, if he ramped up the probe's replication schedules he could probably finish colonizing the entire galaxy in a couple years. We could use every planet in the galaxy to mass-produce an unimaginable fighting force and overwhelm the swarms. Even if we lost the first battle we could keep iterating and keep trying. I think we'd be guaranteed to win."

Dr. Mazatl shook his head. "That would be a grave mistake. Activating the uncontrolled replication of the Nehemiah IV probes could have terrible side-effects. We could cause an

even bigger disaster than the swarms! But even if it worked, weaponizing the galaxy would create far more problems than the swarms ever could. Do you realize that if the Artilect controlled the entire galaxy, that meant that whoever controlled the Artilect would have absolute power? Why, the leader of the Corporation would be able to rule as dictator for the rest of his life! No one should be allowed to wield that kind of power. The Artilect would be a horrifying weapon of war. It would enable its master to wield a level of power that no one could ever overthrow. He would be an unstoppable force. That must *never* be allowed to happen.”

“But the swarms are killing *everything*! Don't we need to do everything possible to defeat them? Isn't wiping out the immediate threat more important than a purely hypothetical danger?”

“The swarms cannot penetrate Walls,” Dr. Mazatl pointed out. “It is not a perfect solution but it does work. The Artilect, though, is a different kind of threat altogether. The swarms are annoying and even deadly but they are not intelligent. The Artilect can *think*. It can reason. If it is turned into a weapon and taught to kill then you would have a *real* problem on your hands. I have no doubt that it could probably defeat the swarms. It could also defeat Walls. In fact, it could even hunt down every last living creature in the galaxy and destroy it. Then for good measure it could use the Nehemiah IV technology to blow up stars! It could wipe out *everything* in the galaxy, down to the last rock.”

“But it would never do that! It's not in his character.”

“And what if it *did*?” Dr. Mazatl asked. He paused for a moment to think. “You see, Victor, whenever an opportunity presents itself there are two things to think about. Most people only consider the best possible outcome and assume that if they make that choice they will get that outcome. But it is also wise to consider the worst possible outcome. If things go well then that

is nice, but what if things go poorly? That is something we must consider. If we turn the Artilect into a weapon then it is quite possible things might *not* go well. How much damage do you think an evil Artilect could do? To me that seems far more dangerous than bots which can be kept at bay by a simple Wall."

"I guess I see your point," Victor replied reluctantly. "As long as the Rangers keep their Wall in place they will be safe. Within our Walls we can continue to study the swarms and eventually find a weapon that can defeat the bots. I've heard some people talk about reprogramming the bots to attack themselves. Perhaps we can fight bots with other bots."

"It will never work," Dr. Mazatl said firmly. "If you take a bot, reprogram it, and launch it, you will have two equal forces fighting against each other. Since they are equal, neither will ever gain the upper hand. All you will get is an endless war. If you truly want to defeat the bots then you need to build a *superior* bot. Then you might have a chance."

"Is that what you're going to do? Are you going to go back to the Rangers and lead the war effort?"

Dr. Mazatl shook his head. "I'm not a weapons expert, Victor. There are plenty of those and I am sure they have already thought about all of this. My place is here. I'm going to stay here as long as I can. What about you?"

"I need to head back to Xanthe. We have secrets there that we need to protect, and I need to find out what Lane's been up to all these years. I know you think the Artilect can defend itself, and maybe you're right, but I would feel better if I cleaned things up."

"You know, it's possible that Lane already has the information that you are trying to hide."

"I don't think so. If he did then we would've been attacked by now. Since we're still alive he must not know where we are."

"Unless he's innocent," Dr. Mazatl pointed out. "That is a

possibility.”

“We will see,” Victor replied.

CHAPTER 27: ABANDONED

Log date: December 14, 2452

Location: Xanthe

Log note: Setting out on the long journey home

AFTER VICTOR STRYKER MADE THE DECISION to return to Xanthe, he immediately began preparations to relocate. He quickly discovered that getting back to Xanthe was not going to be easy. The swarms made interstellar travel very hazardous. No one wanted to risk running into them in deep space and getting destroyed. Life on the Artilect might not be glamorous, but at least they had a Wall to protect them. Out in the void between the stars they had nothing.

For several months Victor wasn't sure what to do. Then, to his great surprise, Dr. Mazatl stepped forward and solved the problem. The director used the technology from the Nehemiah IV probes to create a monitoring system that could scan deep space for the presence of the swarms. He then contacted Governor Davidson and told him about his new invention. The governor immediately deployed it, since it gave his star system an early warning of an approaching attack. In the past he could only see the swarms when they were right on his doorstep, but now he could track them while they were still more than a hundred light-years away.

Once the other Ranger governors installed the technology as well, Dr. Mazatl was able to build a map of the swarm's routes. Over the course of six months he carefully monitored them and discovered that they had a fixed pattern. Once a month they made a complete cycle through all three of the surviving Ranger star systems. The swarms never went anywhere else and they

never approached one of the Vault worlds. Their pattern never changed.

Since Dr. Mazatl knew where the swarms were going to be at any given time, he used that knowledge to chart a course that would keep the refugees from the Artilect safe. He also took the precaution of installing the remote detection technology on board the *Vanguard*. The equipment was very large and required a great deal of power, but the *Vanguard* was so massive that it could easily handle the load.

Victor was not the only one who was leaving for Tau Ceti. Once Dr. Mazatl demonstrated that the Vault worlds were not being attacked, everyone else decided to join Victor on his trip. More than two thousand people – nearly the entire population of the planet – were going to come along. Less than a hundred people would remain behind.

There was still one more problem: how were they going to get into the Tau Ceti system? The Gate was locked and had to be opened from the inside. This seems like an insurmountable obstacle, but Dr. Mazatl solved that problem as well. Since it was still possible to connect to the equipment in the Diano Building, he contacted a robot in Star City and had it go to Vault 37 and request access. The bot was able to get the attention of Adrian and told him that a group of refugees from the swarm wanted to come to Xanthe and relocate into a Vault. Adrian was surprised, but he agreed to help them. He would make sure that they had room when they arrived.

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On December 14, 2452, all of the preparations were finally completed. Victor was one of the last people to teleport off of the Artilect and board the *Vanguard*. He knew that this would be the last time he ever saw the Artilect, and the last time he saw Dr. Mazatl in person. Victor had enjoyed working with the

company director for many years and valued him as a friend and coworker. He had tried to get Dr. Mazatl to come with them back to Xanthe but he had refused. Victor suspected that the director would remain with the Artilect until he died.

It was now time to begin the six-month journey back to Xanthe. Victor never thought he would go back there, but here he was. He had a mission to accomplish, and he knew Lane wouldn't make it easy for him. Victor would have to be very careful to make sure that Lane never found out what he was actually doing.

As the *Vanguard* spent months traveling through deep space, Victor kept an eye on the news. Although Dr. Mazatl had assured him that the bots never changed their pattern, Victor still felt uneasy. Six months of activity was not a very long time. At any moment the swarms might do something different and unexpected. It was true that the *Vanguard* could see them coming, but Victor doubted the massive ship could outrun them.

The news, though, never changed. The war against the bots had reached a stalemate. The three worlds that had erected Walls were safe, and the bots never changed their pattern. They kept endlessly trying to attack a star system that they could not enter. The swarm never changed their tactics or tried anything different – they just kept doing the same thing over and over again.

Victor was convinced this was more evidence that Lane was behind the bots. A real army would have realized the attack wasn't working and developed a new strategy. The fact that the bots kept repeating the same commands could only mean that no one was watching them. But Victor knew he would have to find proof before Dr. Mazatl would believe him.

For now the Walls were protecting the Rangers. But how long would that last? Lane would eventually realize that three systems had evaded his attack. What would he do then?

He'll try something else – if I can't stop him before then. I just hope the Rangers will be ready.

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During the six-month trip to Xanthe the Rangers only made one attempt to defeat the bot swarm. Governor Davidson had been able to capture a small number of bots when they came by his protected system, and he reprogrammed them to fight the swarm. These reprogrammed bots were then released into deep space. Once they replicated they attacked the main swarm.

The attack was successful but it was not decisive. Although the attacking force wiped out the swarm, it did not wipe out all of the enemy bots because some of them were in another star system at the time. The surviving bots then replicated and attacked – which failed to completely eliminate the reprogrammed bots. The situation deteriorated into exactly what Dr. Mazatl had predicted: one side attacked the other side, which then regrouped and attacked again. It devolved into an endless war where no one ever won and no progress was ever made. Both sides were equally matched, and neither side ever got the upper hand.

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On June 8th of the following year the *Vanguard* reached the Wall around Tau Ceti. When the ship requested clearance to enter, Adrian opened the Gate and granted them safe passage. Victor was a little surprised that things had gone so smoothly. He was half-expecting Lane to attack them – but apparently he didn't have a problem with people coming to join his Vault. *Maybe this is what he wanted all along*, Victor thought.

The *Vanguard* made its way through the Tau Ceti system

and touched down in the abandoned spaceport outside Star City. It was the first time the ship had ever entered a planet's atmosphere and landed. *This is going to be the ship's final resting place, Victor thought. It will never go anywhere again. The ship will just sit here on the runway and slowly fall apart until it collapses into ruin.*

Over the course of the next hour the thousands of passengers on board slowly made their way outside. The view that greeted them was jarring. The passengers had spent the last twenty years on the world of the Artilect, which was composed of shiny new machinery that stretched from horizon to horizon. On Xanthe, however, there was nothing but ruins. The runway was cracked, broken, and covered with weeds. The buildings of the spaceport were in serious disrepair. Roofs had collapsed, windows were broken, and trees were growing *inside* the decaying structure. In the distance they could see the skyscrapers of Star City and they did not look any better. The only building that still appeared to be intact was the Diano Building. It towered above the rest of the decaying city – a reminder of the glory that the metropolis had once possessed.

But the passengers were not concerned. After all, none of them were planning on living on the surface. They were going to go into the Vaults and start a new life there. The condition of the surface simply wasn't important.

Victor was the last person off of the ship. He was hoping that by the time he got off, everyone else would be heading for a Vault and he could simply slip away unnoticed. He thought that Adrian would send a robot or something to guide them. After all, why would he bother to leave the comfort of paradise just to pick up some refugees? To his great surprise, though, Adrian was there in person – and Carroll Lane was as well.

Once everyone was off the ship, Adrian spoke up. "Hello, everyone, and welcome to Xanthe! If you will follow me I'll escort you to your Vault. Right this way! Your paradise will begin

shortly.”

It was a short message, but it served its purpose. The group formed a very long line behind Adrian and followed him as he began walking down the road.

Victor, however, did not join the group – which Lane noticed immediately. As Victor stood by the *Vanguard* and watched people leave, Lane came over to talk to him.

“I have to say I'm surprised to see you here,” Lane remarked. “I never thought you'd come back. It has been a long time.”

“It certainly has,” Victor agreed. “You've been pretty busy since we left! Your Vaults turned out to be pretty popular.”

“Of course! I told you they would be. You see, I can give people anything that they want. What people want right now is a better world – one without the threat of war, violence, and death. And *they can have it*. I'm not at all surprised to see people coming here seeking refuge. If I was in their place that's exactly what I would be doing too. If more people want to join me in paradise then my doors are wide open. I'm not going to turn anyone away.”

Victor was nervous. He hadn't planned on encountering Lane so soon and he wasn't sure what to do. He needed to get away from him without raising his suspicions. Victor was alone and had no supporters. He needed time to perform his mission.

“So what are you going to do?” Lane asked. “There's room for you in my Vault, you know. My technology has come a long way since I first showed it to you all those years ago. You were one of the very first Vault users, and it would be so appropriate if you were one of the last. I don't know what you've been doing out there among the stars, and to be honest I don't really care. This world doesn't interest me. But I will say this: I can give you whatever you want. I can make every last one of your dreams come true.”

Victor shook his head. “I wish you could, Lane. I really do.

The problem is that you and I want different things. I guess I'm one of the few people left who want something that's *real*. Not something that *looks* real or *seems* real or might be real, but something that is *actually real*. I want a better world. I want to see mankind grow and advance and actually do something useful. I want a better tomorrow."

"Oh, I understand. I think we all want those things. But honestly, Victor, do you really think that any of that is going to happen? You know what reality is like. Do you remember that night when those thugs broke into your apartment and knocked you out? Do you remember the time they crushed my hand? Do you remember how the outsiders took advantage of us and stole from us? This world is a *terrible* place. It always has been and it always will be. People are corrupt and vicious. There's nothing but darkness out there, and that darkness is growing all the time."

Lane sighed. "Look. I know you mean well. We used to work together, remember? I have a lot of respect for you. You've done your best, but what good did it do? When the Ranger worlds got their hands on a Nehemiah IV probe they used it to fulfill their own fantasies. They didn't do anything useful or productive with them. For all intents and purposes they might as well have gone into a Vault and lived out their fantasies there. I know you're looking for hope but there just isn't any to be had. It's over, Victor. It's done. There's nothing left. Don't hold on to a false hope. Come and join me in my Vault. I can give you something that's *much* better than all of this ruin."

You have some good points, Victor admitted to himself. But I know that all is not lost. I saw the Stryker Twins. The Artilect from the future went back in time to save them, so there must be a future ahead that doesn't involve a Vault. I don't know what that future looks like but I'm going to protect it. Once I do that my job will be done. You can have your fantasy – I want something real.

“Things do look pretty grim,” Victor said aloud. “And maybe you're right. Maybe the Vaults are all that's left. I'm just not ready to join them yet. This is the first time I've set foot here in years and I'd like to take a look around. You know – see my old home, visit the office, relive some memories. To be honest I never thought I'd set foot here again.”

Lane laughed. “Take all the time you want, my friend, but there's not much to see here. All that's left is ruins and decay. Once you get tired of being alone, let me know and I'll connect you. I'm sure it won't be long.”

Lane then bid Victor goodbye and walked off, leaving Victor alone.

Once he was out of sight Victor began walking toward the Diano Building. He knew what he had to do and he was going to make sure it was done.

* * * * *

The Diano Building was much larger than Victor remembered. He quickly realized that it would take him a lifetime to physically go through every floor and office. There had to be a better way to process the building and clear it of evidence. Victor was sure that Lane's patience would eventually run out. He had to be done before Lane came for him. This meant he had to find a better solution – and that meant automation.

Victor found a deactivated maintenance bot and spent a month reprogramming it to find and remove all traces of the Artilect project. Once he was confident it was working, he uploaded the program into all the other working bots he could find. It took him a week to find them and reconfigure them, but he eventually had 97 bots scrubbing the building.

Fortunately the building itself was in good condition. It had been built to last forever and the machinery inside was

largely intact. Even the physical structure of the building had decayed very little. From what Victor could tell the building hadn't been attacked in any way. It was just left empty. Victor could find no evidence that anyone had disturbed it.

At first Victor was tempted to simply destroy the entire building and everything it contained. That would have been the surest way to wipe all traces of the project, but he decided against it. If he took that drastic action that then Lane would *definitely* notice and would come after him immediately. But what if Lane hadn't built the bots inside the Diano Building? What if he had done his work in a different location? Victor needed time to search the entire city, and that meant he couldn't do anything that would draw attention to himself. If he just erased the Artilect's information it was unlikely that anyone would ever notice. That data would simply be gone – and who would notice a single leaf missing from a giant forest?

While the bots continued their task Victor decided to take up residence in the building itself. He had to live somewhere and it was the only intact building left. His old apartment outside of Star City was in ruins. The walls had caved in, the ceiling was gone, and the place looked like it had been bombed. On top of that, the subway system that had offered easy transit to and from that neighborhood had fallen into disrepair. Living inside the building just made sense. The apartments were still functional and the ZPE power plant gave him all the materials he needed to survive.

In fact, as far as he could tell, he could live in the building forever. But it was not going to be a particularly rewarding life. There was no one else on the surface of the planet to talk to. He was completely alone.

It took the maintenance bots two months to finish purging the building. One job was done – but there was still one more to do. To Victor's great disappointment they had not found any files relating to the swarms. That meant that either Lane was

innocent or he had done his design work elsewhere.

Victor reprogrammed the bots to search the entire city for any traces of anything that might relate to swarms. The machines could cover the city in a matter of months and would do a far more thorough job than Victor ever could. In the meantime all he could do was wait – wait and try to figure out what to do with all the time he had on his hands. As far as he could see he didn't have a lot of good options.

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In order to stay sane Victor made it a habit to call Dr. Mazatl once a week. The conversation was usually the highlight of his week, since it was the only time that he had someone else to talk to.

“It would seem that I am now in the same situation that you are,” Dr. Mazatl remarked one day. “Another starship has left this world, bringing with it the last inhabitants of the planet. I am now the only person who remains.”

“You didn't go with them?” Victor asked, surprised.

Dr. Mazatl shook his head. “Why would I go with them? My work is here. On this world I have something to do – a purpose. If I accompanied them to one of the Vault worlds I would be aimless. I want to *do* something with my life, Victor. I want to achieve something.”

“You *have* achieved something! You built the Nehemiah IV probes and the Artilect. The Artilect has been fully functional for years now. I'm really not sure what else there is to be done.”

“That is all true. To be honest, he's advanced so far now that I really have nothing else to contribute. But it is fascinating to watch him grow. His mind is remarkably stable. I have great hopes for this project.”

“I do too, but aren't the swarms an issue? I mean, no one is even going to consider colonizing any of the probe worlds as

long as the swarms are out there. Isn't that a serious problem?"

"The Artilect is aware of the matter. If he sees the bots start to move toward him or his worlds then he will take action against them. The Artilect, though, is purely defensive. He is not going to attack them. He is not a weapon of war and I am not going to turn him into one."

"But something needs to be done about the swarms. They have turned all of us into prisoners and trapped us on our worlds. This situation can't be allowed to continue."

"Do you still think that Lane is responsible for creating them?" Dr. Mazatl asked.

"Of course I do. No one else had the motivation. The problem is I can't prove it. A big project like that would surely have taken significant time, effort, and resources, which means there ought to be evidence. If he created them then he would have left signs of it somewhere. There should be notes, research material, prototypes, and so forth. But I just can't find any evidence. I'm beginning to think that the construction was done on another world – Alpha Centauri A, maybe. I don't see anything in Star City that proves it was done here."

"Then perhaps he is innocent. This may be the work of some unknown enemy."

"Then where is this enemy? The Nehemiah probes are continuing to go from star to star, pushing back the boundaries of our knowledge. In all the centuries we've had space travel we've never found life on another planet. *Never*. If there was some other civilization out there then we would have run into them by now. We haven't exactly made our presence a secret! No, it *has* to be Lane. It's the only explanation that makes sense."

"Perhaps. But whether it's Lane or someone else, the bots continue to have the upper hand. The reprogrammed bots that were launched by the Rangers have not turned the tide of the war. I told Governor Davidson that if he intend to win he needed to find a different approach, but they have ignored my advice. It

seems they are content to live within the confines of their Walls. Since they are no longer being directly threatened they see no need to fight at all. They believe they are safe.”

“Which they might be – for now,” Victor said. “But what if the situation changes? What if the bots learn to overcome their defenses? They're assuming that the threat won't get worse – but that may be a terrible assumption. They should be using this time of peace to put together some kind of counterattack.”

“Oh, I quite agree. I have proposed several different possibilities in the past few months but they have all been ignored. I think the Ranger worlds have decided to opt out of this war.”

“Is there anything that we can do?”

“Just the two of us?” Dr. Mazatl asked. “Not really. The bots are very sophisticated. I've obtained access to their data schematics, which were created based on the few bots that Governor Davidson managed to capture, and they are truly state-of-the-art. There are some interesting advances in them that I hadn't considered before. The only way to beat them is to build a bot that is significantly better. The Nehemiah IV probes are vastly more powerful but they would be overwhelmed by the swarm's sheer numbers. In order to build a better bot, though, you'd need a significant leap in technology. That would require an entire team of dedicated people – probably thousands of them. You and I, working alone, aren't going to be able to invent a tracking technology that is so vastly better it can identify a single tiny bot no matter where it is in the galaxy. The best I could do was build something that could track the swarms, which is nice but not that helpful. Remember, it only takes *one* bot to reproduce the entire swarm. You have to eliminate every single last one of them, no matter where they are – and that's just not going to happen.

“No, I'm afraid that if this threat is going to be defeated the Rangers will have to do it themselves. They will have to

actually *work* for a change. Since they're not willing to do that, the outcome is obvious – the bots are not going to be defeated. Our only hope now is that the bots will go away on their own. If they don't then it's only a matter of time before the Ranger worlds are crushed. One day something will happen and the Wall defenses will come down, and that will be the end of that.”

“There's a depressing thought! Do you really think there's no hope for humanity?”

“Oh, there is always hope,” Dr. Mazatl replied. “I don't think all is lost. I *do* think there is going to be a tomorrow – otherwise I would never have bothered to build the Artilect in the first place. But our choices have consequences. The Rangers have made some poor choices and I fear those choices will come back to haunt them.”

“So what do we do now?”

“Well, I'm going to stay here and learn what I can. You're welcome to do whatever you want. You have the entire Diano Building to yourself, with all of its power and technology. If you wanted to build something, or research something, or study something, this would be the time to do it. You have all the resources you could ever want. Or you could go into one of the Vaults, I suppose.”

“I definitely do *not* want to do that,” Victor said firmly. “The last thing I want to do is lose track of what's real and what's fake. In the Vaults I would be every bit as alone as I am here, because nothing in them is real. But I would forget that I was alone. I would forget that I was just lying there, dreaming empty dreams and not actually doing anything. I would lose sight of what mattered and I'm not willing to do that. I want to stay awake. I don't want to fall asleep and dream my life away.”

“Then you'll need to find something to do to occupy your time. Otherwise you are going to go mad.”

CHAPTER 28: PATIENCE

Log date: August 24, 10,000 of the Eternal Era

Location: The Artilect homeworld

Log note: Sometimes the best plan is the easiest one

IT TOOK THREE DAYS for all six Administrators to assemble on the Artilect's homeworld. Although finding the lost world of the race that built the *Vaughn* was a high priority – so much so that the entire universe was following the story – each person had their own tasks that they were working on. Life in the Eternal Era was full of wonder and discovery. Each day brought with it new opportunities. There were countless trails to follow and none of them led to destruction or death. The old world of sin and suffering was gone forever and it would not be coming back.

At three o'clock that afternoon all of the Administrators finally reached the Administrative Tower. When Victor Stryker arrived he saw that Professor Grimes was already present and deep in conversation with the Sentinel. The professor rarely visited the Artilect in person; in fact, Grimes never set foot on his homeworld during the days of the old universe. Grimes was a scholar, not a technician. It was unusual for him to come here – but his expertise was always appreciated.

The next people to arrive were the Stryker twins. A few minutes later Nehemiah Temilotzin appeared, who was accompanied by Dr. Mazatl. Timothy Stryker was the last to reach the meeting.

Once everyone arrived Professor Grimes asked them to take a seat around the conference room table. “Thank you for coming today! I will try to keep this short. I realize that all of us have much to do. Fortunately, the answer to this riddle is quite

simple.”

“Have you really figured it out?” Amanda Stryker asked.

“It's rather obvious if you think about it. Let's take a step back and review what we know, shall we?”

Grimes made a small gesture in the air, and a holoscreen appeared. The screen showed a timeline. “Although this case has many unknowns, there are some things that we have firmly established. First of all, there is a race of beings somewhere in this universe which we have not yet located. We know that they are there but we cannot find them. This is because, for whatever reason, this race has not revealed itself to us.

“Now, it is difficult to determine why they are hidden. Perhaps it is due to their planet's unusual location, or perhaps they have shielded themselves the way that Tau Ceti was one shielded. Personally I believe that the latter option is unlikely. There are no enemies in the universe and there is nothing to guard against. This means that no one has any motivation to hide. After all, what is there to hide from? Therefore I think that this race did not hide itself on purpose. My guess is that they are in some sort of subspace pocket that we have not been able to detect and penetrate.”

“If so, it's certainly not for lack of trying,” Dr. Mazatl commented. “Even the Artillect couldn't find this hidden world. Penetrating the barrier that cloaks their home is apparently impossible.”

“Impossible for us – but *not* for them,” Grimes pointed out. “After all, they were able to launch the *Vaughn*. It left their homeworld and entered into our space, where we were able to find it. We do not have the means of reaching them but they *can* reach us. This opens up a number of intriguing possibilities. Did this race just gain the ability to cross into our space? Since we have never seen a ship like the *Vaughn* before, that is a strong possibility. The other question we must ask ourselves is how much this race knows about our universe. The evidence is strong

that they have detected the U16b anomaly and are trying to cross over into it. It is possible that they thought the technique that let them cross into our space would also enable them to reach U16b. However, we need to remember that the galaxy which is home to the Stryker singularity is uninhabited. This race may not be aware that we exist. It is entirely possible that they believe they are alone in the universe.”

Amy spoke up. “But surely they noticed us on the *Vaugn*! After all, Velvet Dawn saw them.”

“That depends on a number of factors. We don't know how their bodies work – or if they have bodies at all. They may have seen your friend and then dismissed her because she was not what they were expecting. We have learned quite a bit about the ship they built, but we know nothing about them. We don't know how they think, or what they care about, or what they are able to perceive. We don't even know if the creatures you saw are the same sort of creatures that built the *Vaugn*. For all we know they might have been some kind of robots or artificial construct. We simply don't know.”

“I see your point,” Amanda said.

Grimes continued. “What we *do* know is that this mysterious race desires to cross over to U16b. They created the *Vaugn* in order to study that anomaly and relay their findings. The *Vaugn*, however, did not cross over into that anomaly and is no longer relaying data. This leads me to believe that the ship has accomplished its purpose and, therefore, the race that built it has stopped using it. Yet its greater goal – to cross over to U16b – was not realized. Therefore we can assume that the race is going to try again.”

Victor spoke up. “So you think they're going to create another ship?”

“Certainly! This race has now acquired more data – data that they went to great lengths to obtain. I have no doubt that they are going to use this data to correct their past mistakes and

make another attempt at crossing over. This means that eventually they will send another ship into our space. Now, I do not know how long this will take; it may be years before they have come to understand their findings and are able to build a new ship to take advantage of them. But I think it is a very strong possibility that they *will* try again.”

“Then this whole matter becomes quite simple!” Nehemiah Temilotzin exclaimed. “All we have to do is wait until they reappear and then contact them.”

“Quite so,” Grimes agreed. “It's just a matter of being patient.”

The Artilect spoke up. “Then I will continue to closely monitor the target area. When another alien ship appears I will notify all of you immediately.”

Amy spoke up. “Thanks! That sounds like a good plan to me. But I'm still a little confused. At one point the *Vaughn* had a crew. Then its crew disappeared – but the *Vaughn* stayed here. How did the crew get back home?”

“That is an excellent question,” Grimes replied. “We would have to know much more about their physiology before we could give a reasonable answer. However, *you* are able to travel through space without requiring a spacecraft. In fact, all of us have that ability. Perhaps this race can do the same thing.”

“Then is it possible they will just zip straight over to U16b without a ship?” Amy asked.

“That is unlikely. If they had that innate ability then I am sure they would have simply done that and never bothered to build a ship at all. Now, it may be that you are right. Perhaps they will take the data and upgrade themselves. After all, that is what we would do if we were in their position – and if that happens then we will never see them, unless we find our own way into U16b and meet them there. But since they built a ship once I think we can expect them to build a ship again.”

Victor spoke up. “All right. So let's suppose they *do* build a

ship and one day it appears in space. The Artilect contacts Amy and Amanda and the two of them zip over to the *Vaughn*."

"With Velvet Dawn," Amy added.

"Right. So once they meet, what happens next? Do we have a plan for first contact?"

"Do we really need a plan?" Amanda asked. "I mean, we can just talk to them and explain who we are. Then we can ask them who they are. I don't think this will be hard. It's not like it's the first time we've ever met a new race of aliens."

"Do we know that we *can* talk to them?" Victor asked.

"Well, not really, I guess," Amanda replied. "But we can try. Once we find them I think we can work something out."

Amy spoke up. "And once we're friends I'm sure we can get them to show us their home."

"I think they have a great deal more to offer than that," Grimes remarked. "As I recall, the Diano Corporation has been trying to reach U16b for some time and has never come close to succeeding. Perhaps if we join forces with this new race we will be able to jointly bridge the gap and reach that mysterious area."

"I'll be sure to mention it," Amy said.

Dr. Mazatl spoke up. "So Grimes, I take it your plan is to just wait for them to show up again?"

"My prescription is for patience and vigilance. I propose that we keep scanning that area relentlessly, year in and year out, until we see them again. We wait with determined anticipation and never give up. Then, when the aliens appear once more, we immediately take advantage of that opportunity and introduce ourselves. I believe this plan has the best opportunity of succeeding while consuming the least amount of resources."

"It's also quite simple," Timothy Stryker replied. "I thought you were going to come up with something bizarre and complicated!"

"It's easy to come up with a complicated plan," Grimes

said. "Anyone can do that. It takes a great deal more effort to design a solution that is simple and straightforward. Those plans tend to be the best."

"Then that is what we'll do," Nehemiah Temilotzin replied. "I think we have our course of action."

The Artilect nodded. "I will continue to scan the area and will let you know what I find."

"Thanks!" Amy replied.

CHAPTER 29: DEPARTURE

Log date: June 3, 2458

Location: The Artilect homeworld

Log note: One last voyage

FOUR YEARS HAD PASSED since the last Diano Corporation employees had abandoned the Artilect and left Dr. Mazatl alone on that massive mechanical world. The director was sad to see them depart but he had no desire to join them. He fully intended on spending the rest of his days on the world that he had built. There was simply no reason for him to go anywhere else.

But his time had run out. In 2458 the Diano Corporation was definitely dying but it was not yet wholly dead. There were still a few employees who cared about the future and who were concerned about the course of action that the Rangers had taken. Martin Yates was deeply worried about the fact that the Rangers had stopped trying to fight the swarms. He was convinced that this would lead to their destruction and he wanted to do something about it while there was still time. With the support of Governor Davidson, Martin contacted Dr. Mazatl and asked him to come to Gliese and lead an effort to destroy the bots once and for all.

Dr. Mazatl was not convinced that this would do any good. The challenge was great and the number of people willing to work was few. But he was forced to admit that trying to save mankind from the swarms was a better use of time than continuing to stay where he was. He could not ignore the request and so he agreed to go.

Since the *Vanguard* had departed for Xanthe five years ago there were no starships left, so Dr. Mazatl used the Artilect

to build a new ship for the journey. Once the ship was completed the director knew he had to leave. It was time to depart – but before he left he stopped to say goodbye to the Artilect.

He could have had this final conversation anywhere on the planet. After all, the Artilect was present throughout the world and could be summoned at any point. But, feeling a big nostalgic, Dr. Mazatl decided to stop by Room 917.

When he entered the room he thought back to that fateful day when he and Victor had loaded the Artilect's main program and booted him up for the first time. It seemed so long ago now. So much had happened since then. "This is where it all began," Dr. Mazatl said quietly.

"That is correct, Doctor," the Artilect replied. "After I was taken from the *Vanguard* and moved here, you were the one that issued the command that brought me to life. It was at that moment that I first began to understand."

"And you have never been turned off since that day twenty-seven years ago. You have exceeded all our expectations. I have no trouble believing that you will be able to manage the network and prepare it for human habitation. Your potential is staggering, Andy. I can't begin to imagine what you're capable of doing or becoming. I wish I could be here to see what things will be like a thousand years from now."

"I wish you could as well. I will never forget anyone who worked on my construction. These memories will remain with me forever. I only wish you did not have to go."

As *do I*, Dr. Mazatl thought. He had no desire to return to the corrupt Ranger worlds. But the war effort was calling him and he had to answer. He could no longer afford to linger behind.

"We never could have built you using a traditional approach, Andy. You were grown, you know. It took years for you to develop to the point where we could turn you on, but all we really did was plant the seeds and tend to them. The past two decades have been your childhood and you are now a fully-

developed adult – although, really, you're never going to stop growing. You're something new – a new form of intelligence. Nothing on this scale has ever been done before, and I sincerely doubt it will ever be done again.”

“It will be different operating without you,” the Artilect replied. “I am used to hearing voices and now yours is the only one left. When you are gone all of the voices will be silent. It will be a new experience.”

“I'm sorry it has to be this way – I really am. I wish I could stay but the Board is right. You're working better than we could have hoped and there's really nothing left for me to do. I suppose it's time for me to go and let you start fulfilling your purpose. It's just hard for me to close up shop and walk away. You're my life's work, after all. I'll never do anything like this again. This was my one chance to make a difference – to do something real that would still be helping people long after history had forgotten me. Now that this is over I'm not sure what to do with my life. At least I can rest in peace, knowing that you're here. That gives me hope.”

“Hope?”

“Dark times are coming,” Dr. Mazatl said. “It's nothing that you need to worry about. People are doing terrible things to each other, things that should never be done. But that will not last forever. When the darkness has passed people will come looking for you and you'll be there to greet them. Don't worry too much about us – just take care of yourself. The important thing is for you to still be here a thousand years from now, when all of this is behind us and people are sane again.”

“I will miss you, my father,” the Artilect replied. “I will miss all of you.”

“I know you will. You have a lot of heart, Andy. But try not to think about us too much. You do have a job to do, after all. And it won't be too long before you'll have friends again.”

“Can I expect to receive messages from the Diano

Corporation?” the Artilect asked.

“Oh, of course, don't worry. We'll be checking in on you.”

* * * * *

Once his final conversation with the Artilect had ended, Dr. Mazatl teleported to his ship and departed. He then began the long journey back to the Ranger systems.

In his heart he sincerely hoped that he had not lied to the Artilect. He hoped that the Corporation would succeed in defeating the bots and would live to contact the Artilect again. He hoped that the Artilect's long vigil in the darkness would not be in vain, and that one day people actually would go and inhabit the worlds that he was building.

But he was afraid. As the years had dragged on he began to think that Victor was right. Surely if aliens had created the bots they would have shown themselves by now. Surely the probes would have seen some sign of alien life on another world – or perhaps a sign of their conquest and destruction. But nothing was ever found.

The culprit *had* to be Lane. But even if it was Lane the director did not see how that knowledge could help them. Lane would never admit guilt and he would never deactivate his bots – if such an override command even existed, which seemed unlikely.

Dr. Mazatl was afraid that in the end Lane was going to win and mankind would be defeated. There was always a chance he was wrong – but it was a slim one.

Take care, Andy, Dr. Mazatl thought. I will never forget you. I pray that mankind does not forget you either.

* * * * *

By June of 2458 Victor Stryker had spent five long years

on Xanthe, alone. The presence of the Vaults were a constant temptation but Victor refused to give in. He knew that what they offered was not real and he wanted no part of it. Reality might be terrible but it was at least something he could grasp. He had no desire to spend the rest of his life trapped in his own dreams.

There were times when he considered going to Gliese. After all, the three surviving Ranger worlds were full of people – unlike Xanthe, which was empty. But space travel was very dangerous now. In the past year the swarms had unexpectedly changed their behavior. He didn't know if it was a flaw in their programming or a mistake in replication, but the swarms had multiplied by the millions and now constantly patrolled interstellar space. Going from star system to star system meant certain death.

In fact, when Victor heard that Dr. Mazatl had left the Artilect's homeworld he became gravely concerned for his safety. He hoped that the director would survive the trip but he had his doubts. As far as Victor could tell the days of space travel were over. Mankind had been grounded by machines – machines that Lane had surely built.

Since Victor had all the time in the world and nothing to do, he decided to make it his personal task to bring Star City back to life again. The functional ZPE in the Diano Building gave Victor an almost unlimited supply of resources. The programmer created hundreds of maintenance bots and dispatched them throughout the city. There were countless skyscrapers that needed repair, streets that needed repaving, and pipes that were long overdue for maintenance. Victor wanted to make the city utterly spotless. The inhabitants of Xanthe may have left it to crumble and decay, but Victor refused to sit by and watch his hometown fall into ruin. The city was his now and he was going to take care of it. *Besides, it gives me something to do*, Victor thought. *And who knows – perhaps one of my bots will finally find the missing evidence that Lane is behind the swarms.*

He also spent time experimenting with artificial intelligence. The AI software that had been written for the Artilect required an entire planet in order to run – and even if there was a planetary machine he could use, he didn't have a copy of the software or a wisp to bring it to life. But he did have the AI research that was in the Diano Building, so he decided to build some simplified AI cores.

Instead of trying build a stable AI, Victor went another route. He did not want to become lost in his own construction and start to think that his AI personalities were actually real. Xanthe had too many illusions as it was and he didn't want to create even more. Victor therefore decided to make all of his AI cores unbalanced and insane. Over the years Victor created dozens of different programs, all of which were crazy and irrational in one way or another. Talking to them was hilarious and gave him something fun to do.

So Victor filled his days with the repair of Star City. His efforts, however, did not go unnoticed.

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For the first time since the *Vanguard* had returned to Xanthe, Carroll Lane had been forced to leave the comfort of his Vault and return to the physical world. As Lane got older, each trip outside the Vault upset him more than the last. He didn't like being outside his synthetic world. The real world annoyed him and caused him so much trouble. Every time he had to return to Xanthe he felt like he was leaving paradise and entering into some sort of nightmare.

But it had to be done. Lane had a series of difficult situations on his hands, and this time he could not force Adrian to resolve them. His first problem was that the war against the Rangers had reached a stalemate. The surviving worlds were protected behind Walls – a barrier that even he could not find a

way to penetrate. Lane knew that he could not let those colonies survive. If he did then it was only a matter of time before they defeated the swarms and destroyed him. He had to destroy them first, which meant he had to find a way to get his army of bots inside their territory.

The second problem he faced was Dr. Mazatl. Lane's bots had captured the director's transmissions, and Lane knew that he was on his way to Ranger territory. If he arrived safely then he would probably find a way to beat Lane's bots and end the war. Lane had a great deal of respect for the director and knew that he was a powerful foe. Dr. Mazatl had to be dealt with.

The third problem was Victor Stryker. Victor had been living on the surface of Xanthe for years now and it was making Lane nervous. After all, it would be trivial for Victor to sneak into the Vault and kill them in their sleep. Something had to be done. Victor was a loose end and Lane didn't like loose ends.

Fortunately there were ways to solve all of these problems. Lane knew exactly what to do.

* * * * *

Victor Stryker was outside on that particular afternoon. June 28th was just another day to him – he was walking down the streets of Xanthe and checking on the progress of his maintenance robots. Victor had read the reports that stated his robots were making fantastic progress, but he wanted to see it for himself. The reports, after all, could be flawed; the robots may have missed something important.

But as far as he could see things really *were* coming along well. The city was being repaired and decades of neglect were being reversed. The robots were putting things back in order. The only downside was that the repaired city was even more creepy than the ruined one. A ruined and empty city was a normal sight. Ruins typically were abandoned, after all. But a *pristine* and

empty city seemed like a violation of nature. Victor hated the emptiness around him. But at least it was progress.

Victor was so engrossed in his work that he didn't notice the person who was approaching him. He had been alone in Star City for so many years that he had almost forgotten he shared the planet with hundreds of thousands of other people. When Lane called out to him he was taken completely by surprise.

Victor turned his head and looked down the street. It took him a moment to realize that the approaching figure was a human being, not a robot. Lane was walking down the sidewalk toward him. "There you are!" Lane called out. "I've been looking for you."

Victor's pulse quickened. *What in the world is Lane doing here? He can't possibly be coming to do me a favor! This isn't going to end well. I expected a lot of things but not an in-person visit.*

Victor quickly glanced down at the control box he was holding, which he had been using to check on the work of his maintenance bots. He discreetly pressed a few buttons and then put it in his pocket. "Is that you, Lane?" Victor called out. "What brings you here?"

Lane walked over to Victor and sat down on a bench on the sidewalk. "I hope you don't mind if I take a seat. I don't do a lot of walking these days, you know. Coming back to the physical world is always a bit jarring."

"I'm sure it is. So what are you doing here?"

"Oh, I just wanted to check up on you. See how you were doing. It looks to me like you've been keeping yourself pretty busy! Are you really trying to repair the entire city?"

"Of course! It's my city, you know. I was born here and I've lived here for a large part of my life. I don't like seeing it decaying and falling apart. I'm trying to fix it up again."

"But why bother? What purpose does that serve? No one will ever live in it again, you know. Once you die it will fall into

ruin and no one will miss it. What's the point of this labor?"

"See, that's where I disagree with you. I think that people *will* live in Star City again. I think this city has a future – and the Vaults do not. There are still a billion people out there who live in the physical world – the *real* world. They have no intention of ever living in Vaults. They are going to inherit the stars one day, Lane, while you and your friends die in your dreamworlds. You are the one who picked the road that leads to a dead end."

"I don't think so," Lane commented. "I think *I'm* going to win. You see, my world is *better* and I'm fighting for it. I'm going to defend it and I have every confidence of victory. In fact, I think victory is very close now. All I have to do is reach out and take it."

"What are you talking about? No one is attacking you. In fact, no one has *ever* attacked you. Except for that one time with President Rios, I guess, but he died decades ago. You're not even being threatened!"

"And how long will that last? You can't trust the Rangers, Victor. I'm *not* just going to sit idly by and wait for them to come to me. The only way to deal with threats is preemptively – by destroying them before they destroy you. You don't wait for a nest of wasps to attack you before you destroy it. No, you aggressively wipe it out before it has the chance to do you any harm. That is the smart move."

"What are you saying?"

Lane laughed. "Don't play dumb, Victor. I know you believe I'm behind the bot swarms, and I know you're here to find evidence to prove it. Do you think I'm a complete idiot? I know you've spent years searching for proof and haven't found anything. Do you know why you haven't found any proof? It's because you looked in the wrong place."

Victor was puzzled for a moment and then suddenly realized he had made a colossal mistake. "Of course! You *hate* reality. You never would have done your design work in the real world. Instead you would have found the data you needed,

uploaded it to your Vault, and designed them in your virtual world. There was never any evidence out here to find.”

“It's so obvious, isn't it?” Lane asked. “The point is, you lost. You had your chance and now it's gone. Since I've become tired of this game I've decided to make you an offer.”

“An offer?”

“Yes, an offer. Despite what you may think I'm a reasonable man. Join us, Victor. Come and live in a Vault. It's really not a bad life. If you do that then I'll let you live and you can have whatever fantasy you want for the rest of your life. You can have peace. I have nothing against you personally, you know. We were friends once. At any time over these past four years you could have gone down to Vault 37 and killed me, and yet you never did. I'm willing to make peace.”

“What happens if I want to stay here in Star City?” Victor asked.

“Well, I'm afraid that's going to be impossible. You see, I've decided to destroy this city. Completely. Nothing on the surface is going to survive. If you want to live then come with us. If you choose to remain here then this is where our paths must part.”

Victor looked up and noticed that a swarm of bots had appeared in the sky. It wasn't a very big swarm, but he knew it was big enough.

“Don't do this,” Victor said urgently. “You're making a terrible mistake. You're not killing me, Lane; what you are really doing is killing yourself and—”

Lane interrupted him. “Oh, spare me the speech about hell and judgment. Grimes already tried that decades ago. The truth is that if Grimes had stayed here in my Vault he would still be alive today. Ironic, isn't it? His choice to leave Xanthe got him killed. And who killed him? The *Rangers*. It wasn't me, Victor. It was your 'friends'.”

Lane stood to his feet. “Anyway, I know you probably

want to kill me right now, but if you try to attack me the bots up there will strike you down where you stand. I'm out of your reach. But you still have a chance to save yourself. In ten minutes those bots will level everything. If you are in Vault 37 when those ten minutes expire then you will be safe. If you aren't then you'll be dead. The choice is up to you."

Lane turned around and casually strolled down the street, leaving Victor alone.

* * * * *

As soon as Lane walked away, Victor raced down the street. I should have killed him, Victor thought. All those years I had a chance, but I never took it. I just couldn't bring myself to kill him when I couldn't prove he was behind the swarms. What if I was wrong? What if it was someone else and he was innocent? Now that I know for sure he's behind them it's too late to do anything about it. All I can do is try to escape.

Victor's maintenance bots had spent the past four years repairing and maintaining the city. While they went about their jobs he had also made sure that they maintained the *Vanguard*. For the past few years the massive ship had been primed and ready for immediate departure. Victor was extremely glad that he had taken that precaution. His life now depended upon it.

There would not be much time. The bot swarm was already hovering overhead and was ready to strike. Lane had told Victor that he had ten minutes, but Victor had no way of knowing if Lane would keep his word.

* * * * *

When Lane walked back into Vault 37 he strolled to his office and sat down behind his desk. He lazily opened a console and sent a single command to his bot swarm. This command

added a new target to their roster – a certain starship that was flying toward Ranger space.

Dr. Mazatl had been hoping that his ship would go unnoticed since its course had been carefully designed to avoid the swarms. However, Lane had captured the director's transmissions and knew where his starship was located. Since his ship was unarmed it would be easy to destroy.

The swarm jumped into hyperspace and vanished. It would take about a week for them to reach Dr. Mazatl's ship, but the outcome was already determined. There was no way that he could escape. When the bots reached him they would vaporize his ship – and that would be the end of that.

I still have the three Ranger colonies to deal with, Lane thought to himself. But without Dr. Mazatl to lead them they won't do much of anything. Who knows – they might even let their Walls collapse from sheer neglect! Without a leader in charge they're going to be hopeless. Anyway, I'm tired. I can deal with the colonies later.

* * * * *

Victor reached the *Vanguard* with three minutes to spare. When he saw the ship he almost screamed in horror. He belatedly realized that he had told his bots to repair the ship's *machinery*. He had never said anything about maintaining the ship's hull. The rain and humidity of the past four years had nearly destroyed the vessel. The hull was rusted, battered, and had gaping holes. He could patch those with emergency force fields but the ship clearly had major damage. *If only I had come to visit the ship!* he thought desperately. *If I had made even one visit to it I could have seen the terrible oversight I had made. The bots will only do what they are programmed to do. What was I thinking?*

But there was no time to waste. Victor ran onto the

Vanguard and immediately gave the command for liftoff. The ship had been waiting for that order for years. As soon as the command was given the ship ignited its engines and soared off the surface of the planet.

Victor then gave another command. This one was not aimed at the starship but at the weapons he had hidden throughout the city. As the bot swarm waited patiently in the sky, Victor's hidden bombs erupted and released a powerful electromagnetic pulse.

He knew that Lane's bots had been hardened against EMP but he also knew they were so small that they couldn't defend themselves against everything. There were some wavelengths of radiation they *could* defend against and there were others they could not. Victor had used their schematics to determine just what to target. He couldn't destroy the swarm but he could buy himself some time.

With a brilliant flash of blue light, Victor's EMP weapons went off. The intense radiation pierced the swarm's shielding and temporarily knocked them offline. The disabled bots slowly fell to the surface as they struggled to reboot and resume normal operation.

Unfortunately the blast also had a tremendous impact on Star City. All of the electronics within range of the blast were completely fried, and Victor's army of maintenance bots were destroyed. Victor hated to see the city ruined – especially after all the years he had spent fixing it – but Lane was going to destroy it anyway. There was no longer anything he could do to save it.

His next task was to leave the Tau Ceti system. Victor had programmed the Wall to allow him to leave, and took pains to make sure Lane could not override that command. His biggest danger at this point was the swarms. It was only a matter of time before they came back online and chased him down. Victor was desperately hoping that the aging, rusted, heavily-damaged

Vanguard would be able to outrun them – but he doubted that he was that lucky.

* * * * *

The *Vanguard* raced into space and began its journey to the far reaches of the Tau Ceti system. Victor was glad to see that he wasn't being followed – but at the same time he was nervous. One thing he knew about Lane was that he was thorough. Lane would never go back into his virtual world without first making sure that he had accomplished his goal. When Lane saw that his swarm had been defeated and Victor had escaped, he would definitely do something about it. Lane would never let Victor go – especially not after confessing that he was behind the swarms.

Victor already had a new destination in mind. The galaxy was full of uninhabited star systems that had been terraformed by the Nehemiah probes. He could go and live on any of them. They were far away from the swarms and they were more than able to sustain life. It's true that it would be a lonely existence, but at this point there weren't a lot of good options. Trying to make it to one of the Ranger worlds would have been suicide – the interstellar bot swarms would never allow it.

As the *Vanguard* ran on auto-pilot Victor made his way to the control deck. He then sat down in the captain's chair and waited. Minutes ticked by. Nothing in particular happened – but with each passing minute Victor became more nervous. To his surprise, the starship reached the Gate without incident. The Gate opened and the ship exited out into interstellar space – right into the path of an oncoming swarm.

I can't believe it, Victor thought with horror. Lane really did think of everything. He put a swarm in Star City to catch me, and just to be safe he stationed one outside the Gate as well. No wonder I wasn't chased off the planet – there was no need! He knew I was going to walk into this ambush because there was no

other available path.

Victor slammed the ship into hyperdrive the instant he saw the swarm. Normally jumps into hyperspace were made with great care and precision, in order to make sure that one arrived at the intended destination. But today there was no time for that. This jump was wild and uncontrolled. Victor had no idea where he was going to end up and he didn't care. Outer space was almost entirely a giant, near-perfect vacuum. There was so little physical matter in deep space that the chance of a collision was miniscule. It was so small that it wasn't even worth worrying about.

The *Vanguard* came out of hyperspace a moment later, but the swarm was still on his trail. How they managed to track his wild jump through hyperspace was something he didn't understand. What he did know was that he had to get away from them or they would destroy his ship and he would die.

So Victor jumped into space once again.

* * * * *

When the *Vanguard* completed its third jump and was still being followed, Victor knew he had to do something desperate. The bots had limited resources; after all, they were very small machines. The *Vanguard*, however, was enormously large. What Victor needed to do was make a jump so incredibly fantastic that the swarms would not be able to follow him. Victor needed to put everything the ship had into one last, desperate attempt to escape.

With great trepidation Victor disabled the safeguards on the ship and poured all its titanic energy into its hyperdrive. This overtaxed the engines to a dangerous degree and prompted a strong condemnation from the ship's AI, but Victor didn't care. It was all or nothing at this point.

With the ship straining and at its breaking point and the

bots close behind him, Victor made one last jump. The *Vanguard* vanished into hyperspace. A moment later it dropped back out – and ran straight into a planet while traveling at more than 99% of the speed of light.

Victor had successfully escaped from the bots. They were now billions of light-years away and had no idea where he had gone. But when the *Vanguard* struck the planet, it completely obliterated that world – along with the ship, and Victor Stryker.

But it did far more than that. The ship had been desperately trying to engage its hyperdrive when the collision happened. This warped local space – and the titanic, uncontrolled energy of that collision was poured into the warped spacetime and tore it. This created a new singularity that was unlike anything else that had ever existed.

Victor's life had come to a unique and spectacular end. But in a way, his life was just beginning.

* * * * *

When the *Vanguard* exited the wormhole Victor had a fraction of a second to see that his ship was about to collide with a planet. He barely had enough time to register surprise – and then it was over. The collision happened so quickly that Victor missed it. One moment he was on board the *Vanguard*, and the next moment he was not.

When he came to his senses he found himself standing in an enormous, grassy meadow. Above him was a deep blue sky. On the far horizon he could see a line of beautiful, massive trees – and beyond that, just barely within his vision, was a massive golden city.

Victor wasn't sure where he was but he felt like it was a peaceful and happy place. It had a good sense about it. Even though he had never been here before he somehow knew he wasn't a stranger. *This* was where he belonged. It was as if he

had been away all his life and had finally come home.

“Hello?” Victor called out.

“Welcome!” a strong voice replied. Victor suddenly noticed that there was a man standing next to him. Whether he had always been there, or had just appeared, was impossible to say. The man was clearly old – perhaps even ancient – but he had a look of strength and vitality about him.

The man reached out and shook his hand. “It’s a pleasure to finally have you here. I’ve been wanting to meet you for quite some time! You’ve led quite a life, you know.”

Victor looked at him closely. The man looked vaguely familiar but he couldn’t quite place him. “Do we know each other?”

“In a way,” the man replied. “Actually, the two of us are related. You are Victor Stryker, formerly of Star City. I am Timothy Stryker, your ancestor. You’re one of my descendents – the last, I think, of the Stryker line. Welcome to Paradise!”

Victor’s eyes widened. “Really? You mean I’m dead? Is this Heaven?”

Timothy laughed. “It most certainly is! As far as being dead, though – I think that’s a rather poor word to describe your situation. Yes, it’s true that your former body is dead. In fact, it’s completely vaporized! You hit that planet pretty hard. In fact, that was the largest explosion I’ve ever seen. People are going to talk about the way you destroyed that star system for years.”

“So *that’s* what happened,” Victor said thoughtfully. “If the *Vanguard* hit a planet when it exited the wormhole there’s no telling what kind of damage it might have done. I guess I should have been more careful – but, seriously, what were the odds of hitting anything? I was *spectacularly* unlucky.”

“Oh, perhaps. But maybe there’s more to the story. Your accident will live on, for you have created a rather unique singularity. You damaged space in a way that I didn’t even know was possible. People will be studying what you created for

centuries to come.”

“What people? Are you aware of what's been going on back home? There aren't any people left! Lane is going to destroy the three Ranger colonies that survived and that's going to be the end of that. No one will ever know that I obliterated a planet, and no one will ever come to study it.”

Timothy laughed again. “Oh Victor, you have such a narrow perspective. All you can see are the people who are still in the shadow world – the world plagued by sin and death. You have forgotten that there are countless billions of people *here*, in Paradise. These people – and yourself – are very much alive. Your singularity is going to captivate people. In fact, I'm sure that as soon as Professor Grimes hears about it he'll begin researching it immediately. He always did have a fascination for all things unusual and strange.”

“Professor Grimes? Oh – of course he's here! It's just strange to think of him as being alive and out there doing things.”

“Believe me, Victor, he's led quite a busy life since he arrived. His courses are quite popular and he has a lot of students. But the real fun will begin once the Lord raises our bodies back to life and transforms us into glorious immortals. Then we will go on to inherit the worlds that He has made. But there are still many things that must be done before Judgment Day comes and the old universe is brought to an end. For now it is time for you to rest. You're 71 years old, you know. You've had a long life and have done many things. You can relax now.”

“A long and rather unsatisfying life,” Victor remarked. “From what I can tell I haven't really accomplished much of anything. I feel like I've wasted my time. I just didn't have a lot of good options – which isn't really an excuse. I know I should have done more.”

“You did quite a lot. You played a role in building the Nehemiah IV probes, and you made sure Amy and Amanda Stryker were given administrative access to both the probes and

to the Artilect. You worked to build the Artilect itself, and when Amy and Amanda arrived you hid them to make sure they could complete their journey into the future. Five thousand years from now the actions you have taken will make it possible for Mars and Earth to be given a second chance. Your life played a role in the salvation of millions. Without you the people on those two worlds would have been lost.”

“Really? I don't understand. How is that possible? I never even visited Sol! And what do you mean, five thousand years from now?”

Timothy smiled. “God can use our lives in ways that we cannot even imagine. He plays a long game, you know, and He doesn't usually tell us what He's up to. God does not call us to do great things for Him. What God calls us to do is to surrender our lives as living sacrifices and allow Him to use us as He pleases. What God does with our lives, and how He uses them, is up to Him. We are simply called to be faithful and walk in His ways. What does the Lord require of us but to do justly, and love mercy, and walk humbly with Him?”

“You were faithful, Victor, and that's what mattered. Your life played a role in events that will happen thousands of years from now. Lane believes that he has won, but in reality he is the one who lost today. His day of judgment may be long delayed but it will still occur. He is facing an eternity of torment in the Lake of Fire – but you have a much better future ahead of yourself. We have a great deal to look forward to.”

“That sounds mighty good to me,” Victor said.

“It certainly is! I think it's high time we introduced you to Paradise. If you'll come with me I'd like to show you a few things. There are a lot of people who'd like to meet you.”

CHAPTER 30: DEFEAT

Log date: July 4, 2458

Location: Interstellar space

Log note: The long, dark night begins

THE SHIP THAT WAS CARRYING DR. MAZATL continued its journey through interstellar space. As far as the director knew, nothing was wrong. If he had been a bit more paranoid he might have realized that the messages he had been sending to Victor could have put him in danger. After all, if someone traced those messages back to him and discovered his location in space then they might send forces against him. The director should have realized that those messages were going through the Gate at Xanthe in order to reach Victor, which could theoretically give Lane access to them.

But Dr. Mazatl was not a suspicious man. He knew Victor was certain that Lane was behind the swarms, but he simply couldn't bring himself to believe it. There was just no reason for Lane to kill people who weren't a threat to him. It was an unthinkable act. Dr. Mazatl would never do such a thing if he was in Lane's position – and so, therefore, Lane must not be the culprit. The idea that Lane was fundamentally different from him and might come to different conclusions never crossed his mind.

So Dr. Mazatl continued his journey without a single worry or care. He spent all of his time thinking about the war effort and the best way to defeat the swarms. There were many ways to approach the effort, but the problem was always the impossibility of destroying every last one of the bots. If even one bot survived then that was enough to recreate the entire army and start the cycle all over again.

Dr. Mazatl had no way of knowing that Lane had just

killed Victor Stryker. Victor's death did not make the news on any planet. In fact, even Lane never found out what happened to Victor. The *Vanguard* was vaporized in a distant galaxy and there were no witnesses or bots around to report it. No one ever found out what happened to him – and neither did Dr. Mazatl. During the last week of his life he thought that Victor was still on Xanthe.

The bots had no trouble finding Dr. Mazatl. His ship did have long-range scanners, but all the reports in the world are of no value if no one evaluates them. When the swarm finally reached the *Valor* he was asleep in bed. The bots attacked his ship with overwhelming force – and in a matter of seconds he was dead and his ship was vaporized. The fight was over before he even realized he was in danger.

* * * * *

When Victor heard that Dr. Mazatl had been killed he immediately tracked him down. It had been years since the two men had seen each other and they had a lot of catching up to do. Victor eventually found him on the streets of Heaven talking to Ramon Diano, the founder of the Diano Corporation.

“Victor!” Dr. Mazatl exclaimed, surprised. “What are you doing here? I thought you were still on Xanthe. What happened to you?”

“Lane happened to me. When I was on Xanthe he sent a swarm of bots after me, and I ran for my life. I took the *Vanguard* into space to escape his swarm. Things were going pretty well until I accidentally ran into a planet.”

“You ran into a *planet*?” Dr. Mazatl exclaimed.

“He certainly did!” Ramon Diano replied. “He vaporized himself, the ship, and the planet as well. He created the most fascinating tear in space. It has remarkable properties! I've never seen anything like it.”

“So Lane actually *was* the villain, then,” Dr. Mazatl said thoughtfully.

“Absolutely,” Victor said. “I was right all along. The reason I was never able to find any evidence was because he did all of his design work in his virtual world. There was no physical evidence to be found.”

“So does that mean that Lane wins?” Dr. Mazatl asked.

“Of course not,” Ramon Diano replied firmly. “Evil *never* wins. God may allow it to endure for a time in order to fulfill His purposes, but in the end the Lord will always triumph. Lane may have killed you both but he is the one who has lost. He has killed all the people who were trying to save him and shown him the way of salvation. He is a drowning man who cast away the life preserver that was thrown to him, and he now faces death and destruction. He may live on for a while but he will not prosper. Professor Grimes was right – the way he has chosen leads only to death.”

“But he's going to destroy the Rangers!” Dr. Mazatl pointed out.

“Yes he will,” Ramon Diano replied. “But the Rangers are every bit as corrupt as Lane. They have also been given many opportunities to change their ways and repent, but they have taken none of them. Instead they assassinated Professor Grimes – and they would have eventually killed you as well if you had managed to make it into their territory. Governor Davidson may be aggressive but he is not a reasonable or a sane man. At this time in history there are no good guys. Both sides are evil and corrupt, and both will be destroyed.”

“And what about us?” Dr. Mazatl asked.

Ramon smiled. “As for us, we have a bright future ahead of ourselves! Ahead of us lies an endless eternity of fascinating adventures. In fact, we've already begun work on a number of projects that I think you'll find quite interesting. Your work is not over, director; in fact, it has only just begun. The future is looking

quite exciting. What you have done in the past will pale in comparison to what you will do in the ages to come.”

“Oh? Tell me about it.”

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No announcement was made when Dr. Mazatl was killed. His death did not make the news, nor did word of it ever reach the Ranger leadership. The director simply failed to show up. The only person who knew the truth was Lane. His bots had sent him a brief intelligence report of the attack. Lane didn't normally allow his bots to talk to him because he didn't want anyone to find out that he was behind them. In this case he made an exception because he wanted proof that his enemies were dead. Lane was enraged when Victor escaped – but Dr. Mazatl's death soothed him. Even if Victor *had* somehow survived, he would not get very far without the skills and experience of the director.

When Dr. Mazatl failed to arrive on time Governor Davidson eventually came to believe that some sort of accident had happened on the trip. His disappearance was seen as yet more proof that the world outside the Walls was a world that was not worth having. Why bother with space exploration when mankind had everything they needed right there in their own systems? If they ran out of space on one planet (which was unlikely, given that their population was declining rapidly), there were plenty of other planets around their suns that they could colonize. Within their Walls they were safe, secure, and happy. There was no need to fight the bots.

So the Rangers stopped trying. Why bother? After all, the bots couldn't get in. Their Walls had turned the swarm into an empty threat.

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Lane was deeply surprised at the Ranger's response to Dr. Mazatl's death. He thought that the director's suspicious disappearance would infuriate them and make them redouble their efforts. He never imagined that the Rangers would simply stop caring and ignore the war. Lane had strategically positioned swarms at the edge of every Wall so that they could pour inside the moment they opened the Wall to sent out more armies to fight against him, but the systems never opened. One year went by, and then another, and then another. Nothing ever came out. Lane had no way inside.

He became so frustrated that he tried to find a way to penetrate the Wall, but he got nowhere. Lane was a software developer, not a theoretical physicist. The science of space mechanics was simply beyond him. Even after months of study he couldn't understand how the Walls even worked in the first place. To him they were simply magic. The math that was behind them might as well have been complete gibberish. In his research he came across three different proof papers that claimed the Walls were absolutely invincible and there was no way to get around them. For all Lane knew they were right. If the Rangers stayed in their systems forever then they would always be out of his reach.

Just when Lane was about to give up hope, something unexpected occurred. On May 2, 2465 the Wall around Cygni suddenly disappeared. Lane never found out what happened. Perhaps there was an equipment malfunction; maybe some critical part broke and there were no backup systems to take over. Given the Rangers' careless attitude, Lane suspected that people had just stopped caring and failed to give the Wall the care it needed. Whatever the reason, this gave the swarm the opening it needed to wipe out that entire system. The three surviving Ranger colonies had become two.

The very next day the Wall around Luyten fell. This made Lane think that there must have been some manufacturing

defect in the Walls of those two systems. Perhaps they had been made from the same flawed plans. If the Rangers had failed to create backup systems then a simple technical failure could have led to total system collapse. His swarm quickly wiped out that system as well.

Lane was hoping that Gliese would be next, but its Wall stayed firm. Weeks went by, and then the weeks turned into months and the months turned into years. Governor Davidson's Wall never wavered. It was immensely frustrating. Lane could not enjoy his paradise as long as he knew that Davidson – the most irrational and paranoid Ranger governor of them all – was still alive. He was precisely the one who was most likely to attack Lane. He had to be dealt with.

For four years Lane waited for his Wall to collapse on its own, but it never did. Eventually Lane grew tired of waiting and decided to act. He had a plan, but it was risky. If it failed it would reveal that a human foe was behind the bots, but he decided it was a calculated risk. He had to do something to resolve the stalemate. The wait was more than he could bear.

* * * * *

A battered starship approached the boundary of the Wall around Gliese. The ship was old and had clearly seen battle. When it approached the system's long-range scanners detected its arrival. The ship had picked the right day to make the trip – the swarms had left a week earlier and the space around the Gliese system was clear.

As soon as the ship was detected, the automated systems notified Governor Davidson that something unusual had happened. Not only was a ship approaching, but it was trying to contact them.

The governor examined the scanner's reports before making any decisions. To his surprise the ship was the *Valor* – the

starship that was carrying Dr. Mazatl. Everything seemed to check out.

Governor Davidson activated the console in his office and replied to the ship's message. "Dr. Mazatl! I thought you were dead. What is going on? Why are you so late?"

On board the *Valor* was a swarm of bots. Lane had packed as many bots as he could into an exact replica of Dr. Mazatl's old ship. The director, of course, was not there to reply to the governor's message, but it hadn't been difficult to modify the ship's AI to fake a video transmission.

"I ran into problems with the swarms," the ship replied. To the governor it looked like an aging, tired old man was talking to him. "I had to hide out on empty planets for years. It was terrible. I could only travel in short jumps. It's awful out here. Can you please let me in?"

The governor was convinced. He was expecting Dr. Mazatl to arrive, and there he was. It was true he was late but he had a good reason. His ship checked out and his story made sense.

"Of course," the governor replied. He reached up and tapped a button on his holoscreen.

An hour later, every last living creature on Gliese was dead. The swarms had finally destroyed the last Ranger world.

When Lane heard the news he shouted for joy. He had won! Thanks to his cleverness and foresight, the Vaults had won and reality had lost. The only inhabited star systems left were Tau Ceti and Alpha Centauri A, which were Vault systems. All of mankind was now in Vaults and their future was secure. He no longer had anything to worry about.

Lane had been in Vaults for so long that he had forgotten about Sol entirely. There were still two inhabited worlds left – Earth and Mars. There was also the massive artificial intellect that Dr. Mazatl had built. It survived the swarms simply because Lane stopped caring about the Corporation's probe project.

Once Gliese fell, Lane was tempted to shut down the swarms but decided against it. Victor was still out there somewhere. He had found a way to escape, which meant that one day he might decide to come back and cause trouble. The smart move was to leave the swarms out there in Ranger space and watch for his return – and so that is what Lane did.

Meanwhile, the Stryker twins were frozen in time in the Artilect. They awaited the day when they would be released and defeat the swarms once and for all...

CHAPTER 31: REDEEMED

Log date: November 25, 10,007 EE

Location: Interstellar space

Log note: A new country

AFTER LANE'S SWARM HAD DESTROYED the last surviving Ranger colony, he returned to life in his Vault. He and his people then spent year after year living in worlds of pure fantasy and depravity. His technology not only worked, but it also extended his life enormously – which was exactly what he had worked so hard to achieve. His life was extended for thousands of years.

Things went well for those who lived in Vault 37, but the other Vaults began to experience problems. After a few short decades catastrophic problems began to develop. Since there was no one left to maintain the machinery that the Vaults depended upon, things eventually started going wrong. The maintenance bots did their job well but they were not perfect. When problems arose there was no one around to notice them, much less resolve the issue. The Vaults on Alpha Centauri A were destroyed in an unfortunate disaster and everyone perished.

The same fate befell the Vaults on Xanthe. After just fifty years there was only one Vault that was still functioning, and that was Vault 37. All of the other Vaults had gone offline and the people in them were dead. The reason Lane's Vault never broke down was because Lane assigned Adrian Garza to care for it. Every so often Adrian would wake up from his fantasies, return to the real world, and check the health of the Vault. Since Adrian was there to watch over the systems and resolve problems before they became catastrophes, things never went terribly wrong. If someone had done that for the other Vaults they might

have lasted longer – but no one was interested in taking that responsibility.

After five thousand years Vault 37 was still operational. By then, though, things had begun to change in the outside world. The *Sparrow* brought the Stryker family to the 73rd century, and shortly after that Amy and Amanda Stryker were freed from their time stasis at the Artilect. The twins then led the Artilect to victory against the bot swarms and ended their five-thousand-year reign of terror. Once the war was over the Strykers offered a new life to the people in the Vault – a life among the millions of worlds the Nehemiah IV probes had terraformed.

Lane immediately rejected their offer. He hated the idea of reality back in the 25th century, when Professor Grimes and Victor Stryker were still alive, and he hated it even more in the 73rd century. Since the Strykers did not love his virtual worlds and were trying to persuade people to leave his Vault, he decided they were a serious threat. He treated them the same way he treated the Rangers: he assassinated the Stryker family and destroyed the Artilect.

But in spite of his best efforts Amy Stryker survived – and Lane was killed. After his death Lane was condemned for his great and terrible sins against the Most High God and was cast into Hell. All of the evil that he had ever done was judged, and he was sentenced to be tormented by fire for all of eternity with no hope of escape or comfort. Lane's wicked choices finally caught up with him.

Once Lane was gone Amy put an end to Vault 37. She offered its inhabitants forgiveness and told them of the power of God to save them, but they refused to listen to her. Instead of choosing life they chose death. In the end they all died and only a few were saved.

Amy then went to Sol and freed that star system from the Wall that had surrounded it since the 19th century. She gave Mars a chance at a new future and they took it. Amy made a similar

offer to Earth; some took advantage of it and others did not. When her task was done she went through the Door to Heaven and left behind new civilizations on Earth and Mars.

On February 9, 7351 the Lord returned and put an end to the old universe, with its sin and pain and death. The great and terrible Day of Judgment finally came. On that day the dead, small and great, stood before God. The books were opened, and the dead were judged out of those things that were written in the books. Those whose names were written in the Book of Life were saved, and those whose names were not written were cast into the Lake of Fire, where they were tormented day and night. When the final judgment was over the Lord created a new Heaven and a new Earth. In that glorious place there was no death or sorrow or crying or pain, for the former things had passed away.

Ten thousand exciting and action-packed years passed. Then one day...

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The six Administrators agreed with Professor Grimes' plan and instructed the Artilect to watch the area around Victor's Singularity for the appearance of any new alien starships. The Artilect agreed to this task and executed it faithfully. While he went about his duties in the rest of the universe, the Artilect deployed equipment that carefully monitored that mysterious void between the stars. The days grew long and no ships appeared, but the Artilect kept watching. He was very patient, and he would not abandon his assigned task.

Meanwhile, as the years went by, the rest of the Administrators went on about their lives. They all had many things to keep them busy – things to learn, things to see, places to visit, and new mysteries to unravel. There was no end of adventures to be had. It was an amazing time to be alive – and

each day was better than the one before.

For six years the Artilect waited and found nothing unusual or strange. For six years life continued as normal. Then, in the seventh year, it finally happened. On November 25, 10,0007 of the Eternal Era, a starship of a very unusual design appeared out of nowhere. One moment there was nothing and the next moment it existed.

It took the Artilect less than a minute to analyze this vessel and discover that it had the same unusual technology and exotic matter that had been found on the *Vaughn*. It took him only seconds to discover that this ship had living creatures on board. The mysterious builders had finally returned.

The Artilect immediately contacted the Stryker twins. It was time for them to make first contact. The long wait was over.

* * * * *

When Amy and Amanda Stryker were told the news they immediately dropped everything that they were doing. Although they had become involved in other matters, this could not wait. They had spent years waiting for another ship to appear, and there was no way to know how long that ship would remain in their space or how soon its passengers would vanish. It was possible the ship would only stay around for a few minutes before it crossed over into U16b. They had to make contact right away.

Yet the twins did not go straight to the *Vaughn II*. Instead they went to Ayala to get Velvet Dawn. Even though time was in short supply, they had a promise to keep. They had told their friend that she would accompany them to the end of this mystery, and they were going to keep that promise. The twins were not going to board the *Vaughn II* without her.

Velvet Dawn was surprised to see them. "I didn't know you were going to be paying me a visit today! If you had given

me a little advance notice I could have prepared something for you.”

“Or you could have had one of your minions prepare it,” Amy Stryker teased.

The purple wisp glowed brightly. “I'll admit I've become a little more well-known over the past few years. It seems that the new abilities you gave me have opened up all kinds of possibilities for our race. It's all been good, of course – we can do things now that we couldn't do before. We're becoming a modern civilization! But it does take up a lot of my time.”

“You've been using your powers very well,” Amanda replied. “It's great to see what your race has done to Ayala. It's changed a lot since we first asked you to join us seven years ago.”

“It really has. So what can I do for you?”

“Can you guess?” Amy asked. “Why do you think we're here?”

Velvet paused to think. “Hmmm. Well, the only bit of business I can think of that we haven't finished yet has to do with that ship we explored in that faraway galaxy. It had some kind of funny name. The *Vaughn*, maybe? Seems like we were waiting on something to happen.”

“That's exactly right! We've been waiting, and our waiting has finally paid off. The builders have sent another ship into our space and the Artilect says that it has living creatures on board. Living creatures! I can hardly wait to meet them – but we don't want to meet them without you. We'd like for you to be there when we make first contact.”

“I'd be delighted!” Velvet exclaimed.

“Is now a good time?” Amanda asked.

“I don't see why not.”

“Then let's go!” Amy said eagerly.

The three of them vanished.

* * * * *

Amy, Amanda, and Velvet Dawn appeared on the bridge of the new ship. They immediately noticed that this vessel was several times larger than the *Vaughn*. It was clearly more powerful than its predecessor – and it was packed with mysterious equipment. Whoever built it clearly had some sort of purpose in mind. They were trying to accomplish something – and if Grimes was right, they were attempting to breach the barrier and reach the U16b anomaly.

“I can see them!” Velvet Dawn said excitedly. “I don't think they can see us though.”

Amy and Amanda used their nanites to scan the bridge. They immediately saw four unusual beings on it. They didn't look like any other creatures they had ever seen.

“You're right,” Amy commented. “They aren't aware of our presence at all. It's like we're not even here.”

“I guess that makes sense, though,” Amanda said. “We can't see them without these nanites, so maybe it works the same way – I guess they can't see us either.”

“So what do we do?” Velvet Dawn asked.

“We make ourselves visible to them,” Amy replied. “When the Artillect studied their technology he came to understand how it works – and how to recreate it. We can use his knowledge of the nanites to create an image of our form in the type of matter that they can see. This won't actually change us – it's just an illusion for their benefit – but it should let them know that we're here.”

“But how are we going to talk to them?” Velvet asked.

“I don't know yet,” Amanda said. “Let's just go with it and see what happens.”

The three friends commanded their nanites to change their visible appearance. From their perspective nothing happened – but the four aliens reacted strongly to what they had done. The entire group stopped what they were doing and stared

in astonishment at Amy, Amanda, and Velvet. They were frozen for a moment, and then started talking excitedly. But what they were saying could not be heard.

Amy immediately knew what to do. "The communications system! Let's try sending them a message that way. We know they can pick up *those* signals! Thanks to the Artilect we know how to send the kind of signals that they can receive. Maybe we can talk to them that way."

"Our nanites can do that, right?" Velvet Dawn asked.

"Right," Amanda said.

All three of them connected to the system that the *Vaughn* had used to receive messages. "Hello there!" Amy broadcast. "It's nice to finally meet you at last. We've been looking for you for a long time!"

One of the beings glanced down at the console in surprise. It then picked up a small device and talked into it. "Are you talking to us over this machine?"

"Yes we are," Amanda said, grinning. "I'm sorry for the inconvenience. This is all kind of new to us. You see, when you're in our space we can't see you without the aid of special technology. We can only hear what you're saying when you talk into your communicator – and I guess that's the only way you can hear us as well."

"*Your* space?" the being exclaimed, surprised. "Do you mean you live in the void? But how is that possible? There is nothing out here except for the great tear!"

Amy laughed. "This isn't a void! It's just part of the universe – and the universe is really, *really* big. We're not the only ones who live here either. There are dozens of other civilizations all around us that are spread across trillions of stars and more trillions of planets. There is a *lot* of life out here."

The beings looked at each other in amazement. A different being spoke up. "We had no idea. We thought that life only existed on our own world and that the void was nothing but

emptiness. The matter that exists in this void is so unusual and strange that we can only work with it using the most precise materials. We never imagined that it could support life.”

“We thought exactly the same thing about *your* matter. We had to invent new technology just so we could see you. In fact, we would never have even known you existed if it wasn't for Velvet Dawn here.”

“That's me!” Velvet said quickly.

Amanda spoke up. “Velvet was our bridge. She is made of matter that we're familiar with, but she can see your exotic particles. If it hadn't been for her we never would have found you.”

“It's just how the Lord made me,” Velvet explained. “I can't take any credit for it. But it's so nice to finally meet you! We've been trying to find you for such a long time now.”

“We were unaware of this,” the first being replied. “In fact, it would seem there is a great deal that we are unaware of. It is amazing to consider that there are entire civilizations right outside our home that we did not notice. It opens up many new possibilities.”

“You don't know the half of it,” Velvet Dawn said excitedly. “Just wait until you see the place where Amy and Amanda are from! Their home is the City of God – the New Jerusalem. They dwell with the Lord Himself. It's the most beautiful and amazing place you've ever seen! Nothing else even comes close to it. The city is lit by the glory of God and is tremendously holy. No place in the entire universe is better – and yet mankind *lives* there.”

“But how is that possible?” the first being asked. “The Lord lives in His dwelling place, surrounded by His immortal servants. He dwells in inapproachable light. His abode is far beyond reach and He lives in unimaginable glory. Are you truly His servants? Are you among those who live in His holy city?”

“We certainly are,” Amy said.

“So are you angels, then?” the being asked.

“Oh no,” Amanda replied. “We're not angels. They are entirely different species. We are the Redeemed. We were created around the same time, but we're very different and have a complicated backstory.”

“I am not familiar with the Redeemed. That is an unusual title! To redeem something means to purchase it. Were you purchased? How did this come about?”

“Do we ever have a story to tell you! It's the most glorious story of all. Let me tell you what the Lord has done for us.”

* * * * *

News of first contact with the remarkable beings who created the *Vaughn* rapidly spread throughout the universe and was received with great joy. First contact was always an exciting occasion, but this was more momentous than normal. The first signals from this alien race had been received in the old universe by Victor Stryker. Nearly fifteen thousand years passed between the discovery of that first signal and the day that Amy, Amanda, and Velvet Dawn met them on board the *Vaughn II*. It took a great deal of effort from many people in order to bring that moment to pass, and when it finally happened there was much celebrating.

The beings from Zovitalia were astonished to learn that they were not alone in the universe. They told mankind that they were indeed trying to reach the U16b anomaly, and the reason they were doing it was because they were seeking to discover other life. The fact that there had always been abundant life all around them was a source of great amazement. There were entire worlds out there that they missed because they could not perceive them.

The Artilect used his immense capabilities to help the Zovians create tools that let interact more easily with the rest of the universe. Once he taught the aliens how to access the

universe, they sent a delegation to mankind. From that moment on things began to change.

The first thing the Zovians wanted to do was visit Zion. They had heard about the Lord and they loved Him but they never imagined they would be granted access to His holy city. They never thought that they would walk down the New Jerusalem's streets or meet the One who had created it. Thanks to the Artillect they could now come and worship the Lord in the place where He manifested His presence. When the kings of the stars entered the New Jerusalem to bring their treasures to the Most High God, the Zovian leadership entered among them.

But that was not all that they did. The Artillect discovered that the aliens knew things about the Singularity that mankind had never discovered – and the aliens learned that there were entire branches of technology that had never even occurred to them. They invited Victor Stryker and Noel Lawson to their homeworld so they could have an exchange of technology and ideas. Both sides had much to learn from each other. They also had a common goal: they wanted to reach the U16b anomaly.

A plan was made to join forces. They believed that if they worked together they could find a way to do what neither group was able to achieve alone. It was time to make one more effort to reach the unreachable.

* * * * *

On February 18, 10,046 of the Eternal Era, Victor Stryker found himself standing on the surface of a rocky world. Beneath his feet was a tough, reddish rock that stretched to the horizon in all directions. Above him was a pale blue sky. The air was thin on this world and there was no life. Most worlds were designed to be the home of civilizations, but this one was crafted with a very specific purpose in mind. Every aspect of it, from its crust and mantle to its core, was the product of years of careful research

and experimentation. Most of the technical features of this planet were below ground and out of sight, but there was one exception. In front of Victor was an enormous machine of a curious and intricate design. Around that machine was a large group of very excited people.

“It's quite a sight, isn't it?” Dr. Mazatl commented.

“That's one way to put it,” Victor replied. “It sure wasn't easy to build, I'll say that! I thought that building the Artilect was the most difficult thing we'd ever done, but I have to say this tops it. Not only did it take almost 30 years to design and construct, but look at what we had to do to manufacture it! First we had to create a planet with just the right composition. Then we had to position it in exactly the right place relative to the Singularity. *Then* we had to build that crazy machine – which goes all the way through the core of the planet itself. That is a very expensive gadget.”

“And in a way it is all thanks to you,” the First One replied. The Zovian had overheard their conversation. “The reason this machine can operate is because of the singularity that you created fifteen thousand years ago. That was a most fortunate occurrence!”

Professor Grimes grinned. “It certainly was! Although I am sure it didn't seem that way at the time. Victor told me he felt like the unluckiest person in the universe when he crashed the *Vanguard* into that planet. But as we can see today, even that had a purpose. If it wasn't for that singularity we might never have discovered the only way to reach U16b.”

“Which is a terrible name for such a fascinating anomaly,” Amy Stryker commented. “Whoever named it needs to be taught a thing or two about inventing names.”

Victor nodded. “Now *that* is something you can't blame on me! It *is* true that my apparent lack of piloting skills did result in the creation of that anomaly, but I can't take all of the credit here. The Stryker twins are the ones who finally tracked down

the Zovians. I might have been the first one to receive their signal but I'm not the one who made first contact with them."

Amy spoke up. "Well, we never would have found them if it hadn't been for Velvet Dawn."

"I was glad to help," Velvet replied. "It was the least I could do."

"All in all it was truly an extraordinary team," Dr. Nehemiah Temilotzin remarked. "We have each played a part and contributed something. The sequence of events that led us to this point is rather remarkable. We would not be here today if Timothy Stryker had not made his two sisters administrators over his replicating probe project. Without that act of kindness the future would have been radically different."

"It goes back even further than that," Timothy Stryker commented. "The reason my parents adopted Amy and Amanda in the first place was because their original parents abandoned them. The reason they abandoned them was because they had a rare genetic defect that gave them only a few years to live. Mom and dad had compassion on them, and that compassion changed history. I made them administrators because I thought their short lives were coming to an end, and I wanted them to be remembered."

"Well, we *did* end up having short lives," Amy pointed out. "Neither of us lived to be 20."

Noel Lawson laughed. "I didn't meet you until five thousand years after you were born! You may have led a short life but it was spread over quite a few years."

The Sentinel spoke up. "I do not think they have led short lives at all. After all, are you not still alive today? Have you not inherited a universe of endless wonder and joy? You have not met the terrible end of Carroll Lane, who will experience nothing but unending torment for the rest of time. In this universe all is well, for the dark things are passed away. You have lived quite a long time and you will continue to live on forever. That is an

amazing gift.”

“And it is all thanks to our great Redeemer,” Amy said.

The Artilect spoke up. “Indeed it is. He purchased your salvation with His own blood, and gave His life for yours. Thanks to his sacrifice you will live forever. Throughout all the endless ages to come you will experience nothing but the exceeding riches of His grace.”

There was silence for a moment. Then Miles spoke up. “Is it time?” he asked.

“I certainly hope so,” Captain Max said. “I’ve waited a lot of years for this.”

“As have I,” Jones replied.

“I wouldn’t miss it for the world,” Reverend Knight remarked.

“Very well,” the Artilect replied. “Shall I start up the reactor and open the Gate?”

“Of course!” Victor said. “What are you waiting on?”

Dr. Mazatl laughed. “I think all the Administrators are in agreement with Victor. By all means, Andy, don’t keep us waiting. We’re all very eager to see what’s on the other side of that Gate.”

The ground rumbled beneath their feet. It was a soft, gentle rumble at first, and then it grew in intensity. The machinery that stretched out across the rocky plain began to glow, and a faint shimmering light appeared in the air. It was hard to see at first, but over time it solidified.

The group waited patiently. As the hours passed the machine continued to create a path through the barrier. The wormhole that it was attempting to create was a highly unusual one that exploited the odd nature of Victor’s singularity. Building the passage and stabilizing it was a tricky task.

While the machine worked, the crowd around the gate laughed and talked with one another and reminisced about the many adventures they’d had in the past. All of them were eager to see the anomaly open but none of them were in any particular

hurry. After all, they had all of eternity stretched out before them and they had inherited everlasting life. They were not in danger of running out of time and they would never again be threatened by any sort of enemy. Peace – unending peace – stretched out as far as one could see.

Monroe and Merlin were there to record the momentous events that were unfolding. They were not alone, for reporters from all over the universe had come as well. Everyone throughout the stars wanted to know what the Gate would reveal.

After two days the shimmering light solidified. The wormhole strengthened quickly after that. At first they could only see a blurry picture of what was on the other side – but on the third day the connection was finally made. Through the wormhole, which seemed to stretch for only a few feet, the group could see another world. It was a bright world, full of light, and the very air seemed to be filled with joy.

They couldn't see very much of it from where they stood. There seemed to be some sort of living creatures moving about. The ground was moving as if it was made of liquid, but yet it had strength and solidity to it. Everything that they could see seemed to be beckoning them to step through the portal and enter a new realm.

“Remarkable!” Professor Grimes exclaimed.

“How old do you think that place is?” Monroe Araiza asked.

“Hard to say,” Richard Stryker commented. “It could be older than the universe.”

“Which would make it almost as old as us,” Laura Stryker teased.

“Well, let's get moving!” Governor Nicholas said. “After all, we're not going to find our answers by standing here and staring. Don't you think it's time we stepped through?”

“Absolutely!” Amy agreed. “I think it's high time we

started on another adventure. Velvet, would you like to come with us?"

"I'm right behind you," the wisp replied.

The group eagerly made their way through the portal. There was a whole new world to explore, with new mysteries and new opportunities. It was time to see what was on the other side. Who knew what amazing things were waiting for them?

EPILOGUE: AN UNEXPECTED COUNTRY

Log date: February 26, 10,046 EE

Location: Interstellar space

Log note: A new adventure

NO ONE KNEW HOW LONG the brave team of adventurers would be gone when they stepped through the Gate. After all, it was impossible to tell what they would encounter on the other side. They might be gone a few hours or a few years. This was an entirely new experiment – which is what made it so exciting.

Most of the onlookers stayed for an hour or two after the Gate was activated and then left. The universe was a busy place and they had responsibilities to tend to. The only ones who decided to stay were a few intrepid reporters. Although they could not linger forever, they decided to hang around for a few more days so that they could be there, in person, when the expedition returned. They didn't want to miss that triumphant moment – or what might come back through the portal with them. So they settled in for a long wait.

Four days passed and nothing happened. Then, on the evening of the fifth day, the Gate activated once more. Two people stepped out of it – Victor Stryker and Professor Grimes.

Tommy Neal, the reporter from the *Blue Mountain Eagle*, immediately rushed over to them. “If I might have a moment of your time, gentlemen, I have a few questions for you. Our readers would love to know what wonders you discovered on the other side of the Gate.”

Grimes spoke up. “I'll be happy to tell you whatever I can, but first I have a question for you. How long have we been

gone?”

“Five days,” Tommy replied.

Victor laughed. “You were right! Time *does* flow at a different rate there.”

“Which is rather convenient for us,” Grimes replied. “There was no other way we could afford to spend that much time there otherwise. For one thing I have classes to teach, and I can only put that off for so long. This opens up some rather interesting possibilities.”

The reporter spoke up. “Do you mean to say you've been gone for *three years*?”

“We have indeed! Of course, we had no idea what we were getting into until we stepped through the Gate. There was no way of knowing in advance.”

“So what else did you find on the other side?”

“Something quite unexpected,” Victor replied.

What do you mean?”

Grimes spoke up. “There is indeed a country on the other side of that gate – a magnificent country that vastly exceeded my highest expectations. But you must understand that it is a *new* country. There are things in it that I had never even imagined before. That makes it rather difficult to talk about. You simply don't have the vocabulary.”

“Are you saying that you can't put it into words?”

“I'm saying that if I did it wouldn't help. Suppose that you were one of the species in this universe who could not see the color red. I could tell you that red exists, and that it's entirely different from green. I could mention that it has a frequency of 620 to 750 nanometers. I could tell you that it is magnificent in sunsets. But none of that would really help you very much. Oh, you might *think* that you understood red. You might believe that all the facts you have memorized about it have given you some level of insight. But until you have seen the color itself you actually know nothing. You are missing the one thing that

matters the most – the actual experience of that color.”

“You seem to have a deep passion for red,” Tommy remarked.

“To be honest, I actually do not have a favorite color. I think it depends on the situation. For example, red is magnificent but I don't think it works very well for grass. But the point is you are making a tactical error. I cannot tell you what is on the other side of that Gate because you have no frame of reference for it. The words would mean nothing to you. If you wish to know what lies beyond then *go there and see for yourself*. Then you will know.”

Victor spoke up. “Of course, you might find it tricky to explain what you find to your readers. But I'm sure you'll think of something! One good bit of news for you is that the universe is about to change. Just wait until what is over there comes *here*. A lot of things are going to be different going forward.”

“So what happens next?” Tommy asked.

“It's impossible to say,” Grimes replied. “All we know is that the Most High God is the undisputed ruler of all the worlds – both the worlds that exist now, and all the worlds that are to come. We are going to spend the rest of eternity glorifying our Savior and enjoying the bountiful riches of His grace. Could there be anything better than that?”