

GIBRALTAR EARTH

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PROLOGUE

"It is said of the British Empire's acquisition of the Indian subcontinent that they did not so much conquer India as win the prize in a fit of absentmindedness. Although exaggeration, there is a modicum of reality in the statement. For the truth is that the greatest jewel in Victoria's crown was won in large part through a streak of luck - bad luck for the indigenous peoples and good luck for the inhabitants of what otherwise might have been just another sleepy island nation.

"Nor can we modern humans make any great claims for our own recent acquisitions. Oh, we speak loudly of our own prowess, and celebrate the memories of the brave men and women who sacrificed their lives to our cause. Still, we should not lose sight of the undeniable fact that we were lucky, perhaps far luckier than we deserved. I therefore ask you, my fellow citizens of Sol, to join me in an exercise in humility. Consider for a moment all the things that might have gone wrong--"

From a Victory Speech by the

Right Honorable Jonathan Ambrose

To the World Parliament

12 October 2356

CHAPTER 1

Captain Dan Landon of the Survey Ship *Magellan* sat strapped in his desk and gazed at the large holoscreen that dominated the far bulkhead. It was filled by a blue-white planet bordered by a patch of ebon sky. Stretched out before him to the curving planetary limb was a panorama of fleecy-white clouds and seas of royal blue. To the right lay a sprinkling of green islands; each surrounded by aquamarine shoals. At the top of the screen, just coming into view, was the jagged coastline of one of the major continents. Soon they would be sweeping over amber plains blackened by herds of six-legged beasts, mountain ranges capped by snowfields, forests of deep green, and a river network that was equal to the Nile, the Amazon, and the Mississippi combined.

In the two generations since humanity had won free to the stars, the race had found but twelve worlds sufficiently like the Mother of Men to be considered even marginally habitable. This was the thirteenth, and so far, the best. Preliminary results gave it double the highest habitability index previously recorded. A solid month of orbital scanning, laboratory tests, and on-the-ground exploration had revealed a paradise. For that reason, Landon scowled as he watched the scenery float by far below. A life spent in the service of the Stellar Survey had left him with a philosophy that mirrored the organization's unofficial motto: "If things are going well, you have obviously overlooked something!"

As he gazed at New Eden, the crew's unofficial name for their find, he wondered what they were overlooking. Even after a month of study by a thousand talented specialists, they had only scratched the surface of what there was to know. A world was just too large and too varied a place to be surveyed by a single shipload of scientists. To understand New Eden completely would be the work of generations. Where lurked the microorganism that would ultimately prove fatal to humans, the environmental factor that would render colonists sterile, or the million-and-one other deadly possibilities that would turn this beautiful new world into a pestilential hellhole?

Landon knew that his current black mood was a defense mechanism against the high hopes that New Eden had spawned in him. It was easy to remain detached when the system to be surveyed consisted totally of sterile rocks and gas giants, as most of them were. There was no love in his breast for the usual dust balls, volcano fields, and oceans of hydrochloric acid. However, to find this beautiful world and then lose it because of some innocuous-seeming environmental factor would be too great a disappointment. Better to keep expectations low until they knew more about it. Sighing, he moved to retrieve a bulb of steaming hot tea from its microgravity holder.

There was a quiet rattle as the cabin around him shivered. Landon froze for a long second as his brain analyzed what he had sensed largely on a subconscious level. A chill had gone up his spine as it sometimes did when he was thrilled or frightened. Yet, it had not been just him. There had been a subdued clatter from the storage lockers that lined every unused centimeter in his cabin. The holoscreen had flickered with static, hadn't it?

The introspection took less time than it takes to gulp. A moment later, his hand reached out of its own volition and slapped down on the intercom plate inset into the desk.

"Report!" he snapped as the duty officer, a pimple-faced ensign, stared back at him.

"Don't know, Captain," the boy squeaked. "We are getting reports from all over the ship. Wait a second. Scout Three is reporting that they felt it, too!"

Scout Three was Jani Rykand's ship, en route back from exploring the larger of the two moons of the planet. The fact that she was ten thousand kilometers from *Magellan* eliminated the thought that whatever had happened was a problem only with his ship.

"Sound general quarters, Mr. Grandstaff."

"Aye aye, Captain."

Landon was already out of his seat, pulling himself hand over hand toward the control room as the alarms began to bleat. A thousand past drills provided him with a mental picture of the organized bedlam that was taking place all over the ship. Before the alarms lapsed into silence, he was strapped into his control console at the heart of the big survey craft, surrounded by dozens of screens, none of which told him what he wanted to know.

"What was it, Doc?" he asked a white-haired man in his personal screen after keying for the ship's chief

scientist.

“Whatever it was,” Raoul Bendagar replied, “it wreaked holy hell with our instruments. Half of them lost calibration at the same precise moment we felt the shock.”

“You must have some idea,” Landon persisted.

“Wait a second while I check something,” Bendagar answered. He stooped to manipulate a screen on which a series of glowing red lines were superimposed on a polar coordinate grid. “Well I’ll be damned.”

“Don’t keep me in suspense.”

Bendagar glanced up at the captain, a look of shock on his face. “We just experienced the Grand Hooting Monster of all gravity waves, Captain. No wonder it knocked everything out of alignment.”

Landon frowned. He knew that gravity waves existed, of course. For more than a century, a trio of satellites had orbited between Earth and Mars at a precise one thousand kilometers from one another. They used laser beams to maintain their spacing to twelve digits of accuracy, forming a vast right triangle that detected the microscopic distortions caused by the collapse of distant stars and other more catastrophic events. The largest gravity wave ever detected had distorted space by an amount less than the width of a proton. This one had been heavy enough to rattle Landon as he sat in his cabin.

“Come off it, Doc. Couldn’t have been.”

“The instruments recorded a distortion wave traveling from Equipment Lock Two to the boat deck at the speed of light. Call it what you will, but I say it was a gravity wave.”

“Captain,” the communicator on duty reported, “Scout Three has a sighting report.”

“Put her through.”

As usual, Jani Rykand’s features were framed in a tousled copper explosion of hair. Unlike most women who lived and worked in microgravity, she refused to bob her mane, or to keep it bound in a hair net. On her, it looked good.

“Report!”

“Something weird going on out here, Captain. I am getting energy readings from a point thirty degrees aft of my orbital path.”

Landon glanced at Bendagar.

“We’ve got them, too,” the chief scientist reported.

“What do you make of it, Scout Three?”

“Hirayama’s got the scope focused on it, Captain. It looks like a couple of ships.”

“Patch your view through to us,” Landon snapped.

An instant later, Jani Rykand’s features dissolved to show the blackness of space. In the background were the usual constellations of stars, subtly or drastically altered from the familiar constellations of home by the hundred light-years *Magellan* had crossed to reach this world. At first, there was nothing to see. This changed when a violet flash of light sparked the darkness. It put Landon in mind of summer lightning back home in B.C. Except this lightning managed to illuminate two shapes in the blackness, one of which

glowed for long seconds after the bolt.

“Give us a tighter view, Hirayama,” the captain ordered. Onboard the scout the geologist who was operating the scope controls moved to comply. The distant stars jerked back and forth a few times as the telescope zoomed to maximum magnification. When it stopped, there was no doubt that they were looking at two vessels and that one of them seemed intent on destroying the other.

The prey was the larger of the two, a squat cylinder - it looked remarkably like the pressurized cans in which ground coffee was shipped to prevent vacuum damage. The ship was obviously intended to be spun to produce artificial gravity. Its tormentor was a thin cylinder with a variety of mechanisms jutting from a central core. While they watched, the attacker again sent a beam of violet to splash against the hull of its larger prey. They watched as a geyser of plasma spewed away from the strike in a wide-angled vacuum expansion cone.

“All recorders to maximum,” Landon ordered without being aware of it. “Hirayama, track them!”

Even with the telescope focused on the battling duo, it was obvious that the larger ship was doing everything in its power to escape. It jinked one way, then the other, always trying to stay ahead of its tormentor. The effort was futile. The small warcraft matched each violent maneuver with one of its own, hanging onto its prey like a small terrier harrowing a large bull. Every few seconds another violet beam would splash across the hide of the larger craft, leaving an ugly, glowing scar in its wake. Yet, if the small ship were attempting to disable the larger, it was having little luck. After each hit, the target changed course and tried to flee.

“They’re headed this way!” Jani Rykand’s excited voice said over the intercom. Sure enough, the larger ship had changed course and was now headed directly for the scout. As the observers aboard *Magellan* watched, the squat cylinder became a perfect circle and began to grow on the screen. Whatever drive principle the two unknowns were using was not obvious. There were no flares or other emissions to suggest they moved by means of reaction engines.

“Scout Three, take evasive action!”

“Any particular ideas?” the young woman pilot asked. “They both look as though they can fly rings around this tub of mine. My God, look at them come!”

She was right. Both ships were growing at an unbelievable rate on the screen. Soon Hirayama was backing off on the magnification to keep them in view. It took less than a minute before both ships were within naked eye range of Scout Three. The larger prey flashed past at a range of ten kilometers with the small war craft in hot pursuit.

Then it happened.

Dan Landon had been dividing his time between the view from Scout Three and several long-range views of the battle from *Magellan*’s own telescopes, which showed only an occasional spark of violet against the ebon backdrop of space. As it passed the scout, the warship fired another of its violet beams. The beam reached out and momentarily bathed Scout Three in a violet corona of light. The signal from the scout cut off abruptly.

“Scout Three!” Landon screamed. “Report. Jani, how badly are you damaged?”

The answer was obvious on the screen. Where a moment earlier there had been a tiny human spacecraft too small to be seen against the blackness of space, now there was a tiny speck of radiance, a glowing cloud of plasma that cooled as it expanded.

Landon felt a sudden surge of rage. His vision was clouded by the memory of a laughing face framed in wild red hair. Then, as quickly as it arrived, the rage was gone. He felt nothing as he watched the larger ship again foreshorten until it was a half-lit circle of light expanding on the screen. It was the same as the view from Scout Three's cameras, but with the difference that this time, *Magellan* was drawing the battle to it.

"Prepare message probe."

"Captain, we can't do that," Grandstaff said beside him. "We are too deep in the planet's gravity well. The generators will never stand the strain."

"Load message probe, damn you!"

A moment later, Grandstaff reported, "Message probe prepared for launch."

Crammed with power reactors and a star drive generator, a message probe was a small, unmanned starship. *Magellan* carried a dozen of the five-meter diameter spherical craft. They were used for sending reports back to Earth. Not only did they obviate the need to return home after each system; they were insurance against the loss of valuable data should the ship meet with an accident.

Landon watched the oncoming pair while monitoring a display that showed their speed, course, and relative bearing. Since no one had ever expected to fight a space battle out among the stars, *Magellan* was ill equipped to defend itself. The ship's entire armory consisted of rifles, machine guns, and a few heavier weapons to take care of pesky carnivores. Still, they had one potential weapon onboard that might prove useful in stopping an alien marauder.

The two craft came on, with the smaller continuing to chew away at the larger. The damage was beginning to take its toll. Chunks of the prey were being shot off as a cloud of gas and vapor issued forth from dozens of rips in the hull.

Dan Landon set up the probe's coordinates himself, not trusting anyone else to do it. As the warship neared the distance from which it had destroyed Scout Three, Landon keyed the control that would send the tiny unmanned starship racing for Earth. Except, its target was not Earth this time. Landon sent it directly toward the alien warship.

Ensign Grandstaff was right. They were far too deep inside the planet's gravity well for a star drive generator to remain stable. The message probe disappeared from its launching cradle and moved a hundred kilometers at superlight velocity. Those few nanoseconds of operation were sufficient to overload the probe's generators. They exploded, hurling the probe back into normal space. The excess energy was converted to velocity. The rapidly expanding cloud of debris that returned to normal space moved at 0.6c. There was no time for the unknown warship to react. An instant after the cloud of debris appeared, one or more of its particles struck the small warship, turning it into a star that rivaled the system primary for a few seconds.

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Lieutenant Harlan Frees had joined the Stellar Survey because he did not relish the thought of taking over the family business in Woomera. The life suited him. To Frees, the opportunity to lead a party aboard the surviving alien craft seemed too good to be true.

"Report, Scout Two," Landon ordered as Frees's command hovered just beyond range of the slowly tumbling alien craft. Immediately after *Magellan* had destroyed its tormentor, the large ship had put on a burst of speed to escape the scene of the battle. It had apparently been too much for the craft's tortured

engines. Moments later, the squat cylinder had gone ballistic. After checking the point where Scout Three had been destroyed, *Magellan* went in pursuit.

“She’s not human, Captain. No orbital shipyard anywhere near Sol ever built this thing,” Frees reported. He had ordered his vessel in as close as he dared. In front of him was a vast gash where one of the warcraft’s beams had struck a slashing blow. In the compartment beyond floated a body. It was badly mutilated, but enough survived to know that the being had possessed two arms too many.

“Get a shot of that,” he ordered Ensign Grimes, his copilot.

“Yes, sir.”

“After you get the body, do a slow pan. Show them the extent of the damage.”

“Yes, sir.”

While Grimes took care to document the alien ship, Frees looked for a place to dock. The alien ship’s slow tumbling motion was a problem. They would have to latch on and use their own drive to halt it before anyone could explore. Otherwise, there was too much risk of an accident.

Frees found what he was looking for and gently nudged the scout forward. He became conscious of a strange stink in the helmet of his vacuum suit, and then realized it was his own fear producing the odor. He wondered if Grimes smelled the same thing inside his own closed environment.

Scout Two made contact without incident. Two minutes later, they secured their ship to the derelict with a cable. Five minutes after that, they had the tumbling motion halted.

“You have got the conn, Mister,” Frees ordered as he unstrapped. “If you see anything other than us moving about in there, blow the explosive bolts and run like hell for the ship. Got that?”

“What about you, Lieutenant?”

“Don’t mind me or anyone. Anything with four arms comes into view, you get out of here.”

“Aye aye, sir.”

Frees moved to the after compartment where the rest of his boarding party waited. The three were sealed inside vacuum suits and looked slightly ludicrous with a collection of weapons strapped to their chests. Firing a gun in microgravity was a tricky business. The recoil could send you caroming off in the wrong direction, not to mention the possibility of a ricochet puncturing a suit. Nevertheless, considering what had happened to Scout Three, the captain had ordered the boarding party armed.

“I’ll lead the way,” Frees told Able Spacers Goldstein, Valmoth, and Kurtzkov. “Monitor this frequency and the emergency one at all times. Everyone set?”

He received several clenched fists, the gesture that substitutes for a nod in a vacuum suit, in response. After checking to see that Grimes was prepared in the cockpit, he turned the valve that spilled cabin air directly to space. This was one time, Frees reasoned, when they might not have time to cycle through the airlock in the normal manner. When both inner and outer doors were latched open, each man floated through the short airlock tunnel and entered the alien ship.

They encountered corridors that were two meters square and lined on two sides with equipment lockers. This confirmed that the ship was designed to be spun to produce artificial gravity. In ships designed for microgravity, the lockers would have covered walls, deck, and overhead. During fifteen minutes spent

exploring the dark, they discovered several members of the crew. There were more of the four-armed beings that looked like beetles with fur. Another species had bulging eyes and thin manipulators that seemed to have evolved from something like a lobster's claw. Whether the bulging eyes were natural or the result of explosive decompression was not immediately obvious.

Frees was examining one of the dead when a radio call came echoing to him through the metal corridors. "Come look at this, Lieutenant. We've found a section with air behind it."

"Stand by."

Frees pulled himself hand over hand to where the able spacer shone his light on a closed pressure door. The door was similar to that found on a human spaceship, although the proportions were different. So, too, was the control inset in the door's face. It glowed in a script composed primarily of dots and swirls. Kurtzkov braced his legs against a ledge that stuck out into the corridor and tried to lever the door open with his own strength. The hatch did not budge. That was hardly surprising if there were air on the opposite side.

"Are you sure it isn't jammed?" Frees asked as he floated to join the two spacers.

"Don't think so, Mr. Frees. None of the other hatches we came through was."

"Right. Valmoth, get back to the ship and break out the portable airlock. We have atmosphere on the other side of this bulkhead."

Rigging the airlock took twenty minutes. The biggest problem was finding a point to anchor the lock in order to control the blow-off load when it was pressurized. The lock was just big enough for two men in vacuum suits. Frees and Kurtzkov crowded together and let the other two seal them in before getting to work on the hatch. A quick flash of light from Kurtzkov's drilling laser and the airlock filled with air.

As soon as his suit collapsed around him, Frees reached out to touch the hatch control. Pressing one contact had no effect. He tried the other. The pressure door swung silently back on its hinges.

Inside, Frees swept his flashlamp around the darkened room. In one corner, a figure lay huddled in a tight ball. At first, Frees thought it another corpse. Only after a moment did he notice the unblinking yellow eyes that stared at him and the quick panting breath.

"Tell the captain that we have a survivor," he told the two spacers still in the vacuum portion of the ship.

Slowly, carefully, he moved toward the shivering mass of flesh. The being jumped and whimpered when Frees reached out and touched it on a pointed shoulder. Slowly, gently, Frees and Kurtzkov unrolled it.

"Damn, Mr. Frees. It's a monkey!"

CHAPTER 2

Moirá Sims was all any man could ask for in a woman. Long of limb and svelte of form, she was beautiful enough that men sometimes walked into walls as she passed. Her dress of black gossamer set off her pale skin while emphasizing her full figure. Her jewelry was understated and expensive, her coiffure perfect, and her voice that low, throaty purr much prized in holo actresses. She was poised, a witty conversationalist, and had a sparkling sense of humor. Yet, Mark Rykand was becoming bored with her.

“Let’s go back to your place, Markie. I am tired of this party.”

Mark glanced toward his companion who was sprawled beside him in the lounge on which he was perched. She had slipped a finger under his cumber bun and was kneading the little roll of fat that he worked so hard to keep under control. He tried not to frown despite the fact that she had interrupted Gunter Perlman, his fellow solar racing enthusiast, and the skipper of the yacht on which Mark occasionally crewed.

He made a conscious effort to swallow his irritation as he turned to her. “In awhile, Moira. Gunter and I need to settle this bet before we leave.”

“But solar racing is such a bore!”

“Then why not go get yourself another drink? We’ll be through in a bit.”

“Oh, pooh!” He was conscious of her warm body as she slid off the lounge and stood up. Gunter watched as she straightened the dress hiked up by the maneuver. Her answering smile showed that she was aware of the attention. For some reason, that irritated Mark even further. The two of them watched her sway her way past the string combo toward the bar.

“Why do you do that, man?” Gunter asked.

“Do what?”

“Why do you treat her like furniture? She loves you.”

“Moira loves my money.”

“Even if true, that’s no excuse. If you are not careful, she is going to leave you the way Carol did.”

Mark’s answering shrug felt callous, even to him. “There are a lot more fish in the sea.”

“At the rate you are going, you just might do a full-scale ecological count on this particular ocean.”

Irritated with the way the conversation was going, Mark asked, “Look, have we got a bet or not?”

Gunter smiled. “You still think Price is going to beat Hoffman in the cis-lunar, do you?”

“Why not? His yacht just had a sail replacement and the word is that he has lightened his life support system by twenty percent.”

“Doesn’t matter. When Niels Falon quit him, he lost all hope of winning the trophy this year.”

“I think Price’s advantage in equipment will overcome any experience loss from Falon’s departure. In fact, I’ll put a thousand on it just to make it interesting.”

“Even bet? No distance handicap?”

“None.”

“Then you have got yourself a wager, Rich Boy. I just hope you aren’t too drunk to remember this tomorrow morning.”

“I’ll show you who’s drunk,” Mark hissed as he stood. Suddenly, the room began to revolve slowly. He reached out to steady himself on Perlman’s shoulder. “Maybe you’re right. I think I’ll find Moira and call

it a night.”

“Don’t forget that I am having a practice session aboard *Gossamer Gnat* in a couple of weeks. I would love to have you crew for me if you have the time.”

“Sure, sounds like fun,” Mark said. “Nothing I like better than smelling myself after being cooped up in a vacuum suit for a solid week. Call me in a couple of days and we’ll arrange it.”

#

The lights of the Phoenix-Tucson metroplex were a brilliant carpet of diamonds strewn across the dark desert floor as Mark Rykand’s air car wended its way west. In the intermediate distance were the ribbon-like communities that lined the banks of the Colorado River, while on the horizon; the sky glow of San Angeles was just becoming visible. Within the sky car, the only illumination came from the blue glow of the instruments.

Mark scanned the horizon, searching for other aerial traffic while Moira snuggled close, her left arm draped around his neck and her head resting on his chest as she emitted soft, snoring sounds. There was a reason for his vigilance.

Three years earlier, Mark’s parents had been traveling this same flyway when a drunken pilot had chosen Blythe for his next drink. It had been a busy Friday night and traffic control had refused changes in flight plans all evening. Rather than take the chance that his maneuver would be disapproved; the drunken flyer had illegally switched to manual and started a long sweeping turn to the right. Part way through the turn, his car had encountered that of Mark’s parents.

The drunk had paid for his mistake immediately. His car’s right side impellers had been smashed, robbing him of half his lift. The resulting asymmetry had turned his car over and sent it diving into the ground some twenty kilometers east of the river. Mark’s parents had been marginally luckier. With most of his active flight controls smashed, Hugh Rykand had fought his car into a semblance of stability and headed for the ground. He’d let down to land on a stretch of Old Interstate 10 only to discover a small hillock, invisible in the dark, loom in the beams of his landing lights at the last second.

Moira stirred. “What’s the matter? You are shivering.”

“Sorry. The liquor must be giving me the twitches.”

“Oh, poor Markie! Your heart is beating a kilometer a minute,” she said as she burrowed her head into his chest. “Is there anything Moira can do for her Markie?”

“No,” he said more sharply than he intended. “Go back to sleep.”

He had been a student at the time, studying to be a computer specialist, with a minor in astronomy. Life had been good. As the son of rich parents, he had lacked for neither money nor clothes and had more than his share of female companions.

“Are you Mark James Rykand?” the taller of the two police officers that called at his apartment door had asked.

“What have I done, officer?”

“Nothing that we know of, Mr. Rykand. We are here about your parents. There’s been an accident.”

The knife that had entered his heart had been ice cold. “How badly are they hurt?”

“I am sorry, but they’re dead.”

The news had not really sunk in until Mark had gone to identify the bodies. He had managed to identify his father’s battered corpse without breaking down, but when he saw his mother lying naked on the cold slab with no obvious injuries; it had been too much. The feeling of being alone had been overwhelming. Despite his many friends, he’d felt that only one person could remove the hollow feeling in the pit of his stomach. That was his sister, Jani, and unfortunately, she was exploring some nameless star system out in the deep black.

Over the next several weeks, he had wondered how he would break the news to her when her ship finally returned. Like a trip to the dentist, the anticipation of the event had proven worse than its reality. In fact, he had not had to tell Jani at all. The Stellar Survey took care of that as soon as her ship materialized somewhere beyond the orbit of Jupiter. Jani had nearly three weeks to compose herself before her return to Earth, and then she barely stayed a week. She had visited Mark just long enough to have a good, long cry with him and to sign over her power-of-attorney, giving him *carte blanche* to manage their mutual inheritance. After that, he had accompanied her to the spaceport, kissed her good-bye, and watched her disappear back into the endless vacuum overhead. Her whirlwind visit had done nothing to alleviate the gnawing feeling of loneliness.

Three years later, the feeling was still with him. Mark often awoke to find himself wrapped in perspiration-soaked bed sheets, shivering, fists clenched around an invisible control column as he struggled to gain just the few meters of altitude that would have saved his parents. In the aftermath of such episodes, Mark often wished that he had followed his sister’s example. Better a life among friends in the midst of vast emptiness than a life alone among Earth’s teeming billions.

#

Moira was the first to notice the blinking notice on the screen in the den. They had been home ten minutes and were preparing for bed.

“You have a max priority message, Mark,” she said as she entered the bedroom, head cocked as she removed one of her earrings.

“From whom?” he asked with a start.

“Doesn’t say.”

He muttered under his breath as he padded in bare feet to the den. Sure enough, the diagonal red stripe designed to draw instant attention was blinking on the screen. He cleared it and called up the message. The face was that of no one he had ever met.

“Mr. Rykand, this is Hans Cristobal, duty officer at Stellar Survey Headquarters,” the recording said. “Please give me a call when you return. It’s important.”

The sober expression and matter-of-fact delivery was enough to shock Mark sober. A call from the survey duty officer could have only one meaning. All that was left was to find out just how bad the news was. Mark punched out the numbers at the bottom of the screen with shaky fingers and waited an eternity until he was looking at the same face as had been in the recording.

“Yes, may I help you? ... Ah, Mr. Rykand. Good of you to call back.”

“What’s happened to my sister?” he asked without preamble.

The officer blinked, not knowing how to react to the direct question. The hesitation told Mark all he

needed to know. He had seen that look before, on the face of the police officer that had delivered the news about his parents.

Finally, after a lag that was nearly four times that required to get a message halfway around the world, the officer said, "I am sorry, Mr. Rykand. It is my sad duty to inform you that your sister was killed in an accident three weeks ago."

"How did it happen?"

"We have few operational details at this time. Perhaps we will know more when *Magellan* docks. All I can tell you now is that we have received official confirmation of her death."

It was the recurring nightmare about his parents all over again. Mark felt the cold hand grip his heart again, just as it had three years earlier. If anything, it was worse this time. He barely heard his own voice as he asked, "When will you be shipping the body home?"

The duty officer hesitated. When he resumed, his words gave no comfort. "I am afraid there is no body. We will, of course, arrange a memorial service for Miss Rykand at the time and place of your choosing. There is also the matter of her standard insurance policy. I believe you are the beneficiary."

"Damn it, I'm not interested in her insurance. I want to know what happened!"

"As I said, sir, I don't have that information at this time. Perhaps in a few weeks--"

The screen rattled on his desk as he slammed his fist onto the cutoff plate. He sat trembling before the darkened screen for nearly a minute before Moira came in to see what the noise had been.

"What's the matter?" she hissed upon seeing his expression.

"Jani is dead."

"Oh, no, Mark! It can't be true."

"It is. That call was from survey headquarters. Sorry to inform you, Mr. Rykand. No, we do not know anything else, Mr. Rykand. Sorry, but the body will not be returned, Mr. Rykand--"

Mark's voice evaporated as his body was wracked with sobs. A moment later, he found himself cradled in Moira's arms. She stroked his hair and cooed to him softly. It did not help. The old foreboding was back. He could not shake the feeling that this time his loneliness was permanent.

#

Mark Rykand watched the endless procession of vineyards sweep past as the bullet car soared between successive electromagnetic accelerator rings in its usual gravity defying flight. This part of northern Switzerland was especially beautiful with its green hills and whitewashed houses slipping past at an easy 200 kph. Normally he would have been enchanted by the view. Not today. This morning he felt drained - emotionally, physically, mentally, morally. The human body has only a finite capacity for strong emotion and he had used up his full quota in the previous twenty-four hours. The only trace left was a pale anger, a mere shadow of the rage that had threatened to consume him during the dark hours before sunrise.

The bullet car topped a rise to reveal the blue expanse of Lake Constance in the shallow valley below. White sails were silhouetted against the dark blue of the lake. The view was a brief one. Soon the car dipped behind a low hill as it followed its line of pylons and accelerator rings. The lake flashed into view one last time. On the far shore, the glass-and-steel pyramid shape that was the headquarters of the Stellar

Survey seemed as large as the distant Alps. The building fluoresced gold as early morning sunlight reflected off the eastern flank of the pyramid. A moment later, the lake, its boats, and the pyramid on the far shore were gone as the car hurtled into the black maw of the tunnel that would take it across to the far shore.

Mark's anger had been unfocused at first. He had raged at an uncaring universe that had robbed him of his entire family in the short span of three years. Yet, shaking one's fist at the stars is not very satisfying. Society taught that when a person dies, someone is to blame. The culprit might be a criminal, the drunken flyer of an aircar, or even the victim himself (if he dies of a heart attack after a life of dissolution).

Until he knew the details of Jani's death, it would be impossible to assess blame. The more he thought about the duty officer's refusal to tell him how his sister had died, the angrier he became. How dare they keep such vital information from her only relative?

After a long night spent in mental turmoil, Mark decided to do something. It was easy to ignore a face on the screen, considerably less so when that face is close enough to feel hot breath issuing from an angry mouth. The sun had not risen over the Sierras when he had booked passage on the first suborbital flight to Europe. Even then, nature conspired against him. The eight-hour time difference meant that the first direct flight did not leave until early evening. He had spent the day in anxious anticipation and useless recrimination before boarding a suborbital hyperjet for Zurich.

In less than a minute, the car was out of the tunnel and in sunshine again, climbing the low hills that surrounded the ancient fortress at Meersburg. The bullet car pivoted about its long axis, compensating for the sideways surge of a long sweeping curve to the right. The accelerator ring pylons ran parallel to the shoreline, directly for the gleaming pyramid that towered above the trees. A minute later, the car decelerated swiftly as it entered the pyramid and slid to a halt in the subsurface transport station. Most of the passengers climbed to their feet and waited patiently for the automatic doors to open. When it came Mark's turn, he moved like a man in a trance.

"Mr. Rykand?" a young woman asked as he exited the car.

"Yes?"

"My name is Amalthea Palan. I am special assistant to the director here. We received your message that you were coming late last night. Director Bartok apologizes for not meeting you personally, but he had an appointment in Toronto today. He asked that I convey his sympathy for your loss. Your sister was a valued member of our family and will be sorely missed."

"Look, I don't want to cause any trouble, but I won't be quiet either. I came here to find out how my sister died. I think you owe me that."

"I understand your concern, Mr. Rykand. Why don't we go up to my office and discuss it? I'll be happy to share everything we know, little as it is."

They rode an escalator up to the main level of the building. The public foyer of Survey Headquarters was one of the eight architectural wonders of the world. It was the largest enclosed space on the planet, exceeding even the ancient Vehicle Assembly Building at the Cape Canaveral Museum. Finished in polished marble, the great expanse reminded Mark of a mausoleum - a thought that he ruthlessly put down as soon as it occurred to him. Around the perimeter were views of worlds the survey had discovered. It being early on Monday morning, the usual small groups of school children were absent and the anti-echo field had yet to be turned on. Mark listened as his and Amalthea Palan's footsteps echoed back from far overhead.

They took another escalator to a mezzanine level and then an express lift to the 27th level. The director's assistant ushered him into a plush office with a sloping window that looked out over the lake.

"Refreshments, Mr. Rykand? Coffee, tea, perhaps something stronger?" she asked as she motioned him to a leather settee and then sat opposite him.

"No thank you."

Amalthea gazed at her visitor.

She saw a well-muscled young man of slightly more than average height with a shock of sandy hair and piercing blue eyes. He would almost be handsome except for the dark bags under each eye and the turned down corners of his mouth. In addition, it looked as though he had not depilated today. "I hope you don't think me too forward, Mr. Rykand, "but you look as though you haven't slept in a long time."

"Could you sleep if it had been your sister?"

"No, I suppose not. If you like, I will have our staff doctor prescribe something when we are through here. We can even provide you with quarters in this building. We keep them for visiting VIPs."

"Please, I just want to know what happened to my sister."

She paused, seemed to come to a decision, and then said, "Very well. Are you aware of your sister's job out in the deep black?"

"She was a scout pilot."

"Quite correct. As I understand it, the system *Magellan* was exploring this trip is quite dirty compared to most. It had a lot of meteorites and space dust in it. The astrophysicists tell us that this is normal for a new system. Personally, I majored in economics, so I do not really understand these technical things. Do you?"

Mark nodded. One of the courses he had taken in pursuit of his minor had gone extensively into the evolution of star systems.

"Anyway, your sister's scout craft was transporting several of the ship's planetologists to a moon when it ran into a piece of orbital debris. The ship was vaporized instantly. That is why we can't return Miss Rykand's body to you."

"There were others killed?"

"A total of eight, according to the report by *Magellan*'s captain. I am afraid that is all we know about the incident until the ship docks and sends down its full logs."

"Perhaps I can talk with the captain to get more information," Mark said.

Amalthea Palan sighed and cocked her head in an odd gesture. "I am afraid that is impossible. The ship is still out beyond the orbit of Mars and two-way communications are not yet practical. Speed-of-light delay, you know."

"When will it arrive?"

"Within a week."

"Perhaps I can visit the captain then, both to hear what happened to Jani and to pick up her personal

effects.”

“We’ll deliver her effects to you. You certainly won’t have to go to the expense of going all the way to orbit to retrieve them.”

“I am rich. I don’t mind the expense.”

“I understand your pain, but there is really nothing constructive you can do in orbit. Captain Landon will not be able to meet with you, anyway. First, there is the mandatory quarantine period and he will be very busy preparing the ship to go out again. I will tell you what. We will forward a copy of the captain’s log entry as soon as we receive it. Will that be acceptable?”

Mark gazed at the pretty blonde opposite him. Her expression reminded him of the professional lamentation of a mortician. Perhaps it was his lack of sleep or the fact that his senses had been stretched taut. Something about her manner told him that she was not telling him the truth, at least not the whole truth. He frowned, and then nodded. “I suppose it will have to do.”

They talked for another ten minutes, after which Mark found himself deftly herded back to the transport station. He climbed into a bullet car headed south and watched Amalthea Palan as she stood on the platform until his car had left the building.

Mark mulled over his next move. If the survey thought that he would go back to California and give up, they were in for a surprise. Someone was to blame for his sister’s death and he was not going to rest until he found out whom that someone was!

CHAPTER 3

Nadine Halstrom, World Coordinator, and arguably, the most powerful single human being alive, sat in the dark and watched the images shimmer in the depths of the holocube. Beside her sat Anton Bartok, director of the Stellar Survey. Beyond the darkened office, a late afternoon storm sent booming thunder across the Toronto cityscape while rain pelted the side of the hundred-story office building that housed the bureaucracy serving the World Parliament.

The record of *Magellan*’s fight with the alien starship and its aftermath ended in a flicker of static as the lights came on in the coordinator’s office. Nadine Halstrom blinked rapidly in the sudden brilliance.

“My God, Anton. So it’s true!”

“Yes, Madame Coordinator. Captain Landon squirted that recording and his report to me via secure comm link as soon as *Magellan* dropped sublight.”

“Where is *Magellan* now?”

“Just crossing the orbit of Mars, inbound. She should be here in about a week.”

“I have to admit to some skepticism when I received your initial message, Mr. Director. After seeing this, I must say that you understated your case. Have you considered the implications?”

Bartok nodded. “I’ve thought of nothing else for the last day and a half, Madame Coordinator.”

Nadine Halstrom sighed. She, too, had thought of little else. “I think we have a major problem here.”

“I agree.”

“Have we any idea at all where these aliens come from or their military potential?”

Bartok’s expression was doleful as he shook his head. “None.”

“Then we’d best keep this under wraps until we’ve learned more.”

“Is that wise? The newsmen will cut us to pieces when they learn we’ve been holding out on them.”

“That can’t be helped. Do you have any conception of what it will do to the body politic if they start going to bed every night afraid they’ll wake up dead in the morning?”

“I think you are exaggerating, Madam Coordinator.”

“I wish I were, Anton. You should read more. The surest way to bring about psychosis in the human animal is to give him something to fear that he does not understand. I can cite you chapter and verse from history if you like.”

Nadine Halstrom had begun her career as a professor of history and had only gotten into politics through a fortuitous series of accidents. Her field of specialization had been the ultra-violent twentieth century. In many ways, that century had been an aberration, a detour into mindless destructiveness. It had been an era when the question of national survival had turned logic on its ear. How else to explain the fifty-year stalemate that had dominated much of the last half of history’s bloodiest century? Eastern and western power blocs had both threatened to annihilate their foes if attacked, all the while professing their devotion to the cause of peace. For more than two generations, people had lived in fear of death raining down from the skies and it had warped them. To think that the same thing could happen in her century sent a shiver up her spine that had nothing to do with the temperature.

“Very well,” Bartok replied, “we’ll keep the alien a secret.”

“How do you propose to do that, Anton?”

Despite the lightness of her tone, it was obvious to the survey director that his job might well hinge on his answer. He considered the problem for a few seconds while alternately puffing out his cheeks and sucking them back in. It was a mannerism of which he was totally unaware.

“Standard procedure calls for holding the alien in quarantine aboard High Station until the biologists can clear him. Obviously, we cannot do that. High Station is too public for a secret of this magnitude to last very long.”

“You aren’t suggesting that we break quarantine!”

“No, of course not. What we need is someplace out of the way where we can perform the necessary tests, somewhere we are able to control access.”

“Any suggestions?”

“What about PoleStar? The weather directorate owns it outright and there is virtually no traffic to and from the habitat.”

Nadine Halstrom looked pensive, and then flashed a smile familiar to billions of holovision viewers. “Hmmm, not bad ... not bad, at all! It is remote and in a conveniently difficult orbit for everything in the equatorial plane. I will see to it that the weather directorate cooperates. What problems are there in

turning it into a base of operations?”

“We’ll need to duplicate High Station’s laboratory facilities, of course, and man them with specialists. If we start moving people and equipment from High Station, someone will talk.”

“Then we don’t do it. You can use *Magellan*’s specialists for most things. Those extra scientists we need, we will recruit here on Earth. Same with the equipment. That way no one will have enough view of the full picture to realize what is going on. To further obscure things, have *Magellan*’s flight plan pulled from the Sky Watch computer. We may not be able to obscure the fact that the ship is home, but by God, we can make it difficult for anyone trying to find it.”

Bartok scribbled a note on the face of his pocket computer before continuing. “Then there is the problem of the people who were killed. We’ve notified their next of kin.”

“Any problems?”

“The families are in shock at the moment. I think we can handle them well enough if they start to ask too many questions. The scout pilot was independently wealthy. So is her brother. He is at headquarters right now making inquiries into how his sister died.”

“I suppose you have arranged a plausible cover story.”

Bartok nodded. “My assistant is explaining to him that his sister ran into an errant piece of space junk. That should satisfy him. We will also send someone to help with the funeral arrangements. I figure if we are helpful enough, he will soon give up rooting around for details.”

“It sounds like you have things well under control, Anton. Now, then, what do you make of the fact that these aliens attacked our scout and starship without warning?”

“Obviously, they’re warlike.”

“I thought species who have achieved interstellar travel were supposed to be long past the war stage. In fact, I once wrote a thesis to that effect.”

“Apparently, your thesis is in need of revision.”

“They must be very confident,” she mused. “The speed with which they attacked the scout indicates that they didn’t consider *Magellan* a threat.”

“How could they know whether it was or wasn’t?” Bartok asked. “They’d never seen a human ship before.”

“Paranoid?”

“Possibly. Still, the fact that they attacked us without provocation is less disturbing than what our people found onboard that derelict. You saw the bodies. Did they look like the same species to you?”

“No, of course not.”

“The survivor represents a third species, and those who destroyed our scout, a possible fourth.”

“Where does that leave us?”

“In a very precarious position, Madame Coordinator. The evidence suggests that somewhere not far from here, there are two interstellar civilizations at war with one another. One of these civilizations

contains at least three stars, probably more. Possibly, a lot more! Maybe they both do.”

“Does that necessarily follow?” Nadine asked as she stared at the director over steepled fingers. “After all, if someone boarded one of our starships, they’d find humans, dogs, cats, parakeets, cockroaches, and a dozen other species.”

“You haven’t had time to read Captain Landon’s report,” the director said as he held aloft a report marked *Stellar Survey Confidential*. “*Magellan*’s biologists autopsied several of the corpses. The six-legged aliens developed under a star cooler than our own, a K5 stellar type to judge from the construction of their oculars. The second species of dead aliens came from a hotter star, probably one in the F-class. The survivor comes from a star very like our own. In addition, the scientists say the survivor and the six-limbed species have blood chemistry based on iron, same as human. The insectoid had a magnesium-based circulatory fluid. The three could not possibly have come from a single biosphere. Human beings and oak trees are more closely related.”

“So we face a minimum of three star systems and two contending interstellar associations --”

“Or a single association infested with space pirates.”

“That doesn’t cheer me up any.”

“No, Ma’am. Still, there is one bit of good news. They don’t know where we live.”

“Are you sure? One explanation for their quickness to attack a human starship is that they recognized it for what it is.”

“The fact that *Magellan* destroyed the attacker would argue against that,” Bartok insisted. “And if our ship was their target, why were they fighting the other vessel? No, I think we stumbled into someone else’s fight.”

“How do we confirm or refute that?”

“Two ways,” Bartok said, holding up a similar number of fingers for emphasis. “If we can learn to talk to the alien, he can tell us what is going on. For that, we will need a good linguist and knowledge of his psychology. We need to establish a baseline sufficient to tell when he is lying to us. Luckily, semantic analysis has developed into quite a science since the two of us were in school. Given time, we will be able to tell when he lies to us merely from analyzing the internal contradictions that creep into his story. Luckily, no knowledge of alien physiological reactions will be required.”

“Not that we won’t use bio-monitoring as well, once we learn how he reacts.”

“Agreed, Madame Coordinator.”

“What are your immediate personnel requirements?”

“We’ll need a linguist and a psychologist to study the alien. Also, an astrophysicist. We can get him from *Magellan*’s crew.”

“Why an astrophysicist?”

“Because,” the director replied, “once he tells us where his star is located, we’ll need someone who can translate his coordinates into our own.”

“And if he won’t tell us?”

“Semantic analysis ought to help there, too. If we can get him talking about the sort of things he sees in the night sky of whatever planet he lives on, we may be able to triangulate the location of his home world.”

Nadine Halstrom nodded. “All right, the alien is the first approach. What is the second?”

“That one is a little more objective. Captain Landon wants to return to New Eden to salvage the alien hulk. We can learn a great deal about these people by studying their technology. Who knows, we might even come away with their star maps.”

“I don’t like that approach, Anton. As of now, they do not know where we live. However they got there, New Eden has been visited by two alien starships. What is to stop it from being visited again while we are trying to salvage that ship? They could follow *Magellan* home this time.”

“I believe the gain is worth the risk.”

“We’ll see. Before I approve any such expedition, I’ll want to see a detailed operations plan that reduces our exposure to a minimum.”

“Yes, Ma’am.”

“In the meantime, you can busy yourself getting the PoleStar operation moving. I must emphasize, Mr. Director. I want this secret held very tight. No more are to learn of the alien than are absolutely necessary.”

“I understand.”

“I will also want someone there to look after things from a political perspective. Any objections to Dieter Pavel?”

“None.”

“Excellent. Whom will we get for our linguist? --”

#

Like the earliest space stations, Soyuz and the Space Station Freedom, Equatorial Station orbited low to keep beneath the Van Allen radiation belt. The relative lack of altitude contributed to a view that made the big triple-wheel a destination as well as a transfer point. The extra income from tourists nearly compensated for the cost of the additional reaction mass that had to be expended to counteract atmospheric drag.

Like everyone else, Lisabeth Arden paused at the viewport in the non-rotating station hub as she exited the transfer tube. Arden was petite blonde with a permanent tan and green eyes. Beyond the armor glass, the Earth slid quickly beneath them, a vast blue circle too large to encompass in a single glance. The station was just passing over the eastern coast of Ecuador. The South Atlantic stretched clear to the limb of the planet, with the Ivory Coast of Africa still fifteen minutes away over the curving horizon. The usual bands of clouds were dominated by a large spiral formation that was the beginning of a tropical storm. Directly beneath them, the thin white contrails of aircraft marked the air route between Lima and Kinshasa.

Lisa was a professor of linguistics at the Multiversity of London. She had arrived at her office half an hour late that morning, not having gotten to sleep until the early morning hours before dawn. The first thing she noticed when she powered up her work screen was a summons to the chancellor’s office. The muttered

oath that accompanied the discovery was one that had come down unchanged from Anglo-Saxon times.

As she hurried down the hall toward the lift, she ran over in her mind all of the possible infractions that might have earned her a visit to the chancellor's office. There had been that expense report she had turned in for the seminar in Mombassa. Or possibly, she was over her budgeted allotment of time on the university's library net. Still, neither matter should be important enough to be called before Chancellor Seaton.

"Come in, Lisa," Seaton said when she entered his office. "Have a seat."

"Thank you, sir."

After sitting, she was surprised to note that Seaton appeared nervous. If so, she realized with a start, it was the first time she had seen him that way. "Before we go any farther, Lisa, I need your word that what I am about to say won't go beyond this room."

"You have it."

"The Stellar Survey has asked me to recommend a linguist for a project they have going on in orbit. Would you be interested?"

"Me? In orbit? Whatever for?"

"They didn't give me the details. I can tell you that the World Coordinator has endorsed the request. Whatever it is, you can expect that it will look good on your resume once you finish the job. It will also reflect well on the university."

"Why me?" she asked.

"Because tolerance for microgravity degrades with age and you are the youngest person in the department. In addition, you are one of the best linguists I know. And, if you must have a third reason, they said they preferred someone who is not married."

"What could they possibly want with a linguist?" Lisa mused, almost to herself. Then, when the comment about her marital status sank in, "Just how long will I be gone?"

"The coordinator only said that you could expect to be away for several months."

"Who will take my classes?"

"Ardmore can handle most of them, and we'll get Shipingdale to help out. Don't worry, we'll manage."

"And you can't tell me what I'll be doing?"

"All I know is that it is a matter of some urgency."

"This is silly, Chancellor! They really expect me to make up my mind without telling me anything about the project? I thought things like this only happen in historical holofilms."

"I've never seen anything like it," Seaton agreed. "That, coupled with the coordinator's interest, should give you some idea of the importance."

"Or else the bureaucrats are merely playing their damned power games."

"I am sure that if you find the assignment not to your liking, you can always resign. Nothing will be said if

we find you back here in a week. Now then, your decision, please.”

“I suppose I’ll do it. When do I leave?”

“They’ve booked you on this afternoon’s flight out of Sahara Spaceport, if you can make it.”

Lisa let her eyes go wide as she considered the implications. She had thought his comment about being back in a week had been rhetorical. She had expected to have time to prepare for the trip and coordinate with those who were taking over her classes. She could not possibly leave this afternoon!

“You’re not serious.”

“I am very serious, Professor Arden. They were emphatic that I should put my selection on this afternoon’s booster. Now then, are you still our volunteer?”

Despite her misgivings, six hours later, Professor Lisa Arden, Ph.D., found herself forced deep into an acceleration couch as scramjet engines roared somewhere behind her and the outside sky turned from dark blue to jet black.

#

Her instructions were to take the C-Ring lift down to Gamma deck, and from there, to proceed sixty degrees to spinward, to Compartment G-103.

As the lift descended into higher gravity, strange things happened to her inner ear. There was a name for the effect, she knew, but she could not remember it. When spin-gravity had climbed to approximately one-quarter of a standard gee, the doors opened to reveal a corridor that curved sharply upward in both directions. She turned to spinward (the direction being prominently marked on the opposite bulkhead) and began striding. G-103 was closer than expected and she nearly missed it. She pressed a recessed control in the corridor wall. A moment later, the door slid into its recess to reveal a small anteroom of the sort that guards the entrance to most airport and spaceport VIP lounges.

“May I help you?” a handsome dark-haired man of about twenty-five asked as she stepped into the sumptuously furnished compartment. His glance quickly scanned Lisa’s form and stopped at the pink-and-white kit bag she carried.

“I am not sure,” she said, suddenly very aware of the piercing eyes focused on her. “The directions I was given brought me here,” she stammered. “Perhaps I took a wrong turn--”

“Not if you are Miss Arden from London.”

“I am.”

“Welcome to Equatorial Station.”

“Thank you.”

“It is a shame you won’t be with us long. We just finished completely remodeling the Ring-B shopping mall.”

“How long do I have?”

The steward consulted the work screen on the corner of his desk. “It will be an hour before your ship is ready for departure. They are topping off their reaction mass. You can leave your luggage in the locker if you wish.”

“What is my ship’s destination?”

He raised a questioning eyebrow at that. “I am sure I don’t know. Don’t you?”

“No, they didn’t tell me.”

“Interesting,” was his only comment. Somehow, he managed to cram that single word full of meaning far beyond what it actually said.

Lisa stowed her gear on the indicated shelf next to an expensive leather bag. She pushed through the inner door into the lounge beyond. There was one other person in the lounge. A tall redheaded man lay in one of the recliners reading a micro book.

“Hello,” he said, returning her appraising look.

“Sorry, I didn’t mean to interrupt your reading,” she muttered.

“You didn’t. I have been hoping someone would come in to talk to me. How long are you going to be here?”

“An hour.”

“Oh?” he asked in a tone that signified that his interest had been piqued. “Where are you headed?”

“They didn’t tell me. All my chancellor said was that a study team is being formed in orbit.”

He smiled. “Then you must be Professor Arden. He rose and crossed the curved floor of the compartment. “My name is Dieter Pavel. I am on the staff of the World Coordinator.”

“Then you must know what is going on.”

“Indeed I do.”

“Mind telling me?”

He glanced around, making a show of inspecting the walls. “Once we are aboard ship, I’ll answer that question. As for now, you will have to trust us.”

“What’s the big mystery?” she asked, refusing to be put off.

He laughed. “Look, I have my orders. I do not like them, but they are orders. I take it that you were rushed into ... ‘volunteering?’”

Now it was her turn to laugh. “It all happened so fast, I barely had time to buy this outfit,” she said, gesturing toward her shipsuit.

“It is very fetching. Now then, shall we relax and talk about something we *can* talk about. Why don’t you start by telling me the story of your life? After all, we are going to be together for quite some time.”

CHAPTER 4

Lisa Arden floated in midair before the orbit-to-orbit ferry’s small viewport and searched the firmament in front of her. Save for the yellow-white billiard ball that was the sun, there was nothing to see. The stars

were too faint to compete with the Great Hydrogen Bomb in the Sky, and the Earth was somewhere behind her. Of the vast orbiting mirror that was their destination, there was no sign. It was as though the artifact were hidden behind some great black veil.

“Why can’t we see it?” she asked. Dieter Pavel floated beside her at the viewport in *Mercanter’s Wind*, the high-delta-V orbital ferry they had boarded at Equatorial Station.

“See what?” Pavel asked, moving to float directly behind Lisa. She thought he hovered closer than was necessary, but decided not to make an issue of it. After all, they would be cooped up together for the next several weeks.

“PoleStar! Where is it?”

“Right in front of you,” Pavel replied. As he spoke, he pointed over her shoulder. “See the dimly glowing patch?”

She strained her eyes, and sure enough, a patch of - something - seemed to be obscuring the blackness of space. It was remarkably difficult to focus her eyes on the spot, however.

The ferry’s pilot had announced that they were bound for PoleStar shortly after leaving Equatorial Station, and while the information had answered one of Lisa’s questions, it had generated several others.

PoleStar had begun life toward the end of the last century as a power satellite. A giant orbiting mirror, it had focused sunlight on a generator to produce electricity. The electricity, in turn, had been transformed into microwaves and beamed down to a rectenna on the ground, where it was reconverted and distributed on the power grid. The project had produced a considerable number of kilowatt-hours, but never any profits. After a decade of losing money, the SolSat One Corporation had filed for bankruptcy.

The power generators, habitat, and orbiting mirror had been moved out of geosynchronous orbit to free up the valuable parking slot they occupied. Years later, the big mirror and its accompanying habitat had been purchased by speculators who planned to change the orbit of the satellite. They reasoned that if they could place the mirror into a highly elliptical polar orbit, with its apogee above the North Pole, they would be able to provide several hours of illumination each day through the long northern winter.

On paper, at least, the scheme had appeared a sure moneymaker. Unfortunately, the new owners had grossly underestimated the cost of changing the big powersat’s orbital plane from equatorial orientation to polar. They had also failed to foresee the problems associated with municipalities and other regional administrations signing up for their service. Since the mirror, renamed PoleStar, cast its light on subscriber and non-subscriber alike, people had little incentive to pay for the six hours of half-light they received each day. Eventually, PoleStar had gone bankrupt and was taken over by the weather directorate to be run as a public service.

“I see it,” Lisa said as she gazed at the faintly luminous patch in the sky.

“That’s the big mirror,” Pavel replied. “Naturally, the habitat module is still too small to see at this range.”

“But why isn’t it glowing like at home?”

“Because we aren’t in the sunbeam. All we see reflecting back to us from the mirror is the blackness of space. A mirror in space is practically invisible.”

“I believe it.”

Fifteen minutes later, they passed into the beam of light that was currently illuminating the Alaskan night.

The transition was dramatic. One moment there was nothing to see. The next, a second sun appeared in the sky in front of them. This one, too, was a glowing yellow billiard ball, but with a difference. The second sun was too bright to look at directly, but as Lisa observed it with peripheral vision, she had the impression that it changed shape as it slowly drifted across the surface of the orbiting mirror.

She asked Pavel about it. He explained that the mirror was a sheet of thin reflective film stretched out across a framework of gossamer braces nearly a hundred kilometers in diameter. It was the largest (and most fragile) artifact humanity had ever constructed. When it had been an orbiting power station, the mirror had been much more concave than at present, in order to concentrate the heat of the sun on a collector satellite. The current shape was nearly flat; curved just enough to ensure that the light beam was focused on whatever area of the Earth they were illuminating.

Beyond the reflective sheet of the mirror was the tiny spherical habitat module. They watched it grow slowly larger as the second sun continued to keep pace with them. By the time they crossed out of the beam, the habitat had grown a bulge on one side. It took several minutes before the bulge resolved itself into a second globe half the size of the habitat.

“It’s a survey ship!” Lisa exclaimed. “I wonder which one.”

“*Magellan*,” was Pavel’s only reply.

#

Lisa observed that docking with a non-rotating structure in space is child’s play compared to the maneuvers required to approach any of the rotating stations. The only maneuver came at the last moment as the dumbbell shaped ferry slewed sideways to present its dorsal airlock to the large airlock at the habitat module’s “equator.” Their arrival was announced by a series of *thunks* as the station grappled them in.

There followed a general popping of ears as the orbital craft’s pilot bled his atmosphere down to match that of the 40-year-old habitat. Lisa Arden and Dieter Pavel made their way with their luggage to the airlock antechamber. They hung back until the round hatch swung inward. Beyond was a short tunnel filled with equipment and truncated by a lighted circle some four meters away. Lisa caught a glimpse of someone’s lower torso and legs for a moment before Dieter Pavel cut off her view as he pulled himself forward and disappeared headfirst into the tunnel.

She waited for Pavel to clear and then followed him. She found a welcoming committee at the other end of the tube. There were two of them. The older was a bald man of about fifty whose lack of hair extended even to his eyebrows.

“Greetings, new fish!” he boomed out. “Welcome to PoleStar. My name is Hancock Mueller, Station Commander. I am your host, so if you want for anything, give my office a call and we will see if we can accommodate you. Please be patient with us. We do not usually get visitors in this orbit. Between you and the survey ship, we are a little overwhelmed just now.”

Mueller “swam” to where Pavel clung to a guide rope and thrust out a bony hand. “You must be the Coordinator’s representative.”

“Dieter Pavel,” Pavel said. “Good to meet you, Commander. I take it that you received Coordinator Halstrom’s message concerning me. I’ll need an office and full access to all data.”

“An office we can arrange. This old bucket has cubic to spare. As for the data, you will have to handle that with *Magellan*’s chief scientist.”

“Then please show me where I can find him. I am anxious to get started.”

“Very well. Give your bag to young Adams here. He will take you to Professor Bendagar and then get you settled. The accommodations aren’t the best, I am afraid, but then we’ve had only forty-eight hours to get this show organized.”

“I am sure the accommodations will be acceptable.”

Mueller’s companion floated forward, took Pavel’s kit bag, and disappeared with him into the corridor beyond. Mueller turned to Lisa.

“You must be Miss Arden.”

She nodded.

“They didn’t tell me you were such a looker. You will brighten things up around here. I cannot tell you how tired we get of seeing the same old faces in this out-of-the-way orbit. Here, let me have your bag. I’ll take you to your quarters.” The bald man turned in preparation to leave. Before he could plant his boots on the nearby bulkhead, however, Lisa asked, “Would you mind telling me what is going on around here?”

Mueller halted in midair and turned back. “You have an appointment with Professor Bendagar at ten hundred after he finishes up with Pavel. I expect he will tell you what you need to know then. Besides, who am I to spoil the surprise?” With that, he was gone down a curved corridor, leaving behind only a bass chuckle.

#

Raoul Bendagar had watched the arrival of the ferry with mixed emotions - defined in this case as observing your mother-in-law fly into a cliff in your brand new sportster. On the one hand, *Mercanter’s Wind* was bringing the reinforcements he had requested to beef up his research team. On the other, he would have preferred to pick his own people from the staff of High Station. It had been made very clear to him that any additional scientific personnel required would be recruited on Earth, regardless of his personal wishes. Nor was that the chief scientist’s only complaint. The ferry was also bringing a government representative into his life.

Bendagar had been in the service long enough to know that the most dreaded words any high-ranking official can utter are, “We are here to help you.” Twelve hours earlier, he had heard that very statement from the World Coordinator herself. To his chagrin, that “help” had arrived with unseemly speed. Bendagar had pondered all of this with a furrowed brow as he watched the docking procedure on his office viewscreen. Too few minutes later, the annunciator chimed.

Sighing deeply, he consciously rearranged his features into a neutral mask before yelling, “Come in!”

The man who entered was younger than expected, but bore the identifying look of all political appointees. It was a hard look to describe, but one familiar to anyone who has been in government service for a long time. It was a fusion of haughty self-importance with the perplexed expression of someone who has no idea what is going on. Bendagar thought of it simply as “The Look.”

Dieter Pavel crossed Bendagar’s office using the overhead grips like a child on a set of monkey bars. “Professor Bendagar?” he asked, holding out his hand to be shaken. The gesture marked him as a groundhog. Shaking hands was awkward in microgravity, especially when the other hand was needed to anchor oneself. Most microgravity dwellers confined themselves to a quick nod of greeting. Despite this,

Bendagar leaned across the desk as far as his seat belt would allow and took the proffered hand.

“Mr. Pavel?”

Pavel nodded. “You were notified that I was coming, weren’t you?”

“Yesterday.”

Pavel laughed. “Sounds like you knew before I did.”

“What can we of the survey do to help you?”

Pavel pulled himself into the framework that served as the visitor’s chair and slipped his legs into the hold down straps. “You probably know that better than I do. They did not give me much guidance. Why don’t we begin at the beginning? What has happened since your people found the alien?”

“I have full reports - ”

Pavel held up his hand in a restraining gesture. “I am sure you do, Dr. Bendagar. I will read them later. In the meantime, I am merely looking for an overview of the situation.”

“Very well,” Bendagar answered with something approaching resignation. “As soon as the report of a survivor came in, the captain ordered a cabin prepared to receive him. We had a busy time of it for an hour or so.”

“You took the usual precautions against disease?”

“Of course. The captain cleared out a cluster of cabins at the end of a cul-de-sac corridor, all of which are against the outer hull. The former occupants were less than happy to be evicted. We stripped the central cabin of furnishings, sealed off its connection with the ship’s environmental system and installed an air renewal unit before depressurizing the cabins around it.”

“Why did you do that?”

“To build a Class 1 bio-barrier, of course. We have yet to discover an organism more complex than a spore that can survive a journey through vacuum. We installed multiple contamination locks in the corridor leading to our holding pen and implemented full decontamination procedures for everyone going in or out. The precautions were as much for the alien as for us. We did not want him coming down with the common cold or something equally devastating. That mistake has been made far too often in the past.”

“It sounds as though you were admirably thorough.”

“If there is one thing we of the survey know, Mr. Pavel, it is how to establish a proper quarantine.”

“I never doubted it, Dr. Bendagar. What happened next?”

We equipped the holding pen with cameras and self-contained sanitation facilities, gathered up everything aboard the alien ship that resembled a foodstuff, and then brought the alien aboard in a decontaminated rescue bag. We left the bag in the cabin, sealed the door, and sat back to watch.”

“What happened?”

“After ten minutes or so, he figured out how to work the bag’s escape mechanism. He spent the next several hours exploring the cabin, randomly at first, then much more systematically. He seemed to

recognize the function of the waste disposal equipment almost immediately and soon had a fair understanding of the built-in controls. Then he found the bulkhead-mounted holoscreen. Once he learned to operate that, he barely moved for the next three days.”

“Then there is no doubt he is intelligent?”

“None whatever.”

“What does he do now?”

“He splits his time between watching the screen and watching us watch him.”

“What about communication?”

Bendagar grimaced. “That is a problem. He still shows no sign of recognizing that we are speaking to him and has not attempted to communicate, at least, none that we have recognized. That is why I asked to have a linguist assigned to my team. We need to take a more professional approach to the matter than we’ve been able to manage up ‘til now.”

“How long do you think it will be before we will be able to talk to him?”

“Weren’t you listening? We don’t know that we *can* talk to him.”

“I meant no criticism by my remark, sir,” Pavel answered. Humility did not come easy to him, but he had learned long ago about the scientific temperament. In his opinion, scientists were like poorly designed computer interfaces. One must put up with their idiosyncrasies if one wants to obtain any information. “I only meant that the coordinator has a number of questions she wants asked. I would like to give her some idea of how long it will be.”

“Give our new linguist a week or so, and perhaps we can tell you that. Believe me, Pavel, there are a lot of questions we of the survey want answered, too.”

“Such as?”

“The first thing we want to know is how long they’ve had star travel.”

Pavel nodded. “That way we can gauge their level of technological development.”

“That, too, but mostly we want to get some measure of the distance between us and their civilization.”

“I am afraid I don’t understand.”

“You were told they use some sort of wormhole transportation, weren’t you?”

“Not that I know what that means.”

“It’s a method for moving between two widely separated points without crossing the intervening space in between.”

“What has that to do with where they are located?”

“Everything. When their gate formed in the New Eden system, it produced a powerful gravity wave. Now gravity waves are very persistent phenomena. Had any alien-induced gravity waves yet reached the solar system, we would have detected them. Since none have, we can set a lower limit on the distance to the alien’s home system. Their stars can be no closer than the number of light-years equal to the time that

has passed since they first developed this method of travel.”

“You have lost me, Dr. Bendagar.”

“It is simple, really. Let us say that they invented the stargate a thousand years ago. Since gravity waves are omni-directional and travel at the speed of light, the fact that we have yet to detect that first wave would indicate that their systems are more than a thousand light-years from here. Likewise, that wave they set off in the New Eden system should be getting here in about a century.”

“You speak of ‘their stars.’ Coordinator Halstrom believes we face at least one interstellar hegemony, and maybe two. Do you agree?”

“Of course. The autopsies on the dead and our tests on the survivor conclusively prove they came from different star systems. If you find widely divergent organisms together on the same starship, what other conclusion is there?”

“Any indication of how many stars we are talking about?”

“None. Of course, when we can finally speak to our guest, that is something we will ask him.”

“Why do you suppose they attacked you, Dr. Bendagar?”

“Another matter we hope to explore with Butch.”

“Butch?”

“The alien. We have to call him something, at least until we learn what he calls himself.”

“Do you subscribe to this theory that they are inherently warlike? I have always believed that war was incompatible with an interstellar civilization.”

“I always believed that too,” the scientist said, “right up until the moment they vaporized Scout Three.”

“Perhaps that was unintentional. You know that such accidents aren’t unknown where automated weapons systems are involved.”

“You have seen the tapes. Did it look like an accident to you?”

“What it looked like to me is immaterial,” Pavel said smoothly. “I would hate to think that we were ready to begin an interstellar war over a single, regrettable incident.”

“Tell those who died how ‘regrettable’ it was,” Bendagar responded.

Pavel noted that the scientist was becoming impatient. One thing a life in politics taught a person was to judge accurately when one’s welcome was wearing thin. He decided to change the subject.

“When can I see the alien?”

“Anytime you want,” Bendagar replied. He checked his chronometer and said, “Except, he is probably asleep just now. You may want to wait until after dinner. We’ll introduce you and Miss Arden to the staff, then take you down to meet Butch.”

CHAPTER 5

Dr. Bendagar was wrong. The alien was not asleep. He was sitting in his cell, contemplating the strange bipeds in whose custody he found himself. The same activity had consumed his every waking moment since they had brought him aboard their ship. Nor was his name "Butch." His personal label was Sar-Say, descended from the famous Sar-Dva and ortho-cousin to Sar-Ganth, a name recognized in dozens of star systems spread across three quadrants of Civilization.

Sar-Say's species had been civilized too long for them to rail against fate or vent their frustrations in emotional outbursts about what might have been. Even so, Sar-Say's recent experiences had been enough to drive the most stolid being to wonder whether the universe might not have a personal grudge against him.

The ship on which he had been traveling was the *Hraal*, commanded by a Vithian named Muulbra, with a mixed crew of Vithians and Frels. The *Hraal* had been on the third stage of the journey from Vith to Persilin, maneuvering to approach the stargate on the far edge of the Nala system. They had halted their approach when the Nala stargate computer had warned of priority traffic astern. The traffic had turned out to be a Broan Avenger-class warcraft on high gravs. Rather than make for the gate, the Avenger had closed to within a thousand *fel* of the *Hraal* and opened fire.

Captain Muulbra had not even considered wasting his energy being indignant. Whatever reason the Broa had for attacking his ship must seem good enough to them, and one thing the overlords never did was explain their actions to the lesser races of Civilization. Instead of fleeing back toward Nala, Muulbra had ordered his ship into the stargate's locus in the hope of escaping to safety in the Persilin system. If he had thought the Avenger would break off the attack, he had quickly been disappointed. Both ships reached the invisible boundary of the stargate just as the Avenger unleashed a single massive bolt of energy at its prey.

That bolt had never arrived. Onboard the *Hraal*, Sar-Say had been thrown from the resting frame in his cabin as alarms began to scream throughout the ship. The blow was not the sharp *crack* of an energy strike against metal, but rather a massive temblor in space. What had rocked the ship was the strong gravity wave that always accompanies a shift in the focus of a star gate. Sar-Say had barely regained his perch when Captain Muulbra reported that they had indeed jumped through the gate, but not to the Persilin system. A billion *fel* below them was an unknown yellow sun.

In one sense, they had been extremely lucky. The energy surge that had sent the gate focus skittering across some unknown number of light-*vang* could easily have dumped them out in deep interstellar space. Had that happened, they would have starved long before the *Hraal* could have reached another star. Instead, they found themselves close to a planet that reflected the blue-white glow of a water world. There had been no time to rejoice at their good fortune, however. Moments after the captain's announcement, they were again under attack from the Avenger's energy bolts.

Captain Muulbra, with half his crew dead and his ship being carved to pieces around him, had made for the nearby planet in the hope of taking to the lifeboats before their tormentor could vaporize them. They had crossed half the distance to dubious safety when they discovered a single ship in orbit around the planet, and another, much smaller craft, in transit between the world and one of its moons. Muulbra had altered course for the strangers in the forlorn hope of distracting his pursuer.

The running battle - or more accurately, the running slaughter - had continued until the Avenger drew close to the smaller of the unknown ships and destroyed it with a single bolt. The attack took less time than the blink of an ocular. Even so, it allowed Captain Muulbra to widen the gap between *Hraal* and the

Avenger. The order for lifeboat stations went out to the surviving crewmembers. Once in the boats, they would scatter while the Avenger took care of the large unknown ship in orbit. If they got well into planetary atmosphere while their attacker was preoccupied, they might yet survive.

Pursued and pursuer had closed the range to the large ship visible only on instruments just above the backlit planetary limb. As the Avenger approached weapons range with the stranger, something mysterious happened. The powerful Broan warcraft had exploded, adding its own substance to the detritus of space. As far as Sar-Say had seen, the stranger had taken no perceptible measures to defend itself. It was possible, of course, that the Avenger had run into one of the tiny bits of matter that cluster close to any planet. To have done so at so opportune a moment, however, was too improbable to contemplate. Muulbra, realizing that the danger ahead was as great as that which had been behind, used a last surge of power from his tortured engines to throw *Hraal* into an escape orbit. Then, as the engines died, so had the captain and his crew.

In time, the unknowns had boarded the derelict *Hraal*. Sar-Say had followed their progress by the bumps and scrapes transmitted through the hull despite the airlessness in the rest of the ship. As the sounds grew louder, he had become more frightened. Anyone who would destroy a Broan Avenger might show him little mercy. Then the moment of discovery had come, and despite his quaking, one part of Sar-Say had observed the strangers with detached clinical interest.

They were, like him, bipeds. That was not surprising. Bipeds made up the majority of Civilization's species. The scientists were still arguing over why this should be. The fact that he did not recognize them in their vacuum gear did not particularly surprise him. The unfamiliar suits covered most of their form. Besides, Civilization was large enough that no single being could be familiar with all the breeds within its domain. Still, he had expected them to recognize him for what he was. When they did not, he had become more than curious.

It was not until after he had been taken aboard their ship and the ship had spaced for the bipeds' home world that he began to understand what these strangers were. That knowledge had terrified him more than the fight so recently ended.

#

Doctor Bendagar chose the end of the evening meal to tell Lisa why she had been summoned to orbit.

"You are kidding," Lisa said after Dr. Bendagar told her that *Magellan* had brought an alien back from New Eden.

"Not in the least. Would you like to see him?"

"When?"

"How about right now?"

Dieter Pavel joined them as the party left the mess hall to pull themselves halfway around PoleStar's perimeter using the "fire poles" that lined the corridors. They soon found themselves in a deserted section of the station lit only by widely separated emergency lights. The section had once housed power station personnel and their families, Bendagar explained, and would be reoccupied as the research program grew. The corridors were currently cluttered with all manner of equipment, visible proof of the speed with which the facilities had been prepared for the alien's arrival.

"Good evening, Technician Vlcek," Raoul Bendagar said as they reached the transparent airlock that served as a contamination control point. The technician sat in an open framework at a desk that had been

bolted to the deck.

“Evening, doctor.”

“Any excitement with Butch?”

“No, sir. He spent the afternoon just sitting in there. He took one nap and turned on the holo about an hour ago.”

“Very well. This is Mr. Pavel and Miss Arden. They are the first contingent of the help we have asked for.”

“About time,” the technician grumbled. “We are stretched thin, what with the captain preparing the ship for a return to New Eden.”

Bendagar pulled himself to the portable airlock and said, “I’ll go through first. You two follow one at a time.”

Lisa was the last to lock through into the corridor beyond. As she exited the contamination lock, she could see the others clustered around an open hatchway a dozen meters farther down the corridor. She moved toward the patch of light spilling forth from the compartment beyond. As she did so, she noted that the hatchway was not open after all. Rather, a sheet of armor glass had replaced the hatch. As Lisa reached the glass door, she turned to see the alien not two meters away. The alien regarded her with yellow eyes.

Her first impression was that she was looking at a monkey.

The alien was small, approximately a meter-and-a-half high, and covered with brown fur. Its head was round, with two ears that were vaguely humanoid and which stuck out at right angles to its head. The ears gave the being a slightly comic look. The mouth was a slit in a snout centered just below the eyes, with a series of what seemed to be breathing holes spaced like the holes of a piccolo along each side. It seemed an odd arrangement. Human nostrils and those of most other species pointed down, shaped over the eons by the simple need to keep water from running in when it rained. Surely the same imperative operated on whatever world Butch was from. Or did it?

The being’s body was thinner than that of a human, and looked more flexible. The six-fingered hands seemed patterned after a flower opening its petals to the sun. The feet were solid clubs of flesh without toes, making it look as though Butch was wearing moccasins. Except for an equipment belt that encircled his waist, the alien was unclothed. He was male, but not as obviously so as a human male would be if similarly attired.

Moreover, while they watched Butch, he watched them back with an intensity that was hard to match. Except for an occasional blink, he did not move.

Lisa was faster than Pavel in finding her voice. “What progress in communicating with him?”

Bendagar reviewed their attempts during the return to Sol and since they had transferred the alien to PoleStar. He finished with, “He seems totally uninterested in our attempts at communication. Who knows? Maybe his people are telepathic.”

“With those ears, he can obviously hear. How long do you work with him each day?”

“At least two hours.”

She nodded. "There's your problem. The best way to establish communication with someone is to live with them. When can I move in?"

This last caused Dr. Bendagar to sputter. "Move in where?"

"With Butch, of course," Lisa replied in a tone that made it seem the most obvious thing in the world.

"You can't go into that cage. It isn't safe."

"Isn't safe how?"

"We haven't absolutely eliminated the possibility of interspecies infections, for one thing. Why else do you think we keep this section under quarantine?"

"Surely you must know the probability of us catching something from him is low or else you wouldn't have brought him aboard this station."

"Low, but not yet zero. It will still take several months to be absolutely sure," Bendagar insisted. "Until then, you will have to work through the glass like the rest of us."

Lisa let loose with a comment that she had not learned in linguistics class. "If I work through the glass, I will have about as much success as you have had. If this is to succeed, it must be a saturation learning experience for both of us."

The chief scientist hesitated and pondered his dilemma. He noted Dieter Pavel's look and knew what the government man's recommendation would be. He had made it clear enough in the office that afternoon that he wanted the alien speaking at the earliest possible moment. Then again, if this impetuous woman wanted to risk her life, who was he to stop her? Finally, he nodded. "Very well. I hope you realize that you are offering yourself up as a human guinea pig for the biologists' studies."

"I realize that."

"What if he bites?" Pavel asked.

Lisa turned to him and smiled. "Then I'll bite him back. Seriously, I would not suggest this if it were not important. Two rational beings ought to be able to understand one another, but only if they can establish common ground of some kind. This is the only way I know to learn what I must to crack this being's language - assuming, of course, that he has one. I certainly won't succeed if I am limited to an hour a day of 'Me Tarzan, You Jane' through a centimeter of armor glass."

She turned to Bendagar. "How do I get inside?"

"Do you mean *now*?"

"Why not?"

He sighed, recognizing her determination. "What will you need?"

"A sleeping bag, my kit bag, and enough food to last me a week. Give me space rations. I will switch to real food once I am sure the smell will not upset our guest. Oh yes, and I want the camera turned off in the head whenever I need to use it."

"Very well."

"Now, how do I get inside?"

Bendagar reached for his communicator. "Wait, I'll call for some of the station maintenance people. They will unbolt this door for you."

#

Sar-Say watched with apprehension as the barrier was removed and one of the bipeds floated into his cage. At first, he thought they were after more tissue samples. He prepared himself to be prodded and poked again. He was surprised when, after the others handed several bundles to the creature, they replaced the thick transparency that kept him prisoner.

The newcomer was female, he observed, or at least of the subgroup of creatures he had tentatively identified as such. The cylindrical roll she carried had the looks of one of the null gravity beds they had provided to him for sleeping. In addition, the other packages were similar to the small rectangular packets from which Sar-Say had observed the guards eating on more than one occasion. It was then he realized that this creature intended to take up residence inside his cell. Evidently, then, this knowledge seeker would attempt to establish communication with him. It was a turn of events that he had been expecting.

After stowing her gear on the far side of the compartment from where Sar-Say's own sleeping mattress was hung, the female pulled herself to a point just beyond reach and lashed herself to a chair. She then leaned forward, showed her teeth in the ferocious gesture that Sar-Say had learned signified mirth among these beings, and spoke two syllables: "*Leee ... Saa!*"

As she uttered the sound, she gestured in her own direction, then bared her teeth again and gestured toward Sar-Say. When he did not respond, she repeated the performance. He continued to watch her in silence as his brain worked overtime to resolve a dilemma he had been considering ever since his capture.

It had taken Sar-Say several days to come to the realization that these people were ignorant of Civilization. The situation was not without precedent, of course. There were stations throughout the Broan dominion that swept the stars for telltale signs of a technologically advanced species. Once detected, a flotilla of warcraft would use dozens of refocused stargates to converge on that system. Usually a show of overwhelming force was sufficient to gain a species' grudging acceptance of Broan domination. Sometimes actual fighting took place. In either event, the decision was never in doubt. A species either submitted to the overlords or else they were exterminated.

However, this was the first time such outsiders had, in effect, discovered Civilization for themselves. The situation held great danger, but also, the prospect of great opportunity. Properly exploited, it would bring considerable profit to Sar-Say and all his line. Everything turned on what he told these beings of the situation out among the stars. To be caught in a lie would be disastrous. It would likely end his life and all possibility of personal profit. Yet, the whole truth would be equally disastrous. How much to tell these strange bipeds and how much to conceal? That was the dilemma.

There had been no need to commit himself so long as his captors were content merely to watch him. With the arrival of this knowledge seeker, however, the time for contemplation had ended. Eventually he must acknowledge their attempts at communication. Once committed, he would have to tell them something of Civilization, and whatever that something was, it would have to be self-consistent. He had spent his time in captivity mapping out several versions of "the truth." Each had its advantages and its risks.

The problem was that any advanced species possessed computers - by definition! With computers comes information theory, and that leads to a scientific theory of language. Shortly after inventing the infernal machines, most species quickly developed software that could analyze an individual's speech -

say that of a prisoner - and determine from the content whether that individual told the truth. The method was not 100% accurate, of course; and it worked less well on aliens than on one's own species. However, given a sufficiently large sample and the time to study the subject's pronouncements, the internal inconsistencies would inevitably become apparent. No thinking being can remember everything when forced to substitute imagination for actual experience over a long period.

Since Sar-Say expected his captors would use the technique on him, he dare not stray too far from the truth. In fact, the longer the bipeds studied him, the less he would be able to conceal. No, if he was going to lie, he would have to limit it to something simple, but vital. To escape detection, his secret must be small, and heavily swaddled in a wrapping of truth.

Sar-Say reviewed one last time what he knew of these people, of their current state of knowledge, and what they were liable to learn about him in the future. He considered ... contemplated ... then made his decision. His twin hearts picked up their beat. For he was at a convergence of the star lanes. From this moment on, he would be committed. There would be no turning back.

Sar-Say sat and watched the female go through her elaborate pantomime for perhaps the twelfth time. Again the two syllables "*Leee ... Saaa*" echoed through the compartment.

Slowly, as though he was just beginning to understand, Sar-Say bent his own arm to touch his chest. He, too, bared his teeth, although that expression among his people was more an invitation to battle than a sign of mirth. Then he opened his mouth and let the sounds that he had practiced mentally a thousand times issue forth.

"*Sssarrr ... sssaayy...*"

His peripheral vision was quite good, better he judged than that of his captors. Thus, he was aware of a brief commotion beyond the glass, but not its significance. Had he been able to hear the oath that issued forth from Raoul Bendagar, he would not have understood it, although some of the emotional content might well have bridged the gap of interspecies ignorance.

"Well I will be goddamned!" the chief scientist muttered in a low monotone. It was more of a prayer than a curse.

CHAPTER 6

Mikhail Vasloff strolled through the grand concourse of the headquarters of the Stellar Survey and gazed at the lighted displays of worlds the survey had discovered. Here an ice world lay beneath the blue-white actinic point of a B2 giant star; there an airless world orbited close to a red giant sun; beside it, twin suns hung high in the purple sky of a dusty, wind-swept desert planet. Everywhere he looked, Vasloff was reminded of the fact that the universe had little love for a race of vainglorious upstarts who styled themselves *Homo sapiens*. In all the endless light-years of blackness, there was but a single orb designed for human life. What a waste it was to send men and women in search of new homes for humanity when such were a logical absurdity.

True, here and there the survey had stumbled across worlds that were marginally habitable. There was Lucifer, with its spouting volcanoes and boiling mud, where the domes floated amid columns of steam and the habitats had to be cooled if their occupants were not to be boiled alive in their beds. There was Malachi, with a pea soup atmosphere rich in oxygen. Fires there burned with the ferocity of explosions and an unprotected human was quickly poisoned by the very gas that made life possible. There was

Persephone, locked in a permanent ice age, where the winter wind smelled of almonds due to a trace of cyanide in the air. There was Rio Verde, named by a practical joker, where there were neither rivers nor green?

“Never mind,” Mikhail Vasloff thought as he turned away from the prideful display dedicated to the latest in a long list of human arrogances. Everyone knew the list of worlds only slightly less deadly than most. So why couldn’t they see the waste of resources inherent in planting colonies on these slagheaps? What was the quirk in human beings that made them glamorize scratching out a living under conditions that would not be allowed in the most hellish prison? Whatever it was, Mikhail Vasloff had long ago set himself the task of combating this odd enthusiasm that resulted in Earth’s best and brightest risking their lives so far from home and to no good purpose.

History, in Vasloff’s opinion, was a long contest between the despoilers and those who would conserve humanity’s limited resources, they who saw a wilderness as something to be tamed and others who enjoyed wildness for its intrinsic beauty. Mikhail Vasloff was satisfied with the world that God had given man and saw no reason to go looking for a replacement. To his mind, there was something obscene about the risks the Stellar Survey was taking in their quest to find another Earth. Even the most rabid champion of interstellar expansion would admit (if pushed) that they did not know what they would find Out There. What if one of the starships brought home a plague, or worse? The survival of the race was too important to be risked for something as trivial as idle curiosity.

He had begun his career as a political gadfly, one who lobbied parliament to end the huge subsidy given to explore the stars. Often his struggles had been in vain, although there had been an occasional small victory. Eventually, his efforts had brought him to the notice of a small coterie of wealthy people who thought as he did. With their aid, he had formed a grassroots political organization that he named *Terra Nostra*. It had grown into the largest and most influential of the anti-interstellar organizations.

Terra Nostra was not affiliated with any particular religion, though it garnered much of its strength from the most fundamentalist denominations. Nor was it officially affiliated with the socially progressive political parties, though its views often found fertile ground among those who believed that resources spent exploring the stars could better be invested on Earth. Even people who were on opposite sides of most other issues found common ground in Vasloff’s organization when it came to opposing the huge drain on resources that was starflight.

One place Mikhail Vasloff lacked supporters was the building in which he now found himself, this arrogant pyramid thrown up on the banks of Swan Lake. It felt strange to be striding across the vast expanse of marble with which these latter-day conquistadors had floored their monument to themselves. He was here at the invitation of the enemies that he had fought for so long, invited to give his views at a conference concerning the troubles encountered in implanting human beings on alien planets. In Vasloff’s opinion, the invitation was a grave tactical error on the part of his antagonists. Not only were they conferring the boon of legitimacy, they were giving him a platform from which to shout his heresies. A news media that would normally yawn at the latest *Terra Nostra* press release would take notice when the high priest of isolationist philosophy spoke in the very temple of expansionist power. That he had been invited at all was a testament to the growing influence of *Terra Nostra*.

“Mr. Vasloff!”

Vasloff turned to see a well-dressed young man striding across the marble floor in his direction. The man had light brown hair and a determined expression on his face. There were worry lines around his eyes and the way his mouth turned down at the corners told Vasloff that he was not happy.

“Yes?”

“Hello,” the young man said, “my name is Mark Rykand. I am a friend of Gunter Perlman. He suggested that you might be able to help me.”

“How is Gunter?” Vasloff asked. “Still wasting his fortune on those expensive toys of his?”

“You mean his yachts? Yeah, he is having a new 3-micron light sail built in time for the fall regatta.”

“How did you find me, Mr. Rykand?”

“Your office said that you were coming here today. I have been staying at a small villa on Lake Geneva, so I took a chance on intercepting you. I almost didn’t. I was in one of the side galleries looking at alien rocks.

“What is your interest in me, Mr. Rykand?”

Vasloff watched a hesitant look turn to one of determination. “I am afraid my problem can’t be put into a few words. Perhaps we can get together for dinner to discuss it.”

“I am not in the habit of allowing myself to be picked up by strangers, even ones who claim a mutual friend, Mr. Rykand. A man in my position has to be careful. I am sure you understand. Perhaps if you come to my office when I am there next week? ”

The answering smile was inappropriate on Rykand’s sad countenance and out of place for the situation. Normally when Vasloff brushed someone off, they stayed that way. “Would a substantial donation to *Terra Nostra* change your mind?”

“How substantial?”

“Fifty thousand credits.”

Years of fund raising had honed Vasloff’s reflexes. His frown slipped effortlessly into a closed-lip smile as he extended his right hand to Rykand. “Why didn’t you say so? Where would you like to eat?”

“Meersburg Yacht Club? It’s only five kilometers down the lake.”

“Very well. My session ends with a reception at 18:00. It will be some time before I can break away. Shall we say 20:00 hours for dinner?”

“Fine. I’ll be there.”

#

The Meersburg yacht club had served the sailors of Lake Constance for three centuries. Though its menu was international, its decor was local, with the waitresses just rude enough to maintain the Bavarian ambiance. Mikhail Vasloff exited the autocab and strolled into the low building nestled among the vineyards just coming to ripeness. He found Mark Rykand in the bar, sipping a large stein of Beck's Dark Bitburger Premium Pilsner.

Mark hopped off his barstool as he spotted his guest and came striding across the dimly lit room. “Good evening, Mr. Vasloff!”

Vasloff smiled. With his thin face and shock of white hair, he knew that the expression made him look less formidable. That was one of the reasons why his official portraits showed him in somber pose. “Large contributors call me Mischa, Mr. Rykand.”

“And I’m Mark.”

“Very well, Mark. Which shall we do first? Eat or talk business?”

“I imagine you’ve had a tiring day. Why don’t we eat first?”

“An excellent suggestion!”

Themaitre’ de convoyed them to an out-of-the-way table as far from the small polka band as possible. After initial drinks and while they shared a plate of knackwurst as an appetizer, Mark asked, “How was the session?”

Vasloff finished off his beer and leaned back. “Tiring, as you surmised. It is very difficult to maintain one’s equilibrium when confronted with a solid phalanx of nearsighted fools. Like most people, I think that if I could just state my position more clearly, others will see the logic of my arguments. Alas, such a result is far too utopian to ever be possible in the real world. May I inquire, Mark, whether you are a true believer?”

“Are you asking my religion?”

Vasloff smiled again. “Not in the formal sense. How a man worships God is his own business. In another sense, however, I suppose I am. Are you expansionist or conservator in your outlook?”

“I haven’t thought about it all that much, Mikhail. I suppose that I favor the idea of going out to explore the stars. That is where our destiny lies, isn’t it?”

“How do you know that?” Vasloff asked nonchalantly as he speared the last knackwurst.

“I have ... that is, I had someone close to me who was part of the effort. Her enthusiasm infected me, I suppose.”

Vasloff watched the storm of emotion reflected in the younger man’s face. He did not pry. “I am a much older man than you. Would you grant that I may have learned something during my time on this battered old world?”

“Granted.”

“When I was growing up in my home city of Perm in the foothills of the Ural Mountains, I used to fish with my friends in the Kama River. There are some of the largest fish you have ever seen in that river, and ferocious! You would not believe how they fight. I’ve often wondered what they taste like.”

“You never ate one?”

Vasloff turned around to signal the waitress for another beer, then turned back to Mark. “No, I never ate one. The Kama is a large river, about the size of your Ohio, in fact. However, it has been contaminated with heavy metals and industrial poisons since Soviet times. No matter what we do we can never seem to find all of the old waste dumps left lying around by our ancestors. Fishing on that river, knowing that I could never partake of its bounty, that more than anything is what convinced me that I was a conservator at heart.”

“What has that to do with exploring the stars?”

“We have a beautiful river and fine game fish, yet because of contamination caused by people 300 years dead, I cannot eat of the river’s bounty. The lesson I draw from that fact is that life is very precariously

balanced on this world. We tend to forget that because we ourselves are so precisely matched to our own particular ecological niche. Yet, how could it be otherwise? We evolved to fit this world more precisely than a surgeon's micron glove fits his hand. We are matched to this, our environment, and no other. My poor Kama proves that. A few heavy metals loose in the environment, some old toxins, and our food supply is no longer fit to eat.

"With such a precise balance between life and its environment, what are the odds that we will ever find a world as closely suited to our kind of life as the Earth? So close to zero as to be nonexistent! That belief leads me to the obvious conclusion: If there are no other 'Earths' out there, why spend our precious resources looking for them?"

"I had a professor in college who taught us that the formation of terrestrial type worlds is almost inevitable given the correct planet size and distance from the system primary."

"Your professor was wrong."

"We've discovered dozens of worlds with life on them and even have colonies on some of them."

"The life we discover is poisonous to us, or lacks the proper nutrients, or has too many things which will make us sick. As for our colonies, they are little more than outposts and never will be anything else. Each of them is clinging precariously to the surface of worlds inherently inimical to our sort. The colonists survive only by artificial environments and the infusion of billions of credits of subsidies each year. Take away their subsidies and those worlds will soon be abandoned. That, my young friend, is the strategy of *Terra Nostra*. Eliminate the subsidies and you eliminate the colonies! We need that money to clean up the Kama River, among many other needs."

"You seem sure of yourself, Mikhail. But what if you are wrong?"

Vasloff took another sip of beer and said, "Then I am wrong and no one will listen to me. However, I am not wrong. The Holy Grail that the survey seeks does not exist, yet they subject us to danger merely by looking for it."

"What danger?"

"You know that the survey takes very great care with the biological specimens it brings back, don't you?"

"Yes."

"To date there has never been an extraterrestrial microorganism that could live in Earth's biosphere. This fact alone proves my point that the planets of the universe are no less individualistic than snowflakes. We cannot live on their worlds and they cannot live on ours. Yet, if we discover a world where we can live, then it also follows that the pathogens of that world can migrate to Earth. What if the survey brings back a plague, Mark? How will we all feel about exploring the stars then?"

"You are a persuasive advocate, Mischa."

"You haven't yet heard my most persuasive argument about why we should not go out to the stars. Let us assume that your professor was correct and that a terrestrial world circles every star we can see in the sky. Think the scenario through. What would be the primary characteristic of a universe filled with terrestrial worlds?"

"You tell me."

“We know our environment eventually breeds intelligent life. Obviously, so would other terrestrial worlds. So where are they?”

“Where are who?”

“The other species who have progressed far enough up the scale of intelligence to build starships. If we can do it, anyone can. Why haven’t they visited us, or at least, sent a radio signal in our direction? That question was first asked by the physicist who was primarily responsible for the invention of the atomic bomb. It is called Fermi’s Paradox. It is the final proof that other Earths do not exist. If they did, their inhabitants would have found us long ago. That they have not done so indicates that they do not exist.”

“I can see why you have chosen to spend your life crusading against the starships,” Mark said cautiously. Gunter Perlman had warned him that Vasloff was a fanatic on the subject.

“But you don’t believe me, do you?” Vasloff asked, suddenly all affable again. “Not to worry. The inoculation seldom takes on its first application. Give it time and the truth of what I am telling you will begin to sink in. Now then, shall we order? Afterwards, we can discuss whatever problem you feel is worth giving me^{CR} 50,000.”

The food matched its high cost and both men ate heartily. Vasloff turned out to be a skilled raconteur and enlivened the meal with endless stories of the antics he had seen during his ten years as a public irritant. When both men had full bellies and were lingering over their coffees and aperitifs, the white-haired Russian asked, “Now then, what can *Terra Nostra* do for you?”

Mark found himself pouring out his story. He spoke of the death of his parents and that terrible call from the survey telling him that Jani was dead. He recounted his meeting with Amalthea Palan and his feeling that she had not been telling him the entire truth. He ended up by explaining his determination to find out the details of Jani’s death and to hold someone responsible if there was even a hint of negligence.

“Their story sounds very plausible to me,” Vasloff said after Mark had finished. “Young stars are indeed surrounded by rings of matter and a ship that ran into a small piece would be instantly vaporized. In any event, I do not see how you expect me to help you.”

“Gunter suggested that you know a lot more about the operations of the survey than is widely known. In fact, he said you have spies at headquarters.”

“Spies, Mark? I should say not! Sympathizers, possibly. But even if I do, what possible use can they be to you?”

“Ask them to report everything they know about *Magellan*’s last mission. Why are they lying to me?”

“Are they?”

“I believe so, and if not, then no harm done. The fact that they will not let me visit the ship or speak to the captain tells me they have something to hide. Besides, they are back early.”

“Oh?”

Mark nodded. “Usually Jani would be out for more than a year on one of these cruises. *Magellan* returned after only six months in space. Why?”

“I really can’t say,” Vasloff replied.

“I think you can find out. Perhaps it was related to Jani’s death. Maybe her ship did not collide with a

meteorite at all. Maybe there was an explosion onboard that killed those eight people and they had to limp home for repairs.”

“I might not learn anything of value,” Vasloff warned.

“I’ll take that chance.”

“Very well, I will do what I can. When can I expect the donation?”

“Now,” Mark replied as he pulled his communicator from his pocket and began keying in numbers. Another string of numbers from Vasloff sent^{CR} 50,000 flying from one account to another.

CHAPTER 7

Lisa Arden floated cross-legged and gazed at Sar-Say less than a meter distant. It had been nearly a month since she had moved into the alien’s cage and, except for quick jaunts to her own unused quarters following the lifting of the quarantine, she had spent the entire time getting to know her roommate. Her world had shrunk to these six walls and Sar-Say. It took a moment of thought to remember what her flat in London looked like, or for that matter, London itself. She knew she was nearing the limits of her personal endurance, but was too fascinated by what she was learning to quit.

The good news was that Sar-Say was a phenomenally quick study. He heard everything told him and seemed never to forget anything. Indeed, lately he had taken to quoting entire conversations he had overheard before he could speak a word of Standard. To be able to parrot back formerly meaningless sounds was all the proof she needed that the alien had an eidetic memory.

Lisa wished that she had the same ability. As an aid to Sar-Say’s learning the language, she was learning his tongue. Many a night she had awakened in her sleeping net pinned to the bulkhead with her mind in a whirl as her brain tried to sort all of the new knowledge she was forcing into it. She had almost forgotten what it was like to cram for finals in school. She had been cramming for finals for 28 days now and felt as if each day had aged her a full year.

Lisa was restrained by twin straps attached to her belt while Sar-Say preferred to wrap his legs through the frame in which he perched. Lisa held aloft a large photograph of a tree.

“*Tree*” she enunciated clearly.

Yellow eyes encountered green eyes. “What ... is ... tree ... Leesaa?”

“It is a plant that grows on Earth.”

“Is word ... general ... or ... sp ... specific?”

“General,” she replied. “It refers to a large number of different plants. Among the trees are pines, oaks, redwoods, eucalyptus, and hundreds of others. We group all of these under ‘tree’ for convenience.”

“What difference ‘bush’?”

“A bush is a smaller plant. Trees are much taller than men are. Bushes are about the size of men.”

Sar-Say blinked and made the gesture that signified that he understood. “The word in my language is ‘sszalt.’”

“Sszalt,” she pronounced carefully. “That ought to be easy to remember. It sounds like our word ‘salt.’”

“No, the word is different. You are not hearing it well. It is ssszzaalt.”

“Ssszzaalt.”

“Much better,” Sar-Say agreed.

“Excellent,” Lisa said with a smile.

“What is next word, Leesaa?”

Lisa glanced at her chronometer and said, “That is enough for now. We need to get ready.”

“Ready for my interview?” Sar-Say asked.

“Yes. Dieter Pavel is most anxious to speak with you.”

So far, Lisa had avoided asking the alien about the circumstances that had brought him to be humanity’s guest aboard PoleStar habitat. That had not been her idea. Had she had her way, it would have been the very first subject they talked about when Sar-Say had developed sufficient vocabulary. Unfortunately, Dr. Bendagar had forbidden it. Therefore, she had spent her time telling Sar-Say about Earth and humans while he undoubtedly wondered at her lack of curiosity. But then, she often reminded herself, perhaps curiosity was not a universal trait among thinking beings - although she could not imagine a species getting to be intelligent without it.

“What he-I talk about?” Sar-Say asked after a momentary pause.

“I have tried to explain our government to you. Did you understand?”

The small apelike figure shrugged, a gesture that Lisa had learned was somewhat akin to a nod, but with more ambivalence to it.

“Well, Pavel is the World Coordinator’s personal representative. He wants to learn all he can about your people, how they live, what kind of economy you have, and your form of government.

“Pavel represents Earth government?”

“Yes.”

“And he wishes to ask questions from me?”

“Ask questions *of* you. Yes.”

“I not speak Standard well enough.”

“You speak it fine. Don’t worry, I will be there to help if you get stuck.”

“You mean poked with needle?”

She laughed. “No. It is an idiom. In this context it means if you do not understand something.”

“I not stuck. I understand.

“Do you need to use the toilet before we go?”

Sar-Say shook his head, a human gesture he had learned to copy. "I not eat or drink today."

"Unfortunately, we humans are not built that way. Therefore, if you will excuse me for a moment, I will be right out. Then we will go see Dieter Pavel."

#

In the month they had been studying Sar-Say, the medical specialists had concluded that the risk of contagion was minuscule - not zero, but low enough that it was a risk worth taking. The alien's biochemistry was similar to human, but sufficiently different that one species' bugs were unlikely to find the other tasty. Indeed, the exobiologists judged the risk to Earth to be less than the risk of an asteroid impact. With that welcome piece of news, Dr. Bendagar ordered Sar-Say's strict quarantine ended. The decision had been an easy one to make. Working through a couple centimeters of armor glass had proved to be most inconvenient.

The past weeks had seen the arrival aboard PoleStar of twenty specialists in the biological and behavioral sciences. As quickly as they arrived, they had been put to work studying the living and dead aliens that *Magellan*'s crew had brought back. While half the team performed autopsies on the corpses, the other half studied Sar-Say. They cataloged the alien's behavior, physique, and even the microscopic zoo that inhabited his body. For, like humans, Sar-Say possessed a self-contained ecology without which he would soon sicken and die. The research was giving the scientists a new appreciation for the biological complexity of Sar-Say's home world.

To house the scientists and provide them with space in which to work, a large section of the PoleStar habitat had been turned into a research center. The cabins around the alien's quarters were filled to overflowing with all manner of instruments and diagnostic tools. To enhance the free flow of information among the staff, a large storage compartment had been outfitted as a conference center. It was to the conference center that Lisa led Sar-Say. His longer arms made him far more adept at moving in microgravity than she was. Still, he was careful not to lose her as they both transited the weightless corridors. They found Dieter Pavel, Dr. Bendagar, and three scientists Lisa had yet to meet, already waiting for them when they arrived.

"Good morning, gentlemen," Sar-Say said as he pulled himself to one of the two empty restraint frames at the table. Lisa noted with pride how much his pronunciation had improved. Even a week earlier, the greeting would have been unintelligible to the untrained ear. The alien's accent was still thick, but improving. In another month, she suspected, Sar-Say would speak Standard better than she did. She only wished that her own progress in learning the alien speech had been as rapid.

"Good morning, Sar-Say," Pavel replied. "I am pleased that you could join us. Did Lisa explain to you the purpose of this meeting?"

"She say you want to know about Sar-Say government."

"Correct. We know that you come from an association of more than one star. Perhaps you can tell us how many."

Sar-Say looked at Lisa and made a gesture that none of the others recognized. There was a hurried conference. When it was over, Lisa said, "You will have to excuse us for a bit, Mr. Pavel. Sar-Say understands our base ten numbering system, but has trouble converting from his own base-twelve math. We need to do some calculating."

"Go right ahead."

Lisa retrieved a stylus from her pocket and began scratching numbers on a writing pad. Every few seconds she would touch one corner to erase her scribbles and start over. Sar-Say made a few comments in his own language as she wrote. He, too, had a stylus and was making marks on a second pad. The latter consisted of a long series of dot patterns interspersed with swirl marks. Finally, alien and woman agreed. Lisa turned to the others and said, "I make it three times twelve to the fifth power."

Pavel glanced at Dr. Bendagar, who was doing the math in his head. He gulped and looked at the coordinator's representative. "That's approximately one million!"

"You don't understand," Pavel said to Sar-Say. "I want to know the number of star systems there are in your civilization."

"In base ten ... ten multiplied together six times," Sar-Say said.

"Sixty stars?"

"No. Ten to sixth power."

Pavel's eyes nearly bugged. "You are seriously telling me you come from an association of *one million suns*?"

"If that is word for ten to sixth power."

"But that is impossible!"

"Why?" Sar-Say asked.

"The distance between stars, for one. You could never hold such a massive organization together."

"Stargate--" Sar-Say halted and turned to Lisa. The two had a conversation that was half-Standard and half-alien speech. Finally, Sar-Say turned back and said, "Stargate make space between stars unnecessary."

"Irrelevant," Lisa corrected. "The space between the stars is irrelevant."

Sar-Say signaled his agreement and continued. "No difference travel near star or between stars."

"My God!" Dr. Bendagar exclaimed. "A million of them! Considering the few truly habitable stars there are, this group must cover a significant fraction of the galaxy! How do you ever govern it, Sar-Say?"

"I not govern. Broa govern."

"Broa? What is that? Some species or merely your name for your ruling class?"

"Broa one species."

"How did they get the job? Are they so talented at governing that the rest of you decided to let them run your affairs?"

"Don't understand. Talk too fast."

"What Dr. Bendagar is asking," Lisa said, "is why do you allow the Broa to rule you?"

"Broa not ask. They have stargate. They control ... all stars."

"You mean this one species rules a million suns?"

“Yes.”

This revelation was like a punch in the stomach to each of the humans. The concept was overwhelming. Humanity had but seven star systems, and was in full possession of only a single one of those. Yet, Sar-Say claimed membership in a galactic empire encompassing a million suns. The implications were ... horrifying!

Dr. Bendagar was the first to recover. “What is your place in all of this, Sar-Say?”

“Sar-Say is Taff.”

“What is that?”

“Taff are people like Sar-Say. We trade.”

“You are a trader, did you say?”

The ensuing gesture was a good imitation of a human nod. “Sar-Say go from star to star, exchange knowledge and high cost goods, take elsewhere, exchange again for extra value.”

“If you are a trader, you must have seen a great many of your civilization’s stars.”

“No. Few. No being live long enough to see all stars controlled by Broa.”

Like Dr. Bendagar, Dieter Pavel had difficulty contemplating a million-star galactic empire. Then he had a truly frightening thought.

“Sar-Say,” Pavel said. “When we found you, your ship was being attacked by another ship.”

The alien turned to regard his interrogator. “Is true.”

“How many stars do those who attacked you rule?”

“Do not understand.”

“We have theorized that the ship that attacked you was from a second interstellar civilization. How many stars?”

“You wrong. Broa attack.”

“The Broa attacked you? It was one of their ships?”

“Yes. Warship of the third most powerful type.”

“But why? Had you done something wrong?”

“Do not know. Broa not communicate before attack.”

“But they must have had a reason.”

“Broa do not confide in Sar-Say, or in others. They wish, they do.”

“How many stars have you seen?” Pavel asked, returning to his original line of questioning. Professor Fenner from the University of North America looked as though he were about to explode, while his two companions were not doing much better.

“Fewer than twelve to the second power,” the alien answered.

“And each of these has its own native species?”

The alien made a gesture that Lisa did not recognize. “Many have native species. Many have species Broa put there.”

“You mean they have seeded those worlds with new life forms?” Pavel asked.

“Yes.”

“Because they were previously uninhabited?”

“No.”

“No, they weren’t uninhabited?”

The double negative clearly confused the alien, causing Dieter Pavel to rephrase. Sar-Say responded

“Many worlds possess native species when discovered. Species prove troublesome to Broa. Planets seeded with new lifeforms.”

“What about Earth? Would the Broa seed Earth with a new ecology?”

“Unknown,” Sar-Say replied. “If benefit Broa, humans ruled by Broa. If not, humans killed, Earth reseeded.”

“If we benefit the Broa, what will our status be?”

“Not understand.”

“Will we be given limited home rule? Will we be allowed to send representatives to some central government?”

“No government. Broa rule. All others ... servants.”

#

“Good morning, Captain. Good of you to come so quickly,” Anton Bartok said as he rose from behind his desk and strode toward Landon.

“Thank you, Director.”

“How was the flight down?”

“A little lonely on the first leg. On its return from PoleStar, the supply shuttle is just one big empty shell. I felt like a fly in an air cylinder.”

“Any trouble at Equatorial Station?”

“None, sir. I slipped into my civvies, boarded the ferry at the last moment, and started a good book as we reentered. Why the secrecy?”

“We have had a few people report conversations with inquisitive strangers lately. They all seem to want to know about your last mission. They are probably reporters nosing around.”

It was then that Landon noticed they were not alone. A large, rawboned woman sat in one of the visitor's chair. The face, which not even a mother would classify as beautiful, was familiar to him.

"You know Laura Dresser, I believe."

"Hello, Laura," Landon said in reply.

"Hello, Dan," she replied in a sultry voice. It was a voice that had originally caused him to picture someone quite different at a time when they had only spoken over voice circuits. In addition, Laura had a pair of archaic eyeglasses perched on her face. The glasses had slid down her nose and she looked over them at Landon. "It has been about five years, hasn't it?"

He nodded. "*Magellan*'s last overhaul."

Laura Dresser was a living, breathing contradiction. The glasses were her announcement to the world that she was a medievalist, one who lived her life in harmony with the precepts of an earlier (and supposedly simpler) age. In allegiance to her beliefs, she refused to wear synthetics, eat anything grown in a vat, or use perfumes formulated with human pheromones. Yet, she was also the best stardrive specialist in the survey. She led a crew of a hundred rugged individualists who could strip down a ship and within a few months, return it to a condition as close to perfection as was humanly possible to attain.

She was also a royal pain in the ass. She and Landon had done nothing but argue when he delivered his new command to her tender loving care five years earlier. They had barely been on speaking terms when she gave *Magellan* back after the overhaul. Still, she had done a perfect job on his ship, and for that, he could forgive everything.

"Captain, I understand you have worked out your operational plan for going back and salvaging the hulk of that alien wreck," Bartok said, getting to the reason Landon had come down from orbit.

"Yes, sir. May I use your screen?"

"By all means."

Landon reached into a pocket and retrieved a record module, which he inserted into the reader slot built into the director's desk. The window polarized automatically to shut out the light and a screen illuminated in what had moments earlier appeared to be a large painting of a seashore.

On the screen was a star chart.

"New Eden, sir, is the third planet of a class G3 star. The star is just under a hundred light-years from here. Transit time each way is ten days. I figure that we can strip the wreck and transport everything of value back here in three months if we use one of the big colony ships for transport."

Bartok shook his head. "No colony ship."

"Damn it, Director, you can't just throw away a month's planning like that!"

"I can and I will, Captain," Bartok said, frostily, "if that is what the coordinator wants. You cannot have a colony ship because it would be too conspicuous leaving the system. If it spaces within a month of *Magellan*'s departure, people will notice and start to talk. There is already a rumor floating around headquarters to the effect that you came back early because you found a terrestrial planet."

Landon smiled. "That rumor couldn't possibly have started in this office as a cover for what really happened, could it?"

“Possibly. In any event, you cannot have one of our big ships.”

“Then how the hell do you expect me to transport the salvage back here, Director? We can’t very well tow it.”

“Maybe you won’t have to. Laura has an idea.”

There was a momentary pause as the two men turned to the stardrive expert. She peered at Landon over the top of her glasses and said, “My first thought upon learning of the wreck was the same as yours, Dan. Obviously, that ship is much too big to take onboard one of our own starships whole, so I figured we would have to carve it up and ship it home in pieces. The only problem with that approach is that we are liable to destroy as much alien technology as we save. Just imagine what would happen if you gave an able spacer a cutting laser and orders to chop up *Magellan* !

“Anton first brought me into this to evaluate the records you people brought home with you. About halfway through my review, it occurred to me that we might be able to fly the ship home.”

“How? It isn’t equipped with a star drive and we don’t happen to have a stargate handy.”

“What if we install both a drive and a reactor in the wreck?”

“Same objection as bringing the wreck back in pieces. To transport the drive generator and power reactor, you will need a colony ship.”

“Not if we mount both on *Magellan* ’s hull,” Laura Dresser said. “We will cross connect the new generator with the ship’s own drive, thereby extending the field to cover everything.”

“Will that work?”

“My computer says it will if we synchronize both generators properly. It might be a little tricky in practice.”

Right. Let us say you succeed with this jury-rig. Have you considered the risk of flying the hulk home? What if the drive breaks down en route?”

“Then you will be there to rescue us.”

Landon snorted. “Do you have any idea how much empty space there is in a light-year? If you disappear in that blackness, you will starve to death or run out of air long before we will be able to find you.”

“Then we had best not break down.”

Landon turned to the director. “Are you sure you want us to try this, sir? It seems a good way to lose a lot of talented people, not to mention our alien prize.”

Bartok glanced at the chronometer inset into his sleeve before fixing Landon with his gaze. “That is the reason I asked for this conference, Captain. Laura is the best we have when it comes to star drives, but you have the practical experience. I want the two of you to work this plan, wring it out, and report back to me tomorrow on whether it is feasible or not. If you conclude there is too much risk, we will think up something else. Just remember, the longer we are in the New Eden system, the more likely it is that other aliens will show up.”

CHAPTER 8

Salli Rheinhardt was a typical working mother. In addition to the job that kept her tied to the computer workscreen in her den six hours each day, she had three children to get off to school, pick up after, and shuttle around to various functions. She worked in the Princeton Medcenter four hours a week and had her clubs and hobbies. She was also active in campus politics and had faculty teas to attend. Even in the best of times, it was difficult for her to find a free hour in her day. With her husband away on an extended business trip, the burden was nearly more than one woman could handle.

When Ben had told her that he was being assigned to an orbital research project, she had sighed and played the supportive wife. In theory, he could have told his department manager to find someone else; in practice, that would never do. Had Benjamin Eustus Rheinhardt turned down the assignment, it would have been like announcing to the entire university that he no longer sought the chairmanship of the microbiology department. Salli Rheinhardt understood that as well as her husband. Still, after nearly a month alone with the children, she no longer cared whether Ben was awarded the chairmanship. Suddenly, the idea of hosting faculty teas and being deferred to by the other wives and the graduate students had lost much of its allure. She had reached the point where she would gladly have traded all of that for Ben lounging on the couch in his tattered bathrobe.

Because of her resentment over her husband's absence, she was in an especially bad mood when the telephone beeped for her attention while she was programming dinner.

"Yes, what is it?"

"Mrs. Rheinhardt?" an elderly, silver-haired man asked as he gazed out at her from the screen. A perceptible accent accompanied the words. It took Salli a moment to realize who he was.

"Citizen Vasloff!"

"Have I caught you at a bad time, Mrs. Rheinhardt? My chronometer assures me that it is not yet dinnertime in your zone. Perhaps you eat early?"

"No, you aren't interrupting, Citizen. And please, call me Salli."

"Very well, Salli. And I am Mikhail."

"To what do I owe this honor, Mikhail?"

"One of the joys of my position, Salli, is the opportunity to speak to organization members who have done us particularly good service over the years. I understand from your section leader that you were responsible for coordinating our grassroots letter writing campaign in your city last year."

"It wasn't difficult, Mikhail. I merely called a few friends, who called a few of their friends."

Vasloff held up a hand in a restraining gesture that was distorted by his hand being too close to the phone pickup on the other end.

"Please, dear lady. Do not make light of your efforts. If the truth be told, it is the work of you and thousands like you who make *Terra Nostra* possible. I am afraid that those of us on the firing line do not acknowledge our debts to the rank-and-file often enough."

"Is that why you are calling me now, Mikhail?"

Vasloff smiled. "I think you are sufficiently perceptive to know better than that, Salli. No, I am speaking to you because a computer check of the membership has revealed that you are uniquely positioned to help the organization at this time. Can we count on you?"

"Certainly, Mikhail. What can I do to help?"

"I understand that Professor Rheinhardt is in orbit at the moment, on assignment for the university."

Salli gazed at the beatific features of the man who was said to have done more to stem the useless flood of resources to the stars than any other. There was something in his expression that told her the question was of more than passing interest.

"Why, yes. He is aboard PoleStar doing microbiological studies for the Stellar Survey."

"PoleStar? I thought the survey confined its studies mostly to High Station."

"Usually, they do. At least, the other three times Ben has worked for the Survey, that is where he has done his work."

"So why PoleStar this time?"

"I don't know. Ben does not speak about his work on an open telephone circuit. He does not want to take a chance on any discovery he may have made being ruled in the public domain. Also, I get the impression that information is being much more controlled this time."

"How so?"

"For one thing, he is only allowed to call once a week. When he was aboard High Station, we used to talk nightly."

"And the other things?"

"When we do speak, there is a five second delay between the time I talk and the time he answers."

"That should not be. PoleStar is in Earth orbit. Communications delay is no greater from there than for point-to-point surface circuits. You are telling me that they have a computer monitoring his calls?"

"I believe so."

"And he has not told you anything about what he is working on?"

"Not a hint. In fact, the one time the conversation started to drift in that direction, he was quick to change the subject." Salli Rheinhardt hesitated, wondering how much she should reveal to this famous stranger.

Vasloff recognized the hesitation for what it was and smiled. "You can be sure that any confidences will be kept, Salli, and I would not be asking if it weren't important to the cause."

"He has never *said* anything, you understand, but we have been married long enough that I have no trouble reading his emotional state. Whatever he is working on, he thinks it is important."

"Oh, why?"

"When he first called to tell me that he had arrived safely, he was very excited. I could see it in his eyes."

"Interesting. Is there anything else you can tell me?"

“Can you tell me what this is about, Mikhail?”

“No, dear lady. Not at this time. We will keep you informed as things develop, however. And perhaps it would be best if you do not mention this conversation to Professor Rheinhardt.”

“I cannot keep secrets from my husband, even if he does not think the way we do about this interstellar foolishness.”

In fact, Ben and Salli Rheinhardt often argued about the expense of exploring the nearer stars. Ben maintained that understanding alien biospheres was necessary to the advancement of science. Salli thought the money could better be used to solve problems at home. Neither was particularly interested in planting colonies around other stars, especially on the kind of marginally habitable worlds that humanity had found to date.

“You may tell him what you wish, of course. I had thought to keep him from having ... professional difficulties, shall we say?”

“I will think about it.”

“Then we will be in touch dear lady. Thank you for your assistance.”

#

Mikhail Vasloff let his features fall into a frown as the view of Salli Rheinhardt faded from the screen. What he had learned was interesting, but not very satisfactory. What had begun as a favor to a rich contributor had taken on all the aspects of a major mystery. Mark Rykand had been right about one thing. *Magellan* had come home early - eight months early to be precise. Moreover, that had only been the first of a long list of odd goings-on.

The Stellar Survey had an operating procedure for ships returning from exploring alien star systems. They would dock at High Station, which orbited more than 100,000 kilometers over the equator. The station was so high, in fact, that it appeared to orbit retrograde in the sky. Once there, the returning ship was placed in routine quarantine until everyone was sure that it had not brought back any parasites or diseases. Following the end of quarantine, the scientific community was invariably invited to attend a conference at survey headquarters where the ship's discoveries were announced, and bids taken on research projects.

Magellan had done none of those things to date, despite having returned more than a month previous. The ship had materialized out beyond Jupiter, and then made its approach normally until, at the last, it had assumed a polar parking orbit rather than an equatorial one. Polar orbit was much beloved by survey satellites and those with a need periodically to scan the entire surface of the Earth, but by no others. The truth was that it was damned costly to get to. Moreover, PoleStar was in an exaggerated elliptical orbit that made it even more expensive a place to reach from the equatorial orbits.

Yet, despite the expense and difficulty associated with the change-of-plane maneuver required to reach PoleStar, someone had set up a regular shuttle service to do just that. Vasloff had found that to be curious when he had first learned of it. After all, it was cheaper to reach polar orbit from the Earth's surface than it was from equatorial orbit, so why would any cost-conscious company set up a ferry service from orbit?

Then there were the scientists who seemed to be traveling to Equatorial Station and then vanishing into the vacuum of space. At first, it had seemed sufficiently mysterious to have the makings of a good technothriller. Vasloff's computer had searched out their ticket records and verified their debarkation

aboard Equatorial Station, yet could find no other destination. They had not seemed to embark for Luna, the outer planets, or any other of the usual destinations. In fact, it had been his investigation into the missing scientists that had first alerted him to the shuttle service to PoleStar.

Apparently, PoleStar was the site of a secret research project that was classified at the highest levels of the Stellar Survey. In addition to Rheinhardt, they had identified ten people, all top men and women in their field, who had been assigned to the task. It had been a stroke of luck when a computer check had revealed Salli Rheinhardt to be a member of one of *Terra Nostra*'s affiliated groups.

Vasloff sat and pondered what Salli had told him. He had read a history book once that asserted the Germans might have uncovered the Manhattan Project if only they had noticed the number of physicists who were booked on trains from Princeton, New Jersey to Alamogordo, New Mexico. He wondered if Benjamin Rheinhardt were not his Edward Teller in that respect.

“Well, Claris, what did you think?”

Claris Beaufort, Vasloff's second in command, was an intense blonde woman in her early thirties. Her expression matched Vasloff's, except on her, the frown was permanent. “We have confirmed our suspicions.”

“But what do we really know?”

Claris shrugged. “They have found something important enough that they do not dare use the resources of High Station.”

“Why?”

“Security. It is too hard to keep a secret there.”

He nodded. “Even more important, they are staffing the project from Earth. That tells me that they want to keep the very existence of the project secret, not merely its subject. That means they have powerful backing, possibly even the World Coordinator. They are using too many resources for this to be solely a survey operation. So what could they have possibly found that is this important?”

“This mysterious Earthlike planet our people at survey headquarters have reported?”

“Possibly,” Vasloff said, nodding. Despite his lecture concerning the impossibility of other terrestrial worlds to Mark Rykand the previous month, he was not as convinced as he liked people to believe. “If ever anyone truly discovered a twin to Earth, it would be a major blow to the global economy. Think of the speculation that would break out, the jockeying for position, the out-and-out greed. What else might it be?”

“Those people who died. Maybe they contracted some deadly plague.”

“Possible,” he mused. “That would explain the secrecy. If word got out that they have found an alien bug that lives on human beings, they would be doing our job for us. We could get a recall order passed in Parliament in a minute. All the ships would be broken up and sold for scrap within a year. I would see to it.”

“As would we all, Mikhail. What do we tell Rykand?”

Vasloff frowned. That was a minor ethical dilemma. He had taken that rich young man's money on the clear understanding that he would be told everything that *Terra Nostra* found out about his sister's death. Yet, what they had discovered was too important to share with someone whose only motive was revenge

rooted in personal grief. Whatever was going on out there might prove *Terra Nostra*'s best hope (or worse nightmare). He considered it a moment, felt his conscience tug at him, and then shook it off.

"We tell him as little as possible. Call him and report that we have confirmed that *Magellan* returned early and that there is a hint around headquarters of a world marginally less uninhabitable than our current colonies. As for his sister's death, tell him the truth. We have learned nothing."

#

Raoul Bendagar sat alone in the conference center and gazed at the holoscreen on the far bulkhead. The screen allowed PoleStar's scientists to hold secure teleconferences with their colleagues on the ground, and was used to display computer data and the results of experiments. When not used for those purposes, it was switched to whichever hull camera offered the best view of Earth.

The Earth was a sphere the size of a medicine ball, surrounded by the blackness of space. Centered on the orb was the polar ice cap, with the northernmost reaches of Asia, Europe, and North America surrounding it.

Without the familiar outlines as a guide, it was easy to imagine that this was New Eden as it had been just before the gravity wave announced the arrival of two alien ships. Perhaps Sar-Say's planet looked something like this, or the Broan home world. How many other planets were there in the galaxy that could pass for the twin of Earth? The answer, it seemed, was far more than even he had thought. Based on humanity's rather small sample - Earth and New Eden - approximately one system in fifty must harbor a terrestrial world. That meant the Broan domain was spread among some fifty million suns. A sizable number, but still only a small fraction of the galaxy's one hundred billion stars.

His contemplation was suddenly ended by the chime that announced the arrival that he had been waiting for. He checked to see that the recording circuits were operating, and then told his visitor to enter.

"Good morning, Sar-Say," he said as the alien pulled himself to the restraint frame opposite Bendagar. "I trust that you slept well."

"Very well, Profess ... or. How your night?"

"I hardly slept at all. Your revelation of the Broa yesterday has us all in an uproar."

"Uproar?"

"Upset, agitated. Dieter Pavel had me up half the night composing a report to his bosses on Earth, and after that, I lay in my cabin and thought about the implications. They are very frightening."

"Why?" the Taff asked.

Bendagar smiled. He had noted yesterday that the alien could relate the most horrific vision of the universe possible without any outward sign of emotion. In his lights, he was merely explaining the way things were. It was as though a modern had tried to discuss the population control act of 2312 with one of the original Pilgrims. Their frames of reference were just too different.

"Leesa said that you want talk about astronomy."

"Yes, I do. I am sure the political people will monopolize your time once they get instructions from home. I thought I would get my licks in first."

"Don't understand."

“Not important,” Bendagar replied with an airy wave. “Just tell me about the stars you have seen.”

“I know very little of stars and galaxies.”

“You probably know more than you think. At least, I hope that you do. Would you like to go home someday?”

“Very lot!”

“I think I may be able to find your home if you will cooperate. I would like to start with the question of how long the Broa have possessed the stargate.”

“Why?”

Bendagar repeated the explanation he had given Pavel when that worthy had first arrived aboard, and several times since. Astronomy was not the politician’s strong point, he had discovered. The concept that light-years could be equated to time was an alien one for him.

However, not for Sar-Say, he quickly discovered. When he finished, the alien shrugged in a very humanlike gesture. “Leesa ask me this once. I must tell you that I not know. I not think it help if I do know.”

“Why not?” Bendagar asked.

“Broa expand faster than light using stargate. Maybe first gravity bump on way long after near bump enter solsystem.”

“Hmm, I hadn’t thought of that.” The alien’s point, the scientist noted, was that as the Broa captured system after system, the limits of their domain expanded faster than one light-year per year. Thus, the borders of the Broan Empire always moved outward faster than the gravity waves produced by their star gates. Thus, if the Broa had invented star travel a million years earlier and a million light-years distant, those first gravity waves would just be reaching Earth. So would the waves from a star gate they had established four years ago in the Alpha Centauri system. In other words, he could use his idea to locate the center of the Broan domain, but not its edges. The conquerors might be much closer than anyone liked.

“Let us explore the question anyway. How long has it been since the Broa first found you Taff?”

Sar-Say’s features, which were as mobile as any human’s was, twitched in some unknown expression. “Stories among my people of the time before Broa came. Most told by old ones to cubs very late at night and in depths of own den. Broa not like stories.”

Bendagar nodded. If you were in the business of subjugating an alien world, the first thing you would do is rob the inhabitants of their native culture. The overlords would likely consider the teaching of pre-Broan history treasonous. A Taff who wished to pass down the old traditions to his descendants would do well to keep a low profile.

“How long do those stories say that it has been?”

“Last clan leader of Taff, Uuleri, who live end of last cold era on my world.”

“How long ago was that?”

“Leesa and I work to convert Taff years to human. If accu ... accurate, Broa came to Taff 5000 years

ago.”

The scientist whistled. Five thousand years ago on Earth had seen the first primitive stirrings of civilization in the Nile and the Po River valleys. Yet, the Broa had possessed interstellar travel for some period before that.

“Was the Broan government young or old in those days?”

Sar-Say imitated a human shrug. “Who can say?”

“Right. I will report what you have told me to Dieter Pavel, along with the fact that we have been overlooking the expansion of the Broan realm. Now then, tell me about your travels.”

“I not understand.”

“It is simple,” Bendagar said. “From your description of the places you have been, especially the night skies you have seen, I hope to identify some galactic landmark that we can use to establish where a particular sun lies.”

“You look for stars?”

Bendagar shook his head. “They look too much alike to the naked eye. What about other things? Glowing clouds at night, black shapes against the band of the galaxy, other odd objects?”

“One world I visit have large cloud in night sky. Is interest?”

“I am very much interested, Sar-Say. Please continue--”

CHAPTER 9

“-- Despite all attempts to shake his story, Sar-Say continues to maintain that his society spans a million stellar systems and is under the absolute control of a race of totalitarians called the Broa. As his command of Standard improves, he has provided his interrogators with ever more detailed stories of atrocities committed on other species by these overlords. He recounts these horrors as matter-of-factly as you and I would discuss the weather. Indeed, the psychologists have come to believe that his attitude is the best proof we have that the Broa actually exist. They see an analogy between Sar-Say’s attitude toward the Broa and that of a dog toward its master. Perhaps a better analogy would be the way the ancient Greeks looked at their gods on Mount Olympus. If Zeus or Hera wanted to come down from on high and play a dirty trick on some mortal, then that was their prerogative and not to be questioned. Even when it comes to his own near death at their hands, Sar-Say seems strangely unconcerned.

“Dr. Burrows, of the Alien Psychology Assessment Group, believes that Sar-Say’s people, the Taff, have borne the Broan yoke for so long that they have been selectively bred into a position of permanent servitude. Professor Vining disagrees. He maintains that Sar-Say’s attitude is merely the rationalization of an intelligent being when faced with an unpalatable situation over which he has no control.

“I must tell you, Coordinator Halstrom, that I have my doubts. Sar-Say’s stories of the evil Broa seem to me to be too reminiscent of a dark fairy tale. Each time he tells us of a Broan abuse of power, I am put in mind of the Hansel and Gretel legend about what happens to naughty children

who wander into the dark forest against their parents' wishes. Frankly, the galaxy he describes is counterintuitive. Many of the scientists have asked what reason he would have to lie to us, as though that were an argument. Perhaps Sar-Say is not the simple trader he claims to be. He could just as easily be a smuggler, or some other sort of criminal. If that is the case, then he was in the midst of being apprehended when his ship jumped into the New Eden system. He may be lying to us in order to poison our minds against the lawful authorities in his region of space. What better way to assure that we will not turn him over to those who would imprison him? I have expressed this possibility in various scientific conferences, and I must report that the reaction has not been favorable. Still, as a story it is much more palatable than his tale of a galaxy controlled by a race of paranoid megalomaniacs.

"It would appear, Madame Coordinator, that you were very wise not to release this news of Sar-Say's capture to the media. They would have a field day with the lurid stories he has been telling us. Perhaps the return expedition to New Eden will provide facts with which to refute his story. As it stands now, we must keep the alien under absolute wraps if we are to avoid a system-wide panic."

(Signed)

Dieter Pavel

Coordinator's Representative

#

Nadine Halstrom sighed as she finished reading Pavel's report. It had been a week since the first reports of Sar-Say's claims had been forwarded to her via secure communications link. She remembered the knot that had formed in her stomach, a knot that had yet to loosen. Was it possible that a single species could control a million inhabited star systems? If so, what chance did Earth and her six puny colonies have against such a race?

What if Dieter Pavel was right? What if Sar-Say was lying to them? He need not be an interstellar criminal to make up such a story. Maybe he was the Taff equivalent of the garrulous old man who makes up stories so people will notice him. On the other hand, if truly a trader, then he might be spinning his yarns in order to exploit humanity to his own benefit. If he frightened them enough, they would remain ignorant of the true situation in this great galactic empire, and would be correspondingly easier for him to cheat.

Then there were the more grandiose possibilities. What if Sar-Say had been deliberately planted on them? What better way for his masters to avoid human competition than to stage a fake space battle in order to plant an agent among them? Perhaps Sar-Say's people were no stronger than Nadine Halstrom's and that they hoped to keep human beings out of their space with stories of a gigantic, rapacious, and totally fictitious galactic empire.

Finally, there was the most horrifying possibility of all. What if Sar-Say was telling them the simple, unvarnished truth?

"Come now, Nadine," she growled under her breath. "You are getting paranoid in your old age." Of course, she reminded herself, in the universe Sar-Say had described, a little paranoia was not necessarily a bad thing.

The problem with Pavel's hypothesis, her own maundering, and Sar-Say's story was that there was nothing to prove or disprove any of them. Moreover, absent any method for telling the possibilities apart, she would have to assume that Sar-Say's worst-case scenario was fact.

An easy principle to proclaim, she thought, but not one that was easy to put into practice. For example, if the galaxy was under whatever the Broa used for thumbs, what should she do about the Stellar Survey? It had been the survey that had brought the Broa to humanity's attention (and possibly vice versa). Presumably, the more stars they explored, the higher the probability that they would tangle with the Broa again. Logically, then, the survey should be curtailed or ended completely. Yet, by another logic, the survey ought to be accelerated and the great starships sent farther into the void. For if human beings shared the galaxy with the Broa, there was always the risk that they would discover Earth, and having done so, destroy it. Under such a scenario, wouldn't it be best to spread the human seed as far as possible as insurance against future catastrophe?

Then there was the problem of the public airwaves. For nearly two hundred years, Earth had been blasting ever-greater levels of electromagnetic energy skyward, forming a great bubble of radio noise that was even now expanding toward the Broan domain. Should they place restrictions on broadcasting, or was it already too late for such precautions? Perhaps some Broan listening post was even now picking up the theme song of *I Love Lucy* or one of the other legendary programs of the early age of broadcasting.

There were literally thousands of such questions for which she had no answer. Not for the first time, Nadine Halstrom wished that she had never decided to leave the comforting confines of the classroom. She was put in mind of what the chief of the Lucayan Indians must have thought when he awoke one morning to find an Italian navigator and a crew of gold-hungry Spaniards on his beach. "Should I welcome these pale strangers with the giant ships, or should I kill them immediately?" he must have asked himself. History recorded that that nameless Indian chief had made the wrong choice that autumn morning in 1492. Would the same be said in future centuries of Nadine Halstrom, assuming, of course, that there was anyone alive to record it?

Frankly, she thought, the responsibility was far too heavy a burden to be placed on the shoulders of one overworked bureaucrat. Unfortunately, that thought did not help resolve her dilemma either.

#

"Something is wrong," Mark Rykand said into his drink, a Manhattan, the olive of which was now making a wet puddle on the bar. He hated olives.

"Is Moira getting on your nerves again?" Gunter Perlman asked.

"Not Moira. This Vasloff character you put me onto."

"Vasloff? What about him?"

"I made a donation to his organization, but he isn't coming through with any information."

"Doesn't sound like him," Gunter replied. "True, he's an absolute nut when it comes to starships, but he is basically honest. If he told you he would find out something and has not, then maybe it isn't to be found."

"Don't be a toady, Gunter. The man is holding out on me!"

His friend regarded him with careful eyes, gauging the degree of his intoxication. Finally, Perlman said, "You know, he is not the only nut around here."

“How do you mean that?”

“Just the way it sounds, pal. You have known about Jani’s death almost six weeks now. It is time for you to put away your little fantasy and get on with your life.”

“Screw you, Gunter!”

“Listen to yourself. The survey is against you, Vasloff is against you, and now I am against you. Frankly, Mark, paranoia ill becomes you. Hell, I heard how you bit Johnny Fargo’s head off the night before last because of some comment he made about your dead sister. Everyone has heard about it. If you don’t watch it, you are not going to have any friends left!”

Mark frowned and took another sip. Gunter was right. He had been ashamed of himself after he had yelled at Fargo. True, Johnny was a boring, self-important snob, but he meant well. He just happened to be the unlucky soul who had told Mark that time heals all wounds one time too often.

“Do you want to prove you are on my side?” Mark asked belligerently.

“Not if it means humoring this delusion you have developed.”

“I don’t want you to humor me. I want you to help.”

“How?”

“Let me use your yacht.”

“Sure, I’ll loan you *Gossamer Gnat* after I have sunk a quarter-million credits in her.”

“I don’t want you to loan her to me. I want you to take me somewhere.”

“Where?”

“PoleStar.”

“Why?”

“Because that is where *Magellan* is.”

“And I suppose they are going to allow us to light-surf right up to their midships airlock and let you out?”

“They might,” Mark agreed. “However, if they do, it means that you are right and I am imagining things. Now, if I am right, they will warn us off and not let us near the ship.”

“So what good will it do you?”

“It will give me confirmation that they are hiding something. Don’t worry, I will not ask you to violate any restricted space, but if you can get me close enough, I will be able to get there on my own.”

“How?”

“Long range vacuum suit.”

“You’re drunk, Mark! Only a fool would try to navigate a suit across a hundred kilometers of empty space, and he would need to be a skilled fool to have any chance of making it.”

Mark shrugged. “If I get into trouble, I will switch on my emergency beacon and they will send the station

taxi to pick me up. Either way, I'll get where I want to go."

"And I will end up in jail for violating restricted cubic."

"No you won't. You will keep well clear. You can claim that I am a stowaway, that you did not even know I was aboard."

"Pretty difficult claim to make on a solar yacht, my friend."

"Whether they believe you or not isn't important. I will back up your story. That way they will only throw me in jail."

"You are forgetting one thing. How are we going to get the *Gnat* into polar orbit?"

"Tug. I will pay the change-of-plane charges both ways."

Perlman considered for a moment, and then shook his head. "I won't do it. If you want to kill yourself, do it without my help."

"Please, Gunter, I am begging you."

There was a long pause while Perlman thought it over. Finally, he turned to Mark and said, "All right, I'll do it. I was going to take the *Gnat* out and exercise her anyway. I still think it's a damned foolhardy thing to try."

"I have to try, Gunter. I hope you see that."

"All I see is someone who has lost his family and seems determined to join them. Talk to Sam Wheeling about a vacuum suit. He knows about such things and will get you a good one. Do not scrimp on the price. You may be out there a long time before they can rescue you."

#

Lisa Arden watched Sar-Say as he moved effortlessly in the microgravity of PoleStar and wondered how long it had been since his people had invented space travel. The pseudo-simian (as the scientists had taken to calling him) seemed too well adapted to microgravity for it to be an accident. She felt clumsy by comparison. Next to the Taff's fluid movements, she seemed all elbows and knees.

"Wait up, Sar-Say! Nothing's going to happen for at least fifteen minutes."

The supple neck twisted to reveal two yellow eyes and comical ears pointed in her direction. "Hurry, Lisa. We don't wish to be late."

"*Don't*, with a 't' ending," she corrected automatically. "It is one of those pesky contractions."

The alien blinked, a sign that he was filing another fact away in his prodigious memory, and said, "We don't wish to be late."

"Better," she replied approvingly as she finally caught up with him. Sar-Say's speech was improving daily with practice. Just that morning, they had engaged in a conversation that would have been impossible only a week before. The subject of what name applied to the Broan Empire had arisen.

"The Broa do not rule empire. There is no single Broa in charge, no emperor."

"Then what would you call it?"

“I do not know,” Sar-Say had replied seriously. “I have not yet learned a Standard word that fits.”

“What do you call it in your own language?”

The alien had uttered a long series of syllables that consisted mostly of sibilants.

“What does it mean?”

“It means ‘Civilization.’ It means that the Broa rule all.”

“The Broan Tyranny, perhaps?”

“No. The word is too negative.”

“You have described them as pretty negative people.”

“They are not malicious,” Sar-Say had replied seriously. “So long as things are done as they wish, they allow most to live with a minimum of ... of interference.”

“Big of them,” Lisa had said sarcastically. “What is the mechanism of their power over other species? How do they maintain control?”

“They have no need to control the worlds directly. They control the stargates. The Broa are not a ... prolific ... yes, a prolific people. They breed slowly. There are not enough of them to colonize every world in their ... whatever you humans call it.”

“Then there are some worlds that are free of Broa?”

“Yes. Many worlds have only a few Broa on them, and others are visited infrequently by the masters.”

“These worlds are sovereign?”

“What does that mean?”

“It means that they have control over their own affairs and answer to no one else for what they do.”

“No, the Broa are ... sovereign. Those who rule do so in the masters’ name.”

“The Broa are the kings?”

“No, that word too denotes a single individual who rules. The Broa practice rule by kinship, not kingship.”

Lisa had looked sharply at her star pupil. “Was that an attempt at humor, Sar-Say?”

“It was.”

“Not bad for a beginner. But you were saying--”

“A single clan or gathering will generally control a few stars, or even an entire sector. They are sovereign over all the worlds that are linked by the network of stargates they control. Generally, the clan lives on a single world and periodically visits their possessions. There are worlds that go without a visit from the masters for decades - so long as there is no trouble, of course. When there is trouble, then the Broan warships visit them quickly.”

“The Broan domain is organized around the stargates?”

“How could it be otherwise?”

“Perhaps we should call it the Broan Sovereignty?”

“Perhaps,” Sar-Say had agreed. “I will have to think upon it.”

“Let us hurry, Lisa,” Sar-Say said, gesturing for her to follow him as he again began his effortless movement down the long corridor.

“Very well. The view compartment is just ahead there. You go on and I will catch up.”

Sar-Say swarmed toward the open hatchway toward which she had gestured. She watched him go. The ship bringing the stardrive and fusion generator that were to be transported to the New Eden system was due today. Sar-Say enjoyed watching the supply shuttle come and go, but today their cabin viewport was facing the wrong direction. She had asked to take him on an excursion outside the research area and had gotten Dr. Bendagar’s permission. It was like taking a young child to the zoo.

She caught up with Sar-Say to find him hovering in front of the meter-wide viewport. Beyond they could see the Earth with the Moon low behind it. To judge by the position of the Earth and Luna terminators, the sun was somewhere over their left shoulders. The Earth was as small as it ever got, indicating that the orbiting mirror and habitat were near apogee - the highest point in their orbit. Below them, the arctic region of Earth was laid out in a dazzling mosaic of white. It was still summer in the northern climes, with little need of PoleStar’s service. Indeed, if the weather directorate could ever figure out how to deliver darkness to those climes at this time of year, they could probably sell that service too.

“There it is!” Sar-Say said, pointing. She followed his long, nimble arm with her eyes. Not only was the alien’s memory better than hers was, apparently, so was his vision.

CHAPTER 10

“Watch what you are doing, you fumble fingered oafs!”

Lieutenant Harlan Frees turned his attention to the smallish figure in the day-glow orange vacuum suit gesturing violently at the gang of sweating, cursing spacers who were manhandling the large burnished cylinder toward *Magellan*’s hull. Lucky for Frees’ future career in the survey, his faceplate was polarized to golden-mirror sheen. Otherwise, Laura Dresser might have seen the look he gave her. He switched to the alternate comm circuit and said, “Please keep quiet, Ms. Dresser. The command channel must be kept clear for my orders to the crew.”

“Damn it, Lieutenant, they almost bounced it off the hull that time. They need to be more careful. That stardrive generator is a delicate piece of machinery.”

“We are doing our best. Now, either observe in silence or else I’ll halt the job and have someone escort you back to the airlock.”

Frees took the ensuing silence for assent and turned back to the six men who had their boots in restraints and who were spaced evenly around the large cylinder that hung a meter and a half above *Magellan*’s north pole. Despite the mass of the generator, its lack of weight and the total lack of friction in space made it a skittish load. The slightest touch was sufficient to start it wobbling and only careful, coordinated work by the six spacers could damp out the oscillations.

Had they been at High Station, they would have used one of the big manipulator arms to position their cargo. Unfortunately, at PoleStar they were forced to do it by hand. As the first astronauts who had tried

to build a space station had discovered, manhandling heavy objects in microgravity has its own special problems.

“All right, let’s try to get it right this time. Murphy, you lead off. Do not let it rotate, and for God’s sake, keep your boots clear when it bottoms out on the hull. On three, let us see you plant it square on the thrust frame butt-plate with no more than a centimeter-per-second of velocity. Ready? One ... two ... three!”

This time the operation went more smoothly. The cylinder drifted across a decreasing sliver of space, moving dead slow toward a collision with the starship. It took a sharp eye to note that the drive generator was in motion. Even so, Frees wondered if they had given it too much velocity. When the gap between ship and generator dropped to 20 centimeters, he gave orders to begin retarding the heavy generator casing.

Frees noted the resulting *thump* through the soles of his boots when the generator touched down. He wondered just how loud the noise had been inside the ship.

“Right. Haskens, Baker, Donner, Kurtzkov. You four stabilize it while Murphy and Goldstein get it anchored properly.”

Two of the figures around the generator immediately moved to where a series of monofilament straps had been strung from the generator in preparation for this moment. They quickly and expertly threaded the straps through the circle of padeyes that surrounded the generator to form a spider web of restraints.

“All secure, Lieutenant,” Murphy’s voice said over the command circuit.

“Very well. Ms. Dresser, would you care to check the restraints?”

“I would, Lieutenant.”

Frees felt a moment of irritation. He had made the offer out of courtesy, not expecting her to take him up on it. Hadn’t she watched them while they worked? He stood with his boots against the starship’s hull and a crescent Earth overhead as Laura Dresser checked the tension meters built into each strap. Finally, she turned to him and said, “Good job, Lieutenant. Now let’s go back and get the power reactor before we patch the generator into the ship’s star drive.”

“Very well, Ms. Dresser. You heard her, men! Back to the freighter. We’ve a power reactor to offload.”

#

Ensign Niles Pendergast sat at the sensor station in the bowels of *Magellan* and watched an impossibly large ship make the slow climb from Earth. According to the glowing green digits on his screen, the vessel was more than one hundred kilometers in diameter. In fact, the ship was nowhere near that large. Or rather, it was, but it was not.

The vessel climbing toward them was a solar-sail-powered racing yacht out of Earth parking orbit. They had watched it climb laboriously away from the planet for the past three days. The sail was every bit as large as the computer claimed, but so thin that a thousand sheets of the mirrored polymer made a stack thinner than tissue paper. As for the yacht itself, that was a pod barely large enough to carry its crew of three and minimal life support equipment. Conditions aboard were so primitive that the yacht’s crew lived in their suits. Pendergast had heard that at the finish of each year’s Solar Regatta, there were so many showers taken aboard the host station that water had to be rationed.

“What’s that you are looking at Mr. Pendergast?” Chief Newman asked from his station beside the

ensign's. The chief was monitoring the team sweating the new stardrive generator in place on *Magellan*'s hull. There was considerable profanity on Channel 3, not coincidentally; the one the Lady VIP's suit was not equipped to receive.

"That solar yacht is back, Chief, bigger than ever."

"Wonder what a yacht is doing in polar orbit, sir?" the chief asked aloud. His tone was respectful enough, but the words conveyed the message that Pendergast should be wondering too.

"He is close enough, maybe we should find out," the ensign agreed. He punched a control and caused a high gain antenna to slew to point where the control pod ought to be. "Space yacht, this is *Magellan*. You are approaching a restricted area. Advise your intentions, over!"

There was no reply for more than a minute as Pendergast sent the same warning three times. Finally, a voice responded.

"Hello, *Magellan*, this is *Gossamer Gnat*. What restricted area?"

"Orbital Control has declared a 100 kilometer buffer zone around PoleStar Station to be off-limits to all traffic. What are your intentions?"

"Well, damn it, why doesn't anyone ever tell me these things?" the exasperated voice exclaimed.

"If you kept up with your Notices to Spacers you would know that this station has been restricted for almost two months now."

"What the hell for?"

"I am sure I don't know, *Gossamer Gnat*. I just work here."

"Be advised, *Magellan*, that I am having control problems. One of my anchor units is loose and in danger of separating. I could lose some of my rigging if it goes. I had planned to reef my sail and call at PoleStar for repairs."

"Sorry, *Gossamer Gnat*, that will not be possible. I suggest you shift your sail and start spiraling down again. You can have a tug meet you for a return to equatorial orbit."

"I need to make repairs," the peevish voice replied.

"Are you declaring an emergency?" Pendergast asked. Since the days of airplanes, those words have held magic when spoken by a pilot-in-command. In this case, they would automatically clear the yacht for its approach to PoleStar Habitat. Coincidentally, the declaration would also leave the pilot liable for criminal and civil penalties if the emergency turned out not to be real.

There was a long pause before the voice responded, "Negative. The problem is not that bad. I will begin maneuvers to return to parking orbit immediately."

"Good day to you, sir," Pendergast said before switching off. "Well," he thought, "that's about all the excitement I can expect this watch." He reminded himself of a time he had been on watch in the New Eden system when things had gotten much too exciting.

Just for fun, he used one of the big ultraviolet lasers to paint the light sail. The target was so frinking large at this close range that the picture took nearly thirty seconds to build on the screen. The sail, he noted, was the usual spinning disk with outrigger panels to aid in tilting the axis of rotation. Emanating from the

sail were the fixed rigging and the control shrouds used in maneuvering, all of which were too thin to be seen against the blackness of space. Even to the laser display, it looked as though the tiny pod was suspended by magic from the vast dish shaped sail.

He ordered the computer to zoom in on the pod and waited while it did its work. The yacht's life pod was little more than a formless splotch on the screen. He was about to return to the normal watch screen when he noticed a tiny speck separated from the pod by a few millimeters of blackness.

"Computer," he commanded. "What is the speck of light at? " He reeled off the coordinates without bothering to mark the spot with his cursor.

"Object is too small to identify," came the musical reply. "It separated from the pod four minutes ago."

"Do you still have it in sight?"

"Negative. It is not visible with normal wavelengths."

"What do you think, Chief?" Pendergast asked Newman, who was now more interested in the ensign's screen than he was in listening to the work party.

"Hit it with another scan."

Pendergast ordered another laser sweep of the light sail. Suddenly, his screen was yelling at him and flashing alternate red and white.

"Warning! Object is under power. Repeat. Object is not in ballistic flight. Possible hostile intent. Warning! ..."

For the second time in his young career, Niles Pendergast found himself in the unenviable position of calling the captain and telling him that something bad was happening.

#

Harlan Frees's reflexes took over the moment the General Quarters alarm began to beep in his earphones. His crew of vacuum stevedores had just maneuvered the bulky fusion generator into position next to the stardrive generator, but had not yet started the long, slow descent to the hard point on the hull.

To the six spacers arrayed in a circle around the generator, he ordered. "Stand by to jettison! On the count of three. One, two, three, jettison!"

At the "Stand By" order, the six shifted their grips on the half-sphere. Twelve gloved hands moved under the outer rim of the generator, palms forward and up, as twelve knee joints flexed to prepare to lift. At the end of Frees's count, all six put their backs into shoving the generator straight into the black sky. The velocity imparted was not great, but the big mass rose perceptibly as it began its journey away from the starship. Frees didn't care where it went so long as Magellan had room to maneuver if needed.

"Haskens, Baker, get Ms. Dresser back to the airlock. Double time!"

The two spacers grabbed the surprised stardrive expert by the harness and jerked her off her feet. Using their free hands, they pulled themselves along the safety lines leading back to the lock. Frees chinned the control that would put him on the ship's main command circuit.

"Frees, on the hull with six spacers and Ms. Dresser. I have her and two men headed in, awaiting

orders.”

“Where’s that generator, Lieutenant?” the duty officer asked.

“On its way to infinity, sir. It will clear the danger zone in another thirty seconds.”

“Very well, stand by for orders.”

A moment later, the captain’s voice crackled on the circuit. “Frees, what is your consumable state?”

“We’ve oxygen for another four hours, Captain. Everything else is topped off.”

“There’s an object coming in from that solar yacht below us. Flight profile indicates a visitor in a vacuum suit, although we have yet to confirm that. The object does not show a locator beacon. I repeat, no beacon! I want you and a couple of your men to hook on maneuvering packs and go out to meet whatever it is. Understood?”

“Aye aye, Captain.” Frees switched to his local frequency. “Donner, Kurtzkov, you are with me. You other two get on packs and see if you can stabilize that damned reactor before it floats out of sight. Move it!”

#

Mark Rykand was more frightened than he had ever been in his entire life. He remembered the night he had thought up this scheme. He had been half smashed and feeling mad at the world. That was the only combination he could imagine that would cause him to consider such a damn fool stunt. He remembered how confidently he had assured Gunter Perlman that he could reach *Magellan* on his own, or failing that, merely call the station for someone to come pick him up. No problem, right? Somehow, the original picture of himself in a vacuum suit, sailing confidently toward a ship and station too small to see, had not included the heart that was now pounding in his ears and the adrenaline that saturated his blood. If only he hadn’t been so damned persuasive?

Where he had made his mistake, he decided, had been the next morning when he had not phoned Gunter, and called the whole thing off. Instead, he had placed a call to Sam Wheeling and explained his need. Wheeling, in turn, had recommended a local vacuum supply company where he could purchase the necessary equipment, and a local mechanic who would do the suit modifications he needed. The reason for not having the manufacturer modify the suit was simple. The mods in question were illegal.

The vacuum supply company had been more than happy to sell him their top-of-the-line spacesuit, maneuvering pack, extra oxygen tanks, power supply, sensors, and the navigation system required for long jaunts orbit-to-orbit. The difficulty had come when Mark realized that the entire ensemble massed more than a hundred kilos under Earth gravity and was ill suited to the sport runabout he was driving. Eventually the suit occupied the passenger seat, looking like an oversize gorilla as it sat there with the top down. Maneuvering pack and extra oxygen tanks had filled the rear seat to overflowing. Even strapped in, the suit tended to flop onto the driver during a right turn. The first time it happened, Mark nearly lost control of his car.

The next step had been more ticklish. Mark drove to the small shop the freelance mechanic operated out of his garage and after twenty minutes spent feeling the man out, had contracted to have his suit modified to his specifications. The first mod involved spraying the exterior with a non-reflective black coating that absorbed radar waves. The second involved a software change to the suit’s three computers. A vacuum suit’s locator beacon was supposed to operate as long as the electrical system was energized, and for up to a month thereafter on battery. The change in system software allowed Mark to turn off his beacon

merely by speaking a password aloud.

While the mechanic was working on his suit, Mark made sure that Gunter remembered agreeing to let him use *Gossamer Gnat*. Gunter had been as reluctant to take part in the scheme sober, as he had been drunk. Mark reminded him that he had been planning for months to try out the *Gnat*'s new three-micron sail, and that he could now do so without paying the usual tug charges. Solar sailing was the most expensive hobby ever invented by human beings, and as such, was a strain on the finances of even someone as rich as Gunter Perlman. The thought that he could defray the cost of what was essentially a training cruise finally overcame his caution. As J.P. Morgan had once said about ocean yachts, if you had to ask the price, you could not afford one.

All this passed through Mark's mind as he hung suspended in space with nothing but the universe to keep him company. His voice sounded especially thin as he ordered the computer to display his orbital path on the suit's head-up display. Soon he was staring down a ghostly hollow tube that receded into the distance as he closed on *Magellan* at three hundred kilometers per hour. He noted that he was sailing along very close to one wall of the spectral highway and pondered whether he should adjust his path or compute a new one based on his current position.

According to his guidance computer, he had another forty minutes before he could start decelerating, with another twenty minutes or so before he had to make a decision. If being slightly left of orbit was his only problem, he decided, he would light candles for whatever god looked after spaceborne novices.

One thing he did not have to worry about was interception by those aboard the station. With his beacon switched off and the black, radar absorbing coating on his suit, he was confident that the starship would not be able to detect him until he closed to practically spitting distance.

Thus, it was a shock when the same voice he had heard talking to *Gossamer Gnat* echoed in his ears. "You in the vacsuit! You are in restricted space. Retard your velocity and prepare for pickup! This is an official order. Retard your velocity. We have people on their way to intercept you!"

CHAPTER 11

There is that instant of total panic when you look up to discover the girl's father standing in the doorway, or that first flash of a red light in your rear view mirror, or the step that isn't there. Mark felt all of these and more at the sudden hail from the ship hidden somewhere in the infinite blackness. The panic quickly gave way to a flash of anger.

He had been swindled! Instead of switching off his beacon (something reputed to be impossible short of destroying it), that damned mechanic must have gone into the program and inserted a few lines of code that returned *abeacon off* response whenever the password was spoken. Such swindles were common among itinerant unlicensed programmers. Why go to the trouble of debugging a program containing a few million lines of code when a quick cosmetic change to the user interface would serve long enough to be paid?

What if he had not been swindled? What if the mechanic had done precisely what he had been contracted to do? Were the starship's sensors good enough that they could track him without the aid of the beacon? If they were, what sort of sensors were they using? The first thing he needed to do, he decided, was determine whether he was shining like a star in the radio frequencies.

"Computer."

“Ready,” the clear contralto voice answered in his earphones.

“Run a diagnostic. Report status of locator beacon.”

“Running,” came the reply. Mark sweated out the next two minutes. The diagnostic program was as inflexible as a graphite I-beam, and therefore, nearly impossible to fool. Whatever the mechanic had done to his suit, the diagnostic could not have been affected ... could it? He waited through the checks of the environmental control, communications, and navigation systems. The answer came after what seemed an eternity. “Beacon is inoperative.”

“Radio check.”

“Radio is turned off.”

“Status of any system that might radiate energy to space.”

“Thermal control is operating nominally. All other energy rejection systems are disabled.”

Mark frowned. Thermal control! Were they tracking him by his infrared emissions? If so, there was not much he could do about it. So long as he was alive, he would show up as a spot of radiance on any infrared detector.

What was the likelihood that they had him in the focus of an infrared telescope? If that was how they had spotted him, then they were operating under a major handicap. For, as his old astronomy teacher had often lamented, telescopes suffer from an inability to directly measure the range of an object under observation. Ever since Copernicus’s time, astronomers have known the angular position of every star visible to the naked eye to within a few fractions of an arc second. Yet, despite the accuracy of their angular measurements, they have been lucky to guess the distance of all but the closest stars to within a dozen light-years. In fact, only with the advent of star travel had humanity managed a sufficiently long baseline to triangulate the stars directly. As for the more remote galaxies, their distances were still largely only informed guesses.

If the watchers aboard *Magellan* had him in the crosshairs of an infrared telescope, they would not be able to estimate his range closer than a few kilometers. Any interception in space is a complex problem in vector analysis. Without range information, it was unlikely his pursuers would be able to catch him.

What else could they be using to track him? It could not be laser radar. The coating of his suit absorbed more than 99.9% of the light that fell on it. A laser beam should not reflect sufficiently to give a readable return. The same for any other kind of radar. *All light* or merely that small bit of the electromagnetic spectrum that people can see? The thought struck like a fist in the stomach. What about the ultraviolet wavelengths? Was his suit black in the ultraviolet spectrum? He kicked himself for a fool for not having checked the possibility when he had tested the suit.

Whatever detector they were using, he was faced with the problem of spoofing it until he could get close enough to make a straight run at the ship. The problem with being suspended in space was that one is as naked as a fly on a wall with no place to hide. Or was there?

He called up the long-range display on his faceplate. The view was not real time. It had been downloaded to his suit from *Gossamer Gnat* the moment before he stepped out of the airlock. So long as *Magellan* did not move, the view ought to serve his purposes.

The survey ship was lying beside the PoleStar Habitat while another ship, an interorbit freighter, hovered some distance away. To one side of his orbital path and two-thirds the distance to the starship lay the

PoleStar reflector. Gunter Perlman had warned him several times of the danger the big mirror presented. Although Mark's speed was minuscule compared to orbital velocity, it was still fast enough to turn him into bloody pulp if he hit the reflector. Gunter had hoped to close to a position where Mark could give it a wide berth. The warning from *Magellan* had cut short that effort. As it now stood, Mark would barely miss the big mirror.

The map display defaulted to what is known colloquially as Godview - high overhead at right angles to the plane of the ecliptic. Mark commanded the map to rotate in model space to align the viewpoint with his own current position. The display showed him what things would look like if only he possessed the vision of an exceptionally keen-eyed eagle. The habitat and two ships were tiny pinpoints in the distance with the ghostly glowing mirror nearly occulting them.

Nearly occulting them...!

Mark smiled as he savagely twisted the backpack controller in his right hand and began boosting perpendicular to his flight path. Regardless of what they were using to track him, he doubted it could see through the PoleStar reflector. So long as he kept the mirror between himself and *Magellan*, his pursuers would be blind.

#

Harlan Frees scanned the display being relayed from the long-range sensors aboard the ship and demanded, "Where is he, Control?"

"We've lost him," came the squeaky reply from Niles Pendergast.

"What do you mean 'you've lost him?'"

"He was there one minute and gone the next."

"He can't have just disappeared."

Even as he said it, Frees had to admit that the quarry had indeed disappeared. The icons denoting *Magellan*, PoleStar, and the freighter were all there, as were he, Donner, and Kurtzkov. He could even see the beacons of the two spacers he had ordered to stabilize the fusion generator. Of the quarry, however, there was no sign.

"Full display, radius 100 kilometers," he ordered. The ghostly lines in front of him changed as the computer showed him a view of circumambient space from somewhere near Polaris. The ships and habitat shrank until they were one symbol. At this scale, only the PoleStar reflector was large enough to show as other than a point. The reflector was a small dish-shape with a pink fan radiating out behind it. The pink zone showed the cone of shadow, the region of space blocked from *Magellan*'s view by the body of the big mirror. The last known position of the intruder, he noted, was on the edge of the zone.

"He has slipped behind the reflector!" Frees reported to control. "Kurtzkov, Donner, jet for the mirror! Kurt, you take the zenith point, Donner, you take four o'clock, and I will take eight. We will hover out of sight until he passes back into view of the ship. Then we'll nail the bastard from behind!"

The spacers acknowledged their orders. Brief sparks of control jets flashed above and to the side of Harlan Frees as the other two changed their vectors to intersect the mirror. He did likewise and soon the giant construct was swelling at a perceptibly faster rate. Speed is deceptive in vacuum where there is no way to judge size or distance. However, there is a point where very large objects in microgravity cease to be "out" and suddenly become "down." It is a psychological quirk of the human eye and brain brought

about by millions of years of evolution at the bottom of Earth's gravity well. Frees was still a kilometer from the reflector when the vertigo struck him. When the dizziness passed, the universe had rotated through ninety degrees. Frees found himself descending toward a vast plain lit by Luna glow and starlight. From this angle, the mirror was an oversize tambourine filled with a honeycomb of support trusses.

With his suit radar taking continuous range readings, Frees switched to automatic and let his computer worry about halting his flight. His suit jets burped automatically and the thin reflective film that made up the big mirror began to flap in the invisible wind. He quickly switched back to manual and dialed his thrusters down to minimum power. The rippling continued, but much less violently. Despite his care, the disturbances radiated outward like waves in a pond and soon the whole mirror was shaking.

"Watch your exhaust," he warned the two others. "Gentle, continuous thrust!"

Frees came to a halt with his boots nearly touching the supporting trusswork of the reflector. After rotating about both spin and yaw axes, he jetted toward the edge of the structure to await the intruder's arrival.

#

Mark's eyes hurt. The PoleStar mirror occulted more than a third of the sky, yet was virtually invisible. He had not planned for this complication. He needed to be able to see the mirror to judge when to begin thrusting laterally to avoid a collision. Yet, except for a very faint glow that disappeared when he stared too hard at it, the mirror was as black as the space it reflected.

He checked his instruments every few seconds. He had departed *Gossamer Gnat* with approximately 300-kph inbound velocity, which meant that he would require at least a minute of lateral thrust if he were to avoid smashing into the mirror. That would be easy enough if he were able to use his suit radar for range information. Yet, if he began sending out radar pulses, his pursuers would not need their ship to tell them where he was. They would be able to use suit instruments alone.

Nor was he able to ignore the fact that somewhere in front of him were men whose job it was to cut him off from *Magellan*. Every few seconds he anxiously scanned the sky. His intellect told him that eyeball reconnaissance was less than useless in the vastness of space, but some impulse within made him look anyway.

Mark was engaged in one of his periodic scans of the black sky when he was overcome with a nearly overpowering urge to vomit. Again, he found his heart in his throat as he wildly scanned his instruments. Whatever was wrong, it was not his suit. All his displays read normal. Gritting his teeth, he forced himself to concentrate on the blackness in front of him although it caused shooting pains at the backs of his eyes.

Something was terribly wrong with the universe! The few stars he could see seemed to be wavering and blinking on and off. What could cause such a phenomenon? Correction. What could distort *areflection* of the stars that way? Of course! Something had disturbed the mirror and it was distorting his view of the stars.

"You are too close!" his mind screamed as his brain used the new information to recalibrate the size of the mirror before him. He had misjudged, waited too long, and now nothing could prevent a collision! As he felt his heart pounding in his temples, he forgot his resolve about not radiating, and ordered a single ranging pulse from his suit radar.

The answer came back at the speed of light. He was ten kilometers from the mirror and closing at 320 kph. He had cut it too damned fine. In another fifty seconds, it would have been too late.

A clammy chill ran down his spine as he began the maneuvers that would give him enough lateral velocity to miss the mirror - maybe. He twisted the thruster control and was rewarded by a quiet hissing from his backpack accompanied by a gentle hand pushing in the small of his back.

This close to the mirror it was possible to see imperfections in its surface - micrometeoroid punctures and places where the coating had flaked off over the years. The round edge of the mirror was flashing toward him at a frightful speed. Mark flinched as the mammoth wall reached up to swat him?

#

Niles Pendergast was worried. For long minutes, he had been effectively blind. He could see Harlan Frees and his two companions, but not the quarry. The PoleStar reflector had effectively masked him from sight. He was sweeping the vicinity of the reflector with the ship's ultraviolet laser for the hundredth time when Frees's excited voice burst forth from the comm speaker.

"Kutzkov, Donner, the son-of-a-bitch just zipped past me! He could not have been more than three hundred meters out when he entered the sunbeam. All I got was the impression of a helmet. He must have his suit coated with something. Where is he, Control?" This last was addressed to Pendergast.

"Three kilometers above you, Harlan," the young ensign reported, having reacquired the intruder. He reeled off a string of numbers that told Frees the position vector from his location, and then listened as Frees cautioned the other two against damaging the mirror with their jets. A moment later, all three rose slowly away from the reflector on minimum power. A kilometer above the mirror they began accelerating as fast as their backpacks would allow. Even so, it was obvious that they were in for a long chase.

Frees set the laser to automatic and began painting the intruder continuously. He smiled. Whoever this maniac was, if his faceplate did not stop ultraviolet, he was going to have quite a sunburn when he woke up tomorrow. Serve him right!

Pendergast was startled by a voice from close beside him. "Who else have we got out there?"

He turned to discover the captain floating behind his chair, watching the pursuit on the screen.

"Uh, Murphy and Goldstein, Captain. They're trying to recapture that generator."

"Order them to secure and join the chase. We'll trap him between them and Frees."

"Aye aye, sir." Pendergast issued the orders and received an acknowledgment from the two affected spacers. By the time they jetted away from the ship, the intruder had closed half the distance to *Magellan*. If he did not begin decelerating soon, he would overshoot.

"Put me on the emergency circuit," Landon ordered.

"Circuit live, Captain."

"You there! We have you surrounded. Begin decelerating or else you will be fired upon. I repeat, we are tracking you and will fire if you do not halt." He made a throat cutting motion and Pendergast killed the circuit.

"Fire on him with what?" Pendergast muttered.

"Hopefully, Ensign, he doesn't know that starships are unarmed."

"And if he does know?"

“Obviously, he has at least heard rumors about our guest. Maybe he has also heard that we destroyed that alien ship back at New Eden. If so, that knowledge alone ought to give him pause.”

Long seconds passed without anything happening. Then Pendergast noted that the visible light telescope had recorded several actinic sparks in the location of the intruder. “It looks like that did it, Captain. He is decelerating.”

“Good! Tell Lieutenant Frees where he can pick up his captive.”

Pendergast reached out to activate the comm again then froze. “Damn, Captain, he’s changing course.”

“For where?”

Pendergast glanced at his commanding officer, his mouth agape. “The habitat, sir. He is making directly for the PoleStar Habitat!”

CHAPTER 12

The PoleStar Habitat and *Magellan* were two crescent shapes that mimicked the Earth-Moon system when viewed from outside Earth’s orbit. Had Earth been in the background rather than somewhere behind Mark Rykand’s right shoulder, the station and starship would have presented one of those picture-postcard-from-space shots that first time tourists to orbit are so fond of sending home. As it was, the beauty of the scene was lost on Mark. He was far too busy to pay any attention to scenery.

Mark was still shaking from his close encounter with the PoleStar reflector. He could not get the vision out of his mind of that giant mirror rushing toward him. The only good thing about the near miss had been that it had frightened him into closing his eyes, and thus, he had not been blinded when he passed through the sunbeam. His moment of closest approach had been signaled by sudden brightness behind closed eyelids and then dark again.

Once the mirror lay behind him, *Magellan* had had no problem picking him up again. “*You there! We have you surrounded. Begin decelerating or else you will be fired upon. I repeat, we are tracking you and will fire if you do not halt.*”

The voice was the sort that people obey instinctively. Mark put down the sudden urge to begin decelerating and turned instead to the problem of this new threat. Did starships really carry space weapons, and if so, would they actually fire on him?

The problem, he soon realized, was academic. Throughout his ordeal, he had constantly scanned space, attempting to locate his pursuers. As he scanned the starship shortly after flashing through the sunbeam, his eyes were drawn to two sparks that could only come from backpack thrusters. The sparks were in front of him and undoubtedly vectoring to cut him off!

Mark’s attention had been focused on *Magellan* ever since it had grown large enough to be visible. The new threat caused him to scan the vicinity of PoleStar, looking for other sparks of radiance. The habitat was larger than the starship and closer. With no intervening atmosphere to soften the details, he had a sharp, clear view of the lighted portion of the station. The lighted half of the hull was a jumble of gas tanks, piping, conduits, heat exchangers, and bowl-shaped communications antennas. Away from the lighted crescent, Mark could see nothing at all of the station save for a few lighted ports.

The station’s messy exterior gave him an idea. Again, he faced the problem that he was hanging in empty

space with nowhere to hide from the questing sensors of the starship. With PoleStar between him and *Magellan*, it might be possible to pull the same trick he had with the reflector. If he grounded in the shaded hemisphere and hid among the external machinery, his suit's non-reflective coating ought to make him invisible. He could use the cover to make his way around to the opposite side of the station. From there, it would be a straight jump for the starship and a short enough trip that it was unlikely anyone would intercept him. If he could make it to one of *Magellan*'s airlocks without interference, then he could put his case to Jani's commanding officer.

#

Lisa Arden was indulging in her one luxury. She was taking a shower.

She had expected that her workload would be reduced once Sar-Say learned to speak Standard. Instead, she found herself working harder and longer as her job description evolved to keep pace with Sar-Say's increasing sophistication. She was less a linguist now and more a teacher/explainer. Despite his surface fluency with the language, there were still many human concepts Sar-Say had difficulty grasping.

Nor did the education flow in only one direction. Even as he learned to speak Standard, the small alien continued to teach Lisa the Broan lingua franca. She was frustrated by her progress and worried that her lack of ability reflected badly on humanity. After all, weren't humans as smart as Taff?

Nor had her transformation from teacher to student been the only change in her role. Increasingly she was Sar-Say's interrogator. Instead of spending her entire day answering the alien's questions, she often asked him questions sent up from Earth. In addition to the scientists aboard PoleStar, the Stellar Survey had established a working group of scientists on Earth to study the alien's claims. From the number of questions they transmitted each week, it seemed to Lisa that they were taking their jobs entirely too seriously.

All of these new responsibilities had her working sixteen-hour days and left her tired and irritable. Once a week, she would give in to her indolent impulses, seal herself into a shower cylinder, and let the warm water/air mixture run over her until her tension ebbed away. There was nothing quite so sensuous as tilting her face up into the stream and letting water trickle down her flanks. The warm air that accompanied the water had the effect of pulling her down to the open grillwork floor, giving at least the illusion of gravity.

She was startled out of her reverie by a sharp rap on the glass of the cylinder. Opening her eyes and wiping the water from them, she noted the silhouette of Sar-Say's compact form through the frosted glass. Sighing, she reached out and punched the control that would turn off the water.

"What is it?" she asked, her voice echoing strangely in the enclosed space as the flood reduced to a sprinkle.

"Dieter Pavel is on the screen for you," the alien said.

"Tell him I am in the shower and will call him back."

"He says that it is urgent."

"It never fails," she muttered. To Sar-Say, she said, "Hand me a towel."

#

Mark was sweating inside his suit despite the best efforts of the environmental control system to keep him cool. Like every other phase of this foolhardy stunt, he was surprised that he was still alive. He had

ordered his suit computer to get him to the PoleStar habitat in minimum time. It had done just that. It had taken all of his willpower not to override the program as he had fallen rapidly toward the very solid looking half-sphere with the lighted ports. At the last minute, the suit had automatically fired its jets, shutting them off just as his boots touched down on PoleStar station.

He had landed on the shadow side of the station, yet his surroundings were not as dark as he had expected. One glance behind him showed him the reason. The Earth was low above the station's limb and bathed the area in reflected sunlight a hundred times brighter than a full moon. He skimmed low over the various outcroppings that turned the hull into a miniature landscape until the Earth dropped below the horizon. He again grounded on the hull and lost no time in pulling himself into a nearby maze of pipes. He discovered that he could align himself between two pipes and pull himself hand over hand with relative ease. It was, he decided, the space equivalent of crawling through a ditch on one's belly.

After five minutes of scrambling through a stygian forest of unseen plumbing, he decided that he had moved far enough from his landing point to take a breather. Besides, he was lost and needed to orient himself. He anchored behind the blunt, square shape of a waste heat radiator and gazed skyward. Above him, looking like a wide, shallow cake pan, floated the reflector he had come so close to hitting. A bright spark in the sky just above the mirror drew his attention. He was surprised to see a tiny human figure attached to the spark.

As he watched intently, the vacuum suit grew larger and brighter as the man arrowed toward where Mark had first grounded. Soon the figure disappeared under the short horizon and Mark decided that he had best move along.

It was easy to see his surroundings now that his eyes had adapted to the darkness. His pursuers, on the other hand, were hovering in sunlight and would be unable to penetrate the stygian pit in which he was hiding. Even if their suits were equipped with light amplifiers, he would merely appear to be another diffuse shadow amid a confusing jumble of shadows.

Mark found his way blocked by a massive machine he did not recognize. Casting about for another path, he discovered that he had reached one of the lighted viewports he had seen from space. Turning away before the light streaming forth ruined his vision; he reversed course until he found a wiring conduit headed in the direction he wanted to go.

#

The shower door opened and a brown furry hand slipped through. A large towel was suspended from the six fingers. Lisa thanked Sar-Say and wrapped herself carefully in the towel, making sure it would not ride up in the absence of gravity. Her modesty was not aimed at Sar-Say. She felt no more concern about undressing in front of him than she would in front of a pet dog. What she *was* modest about, however, were the video cameras in their living quarters. She was damned if she was going to give an eyeful to whoever had monitoring duty tonight.

Lisa and Sar-Say no longer lived in their original cage. They had been given a suite with a central living/dining compartment, a personal hygiene station, and individual sleeping cubicles. The new apartment even had a viewport on the outer hull, allowing them to see the Earth when the station was in the proper phase of its orbit.

The only illumination showing as she floated into the compartment came from a comm unit on which Dieter Pavel's features were frozen in a perpetual grimace. She anchored herself in front of the screen and noted the surprised reaction that often overtook people placed on hold.

"What is it, Dieter?"

“Why is everything so dark?”

“I have the overhead lights turned off. I was taking a shower.”

“You are in the living area?”

“Yes.”

“Please sign off and call me from your cubicle. I have a priority message for you.”

She opened her mouth to ask the reason, saw the expression on Pavel’s face, and then decided against it. “Right. Call you back in thirty seconds.”

She pulled herself via the handholds in the overhead to her cubicle, closed and locked the door, then asked the communicator to connect her with Dieter Pavel. Almost too late, she ordered the camera off. She had shed her towel upon entry and was hunting around for something to wear.

“Now I can’t see you at all.”

“I have the pickup off. I am getting dressed.”

“Are you alone?”

“I am. Sar-Say is in the commons watching the entertainment screen. What’s the matter?”

“We have an intruder alert. He is somewhere on the station hull.”

She frowned. “An intruder? From where?”

“Apparently he flew in from a ship below us. *Magellan* has been chasing him for the better part of an hour, but they just decided to let us in on it. Probably a reporter with a story he is trying to follow up.”

“He knows about Sar-Say?”

“Hard to say. Better not take any chances. I want you to close the viewport cover and dog it down tight. Make sure that Sar-Say doesn’t have a chance to communicate with this guy before they catch him.”

“Right. I’ll do it as soon as I get dressed.”

“Do it now!”

“All right,” she muttered peevishly. She switched off the comm and rotated in midair to look for her towel. As usual, it had floated to the most inaccessible corner of the cubicle. She debated going after it, then decided that Pavel had been serious when he said he wanted it done immediately. She sighed and hoped the security people would not make copies of the record module.

As she opened the hatch, the lights in the living area brightened automatically. Sar-Say took this as a sign to look at her inquisitively. She mouthed a curse under her breath and made ready to push off for the viewport. As she lined up her jump, she happened to look at the viewport itself. Her scream was entirely involuntary, but enough to alert the startled Sar-Say. The alien turned to follow her gaze.

#

Slowly Mark came to the realization that his surroundings were getting brighter again. That worried him. In one of his zigs or zags, he must have become turned around and headed back in the direction he had

come. He craned his neck to look through the top of his helmet. Just coming into view above the station limb was a new crescent moon. It, too, had a gray exterior cluttered with all manner of plumbing and equipment. It was *Magellan* .

Mark froze as a figure in a vacuum suit suddenly rose into view on his right. The spacer hovered in the black, gazing down intently as he scanned the station hull. He drifted across the black sky and disappeared once more below the too near horizon. Mark decided the time had come to sacrifice stealth for speed. He floated down into the little valley of pipes he had been following and began to pull toward the starship. Again, he found his way blocked, this time by a large antenna cluster. To one side was bare hull on which, if he tried to cross it, he would be silhouetted for all to see. On the other side was a viewport with a dim light emanating from it.

He decided to risk the dim glow in order to keep to a broken surface. He pulled himself forward, skirting the port. There was insufficient room to pass around it. He carefully pulled himself to the edge and glanced down into the station interior. It was then that several things happened all at once.

The first was that the interior lights flashed bright. For an instant, Mark thought he might have triggered some kind of sensor. Then, before he could react, a hatch opened, and a woman floated through. She was especially captivating in that she was nude. Her eyes rose to lock with his (though he knew she could not see anything but a helmet) and the back of her hand went to her mouth. The scream was silent, but obvious.

Under normal circumstances, a beautiful naked woman glimpsed through an open viewport in space would have held Mark's full attention for as long as she allowed it. However, there was something else in the compartment, a figure that turned to face him in response to the woman's scream. Mark suddenly found himself staring into the yellow eyes of something that looked very like a monkey.

CHAPTER 13

Nadine Halstrom's temper was one of her most carefully guarded secrets. Her public persona was that of an unflappable professional politician, someone who could mediate a dispute between God and Satan without betraying a hint of partiality toward either side. Many a pundit had commented on the ice water that must flow in the World Coordinator's veins. Most of the time, they were correct in their perception. However, those who worked closely with her occasionally saw another side of her personality. When she was angry, the Coordinator could swear like a spacer. This happened sufficiently often that she had borne the sobriquet "Iron Maiden" for more than three decades.

As she stared at the features of Anton Bartok, director of the Stellar Survey, Nadine was not angry - she had passed through angry twenty minutes earlier on her way to furious.

"How did it happen, Anton?"

Bartok flinched visibly at his desk half-a-world away. He had known his report would bring a reaction. He just had not expected it this quickly.

"My fault, Coordinator. My people should have followed up with Rykand to make sure he was taking the news of his sister's death better than he obviously was. In addition, no one considered the fact that his credit balance gives him freedom of action not available to mere mortals. After all, it isn't every citizen who can afford to whistle himself up a yacht to deliver him to orbit."

“Are you sure all we are dealing with here is a spoiled rich brat? This story that he was merely trying to find out about his sister’s death seems weak considering that we caught him actually staring at our guest through a viewport.”

“Dieter Pavel interrogated him rigorously. He is sticking to the story that he doesn’t believe his sister was killed by space debris and that he was trying to get to *Magellan* in order to confront Captain Landon.”

“He would hardly claim otherwise if he is a professional. How did he happen to make a beeline for that particular viewport?”

“He claims it was coincidence.”

Nadine’s response was a rude sound that was especially incongruous when coming from the World Coordinator. “I don’t believe in coincidences. I say there has been a leak.”

“If so, why haven’t there been any stories in the media?”

“Because they are afraid to broadcast anything so outlandish without proof,” she responded acidly.

“We would have gotten an indication of something if they were snooping around.”

“How do you know we haven’t had hints? Do your underlings rush to report bad news? What did your people in orbit tell Mr. Rykand after they took him into custody?”

“Nothing.”

“Are you sure?”

“Quite sure. I gave Pavel specific instructions on that point as soon as he reported the incident to me.”

“Have you considered what we are going to do with Mr. Rykand?”

“We’ll charge him with damaging public property, reckless endangerment, failure to heed warnings, and anything else we can hang on him.”

“Oh? And when is his court date?”

“Court date?”

“You have arrested him and are about to charge him. You don’t think we can just order him thrown into the castle dungeon, do you? We will have to arraign him in open court. If you will give me the date, I will arrange to be there. It ought to be interesting to watch his defense lawyer work.”

“Uh, I see your point,” Bartok said. The director’s expression was that of one who has just bitten into a rotten lemon. “But we can’t let him go. He has seen too much.”

“What are you suggesting, Anton, that we toss him out an airlock?”

“No, of course not.”

“I didn’t think so. So what are you going to do with him?”

Bartok considered for a moment, and then grimaced. “I don’t know.”

“Perhaps you should offer him a job.”

“Excuse me?”

“You know, a function that you perform for which someone pays you.”

“But what could he do?”

“That is your problem, Mr. Director. All I know is that if we are to keep him from talking, we will have to keep him aboard PoleStar. To do that, he has to stay of his own free will. Ergo, we need to entice him.”

“But the man’s a dilettante!”

“Perhaps he will welcome a little honest work for a change. Look, Anton, you have all the pieces to the puzzle. He wants to know what happened to his sister, doesn’t he? Tell him! Make sure he understands that we are working to identify the culprits. He might even volunteer.”

“I’ll issue orders at once.”

“Good. Now then, let us consider the more far-ranging consequences of this little drama. Just for the sake of argument, let us assume that Rykand is telling the truth and he stumbled across our little secret by accident. If he can do it then someone else can, too. Frankly, when I agreed to this secrecy, I didn’t expect it to last as long as it has.”

“But we are not yet in a position to go public.”

“Agreed. I suggest we take steps to get ready.”

“What steps, Coordinator?”

“Firstly, we get *Magellan* away just as fast as we can. A ship that has disappeared into superlight is a ship that cannot be recalled. When will Captain Landon be ready to space?”

“By the end of the week.”

“Very well. Tell him that I want his sorry ass gone by Saturday at the latest. When Rykand does not show up in his usual haunts, his friends are going to start to talk. They are the social strata where the reporters are likely to pick up the story. In addition, even if they do not gain the scent from Rykand’s friends, having *Magellan* at PoleStar is too damned conspicuous.

“The second thing I want you to do, Anton, is to set up a conference here on Earth where the scientists can go over everything we’ve learned. I want one of those long-winded free-for-all where they try to dig each others’ hearts out with their pocket computers. Let them fight as long as necessary, but I want a consensus on whether our guest is telling us the truth. We can’t afford to have a dozen ‘expert’ opinions in opposition when the news breaks.”

“A conference will be noticed by the press.”

“Not if you hold it in some out-of-the-way place. Find a resort in the hinterlands we can take over for a couple of weeks. I want that conference convened within the month. Is that clear, Director Bartok?”

“Perfectly clear, Coordinator Halstrom. I will have my staff get to work on it immediately.”

#

The cell in which they had thrown him seemed to have once been used as a dormitory room. Normally in space, things retain the luster of newness forever. However, PoleStar had been continuously inhabited

since its days as a power station, and the presence of atmosphere allows the growth of organisms. The smell in the cell was that of mildew and old corruption.

The events that had followed his arrest had been nearly as exciting as those preceding it. He had been dragged bodily away from the viewport where he had seen the ...*thing*, and towed to a nearby airlock. They had delivered him to a suiting cubicle where he had stripped off his suit under the watchful gaze of several hard-eyed guards. Then he had been towed once more to a bare cubicle where he had to wait for more than an hour before they noticed him again. When someone had finally checked on him, it turned out to be a red-faced functionary who screamed in his face for ten minutes before ordering him taken to a holding cell.

Mark had lain awake for hours after strapping himself into a sleeping net, unable to turn his racing mind off. Dozens of times his brain insisted on reliving the long flight in from *Gossamer Gnat*, the near miss of the reflector, the chase across PoleStar's darkened hull, and always, the yellow eyes that had stared intelligently into his own as he had crouched over that well of light. Suddenly his irritation at the survey for not telling him about his sister seemed petty. Something much bigger was going on.

He had eventually drifted off to sleep and slept more than six hours, waking in late morning, according to the wall chronometer. The lack of a day/night cycle in space was complicated by the fact that all orbital installations operate on Greenwich Mean Time, while Mark's body rhythms were still halfway between California and Europe -- and in the wrong direction!

His stomach was just beginning to growl when he heard scrabbling sounds outside the hatchway. A moment later, the hatch opened and a bald man floated in with a covered food packet tucked under one arm.

"Who are you?" Mark asked.

"Hancock Mueller, station manager. I brought your lunch."

"I am honored that the manager of this station would deliver it to me."

"Everyone else is busy. Besides, I wanted to see the man who created all the commotion last night. I must say, you have guts to do what you did. I've twenty years in vacsuits and I would not have pulled that stunt of yours."

"It seemed a good idea at the time. After leaving the ship, I wasn't too sure."

The manager clipped the food packet to a small table with a sitting rack in front of it. He swam to where Mark perched and stuck his face directly into Mark's. Suddenly, his manner was as cold as Pluto. "I have another reason for seeing you. If you had hit my mirror, I would have made it a point to gather up every tiny piece of you we could find and piss on the entire collection. Goddamn it, don't you know what that mirror cost?"

"I didn't plan to cut it as close as I did."

"A hundred kilometers is too damned close. Hell, the men chasing you almost ripped the film with their exhausts. I understand you have a lot of credit with the bank."

Mark shrugged. "I am comfortable."

"Well if you had damaged my mirror, I would have made sure you ended up destitute and then some!"

"Look, I'm sorry. If they would let me book passage on a regular ship, I would have done so. All I really

wanted was to talk to Captain Landon aboard *Magellan* .”

Mueller’s manner returned to affable as quickly as it had changed. “Then you are in luck. Eat up, you have an appointment with the captain in forty minutes.”

#

Mark had expected the interview to take place aboard PoleStar, but when the time came, two spacers arrived to escort him to a passenger lock and into a small interorbit ferry. A few minutes later, they docked with the starship and Mark found himself following one of the spacers to the captain’s cabin.

Mark had never been aboard a starship of the survey, but had heard Jani talk about them. The captain’s cabin was a study in luxury, with microgravity furniture clamped to the deck and bulkheads. Soft lights lit the overhead and the whole cabin was surfaced with sound absorbing carpet. The place smelled good, too.

“Sit down, Rykand,” Landon said without offering a greeting.

“Thank you, Captain,” Mark replied, ignoring the implied insult.

He pulled himself to the frame in front of Landon’s desk and strapped himself in.

“I understand you wanted to see me.”

“Yes, sir. I wanted to find out how Jani died.”

“You were told that on Earth.”

“I didn’t believe it.”

“Why not?”

“Maybe I just didn’t like thinking Jani died as the result of a random accident.”

“She didn’t.” Landon leaned back in his seat and told Mark about the encounter near New Eden. He told him everything, from the whispering chatter of the gravity wave passing through the ship, to the first reports from Scout Three, to the space battle that followed. He told him of Sar-Say’s capture and of the reason why the discovery of intelligent aliens had been judged too sensitive for public disclosure. Through it all, Mark listened without interrupting. When he finished, Dan Landon asked, “Any questions?”

It took Mark a moment to answer. When he finally did, it was with a huge sigh. “You say my sister was the first to report sighting these aliens?”

“Yes.”

“May I see the recording?”

“Are you sure you want to, considering how it ends?”

“I am sure.”

“All right, after we are through here, I will have my aide show it to you. We’ve something else to discuss first.”

“What is that, Captain?”

“How would you like to help find the aliens who killed your sister?”

“I beg your pardon.”

“I am offering you a job that will help you get back at the beings who killed your sister. Are you interested?”

“Why me?”

“I won’t beat around the bush with you, Rykand. You know about Sar-Say, which means that we cannot let you go. Since you are trapped here, why not make yourself useful? My ship and I will be going back to space in a few days. Those who stay behind can use your help.”

“But what will I do?”

“Anything you are qualified to do. What did you take in school?”

“I majored in computers and minored in astronomy.”

“Well, we ought to find a use for both of those. I will assign you to Dr. Bendagar, our chief astrophysicist. He is staying here to work with Sar-Say after *Magellan* goes out.”

Mark thought for long seconds, and then nodded. “Seeing that the alternative is prison, I suppose I will sign on with your project, Captain.”

Landon’s smile was so broad that Mark almost forgot that he did not mean it. “Welcome aboard, shipmate. We’ll just get you to sign a few papers to make everything legal, then get you settled into your new quarters.”

#

CHAPTER 14

Lisa Arden sat at a table in the project mess and ate her breakfast alone. She had been up past midnight with Sar-Say, quizzing her charge on his knowledge of Broan politics, and then had dictated her impressions of the session for two more hours before finally getting to sleep. As she bit into a muffin covered with yeast butter, she pondered her knowledge of the Broan language - if indeed; it *was* the Broan native tongue. Because of the simplicity of its structure, she wondered if it was an artificial language - like the ancient Esperanto - designed to be spoken by a multitude of beings with different brains and vocal apparatus.

“Hello, mind if I join you?” a disembodied voice asked, shaking her out of her reverie.

She lifted her gaze from her plate to see a pair of ship boots hovering just above the deck. As she scanned higher, the figure of Mark Rykand came into view. She had spent the past couple of days avoiding him and her complexion now reddened involuntarily as she remembered how her weekly shower had ended.

“Hello. No, I don’t mind.”

“I am Mark Rykand,” he said, holding forth a hand after he had strapped himself down across from her.

“Lisa Arden,” she replied, shaking it.

“Look, Miss Arden, I want to apologize for intruding on your privacy the other night. Believe me, I would have never...”

“Never sneak a peek at a naked lady, Mr. Rykand?” she asked, her tone one of mock incredulity.

He grinned. “Well, now that you mention it, I suppose I have taken the occasional opportunity. Still, I did not intend to cause you any embarrassment. In fact, I did not intend anything. I was trying to get to *Magellan* .”

“So I’ve heard. Have you met Sar-Say?”

Rykand nodded. “Yesterday. Dr. Bendagar let me sit in on one of the interrogation sessions.”

“Where was I?” Lisa asked. Generally, she sat in on all interrogations to work out any misunderstandings Sar-Say might have.

“The professor said that you were ... ‘answering some damnfool question from some addle-brained, cretin of a bureaucrat who seemed to think we have nothing better to do here than answer his piss-brain questions,’ or something to that effect.”

Lisa laughed. “That sounds like the good professor, all right. What did you think of Sar-Say?”

Mark hesitated as he chased a globule of scrambled eggs around with a fork before replacing the cover to his tray. Finally, he said, “I suppose I was a bit disappointed.”

“Disappointed?”

“He just doesn’t seem alien enough, know what I mean? I keep thinking I am looking at a monkey.”

She nodded. “Yes, I sometimes find myself having the same reaction. I suppose it would be better if he were a big, throbbing mass of gelatin or maybe a rock with eyes. Yet, if you think about it, form follows function in evolution as in everything else. The Broa have naturally enslaved beings more or less like themselves, and since they are apparently our kind of creatures, so are most of their subservient species. That, at least, is the way the biologists explain how it is that the three species we’ve seen to date are so similar.”

“Three species?”

“Sar-Say and the two types of corpses we took off the alien ship.”

“Oh. I didn’t know that.”

“That’s why *Magellan* is going back out this afternoon, you know. To salvage Sar-Say’s ship.”

“I didn’t know that either. I am afraid I’m a little out of my league here.”

She smiled. “It can be a bit overwhelming when you first come aboard. I liken it to drinking out of a fire hose.”

“They gave me a lot of old reports to read, but I haven’t had the time. Tell me, has Sar-Say told you why the Broa were after him?”

Lisa explained the Taff’s strange attitude toward the overlords, using the pet dog analogy. Mark was doubtful.

“He seems too intelligent for that.”

“We all have our blind spots, Mr. Rykand.”

“Please, call me Mark. After all, one of us has seen the other naked. That should put us on a first name basis, right?”

Lisa did not answer. She was too busy turning bright crimson.

#

Sar-Say sat in his cabin and ignored the entertainment screen on which a buxom young woman breathlessly related the details of the latest scandal involving a well-known actor and actress. His unseeing gaze was directed not at the screen, but inward.

Like humans, Sar-Say had the capacity effectively to switch off his external senses when he concentrated deeply. Also, like humans, he could worry endlessly over whether he had made the right decision at some time in the past. The decision he was worried about now was whether it had been smart to tell the humans essentially the truth about Civilization, what they were calling “the Sovereignty.” In retrospect, it might have been better if he had told them the galaxy was an association of free beings arrayed voluntarily in a great interstellar union. That, at least, would have piqued the curiosity they seemed to have in abundance. Instead, he had awakened fears inherited from ancestors who once cowered in caves to avoid beasts with fangs and claws. That he had known nothing of humans at the time of his capture, and therefore could not have risked such a lie, did little to calm his racing thoughts.

Sar-Say had learned a great deal about humanity since he had been brought aboard this orbiting prison. He was not sufficiently conceited, however, to think that he understood them very well at all. Experience had taught him that thinking, rational beings are the most complicated things in the universe. Humans were no different in this respect from Vvralians, Antaks, or the Broa. For Sar-Say to understand humans would have required him to think like one, and that was a physiological impossibility. His brain structure was as different from the human cortex as their brains were from Vithians. Indeed, one thing he hoped to keep from them was just how different his thought processes truly were.

Even if he could never truly understand them, his study of humans had yielded a few tentative nuggets of knowledge. One stroke of luck had been the human language. It possessed a rigid structure, with word meaning often determined by position within the thought-unit. Compared to High Lantean or the multitude of dialects on Saporsva, the human tongue was a study in simplicity. In fact, it was nearly as structured as the lingua franca of Civilization.

After obtaining grounding in structure and pronunciation, he had devoted himself to gaining fluency. In this, he had been largely successful, or so Lisa Arden assured him. With fluency had come a plan to bend humankind’s actions to his own purposes. For Sar-Say had goals beyond merely being rescued from the beams of a Broan Avenger. His continued survival would mean little if he were forced to live his life circling this unknown planet of an unknown star, *asendalth* sentenced to an eternity of pokes and prods by human scientists.

To be successful, to gain the fabulous wealth and power due him and his sept, he must not only survive, but return to his home. At first, he had been at a loss of how to accomplish this. After all, he had no idea where in space to look for Civilization. Indeed, until his talks with the astronomer Bendagar, it had never occurred to him to think of geography as something that might be applied to stars. In the Sovereignty, the physical positions of stars in space were of interest only to a few licensed philosophers.

He had thought long and hard about the problem while he was learning the human language. Slowly, as

he became aware of the strength of human curiosity, his plan had begun to take form. There was one world that he was sure he could locate among the stars. It was marked by one of the most spectacular sky sights in all of Civilization, a cloud of gas so prominent that even the humans must know of it. Broan masters had traveled from as far away as Pryxal to see the Sky Flower Nebula in the night sky of Zzumer, created in historical times by the explosion of a nearby star. Sky Flower had been the third picture he had painted for Bendagar.

As he sat in front of the flickering screen and stared unseeing into its depths, Sar-Say considered the one factor that might wreck the plan he had so carefully constructed. This morning Lisa had let slip that *Magellan* was about to leave on a mission to salvage the *Hraal*. It had taken all of his concentration not to let her see how much the news disturbed him. So long as he remained the humans' sole source of information concerning the Broa and their domain, he would be able to guide events to his own advantage. If these curious bipeds were successful in salvaging the *Hraal*, they would have an independent source from which to check his allegations. Though the risk of discovery was minimal, this plan of theirs was a complication he did not need. The stakes of the game he was playing were too great for even the smallest of risks.

#

Lev Bukovsky was new to Sky Watch, having just completed his mandatory three-month training assignment. In fact, he had been standing a regular watch for less than a week and had yet to get over the godlike sensation of it all.

Physically, Bukovsky was thirty meters below ground in Sky Watch's operations center outside Omaha, Nebraska. Mentally, he was a million kilometers away - literally. With the aid of the latest full sensory interface, his disembodied self hovered a million kilometers above the Earth in the direction of Polaris. From that vantage point, he could look down on a blue-white sphere the size of an apricot, its surface half light/half dark. From his position "One Meg North," Bukovsky could survey all of the sky junk that orbited Earth in the plane of the equator -- everything from worn out communications satellites scheduled for salvage to the orbiting space docks that were the largest structures ever lofted by humanity.

Much of the sensation of godlike omniscience came from the supernaturally sharp vision granted to his "virtual self." Beyond the orbiting satellites lay the double curve of ships in transit between Earth and Luna. Beyond the half-sphere of gray-white that was the Moon, other ships headed for the planets and beyond.

Bukovsky's vantage point was courtesy of a large sensor array at One Meg North. Strictly speaking, the array was not actually "in orbit." It neither circled Earth nor traveled about the sun in an orbit whose focus lay at the center of mass of the sun. Rather, the sensors (and their twins at One Meg South) were maintained in position by electric thrusters that precisely balanced the gravitational pull of Earth and Sol.

Lev Bukovsky lay in his couch and smiled vacantly as he watched a series of numbers float past his eyes. The emerald green apparitions told him that Luna Lines 502 had just begun the orbital insertion maneuver that would place it at Tyco Station three days hence. Lev concentrated on the spot where the ship lay. Instantly, a dim red curve sprang forth. Other multicolored curves materialized to intersect the first. The various curves showed the orbits of 502 and all objects that would pass within a thousand kilometers of the liner during its voyage. A moment later, the curves vanished automatically, signifying that there was no possibility of a mid-space collision.

Lev was about to return to his routine when a crimson star appeared high above Earth and a silent alarm began ringing in his brain.

“What is that?” Bukovsky muttered to himself in his native Russian. High above the northern hemisphere, an unidentified ship had just begun to accelerate away from Earth. The “no record” message that flashed in response to Lev’s unspoken question was unprecedented in his short experience. He immediately took the action called for by training when confronted with a problem he did not know how to solve. He called his supervisor.

“What is it, Lev?” Melissa Carter asked her newest operator. She had been a Sky Watcher for nearly twenty years and sometimes felt nostalgic for the old flat panel displays on which she had learned. This jumping about mentally over millions of kilometers every few seconds was disconcerting.

“I have a ship leaving orbit with no flight plan. Think it could be a hijacking?” Lev asked as he sent her the transgressor’s coordinates.

Melissa read off the numbers, asked her own mental question, and then smiled. This would be a good test to see how the kid handled the unexpected. “What do you make of it?”

“Someone’s in big trouble,” the young operator said, the grimness in his voice barely covering his suppressed excitement. “It is against the law not to file a flight plan.”

“Perhaps they filed one, but it’s coded so that our computer won’t pick it up.”

“Who would do that?”

“You tell me.”

Lev chewed his lower lip. There had been something about this situation in training, but what? “Uh, Space Guard can do it, of course, under extraordinary circumstances.”

“Who else?”

“The World Coordinator, the grand admiral ... director of Sky Watch ... director, Stellar Survey, I think.” I can’t think of any reason they would do that, though.”

“Nor can I. Apparently, they have such a reason. Now what are our duties in this situation?”

“Uh, to take no notice?”

“Officially correct, Operator Bukovsky. Still, it will not hurt to be a little curious. What do we know about this mysterious flight?”

“We know its point of origin.” There was a moment’s silence while Bukovsky checked the traffic database. “PoleStar. Those are the current orbital elements of the PoleStar mirror and habitat!”

“Good. Now where is it heading?”

“I don’t know.”

“Shouldn’t you find out?”

Bukovsky’s brows knit together beneath the heavy helmet that covered half his face. Suddenly he was no longer a million kilometers out in space, but near the ship so blatantly transiting the traffic zone without so much as a “by your leave.” The green alphanumeric next to the ship symbol changed almost too quickly to read.

“We have a change of plane maneuver going on here,” Bukovsky reported, “and he is moving away from

the ecliptic.”

“Very good, Lev. What does that make him?”

“A starship, of course.”

“What starship?”

“Uh, I don’t know.”

“No reason you should,” Melissa said mysteriously. In fact, she had watched that same ship inbound several weeks earlier. On that occasion, too, the ship’s data had been encrypted; as though someone thought they could enter the Earth-Luna traffic zone without anyone noticing! That had piqued her curiosity and she had watched it rendezvous with PoleStar rather than High Station. Her inquiries on the subject had elicited the comment that it would be unwise to inquire further. “Good analysis. We will make a Sky Watcher of you yet. Now, back to work.”

Lev Bukovsky, junior among Omaha’s watchers, returned to his duties. He watched the unidentified ship climb away from Earth for the rest of his watch. They were in a hurry, whoever they were. Their acceleration rating stayed constant at 1.0 g the whole time.

He checked them one last time just before his watch ended. As he lifted the helmet from his shoulders, he wondered again what ship it had been and where they were bound.

CHAPTER 15

Captain Dan Landon lay in his acceleration couch and watched the screens around him as the chronometer continued its march toward zero hour. The six-day voyage from Sol had been gratifyingly free of mechanical difficulties, with nothing more serious than the breakdown of the wardroom coffee maker to turn his hair gray. He was especially gratified with the working of the stardrive. He had been skeptical when Laura Dresser had first suggested splicing the new generator into *Magellan*’s own circuits. True, the jury-rig was running at only one percent of its rated capacity, just enough to envelop the external cargo in the combined drive field. Even so, Landon did not like trusting his life to such an obvious band-aid.

The near perfect condition of the ship left him plenty of time to handle other problems -notably, Laura Dresser and her crew of prima donnas. Organizations, like people, develop personalities of their own. Most often, an organization’s personality is a reflection of that of its leader. Never had he found that more true than in the case of the stardrive specialists. The arguments had begun almost as soon as they had jumped superlight out of Sol. First had come Laura’s complaints that her people were not provided private cabins, followed by criticisms about the food, the noise, and the smell of the ship. Then had come her demand that her people be given control of one of *Magellan*’s primary computers so they could model the salvaged derelict’s handling characteristics. To give up one of the ship’s computers meant a reduction in operational redundancy. Still, he judged that in this one case, the demand was justified. Preplanning was worth the risk if it would get them out of the New Eden system even one day earlier.

Nor were Laura Dresser’s people the only problem. Along with the stardrive experts, he was transporting a large contingent of scientists hurriedly recruited from Earth. They would search for telltale signs left behind by the New Eden stargate. If Sar-Say’s allegations were true, then the ability to detect where gates once existed could prove highly useful. The leader of this second group of scientists, Dr.

Pomerance, had tried to explain the physics involved, but the explanation had been so much gibberish to Landon.

“Breakout in thirty seconds, Captain,” Grandstaff announced from his station in front of Landon’s couch.

“Very well, Ensign. Make the announcement.”

“All Hands. The ship will transition to sublight in thirty seconds. Take all precautions! I repeat, sublight in thirty seconds.”

“The ship has been notified, Captain.”

“Thank you, Ensign.”

Landon watched the chronometer tick off the seconds. There was no countdown or other such silliness. When the numerals all reached zero, the quiet hum of the stardrive died away and the stars returned to the bulkhead viewscreen.

“Where are we, Miss Mullins?”

“Stand by, Captain,” the astrogation officer said. She monitored while the computer measured the positions of several thousand stars and compared the results to the sky survey they had done the last time they were here. Finally, she said, “I make us 65 astronomical units from the New Eden sun and 12 AU’s above the local ecliptic.”

“Sensors, begin your sweeps. I want to know if there is even the slightest evidence of alien activity in this system.”

“Aye aye, Captain,” came the response on the intercom.

They had broken out on the outskirts of the system as a precaution. If the Broa had traced their missing ships, they might have been able somehow to reconstruct the battle. If they had also found the derelict, they might have discovered evidence of the brief human presence aboard. In that event, it was conceivable they would set a trap for *Magellan* ’s return.

“Dr. Forham, any evidence of gravity waves?” he asked Bendagar’s assistant. He had not liked leaving his chief scientist back at PoleStar, but felt the search for Broan home worlds more important than this salvage operation.

“None, Captain.”

“If you get even a wiggle out of your instruments, let me know immediately. We’ll be out of here so fast that our own photons won’t catch us.” Which, Landon thought, as he disconnected, was the literal truth.

Twenty minutes later, he was gazing at a very-long-range view of New Eden when his communicator buzzed.

“Captain, this is Laura Dresser.”

“Yes, Ms. Dresser. What can I do for you?”

“I would like to begin assembling my team. You still haven’t given me names.”

“I will meet you in my ready room.”

In addition to her own technicians, Laura Dresser would need a crew of competent spacers to fly the derelict. The only source of such people was *Magellan*'s own crew. He had chosen those who would man the salvaged craft three days earlier. The worst difficulty had been deciding who would command. He needed someone who understood the dangers involved and was sufficiently familiar with the jury-rigged stardrive to get the derelict home safely, an officer respected by both the unruly stardrive specialists and his own crew. In the end, there had only been one suitable candidate. He smiled as he pulled himself hand over hand toward the bridge hatchway that led to his ready room.

He wanted to see the look on Laura Dresser's face when he told her!

#

Three days later, those who would operate the derelict on its perilous journey to Sol gathered in *Magellan*'s mess compartment. They sat at the long steel tables bolted to the deck and waited for Dan Landon to begin the briefing. *Magellan* was under power, giving them half-a-gravity of acceleration for the next dozen hours.

"All right, let's get started," Landon ordered as he scanned their expectant faces. "You all know why you are here. This will be our only gathering as a group. If you have a problem with any part of the salvage plan, I want to hear about it before we finish today. Before we get to the details of the mission, I want everyone to think about something. You all know the worst-case scenario. I want you to look deep into your heart and decide if you want to take the risk."

Landon folded his hands in front of him and let his features fall into the pattern of one in contemplation. He did not really expect anyone to quit, although he would not be surprised if someone did. Crossing a hundred light-years of black vacuum in a cobbled together starship was as risky an undertaking as he had faced in his career. Still, that risk was as nothing compared to the worst-case scenario.

The question of what to do if the Broa showed up halfway through the salvage effort had plagued the expedition's planners from the start. Before Nadine Halstrom agreed to let him return to New Eden, she had extracted a price, namely that he rig the derelict to self-destruct in case of imminent capture. That way, all evidence of human presence would be obliterated. Landon had assumed that the job would be done by conventional high explosives, and had been surprised when the coordinator's office offered a nuclear device for the task. In fact, they had provided two.

Earth's nuclear arsenal was a small one, a holdover from the bad old days. There had been no need for such weapons for more than a century. Not only was humanity largely at peace, access to space provided all the destructive power anyone might need. There was nothing fission or fusion weapons could do that a small asteroid could not emulate. In fact, there were two-dozen rocks in Earth orbit that were available to smash cities should the need ever again arise. An asteroid strike released megatons of thermal energy without the concomitant problem of radioactive fallout.

Like most people, Dan had a touch of superstition where nuclear weapons were concerned. In fact, he had never expected to lay eyes on one. Now he had two in his ship's hold. One would be installed in the derelict while the other remained with *Magellan*. In the event the Broa showed up before the derelict was spaceworthy, the salvage crew would evacuate and then vaporize the derelict. If evacuation proved impossible, then it would be the duty of the salvage crew's commander to blow up the ship. Human beings must not fall into the hands of the Broa, whether alive or dead. Human physiology carried far too many clues to Sol's identity. It would take a strong man to set off the bomb while still aboard the derelict. For that reason, Dan Landon had chosen to command the salvage crew himself.

After a full minute had passed, Landon asked, "Is there anyone who would like to stay behind?" When

he did not receive an answer, he continued, “All right, Dr. Forham, let us have your report.”

The acting chief scientist glanced down at his portable computer before clearing his throat. “We have swept this system with every sensor we own, Captain. We have spotted the iron-rich gas cloud that was our adversary. Had the Broa investigated, at least one of their ships was likely to pass through that cloud. Long-range analysis shows no disturbance to the cloud structure. Nor have we found any other indication that someone has been here since we left.”

“Anything else?”

“I am afraid we have been less successful in plotting the position where the stargate materialized. If the gate had any effect on the local vacuum, it is too slight to see from this range. Perhaps when we get closer.”

“Right. Laura, your report, please.”

“We are ready, Captain. My specialists have been training with your people. They all know what is expected of them. We have picked a spot to install the generator and the power reactor, also the life support system and the flight controls.”

“What about the conductive sheath?”

“That may represent a problem. We will have to see when we get there. We have enough copper mesh onboard to bond the whole damned hull if we have to, but it will be time consuming.”

He nodded. To establish the drive field, the ship’s hull had to be unbroken and electrically conductive. The damage done by the Broan warship meant that they would have to patch all the holes. They would bond copper mesh to any point on the hull that produced a “hole” in the drive field. Such a hole would concentrate energy as they flew superlight and vaporize the ship.

“Chief Douglas, how are the supplies?”

“We have rearranged the cargo in the holds for quick offloading, Captain. We’ll have consumables for six months, though we will be on suit rations for the last three months if it comes to that.”

“Ensign Palmer, communications?”

“We will have full communications with *Magellan* within an hour of boarding, sir.”

Landon continued down the table. They were a young crew, but eager. He had chosen them with an eye toward their intelligence and ability to stand up to the hardship this voyage would entail. They had neither the time nor materiel to make the alien ship luxurious. He would settle for livable. As he quizzed his department heads, he was satisfied that they were as ready as they would ever be.

Finally, he nodded. “Very well, people. We arrive in eleven hours, twenty-two minutes. I want you all in your vacuum suits and assembled in the hangar bay at least an hour before arrival. Any questions?”

There were none, not even from the stardrive specialists.

“Dismissed!”

#

“*Deja vu, all over again,*” Lieutenant Harlan Frees thought, echoing a sentiment first spoken by a philosopher lost to history. Frees lay in his acceleration couch encased in his vacuum suit and watched

the squat cylinder with gaping holes in its hull grow slowly in his viewscreen. When last he had made this approach, he had not known whether he would be met by aliens firing the blasters so beloved by purveyors of space adventure. In that respect, nothing had changed. Again, he was being sent to scout a potentially hostile alien craft. There was *one* difference, of course.

“Looks clear enough, Captain.”

“Right,” Landon said from Scout Two’s right couch where he had displaced Frees’s copilot. “If the Broa have laid a trap for us we will know in a few minutes.”

“We have you on screen, Scout Two,” Commander Scott Heinrich, Landon’s executive officer, reported over the command circuit.

“Acknowledged, *Magellan* . Everything looks clear so far. Nothing to report.”

Frees turned on his close approach radar and watched as the derelict’s picture was painted on an auxiliary screen. Except for the false colors supplied by the boat’s computer, there was little difference between radar and visual images.

“We just closed to twenty kilometers, Captain.”

“Right. Slow to final approach velocity,” Landon ordered.

Bright attitude jets flared out in front of Scout Two, making their characteristic popping noise as Frees issued the command. The tug of deceleration sent both men rebounding into their restraining straps.

“Get ready,” Landon ordered over the intercom. In the passenger compartment were a dozen armed spacers. They were jammed in so tightly that the shoulders of their suits rubbed one another across the narrow aisle. In the back of the cabin was the large square box that contained the destruct device. There had been several attempts at black humor about being so close to an atom bomb. Most had fallen flat.

As before, in preparation for boarding the hulk, the atmosphere was pumped out of the scout’s cabin, causing everyone’s suit to puff up. Over the next several minutes, Landon reduced the magnification of the screen image as they continued their approach.

“We detect no artificial energy sources within range of our sensors,” Commander Heinrich reported from *Magellan* . “You are cleared to board.”

“Roger,” Landon responded before turning to Frees. “All right, Lieutenant. Take her in.”

The reaction control jets flared again as Frees slowed the ship, then turned her sideways. The approach was like watching a collision in slow motion. The ragged coffee can of a ship grew until it filled the sky, then came the popping sound of jets, and it was suddenly stationary a dozen meters off their port quarter. Several more bursts of jets caused the scout to drift until a bare meter of empty space separated it from the derelict. Somehow, during the past several months, the alien had picked up a slight tumbling motion. Frees fired the jets to compensate before chinning the intercom.

“First party, disembark!”

Behind them, both doors of the port airlock snapped open and six spacers with riot guns jumped the gap, arrowing for the interior of the alien derelict. Landon watched on the screen, wishing that he could be one of them. Terse orders issued over the radio as the boarding party dispersed to sweep the ship. All of them had been aboard before. They were charged with determining if anyone else had visited the alien in the interim.

Ten minutes later, the boarding party reported no sign of intruders. Landon keyed for the intercom and said, “All right, Johnson. Get the bomb aboard and set up.”

“Aye aye, sir.”

The captain chinned the command circuit in his helmet. “Derelict secure, Scott. Bring up the ship.”

“Aye aye, Captain. We will be there in half-an-hour.”

Landon reached up and began undoing his straps. “Good approach, Lieutenant. As soon as we disembark, move the scout to a safe distance to give *Magellan* room for its approach.

“Aye aye, sir.” Frees watched the captain pull himself through the cockpit hatch and aft toward the airlock. He wondered if Landon’s heart was beating as fast as his had been when he boarded the derelict the first time.

CHAPTER 16

Two weeks after his arrival aboard *PoleStar*, Mark Rykand stopped in the mess compartment for a late breakfast and discovered Lisa Arden seated at one of the long tables. He arrowed for the auto chef, dialed his order, and then waited 30 seconds for it to heat. When the tray appeared in the slot, he slipped it beneath his chest harness and pulled himself to where Lisa was sitting.

“Hi,” he said as he moved the tray to the steel table top, making sure that its magnetic base stuck before letting go. Then he used both hands to seat himself, wrapping his legs around the anchor frame to keep from floating away. “Eating late, aren’t you?”

She nodded. “Late night again. And you?”

“Same. I was up until this morning’s midwatch running comparisons of spectral types for Professor Bendagar.”

“How is it going? Find any matches yet?”

“Not yet,” he said. “We are making progress, though. Have you seen our art collection?”

She smiled. It had been Professor Bendagar’s idea, but she had helped with it. In addition to possessing a near photographic memory, Sar-Say was a fair artist. He had been using a commercial illustration software package to paint sky scenes for the past several days, scenes from planets with unusual phenomena in their heavens.

“I’ve seen it.”

“One of the paintings has a huge nebula in its sky. Professor Bendagar is wondering if it isn’t the Crab!”

“The what? Remember, you are talking to a near illiterate when it comes to astronomy.”

“The Crab Nebula. It is the remains of a star that went nova some 8,000 years ago. It appeared in the sky in 1054 AD and was seen by Chinese astronomers.”

“What’s so important about this nebula?”

“From the size Sar-Say painted it, the nebula must have been within a few hundred light-years of the world he visited. If the identification holds up, we are well on our way to discovering our first world in the Sovereignty,” He slipped the cover from his tray. She noticed that he had gotten the pseudo-eggs and bacon again. Her mother had overdosed her on artificial eggs when she was a child and the sight and smell made her a bit queasy.

“But Sar-Say tells me he can’t identify where stars are in the sky.”

“True,” Mark replied with a full mouth. “That’s the problem with traveling via star gate. Classical astronomy is of little use to people who use seven league boots. They are far more interested in the sequence of star gates than in where the stars lie with respect to one another. Sort of like the subway maps in a large city.”

“And like subway stations, wouldn’t they string the stars together in more or less the same order they occur naturally?”

“Why should they?”

“Because warping space takes power. At least, Sar-Say says it does. The farther they drive a star gate, the more energy is required to maintain it.”

Mark looked thoughtful. “I didn’t know that. What else did he say?”

“Not much. He is a trader. He really does not know any more science than is necessary to survive in that profession. Still, if the energy needed to hold a star gate open is proportional to the distance being spanned, doesn’t that argue that stars on any particular jump sequence must be relatively near one another? It just makes economic sense, doesn’t it?”

His brow wrinkled as he considered the idea. “You might be right. It would take less energy to connect a series of stars together like beads on a string than it would to connect them at random. There would be less doubling back that way. If the stars in a particular jump series are also in natural order, then maybe we can run a search on their spectral types and find them on our star charts.”

“Especially if we are able to anchor such a sequence to a landmark like the Crab Nebula --” she mused.

Mark lifted his bulb of hot tea and sipped slowly. He was a fast learner and had surprised Bendagar with how much he had picked up since he had come aboard. Even so, this talk with Lisa proved he still had a great deal to learn.

“Look, could we get together sometime and explore what else you know that I don’t?”

She looked at him quizzically. Nearly every male aboard had asked her for a date. She had turned them all down, not wanting to complicate her already overburdened life with a romantic entanglement. Still, if they could identify a new method for finding the Sovereignty in a chance meeting over breakfast, what could they do if they compared notes systematically? Besides, his suggestion did not sound like a pickup line ... not exactly like one, anyway.

“Sure, why not? How about tomorrow night after dinner?”

“Tomorrow will be fine.”

She finished her breakfast and disengaged her legs from the anchor frame. “Unfortunately, it is back to the salt mines for me. I have another raft of questions to ask Sar-Say and he probably has as many for me.”

“Thanks. See you tomorrow, then.” He watched in silence as she arrowed expertly through the mess hatch, bounced off the far corridor wall, and was gone. His thoughts were not solely on his work as he finished his own breakfast. In fact, he hardly noticed that his eggs had gotten cold.

#

“It’s the Crab, all right,” Dr. Bendagar remarked as Mark entered the darkened office. Between them floated the ghostly image that Sar-Say had offered up as Painting No. 3. It showed a turbulent starburst of gas and dust shooting outward from the remnants of a supernova. Beside the image of the painting floated another. The second cloud was smaller and three-dimensional. It was an image of the Crab Nebula.

As Mark pulled himself to a convenient rack, the nebula rotated slightly about its vertical axis and pitched up around one of the horizontal axes in response to Professor Bendagar’s hand on the trackball control. “There, I think we have a match.”

Mark Rykand stared at the side-by-side ethereal projections. “I don’t agree. Look at the difference in these tendrils here, and in this formation. There’s a resemblance I grant you, but nowhere near a match.”

Dr. Bendagar’s face was lit by the light from the holographic projection. His smile was apparent even through the translucent tendrils of the fake nebulas that separated them. “You took four years of astrophysics, my boy. Can you think of anything that might cause the difference?”

Mark frowned, then grinned sheepishly as the truth hit him. Of course, the two pictures were not the same. One was a painting done from memory - though to judge by the detail, Sar-Say’s memory was damned close to perfect - and the other was a computer-generated image done from Earth-based telescopic observations. The differences were the result of the two vantage points. The world Sar-Say had visited (he had called it Zzumer) was probably within a hundred light-years of the nebula, while Earth was seven thousand light-years distant. What Sar-Say’s painting showed was the nebula in near real-time. If accurate, they were viewing the way the Crab Nebula would appear to Earth some seven millennia hence.

“Speed of light delay, of course,” Mark muttered.

“Give that student a passing grade!” Bendagar exclaimed. “We’ll do a computer simulation of the nebula’s expansion pattern to confirm that it will look like that when the time comes, of course. There is also the fact that the Zzumers view the nebula from a different direction. Still, I think we have found a match. Did you run those color checks with Sar-Say?”

Mark nodded. In addition to the fact that it was near this spectacular nebula, they had one other clue as to the location of the Zzumer sun - its color. Mark had shown the alien dozens of star images and asked him to pick the one that most closely resembled the star where he had seen the nebula. The star Sar-Say chose was spectral type G3. It was, in fact, a near twin to Sol.

“He says G3, assuming of course that he sees color the same way we do.”

“He does,” the astronomer replied. “One of the first tests the biologists ran was for color perception. We know that he can pass a color blindness test and does not see any farther into the infrared or ultraviolet than we do. Of course, we figured that out as soon as we saw his eye structure. Wherever the Taff species evolved, you can bet that it was under a star that looked a good deal like Father Sol.”

“Then we have enough for a positive identification of the Zzumer sun.”

“Think so?” the old astronomer asked. “How many G class stars are there within a couple hundred light-years of the Crab?”

“I don’t know.”

“I had the computer do a count. One hundred and twelve. Cut that down to the range of G0 to G5, and you get fifty two, fewer but still not easy to check out.”

“Damn, I thought we had it for sure.”

Bendagar laughed. “Cheer up. Finding one star out of a hundred is vastly easier than one out of 100 billion. Besides, if the Broa truly control a million suns, they may be a bit easier to find than we humans might like.”

#

Dieter Pavel was strapped behind his desk, going over the day’s reports before sending them via secure data link down to Friedrichshafen for Anton Bartok’s attention. These scientific reports were largely written in impenetrable jargon, yet he disciplined himself to scan each one. A hard lesson that he had learned early in his career was that scientists could write the most amazing things in their reports, things that caused the powers-that-be considerable embarrassment when they became known. When that happened, it was never the scientists who were blamed. Rather, it was the administrator in charge. He had resolved never to fall into that same trap.

Pavel had been working sixteen hours a day for the past several weeks. Even with the human body’s reduced need for sleep in microgravity, there never seemed to be enough hours in a day. Not only were the ground research teams becoming more insistent about answers to their never-ending stream of questions, there was the upcoming ground conference to organize.

The plan was to gather the principal investigators together to let them compare notes, and hopefully, to provide a definitive answer as to whether or not the Broa were a figment of Sar-Say’s imagination. Each day that passed without that answer placed the existing power structure at greater risk.

As one who dealt with ‘the public,’ Dieter Pavel was well aware that people are much less intelligent en masse than as individuals. Since the fertility riots of the previous century, mob psychology had been a standard course for those who wished to enter the public administration. His teacher *inempie* (as the students called it) had stressed that mob action is caused by mass fear. Dieter could think of nothing that would produce mass fear quite so quickly as a news story about the Broa and their supposed empire.

The annunciator on Pavel’s door buzzed and Lisa Arden floated across the threshold a moment later.

“Busy?”

“No more than normal.”

“I have something to show you.”

In her left hand was a sheet of plastic of the kind the printers used for output. The flash of color told him that this was a graphical plot of some kind. Lisa used her free arm to pull herself awkwardly to his desk and spread the printout in front of him.

The being pictured was a biped. There the resemblance to a human stopped. Blue-green in color, the alien was reptilian and covered with scales. It had a short tail, stood upright but leaned forward, and balanced on stumpy legs. Two beady black eyes were inset beneath prominent eye ridges. The snout

completed the resemblance to a snake's head. The mouth was open and filled with pointed teeth. The body was wrapped in narrow strips of material something like an Egyptian mummy. At its waist, the alien wore a belt from which hung several implements.

"Ugly," Pavel noted. "What is it?"

"That, Mr. Administrator, is a Broa."

He looked at the picture more closely. There was something about the being that raised the hairs on the back of his neck.

"Where did you get it?"

"It occurred to me that if Sar-Say can paint accurate astronomical scenes, he can paint other things. That's the output from his latest artistic effort."

"Does this jibe with what he has told us about the Broa?"

"To date his descriptions have been a bit vague, which is why I had him draw this. I thought it might be good for us to know what our adversaries look like."

"As I said the first time, ugly!"

As he gazed at the picture, he had visions of this image being flashed to every household in the solar system. "*Forget riots,*" he thought. "*Think revolution!*"

CHAPTER 17

Melissa Trank pulled herself hand over hand through the darkened corridor and prayed that she would not come face to face with a goblin. That had happened on her first day aboard and she still shuddered to think about it.

She had been surveying Quadrant 3, Deck 5, checking out the overall condition of the *Ruptured Whale* (the name had mysteriously entered general use within their first few hours aboard). She and her partner, Emil Valdez, had separated to check two small tunnels that branched away from the main corridor leading down into the *Whale*'s capacious holds. After more than four hours of exploring the dead ship, her initial excitement had begun to wane. She remembered thinking how good a nice hot shower would feel at that moment as she inserted the upper body of her suit into the "maintenance tunnel."

The tunnel was just wide enough to pass the torso of her suit and its backpack, after which it was a matter of pulling herself forward like a mountain climber negotiating a rock chimney. She had not noticed the turning of the tunnel until she was nearly on it. Sighing, she braced her boots and scooted up until her head was above the turn.

The insectoid crewmember must have been doing maintenance in the shaft when the ship had depressurized. With his body obstructing the rushing air, he had been whisked along the tube like a ping-pong ball in the hose of a vacuum cleaner. His body had wedged just in front of the turn. The being's mouth was open, frozen in its final scream, or possibly a last attempt to draw the rapidly thinning air into its lungs. There had been some cranial damage inflicted during the trip down the ductwork, causing one bulging eye to hang down from its socket.

The unexpected discovery had caused Melissa to emit a single, sharp scream that reverberated all around her via radio. Melissa remembered nothing after that until the shouts of her partner had managed to overcome the sound of her own heart in her ears. Emil had towed her out of the tunnel, and then focused his helmet light on her faceplate. With a catch in her voice, she had explained the reason for her scream, and then apologized to Emil for frightening him. By that time, her cheeks had been hot from embarrassment.

A week later, she again found herself following the narrow beam of her helmet lamp into the dark unknown. This time she was partnered with Hideki Furosawa, one of Laura Dresser's specialists. Their task was to map the ship's various utility systems. As a member of *Magellan*'s crew, it was her place to break trail in virgin territory. Her place or no, she would rather have been cowering in her bunk back aboard the starship.

"Wait a second, Miss Trank," Furosawa said, his voice echoing hollowly in her earphones. "I think we want to turn right up ahead."

"Are you sure, Mr. Furosawa?" she asked, playing her headlamp along the corridor overhead. "The main cable seems to be headed off to our left."

"I need to check this branch," the small Japanese replied after consulting the portable computer strapped to the chest unit of his suit. The dim glow of the map reflected in a series of colored lines from his faceplate.

"To the right, then," Melissa agreed.

Cautiously she swept the branch corridor with her lamp. As usual, the beam was invisible; with only the moving spot showing were she had it pointed. A pair of doors very like the pressure doors in a human spacecraft was retracted into the walls of the corridor. Their condition was the same as every other pair they had discovered aboard this ghost ship.

Melissa's spot reached the end of the corridor and disappeared. Rather than a doorway or some other boundary, there was just ... nothing. She stared into the stygian darkness for a long second before a star drifted into view.

"Damn, look at the size of that hole!"

"I see it, Miss Trank," came the reply. The words held the faintest hint of reproof, as though Furosawa wanted to remind her that proper ladies did not swear.

They pulled themselves cautiously toward the end of the corridor. Close up it was obvious that they were staring out of a large hole in the bow of the cylindrical ship (bow being the end directly opposite the usual direction of thrust). Most of the damage inflicted by the Broan Avenger had been to the aft of the ship, which was only to be expected since the *Ruptured Whale* had been fleeing its attacker. A hole this far forward surprised them.

Melissa reached out with her safety line and snapped it around a handy stanchion. She made sure that Furosawa did the same before they investigated further. By floating to the end of their tethers, they found they could just reach the corridor end. Beyond lay a gaping hole easily three meters in diameter.

"This isn't battle damage," the engineer said after a moment of inspection.

"Agreed," Melissa replied. "It is too damned circular. What do you suppose happened?"

"It looks like a loading hatch might have blown out," Furosawa said. "Strange."

“How so?”

“This ship is compartmentalized against loss of atmosphere just as our ships are. Despite the damage inflicted, they maintained pressure integrity in large sections for a long period, then at the end, they suddenly lost it.”

Melissa nodded. “Your point?”

“With all of the safety doors open, it is likely that the loss of this hatch was the primary cause of the explosive depressurization.”

“It is certainly big enough,” she said, sweeping her lamp around the edge of the hole. There was no sign that this was battle damage. There were none of the spherical globules that marked the sites where metal had melted. It was as though someone had punched a perfectly round hole in the bow of the alien starship. “Wonder what happened?”

“Perhaps a beam triggered a malfunction in the safety systems, opening all of the safety doors at the same time this hatch was jettisoned.”

“Funny, you wouldn’t think a spacefaring species would make a mistake like that.”

“Agreed,” Furosawa replied. “Whatever the reason this ship lost its air, it is not the sort of engineering a professional would be proud of.”

#

“Damn it, how much longer are you going to take on that generator, Laura?” Dan Landon demanded of his chief engineer. Both were in vacuum suits in one of the compartments where the salvage crew was stringing cables.

“The work is proceeding as quickly as it can, Captain,” came the surprisingly mild reply. One thing Landon had noted about Laura Dresser, her personality improved when she was working. If she could just master the technique in her private life, people might actually begin to like her.

“How long does it take to cut through six decks?”

“Not long at all once you have identified what other equipment you are slicing through as well. You wouldn’t want us to slice through anything vital, would you?”

“If it would get us out of this damned system even an hour earlier, I would consider it.”

“Not to worry, Captain. The crews have the star drive in position and anchored. All that’s needed is to hook up these power cables...” She gestured at the thick cables the crew had anchored to the bulkhead, “... and cover the outer hull with meshwork.”

“We need to speed up.”

“I told you, we are working as quickly as we can.”

Dan thought about that and had to admit that he could not think of how to make them move any faster. “I am just tired of not being able to scratch where I itch.”

“Don’t remind me,” she said with a laugh. “I am okay as long as I don’t think about it. We should have the living spaces sealed and pressurized within another watch. Then we can all strip down to our long johns and have an orgy of scratching.”

“I am looking forward to it,” Landon replied with more feeling than he had intended. Vacuum lamps attached to bulkheads lighted the compartment where they were comparing notes. Around them was the alien machinery they were trying to understand. He had not had much time to study his new command as well as he would have liked. What he had seen of the alien machinery, however, had caused him to come to an odd conclusion.

“Does it strike you that these machines aren’t nearly as alien as they ought to be?”

“What do you mean?”

“Take that microwave conduit over there. If Sar-Say’s story is true, the Broa have ruled the galaxy since the pyramids were young. How is it that we can recognize a microwave conduit as a microwave conduit? What is an advanced race like the Broa doing using microwaves at all?”

Laura’s answer was a laugh. “One of the early space age philosophers maintained that any sufficiently advanced technology would be indistinguishable from magic. You are asking the same question.”

“Perhaps I am. The machinery aboard this ship does not appear to be sufficiently magical to me. Some of it is even a bit crude, like something from out of the 21st century.”

“Form follows function, you know.”

“Even so, you can refine the hell out of something in 5000 years.”

“Perhaps the Broa don’t worship at the altar of progress the way we humans do. Possibly they have learned to respect the dangers of unrestricted curiosity.”

“That is a strange thing for an engineer to say.”

Laura’s head bobbed in a way that told him she had just shrugged her shoulders. Inside a vacuum suit, it was difficult to tell. “Technology is the engine that drives human progress. That has been true since the days of when people lived in caves, and ‘progress’ has not always been pleasant. If a simple thing like the printing press caused The Reformation, is it any wonder that the Broa are wary of introducing new inventions?”

“Did it?”

“Did what?”

“The printing press caused The Reformation?”

“Sure. Martin Luther had a few criticisms of the way the church conducted business and nailed his *Ninety Five Theses* up on the door of his church in Wittenburg. Not a great deal would have come of it if people hadn’t used the new printing presses to run off a few million copies.”

“And by analogy, the Broa would naturally be allergic to new inventions.”

“Of course. In fact, I can think of one invention that would destroy their empire within a few centuries.”

“What’s that?”

“The stardrive!”

Dan thought about it and had to admit that she was probably right. In many respects, the human method for interstellar travel was vastly inferior to star gates. Human ships were forced to crawl across the long,

slow light-years, taking days or weeks in transit. The ships of the Sovereignty, on the other hand, leapt effortlessly from star to star. Yet, as inefficient as the human method was, it had the advantage that a starship could go anywhere its captain chose. He was not bound to fixed pathways controlled by all-powerful overlords.

“Interesting,” he mused aloud. Then another thought hit him. “Do you suppose the *Broadid* invent the star drive, then suppressed it as a danger to their empire?”

“Entirely possible,” Laura responded.

#

Commander Scott Heinrich had worked diligently toward a single goal for his entire professional career - command of a starship. That his ascension to *Magellan*'s command couch was temporary did little to blunt the responsibilities that had fallen on his shoulders. Now that he had them, he was not sure that he liked it.

Magellan had flown in formation with the *Ruptured Whale* for three days while supplies for the salvage crew had been offloaded. When those aboard the derelict had all they would need to convert it to a functioning starship, Heinrich had taken *Magellan* and set out on the second phase of their mission, to see if the brief appearance of the stargate had left any evidence.

First, of course, there had been the problem of where they should look. They knew precisely where the stargate had originally materialized. *Magellan*'s sensors had caught the alien ships in the moment of their appearance. But where was that point now?

The question had caused the scientists to splinter into two camps (as usual). There were the “gravitocentrists” who claimed that the entry point could be located with respect to New Eden's sun, and therefore, they should look at the point in New Eden's orbit where the planet had been at the time of the battle. Then there were the “universalists,” who thought stargates independent of local gravitational influences. It was their contention that the point was fixed in space and that it could only be found by backtracking the path of the New Eden sun through the firmament.

In the end, the gravitocentrists won the argument and the scientists directed Heinrich to a point halfway around the system primary. Since they were deep in the star's gravity well, they made the move in normal space, taking a week to reach their survey area. They then spent the next three days quartering the region with instruments so sensitive that they would be knocked out of calibration if the ship closed to within a thousand kilometers of them. That morning they had made their 27th survey of the region.

“Well?” Heinrich demanded of Dr. Pomerance.

“Nothing,” came the reply of the disgusted scientist as he watched a three-dimensional graph come up on the screen. “The local curvature of space is unaffected to within the limits of our instruments. Nor do there appear to be any density variations.”

“Damn!” Heinrich muttered. To his non-scientist mind, the thought that stargates ought to leave variations in the local density seemed the most logical. Even the hardest vacuum was not completely empty of matter. Inside planetary systems, there were tens of thousands of atoms per cubic centimeter, and even in interstellar space, the particle count was in the hundreds. It was logical to think that if points in two widely separated star systems were connected via stargate, then material from the more dense system would pour through into the less dense. Logical or not, there was no evidence that this had happened at New Eden.

“Nor do we see any shock waves in the gas, or roiling due to the passage of the gravity wave,” Pomerance continued.

“So what do we do now?”

The scientist, who was a small man with closely cropped sandy hair, rubbed at his scalp in frustration. “Our bag of tricks is fast running low. I can only think of two more things we can try. Perhaps the universalists were right after all.”

“Whether they were or not, we have to get back to the derelict. We have left them helpless too long already.”

“Two more passes, Captain,” Pomerance pleaded. “If we don’t have anything at the end of that time, then we will write off this whole avenue of inquiry.”

Heinrich nodded. “Two passes. After that we collect our instruments and head back.”

#

Dan Landon moved through vacuum toward the airlock that the salvage crew had grafted to the side of the *Ruptured Whale*. This morning, the lock had looked like an oversize garbage can carelessly cast aside by some giant junkman. No longer. As he pulled himself hand over hand along the guideline, he was greeted by a curving surface consisting of hexagonal sections of superconducting mesh anchored to the underlying structure and interconnected with thick cables.

As he reached the airlock, Landon rotated his body to gaze at the bright star that was New Eden. Near the half-moon shape of the planet was the bright star that marked *Magellan*’s position. His ship had ended her sweeps of the late stargate’s position - ended them in failure. Save the gravity wave, now approaching half-a-light-year in diameter, there was no sign that local space had been turned inside out. Her separate mission completed, the big survey ship had returned to the *Whale* and now hovered some twenty kilometers distant, ready to evacuate the salvage crew should the Broa appear.

He entered the airlock boots first. As soon as he was inside, he anchored himself against the barrel of the pressure wall and levered the outer door closed with his upper body. The airlock was a makeshift affair with none of the power controls that were normal for such installations. Once the hatch was dogged down, he twisted the valve that bled air from the ship’s interior into the lock chamber. He was buffeted by a miniature storm as his suit drooped around him. When the wind had died to inaudibility, he pressed a gloved hand against the inner door that had been held closed by tons of pressure. With air in the lock, the door swung easily inward.

Landon pulled himself out of the lock to find Laura Dresser hovering in front of him. Her mouth was moving, but only the barest hint of sound came through his helmet. He commanded the suit’s computer to activate the outside pickup, something that was almost never done in a vacuum suit. Her voice sounded tinny in his earphones as he caught the end of her sentence.

“-- Speak with you!”

“Can it wait until I get out of my suit?” he asked, his words transmitted by a small speaker mounted flush to his chest.

He noted with professional interest the inner struggle apparent in Laura’s expression. She was like many engineers; expert in her field, but nonetheless missing something that allows people to interact well with others.

“Certainly it can wait that long,” she finally muttered, signaling that her rough social graces had won the struggle.

“Very good,” he replied. He pulled himself to the suiting cubicle, hooked into one of the waiting frames, then spoke the code word that would release the hinged backpack and swing it out of the way. He extracted his arms from the sleeves, pushed off the rigid chest structure, and slid backwards through the open rear hatch, nearly doubling over in the process.

Like most people, Landon wore a waste control and telemetry belt under his suit, and nothing else. He noted the distracted interest Laura showed in his nearly nude form as he slipped into a one-piece shipsuit. Another thing he noted was the smell, much of which was coming from him. Among the *Whale*’s other shortcomings, it lacked washing facilities. No one aboard had had a bath in three weeks. He wondered what they would all smell like by the time they got to Earth.

Finally, he turned to her and asked, “What can I do for you?”

Two hours later, he was still listening.

CHAPTER 18

Laura Dresser was suspended like a spider in its web as she watched the readouts that detailed the health of the stardrive and its fusion generator. There were five members of the salvage crew in the compartment they had chosen for a control room. Each was encased in a vacuum suit and suspended like Laura, facing outward, with the back of their helmets nearly touching. The arrangement meant that none of them could see the others. She did not need to see her fellows. She could follow their progress by the comments on the command circuit.

They were in suits despite the fact that the compartment was pressurized. The *Whale* was about to be subjected to a number of stresses for which it had not been designed. It was possible that one or more of their 200 patches might give way when the stardrive was activated, returning the interior to vacuum.

“Engineer, how is it going?” Dan Landon’s voice asked abruptly as she worked her way through the pre-start checklist on one of her auxiliary screens. In addition to the captain’s voice, the command circuit carried the breathing of ten other people. The sound was like that of a subdued hurricane.

“Ready for power in a few minutes, Captain.”

“Give me some warning before you bring the generator on line.”

“Yes, sir.”

Landon went on to question Ensign Grimes, who was in communication with *Magellan*. The survey ship would trail them at a safe distance as they moved toward their jump point, ready to render assistance if needed. After they jumped superlight, the *Whale* would be on her own for the six days to Sol. If the stardrive failed after that, they would likely never be found in the trackless vacuum between the stars.

“Ready now, Captain,” Laura said a few minutes later as she stared at the screen and wished that someone would invent a way that old-fashioned eyeglasses could be worn in a vacuum suit. In truth, someone probably had once upon a time. That solution had been lost in the passage of years.

“Bring the fusion generators to power.”

Laura did so, watching her screens for any sign of instability in the generator’s output. “We have

minimum drive power, Captain.”

“Very good, Engineer. Stand by.” Landon switched to the general suit circuit and announced, “*Attention All Hands. We will begin maneuvering in two minutes. Make sure you are strapped down securely. Two minute warning and counting. Stand by!*”

“Commander Heinrich reports that he is ready for chase duty,” Grimes reported.

“Acknowledge the report, Ensign. Tell him we will be bringing our field to power in ninety seconds. Suggest that he do likewise.”

“Aye aye, Captain.”

Laura watched the chronometer that seemed to be hanging a meter in front of her faceplate. The glowing apparition was part of the head-up display of her helmet. It slowly counted down toward zero.

“All right, thirty seconds,” Landon reported. “Begin the automated countdown.”

A computer generated voice echoed through Laura’s helmet. When the display reached zero, she released the *Whale*’s computer to follow its preprogrammed flight plan. The effect was immediate. Her external speaker picked up a woeful moan from the ship as the beams took the stress of the building drive field. The empty space in front of the ship suddenly curved more steeply while that behind flattened by the same minuscule amount. Smoothly, silently, the *Ruptured Whale* fell in the direction of curvature. In effect, the ship slid down the slope of the small invisible hill that its drive generator had created. As the ship moved, so did the localized curvature of space, and like a dog chasing its own tail, the ship followed.

Laura did not need to watch her instruments to know that they were accelerating. Her body gave her the necessary clues. For the first time in weeks, her stomach settled down against her backbone as her toes slid deeper into her armored boots. As weight swept over her, she felt a momentary bliss as the interior fabric of the suit scratched several irritating itches. The relief was short lived, however. The new arrangement of forces conspired to set off a completely new rash of prickling.

“So far we are nominal for flight plan,” Technician Gonzalvo reported after a few seconds of powered flight.

“Accelerate to one gravity!” Landon ordered.

“Yes, Captain,” Laura replied as she keyed in the change. She suddenly felt very heavy as the *Whale* curved space around it sufficient to drive it forward at a velocity that grew by 10 meters per second each second.

She smiled inside her helmet. Score one for the engineers! The old derelict flew ... after a fashion. She felt pleased with herself for having won a small victory, but tried to control the emotion. After all, the real test of her skill and that of her team would come in two days. It would take that long for the two starships to pull away from the New Eden sun to a distance where they could attempt the transition to superlight.

#

Dan Landon was out of his suit for the first time in a week, sponging himself off with a damp cloth and wishing it were a shower bag with jet spray controls. He was in a compartment that had once been devoted to quarters for the ship’s alien crew. The damage here was surprisingly light. In fact, had it not been for the misfortune of having one of the maintenance hatches blown away, coupled with the unexplained opening of virtually every pressure door throughout the ship, Harlan Frees might have found dozens of survivors aboard the *Whale* when first he boarded. As it was, those members of the crew who

had survived the Broan attack had all been killed by explosive decompression just moments before Landon had won his battle with their tormentor. When the technicians first reported that fact, Dan had felt a momentary twinge of conscience for not having acted sooner. So many deaths coming so near salvation was the stuff of Greek tragedy.

It had been twenty hours since the *Whale* shook itself free of its parking orbit and began the long climb out of the New Eden system. Another twenty hours would see them en route to Sol (or a plasma cloud slowly expanding across a million cubic kilometers of space).

Dan was taking advantage of the hours under acceleration to continue exploring his command. He noted the various alien devices attached to the bulkheads. Some were obviously functional, while others appeared to be decorative. One in particular caught his eye. In front of him was a hexagonal frame inside which was a picture that might well have been an abstract painting. Then again, he decided, it might be either a landscape or portrait, but one painted in pigments to which the human eye was not sensitive. The painting was typical of the alien craft's furnishings and fixtures - a strange mixture of the familiar and the odd.

If it were indeed a piece of artwork, it had at least performed one of the functions of art. It had triggered more questions than it answered. He liked to think that humanity would find kindred spirits among a race that painted pictures. In truth, of course, he had no way of knowing. The artist might have been engaged in a mating ritual, or relaying a message, or possibly just wanted to break up the dull grayness of the bulkhead. Perhaps the picture was a signal to the others aboard that this particular section belonged to the beetle things.

Dan used the water bottle to soak the sponge again. From what he had seen of the beetle corpses, they had not been handsome beings. Then again, he doubted they would have found humans attractive, either.

The next best thing to having a live alien to question was to know what they had stored in the ship's computer. A team of specialists had been working for more than two weeks on understanding the alien ship's brain. The team was finally making some progress. They could not read the information they had extracted from the alien computer, of course, but they could do an analysis on how the information had been stored inside the memory banks of the machine.

Curiously, nearly sixty percent of the data bank's memory had proven to be empty, with the unused portion divided among several large gaps. The pattern suggested that there had once been information stored in these sections, but that it had been erased. Whether the hypothetical erasures had been the result of battle damage or of normal computer operation, the specialists had, as yet, been unable to say.

#

"All Hands! Stand by for superlight velocity in ten minutes. Secure for jump and report status. T minus ten minutes and counting!"

"Ten minute warning complete, Captain."

"Very well, Ensign," Dan Landon replied. "Engineer, how are your generators?"

"Fusion is nominal, Captain," Laura Dresser responded. "Stardrive is on-line and functional. Standing by for jump order."

Again, they were suspended from their webs in the control room as all through the ship other vacuum suited figures hurried to secure their equipment for jump. Landon let his gaze sweep the readouts in front of him that showed his ship ready for stardrive. He wondered which of them were lying to him.

“Grimes, get me *Magellan* .”

After a moment, the ensign reported. “Commander Heinrich on the line, sir.”

“Scott, are you ready to jump?”

“Ready, Captain. We’ll wait five minutes after you go superlight to observe, then we will follow you.”

“Right. See you back home in six days.”

“Yes, sir. We will be looking for you. Good luck!”

“Luck to you as well, *Magellan* . Landon out.”

The voyage to Sol would take six days and would be made in utter isolation. So far, no one had ever invented a method for detecting a ship traveling faster than light and it was doubtful that anyone ever would. Once the *Ruptured Whale* departed New Eden, she would be totally on her own, wrapped in a private dark universe. *Magellan* would stick around for five minutes to make sure that the *Whale* did not fall out of superlight the same instant she went in - or to monitor the debris cloud if the ship exploded. However, once either ship transitioned successfully to superlight, there would be no contact.

The great danger, of course, was if their drive broke down en route. The distance between the stars is too vast for the human mind to comprehend, let alone for humanity’s small fleet of starships to search. If the *Whale* fell out of superlight, they would starve to death or suffocate long before anyone could possibly find them.

“Final check. Have all stations report status.”

“*All stations! Report status.*”

The reports began flowing into the control room. Dan Landon listened carefully as each station reported that they were secured and ready for superlight. He noted that their voices carried overtones of repressed excitement, but no more tension than was to be expected. He smiled. They were a good crew. If anyone survived the next few minutes, they had a damned good chance of making it home.

“All stations report ready to jump, Captain,” Grimes reported to him.

“Engineer, begin your final pre-jump check of the stardrive.”

“Stardrive is nominal, Captain.”

“Very well. Stand by. Two minute warning.”

“*All hands. Two minutes to superlight. Stand by.*”

Landon watched the digits of his suit chronometer click down toward **00:01:00** . At the one-minute mark, he ordered Laura Dresser to place the stardrive in automatic mode. A computer-generated voice began to echo softly in his earphones, counting down the seconds. As it always did, the countdown sent shivers up his spine. His eyes scanned the readouts continuously now, his gauntleted hand poised over the kill button. Then came the surge of adrenaline as the final seconds ticked off...

“*Five ... four ... three ... two ... one...*”

Dan Landon took a deep breath and held it as the mechanical voice finished.

“Zero. Energize!”

CHAPTER 19

Dr. Bendagar, Professor Rheinhardt, the project’s chief exobiologist, Lisa Arden, and Mark Rykand all sat in the transient lounge aboard Equatorial Station and watched the Earth periodically appear in the viewport in front of them. They were en route to the Tangier Conference, traveling incognito. All wore tourist-type clothes, which is to say, they dressed normally.

“Feels good to get a solid deck underfoot again, doesn’t it?” Rheinhardt asked. The biologist made no secret of his dislike for microgravity. He had lost twenty pounds since the project’s inception and was looking forward to meals that had never seen the inside of an autokitchen. If he could only arrange to see his wife while he was aground, things would be perfect.

“I don’t know,” Lisa responded. “I kind of like floating through life.” There was one definite benefit to microgravity in her opinion. This was the first time in weeks that she had to wear her bra.

Raoul Bendagar sighed, “I agree with Ben. Man was not intended to swim everywhere he goes. Besides, it will be good to breathe fresh air again.”

The others looked at where he lay sprawled in a pneumatic couch. It had been the better part of a year since the scientist had breathed anything but ship’s atmosphere. He had missed his opportunity to set foot on New Eden and since the starship’s return to Sol, had not left PoleStar.

Lisa was also looking forward to breathing molecules not tainted by the numerous smells that accumulated in a closed environment. There was one smell in particular that she would not miss. She had long since gotten sufficiently used to Sar-Say’s body odor that she no longer made any conscious note of it. Still, it was good to breathe air not clouded by *Eau de Taff*. She suspected Sar-Say felt the same about her body odor.

Official invitations to the Tangier Conference had gone out the week before. Most of the attendees were from the universities and think tanks that had been let in on some part of the secret. A dozen scientists aboard PoleStar had also been directed to attend. As a precaution against accident, and to make them less conspicuous, they were traveling to the conference by three different routes. Mark Rykand had had to pull strings in order to get himself assigned to Lisa Arden’s group.

Sar-Say, of course, had not been invited. Not only was there no way to get him to the conference without people noticing, the biologists still weren’t positive that the risk of infection was zero. There had been long technical arguments about whether the caution involved was protecting humanity from Sar-Say, or vice versa.

Whichever it was, everyone returning to Earth from PoleStar had been given a very thorough physical examination. One who had shown signs of an incipient runny nose had been refused permission to leave the station. Whatever disease he had contracted would have to run its course before he could again enter Earth’s biosphere.

“Here comes our ship,” Lisa said, pointing overhead to where a dart shaped craft highlighted by flashing attitude jets was growing slowly larger against the backdrop of the spinning Earth. As they watched, the Earth again slid out of sight on the right of the port, to be replaced by the black of space. The ship was noticeably larger the next time the Earth was in view. “Perhaps we should get to the loading lock.”

“Plenty of time,” Mark said. “They have to dock and offload before we can go aboard. Besides, docking is the best part.”

Just then, a functionary in the uniform of the Equatorial Station staff entered the lounge and scanned its occupants. He carried a small hand screen clipped to his belt and halted as he spotted the party from PoleStar. He threaded his way among the pneumatic furniture that dotted the lounge until he stood in front of Bendagar.”

“Dr. Raoul Bendagar?”

The chief scientist looked up and nodded.

“I have a message for you from your office. Will you accept it?”

“Certainly.” He took the small reader from the messenger and pressed his thumb against the screen. A terse few paragraphs of glowing letters flowed up the face.

“What is it?” Lisa asked.

Bendagar looked up, his face a mask. When he spoke, it was in a hushed tone that barely carried to his audience. “It’s from Pavel. He wanted to pass on the news that *Magellan* has just been spotted out beyond Jupiter.”

“Just *Magellan* ?

Bendagar’s wizened features broke into a broad smile. “No. Pavel reports that she has another ship with her!”

#

“Hello, Luna Approach Control,” Dan Landon said into his communicator. “This is Survey Auxiliary *Flying Cloud* , inbound for landing at Lomonosow Station.”

“Hello, *Flying Cloud* . We have you on our scopes. You are cleared for final approach. Be advised that you have a plasma research satellite crossing your orbit from the northeast twenty seconds behind you. Please maintain your flight profile.”

“Thank you, Approach. We will do so. Standing by on guard frequency. *Flying Cloud* , out!”

Dan Landon lay back in his improvised acceleration couch aboard the *Ruptured Whale* and watched his instruments. Around him, other members of the command staff were doing the same. Because the arrangement of their couches at the center of the cylindrical control room made it difficult to see one another, Dan had had a mirror installed in the overhead. The view reminded him of the overhead camera shots of dance troops or possibly of the mirrored ceilings above beds in certain specialty hotels.

They had left the New Eden system six days earlier. The tension of whether or not the jury-rigged stardrive would work had peaked at the moment of jump. Nor had the tension really subsided until they had finally dropped sublight on the outskirts of the Solar System. Dan had found the constant tension of waiting for disaster nerve wracking.

He tried to relax by continuing his explorations of the *Whale* . Nothing he found altered his opinion that Broan technology was no more advanced than human. Indeed, a number of artifacts had seemed crudely made. The shipyard that had built the *Whale* seemed not to have been overly concerned with esthetics. Good enough had been good enough.

The *Whale* dropped sublight precisely according to flight plan. Landon was surprised to discover that *Magellan*'s breakout point was only a million kilometers distant from his own. Considering that both ships had just crossed 100 light-years of void, to arrive so close to one another was either extremely lucky or phenomenal piloting. Dan knew enough about the factors involved to discount the latter possibility. The truth was that sometimes you just got lucky.

He wasted no time transmitting his mission log to *Magellan*, which had then sent it on to Earth via secure laser. His orders arrived by return laser almost as fast as speed-of-light delay allowed. *Magellan* was ordered back to PoleStar to deliver their records to the project scientists. The *Ruptured Whale* was ordered to the old Space Navy base at Lomonosow Crater on Luna Farside, where the alien ship could be hidden from the curious. To preserve the fiction, they had taken the name of a cargo vessel.

"How is the reactor holding up, Engineer?"

"Fine, Captain," Laura Dresser replied. "Normal space drive is far less taxing on the power system than stardrive."

Despite her tendency to respond to command inquiries with long, extraneous explanations, Dan Landon had to admit that Laura Dresser had the makings of a fine ship's engineer.

"Comm officer," he said as the radar altimeter began to register their height above the pockmarked lunar surface. "All departments to report landing status."

Each of the *Ruptured Whale*'s crew acknowledged their readiness in turn.

"Altitude is 100 kilometers and closing, Captain," the spacer who operated the sensor board reported.

"I see it, Benton. Stand by for acceleration warning, Comm Officer. Stand by for power, Engineer."

He was greeted by a series of acknowledgments. A large crater with lights strung out across its floor was growing below them. At 50 kilometers, he washed all extraneous thoughts from his mind and concentrated on his flying. There had not been time to rig an auto landing system on the *Whale*. Besides, the cylindrical shape made the ship's mass distribution sufficiently different that he would not have risked it anyway.

"Reactor to power," he ordered as he applied the first few control movements. Superimposed on the view of their landing site was a graph showing velocity versus altitude. Dan worked at keeping the small ship icon centered between lines representing the maximum tolerance of their approach curve.

"Ten kilometers," the sensor operator announced. The warning was delivered in that quiet, matter-of-fact tone that denotes periods of high tension aboard ships in space. He acknowledged the report and kept his attention on the small, descending blip on his screen. So far, everything was nominal.

"One kilometer."

"Right. Comm officer, final landing warning!"

The all hands announcement echoed through the *Whale*'s makeshift habitat volume. All over the ship, people began holding their breath. Dan made a conscious effort not to do likewise. The landing curve called for faster deceleration now and he sank into his couch as he adjusted the controls. The *Whale* slowed, then stopped, hovering ten meters above its assigned landing pad. Dan checked their alignment visually, and then reduced power to the drive field. Slowly, the *Whale* began to sink toward the surface. There was a small swirl of dust as the field intersected the surface, then a gentle shock as they contacted the lunar soil.

Despite the one-sixth gravity, the ship groaned audibly on touchdown.

“Cut power, Engineer.”

“Cutting power now, Captain.” Laura Dresser responded.

“Comm. Have all crew prepare for debarkation. We are home, people!”

#

Mikhail Vasloff stared out his office window at the old houses that lined the opposite bank of the Prinsen Canal. *Terra Nostra* maintained its headquarters in the old section of Amsterdam despite the usurious rental rates commanded by the old canal houses. The benefits that accrued from the address on the organization’s letterhead more than offset the cost.

It was a typical cloudy day in Amsterdam, with an occasional electro cyclist gliding silently down the narrow street on the opposite bank. The city fathers were talking about outlawing the modern contraptions, forcing a return to the more picturesque foot pedal bicycle in an effort to spark tourism. Vasloff noted that there was no corresponding suggestion that the city bring back the smelly gasoline powered canal boats of two centuries past. Even quaintness had its limits.

Old Amsterdam’s administrative problems were not his concern, of course. He had bigger things to worry about. One of these was the mysterious research program that Mark Rykand had brought to his attention. His initial inquiries into what the Stellar Survey was doing aboard PoleStar had been tentative at best. Gradually, over a span of many weeks, he had begun to gain insight. For reasons that no one seemed able to explain, there was a giant research project being assembled in orbit amid secrecy to rival that of the legendary Manhattan Project. The comparison was an apt one in Vasloff’s mind. Classified research, secret projects, and the mysterious disappearance of some of the planet’s best brains - these were the things of historical fiction, of the days when men fought and died amid the mud and blood of war. The implications of such a project in the modern day were too frightening to contemplate. The very existence of the PoleStar project meant that someone had a secret too terrible to tell, and worse, that he did not know what it was!

Frowning, he turned from his window and pressed the control inset into his eighteenth century desk. A minute later, the door to his office opened to reveal the narrow staircase that led down to the lower levels and up to the attic. At the door was Claris Beaufort, his assistant, with her own office visible behind her.

“Come in and sit down,” he ordered gruffly, not bothering to use the orator’s voice that so impressed important visitors. “What’s the latest on the PoleStar investigation?”

Claris sat and wrinkled her face. “Same as last week, I am afraid. Lots of data, but nothing conclusive. The search programs are running up quite a bill. Perhaps we should curtail them.”

“No. Any more news about Mark Rykand?”

Her blonde hair momentarily covered her face as she shook her head. “I talked to Moira Sims two days ago. She has not heard anything since that short message telling her that he was staying aboard PoleStar. She is getting worried.”

“What have you learned this week?”

She sat and flipped open the thin binder that she carried constantly. A moment later, her face glowed with the reflected light from a computer screen.

“You were right about how useful Salli Rheinhardt would be in this. She gave us the data code off the last letter her husband sent her from PoleStar. We got one of our people in the Postal Union to put a monitoring program on it and have now intercepted nearly two hundred personal letters from scientists aboard the station. We cannot read them, of course, but we now have their identities pretty well locked down. We have fleshed out the organization chart considerably. Care to see it?”

“Later. Just a summary for now.”

She shrugged. “They have a lot of exobiologists and other life science people, as well as a smattering from the physical sciences. About what you would expect if they were investigating a loose extraterrestrial disease.”

“Or merely handling sample overflow from High Station, which is probably what they will say if we reveal this project to the press.”

“True,” Claris replied. “The personnel lists have some oddities about them.”

“Such as?”

“There’s Mark Rykand of course. He is the same genotype as his sister. Perhaps they need him for a guinea pig to figure out what killed her.”

“In that case, they will be pulling in relatives of the other victims. Are they?”

“Don’t know, boss.”

“Well, check.”

“Yes, sir.”

“What other oddities?”

“Here’s one that has me stumped,” Claris said, gesturing at her screen. “One of the first scholars to go aboard was Lisabette Arden, out of the Multiversity of London. She is not even a scientist. She is a linguist.”

“A linguist? Now what would they need with a --?” Vasloff had been listening while leaning back in his power chair with his fingertips steepled in front of him. At the sudden thought, he sat bolt upright, moving fast enough to elicit a whine from the chair mechanism. A moment later, Claris was treated to the sight of her imperturbable superior swearing hotly in Russian.

“What is it?” she asked, worried.

“Think, Claris! What kind of a project would be of interest to both exobiologists *and* a linguist?”

“I don’t know. What kind?”

He told her in short, pungent syllables. After half a dozen words, her own eyes opened wide in horror. It made sense! At least, it fit everything they knew now.

Was it possible? Would they dare keep such a secret from the media and the people? If so, what else would they dare?

CHAPTER 20

Al-Hoceima was a small city surrounding a massive resort hotel that rose above the Mediterranean's southern shore like a granite cliff. Built nearly a century previous during the heyday of the Great Sahara Reclamation Project, the resort had originally been designed as a rest and relaxation facility for the highly paid foreign workers who had been the backbone of the project.

The reclamation project had been one of the largest and most ambitious ever undertaken, rivaling even the early space program in the resources committed. A dozen pipelines, each with a flow capacity nearly equal to that of the Nile, had snaked north from the rain-saturated interior highlands toward the great desert. Once they reached the wastelands, the pipes branched many times as they delivered their precious fluid to thousands of artificial oases. The plan called for these islands of green to be the nuclei from which life would spread until it covered the whole of the Sahara. The plan had been bold and grand, but had not considered that the desert might not be as easily tamed as human hubris allowed.

For fifty years, sweating workers by the thousands had labored to make the reclamation project a success, and for a time, they had. However, keeping the sand at bay was an eternal job, and humans are not built for eternity. Eventually the world tired of the never-ending battle and found other projects with greater claim on humanity's limited resources. Slowly, almost imperceptibly, the desert returned to overwhelm the oases and pumping stations. Pipes ruptured and were judged too expensive or difficult to repair. Pumps wore out and were never rebuilt. People moved on to other jobs and were not replaced. Over time, the great arterial network fell into disuse. Shortly thereafter, large gaps would appear in long stretches of pipe as the nomads who still roamed the desert found them a ready source of metal. Other places, the snaking lines lay unrusting in the hot, dry desert climate. Only in a few spots was there any trace left of the vast effort and even there the sand was working at reclaiming its own.

For the past few decades, the Al-Hoceima resort had scraped along on local tourism and those who could not afford the prices charged on the Mediterranean's northern shore. Thus, the resort had been receptive to an offer from the Stellar Survey to host a conference on the dynamics of stellar evolution. Their financial situation was such that they had not even objected to the strange restrictions that the survey had insisted on placing on the resort staff.

Raoul Bendagar, Professor Rheinhardt, Lisa Arden, and Mark Rykand arrived from Tangier in a dilapidated flying bus whose mismatched compressors produced an irritating three cycles-per-second harmonic beat. The vehicle's air conditioning worked, however, a fact made evident as they exited its interior into a furnace blast of heat. They hurried across a cobblestone courtyard toward the eye-searing white facade of the resort, only to find themselves blinded as they passed into the gloom within. An efficient young woman liveried in the uniform of Survey Security met them just inside the door. She ushered them straight past the usual registration desk and into an alcove where they were each asked for their identification papers before being subjected to retina scans.

"Welcome to Al-Hoceima, ladies and gentlemen," Aretha Higgins said after the computers had confirmed their identities. "I trust that you aren't too fatigued from your journey."

"Being on Earth again is good enough to cure any minor ills I might have," Dr. Bendagar answered. "What is the conference schedule?"

"The first session begins tomorrow in the main ballroom, Doctor. You will brief the delegates at 09:00, after which the working groups will go to their various conference rooms and begin their work. Lunch will be at 12:00 and dinner at 18:00. Most have agreed to dress for dinner."

“What about --?” Bendagar asked, jerking his thumb toward where several members of the hotel staff lounged on the opposite side of the lobby.

Miss Higgins smiled. “They will be kept out of the main hall beginning at dawn tomorrow. We will sweep for electronic listening devices every hour and, of course, we have full antieavesdropping measures in effect now. You scientists will be able to speak your minds without fear of being overheard.”

“What do we do when we aren’t attending conferences?” Lisa asked.

“There are swimming, scuba diving, and tours of one of the local villages. In addition, parties of two or more can catch the ferry over to Spain for a day of shopping if that is your desire. The hotel has also agreed to open the casino each night after dinner, including a floorshow that is considered good by local standards. It is not San Moritz, but it is the best we could do on short notice. Now, if none of you have any more questions, we will have Achmed and his people show you to your rooms.”

#

Raoul Bendagar presented his paper on the Sky Flower Nebula to the Astronomy Working Group on the third day of the “Conference on Stellar Evolution.” There was also a Biology Working Group, a Psychiatric Evaluation Group, and even a Technology Assessment Working Group. The latter was slated to depart for Luna to begin studies of the alien derelict. The small audience of specialists listened quietly as Dr. Bendagar pointed out the similarities between the Sky Flower and Crab Nebulas. When he had finished his presentation and the lights came up in the conference room, a small, dark professor of astrophysics from the Sorbonne stood and signaled for attention.

“Dr. Parmentier?”

“I think you have been conned by this pseudo-simian liar, Raoul.”

“Come now, Saul, don’t hold back. Tell us what you really think!”

The joke provoked more laughter than it deserved from the assembled scientists.

“Mock me if you will, but you will never convince me that you can identify a nebula just because some monkey drew a picture that purports to show it seven millennia hence.”

“You have seen our simulations of the Crab’s expansion patterns. They match Sar-Say’s artwork reasonably well.”

“So do half the planetary nebulas in the general catalog. We cannot very well recommend an expedition on the strength of someone’s doodling. Now if he’d taken precise measurements of the pulsar’s rotation rate as viewed from this Zzumer, then we’d have something to sink our teeth into.”

“Sar-Say was a tourist, Saul. How many tourists do you know who carry a timing synchroscope in their luggage?”

“He should have showed more foresight,” the dissenting astronomer replied. There were mutters within the crowd to show that others agreed with him.

Mark Rykand watched his boss handle the heckler with a mixture of irritation and admiration. The irritation came from the fact that he had worked half the night preparing this morning’s presentation. To have its conclusions dismissed so cavalierly was difficult to take. The admiration came from Bendagar’s aplomb at fielding the objection.

Due to a shortage of chairs, Mark had watched the presentation while leaning against the wall at the back of the room. Halfway through the talk, his feet had begun to hurt and he had rested them by periodically shifting his weight. He was not the only one having trouble adjusting to gravity. Dr. Bendagar spent most of his time soaking in the resort pool when he was not attending to conference business.

Mark felt a cool breeze on his cheek as the door beside him opened. The breeze bore with it the whiff of a familiar perfume. Mark turned to see Lisa standing in the half-open doorway.

“How are things going?” Lisa whispered.

“About like the other working groups,” he replied in a barely audible voice.

She smiled. “As bad as that, eh?”

“How was your presentation this morning?”

“Interrupted about every ten seconds for questions. It took nearly two hours to get through my speech.”

“It shows that they’re interested.”

“I am just glad that it’s over. What is your schedule for tomorrow?”

He shrugged. “I’m free unless some work comes out of this session. Why?”

“I am looking for a partner to go on a day trip. Interested?”

Mark’s broad grin told her his answer even before he managed to ask, “Where?”

“I thought we would take the ferry across the strait to Gibraltar. I’ve always wanted to see it.”

“Are we allowed? What about the radiation?”

“Pooh, that’s just a scary story!”

He shrugged. “If you say so. Anyone else going?”

“I’ll ask around,” Lisa said, “but I think everyone is busy. I really ought to prepare for the end-of-the-week summary session myself, but I figure I deserve at least one free day on Earth.”

“I agree,” he said. “Even though I’ve only been away a few weeks, I am surprised at how much I have missed this old planet. We will have to go back to PoleStar soon enough. We might as well get some sun while we are here. I’ll contact security and sign us out.”

“Fine. I will ask the front desk to call Tangier and arrange for us to be dropped off on the daily ferry run to Cadiz. Let you know later how early we have to be down at the dock.”

“I’ll be around,” he whispered as she slipped once more out the door. Suddenly the fact that his feet hurt and he was significantly minus on his sleep did not seem to matter.

#

The golden sun was just peeking above the eastern horizon as the hydrofoil departed Al-Hoceima. The boat had been specially chartered from a tour company in Tangier. A dozen conference attendees were aboard, but only Lisa Arden and Mark Rykand were bound for Gibraltar. The others were headed through the straits and ninety minutes beyond to the shopping streets of Cadiz. The long curving wake of

the boat pointed back toward the North African shoreline now nearly lost in the early morning mist. The resort hotel itself was little more than a rectangular spot of white, with no outward sign that the future of the human race was being argued within its walls.

Mark was dressed against the early morning chill, clad in long pants, shirt, pocket belt, and a light jacket. He and Lisa huddled behind strategically placed transparent windbreaks where the air was turbulent enough to tousle hair and pluck at loose clothing, but nowhere near the strength of the boat's 100-kph slipstream. Lisa was similarly attired, except for shorts that showed off her legs to good advantage, but which caused her to shiver in the breeze. Both wore hiking shoes that made up in comfort what they lacked in elegance. Each of them carried a canteen on one hip and the makings for a picnic lunch spread around various pouches of their belts. They had purchased the clothes and equipment at the hotel gift shop, paying five times what it was worth after Lisa had warned him that they faced a dry day if they were to explore The Rock properly. Mark noticed that Lisa was shivering and suggested that they go below where it would be warmer.

"No!" she said, shouting to be heard over the wind noise. "I find this exhilarating. But then, it's probably very routine for you."

"Why?" he asked. As he spoke, he slipped an arm around her and guided her to a corner where they received more protection from the overhead slipstream. Lisa snuggled closer to gain more of the warmth of his body against her own. She obviously had no objections to the closeness. Besides, it made talking easier.

"Isn't this the sort of thing you rich people do?"

He laughed. "I don't know about the other 'rich' people, but I work for a living. I did, that is, until I happened to spot a certain young lady through a lighted viewport."

Lisa's complexion turned crimson as she recalled the circumstances of their first "meeting." She turned to face the glass wall between her and the bow so that he could not see her reaction. They huddled together, swaying to the gentle action of the waves against the ship's hydrofoils for nearly a minute before Mark broke the uncomfortable silence.

"Why Gibraltar?"

She shrugged. The motion made him aware of her closeness. "Gibraltar occupies a proud place in my nation's history. Being so close, I thought I would like to see it."

Less than an hour after leaving Al-Hoceima, a white smudge appeared on the forward horizon amidst the long black line of the distant shore. It grew quickly larger to reveal itself a gray-white mass of rock that vaguely resembled a crouching lion with its head to the north and its tail to the south. An irregular wound showed in the lion's side just where the shoulder blades should have been and tiny buildings could be seen crouched all around its feet. From a distance, they appeared to be whole.

"How come it doesn't look like its pictures?" Mark asked, staring through the electronically stabilized field glasses that he had borrowed from the boat's steward. Beside him, Lisa had a pair of her own focused on their destination.

"The traditional view is from the land side of the northern face. We are approaching from the sea and the east."

"What is that white mass in the center? It looks like someone has been doing extensive quarrying."

“Those are the old water catchments,” she replied. “They used to collect rain water and deliver them to underground reservoirs for drinking. They were largely destroyed in the Sixteenth Siege.”

“The what?”

Lisa dropped her binoculars to hang by their strap around her neck. “On Gibraltar, they measured history by counting the number of sieges they have survived. There were sixteen of them, although the sixteenth was just a battle. See that discolored spot to the right of the catchments?”

He stared with his binoculars and nodded.

“That’s where the warhead from the doomed Turkish fleet landed. Luckily, it was only a tactical nuke, so the mass of the rock protected the town from the direct blast. Of course, they had to abandon Gibraltar afterwards. The water catchments were destroyed, people were afraid of the fallout and many of the old buildings were no longer safe to live in.”

Mark let loose with a low whistle as he studied the battered side of The Rock. “They took a direct hit from a nuclear shell and still went on to win the battle? No wonder people started talking about things being ‘safe as the Rock of Gibraltar!’”

“No, silly,” Lisa said with a laugh. “That came about as a result of the *Fourteenth* Siege.”

CHAPTER 21

The hydrofoil sat back down into the water as it approached the long ruin that had once been Gibraltar’s southern harbor mole. When it was just a boat again, the ferry motored past the sunken hulks of ships caught in port during the last attack. Once clear of the rusting islands of steel and sea growths, the captain turned toward the stone quay that had been old when Victoria ruled England.

“We will be back to pick you up at sunset,” the chief steward told the two explorers as they clambered from rocking deck onto stone steps leading up to the quay.

“Right,” Mark replied. He and Lisa waved to the scientists ensconced in the lower dining deck, then turned their backs as the hydrofoil’s turbines began their growling song. By the time they had reached the top of the quay, the boat was heading toward one of the two ancient harbor exits for the voyage to Cadiz.

“What do you want to do first?” Mark asked as they reached the top of the steps.

Lisa did not answer. Instead, she stared out across the blue waters and pointed. “That must have been where D’Arcon’s battering ships anchored during the Fourteenth Siege!”

“Beg your pardon?”

Lisa turned to Mark. When she spoke, it was with the breathless excitement of one who is experiencing a lifelong dream. “For all the centuries Britain owned Gibraltar, Spain tried everything they could to get it back. From 1779 through 1782, the Spanish and French navies blockaded The Rock and tried several times to take it by storm. That was the Fourteenth Siege, also called The Great Siege.

“The King of Spain had ten big ships of the line turned into floating artillery batteries. It was an early attempt to build ironclads, except, of course, they did not use iron. They stripped the ships down to their

bare hulls and built up one side with a false hull thick enough to stop British cannonballs. Then, because the British had been experimenting with firing red-hot cannonballs, the Spaniards installed pumps to keep the whole thing from catching fire.

They spent months in preparation. On 12 September 1782, the combined Spanish and French fleets entered Gibraltar Bay. The next morning, the ten battering ships anchored less than 900 meters off the town. They opened fire and slugged it out all day with the battery at King's Bastion. The British fire was not very effective for the first few hours because it takes time to heat a cannonball. It wasn't until shortly after noon that the defenders began to lob their red hot shot."

"Unfortunately for the Spaniards, their captains hadn't pumped enough water to keep their hulls wet. The first fires broke out in the afternoon, and by dark, several ships were ablaze, so much so that the British gunboats sent to harass them ended up rescuing their crews. By morning, only two ships were left. One burned while the other exploded. All in all, the Spaniards lost a couple of thousand men that night."

"Somehow you don't sound as though you are quoting from some dry history lesson."

"Family history," she said. "General Elliot was an ancestor of mine. He commanded The Rock during The Great Siege."

Lisa turned and glanced up at the massive outcropping of limestone that loomed over them while Mark looked down the quay. A dark complexioned man in tan shirt and shorts was swiftly moving to meet them. The brassard on his left breast told them that he was the local constable.

"Hello," he said in tones that mirrored Lisa's own speech, but with Mediterranean undertones. "Who might you two be?"

Mark introduced himself and Lisa to the constable, who in turn informed them that his name was Maurice Farner-Smythe. Despite his warm manner, his gaze was penetrating, as he looked them over.

"What brings you here?" the constable asked.

"We thought we would explore Gibraltar for the day," Lisa replied.

"Have you a permit from the Ministry of Monuments?"

"I didn't know we needed one," she said, sudden disappointment apparent in her voice.

"Tourists!" Farner-Smythe said with a laugh. "You are all the same. Never read the rules and regulations. Well, I suppose with your boat gone I can't very well order you back where you came from, now can I?"

"We'd be glad to purchase a permit if you have them available, Constable," Mark said, reaching for the pouch where he carried his credit cards.

"Not to worry, Mr. Rykand. We are informal here on The Rock. You and the lady appear to be adequately equipped for the day. Just this once we'll make an exception." The constable's tone told them that he made exceptions more often than not.

"Are there any radiation hazards we should know about?"

He answered with a snort. "If there were, Mr. Rykand, do you think I would be living here with my family?"

“I guess not.”

“The rules are that you must not disturb any artifact or natural formation. No chipping your initials into the battlements, no picking up souvenirs, no throwing rocks off the summit to watch them bounce off the old walls. Several of the old tunnels were rendered unsafe by the blast on the eastern slope. They are well marked and you would do well to stay out of them. Do you agree to these terms?”

“We agree,” Lisa replied.

“Also, stay out of the ruins of the town. The buildings are not safe and there are some hermits in there that might not react well to seeing a young woman dressed in hiking shorts. Other than that, use good judgment. I do not want to have to rescue you two from some ledge in the middle of the night. Are we still agreed?”

They both nodded.

“In that case, have a pleasant day. You can follow that road off to the left there. It will take you to the upper galleries and St. George’s Hall. From there, you can climb the trail to Rock Gun if you are feeling especially athletic. Most people also want to see St. Michael’s cave while they are here. Just follow the summit path to the south. It will take you right to it. Damage any of the stalagmites and I will personally hang you up by the nearest available appendage. Oh, and welcome to Gibraltar!”

#

Mark had thought himself in good shape. By the time he and Lisa had trudged half the distance to the upper galleries cut into Gibraltar’s north face, he was not so sure. Either the weeks in microgravity aboard PoleStar had caused his muscles to atrophy more than he had thought; or else, he had been kidding himself. As they hiked up the path separated from the old road by a fence of rusted cable strung between pipe posts, they passed through a mixed forest of scrub pine trees, scraggly grass, and stubby palms. The Rock was covered with green across the lower two thirds of its western face, while alabaster blocks of limestone rose precipitously to the jagged summit where the slope became too steep for topsoil to take hold.

They were each panting heavily as they reached the entrance to the galleries. They rested for a few minutes and then climbed the sloping tunnel to St. George’s Hall. The clammy air in the tunnel did not allow the perspiration to evaporate.

“What’s the story on this?” Mark asked as he tottered to one of the openings that let light and air into the long underground gallery. There were iron bolts in the tunnel floor and the walls that might have once anchored guns.

“They began work on this during The Great Siege. One of the regimental artificers had worked as a miner. He suggested that they tunnel up to a formation called The Notch to mount a cannon there and lob shells into the Spanish ramparts at La Linea. After twenty meters of tunneling they blasted an air hole in the cliff and suddenly realized that they had no need to go as far as The Notch. The air hole itself made a first-rate gun port. For more than a century this place was crowded with artillery pieces ready to rake any army stupid enough to try a charge across the isthmus from Spain.”

They explored the hall for more than an hour, poking into nooks and crannies. When they tired of exploring St. George’s Hall, they set out along the footpath that led upward through a series of switchbacks.

If Mark had thought the climb to St. George’s Hall difficult, the climb to the summit made him wonder if

he was ever going to get there. By the time he and Lisa climbed to Rock Gun, their clothes were one large perspiration stain. From the top, it was possible to see how narrow the summit of Gibraltar truly was. It reminded Mark of the spine of a razorback hog. Here and there along that spine were the twisted and rusting remains of installations that had taken the direct blast of the Turkish shell.

“I am beat. Let’s sit down and rest,” Mark panted as they reached a small flat area on the lower of two summits.

Lisa pushed a strand of wet hair from her eyes and nodded. The two of them found a boulder and plopped down on the hard rock with a sigh. As though of one mind, they reached for their canteens and drank deeply. Crushed ice still floated in the water, kept frozen by the canteen’s near perfect insulation. Mark could not remember when anything had tasted so good.

After a few minutes, Lisa stood and stretched while Mark continued sprawled out on the rock. He watched her limbering up exercises with an appreciative gaze. As she bent over and touched a toe with the opposite hand, she glanced back at him from somewhere near her knee. “You had better get up or else you will be so stiff that you won’t be able to move.”

He nodded, tearing his eyes from her with reluctance. He tried to emulate her movements, but found that he was too stiff to reach much lower than his knees. He noticed also that she watched him as avidly as he had watched her.

Lisa turned away to admire the view that until now had required too much energy. To the north, were the dusky brown hills of Spain across the thin isthmus that had kept invaders at bay since the days when Gibraltar was a Moorish fortress. To the northeast lay the Mediterranean coast. To the west, the Gibraltar Straits Bridge was an impossibly thin line stretched against the dark blue of the sea. The few towers that rose to support the bridge’s vast span looked like toothpicks at this distance. Several massive ships were in transit through the straits, moving like black water bugs across a blue carpet. Along the coast, an air cushion vehicle made its swift way on a pillow of white foam.

Despite the haze of the morning, the day had turned out to be cloudless. A wind from the east cooled the sweat on his brow and suddenly made him cold. Across the straits, he could see Morocco and the sprawling metropolis of Tangier. A much smaller mountain than Gibraltar stood on the African shore, softened by the blue haze of distance. This was Mons Abilia, the other half of the Pillars of Hercules that had once marked the limits of navigation for Mediterranean sailors.

“Beautiful, isn’t it?” Lisa breathed in awed tones as he stepped close behind her.

“It is indeed,” he replied, slipping his arms around her waist.

They stood there for nearly a minute, neither of them moving. Then Lisa slumped back into Mark, pressing her body to his. She tipped her face up and back to present her lips. He leaned forward and kissed her, at first lightly, then with fervor. Breaking away, she turned and embraced him again. Still embracing, they sank to the white limestone and for long minutes, questing hands were busy. Finally, Lisa broke away, gasping. She sat up, caught her breath, and said, “I am hungry. Let’s find a place to eat lunch.”

Mark frowned, confused by the loud throbbing of his pulse. Then, he took a deep breath, stood, and brushed the dirt of centuries from his clothes. “Sure, why not? I am famished.”

They walked hand in hand along a meandering trail that paralleled the spine of The Rock, past the ruins of the old cable car station, and eventually came to a weather beaten sign directing them to St. Michael’s Cave. Neither of them spoke through the long minutes of their stroll, afraid to break the building sense of

anticipation.

The cave turned out to be a disappointment. The stalagmites and stalactites were impressive, but centuries of human activity had somehow dulled their beauty. That and the constant drizzle inside the cave as water dripped from the tiny pores of the rock made their visit a short one.

“Down or up?” Lisa asked as they stood at the entrance of the cave. Below them in the distance was Europa Point, and all around the base of The Rock, the ruins that had once been the town of Gibraltar.

“Let’s take this trail to the left,” Mark replied with studied nonchalance that he was sure fooled neither of them. There were scrubby trees in view to the left and a few flat places where one might spread a picnic lunch in privacy.

Walking arm in arm, they rounded a steep bluff to find a small rectangular area that was obviously artificial. Whatever reason someone had for grafting this platform to the side of the cliff was not clear. Perhaps it had been a sentry post from which to watch for strange sails on the horizon, or a radar site, or even the perch for a ground defense laser. Whatever its one time use, the space was several meters on a side and absolutely flat. A tiny grove of stubby broad-leafed trees had taken root in the fill dirt around the periphery and the center was covered by wiry grass. To the eyes of the young couple, it was as beautiful as any forest glen, and as inviting.

Without a word, they dropped their pocket belts and canteens and stepped forward to embrace again. This coming together held none of the tentativeness of the last. They kissed with the ardor of new lovers; parting only when breathing became a necessity. Both of their chests heaved with desire as they stared into one another’s eyes.

By unspoken agreement, they began to shed their clothes. The race to disrobe was halted by the discovery that their hiking boots were too large to allow the passage of either pants or shorts. Had a distant watcher had them under observation, he would have been treated to the comical sight of two half-naked people collapsing to the ground to begin frantically pawing at the seals on their footwear. After that, things would have become confusing as the ownership of various arms and legs became tangled and indistinct. Nor were the boots the only impediment to love. Small pebbles hidden by the long grass made the ground an uncomfortable bed. Neither noticed as they came together, limbs entwined in that most human of all embraces. Indeed, it was a long time before their conscious minds registered anything but one another.

#

The sun was low in the west when they quit The Rock, strolling arm in arm in long strides down Europa Road. They reentered the town where they had left it, on the slope above Ragged Staff Wharf. The long shadows cast by the setting sun turned the scene surrealistic as they reached the turning in the old road that would take them to the wharf.

Mark glanced at Lisa beside him and noted the change in her appearance. Her immaculate hiking outfit was now dirty and rumpled and perspiration lines streaked her well-scrubbed face. Her hair was plastered flat against her skull and much of her skin was caked with grime that disappeared beneath her clothes. Two of her buttons were missing (the result of being too hurried in their private glen). Their loss caused her to show considerably more cleavage than she had this morning. Her face was set in a broad smile that was only now beginning to show signs of weariness.

Mark suspected that his own appearance was not much different and, despite the warning twinges that told him that he would be sore tomorrow, he would have been happy to have this day go on forever.

“Look, a boat at the wharf!” Lisa said, pointing over the roofless ruins that had once been people’s homes. “More tourists, do you think?”

“Good thing we didn’t run into them about noon, isn’t it?” he asked with a laugh. He held out a hand to block the sun in his eyes and scanned the water of Gibraltar Bay. So far, there was no sign of the hydrofoil. It was half an hour until sundown.

“They had better hurry. I don’t think the captain would like to navigate through those wrecks in darkness.”

They were laughing when they reached the wharf and found Maurice Farner-Smythe waiting for them.

“Did you enjoy your tour of The Rock?” he asked in a hearty booming voice. The way his eyes scanned their dilapidated condition made it obvious that he knew they had.

“Very educational,” Mark said to the accompaniment of Lisa’s swallowed giggle beside him.

“Excellent. We always like our visitors to have a good time. Your ship sent a message to my office. They will be approximately 20 minutes late. Apparently, some of the women in your party did not want to leave the shops of Cadiz. Oh, and there is someone here who is waiting for you.”

“Who?”

“Good afternoon, Mark. It has been months.”

Mark froze at the sound of the familiar voice. He turned to discover Mikhail Vasloff standing behind him. He had approached from the small office at the end of the wharf while the constable occupied Lisa and Mark.

“Hello, Mikhail. What brings you here?”

“I think we’d best discuss that in private. If you will excuse us, Constable.”

“Of course, Mr. Vasloff.”

Vasloff gestured for them to follow him. They trudged up the wharf in the direction of the old dry docks until they were well out of hearing distance from both Farner-Smythe and Vasloff’s boat.

“Who is this, Mark?” Lisa asked, her tone perplexed.

“Lisa, I would like to present Mikhail Vasloff, founder and chief executive officer of *Terra Nostra*. Mikhail, this is--”

“Yes, Lisabette Arden,” he said, taking Lisa’s hand and leaning forward to kiss it. If he noticed the grimy condition, he made no sign.

“How do you know me, Mr. Vasloff?”

“By reputation, dear lady. I must say that you have done some fine work in linguistics. I especially like your *Monograph on the Dispersion of Phonemes in the Farsi Dialects*.”

“What are you doing here, Mikhail?” Mark demanded.

“That is a long story,” the white haired man said. “I missed you at Cadiz, so I hired a boat and came here.”

“How did you know we were on the boat to Cadiz?”

“Safety regulations. The moment you boarded, your personal serial numbers were flashed to the cruise line’s home office in Paris. Our computer search program intercepted the data stream and notified us of your whereabouts. I rushed down.”

“Why?”

Vasloff’s eyes sparkled in triumph as months of effort came to fruition. He paused a moment, cleared his throat, and said, “I want to meet the alien.”

CHAPTER 22

For long seconds, Mark’s universe consisted solely of the piercing cries of sea birds, the quiet slapping noise made by small waves as they encountered the weathered stone of the wharf, and his own heart pounding in his ears. He was able to regain control of his voice long enough to squeak, “What alien?”

His response was met by a broad grin from Vasloff. “Too late, Mark. I can see by your reaction and that of Miss Arden that I am right.”

“I don’t know what you are talking about,” Lisa said, a little too shrilly.

“Then let me enlighten you,” Vasloff replied. “*Magellan* discovered intelligent aliens. They brought one or more back here to PoleStar Station, where you and a large group of scientists have been studying them ever since. Your team includes--” Vasloff reeled off a dozen scientists’ names and watched his two listeners’ complexions turn paler each second.

When he had finished, Lisa looked Vasloff in the eye and said, “If you think we are harboring aliens, why haven’t you gone public with your information?”

The older man’s smile, which had waned, but never truly disappeared, grew broader again. “Good, we are through the denial phase and can begin negotiations. To answer your question, I have not released the news because I do not think having this become public is in anyone’s best interest. I would much rather come to a quiet agreement with you people than have this news dominate the holoscreens for the next several months.”

“I thought your organization was opposed to all things interstellar, Mr. Vasloff?”

Vasloff noted that Lisa’s color had returned to something like normal, an indication of the speed with which she was throwing off the effects of shock. “An oversimplification, Miss Arden.”

“How so?”

“I oppose interstellar colonization for what I consider to be good and valid reasons. I believe that such activity drains us of resources we can better use here at home and promises the public something they can never have, namely a world as good as this one. It does not necessarily follow, however, that I must also oppose contact with intelligent aliens. After all, Earth is unlikely to be any more attractive to them than their world is to us. Moreover, given the basic hostility of the universe to all living things, doesn’t it make sense that we all band together? Think of the possibilities for cultural exchanges, the potential for discovering new ways of looking at things, the different philosophical viewpoint! Doesn’t that excite you?”

“We haven’t said that there*are* aliens.”

Vasloff frowned. So far, the two had been reacting like the surprised innocents they were. His mention of cultural exchanges had caused them to exchange a look that was nothing like what he expected, as though they knew something that he did not. He responded to Lisa cautiously. “Of course not. I fully understand that we are speaking hypothetically.”

“But you would support contact with aliens?”

Vasloff shrugged. “How can I possibly know that until I know the details of that contact?”

“You are looking for veto power?” Mark asked.

“Not at all. I have spent most of my life as an outsider agitating to change the existing order. Believe me, Mark, I know the limitations of the role. What I am looking for in this case is a say in whatever is to be done. I want to be listened to for a change.”

“Your offer, Mikhail?”

“I will suspend my campaign against the Stellar Survey for the time being and keep quiet about what I know. In exchange, you people will give me full access to your data and to the aliens.”

“Even if there*are* aliens, what you ask is beyond our power to grant.”

“Then take me to someone with the power. Otherwise, I will call a press conference tomorrow morning and announce what I know.”

Mark looked at Lisa for a moment, and then turned back. “I think you had better come back to Al-Hoceima with us.”

“Precisely the thing I hoped you would say.”

#

The lights of Toronto shimmered out to the horizon as Nadine Halstrom gazed down at the world from the ninetieth floor of the World Secretariat. Her office was on the south side of the building, facing away from the equally tall World Parliament building to the north. She had chosen the office for that very reason. Instead of having her view blocked by her putative masters, she could look out over the tops of lesser skyscrapers to the distant greenbelt that surrounded the city. It was a vista she had studied for countless hours as she stood at her window and worried through some knotty problem.

She sighed as she returned to her desk and sat in the high-backed chair. As impressive as it was, the view from her office window had begun to take on the aspects of a prison wall. More often than not, she watched the sunset from this chair, and occasionally, the sunrise, as well. How had she ever allowed herself to be trapped into this thankless job? Would the world fall apart if she managed to get home to her husband and children in daylight just once? Perhaps next week she would try the experiment.

Naturally, this week was much too busy to contemplate any such foolishness. There was the breaking Nielson scandal to *spindoctor* (why couldn’t men learn to keep their flies sealed?), the fish harvesting act was in trouble in Parliament, and, of course, there was always that damned alien at PoleStar to worry about! For months, she had devoted an ever-larger percentage of her time to the problem of Sar-Say. As though she did not have enough on her mind already--

The call from Morocco came through precisely on schedule. As soon as she keyed for acceptance, she

spoke the command that transformed her work screen into a secure commlink. Anton Bartok's face appeared on the screen. The director of the Stellar Survey looked as though he had not slept much either. She felt a moment of irrational satisfaction at the thought.

"All right, Anton, who talked?"

Nadine noticed a slight deepening of the frown lines around the corners of his mouth as tired eyes stared back at her from the screen. "I don't know that anyone did, Madame Coordinator."

"Your flash message said that Mikhail Vasloff knows about the alien. Were you in error?"

"No. He keeps asking to see them."

"*Them?* More than one?"

"Yes."

"That, at least, tells us that his spy is on the project's periphery, not in its heart. God grants us a small boon, at least. How the hell did Vasloff get wind of this anyway?"

"He had something to do with that damned fool stunt Rykand used to get aboard PoleStar."

Nadine sat straight up in her chair. When she spoke, her voice had lost all of its cultivated friendliness. "Why haven't we heard this before today, Mr. Director?"

"No excuse."

She sighed and relaxed once more. "At least you are honest, Anton. Where is Vasloff now?"

"Here. I have him in a suite under guard."

"Recommendations?"

"We could deny everything."

"And have him talk to the newsmen? Hardly."

"I agree," Bartok said, nodding. "The conference here is on the verge of recommending an expedition to go in search of this Zzumer that Dr. Bendagar has located. Perhaps we can buy time with Vasloff until that expedition is underway."

"An expedition? That hasn't been in any of your reports."

"It is a recent development, Coordinator."

"It is not a welcome one, Mr. Director. I let you talk me into returning to New Eden against my better judgment. Now you want to barge into the heart of this nest of paranoid aliens Sar-Say has warned us about?"

"It may be the only way to find out whether he is telling the truth."

"Then knowing the truth is a luxury we cannot afford. Let me make my position clear, Mr. Director. I will not risk the safety of the human race to satisfy the curiosity of a few scientists. Barging into the Broan sovereignty strikes me as foolhardy. While I am coordinator, we will take no unnecessary risks *whatsoever* ! Do we understand one another?"

“Message received, Coordinator, loud and clear.”

“Good. Please deliver it to your deep thinkers. Tell them that it is up to them, using whatever gray matter God gave them, to answer the question as best they are able. If this group of scientists is unable to do the job, we will find others who will.”

Bartok sighed. He had seen the coordinator in this mood before. Once she had her back up, there was no reasoning with her. Oh well, Captain Landon would soon arrive with reams of new data for the scientists to quibble over. Perhaps the unambiguous clue for which they searched would be included in the new data. The thought nearly made him miss Nadine Halstrom’s next comment.

“Now then, we were speaking of buying time with Vasloff.”

“He wants to see the ‘aliens.’ I propose that we let him, but only on the same terms we gave Mark Rykand. He will join the project staff and agree to full secrecy before we tell him a damned thing. I’ll see to the penalty clause in his employment contract myself.”

“A monetary penalty won’t stop him if he is determined to get the news out.”

“It will at least give him pause.”

Nadine considered Bartok’s suggestion for a moment, and then nodded. “Very well. Talk to Vasloff and call me back. I will be here for several more hours.”

#

Mikhail Vasloff paced the floor in his suite. It had been hours since they had looked in on him and he was becoming impatient. His sense of euphoria had long since subsided. Now the worry had begun.

That day in his canal house when he had stumbled onto the truth had been one of the most painful of his life. If there was one human failing with which Vasloff was intimately familiar, it was the public’s thirst for new forms of excitement. The source did not much matter. Be it fire, flood, or famine, the newsmen would swarm to any event that promised to hold their viewers’ attentions for even a few hours.

The search for alien intelligence was a story that had held their interest for decades. In fact, it had been a staple of journalism and holomovies since the fabled SETI project of the late Twentieth Century. Now that aliens had actually been discovered, the public would go wild over them. He could see the images clearly: millions of tiny toddlers clutching adorable little alien dolls, holovision comics making jokes about beings with bulging craniums, people clamoring for an expedition to the alien home world. Vasloff could even predict the names of the expedition’s ships - the *Nina* , the *Pinta* , and the *Santa Maria* .

In such a climate, the cautionary voice of *Terra Nostra* would go completely unheard and he, Vasloff, would see a lifetime of fighting to keep humanity at home rendered irrelevant overnight. If he followed his natural inclination and spoke out in opposition, he risked being branded a crackpot. That did not bother him. He had been called “crackpot” before. It was the impotency that would accompany the charge that he hated.

No, the discovery of intelligent beings beyond Earth required him to be both clever and subtle ... and more than a little dishonest. His opponents might have been surprised to learn that last necessity bothered him to the depths of his soul. Still, as a legendary actor had once observed, “A man’s got to do what a man’s got to do!”

There was a quiet knock on his door. He opened it to find a young woman standing there. She wore the survey uniform.

“Mr. Vasloff, Director Bartok would like to see you if that is convenient.”

“Most convenient,” he replied. Years of practice in masking his emotions stood him in good stead. None of the seething feelings was evident in his tone or manner as he slipped from his posh prison and followed the young woman at a staid pace.

Bartok occupied an office-bedroom suite much like the one in which they had imprisoned him, Vasloff observed. The director received him at the door, then ushered him to a couch before taking his own place on the opposite end.

“Coffee or tea?”

“No thank you.”

“Something stronger, perhaps?”

“Nothing.”

“Very well. Merilee, you may excuse yourself.”

The woman guide bowed slightly, then turned, and left the suite, closing the door behind her. Vasloff did not need to hear the lock snick into place to know that it had. The air within the room had that dead quality that signifies an anti-eavesdropping field in full operation.

Bartok stared for a long moment, perhaps hoping that Vasloff would speak first. When the older man failed to comply, the director sighed and leaned back in his chair. “Mr. Vasloff, I have been an admirer of your work for many years. I am pleased to finally meet you.”

“*An admirer*, Mr. Director? I hardly think so.”

“It’s true. One must admire the skill of a worthy adversary even if you cannot agree with his position. I only wish we had you on our side instead of against us. Frankly, I confess to having difficulty understanding your objections to our starships.”

“I think I’ve made that clear enough over the years. I object to you people wasting our species’ scarce resources pursuing that which does not exist, namely other Earthlike worlds.”

“How do we know they don’t exist unless we go look for them?”

“The improbability of our form of life coming into being somewhere else in the universe is well known in scientific circles, Mr. Director.”

“What would you say if I told you that we’ve recently found a truly terrestrial world?”

“Is that where you found the aliens?”

“No comment,” Bartok said. “I understand that you might be willing to cooperate on the matter of our, shall we say, guests? What do you propose, sir?”

Vasloff repeated the offer that he had made to Mark Rykand and Lisa Arden.

“And your status in this affair?”

“My status will be whatever you wish, Director Bartok. You hold the more powerful hand in this game.”

“How do I know that your people on Earth won’t make trouble once we’ve allowed you into our little group?”

“You have my word, sir.”

“That hardly seems enough.”

Vasloff shrugged. “Nevertheless, it is the only guarantee that I have to give.

Bartok chewed his lower lip for a moment, and then said, “Very well. Here are our terms--”

Mikhail listened carefully as the director laid out his conditions. They were harsh, but not unexpectedly so. He, Vasloff, was to be formally employed by the project aboard PoleStar and under their authority. He would be held effectively incommunicado and would be given no opportunity to pass a message to his people on the ground unless approved by the project director. Finally, he would be forced to sign a secrecy agreement with monetary penalties equivalent to three lifetimes’ earnings should he break his oath. In exchange, Vasloff would be given access to all data concerning “the specimens being studied and reasonable access to said specimens to conduct his own investigations.”

“What do you say?” Bartok asked after finishing his litany.

“If I agree, when do I get to meet the aliens?”

“As soon as you sign the contract, you will depart for Sahara Spaceport with Mr. Rykand and Miss Arden. They will accompany you to PoleStar where all of your questions will be answered.

“Very well. I accept your terms. You have the contract, I presume.”

Bartok’s response was to stand, walk to the desk across the room, and pull a voluminous stack of plastic sheets from the drawer. They were, Vasloff noted, very official looking.

CHAPTER 23

Anton Bartok stood at the podium and watched people stream into the main ballroom of the Al-Hoceima resort. As each person entered, he or she would halt, sweep the room with their gaze, and then stride directly for whichever empty seat was closest to the dais. Long years spent arranging public hearings had taught Bartok that people usually fill churches and auditoriums from the rear - the “back pew effect.” The fact that they were not doing so today indicated their interest in this special plenipotentiary session. He, too, was looking forward to Captain Landon’s presentation. It would be his first opportunity to learn the details of the latest expedition to the New Eden system.

Bartok watched as the last few stragglers made their way through the guarded door. Virtually every one of the conference’s sixty-five scientists had asked to attend this session. The guard officer flashed the count to the director using two quick hand signals, then snapped to attention and saluted. A moment later, he was gone through the double doors, which closed behind him.

Bartok glanced down in time to see a row of icons change shape and color on the screen inset into the sloping surface of the podium. The readouts indicated that several security systems had just come online. When all indicators showed good, he reached out and tapped the small tympanic surface built into the podium. From unseen speakers in the ceiling came the amplified sound of a gavel pounding wood.

“All right, let’s get this session going,” he announced as he waited for them to come to order. The conversations halted with gratifying swiftness. When the scientists were silent, Bartok cleared his throat and said, “Ladies and gentlemen, without further delay, I give you Captain Daniel Landon, commanding officer of Survey Ship *Magellan* .”

Dan Landon rose from his seat and moved to stand behind the podium. He noted sixty or so faces wearing various expressions of impatience.

“Screen, please.”

A holoscreen descended from the ceiling to his left. Occasional sparkles of light in the interior showed that the screen was energized, but not yet displaying any picture. A moment later, the overhead lights dimmed and the screen lighted to show the *Ruptured Whale* silhouetted against a black backdrop with a sprinkling of stars surrounding it.

“This is the alien derelict as we left it--” he said. He went on to describe their cautious approach to the ship, the reboarding operation, and their subsequent explorations. As he spoke, he worked through a series of holographs taken inside the damaged craft, including several showing the additional alien corpses they had discovered. Finally, he displayed the cutaway diagram of the derelict compiled from information garnered during a thousand person-hours of explorations. The cutaway showed not only the basic construction of the *Whale* , but also the modifications that had brought it to a state of minimal space worthiness. The damage sustained during the running fight with the Broan warship was marked in red.

“As you can see, the *Whale* is a squat cylinder designed to haul cargo.” He manipulated the control that moved a glowing arrow inside the holocube, marking three large volumes inside the alien ship. “We found these holds filled with what can best be described as ‘general goods.’ We did our best to catalog the ship’s cargo, but we lacked the people or time to do a thorough job. That will be the job of some of you bound for Luna. What will emerge from that cataloging will be the best picture we can obtain of the Broan civilization short of going there.

“Here you see the ship’s living quarters. Though a cargo vessel, the *Whale* had accommodations for a few passengers. Passengers and crew lived together, although each species seemed to have its own section. Whether this was due to clannishness, different life support needs, or a caste system aboard ship, we were unable to determine. Perhaps it was as simple as the fact that the members of the crew objected to each other’s body odor.

“The ship’s engines occupy this large volume near the center of the ship. The generators the Broa use to warp space operate on essentially the same principles that ours do, although the implementation is somewhat different. In fact, much of what we found aboard was recognizable as being similar to our equipment. The one overriding impression I had of the ship is that it wasn’t nearly advanced enough to have come from a spacefaring civilization as old as the *Sovereignty*.” Dan went on to recount Laura Dresser’s theory that the Broa were afraid to introduce new technology lest it destabilize their empire.

One by one, he outlined the expedition’s findings. He told the audience about the safety doors that had opened simultaneously through some disastrous malfunction at the precise moment a maintenance hatch had blown away. He reviewed the condition of the computers as they had found them - operative, but with vast holes in their memory. He showed view after view of the stern where the Avenger’s beams had seared the hull plates. Finally, after nearly two hours in which no one said a word save for a few muttered oaths, he finished by saying; “The damage to the ship was much less extensive than we feared. In fact, patching up the wreck was the easiest task that faced us. It was much more difficult to install the stardrive and fusion generators and ensure that we had an unbroken conductive surface through which to transmit the drive field. In the end, the *Ruptured Whale* proved herself a good ship. We were able to make it

back across one hundred light-years without incident. Now then, if there are any questions, I will be glad to answer them.”

#

In daylight, the verandah of the restaurant of the Al-Hoceima resort provided diners with a panoramic view of the Mediterranean. At night, the open dining area was an island of light at the edge of a stygian sea, the blackness made more intense by the faint sky glow emanating from the opposite shore far below the horizon. Here and there, specks of white light punctuated the darkness where vessels passed en route to and from the Strait of Gibraltar. Dan Landon sat in a wicker chair beneath an umbrella no longer needed as protection against the vanished desert sun and watched the brilliant speck that marked a Mediterranean cruise ship as it slid slowly from view. He wondered if its captain ever became bored with voyaging around what was, after all, merely a glorified lake. The thought was enough to trigger claustrophobia in one who had recently crossed a hundred light-years of vacuum.

“I think it went well today, Captain,” Anton Bartok said from across the table. The director of the Stellar Survey was idly chasing an olive around his martini with a crystal stirrer as he, too, decompressed from what had been a tough couple of days. The flickering candle at the center of the table illuminated Bartok’s face with a red-orange glow. The candlelight improved his sallow complexion while softening the worry lines that were beginning to be etched permanently into his countenance. “Do you agree, Doctor Bendagar?”

“Quite well,” *Magellan*’s chief scientist said. “I was surprised at how good a shape the *Whale* is in.”

“It’s a big ship,” Landon replied. “It looked to me like the Broan Avenger was trying to disable it rather than destroy it outright.”

“Why would they do that?”

“Good question. I am afraid I do not have the answer. Perhaps we should put the question to Sar-Say again. Or maybe the scientists will be able to tell us after they’ve had time to study the derelict and its cargo.”

“I doubt they will have much of an opportunity,” Bartok muttered as he stared at the fuzzy image of the candle flame inside its small sphere of red tinged glass. The smell of hot wax was evident in the night breeze that blew directly into his face.

“What do you mean?” Bendagar demanded.

The director gazed at the scientist, then sighed audibly. “I wonder if either of you recognize the fact that we’ve had it easy up until now? Only a few people know about Sar-Say and those of us who do are largely in agreement as to our course of action. Even the scientists at this conference tend to be of one mind ... an amazing phenomenon when you consider the arguments that usually break out at these things.

“Unfortunately, all of this is about to change. We have kept this secret about as long as it is possible to keep any secret. Soon, possibly tomorrow or the next day, our little conspiracy is going to break wide open. When that happens, the excrement is going to hit the ventilator! The public is going to go positively ape when they start hearing what Sar-Say has been telling us. They are going to feel very frightened and demand that their elected representatives *do something*. Parliament will react as it always does, namely by calling hearings and demanding that the civil servants explain why they have let this mess get out of control. And, of course, they’ll blame everyone involved because they weren’t let in on the secret in advance.”

Bartok drained his drink and looked first at Bendagar and then at Landon before continuing. "It is going to be a political zoo, gentlemen, and we are going to be in it up to our necks. We will be hosting visiting dignitaries aboard PoleStar so often that we won't be able to get any work done ... if they let us continue at all."

"Why would they stop us?"

"Control, Dr. Bendagar. Have you ever known a politician to give up control of *anything* ? They will all want to ensure that we make them look good to the voters and science be damned. If they come to believe they can't control us, then they will get rid of us and bring in those they can control."

"Then we had best keep the lid on until we discover the truth of Sar-Say's allegations ourselves."

"Easier said than done. The circle of people who know at least some part of the secret is growing rapidly. It is only a matter of time before some newser gets wind of what is going on and puts it on the infonet. In fact, we have already had our first incident."

"What happened?"

"Mikhail Vasloff happened." Bartok went on to explain the surprise that had been awaiting Mark Rykand and Lisa Arden at the end of their tour of Gibraltar.

At the end of his explanation, Landon swore under his breath. "If the secret is that close to leaking, I think we had better advance our timetable."

"Timetable to do what?" Bartok asked. The slurring of his speech indicated that he was beginning to feel the effects of the drinks that he had consumed.

"I've studied Raoul's plan to go out and find this Zzumer. I propose we spend a month getting *Magellan* stocked for the expedition, then head out before the news breaks."

"I am afraid that is impossible. Coordinator Halstrom has forbidden any more expeditions."

"Why, for God's sake?"

"The coordinator refuses to take even the tiniest risk that we will be discovered. Frankly, I agree with her."

"A good policy, Mr. Director," Bendagar said, "but hardly viable for the long term. Is the human race going to cower here in our own system for the next thousand years while we wonder whether there is truly an evil empire lurking out there among the stars? You know we do not think like that. Curiosity is built into our genes. Someone will be going out to look, and probably not too long after the news breaks. So why shouldn't it be us?"

"Raoul's right," Landon agreed. "How many would-be Columbus types will discount Sar-Say's horror stories and go off in search of the riches to be had from a spacefaring civilization?"

"Parliament will forbid it."

"When did that ever stop anyone when money was involved?"

Bartok looked skeptical.

"Look, boss, if even one-tenth of what Sar-Say says is true, we are going to have a serious decision to make. We dig a hole, crawl in, pull it in behind us, and hope they do not stumble across us - the Mikhail

Vasloff approach - or else, we figure out some way to deal with the Broa. In either case, we do not dare remain ignorant. *We have* to go out and see what is out there. I say that we do it as quickly as we can, before events get away from us.”

Bartok frowned. “Let’s say we let you go, Dan. What will you do when you get there?”

“We will look the place over from a light-year out, then work our way closer in several stages. If it looks practical to do so, we will make contact and see if they’ve ever heard of this Broan Sovereignty of Sar-Say’s.”

“Don’t you think they will report you to the Broa the moment you arrive? After all, you will be a shipload of aliens no one has ever seen before.”

Landon shook his head. “According to Sar-Say, the Broan yoke is lightly held so long as no one revolts. There are not enough Broa to keep their eyes on everything. They are lightly spread, usually keep to a central administrative world in any given sector, and generally leave their subjects alone so long as they pay their taxes on time. Hell, the stargates are not even manned! They are fully automated. You fly your ship up to one and jump to the next star in the chain.

“As for being reported, I doubt we would be. The Zzumer are amphibian octopoids to whom all land dwelling bipeds look alike. We will look just like a thousand other species they have seen. Beside, there are so many races in the sovereignty that no one can possibly know them all. If we claim to be from some far-off part of the Broan domain, especially if we speak the Broan patois that Lisa Arden is learning, then they will likely accept us at face value.”

“Does that seem reasonable to you, Doctor?”

“Why not? The Sovereignty is too big for the Broa to control everything that goes on there.”

Bartok looked stubborn. It was obvious that he was looking for a reason not to confront the World Coordinator. “Sorry, it won’t wash. You said yourself this morning that you think the Broa keep tight control over starship design and technology. The Zzumer may not recognize you as being from outside the Sovereignty, but you can be damned sure that they will recognize your ship as having come from a non-Broan shipyard.”

“We don’t know that,” Bendagar said. “Again, there must be considerable variation in ship design across the Sovereignty, so much so that it is likely no one knows all the forms their spacecraft may take. Even if they have standardized designs, there is a way we could lesson the risk of them recognizing a human ship for what it is.”

“How so?”

Raoul Bendagar drained his drink, and then began to speak rapidly. Both Bartok and Landon were curious as to what he had in mind. Their curiosity turned to amazement as the scientist outlined his idea for disguising the origin of a human expedition to Zzumer. By the time he finished, both of their brains had switched into overdrive.

CHAPTER 24

Mark Rykand hovered in front of the viewport aboard *Mercanter’s Wind* and watched as the PoleStar habitat slowly expanded to fill his field of view. The mirror was out of sight somewhere behind them as the orbit-to-orbit ferry made its final approach.

“Credit for your thoughts,” Lisa said as she floated into the compartment, swarmed along the handholds, and came to rest with her arms around his waist and her softness fitted tightly against his back.

He smiled. “I was just thinking how much more civilized this is than the last time I saw this view.”

She continued hugging him for long seconds. “That was a damnfool stunt, Mark Rykand!” she said with mock severity. “You could have killed yourself.”

“I didn’t. And if I hadn’t taken the chance, I would never have met you.”

“I suppose not,” she sighed. They drifted that way for long seconds until the hooting of the acceleration alarm drove them apart and toward separate handholds.

As in all of the ferry’s maneuvers, they need not have bothered. There was a sudden tug of perhaps one-twentieth gravity for a few seconds, followed almost immediately by a series of clanging sounds as the *Wind* mated her dorsal airlock to one of those on the habitat. The two lovers leisurely collected their bags from where they had stowed them, then swam in the direction of the debarkation lock. Mikhail Vasloff had arrived there a few seconds before them.

“How are you feeling, Mr. Vasloff?” Lisa asked, grinning. The great man had been spacesick almost from the moment they had made orbit out of Sahara Spaceport some thirty hours earlier.

“I’ll live,” came the weak reply.

Mark waited until the white-haired Russian’s back was turned before winking at Lisa. He wondered if Vasloff’s inherent bias against space travel was simply the result of his weak stomach.

There were several more sounds typical of the routine of spacecraft docking. Mostly they were the quiet hissing noises caused by flowing air. Eventually, the inner lock opened and they found themselves looking down a narrow well that held Hancock Mueller’s smiling, bald countenance at the bottom.

“After you, Mr. Vasloff,” Lisa said.

Vasloff pulled himself forward while the two of them held his feet to steady him. Once he had disappeared into the tunnel, Lisa lunged forward to follow him. She moved with considerably more dexterity than she had a dozen weeks earlier. Mark brought up the rear. When he popped out into the airlock vestibule, he found Dieter Pavel waiting beside the station commander.

“Gospodin Mikhail Sergeivich Vasloff, may I introduce Hancock Mueller, Station Commander, and Dieter Pavel, Project Officer,” Mark said formally. Both men nodded to Vasloff, who nodded back weakly as he clung to one of the hand lines.

“Mr. Vasloff, it is an honor, sir,” Pavel said without a trace of irony in his tone. “I trust you had a pleasant flight.”

“Not as pleasant as I had hoped,” Vasloff said.

“Don’t worry, sir,” Mueller boomed with his usual hearty laugh. “No one has yet died from weightlessness, although innumerable people have wished they would. You should gain your space legs in another day or so.”

“I hope you are right, Station Commander.”

“You look as though you need rest, sir,” Pavel went on smoothly. “Commander Mueller will show you to

your quarters. After you have had a light meal and perhaps some sleep, we can begin your briefings. Director Bartok has forwarded instructions that you are to be given full access to our data and to our guest.”

“Thank you, Mr. Pavel. I would appreciate that,” Vasloff said weakly. “And yes, I suppose I could use some rest before you brief me as to what you people have been up to--” If he’d meant that last statement as a complaint, the way his voice had trailed off at the end had ruined the effect.

When Mueller had taken Vasloff in tow and disappeared through the hatch, Pavel turned to Mark and Lisa. If he noted the proprietary way Mark’s arm encircled Lisa’s waist, or the way she fitted herself to him as the two of them hung in the middle of the compartment, Pavel showed no sign.

“Come along, people. We have some things to talk about.”

#

Sar-Say was engaged in his favorite pastime. He hung in midair in front of the viewport in his cabin and gazed at the half-light/half-dark globe of the Earth. The planet filled the port, indicating that the PoleStar Habitat was nearing the lowest point of its highly elongated orbit. The habitat was sweeping across the glacier-covered southern continent, approaching the line of the terminator. The name of the continent, Sar-Say had learned, was Antarctica. Why they called it that, he had no idea.

That part of the ice-locked land still in sunlight was bright enough to hurt his eyes. Ahead, the glare quickly gave way to an expanse of darkness bereft of city lights. The glaciers of the Antarctic night were lit only by the flickering, electric glow of a yellow-green aurora that danced above the dark line of the planetary limb. It was one of Sar-Say’s favorite sights.

Auroras were nothing new to Sar-Say, who had once made the long journey to Sselt, the eighth planet of a blue-white giant of a star. Such stars were too short lived for life to evolve naturally on any of their attendant worlds. Sselt had been lifeless when Broan explorers first opened a stargate into the system to search for heavy metals on the raw worlds that had so recently coalesced out of the primordial dust cloud. Sselt had proven to be rich in transuranics, so much so that the Broa had decided to seed the sterile world with their own kind of life. The project had been an expensive one, but ultimately successful. Ten thousand cycles after the first seed ships dumped their loads of bacteria into the upper atmosphere, the planet hosted a thriving ecology and a native population of hard working quadrupeds.

Being eighth from the star, Sselt orbited out where gas giants are to be found in normal systems. Even at that distance, however, the pinpoint star was sufficiently energetic that liquid water covered much of the planetary surface. A side effect of the prodigious energy output of the star was a permanent auroral display that danced continuously over the darkened half of the planet. The night sky of Sselt was renowned as one of the most beautiful sights in all the Sovereignty.

Sar-Say had never regretted the long, arduous journey that had taken him to that far distant world. It had been a journey reminiscent of the one that had brought him to his current predicament. Despite their strange attitudes and untamed ideas, human beings reminded Sar-Say of his own people. That was hardly surprising since the world that had produced them was the near twin of Home, as was the star that illuminated it. That Earth was beautiful to his eyes was a fact that would prove of inestimable value to him and his sept should he ever make it home.

The subject of going home was the one that had set him on this particular mental orbit. Lisa had gone down to Earth ten days earlier. She had not told him the reason for her absence, but the fact that several of the scientific staff had disappeared at the same time suggested that something important was happening. Yet, the news channels continued with their usual mixture of crime, scandal, and political

jockeying for position. Nor had the news made mention of humanity's first encounter with intelligent aliens. Not once since Sar-Say had learned enough Standard to understand the broadcasts had they hinted at what had happened in that far off system where he had been captured. In fact, he had often listened to supposedly learned humans pontificate on the fact that *Homo sapiens* was likely the only intelligent species in the universe. The self-centeredness of such claims was astonishing to Sar-Say, who had personally interacted with more intelligent species than there were individual humans aboard PoleStar.

His long captivity had given Sar-Say a great deal of time to think about humans. He was coming to understand them about as well as one species could understand another. The most powerful of human instincts was their curiosity. Like the lesser primates of Earth, which Sar-Say knew he resembled, that curiosity stemmed from the fact that human beings were omnivorous fruit eaters. Just as the ability to spot a ripe banana across a forest clearing had led to humanity's ability to see in color, the search for sustenance had sharpened their monkey curiosity.

Sar-Say's people were also descended from dwellers of trees, or at least, large plants. Like the humans, his ancestors had traveled in the tops of the tangled vine forests of Home. Like the humans, they had been chased out of the vines by bigger, more rapacious predators. Forced to live largely in the lower forests, his people had developed the intelligence that eventually allowed them to dominate Home in precisely the same way that the humans had come to dominate Earth.

None of Sar-Say's thoughts was apparent to those who monitored him at the security workstations. To them, he appeared to be hanging from a pipe in the cluttered overhead of his cabin. In actuality, he was merely holding his body steady in the weightless environment, but the position made him look like an orangutan dangling from a tree limb. Sar-Say was aware that the humans found his resemblance to the lower primates humorous, even comical. He did not mind. Better to be the butt of jokes than the object of fear. Sar-Say was learning how much he had in common with his captors.

It would have been better for them had it been otherwise.

#

Dieter Pavel led the way through the corridors of the PoleStar Habitat to his office. En route, they encountered several people Mark Rykand did not recognize. They had been gone only ten days, and in that short time, the populace of the station seemed to have increased by a significant percentage.

"Who are these people?"

"Scientists from all over Earth," Pavel replied over his shoulder as he pulled himself along the "barber pole" used to navigate the weightless corridor. "We had twenty-two scientists and technologists dumped on us two days after you left. Hancock Mueller has started doubling up on the room assignments. Before too much longer, you both may be getting roommates."

Lisa laughed. The sound sent an electric thrill down Mark's spine. "And I remember how empty the habitat seemed when we first came aboard!"

They reached Pavel's office. He ushered them inside, then sealed the door before floating to his desk and securing himself behind it. He gestured for the two of them to slip into the foot restraints in front of the desk. When they were properly anchored, he leaned back and regarded both of them.

"Welcome home, you two. Did you have fun on Earth?" He noted the exchange of glances that took place between the two lovers, and felt a moment of irritation that Lisa seemed to have taken herself out of circulation.

“Mark and I toured the Rock!” Lisa gushed.

“What rock?”

“The Rock of Gibraltar, of course.”

“Why?”

She told him about her famous ancestor and his part in the Fourteenth Siege. She cut the explanation short when he seemed to lose interest midway through her story. She finished lamely with, “What’s been going on here?”

“You don’t know?”

“Know what?”

“When *did* the two of you leave the conference, anyway?”

“Three days ago,” Mark answered. “We were held up at Equatorial Station when *Mercanter’s Wind* picked up a maintenance squawk. They had to fly a part up from Earth.”

“Then you missed the last couple days in Al-Hoceima.”

Both of them nodded, puzzled at the direction the conversation was going. “What about Al-Hoceima?”

“Nothing much. For the last two days, they have been arguing over the coming expedition.”

“Expedition?” Lisa asked. “What expedition?”

“Director Bartok convinced Coordinator Halstrom that it is imperative for us to go find the Zzumer sun.”

Both listeners let their jaws drop. Mark was the first to recover. “That man must have the persuasive powers of an Arkansas bible thumper.”

“Don’t be so modest, Mark. You and Lisa are at least partially responsible for the decision.”

“Us?”

“You are the ones who brought Mikhail Vasloff back to the conference with you.”

“He found us, not vice versa!”

“No criticism intended. Apparently, the Director told Coordinator Halstrom that if Vasloff could figure out what was going on, others will, too. The coordinator doesn’t want to go public until after we know whether to believe Sar-Say’s stories.”

“The public is bound to find out sooner or later,” Mark said.

“Perhaps, but if we move quickly, we may be able to get the expedition away before someone goes public with our secret. Once the ships are safely away, it won’t really matter, now will it?”

“How long will we have to get ready?”

“The expedition heads out into the deep black in 90 days, or they don’t go at all.”

Mark gave a low whistle. “I don’t know much about starship operations, but that seems a trifle

aggressive.”

Pavel smiled. “More than a trifle when you consider that we are sending a dozen starships seven thousand light-years out into space.”

“As long as that?” Lisa asked.

“Be thankful for God’s blessings. If Sar-Say is telling us the truth about the Sovereignty, seven thousand light-years isn’t nearly enough separation between us and them.”

Mark frowned. “I didn’t realize there were twelve starships in the Solar System at the moment.”

“There aren’t. The survey has nine ships in-system. Three others are out among the stars. The coordinator has given the director only one month to get them to Neptune.”

“A good trick if he can do it,” Mark mused. “And why Neptune?”

“That is the rendezvous point.” He turned to Lisa. “How are your Broan language lessons coming?”

“Sar-Say says that I am becoming fluent. Why?”

“Because you and Sar-Say are going to have to set up a crash course in the Broan trade speech for the expedition members to study en route. You will be going on the expedition, of course. We will need someone to handle Sar-Say.”

“You said you wanted to speak to both of us. What do you want me to do?”

Pavel smiled and leaned back in his metal frame as he steepled his fingers together in front of him. “Ah, yes. I think you will find your assignment uniquely suits your talents. Besides, you are sort of responsible --“

CHAPTER 25

Mikhail Vasloff was back in space. It had been almost three months since he had taken up residence in the PoleStar habitat and his bout with space sickness was a bad memory. That fact was small comfort. His microgravity nausea had been replaced by another illness, a sickness of his soul. After a life spent obstructing humanity’s steady march to the stars, he finally had proof that his life’s work was not in vain. Sar-Say’s description of the Broan Sovereignty was every nightmare Vasloff had ever had, and more. Months after hearing the pseudo-simian describe the subjugation of a million sentient species in his unemotional, matter-of-fact voice; Mikhail Vasloff still woke up in the middle of a night, surrounded by small beads of floating perspiration.

They had been frustrating months for Earth’s leading *Luddite*. Having penetrated to the heart of the Stellar Survey’s most secret project, he found himself constrained to keep their secret. The contract he had signed was not what kept him silent. Even had he been worried about the financial penalties, the magnitude of Sar-Say’s revelation would have released him from any moral obligation he might have felt. The knowledge he carried was far too important to allow such petty considerations as his personal oath or legal contracts to interfere with his trumpeting the news.

No, his frustration resulted from the constraints under which he lived aboard PoleStar. The survey had kept their part of the bargain. They had given him access to all their data, and had even assigned him an

assistant to aid in his search -- Mark Rykand. He had been suspicious of the young dilettante's motives, at first, but Rykand had proven very helpful in teaching him about the alien and his civilization. Over the past three months, Mark had devoted three hundred hours to answering Vasloff's questions and helping him look up scientific reports. This had been in addition to his job assisting the project astronomers.

His current situation was very different from the one in which Vasloff usually found himself. Usually he was an outsider, looking in. Now he was an insider, but one with no access to the public. His contacts with Earth were limited to a single 50-word message each week. It was not even a private message. Dieter Pavel required that he deliver it to the communications office, where a computer paraphrased it before sending the message on.

The security measure had not been 100% successful, of course. While there were a number of code systems for imbedding information in seemingly innocuous messages, the paraphrase algorithm made any word-specific code inoperative. If "cat" meant something specific in a coded message, then "house pet" would probably not carry the same meaning. Moreover, if there was anything worse than a coded message turned to gibberish by paraphrasing, it was that same message, but with the meaning transformed, possibly to the exact opposite of what was intended.

So long as communication exists, however, it is impossible to completely block the transmission of secret messages. Vasloff's code relied not on specific code words, but rather, on code concepts. His first message had simply told Claris Beaufort that he had arrived at PoleStar and was in no danger. Whatever the rearrangement and substitution of words in the message that finally went down to Earth, it had passed along the core idea that he was not in danger. That concept was part of the impromptu code he and his assistant had devised. It meant, "Hypothesis confirmed."

Claris's messages to him were laundered through the same system. She did not have the same word limit, however, and so her messages generally carried more content than his did. The system was far from foolproof, but it worked -- after a fashion. The way he communicated reminded Vasloff of the troubles faced by submarine commanders in the East-West confrontation known as "The Cold War." In those days, scientists had discovered that very low frequency radio waves could penetrate into the depths of the ocean. They had built a radio transmitter with an antenna several hundred kilometers long to transmit at those frequencies. While effective, the low frequency radio had possessed an extremely limited bandwidth. It had taken an hour or more to transmit a three-letter code group.

Vasloff would have been thrilled had his own secret communication channel been as fast. One idea per week was about the maximum for which he could strive. Still, he had managed to get some significant information out over the weeks, one fifty-word message at a time. He had told his assistant, "hypothesis confirmed," "single alien," and "make all preparations for a press conference." Her replies had included "message understood," and "public relations apparatus has been alerted." All that was needed now was for Vasloff to find a way to pass on what he had learned.

That was turning out to be more difficult than he had expected. Initially, he had thought to stow away aboard *Mercanter's Wind*. With luck, he might stay hidden long enough to reach *Equatorial Station*. Without luck, he would try to transmit a message from the orbital ferry. Unfortunately, events had conspired to thwart his plan.

Although most people thought of Vasloff as an agitator, his real job was public relations specialist. In a world with a nearly infinite number of communications channels, getting even a tiny percentage of the people to notice one's message was nearly impossible. In order to move entire populations; it was necessary to have the full attention of hundreds, if not thousands, of communications channels for a long period. He had built *Terra Nostra* largely by knowing how and when to manipulate the mass media.

Unfortunately, for the past three weeks, the news channels had been awash with a story unrelated to aliens. Just as Vasloff had been planning his clandestine departure, news had broken of a major Helium-3 strike on Triton, the largest of Neptune's eight moons. Helium-3 was the most precious substance in history - literally millions of times more valuable than gold - and the news had set off a rush unrivaled since the California gold strike of half a millennium earlier.

For the past month or so, ships had been hurriedly filled with refining equipment and then headed out into the deep black, racing to be the first to set up a refining station to separate the precious helium isotope from the frigid ammonia seas of Triton. The exodus had caused interplanetary shipping rates to double. There had even been unconfirmed reports that the Stellar Survey leased one of their precious starships to transport processing equipment to Triton. Director Bartok had denied the report, of course, but Vasloff automatically discounted just about everything Bartok said.

Normally, even the hint that humanity had contacted intelligent aliens would have been front-page news. With Helium-3 fever running wild, Vasloff worried that his warning would be buried down in the third-level news menus. Worse, it might be restricted to the highbrow information nets where science papers were published. The common citizen might not even hear of it, or if he did, might cancel the transmission in favor of the latest sparsball scores.

The need to let the Neptune story cool had caused Vasloff to delay his prison break. The previous evening a new shuttle had docked at the PoleStar habitat and Dieter Pavel had summoned him to a meeting.

"There you are, Mikhail Sergeivich!"

Dieter Pavel's use of his patronymic irritated Vasloff, although he refused to let the emotion show. To do so would be to acknowledge weakness. "You wished to see me, sir?"

"How would you like to go on a little trip?"

"Trip? Where?"

"To Luna. The team surveying Sar-Say's ship has need of his advice. My orders are to cooperate fully, and we have an extra berth if you would like to go."

"How long will Sar-Say be gone?"

"Not long. Why? Planning a trip of your own?" Pavel's smile was friendly enough, but Vasloff wondered if he were being sent a subtle message.

"Come to think of it, I don't have anything urgent on my calendar," he replied with just the right hint of humor. *Two can play this game, you bastard!*

"Good. Gather up your kit and meet Mark Rykand at the No. 3 Airlock in twenty minutes."

"Twenty minutes? You could have alerted me earlier."

Dieter Pavel smiled everywhere but his eyes. "Yes, I could have, couldn't I?"

#

Most people think of the Moon as bright, when in fact, it is surprisingly dim. Its albedo, the percentage of light that the Moon reflects back into space, is only 10%. That compares to Earth's albedo of 38%. The difference was readily apparent to Mark Rykand as he watched Earth rise above the Moon's limb. Like

the other passengers aboard *Parthenon*, Mark was strapped into a spider-web harness that left him in a standing position. Unlike takeoffs and landings from Earth, the one-sixth lunar gravity made it unnecessary to take the stresses lying flat.

Lisa Arden was hanging like a fly in an adjacent spider web as she strained to catch her first glimpse of their destination. The journey from PoleStar had been uneventful, as were most space journeys? that is, those that one survives. Still, Mark could not help the rising sense of anticipation at what was about to happen. That he could not outwardly display his feelings made the situation even more exciting. Of the four passengers aboard the lunar landing craft, only he and Lisa were privy to what was really going on. The other two, Sar-Say and Mikhail Vasloff, thought they were on their way to inspect the *Ruptured Whale*. In one sense, that was precisely what they were going to do.

Mark had initially resented being assigned as Vasloff's babysitter. Being the dissident's liaison had proved less odious than he had feared. Save for his paranoia on the subject of colonizing the stars, Vasloff was a good man to be around. He was an interesting speaker and raconteur, with a wealth of ready stories concerning his life as a young boy on the Kama River. He was also a quick study. He had shaken off his reaction to news of the Broan Sovereignty in less than a day, approximately three times faster than average. Moreover, having recovered from the shock, he had studied the alien with an intensity that reflected his antipathy. He had studied long hours, absorbed scientific reports that even senior members of the technical team found difficult, and kept his political opinions largely to himself. In fact, his behavior had been so good that the Project Security Officer wondered what Vasloff was up to.

It had been Director Bartok's fear of a premature public announcement that had caused him to make his devil's deal with Vasloff in the first place. So far, the head of *Terra Nostra* had kept his bargain. Whether he had done so honorably and willingly, or because he could find no way to transmit a message, Mark was not sure. Whatever the reason, the secret had kept far longer than Mark thought possible. However, no secret lasts forever and this one would not either. Luckily, it did not have to.

The public announcement was already scheduled. Two weeks hence, at an hour guaranteed to glean a huge audience, the World Coordinator would go on holovision and reveal Sar-Say's existence to the waiting Solar System. The more sensational aspects of Sar-Say's story would be de-emphasized, but none of what they had learned would be held back. Even couched in the most benign terms, the announcement was expected to spark a reaction ranging from riots to religious revivals.

However, the reaction to the coordinator's message was not a concern to those aboard *Parthenon*. They would not be around to see it. If all went well, by the time Coordinator Halstrom spoke to the assembled masses, they and several thousand others would be embarked on the longest journey ever attempted.

Thirteen starships, humanity's entire fleet, would make the 7000 light-year journey to the Crab Nebula. By the time the rioters and the revivalists flooded into the streets of every major city on Earth, the fleet would be moving superlight through the deep black. Once they slipped Einstein's leash, no power in the universe could recall them.

CHAPTER 26

The space dock at Lomonosow Crater resembled nothing quite so much as one of those sports colossi of the 20th and 21st centuries, the domed football stadium. The old Space Navy base had been built to overhaul large exo-atmospheric craft that lacked both landing gear and the structural integrity to survive

terrestrial gravity. Had the captain of any such craft attempted to touch down on the Mother of Men, his hull would have cracked like the shell of an egg. However, most ships of deep space were sufficiently strong to survive Luna's gentle one-sixth gravity.

The space dock's original purpose was to maintain the big Space Navy blastships, weapons-festooned globes more than 150-meters in diameter. Eighty years of peace had taken its toll on the Space Navy. Most of its blastships and cruisers were in high Earth orbit, mothballed against the day when they might again be needed. Lomonosow Base now eked out a meager living overhauling planetary transports and the Stellar Survey's starships.

The dock had an unobstructed internal volume of four million cubic meters. Its designers had started with an impact crater, excavated a hollow bowl, and then roofed the bowl over with a multi-segmented dome. The dome was normally closed, allowing the working volume to be pressurized with a thin atmosphere of pure oxygen. While the pressurization and pumping systems had added mightily to the expense of the dock's construction, the shirtsleeve environment it provided had paid for itself through increased efficiency. Whenever a new ship was due or a job complete, the atmosphere in the enclosed dock was pumped into storage tanks and the dome opened. Its eight segments lay flat against the Lunar plain, allowing ships to enter or depart. When open, the dome had the appearance of a sunflower growing out of the grey-black soil of Luna.

Mark Rykand, Lisa Arden, Mikhail Vasloff, and Sar-Say entered the dock through a tunnel that pierced the crater wall high up one side. Entering the giant manmade cavern, they streamed to the edge of an observation platform and gazed down at the activity below. The cold air of the dock had a metallic taste to it and exhalation fog surrounded their heads as they breathed. The distant throbbing sound of pumps was more felt than heard. Unlike the humans, Sar-Say's exhalation fog came in short pants. Whether the alien's rapid breathing was caused by excitement or the thin atmosphere was not readily apparent.

The *Ruptured Whale* lay at the bottom of the pit that had been hollowed out of the lunar landscape, perched on a work stand cobbled together from one of the mighty docking frames that had once held Space Navy dreadnoughts. Overhead, multiple banks of million-candle-power polyarc lamps illuminated the dock interior, turning its entire volume into a brilliant island of white light. This latter feature completed the dock's resemblance to one of the legendary football stadiums of three centuries earlier.

In the bowl of the dock, surrounding the *Whale*, work stands and scaffolding lay scattered as though playthings dropped by a giant child. Although there was little activity now, the ordered chaos gave the impression of the frantic effort that had taken place here in the past several weeks. At various places around the bowl, ant-size individuals or small groups continued to work at indecipherable tasks. Mostly, however, the alien starship was an island of order in a sea of maximum entropy.

The *Ruptured Whale* before them was not the same ship as the one that had limped into dock ten weeks earlier. That ship had been tattered and torn, its hull deeply scarred by the touch of energy beams, and its compartments open to space in a dozen different places. The ship below them was unbroken as far as it was possible to see from their vantage. Gone were the deep gouges and the broken hull plates of a damaged craft. In their place was a smooth, almost mirrored hull, with its inlay of alien technology. It was as though the Battle of New Eden had never taken place.

"What is this, Lisa?" Sar-Say asked as he halted at the guardrail of the observation platform.

"It's your ship."

"Why have you repaired it?" the alien asked. "I would have thought that your seekers for knowledge would have disassembled it further to learn its secrets."

“They would have, except we have a more important need.”

“What need?” Vasloff asked as his stomach reacted with a sick twinge to the view below.

“Let’s get down to the ship,” Mark Rykand said hurriedly. “In case none of you have noticed, they are pumping the air out of this thing even as we speak!”

Vasloff opened his mouth to reply, and then noted the popping in his ears. Whatever was going on would wait until they got inside an airlock. A space dock being pumped empty of life-giving oxygen was no place to hold an argument.

The four of them made their way quickly to the spindly elevated walkway leading from their perch down to the starship’s airlock. The few workers they passed en route did not exactly stare at the alien, but they did not look away either. If Sar-Say noticed the interest, he paid it no attention. He moved quickly in the knuckle-walking gait that enhanced his resemblance to a monkey.

Mark and Vasloff followed the alien, with Lisa bringing up the rear. Despite the low gravity, Lisa found the half-walking/half-skating movement required for locomotion on Luna unnerving. Looking down, one eye tended to focus on the narrow catwalk, while the other focused on the dock floor some thirty meters below. The split view had triggered a throbbing behind her eyes by the time she passed through the *Ruptured Whale*’s airlock.

Once inside, they found the ship’s interior as transformed as its hull. The air stank of newly applied paint and other, less identifiable odors. White lights had replaced the yellow-orange lighting of the former owners, and the surrounding bulkheads lined with spacesuit storage lockers. A large woman wearing a pair of old-fashioned spectacles met them there. She was in the process of checking her wrist chronometer as they cleared the airlock hatch.

“Welcome aboard. My name is Laura Dresser, and I will be your chief engineer for this cruise. Stand clear of the hatch.” She did not wait for them to comply as she touched the control that would reseal the airlock. There was another general popping of ears as the ship’s internal pressure returned to normal.

“What cruise?” Vasloff asked before the echoes had died away.

Laura frowned. “Surely you have been briefed.”

“Not all of us have been,” Mark Rykand answered smoothly. “We’ll take care of that once we are underway.”

“Underway for where?” Mikhail Vasloff demanded in a sudden burst of exasperation.

“Neptune, of course!” Laura Dresser replied. “That is where we rendezvous with the fleet. Now, let us get you to your compartments. The depressurization cycle should be complete in another fifteen minutes. We launch as soon as they open the dome.”

#

“What’s going on here, Mark?” Vasloff demanded after the two of them were guided to one of the ship’s passenger compartments. Laura Dresser had insisted that they climb into their bunks and strap down before she guided Lisa and Sar-Say to the compartment across the passageway. Out of deference for the Russian’s age, Mark had given Vasloff the lower bunk. Once they were in space and weightless, the distinction between upper and lower would be academic.

“As Laura Dresser said, we are headed for Neptune.”

“Why Neptune?” Vasloff puzzled as he frowned upward at the bottom of Mark’s bunk. “Surely this can’t have anything to do with the Helium-3 strike --” He fell silent, and then let his mouth snap closed as he realized the truth. Long seconds later, he let out an audible sigh. “Of course, the strike is cover for something else, isn’t it?”

Vasloff was not in a position to see Mark’s nod. “Director Bartok arranged for the Helium-3 story as cover for our preparations.”

“Preparations for what?”

“We are sending a fleet to the Crab Nebula about seven thousand light-years from here.”

“*Seventhousand* light-years! Kind of far to go for an astronomy experiment, isn’t it?”

Mark chuckled at Vasloff’s unintended joke. “Depends on what kind of experiment. We are going to try and find the Zzumer sun.”

“The what?”

Mark quickly explained the program for locating one of the stars of the Broan Sovereignty. “Most of Sar-Say’s paintings were alien skylscapes, but one showed a night sky with a close-in planetary nebula that Sar-Say called ‘Sky Flower.’ We think Sky Flower might be the Crab Nebula.”

“The Stellar Survey is launching an expedition into the heart of the Broan Sovereignty? You can’t be serious!”

“Very serious, Mr. Vasloff.”

There followed a sputtering noise that segued into a stream of invective in Russian. After awhile, the invective stopped and there was nothing but silence from the lower bunk.

Mark considered explaining what the expedition planned, but decided not to. There would be plenty of time for that later. Instead, he turned his attention to the bulkhead-mounted viewscreen that displayed the view from a topside camera. Above them, the banks of lamps began going out one by one. Then, when the dock was in twilight, eight bright lines appeared to be radiating from the zenith. They grew wider, and suddenly, the *Ruptured Whale* was bathed in naked sunlight.

An unidentified voice issued from the annunciator. “Dome retracted. Ready for takeoff.”

“Very well,” the voice of the *Whale*’s captain answered. “Generators to power. Stand by for liftoff.”

Long seconds passed in which nothing seemed to happen. Then, the periphery of the landing dock disappeared at the edges of the screen. There was no sensation of motion as the *Ruptured Whale* rose slowly into the black sky.

Mark was jolted by Vasloff’s strained tones from beneath him. “Listen to me, Mark. The Broa killed your sister. They are evil beings and it is criminal for the Coordinator to take this risk. We have common cause here. You have to help me convince them to call off this expedition.”

“Don’t you want to know the truth?”

“But think of the risk, man!”

“The risk is minimal. They have it all planned. We will scout from afar, never getting within a light-year of any target system until we are ready. We rebuilt this ship in order to slip in and out without arousing

suspicion.”

“Damn it, Mark, this is not the sort of decision that can be made by a few bureaucrats and scientists. This involves the whole of the human race. At the least, we should take the time to put it to a vote.”

“Sorry, Mikhail, but the fleet will be long gone when they make the announcement. They can vote when we get back.”

It had been a full minute since the ship had first risen from its landing cradle. Now the viewscreen changed to show the view below. They could see the open Lomonosow Space Dock a kilometer beneath them, its interior partially bathed in sunlight. The rest was inky shadow. As Mark watched, a gentle hand pushed him into the bunk and the crater-strewn lunar landscape receded more swiftly. Soon the Moon was round again, and shrinking by the minute. Ahead lay the dim point of light that was Neptune.

#

Mark Rykand had been wrong. It did matter who was in the upper bunk. More than a week after leaving Luna, that gentle hand on his chest was still there. In its infancy, space travel had been a matter of extremes. One spent a few minutes blasting off on a thundering pillar of fire, and then weeks or months in freefall as the ship coasted towards its destination.

The advent of the reactionless drive had brought about a revolution in space travel for ships large enough to mount one. No longer did a ship need to throw expensive reaction mass overboard in order to maneuver. The space drive generator warped space asymmetrically around itself and slid down the artificial hill thus created. In the days of rockets, when fuel was at a premium, it would have taken a ship thirty-one years to reach Neptune in a minimum energy orbit. The *Ruptured Whale* would make the same voyage in two hundred hours, reaching a velocity of 1100 km/sec at turnover.

For most of that time, sharing a compartment with Mikhail Vasloff was like having a cabin all to himself. Despite Mark’s attempts to engage the Russian in conversation, Vasloff remained withdrawn and uncommunicative. Whether he was sulking or planning something nefarious was difficult to tell.

Mark spent most of the voyage with Lisa in the ship’s communications center. She had been working feverishly to complete the software program that would train the fleet in the Broan lingua franca. She, too, was having roommate problems, but of a different sort. Far from being morose at the prospect of the voyage, Sar-Say’s joy seemed boundless.

“One would have thought that a race of traders would have learned to hide their emotions better,” Lisa remarked one morning at breakfast.

“You can’t blame him. He is just excited about going home.”

“I wish he would calm down enough to sleep at night.”

The language course they prepared was a typical multimedia education program. It had been culled from hundreds of hours of surveillance recordings of Sar-Say, as well as lessons Lisa had recorded back at PoleStar. Users listened first to Sar-Say, and then Lisa, as they enunciated a word in Broan. The students were then asked to repeat the word and a voice analysis was displayed to compare the results.

Mark had learned quite a lot of what Sar-Say called “trade talk” already. He was surprised that the language was so logical and easy to learn.

“Of course it is easy to learn,” Lisa replied in response to his observation. “It has to be simple for a

million sentient species to make themselves understood in it.”

“Why is that?”

“Because those million species have a million different ways of communicating with their own kind. Their brains all work differently. Actually, it is quite an accomplishment for the Broa to design such a simple language. In fact, I think most people have the wrong idea about the Broa.”

“What do you mean?”

“What is it about the Broa that make them capable of ruling a million other species?”

“That’s easy. They control access to the stargates.”

Lisa nodded. “That is right. So long as no one can travel from system to system without their tacit agreement, they do not have a need for a large presence on any individual planet. Sar-Say says that there are systems the Broa don’t visit for years at a time.”

“So they are not the evil imperialists we have been led to believe?” Mark asked.

“Actually, they are probably worse than we imagine. No, their domain is not ruled like a human empire because it can’t be.”

“I don’t follow you.”

“Think about it. Would you try to control a race of civilized dolphins using the same techniques you would use with human beings? How could you? Human and dolphin brains and cultures are too different.”

“For one thing, dolphins don’t care anything about money.”

Lisa laughed. “And the females are in charge, a much more sensible system than the one we use. Think of the problems inherent in controlling a million-star interstellar empire, where every species is a different sort of ‘dolphin.’ What sort of government do you set up that works with humanoids, quadrupeds, octopoids, and God only knows what other forms there are to be found among the stars?”

“I guess you don’t,” Mark replied. “You have to find something that they all agree on.”

Lisa beamed as though gazing at a star pupil. “What the exo-biologists call an Objective Reality. In the case of the Broa, the objective reality is that if you do not do what you are told, a million starships suddenly materialize in your sky and proceed to kill every male, female, and pup of your race. That is the sort of thing anyone can understand, regardless of the shape and size of their brain case. Conversely, however, that is about the *only* level of control the Broa have over their subjects.”

“Interesting, but it isn’t getting this program debugged.”

“Sorry,” Lisa said. “I’ll leave you alone to work.”

Somehow, she did not sound sorry.

As the days passed, the need to finish the training course became ever more pressing. The software program would be distributed to the fleet before it departed Neptune and the human spacers would spend the next year learning the alien language. Those aboard the *Ruptured Whale* would have the added advantage of Lisa’s personal instruction and daily practice with Sar-Say.

Specialists aboard each starship would be fluent in the common language of the Sovereignty by the time they arrived. However, every member of each crew was to learn as much of the Broan language as his or her duties would allow. At the very least, the mission planners hoped any ship that stumbled into contact with aliens would be fluent enough to lie their way out of trouble.

Eventually, the blue star they had been tracking for a week grew into a visible disk. Then, over a period of hours, it filled the viewscreen. The *Ruptured Whale* had slowed to a few dozen kilometers per second when they caught the first laser beacons of the ships that had gathered at Neptune.

An hour later, they were among the gathered starships of the human race as they prepared to go out into the great unknown.

CHAPTER 27

Neptune is an oversize marble thirty times more distant from Sol than Earth, a cold gas giant so far from the sun that it radiates twice as much heat to space as it receives. The internal heat is the engine that drives the planet's 2000-kph winds, the fastest in the Solar System. The winds give the planet the characteristic banded appearance of a gas giant. In the case of Neptune, however, the bands are blue, the result of the red wavelengths being absorbed by methane in the upper atmosphere.

Like Saturn, Neptune possesses a full set of rings, although of much darker appearance than the orbiting ice shavings of its larger sibling. One of the rings has a twist in it, a phenomenon never adequately explained by astronomers. The largest of its moons, Triton, is in a retrograde orbit at about the same distance that Luna orbits Earth. The odd orbit, along with Triton's physical similarity to Pluto, along with the fact that Pluto's orbit actually cuts inside that of Neptune, had long fueled a dispute over whether the ninth planet was actually one of the blue giant's lost moons.

Lisa Arden lay strapped in her bunk and watched the big blue world on her cabin's viewscreen. Like the rest of the crew, she had been briefed on what to expect during their approach. And, like the rest of the crew, she was not particularly interested.

For even though Neptune was just about the farthest point in the Solar System and Sol's outermost "real planet," when one considered the length of the voyage on which they were about to embark, it was akin to walking down the hall to the bathroom in one's own flat. Behind them lay 4.5 billion kilometers of empty space, and before them, a gulf so large that "billion kilometers" was too small a unit of measure.

After a few minutes spent looking down into the blue complexity of Neptune's upper atmosphere and gazing at the enormous cyclone that had been dubbed "The Great White Spot," she shifted her gaze to the pulsing red beacon just above the gas giant's limb. Over the next several minutes, the laser beacon resolved itself into a tiny sphere, and then into an ever-larger globe. Finally, they were close enough to recognize the globe as the Starship *Magellan*.

"That is the ship that brought me to Earth, is it not?" Sar-Say asked from the upper bunk. Like her, the pseudo-simian would have preferred to have his face pressed against a viewport during the approach. However, the Stellar Survey's regulations stated, "All passengers to be strapped down under conditions of variable acceleration," and the captain had proved a stickler for regulations.

"Right," Lisa answered. "That is *Magellan*. She is back from fetching the starships we had out on survey."

Earth's starships were clustered as close together as such ships ever get, yet the scale of space is such that only a few of the starships and giant freighters servicing them were within visual range.

Since she did not expect to see any other ships, Lisa was surprised when a trio of ungainly mechanisms drifted into view, and then off the edge of the screen as the *Ruptured Whale* passed them. The things - she was sure they had not been ships - were gone too quickly to gain more than an impression of their shape. The fact that they had been visible at all meant that the *Whale* had come close to a mid-space collision.

"What were they?" Lisa wondered aloud.

"I was talking to Chief Engineer Dresser," Sar-Say said. "She was telling me about the scientific instruments used to detect gravity waves. I believe that those were the same instruments."

Lisa nodded. Of course! What she had just seen were the gravtenna units they would be taking along. Usually the gravtenna constellation orbited between Earth and Mars. However, the Solar Systems' only gravity wave observatory had been requisitioned for their expedition. Once at the Crab Nebula, they would begin "listening" for the characteristic gravity waves produced by stargates.

The physicists had broached the subject of gravity waves with Sar-Say as soon as the alien's vocabulary improved to the point where the answers were intelligible. Travel via stargate involved the disappearance of a ship from one point in the universe and its simultaneous reappearance at another. Because a ship literally falls into a wormhole, one terminus of which is anchored to the gate, the discontinuous mass function produces ripples in the fabric of space-time -- gravity waves. Each jump results in two such waves being produced, one centered at the point of departure and the other at the point of arrival. These waves radiate outward in all directions at the speed of light and are detectable to distances of several thousand light-years.

Most travel within the Sovereignty was between pairs of stargates and the gravity waves thus produced were of low-to-moderate intensity. It was not necessary to have a stargate at both ends of a jump, however. Given sufficient power, a stargate can drive a single-ended wormhole across the galaxy. That is what had happened to the *Ruptured Whale*'s former owners when the Broan Avenger fired on it during a jump. Wormholes anchored at only one end produced the equivalent of a gravity tidal wave wherever they emerged. It was just such a mega-wave that *Magellan* had felt following Sar-Say's abrupt arrival in the New Eden system.

By detecting the gravity waves produced by ships transiting stargates, and then plotting their points of origin, the expedition hoped to discover at least a few systems of the Broan Sovereignty.

"I would think that if it were that easy, we would have discovered your people long before now," Lisa had said to Sar-Say one night while they had been discussing gravity waves.

Sar-Say explained to her about interstellar distances and the communications delay imposed by the speed of light. He concluded with, "The fact that you have not detected us indicates that none of the gravity waves we have produced have yet reached the Solar System. If this nebula that you people call 'The Crab' is truly Sky Flower, then you will not see a wave produced today for at least 7000 years."

As Lisa lay in her bunk and watched, the spherical ship swelled until it filled the viewscreen. *Magellan* was as she had first seen it at PoleStar, with the exception that the starship was the center of a beehive of activity. Everywhere she looked, there were small inter-orbit scooters and microgravity haulers floating around the big starship. One small vessel would undock from the starship, only to have another take its place a few moments later. Since *Magellan* had been out combing the cosmos for the other starships, she had been late in arriving and the crews were working overtime to prepare her for the coming voyage.

The feeling of weight disappeared and Lisa floated into her restraining straps just as the ship on the viewscreen ceased its expansion. The cessation of acceleration announced that they had arrived. Lisa reached for the strap release just as an authoritative voice issued from the cabin annunciator to order her (and everyone else onboard) to stay as they were.

The reason for the order became clear a few minutes later as a vacsuited figure rocketed away from one of *Magellan*'s docking ports, trailing a cable behind. The figure approached directly into the camera, and then disappeared from view. Only the lazily twisting cable was visible for long minutes. Then, the cable grew taut and they began to slide smoothly forward.

Starships *Magellan* and *Ruptured Whale* were about to engage in an act of intercourse.

#

“Come along, Mr. Vasloff,” Lisa shouted as she followed Sar-Say’s diminutive figure around the circumferential corridor toward *Ruptured Whale*’s main cargo hold. The hold, which still contained much of its original manifest of alien gadgets, had a new addition. Inside was an Earth-standard docking portal. When the hatch doors were opened, the portal telescoped out from the ship and latched onto a mating device aboard *Magellan*. Once docked, the two ships could exchange personnel without the bother of suiting up first. Buried as it was inside the cargo hold, when the cargo doors were closed, the non-Broan technology was out of sight of any inquisitive alien eyes they might encounter. The docking port was merely one of the additions the work crews had made to the alien starship, and like all the other enhancements, great care had been taken to camouflage it.

Lisa, Sar-Say, and Mikhail Vasloff were en route to *Magellan*, where the final pre-launch mission briefing was to take place. All over the fleet, ships’ captains and first officers embarked for the vessel that would serve as the expedition flagship.

Mark Rykand was not with their small group as they made their way through the accordion-pleated tube that connected the two ships. He had gone ahead to help with the astronomical details of the briefing. He had also transported several hundred record cubes containing Lisa Arden’s course in *Conversational Broan*. The software was to be distributed to the fleet at the briefing.

Their destination was *Magellan*’s hangar bay, the largest compartment aboard the ship. Even so, when the three of them arrived, they discovered the bay packed with auxiliary craft, twelve-sided crates, and a milling mob of humanity. Sar-Say’s arrival set off a muted wave of muttering and a general turning of heads. The pseudo-simian halted in the airlock and gazed upward at the surrounding faces. Beside him, Lisa halted as well. She wondered if the Taff had the equivalent of human horror holos. If so, a typical scene would probably look like this one -- a single Taff surrounded by staring naked alien faces. The compartment was also thick with the odor of packed humanity. She wondered what Sar-Say thought of the smell.

“Over there,” Lisa said, pointing to three empty microgravity perches near the anchored podium. She, Sar-Say, and Vasloff made their way to where Dan Landon floated behind an anchored podium. For her part, Lisa tried not to put her foot in anyone’s face.

“Welcome,” Landon said to her and Sar-Say. He ignored Vasloff, who did not seem to take offense at the slight. “We have been waiting for your arrival to begin the briefing.”

“Thank you, Captain,” Sar-Say said formally. “Also, please transmit my appreciation to your superiors. I know the difficulty your people had in deciding to aid me in my return home.”

“We have reasons of our own to go in search of the Broa,” Landon replied.

The three of them anchored themselves next to Dr. Faraday, *Ruptured Whale*'s medical officer. The captain turned back to his preparations, and within a few minutes, pressed the control that caused a raucous klaxon to echo through the hangar bay. The "prepare for impact" alarm had the intended effect. The buzz of dozens of conversations ceased with the dying echoes of the alarm.

After a few seconds' wait, Landon began the briefing. "We all know why we are here. I should not have to tell you that this will be the longest voyage ever attempted by human beings, and possibly, the most hazardous. If anyone breaks down en route, there will be no rescue. We would not know where to begin looking for you.

"Now then, you have all studied the mission plan, so there is no need to go over it again. However, on the theory that there is always one *goofer* who never seems to get the word, that is precisely what we *will* do. Chief Scientist Bendagar, you have the floor --"

Raoul Bendagar had been huddled with Mark Rykand when Lisa entered the hangar bay. He now floated forward to replace the captain at the lectern.

"Good morning, ladies, gentlemen, Sar-Say. I imagine that Columbus, Cook, and this ship's namesake, Magellan, must have felt similarly on the verge of their own great voyages of discovery."

"They were more likely hung over from drinking and whoring..." a voice called out from the back of the compartment.

Without missing a beat, Bendagar responded, "My point exactly!"

The ensuing roar of laughter was more than the joke deserved, but it had its intended purpose. The tension in the compartment dropped noticeably. Bendagar waited for the reaction to subside before continuing. He pressed a control on the lectern and the holocube lit to show a star chart.

"Here, then, is the operational plan. Twelve starships will leave Neptune orbit in three days. We will depart in line-astern formation and accelerate out to where we are clear of the planet's gravity well. We will then jump to superlight and head directly toward the Crab Nebula. The distance is 7000 light-years, and we will be in transit for 380 days.

"As you are all aware, astrogation over such a distance will be a problem. We have yet to venture far enough from Sol to be able to triangulate stars at that distance, so we can only estimate these things. To keep calibration errors to a minimum, each ship will drop sublight once each week to zero their baselines. On our arrival, we will all head for the assembly point --"

The scene in the cube changed to show a yellow star at the edge of the glowing nebula cloud. The green identification letters next to the star identified it as No. 184-2838 in the New General Astronomical Catalog, Twenty First Edition.

"The star is a G3 giant, approximately the same size and type as Capella. Unlike Capella, it is a variable and only about ten light-years from The Crab. In fact, it is within the nebula's gas shell. Once your ships have reached the nebula, you will make directly for this star. The rendezvous point will be whichever planet is closest to the middle of the temperate zone. If that proves unworkable, we will rendezvous 100 astronomical units due galactic north from the star."

"What if we discover aliens?" someone shouted.

"That is unlikely. The system was sterilized by radiation from the supernova less than ten thousand years ago. In addition, as I mentioned, it is a variable star. However, you are advised to drop sublight well

distant from this star and to sweep the system with your instruments before approaching. If you find anything, you will divert to the first alternate assembly point.”

“Won’t the Crab Pulsar mask gravity waves emanating from the Broan stargates?” someone asked.

“If anything, the metronome regularity of the pulsar will make anomalous gravity waves more obvious. Now then, as to other details, I will hand you back to Captain Landon.”

#

The briefing continued for two more hours. After it ended, Mikhail Vasloff asked to see Dan Landon. The two of them made their way through the milling humanity to Landon’s office.

“Yes, Mr. Vasloff?”

“I have a request, Captain. I understand that I am slated to return to Earth aboard one of the freighters after the fleet’s departure.”

Landon nodded. “It will be good to get home again, I imagine.”

“I don’t want to go home. I want to go on the expedition.”

The captain blinked. “I beg your pardon.”

“I want to accompany you on the coming voyage.”

“Considering your views on interstellar exploration, I would expect you to be the last person to make such a request. Why are you?”

“So that I will be in a position to influence events and see that my own point of view is represented.”

“And why should I take someone opposed to interstellar exploration along on the most important voyage of exploration since Magellan?”

“You should take me because *it is* the most important voyage, Captain. You need me.”

“Begging your pardon, but I need you like I need hemorrhoids.”

“You need me because my viewpoint is different from your own, and I might add, that of just about everyone else on this expedition. You are about to embark on a voyage into the unknown. It would be shortsighted not to make sure that you have the widest possible pool of talent at your disposal.”

“Not if one of those talents is intent on disrupting the rest of the talent.”

“I would not be disruptive, Captain. I know how to fit in.”

“Frankly, sir, were it up to me, you would be headed home this afternoon. However, it is not up to me. Coordinator Halstrom predicted that you would make the request and ordered me to take you aboard if you asked. I suppose she wants to get you out of her hair for a couple of years. Do you have any talents other than agitation?”

“I am a pretty fair cook.”

“Then that will be your assignment. Welcome aboard, Crewman. Now get the hell out of my office.”

“Aye aye, sir!”

#

Sar-Say hovered at the viewport in what had once been the passenger section of the *Hraal* , subsequently renamed the *Ruptured Whale* . For once, he was not required to strap himself into that ridiculous bunk.

The humans were taking him home!

After so many months under their control, he had thought that he understood them. Now he was not so sure. He had expected it to take years before they would be ready for an expedition into Broan space, yet here they were, preparing an entire fleet to jump to superlight velocity. He had not thought them capable of such decisiveness.

Sar-Say was philosopher enough to know that he must accept that there were some things still beyond his understanding. For instance, there was the mysterious change in the status of Captain Landon. Shortly after the briefing, it had been announced that Landon would command the *Ruptured Whale* rather than *Magellan* on the long voyage to Sky Flower. When Sar-Say asked Lisa to explain the abrupt change, she told him it was because Mikhail Vasloff would be accompanying them in the *Whale* . Since Mikhail Vasloff's status aboard PoleStar had always been a mystery to Sar-Say, her answer did nothing to enlighten him. Nor did her comment that had ended their conversation: "I suspect the captain wants to keep an eye on the old scoundrel."

The statement had been unsettling to Sar-Say. It implied that Captain Landon was not the expedition's true master and that Mikhail Vasloff was, even though he had no official status as far as Sar-Say could determine. The strange thought was so counterintuitive that it nearly ruined Sar-Say's ebullient mood. Luckily, he would have a full Earth year in which to ponder the mysteries of human social organization. For as difficult as it was to understand humans, understand them he must if he were to implement his own plans once they entered Civilization.

In the meantime, he would play their little games and help Lisa in her efforts to train the others to speak proper language. He would work assiduously to gain their trust, even to the point of seeming to work against his own interests. For if they did not trust him by the time they found one of the outlying systems, all of his well-laid plans would come to naught.

Sar-Say contemplated the interesting universe into which he had fallen while he watched the beacons of the various starships in the fleet. A dozen ships had departed Neptune ten hours earlier and were accelerating in formation. They had finally crossed the invisible line that marked the point where it was safe to use stardrives, and they were even now preparing to jump.

As he watched, one of the distant beacons winked out. One moment the ship was solid and real, the next it vanished without a trace. A few minutes later, another ship performed the same disappearing trick, and then, a third. One by one, the beacons winked out of the sky in front of him.

The sight was mesmerizing. His excitement grew with each departure. He was literally quivering when a raucous alarm sounded aboard the *Ruptured Whale* . The alarm cut off, and Dan Landon's voice issued from the annunciator. "All Hands. Stand by for superlight in five ... four ... three ... two ... one!"

The throb of the engines changed pitch subtly, and suddenly, there were no stars outside the viewport. Beyond the ship, there was only stygian blackness.

The journey home had begun!

CHAPTER 28

Nadine Halstrom stood at her office window and looked down on the cityscape below. Snow had come early to Toronto this year and a light dusting of white reflected the city lights to her in her glassed-in aerie. The covering of new snow made the scene idyllic and peaceful, not the least because the storm had put out the stubborn fires that still raged here and there in the city.

It had been two weeks since she had gone on the full infonet and announced that humankind was no longer alone in the universe. She had worked hard on her speech and she thought it one of the best she had ever given. It certainly should have been. The psychologists massaged it thoroughly, fine-tuning every phrase until the words struck just the right balance of caution and concern, confidence and competency.

She had begun with a straight recitation of the facts of first contact in the New Eden system. She explained in matter-of-fact phrases that one of their scouts had been destroyed in the encounter, but emphasized that *Magellan* had taken its revenge only minutes later. She recounted how the brave men and women of the Stellar Survey boarded the remaining alien ship and discovered its sole survivor.

At that point, Nadine Halstrom's features had faded out of the picture, to be replaced by views of Sar-Say in captivity. The images had been carefully chosen to highlight the pseudo-simian's faintly comic look. Following what she referred to as "our short nature film," the camera had again focused on the World Coordinator, and she delivered the bad news in her most restrained, concerned style. She told the viewing masses about Sar-Say's revelation of the Broan Sovereignty. She gave them the bare facts without embellishment, and then, emphasized that none of the allegations were yet proven. She offered the alternative explanation that Sar-Say might be spinning tall tales.

After a dramatic pause in which the camera zoomed in for a close-up, she gazed earnestly into the lens and said, "Fellow citizens of Sol. This alien claims that somewhere beyond our little bubble of known space lies a large interstellar empire, an empire that may not be sympathetic to our aspirations. Our scientists have studied all available evidence and report that they are, as yet, unable to conclusively and independently verify what Sar-Say has told us. For this reason, I decided that our best course was to seek the truth for ourselves. That effort is now underway.

"Two weeks ago, we launched an expedition to the vicinity of The Crab Nebula, some 7000 light-years from here. There they will seek out this so-called Broan Sovereignty in order to learn the truth of things?"

Her tone had turned soothing. She discussed in general terms the precautions that would be taken to prevent the Broa from learning of the existence of either the human race or its home world. Her words were designed to inspire confidence and to downplay the dangers. She ended her speech with, "You may rest assured that our people aboard the starships will learn the truth and bring it back to us. However, we must all have patience. It is 7000 light-years to the Crab Nebula, and 7000 light-years back. To put it in terms we can all understand, the light we see today from that nebula began its journey before the first pyramid was erected. It takes time to cross that much space and more time for the return voyage. We should hear something from our expedition in approximately 30 months.

"I know each of you will join me in praying for the success of our brave men and women on this, the longest journey ever undertaken by our species. They will remain in our thoughts and in our prayers until they return safely home to Mother Earth. That is all I have to share with you this evening. Good night, and May God bless the Human Race!"

There had followed a full week of calm. It seemed that the speech had worked its magic better than

expected. However, the calm had proven illusory. Nadine Halstrom blamed herself for not noticing the danger signals. She rationalized her failure with the fact that, following her speech, she had been forced to meet with virtually every faction in Parliament. Still, as her conscience insisted on reminding her, that was no excuse.

The meetings had filled her day from sunrise to midnight, and they had all had the same script. The Honorable Member from East Podunk would arrive, begin by demanding to know why he or she had not been let in on the secret, and then launch into a twenty-minute oration on the defects of the Coordinator and her administration. About halfway through the diatribe, her visitors would assure her that keeping the news from the public had been smart politics, and even their fellow MPs had no “need to know.” However, not telling the Honorable Member had been inexcusable, and if she thought it had not, wait until the next yearly appropriations bill was before the Honorable Member’s committee!

While Nadine Halstrom suffered through a parade of self-important legislators, the various media outlets were filled with news of the aliens. There were learned debates as to whether any species could possibly control a million stars. There were emotional arguments regarding the advisability of sending humanity’s small fleet of starships to investigate. There were religious inquiries as to where aliens might fit in God’s grand scheme of things. But most importantly, below the level of public discourse, were the quiet conversations held in bars and homes; frightened whisperings between two or three individuals in which the participants tried to reconcile their worldviews with a million-star alien empire. The more people struggled with the concept, the more frightened they became.

There had been opposition, of course; but it had seemed surprisingly light. One opposition group, in particular, was conspicuous by their silence. *Terra Nostra*, after a brief news release stating that their founder was en route to The Crab Nebula with the expedition, and that he would look after humankind’s interests, had said nothing. However, lack of public pronouncements did not mean that Mikhail Vasloff’s vassals were idle. They worked tirelessly behind the scenes to organize a movement with the ultimate goal of recalling the starships as quickly as a follow-on expedition could be organized.

Seven days after Nadine Halstrom’s speech, the building tensions reached a breaking point. The dormant volcano of public opinion was ready to erupt. All that was needed was a triggering event. That event occurred on the evening of October 6 in front of the New York Metropolitan Administrative Complex.

It was a Friday and the streets of Manhattan were crowded with people. In addition to the normal crowds to be found in the “city that never sleeps” on a Friday evening, there were several demonstrations in progress. The fact that people were not sure what to demonstrate for or against did not help their mood. However, the crowd was orderly, as it had been the previous three evenings. Police were out in force, but did not expect trouble.

All of this changed abruptly at 20:16 hours when a cab driver made an illegal lane change on the elevated thruway that cut across one corner of Administration Plaza. The taxi driver, late for shift change, sped around the curve and ducked into the inside lane to make the off ramp for the New Holland Tunnel. Halfway through the turn, his left front wheel smashed into another vehicle and he was tossed high in the air, clearing the traffic barrier and crashing down into the milling crowd below.

Four people were killed outright and three others survived long enough for their screams to be heard throughout the crowded plaza. A full dozen were injured sufficiently to require hospitalization. The screams of the dying and the wounded proved too much for those whose nerves had been stretched taut by news of the aliens. Those close to the wreckage took out their anger on the hapless driver, who had survived the ten-meter plunge into the crowd, only to be pulled from his wrecked vehicle and beat senseless by the mob. Those beyond fist range turned their rage against the symbols of authority. Several police were beaten. Violence spread like fire in a pure oxygen atmosphere and within an hour, the whole

of the municipal complex had been set ablaze.

News of the rioting flashed instantly around the planet. The direct cause somehow became lost in the reporting as breathless newscasters left the impression that the riot was in response to the alien crisis. Disorders proliferated with the speed of communication. In virtually every major city, crowds that had gathered to seek solace from their governments suddenly turned on their leaders. The disorders began with smashed windows and quickly escalated to looting and arson.

The rioting had gone on for four days and cost more than a thousand people their lives. Ships in orbit reported that they could plot their progress through the night sky by the light of burning cities. Eventually, the irrationality of the violence seeped into peoples' brains, or else they just grew tired. Slowly, the police began to regain control. The rampaging crowds thinned until they were composed primarily of looters. Eventually, even the looters seemed to lose interest and it was finally over.

Nadine Halstrom looked out the window into the cold winter night and shivered at the memory of the long nights of rioting. Whenever humankind began to believe that the ancient beast of mob rule had been tamed, there was always something to remind them that they were no more civilized than their caveman ancestors, only more insulated from the realities of life. She wondered how many more such disorders her career could withstand. Already, most of Parliament was angry with her. A few more riots and she would find herself signing onto the database at the unemployment office.

As she gazed out the window at the slowly healing city beneath its blanket of clean white snow, she wondered if that would be such a tragedy. It was tempting sometimes to think of laying down the mantle of responsibility and returning to the ranks of the citizenry. Then she would have more time for her family and someone else could worry about this headache with the aliens.

She allowed herself the fantasy for another minute, and then with a sigh, she returned to her desk. There were problems to be solved and that was not being accomplished by staring out the window.

#

Six months after their departure from Neptune, Mark Rykand decided that he had had enough of the romance of star travel. The problem with flying at multiples of light-speed was that there was nothing to see. No one had ever invented a way for a starship moving at superlight velocity to detect the outside universe. Such an instrument was not even theoretically possible. So, as much as he would have liked to watch the stars march majestically by as the light-years flew past, all there was beyond the viewports was blackness for 167 hours out of 168.

Once each week, they would drop sublight for an hour to confirm their position and take sightings of the surrounding stars. Then it was back into the absolute blackness of wherever it is that a ship goes when it breaks through the light barrier. With nothing to see most of the time, there was little for the astronomy staff to do.

That was the reason that he had lately taken up an "alternate profession." Ever since the *Ruptured Whale* left Neptune, Mark Rykand had been teaching himself the intricacies of Broan computer science. The subject of his study was the *Hraal*'s main computer, the machine the specialists on Luna had studied extensively. They had sought the cause of the massive data loss about the same time the ship suffered explosive decompression during the Battle of New Eden. They had not found it.

Like everything else onboard the *Ruptured Whale*, the Broan computer was a study in contrasts. Like the Broan trade language, actually operating the machine seemed childishly simple. The interface was akin to the early graphical user interfaces that had been the fashion for human computers through much of the Twenty First Century, although "point and click" was a concept that seemed to have eluded the Broa.

Still, the computer displayed information on a holoscreen in dot-and-swirl script and with easily comprehended iconic representations. Scientists who had studied the computer back at Luna had done a good job of deciphering its basic structure and operating principles. A large amount of this data was intact, including sections detailing the operation of most of the *Ruptured Whale*'s original systems. In fact, it had been those records that allowed human engineers to rebuild the Vithian freighter so quickly.

However, there remained the puzzling gaps in the computer's memory. Whatever had caused them was as much a mystery as ever. Perhaps one of the Broan Avenger's energy bolts had sent an electrical surge through the ship, wiping out sections of memory at random in the same moment all the pressure doors retracted. The only problem with the "electrical surge" theory was that Broan equipment did not suffer from electrical surges. Unlike humans, who strung wires everywhere, the Broa equipped each of their machines with its own self-contained power cell. Save for the hull, electrical charges had no conductive paths to follow to reach the computer circuitry inside its protective case.

By the time the *Ruptured Whale* was approaching the midway point of its journey, Mark Rykand had read all of the reports and learned to query the Broan computer almost as well as a human model. However, nothing in his studies shed any light on the mystery. Therefore, with Captain Landon's permission, he and Chief Engineer Dresser had opened the machine and were exploring its internal circuitry, looking for some clue to its malfunction.

The computer was located in what was now the Engineering Department. It was a cube that measured two meters on a side. If their power cell technology exceeded humanity's, Broan skill with computers seemed to lag that of *Homo sapiens*. The computer was powerful by any measure, but a human-built machine with similar capabilities would have occupied one-tenth the volume.

The computer was a hybrid. Parts of it appeared to be purely electrical in nature, while others glittered with the glass of a holographic memory system. Alien or not, Mark recognized the general purpose of most of the mechanisms. There were a few devices, however, whose functions were a mystery.

"It reminds me of some of the antiques in the Smithsonian's computer collection," Laura Dresser said as she used a needle probe to track one particular conductor back to its source. Because the individual traces were nearly invisible to the naked eye, she had pushed her old-fashioned spectacles up on her head and replaced them with a pair of micromanipulator goggles.

"How so?" Mark asked from where he was monitoring the readout from Laura's probe.

"It's so damned 'modular' in here. You would think after all this time, the Broa would learn that you never use two elements if you can combine them into a single integrated circuit."

"Maybe they had a reason, or maybe the specialists are right when they speculate that the Broa suppress new inventions to keep from destabilizing their empire. ... There, I think you just touched it."

"Right," she replied. "It seems to be live at Junction Alpha Six Two. Let's see if we can track it to the next junction."

At that moment, Sar-Say floated through the hatchway.

"Sar-Say!" Mark yelled across the cavernous space. "Join us."

The pseudo-simian moved with the assurance of a long-time spacer. He quickly reached the point where Mark and Laura Dresser were working and anchored himself to a handy stanchion.

"Hello, Mark. Hello, Laura. You asked to see me?"

“Hello, Sar-Say,” the chief engineer responded from where she had her upper torso inserted into the alien computer case. “Yes, we need your help.”

“How may I help you?”

“This is your ship’s computer. We are trying to determine if it was damaged in the battle.”

“Why?”

“Because we would like to understand the cause of the massive data loss about the time your ship depressurized. Can you help us?”

“I do not know. I am a trader, not a computer technician.”

“You must know something,” Mark persisted. “Not the technical details, I grant you, but surely the stuff that everyone knows. You probably have plenty of knowledge stuffed down in that eidetic memory of yours.”

“I will tell you what I know.”

“We have most of the circuitry identified, but there is one particular trace that has us stumped.”

“Stumped?”

“An idiom. It means that we do not understand.”

Sar-Say nodded. “I do not know that I can help, but I will try.”

“Come over here,” Laura called.

The Taff moved to the computer, where he anchored himself to Laura’s belt and gazed over her shoulder at the interior of the massive thinking machine.

“Do you see this small trace here on this module?”

“It is very small, but I see it.”

“It seems to come out of the power module and run off into this crystalline thing. Any idea what it is for?”

“No, Laura. I have no knowledge of such things.”

“Could it be an interrupt line?”

“What is that?”

Laura opened her mouth to explain, but was cut short by a quiet beep from her comm unit.

“Get that, Mark!”

“Right.” Mark stretched to where Laura Dresser had left her equipment belt. He

unsnapped the communicator and pressed the face to activate.

The call was from the communicator-on-duty. The captain wished to speak with the chief engineer. Laura muttered something uncomplimentary under her breath, extricated herself from the computer, and pulled the magnifier goggles down to dangle around her neck. She then restored her glasses to her face before

pulling herself to where she could reach the comm unit that Mark held at arm's length.

“Yes, Tyler?”

“The captain wishes to speak to you, Madame Chief Engineer. Stand by.”

“Yes, Captain.”

“About those figures you sent me this morning ...”

Suddenly, a flash and crackling noise emanated from somewhere behind Laura Dresser. She pivoted her body to look. At first, there was nothing to see. The open front of the computer case blocked her view such that only Sar-Say's legs were visible. Then, while they watched in horror, the rest of his body floated slowly into view.

The pseudo-simian was limp, his tongue lolled from his muzzle, and his yellow eyes stared sightlessly into space. He looked dead.

CHAPTER 29

Captain Dan Landon sat at his control station aboard the *Ruptured Whale* and let his eyes scan the banks of instruments in front of him as he sipped lukewarm tea. The tea was heavily sugared (the way he liked it), but a bit too strong for his taste. After six months in space, the autokitchen program should have learned his tastes better than that.

His control station was the same basic setup he used aboard *Magellan*. It had multiple display screens inset into a horseshoe-shaped console surrounding his high-backed command chair. The chair included a lapboard with an imbedded touch screen that provided all of the fingertip controls he needed to monitor every section of the ship. Though the instruments were the same as on the big starship, outwardly, they looked completely different.

The instrumentation aboard the *Ruptured Whale*, along with everything else, was part of a grand masquerade. Despite the fact that the control station was a standard design for human starships, the design of the console was such that it blended into the alien décor of the ship.

That was the way it had been with all of the human additions to the alien craft. Those that a casual visitor (for instance, a Broan port official) might see were camouflaged to look like part of the ship's original equipment, while those not easily camouflaged were hidden from view. The object had been to make the ship operable by humans without advertising the extra-Broan origins of the equipment. Nor had the effort to disguise the ship ended when they departed Luna. Ever since leaving the Solar System, the crew had worked tirelessly to enhance the interior camouflage until Sar-Say proclaimed it would pass muster anywhere in the Sovereignty. Landon hoped the pseudo-simian was right. They were betting the future of the human race on his opinion.

The plan to masquerade as a species from a far-off part of Broan space was made possible by the fact that (according to Sar-Say) there were no standardized layouts for Broan starships. Rather, the various species used a few common hull designs, but customized them to fit their varying physiologies and needs. A ship of Broan manufacture crewed by humans would be expected to be equipped with couches, chairs, tables, and viewscreens that displayed pictures in wavelengths to which the human eye is sensitive. In fact, had they tried to use the same furnishings and instruments as the previous owners, any aliens they

met might find the fact sufficiently odd to pass on to Those Who Ruled.

Therefore, the Whale now had two completely different propulsion systems - the Broan original and the human add-ons. Since they could not be passed off as being of Broan manufacture, both space-drive and stardrive generators had been installed in the capacious cargo hold, surrounded by heavy bulkheads, and then hidden behind a façade of alien packing crates. If they did find one of the worlds of the Broan Sovereignty, any port inspector who came aboard would discover nothing but a hold filled with general merchandise.

Nor had the heavy equipment been the only additions to the ship's equipment. Also buried in the hold were three of the most powerful computers humanity had ever built. They were attached to thousands of sensors imbedded in the hull. While in a Broan star system, the Ruptured Whale would record more signals than one of the fabled Soviet intelligence trawlers of the mid-20th century.

The Ruptured Whale had originally been designed to be spun about its axis to provide artificial gravity. That particular capability had not survived the overhaul. The star drive generator, in particular, had badly altered the ship's dynamic balance. Any attempt to spin it in its current configuration would cause it to thump like a groundcar tire with a knot in it. As a result, the entire voyage was being made in microgravity.

Other preparations for disguising their origins were also underway. Each member of every starship's crew was being instructed en route in the Broan trade language. As quickly as they gained proficiency, alternate computer displays were programmed with the Broan dot-and-swirl script. In case of an inspection, the display language of every screen could be converted instantly to Broan. In addition, all permanent writing and markings had been changed over. Even those ships that would never come within a light-year of a Broan vessel were taking the precaution.

Landon sipped his tea and scanned his instruments. As they had for half a year, they told him that his ship was healthy. Even Mikhail Vasloff had given him little trouble en route. Not only had the agitator proved to be a first-rate cook, he was an asset at any of the ship's frequent social gatherings. He had even become a regular at the captain's weekly poker game.

Thinking of Vasloff, Landon wondered how the public announcement had gone back home. From a distance of 4000 light-years, the political squabbles of Earth seemed less important than they once had. Of much greater import were Dan Landon's worries about his ships and people.

One of the biggest worries was what he would do if one or more starships failed to make rendezvous. Stardrives were inherently reliable and fail-safe, and each ship had message probes and auxiliaries to send off in case of a breakdown. Still, space was too damned vast. Even knowing a ship's position to within the accuracy of her instruments would not help much. There were just too many cubic kilometers in a cubic light-year to do a proper search.

Then there was the worst worry of all. What if, after 380 days at superlight velocity, they arrived at their destination to discover no evidence of the Broa? What if the Sky Flower Nebula was not The Crab and they had just journeyed 7000 light-years in the wrong direction? That was the worst-case scenario. Better to discover that Sar-Say was telling the gospel truth than not to know. A threat was something humanity could handle. It was fear of the unknown that sapped the human spirit.

Dan Landon took another sip of tea and mentally shook himself. He had noted a tendency in himself to brood of late. It was the isolation, of course. With blackness beyond the hull for six days, 23 hours each week, they were all going a little stir crazy. In fact, the crew as a whole was displaying the symptoms of sensory deprivation. As the commanding officer, it was his job to see that they were kept too busy to

think about their troubles. That was good advice for all aboard, including him.

With a grimace, he pulled the morning report up on his screen and began to read. It was not his most enjoyable task of the day and he had been putting it off. He scanned the report and then scowled. Things were not as shipshape in Engineering as they should be.

“Communicator, get me Chief Engineer Dresser.”

“Working,” a disembodied voice said in his ear. A few seconds later, the communicator said, “Mr. Rykand answered, Captain. He’s calling Chief Engineer Dresser now.” Then after another short wait, he heard, “Yes, Captain.”

“About those figures you sent me this morning ...”

He did not get any further. There was a moment of static on the circuit, followed by a sharp intake of breath from Laura Dresser on the other end. Then three long seconds of silence passed before the shouting began.

“What’s the matter!” he demanded.

“It’s Sar-Say, Captain. He has electrocuted himself. I think he’s dead!”

#

Dr. Pamela Faraday had been in the Stellar Survey for twenty years and she would not call her duties strenuous. There just was not much that could go wrong aboard a starship. Save for the real possibility that the entire ship would be vaporized by a small piece of space junk -- a possibility that did not require the attention of a medical doctor -- there were few instances of injury. Mostly she spent her days in her dispensary treating sprains from too active calisthenics and sporting contests, and keeping current with her medical databases. It was thus a shock when she received the panic call from the control room.

“Doctor, this is Landon. Grab your kit and get down to Engineering. Sar-Say’s hearts have stopped.”

“On my way, sir!” she yelled over her shoulder as she grabbed an emergency kit and arrowed for the hatch that offered the most direct route toward where the engineers kept watch over the stardrive.

When she arrived, she found Mark Rykand and Laura Dresser kneeling over the prone figure of the pseudo-simian. Both had their legs tucked beneath anchor frames and they were physically holding Sar-Say’s body down against the deck. Or rather, Mark was using one hand to keep the Taff from floating away. He covered one side of Sar-Say’s muzzle with the other hand. Dr. Faraday wondered what he was doing until she realized that he was giving the alien mouth-to-mouth resuscitation. He had covered half the horizontal slits that Sar-Say used for nostrils with his right hand and was blowing air into the muzzle from the opposite side.

Laura Dresser was also active. She crouched over the alien’s chest and was pressing her palms down to stimulate both of the Taff’s hearts in a quick, alternating rhythm. Pamela Faraday wondered where she had learned enough about Sar-Say’s physiology to know to do that.

“Let me in there, please,” the doctor said as she floated above the trio. “No, you keep respiration going, Mark. Laura, you move. I need to get some adrenaline into him!”

One of the things that had kept the doctor busy for the last six months had been reading the extensive medical reports written by the biologists who had studied Sar-Say. The Taff was not human, but his biochemistry was sufficiently similar that most standard medical techniques worked on him. Like human

beings, the rate at which his twin hearts beat was controlled by a chemical in his bloodstream. It was not exactly adrenaline, but it was close enough that the substitute would work.

She whipped an injector out of her emergency kit and made certain that it was set to dispense the proper drug before jamming the injector end against Sar-Say's chest just below where she knew his primary heart to be. She pressed the stud and there was a momentary hissing sound. She moved the injector a few centimeters to the right and repeated the procedure. Then, without wasted motion, she pulled a self-sealing monitor pad from her bag and adhered it to the brown fur midway between the alien's hearts. On her wrist, her monitor immediately began emitting a strange double-thrumming sound.

"That's it," she exclaimed. "We have heart rhythm again."

A moment later, Sar-Say shuddered and drew a ragged breath. His eyes twitched and lost some of their glazed look. The alien did not, however, wake up.

After examining his pupils -- the medical reports said their response to stimuli was as involuntary as in human beings -- she turned to Mark. "All right, you can stop blowing now. His hearts are beating again and he is breathing on his own."

Mark straightened up from where he had been crouching for what seemed an eternity. For the first time he noted the crowd watching through the open hatch. There was a sudden commotion and the crowd parted for the captain.

"All right, what's going on?" Landon demanded as he elbowed his way through.

Pamela Faraday gave her medical report in a few well-chosen words.

"Will he live?"

"Too soon to tell. We do not know enough about his species for me to offer an intelligent opinion without further observation. I need to get him to the infirmary."

"Right." He singled out a couple of spacers who were hanging around outside the hatch. "You two, help the doctor. Mr. Rykand, Chief Engineer Dresser, you come over here with me."

Mark had a worried look as he watched the two spacers gently lift Sar-Say's body from the deck. In the microgravity environment, it was less a matter of lifting the limp form as guiding it through the hatch and out into the passageway beyond. The crowd parted to make way as Dr. Faraday led the small party out of sight in the direction of the infirmary.

"What happened?" Landon demanded.

Laura Dresser recounted the events up to the moment that Sar-Say's unconscious form had floated out of the computer.

"What was he doing inside the damned thing in the first place?"

"We were tracing one of the circuits. I left him to answer the call from you. He must have reached inside and short circuited the power cell."

"On purpose?"

"Hardly, Captain. I doubt he tried to electrocute himself. He certainly didn't seem suicidal just before the accident."

“Mark, is that the way you saw it?”

“Yes, sir. Sar-Say was happy when he showed up and eager to help.”

“Right, what happened next?”

Once it was obvious what had happened, we grabbed his body and held him down on the deck while we performed first aid.”

“Quick thinking on both of your parts. You may have saved his life. What about the computer?”

“I don’t know. We’ve been too busy to check.”

“Please check now, Mr. Rykand.”

“Aye aye, sir.” Mark pulled himself to the computer and gazed inside. One did not need to be a specialist to see that the big machine would never think again. He could see several spots where the circuitry had actually melted.

“It’s trashed, Captain.”

“Well this is one fine hell of a mess!” Landon muttered.

Neither of the others responded. The captain had said it all.

#

Lisa was worried.

She had been working to improve her pronunciation of Broan trade talk when word had reached her of Sar-Say’s accident. Those who saw her between her cabin and the infirmary saw a maniac arrowing through the corridors, heedless of her own safety and that of others. Had she encountered traffic at the passageway junctions, there might have been other patients for Dr. Faraday’s care.

When she arrived in the medical office, she found Sar-Say strapped to a bed with a makeshift oxygen mask over his snout. He looked so small and helpless laying there that large, globular tears welled up in the corners of her eyes. The alien’s own eyes were open and staring into space. They showed no sign of recognition, however. The two orbs were not even pointed in the same direction.

Lisa arrived to find the doctor working on Sar-Say, too busy to answer her questions. Nor was Mark available to tell her what had happened. With nothing to do, Lisa had waited in the passageway outside the infirmary. One problem with microgravity, she discovered, was that it was not conducive to pacing, and without that physical release for her tension, she felt ready to jump out of her skin.

Eventually, Dr. Faraday stuck her head out through the infirmary hatch.

“How is he, Doctor?”

“I think he’ll live. Whether there will be brain damage ... well, we will have to wait and see. The chances are good that he will recover fully. Because of quick work by Mark Rykand and Laura Dresser, his brain wasn’t deprived of oxygen very long.”

“When can I see him?”

“Not until morning. Now go find something else to do.”

“Is that wise, Doctor? He is liable to be disoriented when he wakes up. Wouldn’t it be better if there is a friendly face for him to see?”

“In other words, how about letting you stick around?”

“That, too.”

“All right. You will probably just pester me with comm calls if I send you away. You can play nurse if you like, although I warn you, I don’t expect him to wake anytime soon.”

Lisa quickly agreed. Pamela Faraday showed her how to read the monitoring equipment that displayed Sar-Say’s heart and respiratory rates and explained that since he was an alien, she would have to monitor everything manually. The automatics were off line.

“Why not use them?” Lisa asked, puzzled.

“Because they might mistake a normal Taff reaction for an adverse human one. We wouldn’t want the machine to attempt to cure that strange, double-thump in his hearts, now would we?”

“No.”

So it was that Lisa spent the night listening to the “double thump” and mulling over how things might have been different. The longer the Taff remained unconscious, the more extreme the scenarios her anguished mind thought up. What if he never woke up; or worse, if his mind was gone? What a tragedy for the small alien to come so far, only to be felled by a few stray electrons.

Mark showed up with breakfast the next morning.

“How is he doing?”

“No change. His hearts are beating normally; his breathing is shallow and thready, but adequate. The oxygen content of his blood is within tolerance. If only he would wake up!”

Mark had pulled her to him and held her close. “Give him time.”

“What happened down there?” she asked, half-sobbing into his shoulder.

“We’re still not sure. From the evidence, it looks like he picked up one of Laura Dresser’s manipulators and stuck it into the power cell.”

“Why would he do that?”

She felt his shrug rather than saw it. “No way to tell until he wakes up. Maybe he saw something. Maybe curiosity just got the better of him. We’ll have to wait and ask him.”

Mark stayed an hour and then left to return to duty, leaving Lisa once again with her thoughts. Strange how quickly life can change, she mused. One moment, she had been settled into her familiar, daily routine. The next, a friend was at death’s door. She had not felt this morose since her father had died. Funny that she could be so upset over an alien.

She was on the verge of beginning another cycle of “what might have been” when she was startled by a noise from the bed beside her. She looked up from her readouts to note that Sar-Say had moved an arm. It had been floating free as it did when he slept. Now, however, it moved upward to grab his head.

Lisa levered herself from her seat and pulled herself to hover over the bed. The alien’s eyes were still not

focused, but they did not stare off in two different directions either. Sar-Say's tongue had retracted into his mouth. She was not sure whether this was a good sign. What if he swallowed it and choked? She thought of sticking her hand into his mouth, but decided not to. An involuntary spasm at an inappropriate moment might cost her a finger.

Sar-Say emitted a low sound like a groan and then slowly turned his head to look at her. She hoped the alien had regained enough consciousness to recognize her broad smile for what it was, despite the copious tears that were making it difficult to see. Sar-Say had told her that among his people, the baring of teeth was a sign of aggression, not friendliness. When she thought his eyes were tracking well enough to prove him awake, she said, "Welcome back."

Sar-Say said something in an unintelligible language, and then switched to Broan trade talk. "Where is this place?"

"You are in the infirmary aboard the Ruptured Whale. Do you remember what happened?"

The alien's answering blink was slow in coming, but something seemed to clear in his mind and he said in Standard, "Yes. I saw something that made me curious. I used one of Laura Dresser's tools to retrieve it. That is the last I remember --"

"That is enough," Lisa replied quietly. "You have been injured, but are mending. Rest now. We will talk again after you have regained your strength."

Consciousness seemed to seep from the Taff as quickly as it had come. His eyes closed and soon he was breathing with the same, slow rhythm that Lisa had watched many a night when they shared his cage aboard PoleStar. A quick glance at the medical readouts confirmed that Sar-Say was sleeping normally.

Lisa sighed. She now knew what it was like to be the parent of a sick child. She could not say that she liked the sensation!

CHAPTER 30

"Wake up sleepyhead!"

Mark Rykand stirred and tried to escape the feminine hand shaking his shoulder. He could not seem to get away. Slowly, with great reluctance, he climbed out of the million-kilometer thick pillow that was sleep and slowly let his senses regain control over his body. When he finally opened his eyes, he found Lisa's grinning features staring down at him, framed by a tousled blonde mane.

"What time is it?" he groaned as the overhead light set off a throbbing in his temples.

"Oh five hundred. Get up!"

"Go back to sleep. I have second watch this week and I was up until 02:00 this morning."

"Don't you remember what day it is?"

He groaned and threw an arm over his eyes to protect them. Suddenly, it came back to him. Today was the day! It had been 380 days since they had left Earth. In a couple of hours, they would arrive at their destination. The interminable waiting was nearly over!

It seemed unreal somehow. They had been sealed up in this vacuum flask of a ship for so long that it was hard to remember when it had not been the whole universe. Everything that had gone before - his parents, Moira Sims, ... Jani!!! - all of them seemed a fading memory. Earth was hazy in his recollection, as was every single human being he had ever met who was not currently aboard this ship. Even the earlier parts of the voyage, like the day Sar-Say had electrocuted himself, seemed indistinct and hazy in his mind.

Finally, he yawned, stretched, and noticed the old-sock taste in his mouth. "It's breakout day, isn't it?"

"You are sleepy, aren't you? Damned right it's breakout day! We are going to have something to see other than blackness in a few hours, and all you can do is lay here and stare at the overhead." He felt a movement on the bed and turned in time to see her back disappear into the sanitary cubicle. He found watching her movements in microgravity endlessly fascinating.

If it had surprised the ship's quartermaster back at Neptune when the two of them asked to room together, that dour-faced individual had not shown it. He had merely checked his computer list, arranged for the transfer of one name to another cabin, and then assigned the newly emptied compartment to the two lovers. Nor had that been the only change in berth assignments during the voyage. Several other couples had set up housekeeping during the long outbound months. Some had changed their arrangements several times, in fact. It is lonely in space, and especially so when one is so far that the light from home was older than human civilization.

Staccato banging in the overhead announced that Lisa had turned on the shower. Just as quickly, the noises subsided as she used up her 15-second ration of fresh water. The water system was another improvement they had added to the alien transport. The previous owners, it seemed, had used hot sand for cleaning their fur. Much of the sanitary system's installation had taken place on the outbound voyage, and no matter how long they ran the filtration plant, there never seemed to be enough clean, hot water onboard.

"Done!" she called out from the cubicle.

He untangled himself from the light sheet that was all the covering one needed in space, and floated to the cubicle just as she exited, her hair wrapped in a towel. She smiled up at him as they passed close enough for an intimate touch. Bleary eyed, he pulled himself inside and closed the door.

Ten minutes later, he floated out again. After attending to his body's basic needs, he had brushed his teeth, shaved, and wiped himself down with a damp washcloth. It was not as satisfying as a shower, but it was all that he could afford this week, having recently discovered that he was overdrawn at the water bank. He felt at least a little human, which was a one-thousand-percent improvement over a few minutes earlier.

Lisa had put away the sleeping net and was lounging in midair as she watched him dress.

He saw her looking at him and said, "What?"

"Oh, nothing. I am just admiring my man is all."

"Careful, Wench! You don't want to miss breakout, do you?"

Her gaze shifted from his face to a lower spot on his body, then up again. The contented look she wore suddenly transformed itself into a taunting grin. "Methinks, sir, that thou doth brag to excess."

The whole ship's crew was awake and anxious as the Ruptured Whale droned on through the stygian blackness of superlight velocity. Breakouts were a social occasion aboard ship, a chance to confirm that the universe still existed beyond the small bubble of curved space that their stardrive generator wrapped around them.

This breakout would be different. This would be the last before they rendezvoused with the rest of the fleet.

System 184-2838, which the crew was already referring to as The Hideout, would be their first stop in what could prove to be the outskirts of the Sovereignty. As Dr. Bendagar had mentioned in their final pre-launch briefing, The Hideout was very likely to be uninhabited. Not only was the star a variable G-Class giant, but also the system had been sterilized by radiation from the Crab Supernova within the past ten thousand years. Should their speculations prove incorrect, however, they had an alternate system mapped for fleet rendezvous. In fact, there were four such star systems mapped -- just in case.

Once the fleet rendezvoused, the first order of business would be to find a suitable small planetoid on which to set up housekeeping. They would also erect their gravity wave observatory, positioning its three delicate instruments a precise 1000 kilometers apart. With luck, they would be able to pinpoint the location of the local Broan stars within a few weeks or months of beginning observation. Without luck, they would be forced to search the surrounding stars one by one.

After inhabited stars were located, starships would approach to within one light-year of the targeted systems and quietly spy out their communications and other energy signatures. Those emanations would be recorded and studied until the expedition scientists felt it was safe to move closer. The scouts would then move to the outskirts of the system for follow-up surveillance. Only when they had evaluated their observations would they send the Ruptured Whale in for a closer look.

The best method of injecting the Whale into a Broan-held system had been the subject of hot debate for much of the voyage. Since Sar-Say claimed the stargates were unmanned, most favored placing the Whale into a long cometary orbit that would pass near a stargate, then pretend to be a ship that had just arrived from some other system. Assuming the local authorities had no way to verify the claim, they would request permission to approach. The masquerade would begin in earnest when they took up orbit about a Broan world. Under the guise of disposing of their cargo, they would spy out the true state of affairs in the Sovereignty.

Dan Landon gazed at the other members of the control room crew without being obvious about it. Two of the crew he had brought with him from Magellan. Raoul Bendagar was again his Chief Scientist, just as he had been nearly two years ago on that fateful day in the New Eden system. The other crewmember was Perry Grandstaff, now Lieutenant Grandstaff. The boy had grown up since his first cruise with Landon. No longer did his voice occasionally squeak during "All Hands" announcements, and his skin had almost completely cleared up.

The other members of the crew had been recruited for various aspects of the project. Two - Fairfax the astrogator, and Klein, the sensor operator - were merchant spacers, while Laura Dresser continued to pamper her beloved generators. Her obsession with the operation of the stardrive was one of which Landon approved. After 7000 light-years, the stardrive was still running as smoothly as the day they had gone superlight.

"Two minutes, Captain!" Astrogator Fairfax announced.

Landon acknowledged the report by repeating the information. He could see the countdown chronometer as well as Fairfax could, but there are certain traditions in the space services. One was that

the astrogator kept the captain apprised of the countdown whether he needed to or not. On at least two occasions in the historical past, that custom had averted impending disasters.

In this case, the maneuver the Ruptured Whale was performing was closer to a reentry than a launch. Having vaulted over the mountain that is light speed, they were now sliding down the far slope, preparing to reenter the real universe.

“One minute, Captain,” the astrogator announced.

“One minute, aye. Mr. Grandstaff, make your announcement!”

“Attention, All Hands. Breakout in one minute. I repeat. Prepare for breakout. One minute warning, and counting.”

The numbers on the countdown chronometer continued rolling downward. After an indeterminate time, the numbers on the screen read 30. Then some time later, they read 20. Finally, they began to count backwards at a variable rate, with each second taking approximately twice as long as the one that preceded it.

“Ten ... ” came the voice of the communicator. Some of the high pitched overtones had crept back into Grandstaff’s tone, reminding Landon of those moments after the gravity wave had rattled the ship at New Eden. Still, the boy recovered in time to pick up the count at five.

“Five ... four ... three...”

Dan Landon found his fingers hovering over the “kill” switch of their own accord. He was ready to intervene if anything went wrong with the flight system. Finally, it was time.

“Two ... One ... Breakout!”

CHAPTER 31

The bridge viewscreen had been black for nearly the entire 9,000-hour journey from Earth. No longer. One moment it was a stygian pool, the next it cleared to reveal ... more blackness. Except, this blackness was punctuated by a scattering of diamond-like points, a typical deep-space star field. Arrayed before them were the stars of that section of the galaxy’s spiral known as the Orion Arm. Despite its yearlong voyage, the *Ruptured Whale* had traversed considerably less than one-tenth the diameter of the Milky Way. That was the problem. They were still in Earth’s backyard and so, potentially, were the Broa.

The few stars visible began to move in unison as the ship’s computer found its bearings and began to execute a preprogrammed command. Slowly, so as not to disorient viewers, the star field flowed off the upper-right corner of the screen, to be replaced by new stars at the lower left. For a few seconds it seemed as though nothing else had changed as the dimensionless points marched one after another. Then something did change. At the corner of the screen, a foggy line appeared, followed by a translucent wraith through which the background stars remained clearly visible. The dimly glowing cloud brightened as more of it climbed up the screen, then took on the illusion of depth as the observers’ brains worked to make sense out of the swirling patterns of light and dark. After long seconds made longer by racing hearts, the ghost climbed fully onto the screen.

Dan Landon let out the lungful of air he had been holding, attempting not to sigh audibly as he did so.

Whether the Broa lived around here or not was something to be determined. However, one thing was certain. They were close to their planned breakout point. They had definitely arrived!

#

About the time humanity was learning to farm the Po River Valley of China, a star ten times more massive than Sol finally came to the end of its life. After billions of years spent transmuting hydrogen into helium, then helium into carbon, and finally, carbon into iron, the star had used up all of the available fuel at its heart. Had it been of average size, a dwarf star like Sol, it would have slowly dimmed over time, becoming redder and redder, until eventually, it would extinguish itself completely.

This was not to be. The size of the star prevented it from leaving the scene in such an inconspicuous manner. With the last carbon atoms transformed into iron, the star's nuclear fires went out and the ever-present pull of gravity took control of its fate. With no new energy being produced, the core of the star fell inward, and the energy of position stored in gigatons of star stuff was instantly converted to heat. In a matter of seconds, the temperature within the "cold" star had risen to the point where iron nuclei began to stick to one another.

Iron is unique in the universe. It is at the top of what scientists call "the curve of binding energy." Fusing lighter elements into heavier ones (or splitting heavy elements into lighter) results in energy being released, a process that human beings first harnessed in the atomic and hydrogen bombs. Iron, being at the top of the curve, is a dead-end in terms of energy production. Iron has nowhere to go but down. Fusing iron consumes more energy than it produces.

The iron-iron fusion reaction in the core robbed the star of what little energy remained to fight the implacable pull of gravity. Far from halting the collapse, the fusing of iron nuclei accelerated it and again, in-falling matter heated the center of the star. Suddenly, the interior was hotter than anything seen since the first moments of the Big Bang, and within the boiling cauldron, neutrinos began to condense from pure energy. The "neutrino storm" phase of the star's death throes had begun.

In the menagerie of subatomic particles, the neutrino is the most slippery of them all. Where photons, protons, and electrons might spend millions of years bouncing around inside the star as they worked their way to the surface, neutrinos were not so constrained. A neutrino can pierce the body of a massive star as easily as it can fly through hard vacuum, and that is precisely what the new-formed neutrinos did. In the moment of their creation, they leapt skyward as though the intervening layers of dense plasma did not exist - which, to the neutrinos, they did not. This powerful, invisible stream of energy robbed the star of as much energy per second as it had produced in its entire life.

Of all the reactions taking place simultaneously, the neutrino storm predominated. All other effects were relatively minor byproducts of the exploding neutrino population. However, "minor" is a relative term, especially on the scale at which the universe operates. What happened next was spectacular, even when the aftermath was viewed ten thousand years after the event.

To say that the star had lost all of its fuel is not correct. It lost the fuel down where the nuclear fires had always burned. Out in the gaseous envelope surrounding the core, however, there remained plenty of nuclear fuel in the form of hydrogen and helium. With an interior temperature measured in the billions of degrees, it was suddenly hot enough to fuse hydrogen even in the outermost layers of the star. Suddenly, the entire star was aflame with nuclear reactions. Gravity, which had been on the verge of winning its ages-old battle with the star, was suddenly inadequate to the task of holding the gas mass together.

The star exploded!

Three hundred generations of farmers tilled the Po River Valley before light from that explosion reached

them. On July 4, 1054, the star that had previously been invisible to the naked eye was invisible no longer. In fact, it was difficult to miss, (although everyone in Europe seems to have managed the feat). In China, astronomers noted with alarm the sudden appearance of a “guest star” in the sky, as did the native people of the North American continent. The new star swelled until it rivaled Venus in brightness. In fact, it was so bright that it was seen in daylight for three long weeks. After that, the star slowly sank back into obscurity.

The star was discovered again soon after the invention of the telescope. In place of the dead star was now a misty cloud of material thrown out by the explosion. In the 18th Century, Charles Messier made a list of things in the sky that appeared to be comets, but were not. The remains of the dead star were so prominent that Messier gave the supernova remnant the preeminent place on his list. He labeled it M-1.

Later astronomers gave the cloud a name. They called it the Crab Nebula.

#

The apparition on the screen resembled nothing so much as the puff of smoke from an exploding artillery shell - which, in a way, was precisely what it was. At the center was a furiously radiating star that appeared dull, almost black, against the whiteness surrounding it. In reality, it was anything but dull. The star, though dead, radiated furiously in the ultraviolet region of the spectrum and would burn out any unprotected human eye that observed it. The ship’s sensors were even more sensitive than human vision, and the hull telescope’s overload circuits automatically protected the pixels onto which the star’s image fell by reducing their sensitivity, making the image little more than a representation of the star’s true image.

Surrounding the star was a large expanse of electric-white gas and dust, a region that glowed with the pure light of a fluorescent lamp. Beyond this central glow, the cloud darkened and became translucent, showing the stars and the blackness of space beyond before transitioning to an opaque reddish-purple band at the periphery. The whole central region was striated with tendrils of glowing gas and darker dust that appeared as though they had been whipped together by some giant hand. The contrasting strands were tangled into a complex Gordian knot that had been frozen in time.

The cloud was all that remained of those outermost layers of the pre-nova star. Unable to dissipate the 400 million-fold increase in energy resulting from the furious fusion reaction in its outer layers, the star exploded. That explosion ripped away the star’s atmosphere and much of its mass, ejecting fully 70% of its substance out into space. The explosion had done more than merely blast the outer layers of the star skyward, however. The pressure on the core forced the electrons of the individual atoms out of their orbits and down into the nuclei with the protons. The collapse of the electrons was accompanied by the collapse of the star’s core. Before the explosion, the star had been a glowing ball of gas as large as the orbit of Mercury. After the explosion, it was a madly spinning sphere with a mass more than three times that of Sol, yet a diameter of only 20 kilometers.

Out of the fires of the supernova had been born a neutron star.

“Gawd!” someone muttered as the image of the dead star floated at the center of the screen. Even though it was ten light-years distant, the computer had the hull camera set to maximum field of view, and the gas cloud still overflowed the edges of the screen.

Tearing his gaze away from the apparition on the screen, Dan Landon pressed the control that would put him on the command circuit. “All stations, report!”

The reports quickly flowed in from all over the ship as departments announced their successful return to normal space. When it came time for the communicator to report, he said, “Strong interference across all of the radio bands, Captain. It is all 30-cycle hum, just as predicted. Looks like we’ll be transmitting via

laser for the duration.”

Even with the atomic nuclei jammed together, the star retained both its original angular momentum and magnetic flux. The neutron star rotated on its axis more than 30 times each second, sweeping surrounding space with a magnetic field that was a billion times stronger than the one it had formerly possessed. The spinning magnetic field whipped the surrounding gas and dust into a frenzy and broadcast an intense beam of light and cosmic rays to the heavens like a lighthouse on some unknown shore.

“Understood, Kelly,” Landon replied. “Dr. Bendagar.”

“The background radiation is high, Captain; but well within the capability of our shielding. We have nothing to fear as long as we stay inside the hull. Work parties are another story. I wouldn’t want to be out in that stuff for any longer than necessary.”

Landon touched another control. “Sar-Say!”

“Yes, Captain?” came the pseudo-simian’s voice.

“Is that ‘Sky Flower?’”?

“Yes, Captain. It is just as I remember it, although much larger and more complex.”

“But it is the nebula you saw in the skies of the Zzumer world?”

“No doubt about it, Captain. It is the Sky Flower Nebula.”

For the second time in as many minutes, Dan Landon let out a silent sigh of relief. They were near one of the worlds of the Broan Sovereignty. That meant this whole expedition had not been a wild goose chase, the result of misidentification of the nebula.

“Very well. Astrogator, find us our target star!”

“I have it on the alternate screen, Captain.”

“Switch to main viewscreen.”

At the front of the bridge, the screen changed to show a yellow-white star silhouetted against the blackness of space. Hideout was where it was supposed to be, too. So far, so good.

“Take her in, Mr. Fairfax. Mr. Klein, I want continuous circumambient sweeps on sensors. Let me know if there is even a twitch that indicates the presence of a ship other than our own. Also, keep a full watch on the Broan communications bands.”

Landon waited for acknowledgement of his orders, and then grinned widely for the first time in a month.

“All right, people, let’s go find the rest of our fleet. Twist her tail, Chief Engineer!”

Laura Dresser’s words echoed instantly in his ears. “Consider it twisted, Captain.”

Thrust followed a moment later.

#

“Is it truly Sky Flower?” Lisa Arden asked Sar-Say after the captain signed off and the thrust-gravity had caused the two of them to settle into their acceleration couches.

“Yes, Leesa, it is really the nebula of the Zzumer sun. My memory for such things is quite good.”

Lisa nodded. The alien had subtly mispronounced her name for the first time in months, making the long “e” too long. That was as good an indication as any of the excitement that Sar-Say felt. She could not blame him. She was excited herself.

“How does it feel to be nearly home?” she asked.

“It feels very good,” Sar-Say replied. “But there is still much work to be done. We must find your fleet before we can begin looking for the Zzumer world, no?”

“We must find our fleet, yes! Space is a big place, as you well know.”

Sar-Say “nodded.” As he often remarked to himself, living with humans was hugely educational, if not always pleasant. Frankly, the thought that stars were arrayed in the universe much as cities are arrayed across the surface of a planet was a new one for Sar-Say. He had no use for astronomy before coming to live among these strange people.

He had a use for it now.

Travel via stargate meant that you did not have to concern yourself with the space between the stars. Rather, you moved from stargate to stargate. It was the topology of the gates themselves that was important, not the positions of stars around which the gates orbited. Lisa had related an apt analogy to explain the situation in human terms early in their language lessons. She had likened Sar-Say to a traveler on one of the terrestrial subway systems.

As she had explained, the average rider of the London Underground cared not what buildings he or she was passing beneath at any given moment, nor even the subway car’s location with respect to the Thames River, which the cars crossed without hindrance or notice. What was important to a rider of the Underground was that South Kensington came before Victoria Station, which in turn came before Westminster. Because of this independence from actual geography, the map that subway passengers used was a stylized representation of the Underground rather than a true map of London. For example, the scale of the map was larger in the central region of London where the stations were close together and smaller in the outlying districts where they were farther apart. The map had been designed to give riders maximum information about that which was important to them, namely the arrangement of the stations along the rail line; and suppressed irrelevant information about the lay of the land overhead. In other words, the map showed the topology of the system without too great a correlation to its geography.

That was precisely the situation in Civilization with regard to interstellar travel via stargate. When he traveled, Sar-Say had not been concerned with the “lay of the interstellar land,” only with the sequence of stargates that would get him where he was going. On his fateful final voyage, for instance, he had been en route from Vith to Persilin. The normal stargate sequence was Vith, Armador, Nala, Colsta, and Persilin. Where each of those stars was located with respect to one another, Sar-Say had no idea. They might well be in a straight line, or on different sides of Civilization. With a stargate at one’s disposal, it really did not matter.

The human method of star travel was completely different. He remembered the shock he had felt when he had realized this awful truth. The human ships traversed the space between the stars, rather than jumping over that same space. As the interminable journey they had just completed had demonstrated, where the stars were located with respect to one another was the most important thing to a human starship captain.

The disadvantage of not being able instantaneously to jump from star to star was compensated for by the

fact that human ships were not constrained in their choice of destinations. Astrogation involved pointing the nose of one's ship at any star one chose, and then going there. This freedom of movement would not sit well with Those Who Ruled once they heard of it. Moreover, until they learned the location of the human home world, there was little they could do about it.

That made knowledge of where the human sun was located potentially valuable, and therefore, Sar-Say had quickly decided to see if he could determine its location for himself. As part of his education, the humans had provided him access to their planetary database system, and he had called up various educational files relating to astronomy.

Determining where the human sun was located had proved to be childishly simple. Not that he had actually succeeded in answering the question himself. His knowledge of astronomy was too rudimentary for that. However, he carried in his brain the data that would allow an astronomical specialist to determine Sol's location within a few hundred heartbeats.

Like most self-centered species who believed themselves alone in the universe, the humans had developed a science of the heavens that was Earth-centric. They thus recorded the position of every object in sight, not with respect to some universal coordinate system, but rather, where they appeared in the night sky over Earth. The human sky maps were marked much as their maps of the human world were marked, namely in lines of longitude and latitude. They called their lines of longitude "right ascension" and their lines of latitude "declination." Consequently, each astronomical coordinate was a vector pointing directly back toward Sol and Earth.

The positions of the local stars around Sol were of little use to Sar-Say. Being local, it was likely that the astronomy specialists at home would not know of these particular stars, or if they did, would not be able uniquely to identify them. However, certain features around the galaxy were sufficiently prominent that they appeared in the skies of both Earth and the worlds of Civilization. The Sky Flower Nebula was one such object and the great blue-white beacon stars such as S Doradas (the human name) were others. By memorizing the human-assigned coordinates of these most prominent features of the galaxy, Sar-Say could provide his people's astronomers with dozens of vectors pointed directly back to the human home world.

With the identification of as few as six prominent landmarks and their corresponding right ascension and declination values, the humans' secret would be a secret no longer.

CHAPTER 32

Mark Rykand floated in front of the viewport of one of the Ruptured Whale's landing craft and gazed at the blue-white world in the distance and the black-brown moon below. They had dubbed the planet "Brinks" and the moon "Sutton," in keeping with Hideout's impromptu system of nomenclature. The airless moon, which was three times the size of Earth's Luna, had been the terrestrial expedition's headquarters for the past three months.

They had been busy months, if frustrating. They had been months of preparation, necessary work to support their primary goal of finding a world of the Broan Sovereignty, but work that did not obviously advance their cause. As Lisa liked to say, "they had been making progress sideways." Now that their preparations were nearly complete, things would go more quickly - he hoped. It was a hope shared by every one of the expedition's three thousand members. Aboard the starships and in the newly carved maze of tunnels beneath Sutton's rocky surface, the feeling of anticipation was almost palpable in the

metallic-tasting air.

Their frustrations had begun shortly after the Ruptured Whale had flashed out of superlight and began its approach to the star they called Hideout. Their mission orders read, "... Upon reaching the staging area, each ship will make contact with the others of the force, while being on the alert for the presence of aliens in the system." That there were no aliens in the system had become more obvious hour by hour, as they swept toward the yellow-white giant sun that was their goal. Had the Hideout system once supported native life, that life had come to an untimely end nine thousand years earlier when the nearby nova lit up the sky and sent a lethal dose of radiation sleeting through the system. If the nova had appeared three times as bright as Venus in Earth's sky at a range of 7000 light-years, Mark had difficulty imagining the awesome sight that must have greeted Hideout's denizens a mere ten light-years from the cataclysm. Considering the high background radiation that the nearby nebula continued to send through the system, the supernova at full blossom must have been sufficiently powerful to strike creatures dead where they stood.

However, native life was not the only thing they had to guard against. There was also the possibility that the Broa had established a presence in the system, either for scientific or commercial purposes -- such as mining mineral deposits. Yet, though they had gone in with every sensor at maximum gain, they detected no energy source beyond the rhythmic radio noise emanating from the giant cloud behind them. Nor had they detected a gravity wave that would indicate a nearby stargate in operation.

At first, they had been relieved when their sensor sweeps came back negative for two days running. Then they began to worry. For not only was the Hideout System devoid of alien intelligence, it seemed equally devoid of human intelligence. Of the other ships of the expedition, there was no sign.

"Hardly surprising," Dan Thompson, the ship's chief astronomer and Mark's nominal boss, had said when Mark asked him about the negative results on the third day after their arrival in the system. "A star system is a big place. Hell, we are just now getting to the point where we can identify Hideout's planets, and a planet is infinitely larger than the biggest starship."

"I would have thought our telescope sweeps would have found the planets by now."

Thompson had chuckled. "Typically, an astronomical telescope has a field of view of about half-a-degree, which means that you are looking at about one five hundred thousandth of the area of the sky. Worse, even though we have the fastest computers in existence, there is so much data on the sensor chips that it takes several seconds to read each one. That means that we can only sweep so fast. We will be at this for another half a week unless we get lucky and stumble across something that shows either a disk or a half-disk. Once we find a few planets, we'll be able to plot this system's ecliptic and things will go faster."

Mark had nodded. In Sol System, the "ecliptic" was the plane in which the Earth orbited the sun, and to a lesser extent, all of the other planets. That all of a system's planets must lie close to the same plane was one of the basic tenets of astrophysics. Stars and planets both formed when an interstellar dust cloud collapsed under the influence of its own gravity. As the cloud contracted, it began to rotate in order to conserve its angular momentum. As the contraction continued, the cloud formed a large sphere at its center and a much thinner "accretion disk" around its middle. The sphere contracted until it became a star (or didn't), and the disk broke up into smaller clumps of matter, which eventually became the star's planets. Since they all formed from the same disk, all planets orbited in approximately the same plane - the system's ecliptic.

The problem was that the orientation of the ecliptic is random from star to star; the result of local conditions in the primordial cloud at the time the system first coalesced. There was no unifying principle

to align them in space as the magnetic domains align in a piece of lodestone. Thus, when a starship arrived in a new system, it had no clue as to where to find the plane of the planets, and accordingly, was forced to scan the whole sky ahead looking for them.

Once a minimum of two planets were identified, however, the task became infinitely easier. As a favorite geometry teacher had once informed Mark, “three points determine a plane,” and with one star and two planets located, that was all the computers needed to map out the ecliptic. From then on, the telescopes could sweep a narrow corridor of space, looking for more planets.

They had found Brinks on the fifth day of their search. A world twice the size of Earth, it orbited some 500 million kilometers from Hideout and possessed a moon even larger than Luna. Mission parameters called for the fleet to rendezvous at the planet closest to the center of the temperate zone in any system where they found themselves. Brinks had proven to be nearly perfectly situated in that respect. Its orbit practically bisected the zone where temperature assured that water was liquid.

As they continued their approach from the outermost reaches of the Hideout System, the *Ruptured Whale* swept past both of the outer system gas giants - Bonnie and Clyde - and above a largish asteroid belt that orbited between the two. Mark knew that the asteroid belt in the Solar System was the result of Jupiter’s overpowering gravitational pull, and he wondered what complexities were involved when two such giants contended for the same set of loose rocks.

Unlike the voyage out from Earth, the approach to Brinks had been mercifully short. That was because Captain Landon had ordered the *Ruptured Whale* to make the approach at more than 100 kilometers per second, some five times the speed at which the planet orbited its star. It had been a dive that would have made any hawk proud. Nor had it been as foolhardy a maneuver as it might first appear. For, not only would they arrive at the planet within days instead of months, keeping their speed up meant that they had a good chance of escape should they encounter an alien craft.

They had not encountered one, of course. There was no life in the system other than aboard the human starships and as one wag had commented on the outbound trip, “You call this *living* ?”

That the approach was necessary at all was the result of the laws of transluminal physics. They had dropped sublight on the outskirts of the star system where space was agreeably “flat.” To dive more deeply into Hideout’s gravity well would have been dangerous. The stardrive’s field might have imploded, releasing all of its hellish energy into the ship. Mark had seen what a collapsing drive field could do in terms of destruction when he viewed the recordings of *Magellan*’s brief combat with the Broan Avenger.

That was one recording that he would as soon have missed seeing; yet it held a morbid fascination for him. Every time he watched it, his eyes clouded up when Jani’s tangled mane appeared on the screen. At least, she had not been afraid. Death had come too quickly for fear. Just seconds before the end, he had watched the auxiliary comm channel that had recorded Jani’s expression throughout the quick, deadly fight. His sister had looked excited and curious, but never afraid.

For that he was eternally grateful. Now if he could only get the nightmares to stop!

“Damn the Broa to hell!” he muttered to himself as the landing craft descended across the sun-baked, airless plain of Sutton, arrowing for the place where the expedition had built their home away from home.

#

The tunnels the construction crew had drilled into *Sutton* were four meters square and wide enough for four people to walk abreast, or they would have been had they not been jammed with packing crates of

all descriptions. As it was, he was barely able to maneuver through clutter that looked like someone would shortly be erecting the barricades of Paris for a revival of *Les Miserables* .

He made his way through the organized chaos until he reached the compartment that he shared with Lisa. He found her there, still in her sleeping tights, conversing with Sar-Say in the Broan trade language.

“Greetings, my partner in attempted procreation,” she said as he walked through the door.

He walked over to her and kissed her on the errant strand of blonde hair that she was forever brushing from her eyes. “Greetings, female, someday to be of my clan and sept. How goes the perspiration?”

“I think you mean “respiration,”” she said conversationally, switching to Standard.

“I know what I said,” he replied. “I asked ‘How goes the work?’ Hello, Sar-Say.”

“Hello, Mark,” the pseudo-simian answered without looking up from the screen he and Lisa had been studying when Mark entered. The Taff showed no ill effects from his brush with death on the outbound voyage, but had developed a new respect for electricity.

“In that case,” Lisa replied, “the work is going crappy. Not a peep on any of the long-range sensors or a twitch out of the gravity wave detectors yet. How was the ship?”

“Starting to look deserted,” he replied. “Just about everyone is down here, burrowing into this God-forsaken rock.”

“Don’t speak ill of our new home. At least we have more room here than in our compartment aboard ship. Besides, they are going to get the ice heaters working one of these weeks. We will have all of the fresh water we can possibly use and I will be able to give up that damned sponge!”

He gazed at the pouting expression with which she accompanied her complaint and could not help laughing. She looked almost as comical as Sar-Say. Except she had done it on purpose. The Taff could not help the way he looked.

“What do you say about that, Sar-Say?”

Yellow eyes locked with his and he replied, “I will be happy for the water because we must drink it to survive. However, what you humans see in immersing yourself in liquid is one of the mysteries that I have yet to comprehend. Give me a warm box of sand to sift through my fur any day.”

Mark nodded. “The beings who originally crewed the *Ruptured Whale* used hot sand, too. What did you call them?”

“They were Vithians, inhabitants of the planet that I had visited earlier. And yes, they use hot sand for cleaning their bodies, although with an additive that we Taff find distasteful, a chemical that smells rancid to us.”

“To each his own,” Mark said absentmindedly before realizing that it was probably a sentiment that was not widely voiced among the Broan stars. To the Broa, the sentiment would be “to everyone, our own.” He wondered if Sar-Say even got the reference.

He did not have time to find out. Lisa said, “We have made some progress today. I think we have adjusted this three-dimensional model of the nebula to match the orientation found in Sar-Say’s painting of the Sky Flower Nebula.”

“Interesting,” he responded, looking over Sar-Say’s shoulder. The screen showed a phantom image of the Crab Nebula superimposed over Sar-Say’s painting. What’s the point?”

“If we know which side he was looking at, we can get a rough line of direction on the Zzumer sun, of course. If I haven’t screwed up and Sar-Say’s memory is still good, we should find them more or less in the direction directly opposite the Galactic Center.”

“How far in that direction?”

Lisa frowned and bit her lip, a mannerism of which he doubted that she was aware. In any event, he found it fetching.

“Not sure. We can guess, of course. Considering all of the constraints on the problem, I would suspect that they are somewhere between one and two hundred light-years from here.”

“Why those limits?”

She shrugged. “Logic. If they had been closer to the supernova than 100 light-years, their world would have been sterilized as thoroughly as Brinks...”

Mark nodded. Just to satisfy monkey curiosity -- their own and Sar-Say’s -- Captain Landon had sent an expedition down to the planet to check it out. Sure enough, it had once had life on it. The surface was covered with the toppled remains of continent-wide forests and the seas still harbored a few small swimming things. These latter lived in the narrow layer between where the radiation was filtered out by the sea and the depth to which Hideout’s rays penetrated. One of *Magellan*’s biologists had captured a few specimens and had been happily researching them in his spare time.

“... And if they were much farther than 200 light-years distant, then the nebula wouldn’t be so prominent in their night sky.”

“Seems reasonable,” he agreed. “Can’t you pin it down more closely using Sar-Say’s recollection of the Sky Flower Nebula?”

“Wish we could. Unfortunately, the size of objects in the sky is highly subjective. The problem is that there is nothing with which to compare their scale. Didn’t you ever do that silly experiment with Luna in high school?”

“What silly experiment?”

“You know how large the full moon looks when the moon is just rising, right?”

He nodded.

“Next time we are home and the full moon is rising, face away from it, bend over, and look at it between your legs.”

“You mean upside down?”

“Exactly.”

“Other than getting me into an undignified position, what would that prove?”

She laughed. “Try it! You will be surprised. That giant ball rising from out of the sea looks the same size between your legs as when it is high in the sky. The harvest moon is an optical illusion caused when your brain has the horizon to use as a reference. The brain perceives the moon larger than it really is.

“The same thing is true of the Sky Flower Nebula. Sar-Say saw it high in the sky. He had nothing to relate its size. As a result, he really can’t give us a quantitative idea of its true size.”

“That true, Sar-Say?”

The Taff made the gesture that Mark had learned was his equivalent of a shrug. “I am afraid that it is, Mark. Lisa and I have discussed this point extensively, and unfortunately, my brain plays the same tricks of sight as your own.”

“How about just telling us how far it is from the Zzumer world to the Sky Flower Nebula? Surely your guides told you that.”

Some alien emotion crossed Sar-Say’s features. When he spoke, it was with great seriousness. “I am afraid that no one told me, nor would it have done much good if they had. The Zzumer, like you humans, measure distances in light-years -- Zzumer years, of course. Since I do not know the orbital period of their planet around its star, I cannot convert Zzumer light-years into human light-years.”

“That would have made it too easy, I guess,” Mark muttered. “So we look for the Zzumer star somewhere between 100 and 200 light-years from here in the direction opposite Galactic Center. Perhaps I can talk the boss into running a survey of that region of space.”

“Would you?” Lisa asked. “We know the Zzumer sun is a K-spectral class. There cannot be that many off in that direction. Maybe we’ll get lucky.”

“More than you might think,” Mark replied. “Do you have any idea how many K-Class stars are within 200 light-years of Sol?”

“No.”

“Thousands. Still, having a vector to scan will cut down the work. Perhaps we will get lucky.”

Just then, the bulkhead annunciator squawked and the voice of the duty officer issued forth. “*Attention. Ladies and Gentlemen, attention! Dr. Thompson reports that the gravity observatory trapped a verified gravity wave about twenty minutes ago. Triangulation is beginning now. We should know where it came from within the hour.*”

“Then again, maybe we just got lucky without the search...”

CHAPTER 33

The main auditorium in Brinks Base was a gallery hacked from the solid rock of the moon. The walls still bore the scars of the digging machines’ circular teeth and the overhead lights were a series of naked glow tubes bolted to the rock ceiling. Each bank of lights was connected to its fellows by long, looping strands of black electrical cable. The seats were actually packing crates -- the same crates that cluttered the corridors of the base -- and the tables had been constructed by spreading flat panels across upended foodstuff containers. These latter gave the auditorium an interesting smell since some of the cases’ hermetic seals had been broken during handling. The aroma of coffee beans and various spices mixed with the smell of machine oil and humanity. Anyone back on Earth shown a picture of the place would have been more likely to guess that it was a junkyard than the main conference center of humanity’s farthest outpost among the stars.

Mark Rykand hurried among the ramshackle tables, distributing briefing books as the first conference attendees came drifting through the door from the main tunnel. That they were arriving nearly fifteen minutes before the scheduled time of the briefing was an indication of their excitement at recent events. It was an excitement Mark felt himself. After months when nothing seemed to have been happening, suddenly there was activity aplenty. Their long delayed mission to a Broan-held star was about to get underway.

It had been more than two months since the gravity wave observatory had first detected a stargate-induced gravity wave. That had come from a star system some three hundred light-years farther from the galaxy's center than Hideout. The position vector had not been near Sar-Say and Lisa's estimate as to the direction to the Zzumer sun, but it had been in a direction generally opposite the vector to Earth.

That was potentially good news. It was their second indication that the bulk of the Broan Sovereignty lay outboard of the Crab Nebula. If true, it meant that humanity had no reason to fear that a Broan listening post would one day pick up Earth's expanding bubble of radio noise. The first radio waves from Earth would not arrive in this vicinity for a span of time longer than the one in which humans had inhabited cities.

On the other hand, one detected system and another presumed one were insufficient data to justify any sweeping generalizations as to the location and extent of the Broan Sovereignty. The location of the Broan stars was one of the most important things they had come to discover.

As he finished distributing the briefing books, Mark noted that the auditorium was filling faster than he had realized. More than half the seats had filled while he concentrated on his task. Up on the dais -- another shipping container, this one for some unidentified piece of oversize equipment -- Captain Landon, Captain Heinrich of *Magellan*, and Captain Erickson of *Columbus*, were conferring with Dr. Thompson, Mark's boss.

Mark turned to retrace his steps to the front of the artificial cavern and noticed Sar-Say enter the auditorium. The pseudo-simian moved through the door in his space-eating knuckle walk. Lisa followed closely behind her charge and directed him toward the dais. She answered Mark's wave with a broad smile. The two of them had not seen much of each other since *Magellan* and *Columbus* returned from their scouting expedition. Both had been too busy at their respective jobs -- Mark assisting the expedition's astronomers reduce the two ships' long range observations, Lisa helping Sar-Say transcribe some of their communications intercepts.

Lisa and Sar-Say took their places on the dais at one minute before 10:00 hours, with Mark 15 seconds behind them. Then, precisely on schedule, Captain Landon rose and strode to the lectern, which looked oddly out of place amid the ad hoc collection of boxes and crates. It had been acquired from one of the starships and was constructed of polished mahogany, with built-in lamp and holoscreen controls. The holoscreen was suspended from the rock ceiling. It currently showed a misty cloud of static within its view-space.

"Good morning, ladies and gentlemen," Dan Landon began in a quiet, conversational tone. "We are here to review the results of the scouting mission just completed by *Magellan* and *Columbus*. To start off, I give you Dr. Thompson of the astronomy department. He will set the scene by discussing the target star and its planetary system. Dr. Thompson..."

Willem Thompson was a small, balding man with a facial tic that had become more pronounced over the last three days. The nervous habit was evidence of the strain he had been under since the two starships dropped several terabytes of astronomical observations on his department. Despite the fact that he had

been up all night preparing the briefing, he moved to the podium with a spring in his step -- a natural consequence of Brinks's one-third gravity. As quickly as Dan Landon vacated the lectern, Will Thompson punched up the first holograph. It showed a view of the Crab Nebula and surrounding space out to five hundred light-years. One particular point of light was blinking a bright crimson.

"Here you see the star we have dubbed Orpheus. We detected it some 58 days ago when a gravity wave from its stargate passed through this system. It is currently the only unambiguous jump wave we have identified, although the instruments may have had indications of two others."

Dr. Thompson paused a moment to gaze at the audience. "Before we go any further, I would like to impress upon each of you the significance of that gravity wave that rolled through this system two months ago. The distance between Hideout and Orpheus is 287 light-years. Like all other wave phenomena in normal space, gravity waves propagate at the speed of light. That means that the jump wave we detected came from a ship that transited the Orpheus system almost three centuries ago!

"Never forget that the Broa had stargates before we humans invented steam engines. It is possible that the first Broan conquerors were contemporaries of Julius Caesar. I hope that thought will give you pause when it comes time to make contact with these aliens. No matter what you think of them, it would be disastrous for our race to underestimate their knowledge and power."

Thompson touched the holoscreen control. The view changed to show a small, yellow star with six planets around it. A violet-tinged stargate symbol flashed not too far from the third world out from the yellow star.

"This, ladies and gentlemen, is the Orpheus system. There may be more planets than we have displayed here -- the survey was a rather quick one -- but these are the largest worlds in the system and the ones that are inhabited, based on their energy signatures.

"The main inhabited world in the system is the third. That is not very surprising since the third planet is most often the temperate one in G-Class systems with dwarf primaries like Orpheus or Sol. From our long-range scans, it appears that the third planet is definitely Earth-like. That is a lucky break for us. It means we will likely be able to visit with no more protection than suntan lotion or possibly a heavy winter coat.

A hand went up in the second row. It was one of the project scientists, Dr. Roonavong.

"Yes, Padhil?"

"You say you cannot be sure that you located all of the system's planets, yet our scouts found the stargate. Since it is infinitely smaller than a planet, how did they manage?"

"That turned out to be the easy part. Both *Columbus* and *Magellan* detected a gravity wave shortly after breakout and were able to triangulate the position. In fact..." Thompson reached for the holotank controls, but was stopped by a hand on his shoulder.

"A moment please, Doctor!" Dan Landon said. The commander regarded the audience with the serious expression he reserved for chewing out hapless crewmembers. "Ladies and gentlemen! I appreciate your curiosity about what Captains Heinrich and Erickson discovered. However, we have a great deal of information to impart today and we do not want to become distracted. Please hold your questions until the proper time and allow the presenters to get through their reports first. Thank you."

If Padhil Roonavong noticed that he was being chastised for interrupting, he showed no sign. After a few seconds, Thompson continued.

“Now, then, having located the planets, we were able to eavesdrop quite extensively on the system inhabitants. I am happy to report that the two ships’ ersatz Broan communications gear worked flawlessly. Our compatriots recorded voice, video, and data signals and analyzed those they could on the spot. The rest they brought back to have you specialists take a crack at them.

“I can tell you that Orpheans have six tentacle-like grasping members encircling the upper portion of their torso about where their necks should be and their heads are immobile. They make up for this with six eyes, each spaced equidistant around the full circle, giving them omni-directional vision. They are tripeds who move with a twirling motion, sort of like a Whirling Dervish. They do not appear to be equipped to sit.

“Here, then, is an Orphean.”

The holoscreen cleared to show an alien figure. The being’s skin was vaguely reptilian. He was pale gray and hairless, with a bullet-shaped head surmounted by six protruding orbs. The being was built on the hexagonal plan, with six eyes, six tentacles, and tripod legs.

“The expedition’s instruments picked up hundreds of hours of communications, much of it in a language that we could not identify. We have enough intercepts in the Broan trade tongue; however, to confirm that this is indeed a world of the Sovereignty.

“We will have an astronomy session following this general briefing. It will take place in the astronomy group’s spaces in Compartment B7, Corridor 9. I would now like to turn you over to Captain Erickson, who will describe the details of the scouting expedition.”

#

The briefing lasted more than three hours. Captain Erickson took one-third of that time to describe the recent expedition. He related how *Columbus* and *Magellan* had dropped sublight well beyond the orbit of the system’s most distant planet, and near the inner boundary of Orpheus’s Oort cloud.

The Oort cloud is a standard feature of every star system. It contains the excess material left when the primordial cloud of gas and dust collapsed to form the star and its planets. The Oort cloud is the source of a system’s comets. Literally hundreds of billions of nascent balls of rock and ice fall constantly inward, but at a velocity so low that they will never reach the star that is pulling them down. They wait with infinite patience for something to disturb their “orbits,” and when that happens, comets by the thousands are sent hurtling into the inner star system. There a few of them encounter planets, and eventually collide with them, bringing death and destruction to entire biospheres. Sol’s Oort cloud sends a storm of comets sunward every 26 million years or so. It was a comet storm that killed the dinosaurs 65 million years ago, and another that murdered the trilobites.

However, the Oort cloud also represented safety for Earth’s starships. It was unlikely that the Orpheans had a space watch system that reached as far as their Oort cloud, but if they did, it would be next to impossible to pick up two starships against such a cluttered backdrop.

Erickson described the excitement when a gravity wave strong enough to rattle cups in cupboards swept through the two starships within a day of their arrival. Triangulating the jump wave, they easily backtracked to Orpheus’s stargate, and from there, to the third planet. Then, with Orpheus’s ecliptic identified, they had found five other worlds in only a single day. Two of those worlds were Jupiter-class giants.

“That jump wave was a lucky break for us,” Captain Erickson told the rapt audience. “It cut our mission time by more than a month.”

Close analysis of the energy emissions of each of the five worlds proved that they were inhabited, or in the case of the two gas giants, that their moon systems were. That was hardly surprising considering that starships had been entering and leaving the system for at least three hundred years.

As tantalizing as the long-range intercepts were, however, they raised more questions than they answered. Both captains would have liked to head in for a closer look, but their orders were explicit in that regard: “No approach to target star or world under any circumstances during initial scouting expeditions.” Humanity’s ships were to emulate black cats in cellars at midnight, except a black cat would have sparkled in the infrared wavelengths, and the ships were shielded far better than that. Each radiated its waste energy into space in a direction opposite Orpheus. On the side of the ship facing the star, surface coolers kept the hull temperature at the same level as the surrounding ice and dust.

The next few speakers were mission scientists briefing their colleagues on the communications intercepts. Despite the volume of data collected, the last speaker, Sar-Say, highlighted that they had a lot more to learn. Instead of delivering prepared remarks, the pseudo-simian stood on a box behind the lectern and looked out over the sea of expectant human faces. “You have done well, my friends,” he said, his yellow eyes sweeping the audience in a perfect imitation of the human speakers. “I do not know what I can add to the conclusions you have already heard today, but I stand ready to answer questions.”

One of the scientists near the back of the room shouted, “What do you know about these creatures with the octopus-like collars?”

“Nothing. I have never encountered them.”

“Not even a hint?” the questioner asked.

The alien shrugged. “The Sovereignty is a large place. It is impossible for any single entity to know all of the species and worlds the Broa control.”

A tall woman stood up in the third row. “And what of the Broa? How many are liable to be in the Orpheus System?”

Sar-Say thought for long seconds, and then replied, “If there are any Broa in residence, they will likely be few in number. The system appears to be a marginal one with but a single stargate. It cannot be very important to the Broa.”

The questions continued for another fifteen minutes, but eventually they dribbled away to nothing. Sar-Say returned to his seat and Dan Landon stepped up to the podium. He seemed none-the-worse for having sat through the technical jargon and densely packed graphs and tables.

“I think all of you will agree that we have a potentially viable target here, people. The question is whether we go for Orpheus or we wait patiently for another jump wave to transit this system. I want your working group recommendations by this time tomorrow. In the meantime, get some lunch, use the facilities, gossip. Just make sure that you are in your working groups by 15:00 hours so we can give the problem a thorough evaluation.

“Dismissed!”

#

Three days later, Lisa Arden hurried through the rock tunnel toward the main airlock and the last shuttle before the *Ruptured Whale* left orbit. Sar-Say was already aboard, along with the rest of the starship’s crew. Lisa had stayed behind to help with the anthropology working group’s final report on social mores

among the Orpheans. She had nearly stayed too long.

While physical data and language studies were important, knowing the Orpheans' customs would be crucial if they were to keep news of their impending visit from reaching the Broa. Social interactions among humans were difficult enough, but at least human cultures shared a few universal precepts. Marriage and children, for instance. There had never been a human society that did not have some form of marriage, or one that has failed to cherish their children. Though generations of sailors had routinely violated the principle, most people knew enough to stay away from women in a strange land until they had at least an inkling of the local sexual taboos.

Lisa doubted that they would have any trouble among the Orpheans on that last point. The bullet-headed, octopus necks (as one of the anthropologists had dubbed them) were about as far from the human standard of beauty as it was possible to get. She suspected the opposite was also true.

What concerned her was the possibility that an unintentional slight or insult might create an inter-species incident. Among an unknown race of aliens, that was almost inevitable. For example, what was the local attitude toward bodily functions such as defecation? An alien visiting Earth might find it odd that public toilet facilities were segregated by sex while the ones in private homes were not. Likewise, the human custom of wearing clothes in climates where they were as much hindrance as help would be confusing to an alien who lacked a nudity taboo.

The Orpheans undoubtedly had similar idiosyncrasies in their social arrangements. It had been the job of the Anthropology Working Committee to see what they could learn from the intercepted broadcasts. They had done their best, but too often, the alien actions had seemed pointless.

Except for their physical peculiarities, the Orpheans were not that different from humans. They had holovision -- that is, communications broadcasts intended for entertainment purposes -- or so the majority of scientists thought. They also seemed to have a large number of "talking heads" programs, possibly even "argument shows," in which several Orpheans appeared on screen, chattering at one another in their native tongue, and waving their tentacles. The whole scene reminded Lisa of a forest of seaweed waving in agitated surf.

From the behavior they displayed in their holo programs, most anthropologists thought the Orpheans individualistic. The consensus was that they appeared more self-centered than humans did, although Lisa found that difficult to imagine. Most agreed that they were argumentative and would have no aversion to cheating strangers if given the chance.

Lisa was carrying the record tile containing the scientists' multi-thousand-word tome in her kit bag. The report had only been finished half an hour before she was to depart. She had thought that she would be the only passenger, and was thus surprised when she found Mikhail Vasloff waiting at the airlock for her. His kit bag was with him and he had the air of someone about to embark on an adventure.

"What are you doing here, Mr. Vasloff?"

"I am going along. It took some convincing, but Captain Landon gave his permission an hour ago. I am to go up with you."

"I would have thought you would stay here at Hideout," Lisa replied cautiously, suddenly aware that she might have blundered into sensitive territory.

"Why would you think that?"

"You haven't exactly been this expedition's biggest booster, now have you?"

Instead of growing angry, the Russian put his head back and laughed. When he stopped, he said, "I have never heard a statement made more diplomatically, Miss Arden. Perhaps I should recruit you for my little cabal of fanatics."

"I've never called them 'fanatics,' Mr. Vasloff."

"You are about the only one in the Stellar Survey who has not. But then, you aren't really Stellar Survey, are you?"

"No, sir. I was recruited specifically for this job."

"Then, you can probably understand my position better than anyone. I am going along to make sure that the more ... shall we say, enthusiastic? ... that the more enthusiastic members of our party don't take leave of their senses."

"How so?"

"By revealing the location of Earth to these aliens, of course."

"No one would do that."

"Not intentionally. Still, we cannot know precisely what information we are divulging just by revealing the fact of our existence. Surely any reasonably knowledgeable Orphean biologist will be able to divine what sort of star we evolved under."

Lisa nodded. The human body was a veritable signpost to the fact that Sol was a G2 yellow-white star. It telegraphed that fact merely from the wavelength of light at which human eyes focus most sharply. There was no telling what other secrets their bodies might reveal to an alien who knew what to look -- or sniff -- for. The human body odor must reveal facts about the chemical composition of their home world. How that would also give the aliens clues to the *location* of Earth, Lisa could not imagine. The problem was that an alien might prove to have a better imagination.

"So how do we know what we are revealing to them?"

Vasloff shrugged. "We don't. Alien capabilities are, by definition ... alien. That is why I am coming along. I will be more on guard than the rest of you. I will see to it that no unnecessary chances are taken."

"In that respect, we all want the same thing, Mr. Vasloff."

"Of course. We all want the same things; we just go about it differently. I have no desire to offend, Miss Arden, but perhaps I can explain my point better with an example."

"Go ahead."

"Do you like Sar-Say?"

The question took a moment to consider. In fact, she did like Sar-Say. He had ceased being a research subject more than a year earlier. He was a quick study and had empathy for human ways of looking at things. Besides, he could be very funny when he put his mind to it. She remembered how devastated she had been during that day and night she had watched over him in the infirmary. It had seemed as though she was losing a child.

"Yes, I suppose I do."

"Then you would be more likely to believe something he tells you than not?"

Lisa thought about her answer for a moment and then said, “We’ve never caught him in a lie, but that doesn’t mean he tells us the truth, I suppose.”

“Isn’t that what this entire expedition is about? Determining whether Sar-Say has been telling us the truth?”

“We would be fools to take his word for something as big and bad as he says the Sovereignty is.”

“But if he were going to lie about it, wouldn’t he put a happier face on it?”

“That seems logical.”

“Yes, it does. To a human. However, is it logical to a Taff? That is why I am coming along. Like the rest of you, I plan to learn all I can about the Orpheans and the Broa, but I will learn through the eyes of a skeptic, not an advocate.”

“Well, Mr. Vasloff, whatever your motives, it is good to have you along.”

At that moment, a speaker mounted on the rock wall announced that the orbital shuttle to the *Ruptured Whale* was ready for boarding. They gathered up their meager belongings, and Vasloff ushered her through the portal leading to the docking tube.

A few minutes later, they were spaceborne.

CHAPTER 34

The yellow star in the viewscreen might have been a twin of Sol were it not for the great cloud of gas and dust that lay beyond. The Sky Flower Nebula was not the same universe-spanning wall as in the Hideout System, but it was still the most prominent feature in the sky. In one respect, the Broan conquest of humanity had already begun. Already, bits of trade talk were infiltrating the crew’s daily conversation. It seemed fitting to call the nebula by its Broan name while here in Broan Space.

Dan Landon sat at his station and considered what lay ahead as he sipped tea from a microgravity bulb. The Crab/Sky Flower Nebula was the unofficial boundary between human space and Broan, at least until they knew better how far the Sovereignty extended along the Orion Arm of the Milky Way.

Nor was the name they called the supernova remnant the only evidence that they were in Broan space. Around Landon, the bridge crew was checking and rechecking their instruments, all of which had been converted to the dot-dash script of the overlords. A great deal of the symbology used on the screens had been changed as well. Nor were the screens the only things tagged with Broan script. On the long trip out from Earth, virtually all interior markings had been changed over until there were no Latin letters or Arabic numerals visible anywhere a casual observer might spot them. Even the ship’s name had been changed, although she was still officially *The Ruptured Whale* to her crew. Her camouflage name was *Wanderer*, or the Broan trade-talk equivalent. While in orbit about Brinks, a work party had carefully stenciled the name on the hull in patterns of meter-high dots and swirls. They had done everything they could to make the *Whale* appear a trading vessel from a distant region of the Sovereignty.

The crew’s looks had changed as well. During the outbound voyage, every crewmember had gone into a shower cubicle, to emerge with skin the color of a ripe orange. A few minutes under a hood had finished the job by dying their hair electric blue. The transformation had triggered numerous jokes, many off-color; and cohabiting couples reported taking a great deal of time to check the completeness of their

partners' skin dye. The masquerade was not supposed to make humans look like any particular race of the Sovereignty. Rather, it was to make identification difficult should the Broa later become suspicious and request data on the ship full of strangers that had briefly visited the Orpheus System.

Dan Landon wondered if the subterfuge was worth the trouble. After all, though a large change in human eyes, he doubted aliens would notice anything as trivial as the color of their skin.

It had been a month since the *Whale* and her consorts, *Magellan* and *Columbus*, had dropped sublight deep within Orpheus's Oort cloud. Because Orpheus III was currently on the far side of the star from the nebula, they had circled around and approached the system from directly opposite the Galactic Center. Thus, they had the star between themselves and the nebula. Having safely reached the outskirts of the system, the two accompanying starships resumed their long-range eavesdropping while the *Ruptured Whale* started its long fall into the inner system.

The orbit they adopted would make them appear a comet, although one moving substantially above local escape velocity. If spotted, they hoped the local astronomers would take them for a rare bit of debris from out of interstellar space. In any event, imitating an intrasystem comet was out of the question since such an orbit would take years before it delivered them to the stargate. As it was, it had taken three weeks for them to dive into the heart of the Orpheus System using a hyperbolic approach orbit. In another few hours, they would begin decelerating to intrasystem velocity such that when they reached the vicinity of the stargate, they could pretend to be a newly arrived trading vessel.

#

“Report!”

“Stargate is 200,000 kilometers ahead, Captain. We are closing at 60 kps. Deceleration is holding steady at 2.5 gravities and will continue for two more minutes. Closest point of approach to the stargate is in two hours.”

“Very well. Keep me posted.”

Dan Landon's words were labored by the heavy weight dragging him down. All over the ship, bodies made soft by months in microgravity lay in acceleration couches while their owners labored to breathe and counted the seconds until the sandbags would be lifted from their chests.

“I have a contact, Captain!” the sensor operator announced.

“What sort of contact?”

“It looks like a ship headed for the stargate.”

Landon frowned. A ship was the last thing they needed to encounter in the last phase of their approach, when they were most vulnerable to premature discovery. During the long fall from the Oort cloud, they had looked like an extra-system rock. In a few hours, they would be well into their masquerade as a trading vessel from beyond the stargate. Now, however, they were engaged in a very "un-cometary" maneuver, decelerating at 25 meters per second squared. Any ship that spotted them now would know that they were 1) not a natural phenomenon, and 2) coming in from the outskirts of the star system. If they were spotted before they were ready, they would have to abandon the mission and try again in another star system.

“Range?”

“No way to tell other than to note it is approaching the gate. Do you want me to power up the radar?”

“Negative. Maintain electromagnetic emissions blackout. Continue to track visually.”

“Aye aye, sir.”

“What do you make of it, Sar-Say?” he asked. The Taff was seated in the observer’s chair and was having as much trouble breathing as the humans. Somehow, his comical figure looked a little less comical as he struggled to turn his head toward Landon. Despite his discomfort, he gazed at the captain with wide-eyed excitement. He had been excited during the entire approach. Even those who had not had much contact with the alien recognized the change in him.

“I would say that it is routine traffic, Captain. This particular stargate is the only one in the system. All shipping must converge on this point.”

“Right. We will continue the approach then. Sensors! Stay alert to any sign that he has spotted us.”

A ship in the vicinity was a complication he did not need, but it was not the source of the sudden feeling that he had forgotten something important. Landon disliked having the hair on the back of his neck standing up in the middle of the most important approach orbit of his life. He took a few moments to prod his subconscious for the stray thought. Suddenly, he knew what it was that was bothering him and a sick knot formed in the pit of his stomach.

“Damn!”

“What is the matter, Daniel?” his first officer asked.

“Gravity wave!” he answered. “We’ve overlooked the damned gravity wave!”

“I beg your pardon.”

“Don’t you see? Even if that ship fails to spot our approach, the locals will know we did not come through the stargate. Our arrival will not be accompanied by a gravity wave!”

Raoul Bendagar, who was operating the science console two places down from Landon, grimaced. “You are right! How could we have possibly forgotten something so elementary?”

“It is one hell of a time to think of it now. Sar-Say, your opinion.”

The Taff had been observing the humans, wondering at their sudden agitation. When addressed, he shrugged. “I do not believe it important, Captain. The planet’s gravity masks the waves and it is unlikely that anyone monitors them closely.”

“Raoul, do you agree?”

Bendagar also shrugged. “No data on which to form a conclusion. I propose that we go with Sar-Say’s evaluation.”

Landon pondered the problem. Instead of making a decision, he snapped, “Sensors. How far is that ship from the gate?”

“As I said, we can’t get its range unless we ping it with radar.”

“That isn’t what I mean. What is its angular separation, and how fast is that separation closing?”

“Uh, about half a degree. It has closed perceptibly while I have been watching it.”

“Estimate as to when it will reach the gate?”

“An hour, maybe two.”

“Right. We may be in business. Pilot, reprogram the computer to adjust our deceleration. I want to arrive in the vicinity of the stargate as near as possible to the moment when that ship enters it.”

“The timing cannot be exact, Captain. Not without range data.”

“Understood. Just measure the closure rate of the ship’s image and change our decel accordingly.”

“Yes, sir.”

“What do you have in mind?” Bendagar asked.

“Simple, Mr. Chief Scientist. We slow to an intrasystem speed compatible with reaching the gate at the same time as that target vessel, and then we reveal ourselves a few minutes after he goes through the gate. That way, the Orpheans may mistake his departure for our arrival.

Sar-Say uncovered his teeth in a mock human smile. “Very clever, Captain. If I am wrong and they do monitor the ships by their gravity waves, they may mistake his jump wave for one that we would have produced as we came through the stargate.”

#

Two hours later, they had slowed to 28 kilometers per second and closed to within 20,000 kilometers of the stargate. The other ship, which appeared a dim star on the viewscreen, still had not jumped. Landon was beginning to wonder if that other captain were ever going to quit dawdling. He was about to swear under his breath when the image winked out and a clatter ran through the control room.

“Moderate-strength gravity wave detected, Captain,” the sensor operator announced. “It came directly from the stargate.”

Landon quietly let out the breath he had been holding, before asking, “Sar-Say, how long would a ship normally wait after arrival before it contacted Orphean approach control?”

“Between five and ten minutes, Captain. There are machines to tame and other duties to perform when arriving in a new system. The crew would do these things first before announcing themselves to those who control ship traffic.”

“Right. We will give them five minutes and then call in with our arrival announcement. Thank you, Sar-Say; you have been a great help. Now, if you will please return to your cabin, we will start our preparations for contact.

“But I can help, Captain. Please let me stay.”

Landon frowned. Sar-Say’s request was not a new one, but he thought the alien understood the situation. He certainly did not need the distraction. “Miss Arden...” This last was spoken to thin air, or rather, to the ship’s computer, which routed the message to where Lisa was waiting out the approach.

“Yes, Captain?” her voice answered from the same thin air.

“Please come and help your charge back to his cabin. Report to me when things are secure in accordance with General Order Sixteen.”

“Yes, sir.”

General Order 16 covered first contact with any alien race of the Sovereignty. It ordered that Sar-Say be locked in his cabin and cut off from all means of communication with his compatriots. He was to have no contact whatever with them.

Lisa floated into the control room less than a minute later. She pulled herself to a position just in front of Landon’s station.

“Take Sar-Say back to his cabin, Miss Arden, and make him as comfortable as General Order Sixteen allows.”

“Yes, sir.”

The Taff unbuckled and scrambled toward the hatchway before Lisa could turn around. He paused in the hatch and looked back at her with his yellow eyes. She turned to follow.

“And, Lisa...”

“Yes, Captain.”

“Patch Sar-Say into the main command circuit. Let him monitor our progress. If he has any advice for us, I want you to pass it on. You are to do all of the communicating - not him. Understood?”

“Understood, sir. Sar-Say is to monitor and if there is anything he thinks you should know, I will relay it.”

“Good. Now get him out of here. I can’t open the circuit until I know he is safely locked up.”

“On my way, Captain.”

Landon watched her float back out of the control room, following the small hairy shape that was so much more skilled than any human was while maneuvering in microgravity. Then he forgot about Lisa and her alien charge as he turned his attention back to his task.

“One minute, Captain,” his communicator said.

Suddenly, the tension in the control room was palpable. It was a heavier weight than the 2.5 gravs they had undergone so recently. Unlike the deceleration, this pressure was mental.

At thirty seconds to zero, Lisa announced that Sar-Say was ensconced in his bunk and that the two of them were safely locked in the alien’s cabin. Landon glanced at his readouts. Sure enough, the security system showed all passages into and out of the alien’s area to be secure. The cabin would not have met the standards for a modern bank vault, but did not miss them by much.

“Ten seconds, Captain. Shall I count down?”

“No need to be dramatic, Mr. Peale.”

Even as he said it, Landon realized the incongruity of his statement. If there was ever a dramatic moment in human history, this was it. Suddenly, a lesson from his school days floated unbidden to mind.

They had been watching a documentary in tenth grade history about the first atomic weapon ever used in battle. It had been dropped, he remembered, on a Japanese city with a name that sounded like a sneeze, but one he could never remember. As the ancient bomber approached the city, the pilot had announced to his crew that everything was being recorded for posterity and that they should watch their language.

Symbolically, he was in much the same position as that long dead bomber pilot. Just as the world had never been the same after that first atom bomb, the human universe was about to change. Whether Sar-Say had told them the truth no longer mattered. However, the next few minutes turned out, the human race would not be the same afterwards. A galaxy empty of other intelligent species was on the verge of dying, and one crowded with sapient beings was about to be born. The moving finger, having writ, would move on.

Dan Landon cleared his throat, wished he were really the imperturbable captain he pretended to be, and signaled the communicator. "End E-M isolation and give me a tight beam aimed at the planet."

"Beam coming to power, sir. Beam at full power. Modulator is operable. Whenever you are ready."

Landon took a deep breath and said in his best Broan trade talk, "*Planetary approach center. This is space freighter Wanderer. We are clear of the stargate and request approach instructions. We will await your reply. End message.*"

There was nothing but silence on the comm circuits. They had not expected anything else. Orpheus III was a full light-minute distant from the stargate. Any message would take 60 seconds to get there and another 60 to get back. No reply was possible for at least two minutes, and that was assuming that the authorities on the other end answered promptly.

Dan Landon sat back in his chair to await the response. Despite his outward calm, he could feel beads of perspiration forming on his face and between his shoulder blades. This would be the longest two minutes of his life.

CHAPTER 35

"How long now, Communicator?"

"Two minutes, 22 seconds, Captain."

"What do you think, Raoul? Shall we call again?"

Bendagar pursed his bushy eyebrows and said, "Give them another minute, Captain."

Suddenly, there was a sound from the Broan communicator. It was not a voice. Merely an electronic noise that was midway between a beep and a buzz. Then, a mechanical voice said: "*Starship Wanderer. This is Klys'kra't Space Control. Where are you from and what is your business?*"

Dan Landon let himself give into the luxury of a broad grin. In fact, the Broan trade talk was too simple for long-winded discussions. Even if it had allowed him to render Hamlet's soliloquy into Broan, the two-minute communications delay would have stifled any extended dialogue. The literal translation of what the communicator had said was: "Ship *Wanderer*. We *Klys'kra't* orbit monitor. *Where and what business?*" However, the brain's ability to analyze disjointed verbal input is one of the wonders of the human body. With the few clues that trade talk provided, he had understood what was being asked and even filled in the missing words.

"*Klys'kra't orbital monitor. We are a trading vessel originally from Shangri-La on an extended voyage to develop new markets. We request permission to approach and show you our wares.*"

Two minutes went by before the words came again.

“We are unfamiliar with your world/star. You may approach to within communications range. We will discuss your species’ peculiar needs then. Klys’kra’t Control. End transmission.”

There were grins all around as Dan Landon sat back in his acceleration chair and smiled. After a few seconds, he said to no one in particular, “Well, that wasn’t so bad. I wonder what I was worried about.” It took a few seconds for him to order the ship’s engines to power. The feeling of relief was just too good not to savor. Finally, however, he keyed the command circuit that would send his voice echoing throughout the ship.

“All hands! This is the Captain speaking. For those who have not been monitoring communications - both of you! - I have an announcement. We have made contact with the aliens of this system and we are going in. The masquerade begins now!”

“Pilot, take us to power and close the distance to Orpheus III ... no, Klys’kra’t, if that is the name of the planet and not the species. Remember, we are just a poor ramshackle old freighter, so don’t show them anything spectacular in the way of propulsion.”

“Aye aye, sir.”

“Sensors.”

“Yes, Captain.”

“Everything you have to full gain. If they so much as sneeze in our direction, I want to know about it.”

“Yes, sir.”

“Communications.”

“Here, sir.”

“Download everything we have to date and send to *Columbus* and *Magellan* on a tight beam. Use the maximum power that won’t leave an ionization trail that could be traced back to them.”

“Yes, sir.”

Having placed his crew in motion, Dan Landon glanced around the control room. Everyone was bent over their console, working at their assigned tasks. The scene was incongruously ordinary. It seemed as though life should now be different. With the thought came fatigue. The tension leading up to first contact had been palpable, but now that it was gone, he missed it. As always, the *doing* had been easier than the *waiting*. For now, at least, the first giant hurdle had been overcome. He wondered how many more such hurdles they would have to surmount before they found their way home again.

He had not finished the thought when a gentle hand forced him down into his seat and the stars began to move on the viewscreen. When the stars stabilized, a small blue-white crescent had taken its place center-screen. It was just his imagination, but it seemed to be growing even as he watched.

#

“Have you ever heard the name ‘Klys’kra’t’?” Lisa asked Sar-Say.

The two of them reclined on their respective bunks as they watched the same view of the planet that Captain Landon was seeing in the control room.

“No, Lisa. I have only been in this part of the Sovereignty one time. That was the ... uh, week ... that I

spent on Zzumer. These Klys'kra't beings were not the subject of any of my conversations. Do people think that I am lying when I deny knowledge?"

Lisa laughed. "No, it's just a bad human habit. If a human has a friend who lives in a distant city, and they meet someone else from there, they will always ask if that person knows their friend -- even if the city has 20 million inhabitants. It comes from our species' difficulty in comprehending the scale of the universe, I suppose."

"We Taff look at the universe differently, Lisa. We spend so much of our time in space that we tend to cling to immediate surroundings. It is ... psychological, is correct?"

"Psychological is correct."

Sar-Say paused for a moment and then said, "I fear that Captain Landon is angry with me."

"Why?"

"Because I asked to remain in the control room during the contact. I know that you humans fear that I have lied to you, and that you wish to take precautions against my acting against your interests, but I can be of much use to you if you would just let me."

Lisa considered her reply carefully. This was, she believed, an important point with the alien and she did not want to be misunderstood. Over the past eighteen months, their moments of misunderstanding had dropped nearly to zero -- Sar-Say was that quick a learner -- but occasionally he said something that reminded her that beneath that funny looking cranium there lay an alien brain.

"I know you understand how dangerous this expedition has been for my species, Sar-Say. Try to put yourself in our shoes. Would you take such a risk with your own species?"

"I understand, Lisa, perhaps better than you. I have personal experience with the Broa, while you have only my word. It does not bother me that you do not take everything I say at ... face value. I would do the same were I in your position. It is right to take precautions. However, precautions can be taken too far. You are about to interact with an alien species of which you have no knowledge, not even the knowledge of the name they give themselves -- I believe Klys'kra't is the name of their planet. True, I am as ignorant of them as you are. However, I am familiar with customs throughout the Sovereignty and I can be of great aid in guiding you."

"I know you can. You must understand that our orders from our rulers do not allow us to take advantage of your offer. Not now, anyway."

Sar-Say nodded. "But later. Once you have visited Klys'kra't and have discovered that all I have told you is the truth, what then?"

"Then I'll talk to the captain about it. I agree that you can help us greatly in getting the information we seek. You know right where to look and we do not."

"I can perform another service for you."

"What?"

"Although I personally have no knowledge of these aliens, surely others of my kind have visited this world. We Taff are a well-traveled race, you know. My presence in your party will convince the locals that you are what you say you are, a trading ship from some distant corner of the Sovereignty."

“I hadn’t thought of that.”

“Please bring the matter to the captain’s attention. It is to my benefit to prove my trustworthiness to you if I am ever to see my family again. Agreed?”

Lisa did not reply. She liked the little alien, but was realist enough to know that if the Sovereignty was as he said it was, that there was little chance that he would ever see home again. No matter how much they trusted him, it was very unlikely that the Coordinator or Parliament would allow him to return home. So long as the Broa remained ignorant of humanity’s existence, the Earth was safe. She doubted that Sar-Say would betray them intentionally, but what if he got drunk, or the Taff equivalent, and started talking about the strange bipeds that had rescued him off a damaged wreck of a starship?

She quickly put the thought out of her mind. What to do with Sar-Say after all of this was over was a conundrum with no solution. Thinking about it depressed her.

#

“All right, shall we try again?” Dan Landon asked. The blue-white world had grown considerably on the forward viewscreen, although they were still nearly half a million kilometers distant -- slightly more than the distance between Earth and Luna. This “Earth” was unlike home in at least one important respect. It lacked the Earth’s massive companion. In Luna’s place were half-a-dozen smaller objects, all in the asteroid size class. There also appeared to be numerous large objects in orbit, one of which might have been classed as an asteroid were it not obviously artificial.

“Klys’kra’t Orbital Control. This is trading vessel Wanderer, prepared to communicate. Please respond.”

The wait was considerably less this time. The reply came four seconds later, as though they had been waiting for the call. *“Trading vessel Wanderer. We have been monitoring your approach. Identification of species!”*

“Our species is called Vulcan. We are from the Shangri-La system on the other side of Civilization.”

“We are not familiar with your species. Switch to screen so that we can converse like advanced beings.”

“Stand by.”

“All right, everyone. Here goes. Send our picture and put their reply on the main viewscreen.” To his unseen interrogator, Landon said, *“Visual transmission activated.”*

The being on the viewscreen could have been the twin of those in the long-range recordings made by the two starships. The Orphean, or Krys’ka’tian, was in close-up, which made him (or her) look like a fat fence post near the top of which someone had pinned three oversize obsidian marbles. The oculars were attached near the top of the cranium, each in its own bulged-out eye socket. Whether the eyes were fixed or mobile was not obvious. What was obvious was that the three eyes (and the three others they could not see) gave the being full circular vision. Below the eyes were a series of small circular membranes that might be the being’s hearing apparatus, and below that, slits that periodically widened in time with his breathing. Whether the method used to extract oxygen from the atmosphere involved lungs or gills could not be discerned merely by looking at him. There was no evidence of a mouth, but nowhere in the book of nature was it written that the mouth must be in the head. And, in truth, the creature lacked a head as humans defined the term. Its trunk went all the way to the top.

Below the breathing slits, if indeed that was what they were, the attachment point of the tentacles could be seen, although the tentacle ends were out of the picture frame. Their previous studies of the physiology of Orpheans measured the average tentacle at more than one meter in length, giving the creatures the same reach as human beings. There were six tentacles, each sprouting from a point on the torso equidistant between two eyes at the top of the trunk. The skin was gray and leathery, like a lizard, adding to the being's resemblance to a tree trunk.

The physiology of the Orpheans had been a subject of hot debate back at Brinks Base. The upper portion of their bodies appeared to be axially symmetric -- that is, designed around the central axis of the body, like a starfish. The peculiarly jointed tripod legs were obviously designed to move primarily through rotation of the full body. The argument had raged over what sort of environmental conditions would result in such an odd arrangement of limbs and sense organs.

"I see you," the orbital controller said after a few seconds. *"However, our data base does not appear to have any reference to your species or star."*

"Nor does our database include your esteemed world," Landon replied. As he said it, an irreverent thought flashed through his brain. It occurred to him that he was telling his interrogator the literal truth. *"One reason that we are on this long voyage of trade is to seek new markets for our wares. The people at the last star suggested that you would be interested in what we have to trade."*

"The Bool'el are not usually so helpful to us."

"It is that way everywhere, is it not?"

"It should not be so. Those Who Rule would be better served if their various servants cooperated with one another more."

"We agree."

"But enough of this talk. They might not like it. What sort of beasts are you?"

Landon reeled off a code number that Sar-Say and the biology department had developed together. The code was Broan shorthand for defining the environmental conditions human beings required. The biologists had tasked even Sar-Say's patience with their requests for explanations regarding the meaning of the code groups. Their concern was to provide aliens with information that roughly defined the parameters human beings needed to survive, but not to define them so precisely that they would give the Broa a description of Earth. On the other hand, any exo-biologist worth the title should be able to learn a great deal about Mother Earth merely by looking at the creatures it had spawned. So telling the Orpheans their environmental needs ought not reveal any secrets that they would not soon find out anyway.

Dan watched the screen for signs of any adverse reaction to the code he gave. That was the problem with having to rely on an advisor that you did not know to be perfectly trustworthy. Each time you used his advice, you had to ask whether things were as you had been told. For all he knew, Sar-Say's code could have ranged from pure gibberish to, "Help, I am being held hostage by aliens in a fortune cookie factory."

The alien appeared to have no reaction to the code at all. Of course, with his eye arrangement, it was impossible to tell where he was looking. Perhaps the Orpheans did not "look," in the human sense. Perhaps they had equal awareness of circumambient space at all times. What the brain that could take signals from six different eyes simultaneously would look like, he could not imagine.

That was one of the dangers of this mission. Just as looking at a few hundred hours of holovision would not allow aliens to understand human beings; so, too, their knowledge of Orpheans was virtually nil. After perhaps 30 seconds, the being responded, *“You appear to have no need for special environmental support here on Klys’kra’t. You are approved to approach Za’trel Station. Stand by to record approach instructions.”*

“Standing by.”

A few seconds later, there was a short burst of sound and a diagram popped up on their screens in Broan symbology. Like trade talk, the instructions were in a simplified format that sacrificed elegance for efficiency, but which they had no trouble understanding.

“Message received,” Landon said.

“Proceed to Zal’trel Station on the path we have given you. Contact their orbit control when you are 12³srota from the station. Klys’kra’t orbit control ends communication.”

“Shangri-La trading vessel Wanderer ends communication.”

CHAPTER 36

Zal’trel Station turned out to be the large habitat that was nearly the size of one of Klys’kra’t’s moons. Radar measured the globe at more than 20 kilometers in diameter. If the station had originated on an asteroid, over the centuries it had completely engulfed its parent. Alternatively, perhaps it had been built free floating and had merely consumed an asteroid or two for raw materials. Whichever the case, it was huge!

Mark Rykand was seated at his workstation in the cramped astronomy cubicle and watched the artifact grow ever more giant as they slowly made their approach. Down in the control center, the captain was in nearly continuous communication with the aliens. They had discovered that Klys’kra’t was indeed the name of the planet, and that its inhabitants called themselves the Voldar’ik, with a final syllable that would make one’s throat sore if pronounced too enthusiastically. In fact, they had discovered that the Voldar’ik vocal apparatus was substantially more adaptable than its human counterpart. That fact had not been surprising once they finally identified the mechanism by which the aliens generated sound.

It turned out that they spoke not through their “mouth,” but rather through their “ears.” They made sounds by vibrating the tympanic membranes spaced around their upper torsos, just under the eyes. One of the biologists noted that whenever their interrogator had spoken, a concave circle on his upper torso had become indistinct. By zooming in on that spot, it became obvious that one of his tympanic membranes was vibrating at high frequency. Rather than vibrating strings in a larynx, the Voldar’ik vocal mechanism seemed to have evolved from the woofer in an ancient stereo system. That the aliens could generate substantial volume with the arrangement was surprising, but no more so than the inordinate noise a cricket makes when it rubs its hind legs together. The holo recordings also revealed that the tympanic membrane next to the vibrating one seemed not to be moving. Evidently, the alien used one to transmit sound and the other to receive it, or possibly, they were interchangeable. The discovery started an argument as to whether the Voldar’ik used the capability for sonar sensing, much as a bat or a whale on Earth.

With the discovery of the beings’ speaking apparatus, the exo-biologists began looking for the aliens’ food intake orifice. They found it tucked inconspicuously away about where a human being has his or her

navel. The discovery caused a spate of ribald and insensitive jokes to circulate through the ship. Upon hearing one, Lisa made the observation that the Voldar'ik would probably have the same reaction to human anatomy. Her observation did not stop her from chuckling at the improbable mental picture the joke had triggered.

The last several hours had seen a steady stream of findings broadcast throughout the ship and put on the tight beam toward their two consorts out in the Oort cloud. When the *Whale* closed to within one hundred thousand kilometers of Klys'kra't, however, Captain Landon ordered the long-range communications system shut down. There was too much chance of their hosts detecting it as they got closer to the planet.

While most of the starship's crew manned their stations and listened to the interchange between the control room and Zal'trel Station, the exo-biologists and anthropologists worked feverishly to evaluate the transmissions they were receiving from the hull sensors in real time. Mark sat at his workstation in the cluttered astronomy cubicle and listened to the continuous chatter on the science channels. He found that he was developing an aversion to the whiney voice of Dr. Mendoza, the ship's exo-sociologist. However, he had no thought of switching to something else, or even turning the communicator off altogether. For as irritating as the scientists sometimes were, he had a strong reason to learn about the Voldar'ik.

"Big, isn't it?" Will Thompson asked from his own workstation. It was approximately the sixth time he had made that comment or one similar. "Aren't going to get lost in there are you, Mark?"

"I hope not."

Shortly after making contact with the aliens, Captain Landon had announced the composition of the first shore party that would be going aboard Zal'trel Station. (If one could call transferring from one vacuum-packed sardine can to another "going ashore.") To no one's surprise, the captain had decided to lead the party himself and to take Lisa along as translator. To Mark's surprise, Landon chose him as computer specialist, and Mikhail Vasloff to play the roll of Master Trader.

"Why me?" Mark had squeaked when Thompson gave him the news.

"Because I recommended you," the astronomer replied. "You have worked hard to learn Broan computer technology since we left the Solar System. You know enough to recognize their astronomical observations when you find them and to separate the wheat from the chaff."

"I thought you would be going!"

"Dr. Bendagar vetoed my participation. I agree with him. I am good enough at my job, but my personality does not lend itself to feats of daring. I would likely wet my pants the first time an alien looked at me cross-eyed -- although, it does not look as though the Voldar'ik can cross their eyes.

"Do you think I can do it?"

Thompson nodded. "If anyone can."

Those first few hours after first contact had been exhilarating ones for all aboard. The exhilaration had quickly worn off, however, as they returned to the mundane business of attempting to learn all they could about the aliens as quickly as they could. The mood aboard ship for the past several hours had been one of growing frustration. It seemed as though each communication with the Voldar'ik reminded them of the extent of their ignorance. Mark, in particular, felt like the proverbial ten-year-old lost in a foreign land, a country in which he can neither speak nor read the language. Everything about Klys'kra't seemed

oversize, wondrous, and more than a little frightening.

#

“Lisa, are you ill?”

Lisa glanced over her shoulder at Sar-Say. She had been sorting through her clothes, trying to pick the two outfits she would take with her when they transferred to the big Voldar’ik space habitat. They did not yet know whether they would be staying overnight or coming back to the ship after each meeting. The captain had advised her and the rest of the members of the shore party that they had better come prepared. Despite her meager supply of belongings, she had been sorting through her clothes for the better part of an hour. The problem was that all of her outfits were in colors that clashed with her new orange skin.

“I am fine,” she replied. “Just opening night jitters.”

“I beg your pardon.”

She explained the expression.

Sar-Say absorbed it as he absorbed everything, then commented, “But surely the Voldar’ik will not care what it is that you wear.”

“But I will care. It is a human thing. Actually, it is a human*female* thing.”

“You forget, you are a Vulcan now.”

“That’s right. I had better start practicing, hadn’t I?”

At first, she had thought it silly not to call themselves human when the aliens asked. After all, it was not as though any of them had ever heard so much as a single word of Standard. However, just as intelligence agencies in the bad old days had gone to extraordinary efforts to conceal seemingly trivial details, it had been decided that they would obscure their origins as much as possible. That way the Voldar’ik (and through them, the Broa) would not be able to assemble a host of meaningless details into a very meaningful whole.

It had been one of the scientists with a taste for classic literature that had first suggested the name “Vulcan.” What their visit to Klys’kra’t had to do with the god of volcanoes, Lisa had no idea.

“The captain is speaking to the habitat now,” Sar-Say announced. He had an earpiece in one ear and was following the dialogue on the command circuit. Lisa had turned her receiver off. She found that listening to the dry comments on both ends of the circuit raised her anxiety level. It had gotten to the point where she had felt like her favorite sparsball team was in the playoffs, the score was tied, and they had just entered sudden death overtime. She relied on Sar-Say to let her know if anything important happened, or if she needed to relay a message to the captain. “We are nearly in our assigned parking orbit. You should get ready.”

“Right,” she said, picking up the first two outfits she found and stuffing them into her kit bag. Sar-Say was right. The Voldar’ik would have no standards by which to judge her appearance. To them, she would be a strange, bi-axially symmetric biped who looked funny -- no matter what she wore.

There was a brief return of gravity as the astrogator applied a few seconds of thrust to match their velocity to that of the alien habitat. Then a spate of orders was issued over the ship’s annunciators. The last of these was, “*Shore party to the wardroom, ten minutes! I repeat, shore party to the*

wardroom.”

“Well, I guess this is it,” Lisa said to the alien while repressing an urge to hug him.

“Please be careful, Lisa,” Sar-Say replied.

“I will.”

“And you will speak to the captain about my going along on a future shore party?”

“I will talk to him, but not before we get this one under our belts.”

“Good luck.”

“Thanks.” With that, she signaled the guard beyond the cabin door that she wanted out.

#

Captain Landon was already in the wardroom when Lisa arrived. So was Dr. Bendagar. Mark arrived a few seconds later, and Mikhail Vasloff showed up within a minute. For some reason, Lisa found the sight of the five of them with their bright orange skin and electric blue hair amusing. She wondered if the Voldar’ik would have the same reaction.

As soon as Vasloff sat down, Dan Landon looked at each of them in turn and said, “Well, shipmates, it appears that the time has come to put theory into practice. Any of you want to back out?” There followed a few seconds of silence. When no one answered, the captain continued. “Good. Now, let us make sure that we all know our respective roles before we meet our hosts. Mr. Vasloff.”

“I am to be the rich capitalist merchant,” he said with a twinkle in his eye. “I am afraid my ancestors would not approve.”

“Do you think you can act the part?”

“Oh, easily. We Russians gave up communism several centuries ago. In addition, I have been studying our cargo in my spare time, of which I have had a great deal lately. It seems to me that the energy conversion units will be of most interest to our hosts, as will the control units for that strange silver box thing down in the hold. There are also several other devices that the Voldar’ik may find interesting. As for the rest, we can use our cover story of being new in these parts to find out their likes and dislikes.”

“Have you consulted with Sar-Say on your choices?”

“Miss Arden and I had a long chat with him. Even though he knows not this particular species, he gave me considerable guidance as to what is likeliest to have universal appeal within the Sovereignty.”

Landon nodded. “You seem well prepared. Of course, that is why I chose you. Remember, we want to keep the haggling going long enough to give Mark and Lisa a chance to do their jobs.”

“Understood, Captain.”

“I’ve noticed that you do seem to have an interest in alien technology, Mr. Vasloff,” Lisa said. “Frankly, that surprises me.”

The Russian looked sheepish. “Perhaps you mistake my intentions, my dear. I am studying the devices in the cargo hold to understand their impact on human society, not because I personally have a desire to possess such a device. If anything, the introduction of these new technologies will hurt my cause insofar

as they prove acceptable to the public. They will cause a clamor for more and better gadgets rather than fewer.

“That is one of the problems with our species. We cannot think ahead when faced with the opportunity for immediate gratification. Luckily, I have sufficient time on my hands to consider the long-term impact ... and, as it turns out, to play a leading roll in our small theatrical production.”

“Right,” Landon said. “Mark, is it clear what you are to do?”

“Uh, crack their computers open.”

“Yes. Have you got your safe cracker tools?”

Mark held up a small hand computer. Inside was stuffed enough circuitry to suck the habitat’s computer system dry, although the limited storage capacity meant that he would have to return to the ship periodically to download what he had learned. Mark’s primary mission was to discover the breadth and depth of the Broan Sovereignty and to determine the extent of their penetration in the Orion Arm of the Galaxy.

The captain turned to Lisa. “You and I have the most delicate task, Miss Arden. We need to get the Voldar’ik talking about the Broa without advertising our ignorance. Frankly, I am not sure how we do that.”

Lisa frowned. It had been a subject that she had thought a lot about lately. How does one approach an alien and get them to talk about the overlords without revealing the degree of their curiosity? It was something akin to a wolf infiltrating a pack of domestic dogs, claiming to be one of them, and then asking if any of them knew what a human being looked like.

“Perhaps we can make an offering to the local gods. We tell them that our custom is to pay homage and ask where we send the bribe.”

The captain thought about it and nodded. “That might work. We will have to improvise, though. We cannot seem to be ignorant of the Broa, not if we are to keep them from having suspicions about us.”

“I can search for historical information, things like articles on the Broan conquest of Klys’kra’t,” Mark said. “Anything I find, I’ll include in the download.”

“Of course,” Landon agreed. “Just remember what Sar-Say has said about the Broan fetish for privacy. If true, you are not liable to find much. On the other hand, if you find a lot, it will tell us something about the truthfulness of our little friend.”

Lisa felt a pang at the comment, as though a friend of hers had been accused of lying. She refrained from commenting. After all, the captain had said nothing that was not true.

“I’ll search.”

“Do that. See if you can find a picture of a Broa. We’ll want to confirm that they are as ugly as Sar-Say has painted them.”

Their briefing continued for another fifteen minutes, the last five of which Dr. Bendagar spent looking at the chronometer. Finally, they were finished.

“All right, people. Everyone have his or her backpack? We will stop in the commissary and load up on rations and water. If you have to go, I suggest you do it now. No telling what the toilet facilities are like

on that station. We rendezvous at the main airlock in ten minutes. The Voldar'ik taxi will be waiting to ferry us over to the habitat by then.

CHAPTER 37

The Voldar'ik taxi was a transparent ovoid with naked space-bender coils at each of its cardinal points. Inside the bubble, a gridwork deck held a place for the pilot to stand and room behind him for passengers or cargo. In front of the pilot station were a few instruments that bore a resemblance to the newly redesigned displays aboard the *Whale*, but which were otherwise alien in their construction. Apparently, as Sar-Say had told them, each species in the Sovereignty customized the common technology to fit their own peculiar needs. Save for the pilot station and a series of tubular hold-downs, the bubble craft was devoid of any hint of furnishings or decoration. Apparently, engines and environmental control system were hidden somewhere beneath the deck.

A Voldar'ik pilot was aboard the tiny craft, anchored in the pilot station when the four humans floated through the airlock. Despite the fact that he had never seen their kind before, Lisa Arden could detect no sign that the pilot was paying attention to his orange-skinned passengers. Of course, with the Voldar'ik's peculiar hexagonal-symmetric layout and omni-directional vision, it was impossible to tell precisely where the creature was looking. He stood on his tripod legs like a tree growing out of the deck, unmoving save for a slow undulation of his meter-long tentacles. The pilot's lack of apparent interest reminded her of many of the spaceport and airport workers she had seen on Earth. Eventually such people became so used to travelers that they relegated them to the status of scenery.

The four of them spent a few seconds slinging their kit bags and grabbing hold of anchor points. It was then that Lisa noticed the smell of the cabin air. It held a not unpleasant odor, but one that was unlike any that she had smelled before. In that air were clues to four or five billion years of non-parallel evolution, an entire biosphere that before this moment, had never known the scent of humanity. Moreover, the air was colder than she found comfortable. Already goose bumps were forming on her exposed skin. She considered fishing in her backpack for a jacket, and then decided that anchoring herself held a higher priority.

Without warning, the taxi de-coupled from the *Whale*'s Broan-designed airlock and used a short burst of power to back away before turning end-for-end. The maneuver caused the fluid in Lisa's semicircular canals to do interesting things inside her head. By the time her vision cleared and she had her stomach under control, she was treated to a panoramic view of Zal'trel Station that made her forget her incipient space nausea. Save for the pilot in front and the deck below, the four of them might have been floating in midspace. It was a view sufficiently unobstructed to give an agoraphobe the shakes. It was awe-inspiring.

They had parked the *Whale* in orbit nearly ten kilometers distant from the station. Even so, it was as large as a planet in front of them, covering half the sky. In fact, the body of the station obscured part of Klys'kra't's blue-white disk. Its exterior was as cluttered as any of its human counterparts. The overall impression was that of flying over a wooded farmland. Here and there, the surface was a jumble of piping and alien equipment; while other places, she could see large expanses of naked hull plates. Many of these latter surfaces showed random patterns of light and dark windows. From their size at the current distance, those windows must be huge. Perhaps she was looking down on farmland, but farmland within the artificial asteroid, with the oversize windows providing sunlight to the growing things inside.

The taxi closed the distance to the station more quickly than she had expected. As it grew, the oversized habitat seemed to be drifting to the right. She glanced back toward where they had left the *Whale* and

suddenly realized the reason. Rather than heading straight in, the pilot was taking them around to the opposite side of the station. As she watched, the small, dim star that was their ship slipped below the horizon of the large structure. Lisa felt a sudden chill that had nothing to do with the temperature in the taxi. As soon as they were out of line-of-sight, they were out of communications. Had the Voldar'ik planned anything nefarious, they were now free to proceed. The humans had no way to call for help. Her companions' rigid postures revealed that they too recognized the danger.

The taxi made its way toward a large open airlock, one of several in the habitat's skin. It looked large when they first saw it, and as they approached, it became massive. By the time they passed into the shadow of the station, the gaping maw had been transformed into a huge cavern that could easily swallow the *Ruptured Whale* and all the human starships at Brinks Base.

The taxi sailed into the vast open space and made for the far bulkhead in which there were rows of lighted windows. Around them were a number of dimly lit shapes that further inspection revealed to be spaceships. None of these looked exactly like the *Ruptured Whale*, although several had similar lines. Some of the ships floated with their airlocks attached to tubes that ran into the cliff-like walls of the cavern. Others were swarming with machinery, either loading cargo or undergoing repairs. Still others had been extensively disassembled.

Obviously, the cavern was a busy spaceport, possibly even the crossroads of the Orpheus star system. Since they had yet to learn what the locals called their star, Lisa continued to think of it by its human name.

As they floated past the spaceport tableaux, the humans craned their necks to take in the sights. Their Voldar'ik pilot sat immobile and appeared to take no notice of their curiosity. Perhaps curiosity was an emotion the Voldar'ik lacked, although Lisa could not imagine how a species developed intelligence without it.

As they neared the cavern wall, a snakelike tube came out to meet them. An amber beacon illuminated the end of the tube. The pilot rotated the ship and pressed its dorsal airlock against the end of the tube. There followed a slight bump and the sound of rushing air. Then, the airlock opened and the pilot said, "Go!" in Broan trade talk.

That was the first and only sound he had made during the entire flight.

#

They found a Voldar'ik waiting for them as they pulled themselves single file through the station airlock. Dan Landon was first out of the tube. He used a netlike series of cables to pull himself hand over hand to where the Voldar'ik was anchored.

"*You are of the Vulcan trading ship Wanderer?*" their reception committee asked.

"*We are. My personal label is Dan Landon and I am the One Who Rules aboard our ship. This is Mikhail Vasloff; he is The One Who Trades. Behind him are Lisa Arden, a female of our species, and The One Who Speaks for Others. Finally, we have Mark Rykand, the One Who Operates Computers.*"

"*Greetings, Vulcans. I fear that we do not have your customs in our database, so I cannot greet you in proper fashion. My apologies if this gives offense. It is not my intent.*"

"*No offense taken,*" Landon said. "*I apologize that we also lack knowledge of your species and can therefore not give you a proper greeting.*"

"It is not important," the Voldar'ik replied. "My personal label is Zha and it is my function to aid those who come to this system to exchange value with us."

"We thank you for your aid, Zha."

"It is not necessary. As I have told you, this is my function."

"We are strangers here. How do we begin?"

A silence lasted three seconds, almost as though the Voldar'ik greeter was sizing them up. Then his tympanic membrane began to vibrate and he said, *"There is the matter of fees for use of our facilities."*

"There are always fees," Mikhail Vasloff said in his most unctuous tone, which produced just the right effect, but which was unfortunately lost on the alien. "How much?"

"One twelfth of your cargo."

If the alien had intended to provoke a surprise response from the humans, he was not disappointed. Vasloff pulled himself up to his full height (or rather, length, in microgravity) and said, *"If you will call your little ship back, we will leave your system now."*

"Perhaps we can discuss it later," the greeter said.

"Perhaps we can," Vasloff agreed. "What arrangements have been made for our visit? Do we return to our ship each day after our discussions, or do you have accommodations for us?"

"We have quarters suitable for your species type, although you will have to provide your own food. Without data concerning your dietary needs, it would be foolish for you to experiment with our foods. Besides, it has been my personal observation that beings with an intake orifice such as yours find our nourishment unpalatable."

"We have our own supplies," Landon said. "Space with the proper atmosphere control equipment and a means of communicating with our ship will be all that we require while we are aboard."

"That we can provide you. Will you be traveling to Klys'kra't?"

"That depends on our discussions with Those Who Trade among your people."

"Yes, I suppose it does. Be aware that we need at least four of our planetary days to arrange such travel. Travelers do not appreciate the difficulty associated with introducing aliens into the Klys'kra't biosphere."

"We will try not to be a bother. Shall we go to our compartment now and speak of our exchange of value later?"

"If that is your custom."

Lisa held up her hand as the captain had instructed her to do aboard ship. *"Don't forget the offering."*

"Of course," Landon said. "It would not do to forget the offering."

"What is this offering?" Zha asked.

"It is a custom among our species. Whenever we enter a new system, we make an offering to the

ruling administrator, some small gift to acknowledge his authority and to gain his good will.

“What sort of gift?”

“Whatever the administrator judges has value. Perhaps we could discuss the matter with him or her at some time during our visit.”

There was a long pause. Finally, with considerable waving of tentacles, the Voldar’ik said, *“We are a distant system, at the end of a long series of stargates, and on the outskirts of Civilization. The Overlords only visit us occasionally. There are none in the system now. I will be happy to accept your offering and save it for the next time one of the Broa arrives here to oversee us.”*

“I am sure we can work out something mutually beneficial,” Landon said. The thrill that went up his spine at hearing the word “Broa” was evident only to his crewmates. They felt it too. They had been in conversation with one of the locals for less than five minutes, and they had already confirmed one important piece of Sar-Say’s story. Whatever else they were, the Broa did, indeed, exist!

#

With a little work, their quarters would have made a first-rate flophouse back on Earth. They consisted of a five-meter by five-meter bare cubicle with an overhead three meters above the deck. In addition to bare deck and bulkheads, they had a microgravity attachment for dispensing water and the same sort of waste disposal facilities that *Magellan*’s spacers had found aboard the *Ruptured Whale* that first time they boarded her. There were raised platforms that might (or might not) have been intended as anchor points for sleeping. There were no interior partitions, doors, or any hint that privacy was of concern to the Voldar’ik.

“Is this satisfactory?” Zha asked after ushering them into the quarters.

“Is it possible to change the temperature?” Mark asked the alien. Like Lisa, he was beginning to get goose bumps on his exposed skin.

“You may change the temperature, composition, and water content of the atmosphere using the control panel on the bulkhead. I will demonstrate. Be assured that the safety constraints are in place that will prevent you from making an adjustment that would be harmful to creatures of your type.”

“Then we will raise the temperature to a level our species finds more comfortable and the quarters will be acceptable,” Landon said. *“What of communication?”*

Zha gestured to an instrument that was obviously a communicator. It was similar in design to the communications stations onboard ship, and very like a number they had in their cargo bay. *“The station computer is aware of your identity. If you activate the communicator and ask for “Wanderer,” you will be able to speak to your crewmates.”*

“Are such communications monitored?”

The Voldar’ik hesitated for long seconds before responding, *“I am afraid that I do not understand your question. Could you please restate it using another formulation?”*

“Never mind,” Landon replied. *“I think you provided me with all of the information we need.”*

“Is there anything else?”

“We would speak to those who wish to trade with us as soon as possible. When can it be arranged?”

The greeter answered with a time span that was the equivalent of four hours.

“That is acceptable. There is one other thing.”

“What is it?”

“Because we are far from home, we wish to learn all we can about the local region of space in order to see what opportunities exist here. He Who Operates Computers would like access to your databases in order to explore the possibilities for exchange of value.”

“Such access is not without cost.”

Vasloff slipped smoothly into his role. *“We are a trading people, Zha. We understand the concept of giving value for value, and will see that anyone who helps us is properly rewarded for both time and effort. Now, how much will it cost to gain access to your database? Nothing confidential, just the information that any Voldar’ik can access ... and, of course, only those things recorded in trade talk.”*

“I suppose we will have to work out a rate of exchange between our two species’ products before we can set a price,” Zha replied. *“What sort of goods do you have to exchange?”*

“It has been a long voyage and we have traded away our own products. Our current cargo consists mostly of goods from the star system of Vith.”

“That is one star that I have heard of.”

“Our Shangri-La is twelve stargates beyond Vith.”

“Twelve, you say? That does put you a good distance to the other side of Civilization.”

“Yes, it does. It is a shame that it takes so long to reach your beautiful world. Obviously, if we are to trade value for value, we will have to find something that is worthwhile shipping that far. That is why we need access to your computers. Who but a Vulcan can predict what other Vulcans will prize?”

“True,” Zha said. *“One species’ prize is another species’ offal.”*

“Very true,” Vasloff said. *“However, there is no reason why individuals from both systems cannot participate in a mutually beneficial arrangement if we are able to find the suitable items to exchange...”*

Lisa suppressed a smile. She did not think that he had ever heard a bribe offered so skillfully, and in an alien language to boot!

#

Mark Rykand floated in front of his Broan computer and rubbed eyes that were beginning to feel like boiled onions. It had been two weeks since he began searching the Zal’trel database for facts of interest to humanity. It seemed more like two years. For 20 hours out of 28, he watched the Broan symbology scroll across the screen. Save for periods when he hurriedly gulped down rations, or visited the Voldar’ik “facilities,” or grabbed a few fitful hours of sleep, he had spent his time glued to the screen. Oh yes, there

had been two glorious trips back to the ship to upload what he had recorded and free his portable instrument's memory for new searches.

It had been a successful two weeks, but also frustrating. Initial success had come early. Almost from the moment he first input the symbol for "Broa" into the computer, he had been awash in details about Klys'kra't's place in the Sovereignty. There was no doubt in the Voldar'ik mind whether the Broa existed. The overlords occupied approximately the same position in their culture that Jewish culture assigned to Jehovah. Except, a heretic who doubted the existence of these particular gods learned the error of his ways much more quickly than anyone in the Old Testament had.

Indeed, not only had Sar-Say been telling the truth about the Broa, if anything, he had not painted them black enough. The Voldar'ik records were full of cautionary tales about what happened when the Overlords were displeased. Mark had recorded several hours of scenes showing burned-out cities and dead worlds. At first, he wondered why the Broa would allow such records to exist. Then he realized that were he the master of a million-star galactic empire, the one class of information he would not suppress was the fate of rebels and others who had displeased him. In fact, he would make it required viewing for all of his subservient species.

Despite the ample evidence that the Broa existed and controlled every star within reach, there appeared to be a dearth of information regarding the overlords themselves. The closest he had yet discovered was a library of their published decrees. Most of these involved rules for the use of stargates, but the decrees ran the gamut from banned information to restrictions on the aliens' reproductive practices. There seemed to be no command too invasive for the Broa to issue or the Voldar'ik to follow. Remembering some of the biologists' initial theories about Sar-Say, namely, that he viewed the overlords much as a pet views its master, Mark wondered if the same were not true of the Voldar'ik.

However, try as he would, Mark could find nothing on the Broa themselves. There were no descriptions, no pictures, no regal portraits hung in government offices, nothing. For example, inputting "Broa-species-biology" had yielded no response from the station computer, not even a chiding notice that the data in question was classified. It was as though the idea that the Broa were biological organisms was a null concept in the computer's brain, and perhaps in the brains of its masters.

Unfortunately, the paucity of personal information on the Broa made sense. Just as a galactic overlord would want his subservient species to understand the consequences of revolt, he would want to limit their access to data of a personal nature. Take Broan biology, for instance. A subservient species unhappy with the local Broan ruler could use their knowledge of his physiology to poison him. By denying the Voldar'ik biological information, the Broa were protecting themselves from harm. More to the point, they were denying their subjects information that could even *suggest* there were ways that an overlord might be killed. Furthermore, if keeping one class of personal knowledge from their subjects was beneficial, why not all such knowledge?

That, at least, was Mark Rykand's working hypothesis. So far, it seemed to be holding up. Of course, he would have been better able to test it if he had not been so constrained in the questions he could ask the computer.

No one really knew whether his caution was warranted, but they all agreed that it was needed. Presumably, the Voldar'ik either were monitoring his efforts or had the capability to do so. To prevent the aliens from learning too much about humans by analyzing the questions they were asking, Mark had to approach matters of interest indirectly. If he were asking questions about Broan biology, for instance, that question had to come at the end of a long string of other queries in which he appeared interested in matters of trade. To do otherwise risked leaving a record of human ignorance, a record that would strongly intimate that they were from somewhere beyond the Sovereignty.

It was this need for indirection and obfuscation that had slowed Mark's efforts to a crawl. What they needed, Mark had long since decided, was a copy of the vast Voldar'ik database of their very own. Once back aboard the *Whale* and at Brinks Base, they would be able to ask pointed questions directly. They could seek out all the Voldar'ik knew about the Broa and their empire. They could probe, and correlate, and hypothesize at their leisure, with no concern that hostile eyes might be peering over their shoulders.

It had been the third day of their stay aboard Zal'trel Station that Mark explained his problem to Captain Landon, who had turned the matter over to Mikhail Vasloff. By Day 3, Vasloff was deep in negotiations with his Voldar'ik counterparts and it had seemed only natural for him to inquire as to the price of a copy of the station database. Asking the question had proved the easy part. Ten days later, Vasloff was still haggling with Zha over how much the information was worth.

The sociologists' predictions about the Voldar'ik personality had proven uncannily accurate. As Raoul Bendagar had remarked during one of their calls to the ship, "Certain principles are universal. The Law of Greed is one of those."

Such observations were interesting, but they did not get the job done. What Mark needed was someone far more knowledgeable than he on this particular snipe hunt. What he needed was Sar-Say's help.

CHAPTER 38

"Come on, Captain. Be reasonable. He has told us the truth so far, hasn't he?" Lisa asked in a hoarse whisper.

She and Dan Landon were on a tour of Zal'trel Station and had stopped in the middle of one of the wide fields where the Voldar'ik grew bottle-plant tubers, their primary source of sustenance. Overhead, the sky was black save for the glowing yellow ball of the star they still called Orpheus. Some indefinite distance above their heads was one of the giant windows they had observed during their approach, a window so clear that it looked as though the field was open to space. Only the frigid, alien-scented air that curled around them in long streamers of exhalation fog proved that their eyes were deceiving them.

"I have to admit that everything he has told us has checked out so far," Landon whispered back in Standard. If the Voldar'ik had a voice pickup focused on them, all they would hear was alien gabble. "Still, he has no reason to be loyal to us, and therefore, we have no reason to trust him."

"He's a trader. We can give him reason to trust us. We'll offer him the sole trade concession in the Solar System if he helps us."

There was a flash in the captain's eyes that told Lisa she had triggered something unintended with her comment. "Trade? What trade is that?" he asked, his voice a hoarse murmur. "How do you think they will react at home when we report what we have found? Do you think any human starship will be allowed near the Orion Arm after this?"

She frowned. The captain was right. Just a few of the pictures Mark had dug out of the Voldar'ik database would cause Parliament to run screaming for cover. So long as the Broa ruled the Sovereignty, there would be no trade with humanity.

"Right. Then we will gain his cooperation some other way. How about if we agree to leave him here with our cargo when we go?"

“Do you think he will promise to keep quiet about us?”

“We can ask.”

Landon’s scowl deepened. “Really, Miss Arden! Do you think I would risk the safety of the human race on the word of one small alien?”

“What could he tell them? He doesn’t know where Sol is.”

“He knows we exist. That is enough. Besides, how do you know he is ignorant of our location? Has he been studying our astronomy books?”

“Some,” she agreed, nodding.

“Tell me, where is the zero-zero point in all of our astronomical position data?”

She frowned, not liking the way this conversation was going. “Earth, of course.”

“So, if Sar-Say happens to have memorized the right ascension, declination, and distance data for the Crab Nebula, how difficult will it be for the Voldar’ik to make the correlation?”

“Not difficult, I suppose.”

“Not difficult at all. I suspect they will know where Earth is located about two minutes after Sar-Say tells them we exist.”

She chewed on her bottom lip, unhappy with the conclusion toward which her brain was scrambling.

“You are right, of course.”

“Damned right, I am right. Now, let us have no more silly suggestions that we allow Sar-Say to compare notes with our hosts. Agreed?”

She nodded.

“Good. Let us rejoin our guide. He seems curious about what we are doing with our heads stuck together, whispering like a couple of school girls.”

“Yes, sir.”

While she, the captain, and their Voldar’ik guide continued the tour of the station agricultural spaces, Lisa considered Landon’s comments. For the life of her, she could spot no flaw in his logic and that depressed her even more than thinking about Sar-Say’s fate. The truth was that despite the vastness of space, the Earth was not that difficult to find, not if one merely had a few simple clues to its location.

It seemed there was no solution to the dilemma beyond total isolation. If they were to remain safe from the Broa, they would have to dig themselves a hole, climb in, and pull it in on top of them. There could be no contact with any species of the Sovereignty. Even a hint of their existence and the Broa would come looking for them. In fact, their presence in this system might well have put the human race at risk already.

It seemed that Mikhail Vasloff and his *Terra Nostra* fanatics had been right all along. It was time for humanity to pull in its horns. The universe was too dangerous a place for them to bumble about in.

She continued to mull over the consequences of what they had learned of the Broa and their empire. The more she pondered, the more depressed she became. Her companions found her very quiet for the rest of the tour.

#

Two days later, Mark came up behind Lisa and gave her a hug.

“What is that for?” she asked, still despondent over her conversation with the captain.

“I have to go back to the ship,” he said, letting his hands move playfully over her form. She enjoyed the attention and molded her body to his for a few seconds. “Are you going to be okay?”

“Sure. Out of memory again?”

“You got it. I will transfer this load into the *Whale*’s computer and come back for a fresh batch. Anything I can get you?”

“No. I have everything I need.”

“And if Sar-Say asks about a certain subject?”

She frowned. It had not taken Mark long to cajole her into talking about what it was that was bothering her. They had had a long session of pillow talk the night before. Somehow, lying in the dark, cuddling with him, urgently whispering in his ear, all of those actions had been therapeutic for her. She had not even been shocked when she discovered that Mark agreed with the captain. No matter what else, they could not allow Sar-Say access to the Voldar’ik, or any other aliens for that matter.

She was still depressed about their discoveries and what they implied for the future of humanity, but she was beginning to snap back. Her natural resilience told her that things could not be as bad as she imagined. There had to be a solution other than running home with their tails tucked between their legs. Unfortunately, she had no idea what that solution was.

Finally, she shook her head. “No, I don’t want you to upset him. Besides, it is only fair that I give him the bad news myself. How long will you be gone?”

“A couple of hours. See you tonight. What exciting thing have you planned for today?”

“I am supporting Mr. Vasloff. He seems to get off on this negotiation stuff. He has Dravv offering about ten percent more for the energy modules than he did yesterday. Apparently, we are demanding his first and third born in exchange for our modules, to hear him tell it. I think Mikhail missed his calling when he went into political agitation. He would have made a hell of a good used-groundcar salesman!”

After a few more seconds holding his woman, Mark reluctantly let go and gathered up his computer. It was so packed with information that he thought it ought to have more inertia than it did as he slipped his arms through the straps and made sure that it was secure on his back. He checked the rest of his equipment, then opened the hatch, and floated out into the public corridor beyond.

He enjoyed these short trips back to the ship. Not only did they get him away from the computer screen; they allowed him to see something of his alien surroundings. The first two times he had made the trip, one of the laconic Voldar’ik guides had accompanied him. This was his first attempt to find his way on his own.

A hundred meters down the corridor; he came to a large volume in the form of an open dodecahedron-shaped compartment. The volume was more than one hundred meters across. It was light and airy, and reminded him of what the interior of a hollow golf ball would look like. As the corridor in which he floated opened up into the large space, he halted his progress and considered his next move.

Spacers in the holo epics who encountered such interior volumes invariably kicked off one wall and sailed freely through the air to the opposite side. In practice, it was dangerous to fly free in large enclosed spaces. Human beings had not evolved in microgravity, and among many other shortcomings, lacked the depth perception needed to properly judge distance. If he pushed off too hard, he would slam into the opposite wall with enough speed to break something; if too lightly, he would spend minutes suspended in midair, slowly tumbling.

Neither prospect appealed to him. Then there was the problem that while in flight he would be out of control. He could just see himself caroming off Voldar'ik pedestrians, thrashing the air as he tried to grab anything with which to anchor himself. Rather than risk embarrassing himself in front of aliens, Mark decided to take the long way around.

Around the periphery of the open space were the ever-present Voldar'ik mobility nets. The aliens used their tentacles to "roll" along the nets, spinning slowly and efficiently through space. He grabbed a handful of webbing and pulled himself along the curved wall. It would take several minutes to reach the corridor that was his destination, but he would suffer no collisions in the process.

Occasionally aboard Zal'trel Station, they had caught sight of beings from species other than the Voldar'ik. Mark noted that one such alien seemed to be on an intercept course with him. The being was a big, blue, furry fellow and he moved across the netting with the skill of one who had spent a lot of time in microgravity. When it became clear that the being was indeed converging on his location, Mark halted and waited for him.

"You are one of the Vulcan traders?" the blue alien asked in trade talk. *"The one known as He Who Operates Computers?"*

Mark was about to respond, "You have the better of me," when he realized that he lacked the vocabulary. He satisfied himself with, *"I am He Who Operates Computers. My personal label is Mark Rykand. Who are you?"*

"I am Effril. I would speak with you, Mark Rykand."

Mark hung from the net like a dangling Christmas tree ornament and studied the stranger. At least, he was constructed on a familiar pattern. He possessed two arms, two legs, and a head. Recognizable hands surmounted the arms, although they had six fingers each; and the legs ended in club-like pads that could fairly be called feet. The alien had a short tail attached about where a tail should be, and his head approximated a sphere, with two eyes, a slit nostril, and a mouth about where their human counterparts were located. The being's teeth were sharp and pointed, the mark of a carnivore; and his ruby-red eyes gave him a ferocious look.

"What should we speak about?" Mark asked, trying not to let the big blue alien's appearance intimidate him.

"Matters of mutual value. I would adjourn to yonder refreshment area if you are willing to speak."

"Very well. I have a few minutes to spare before I must return to my ship. Let us speak of that which you wish."

Mark found himself led to a large rectangular compartment where Voldar'ik gained sustenance from their bottle fruit. They did so by placing the fruit in their navel orifices and sucking on them until the skins were deflated husks. The Voldar'ik kept their feeding areas as dark as humans kept their expensive restaurants, possibly for similar reasons. The other members of their shore party had attended several

“dinners” with potential Voldar’ik clients. He had stayed in their quarters and surfed the aliens’ information net.

When the blue alien anchored his feet to the deck in front of one of the pedestals on which bottle fruit were placed before consumption, Mark followed suit. The stranger made a gesture that Mark did not understand and said, *“It is a shame that these tripod-sitters have nothing for us to eat or drink, or else I would purchase you a libation.”*

Mark gestured to his microgravity canteen. *“I carry my own libation.”*

A clear bottle appeared in the alien’s hand from his belt pouch. *“As do I. Shall we drink to one another’s health and prosperity?”*

Mark smiled at the toast so close to the traditional “Live long and prosper.” Had the situation been different, he would have liked to travel the Sovereignty to see how widespread was the custom of drinking together. His limited experience -- first Sar-Say and now this blue fellow -- indicated that it was nearly universal among thinking beings.

“My time is short,” Mark said after sipping water from the canteen. *“What can I do for you?”*

“I understand that you people come from the other side of Civilization.”

“You understand correctly.”

“I am a trader like yourself. I would discuss an exchange of commercial information for our mutual benefit.”

“What sort of information?”

“The local systems in which your people have sold goods, lists of that which sells best in each system, customs that help the exchange of value between sapient beings. I will, of course, supply you with what information I possess.”

“Yes, that would be good,” Mark answered. In reality, of course, humanity had no such information to share. This being had no way of knowing that, of course. In addition, he presented them with another avenue for gaining information about the Sovereignty. If itinerate traders here were anything like those at home, they probably did not report everything they knew to the overlords. *“Perhaps we can come to an arrangement. You can begin by telling me what sort of being you are. I am afraid that I don’t recognize your type.”*

The blue being took another long drink of whatever it was that he had in his flask. A whiff convinced Mark that it was not water. The blue alien looked at Mark with ruby-rid eyes and said, *“You must be from a distant system indeed not to recognize a Taff trader when you see one.”*

#

Mark blinked and waited for the sudden buzzing in his ears to dissipate. The danger signals in his brain had begun ringing at the alien’s revelation. He thought furiously about how to ask the question that most needed answering. Luckily, his past two weeks of practiced indirection served him in good stead.

When he spoke, it was with the caution of someone who has discovered that he has been strolling through a minefield for some indeterminate period.

“You are a Taff? I have heard of your kind, of course. I was under the impression that you looked

different. Is there another species that uses the same verbal label to describe itself?"

"I know of none. We Taff travel all over civilization to trade, so I suspect that I would have heard of it if it existed. What did you think we Taff looked like?"

"It's not important. I am happy to meet you now. Tell me more about this deal between us."

"It is our custom to get to know those with whom we would do business before beginning negotiations. Do you have the same custom?"

"We do."

"Then perhaps you will tell me something of this Shangri-La system that you inhabit, and why I have never heard of it."

"Certainly. However, my people do not like to brag about their accomplishments before giving their guests a chance to extol their own virtues."

The blue Taff emitted a sound like a snort. He followed it with, *"Looking to take my measure first, are you? That is acceptable. Let me tell you about my visit to..."*

The alien proved garrulous. He told of his own exploits in a system named "Srenthon," if Mark heard him right. He was a trader who gloried in obtaining "value" from merchandise that another species considered nearly worthless. His story reminded Mark of the sort of tale one traveling salesman would tell another. When he was finished, Mark responded with a story of his own, largely fictional, about how his ship had found itself hopping from stargate to stargate in search of a bargain. The only system he mentioned by name was Vith, which was from where the *Ruptured Whale* had been sailing when the Broan Avenger had jumped it.

Somehow, Effril got him to talking about their arrival aboard Zal'trel station. Mark did not think he had been steered onto the subject, but the Taff had the air of someone who was expert at such things. The two of them each drank out of their mutual canteens, and if Effril knew that Mark was drinking water, he showed no signs.

Soon Mark found himself relating their first meeting with Zha, and how the Voldar'ik greeter had tried to charge them one-twelfth of their cargo as a port fee. This brought another fit of snorting from the trader.

"These Voldar'ik know value when they smell it," Effril agreed. *"What did the master trader do?"*

"He told Zha to bring back the ferry so that we could return to our ship and leave this wicked place."

"Good for him. We traders must resist these extortionists wherever we find them. Then what happened?"

"Then we made an offering to the local Broan master and discovered that there are none such on Klys'kra't at the moment."

The snorting noise came again, this time louder and longer. Effril finished by saying, *"It would be a poor overlord indeed who had this miserable pile of excrement as his sole possession. No offense intended to our hosts or to you, honorable Mark Rykand."*

"Why would I take offense at your description of Klys'kra't?"

“My impression is that your own world is not very central to Civilization. I would say that Shangri-La also possesses but a single stargate and that you do not get many visitors.”

“What makes you think that?”

“The fact that my own species judges your world to be unworthy for trading ... no offense. However, if you had anything of value, you would have seen my kind before now. Also, if you were a major world, you would not have had to send an expedition to the opposite end of Civilization to look for species with which to exchange value.”

“I admit that we are small,” Mark said, relieved at the trader’s misconception. *“However, we are growing.”*

“I will wager that you do not have an overlord of your own in residence.”

“That is also true. In fact, I am young and I have never seen a Broa.”

“Count yourself lucky, cub.”

“You have experience dealing with them?”

“More than any sane trader would like.”

“How are they to deal with?”

“They like their privacy. They also do not bargain. They will tell you what value they are willing to give for your goods, and you accept their offer. Sometimes you come out ahead, sometimes behind. But you do not bargain, not if you want your ship left in one piece.”

Mark took a deep breath and asked the question that he had been leading up to for much of the past half-hour. *“What do they look like? I hear they are ferocious beings who tower over ordinary species.”*

“Not at all,” Effril said. *“In fact, they are only half my size. One should not let size influence one when dealing with the Broa, however. When they are around, there is no disputing who is the more powerful.”*

“I believe that I must be the victim of my brood mates. Please describe a Broa so that I will know an overlord if I see one.”

“You will know. Trust me. As for their appearance, as I said: They are small beings, usually brown in color and covered with fur. They look a great deal like you, but smaller and with hands like mine -- that is, six appendages rather than your five. Their ears are smaller than yours, and protrude more toward the front. They have a muzzle of sorts, with rows of breathing holes along each side. It is their eyes that one notices when dealing with them. They are yellow...”

CHAPTER 39

Sar-Say was frightened. He hadn’t been this alarmed since that long ago day when an oversize biped floated into his compartment aboard this very ship and kidnapped him to a star beyond the edge of Civilization. Something had gone terribly wrong on the Voldar’ik station and he knew not what. It was

the not knowing that gnawed at his brain. If only they would tell him what had happened, he would meet his fate with some degree of equanimity. As things stood, the only thing that stopped him from rolling into a ball and retreating from reality was that his captors were watching him via their holo-cameras. Therefore, instead of withdrawing into himself, he hung from the overhead and turned his back to the camera as he contemplated the blank wall of his prison.

Things had been going so well! The humans used the hints he had provided to seek out Civilization. True, they found a system other than the one he had intended, but they had returned him to his home, which was the point of the exercise. He assisted them to make contact with the species in this system and for fourteen sleep periods, matters seemed to be progressing satisfactorily. Then, without warning, something had gone awry!

First came word over the command circuit that the shore party was returning to the ship. There were no explanations, no elaboration. One moment the universe had been in its place, the next, Captain Landon issued the terse announcement, "We are coming home. Make all preparations for departure."

Sar-Say's kind was susceptible to heart problems and he thought one or both of his hearts would stop when he heard those words. Then his monitoring circuit had gone dead and he found himself totally isolated. His cabin aboard the *Hraal* (in his mind, he still called the ship by its original name) did not even have a viewport to let him look outside. For more than four human hours, no one answered his calls, nor had the guard responded when he pounded on the hatch.

Two hours earlier, there were the hull-borne sounds of a ship docking. A few minutes later, acceleration alarms sounded, and weight returned. His weight built steadily to one-quarter of a standard human gravity as the normal space generators came online. It had been that way for nearly two hours now.

The continuous thrust told him all he needed to know about the humans' intentions. They were en route to their compatriots in the Oort cloud. Had they merely been changing their parking orbit, thrust would have lasted but a few seconds. Even half an hour at this level of acceleration was sufficient to reach local Orpheus-escape velocity. If they were headed back toward the stargate, they were taking a high speed, hyperbolic orbit to get there.

For the hundredth time since that last terrible message reached his ears, he considered what could possibly have happened. His plan had seemed to be working flawlessly. The way the humans responded to him on a personal level proved that he had correctly grasped their psychology. He had even formed friendships with individual humans like Lisa. She kept him sane during the long months of captivity. That one could have alien friends was a new thought for Sar-Say. That he actually liked humans was a revelation. In many ways, they were an admirable species. Too bad about their foibles, but then, they would not be human without them.

Shortly after his captivity began, he had concluded that the best route to freedom lay in being friendly and helpful to his captors. He had been that and more. Had he not helped them camouflage their ships so that they would feel secure while penetrating deeply into Civilization? Had he not assisted them during their contact with the Voldar'ik? Through these services, he felt sure that they would eventually relent and allow him to join their shore party, which was the whole object of this nearly two-year-long exercise in diplomacy. He had been so close!

Now, however, his careful plans were in shambles. The humans were leaving Klys'kra't at a speed that suggested they would never return. If only they would tell him what had gone wrong, perhaps he could help them put it right.

There was one worst-case scenario that fit all the known facts, a possibility that he did not like to think

about, but which he faced squarely. That was the prospect that the humans had learned his carefully guarded secret. As he pondered the ultimate disaster, Sar-Say was surprised by an unbidden thought that floated up from his subconscious.

It was not very often such a thing happened to one of his kind. The thought was so surprising that he took a moment to consider its implications. There was a strategy - no, a ploy of desperation - that just might work if his worst fears were confirmed. The probability of success was low. In fact, his chances of carrying the day in the coming battle were about the same as winning one of the government-sponsored gambling pools of which the benighted bipeds were so fond. Still, there was a chance for victory if he took action and no chance if he did nothing. Merely thinking about the risk made him lightheaded. It would be the biggest gamble he had ever taken. Success would bring riches and power. Failure might cost him his life.

#

A somber group gathered in *Ruptured Whale*'s wardroom. The whole shore party -- Dan Landon, Mikhail Vasloff, Lisa Arden, and Mark Rykand -- sat around the long table and stared somberly at one another. Raoul Bendagar and Laura Dresser completed the group. The mood in the compartment reminded Bendagar of a funeral. It was a thought he was careful not to express aloud.

The hatch opened and Sar-Say stepped through. In the corridor beyond, the four guards who had escorted him were momentarily visible. They stayed outside and closed the hatch after the alien. Sar-Say moved to stand before the humans. He looked at each in turn with unblinking, yellow eyes.

After the uncomfortable silence had gone on for a dozen seconds, Dan Landon said coldly, "Good afternoon, Sar-Say."

"Afternoon, Captain," Sar-Say replied affably.

"By now you have probably figured out that we are on our way to rendezvous with *Columbus* and *Magellan*."

"Yes. We have been under thrust too long for anything else."

"Do you want to know why we left Klys'kra't in such a hurry?"

"I have been wondering that very thing these past four hours."

"Mark, please tell our guest about your beer-drinking buddy."

"Yes, sir." Mark avoided eye contact with Sar-Say, and then fixed the alien with his coldest stare when he realized what he was doing. "I met an interesting being aboard Zal'trel Station. You would have liked him. Big blue fellow, garrulous. He told me quite a story..."

Sar-Say nodded. His worst fears were confirmed. It was time to jettison all that had gone before and to start boldly anew. It was time to rub the humans' muzzles in the hard facts of the universe. They were not fools. They could think logically when forced to do so, and if the problem was not overly complex. He willed his hearts to slow their pounding and regarded his inquisitors.

He was reminded of an ancient human movie he had watched on the ship's entertainment system the previous month, one that chronicled the life of a human ruler named Cesare Borgia. Most human entertainments left him cold, but this one had struck a chord. The situation in Renaissance Italy reminded him of home, especially the court intrigues. He had been especially struck by the motto on the Borgia family crest - *The Die is Cast* . Somehow, it had never seemed more appropriate than at this very

moment.

Drawing air through his breathing holes to provide extra oxygen to his brain, and hopefully, to sharpen his wits, Sar-Say said, "You met a Taff trader. He told you my true identity."

Mark nodded. "Then you admit that you are a Broa?"

"I do."

"What was that thing you painted for us?"

"An animal from a world I once visited. It is non-sentient, but ferocious looking to human eyes. That is why I chose it as a model for what we Broa look like."

"What did you hope to accomplish by this charade, Sar-Say?" Raoul Bendagar asked.

The alien imitated a human shrug. "I hoped to gain Earth as my personal possession."

"You are one brave alien, I'll give you that," Landon muttered.

"Thank you, Captain. Among those of us who would rule all creation, that is high praise. Of course, I am one of the actual lords of creation. You humans merely believe yourselves to be."

Laura Dresser, who had been quietly absorbing events as they unfolded, cleared her throat and said, "I am sorry, Sar-Say, but there are some things that I don't understand. Would you please clear them up for me?"

"Of course."

"If you are a Broa, what was going on in the New Eden system when you popped up in range of *Magellan* with a Broan Avenger on your tail?"

"We Broa have our internal intrigues and rivalries, just as you do. I cannot tell you which of my rivals sent that ship to ambush me while I was traveling from Vith to Persilin. All I know is that they came at us as we were preparing to jump from one system to another, and the rest -- as you humans say -- is history."

"When we boarded your ship to salvage it, we noted that the damage, while extensive, was not sufficient to have killed the crew. A hatch blew out at the same time all of the safety doors failed open, and depressurized the ship. It has always struck me as being a sloppy way to engineer a spaceship."

"I depressurized the ship at the same time I wiped the computer memory."

"So you were the cause of the computer malfunction!"

"I was."

"Then what were you doing down in engineering when you nearly fried yourself nine months ago?"

"Mark was getting too close to discovering that the data had been deleted intentionally. I was trying to destroy the computer. Unfortunately, as I told you at the time, I am not a technical expert. I honestly had no idea of how much electricity I was setting loose. Had I known better, I would have made sure that I was not grounded before punching through the power cell."

"Okay, so that was an accident," Laura Dresser conceded. "You didn't kill your crew or erase the computer by accident. Why do it at all?"

“To hide my true identity from those who defeated the Avenger.”

“You mean you knew there were humans onboard *Magellan* ?”

“You presume too much,” Sar-Say said with the gesture that Lisa recognized as signifying wry amusement. “I was never so surprised as when I realized that my ‘rescuers’ did not recognize what I was. No, I thought you were from some star within the Sovereignty. I merely wanted to hide my clan and sept in case you humans were in league with my enemies. My best chance for doing that was if I were the sole survivor and there were no records for you to consult aboard ship.”

“You sacrificed your crew on the mere chance that they would complicate your lie?”

“Yes. As it turned out, their sacrifice proved necessary.”

Lisa frowned. She was the human Sar-Say knew the best, and the one whose facial expression he could read most easily. She had worn a pained expression ever since he had entered the wardroom. “Sar-Say, I have a question, if you don’t mind.”

“I am in no position to mind.”

“You knew that we were from outside the Sovereignty when I first moved into your quarters, right? Apparently, you had already learned quite a bit of our language. You knew that we were ignorant of the Broa and of the situation out here in the Orion Arm.”

“All of this is true.”

“So if you could have told us just about any story and we would have believed it, why did you tell us the truth? You scared the daylights out of us. You could as easily have concocted some fairytale and we would have walked unsuspecting into your species’ clutches.”

“I considered fabricating a story, but I did not want you to catch me in a lie. Among my people, we have computers that analyze semantic content, looking for inconsistencies that indicate when someone is lying. You have the same, although not as advanced. With such systems, it is impossible to sustain a complicated lie for very long. I decided to mask the lie about who I was with a much larger truth.”

“My compliments,” Dan Landon said. “You almost got away with it. What would you have done if we’d allowed you contact with the Voldar’ik?”

“I would have ordered them to seize you and this ship the moment I set foot onboard their station.”

“Not exactly grateful that we saved your life, are you?”

“I am well aware of my debt to you humans. However, in this matter I would have had no choice. The Voldar’ik would know what I was as soon as they saw me and would have reacted accordingly. The moment I stepped into view, my masquerade would have been over.”

“What makes you think we would have allowed ourselves to be taken without a fight?”

“So long as I made good my escape, it would not matter whether the Voldar’ik succeeded or failed. If you had escaped, you would have found a Broan fleet waiting for you when you returned to Sol.”

“Then you *do* know where Sol is?”

“Not personally. However, I have memorized the location in human coordinates of the one hundred most prominent features in the galaxy. Surely it would not have been difficult to convert your coordinate system

into our own.”

“Not bloody difficult at all,” Lisa muttered.

“Why are you telling us this?” Landon asked. “You must know it is not helping your case.”

Sar-Say shrugged. “There is no reason to deceive you any longer. Deception is no longer feasible. No, honesty is now called for. It is a tactic that just might work under these circumstances.”

“Work to what purpose?”

For the first time since entering the wardroom, Sar-Say deflected their question with one of his own. “What are your plans for me? Will you kill me outright, or merely lock me up in a zoo for the rest of my life?”

“We haven’t thought about it.”

“Before you decide, I have something to say.”

“Go ahead. I think you should know, however, that no one will believe you.”

“You will believe this, Captain. The truth of my statements will be self evident.”

“Are you pleading for mercy?”

“Not at all,” Sar-Say replied, pulling himself to his full 150-centimeter height. “I intend to make you a counteroffer.”

#

“Go ahead, we are listening.”

Sar-Say nodded. “Very well. Until that day in the New Eden system, you humans believed yourselves alone among intelligent races. It is no surprise, then, that you have developed some odd ideas about your own importance in the universe. In fact, it is common for isolated species to develop delusions of grandeur.

“Unfortunately, reality is quite a bit different than you imagined it. You have seen the wealth and power of the Voldar’ik. That is *our* wealth and power. So, too, are the products of a million other star systems. The truth is that no matter how valiant you humans are, no matter how skilled in battle, you have no chance against us. Those Who Rule can easily muster 100,000 Avenger-class warcraft to send against Sol once they discover your existence. How many can you muster to defend your world?”

Landon’s reply was laconic. “Not that many.”

Sar-Say gestured toward the white-haired man whose scowl transfixed him. “Mr. Vasloff has made a career of preaching the danger to humans of leaving your cradle and coming out to the stars. The danger is greater than even he has imagined.

“My friends, you must consider the objective reality of your situation and put aside your childish delusions. Frankly, you are nothing. You are a tribe of howling, primitive, South Sea islanders who fancy that their stone-tipped spears might be effective against space dreadnoughts. I can assure you that any such effort is worse than futile. It is suicidal. If Those Who Rule find your species difficult to subjugate, they will not conquer Earth. They will sterilize it!”

Dan Landon smiled grimly. "I take it this is the buildup to the offer, Sar-Say. Perhaps you can spare us the bombast and just get on with it."

"I think we know who is speaking bombast, Captain Landon. However, as you wish. My offer is this. If you will turn this ship around and take me back to Zal'trel Station, then I will guarantee your individual lives during the assimilation. You will be well treated and live in comfort for the rest of your days. I give you my word on that. The alternative is that you will die with your species."

"You are hardly in a position to make threats."

"Nor do I make one now. I am merely explaining the way things work. If you release me, I will lay claim to your planet for my clan and myself. By Broan custom, that will make you my chattels, to do with as I choose, within certain broad limits, of course."

"You would register us like a gold mining claim?" Mikhail Vasloff asked.

"An apt analogy. Yes, I would register you like a gold mining claim."

"We would still be under the Broan yoke."

"There is no choice in that. A wild star system represents too great a danger to my species to be tolerated."

"And you are suggesting that we cooperate in our own enslavement?"

"Is not enslavement preferable to extinction? I have studied you humans and I can tell you that you are not prime candidates for subservience. In fact, you are about the least suitable species I have yet met. You are haughty, proud, and do not bow your heads easily. A less patient Broa, or one with less to gain, might decide that you are not worth the effort."

"So we six are to be your personal slaves?"

"Yes. I can promise that each of you will be treated with kindness."

"That is mighty big of you!"

"Sarcasm is not warranted. Either you accept me as your master or else you take your chances with Those Who Rule. That is my offer."

"We could hide," Vasloff said, harshly.

"Perhaps," Sar-Say agreed. "For awhile. However, the Sovereignty expands year by year and eventually we will find you. It is inevitable."

"Are you through?" Dan Landon asked.

"Not quite yet," Sar-Say replied. "There is one other consideration. You have seen Klys'kra't. You know that save for their yearly tribute, they live out their lives unmolested. There is no reason that Earth cannot one day enjoy the same ... shall we say, semi-autonomy? That cannot happen immediately, of course. You have too many independent tendencies that must be weeded out first. However, later, after the eugenics program has had an opportunity to work, there is no reason that your people cannot be as effectively free as the Voldar'ik."

"Any other thoughts on the future of humanity?"

“I could go on for quite a bit longer, but I can see that you wish to speak among yourselves. Thank you for listening. Now, if you will recall the guards, I will return to my cabin to await your answer. When considering my words, I urge you to think with your brains and not with your glands.

“The fate of humanity depends on your decision.”

CHAPTER 40

No one spoke for more than a minute after Sar-Say left. The tension in the compartment had risen to the point where it felt like a hot, heavy blanket that sapped the will and deadened the mind. There seemed nothing more to say. God was alive and well and a pseudo-simian. The hopes and dreams of a million generations of men and women had been smashed on the rocks of reality. Life had turned out to be about nothing more than the perpetuation of a single, favored chain of chromosomes, and the golden pattern had not evolved on Planet Earth.

For the first time, Lisa Arden knew what it felt like to contemplate suicide. Her black mood was not unique. The despair was apparent on all of their faces. Finally, Raoul Bendagar cleared his throat and said:

“Cheeky little bastard, isn’t he?”

The juxtaposition between Sar-Say’s threats, their own depression, and Bendagar’s irreverence, struck everyone as somehow funny. What began as a nervous chuckle quickly escalated into a full-throated roar. Within seconds, people were holding their sides and had tears rolling down their cheeks. Had Sar-Say heard them, he might have been offended. He might also have detected an underlying tone of desperation in the mirth. For the pseudo-simian was right about one thing. Their situation was nothing to laugh about. Somehow, that made it even funnier.

Finally, when they had gotten control of themselves again, Dan Landon signaled for silence. When he had it, he asked, “Is there anyone here who wants to accept his offer and deliver him to the Voldar’ik? How about you, Mikhail?”

“Damn it, just because I have always disagreed with you Expansionists doesn’t make me a traitor to humanity!”

“Sorry,” Landon replied. “No such implication was intended. I merely thought you might have a different reaction to Sar-Say’s ultimatum than the rest of us.”

“I would like to shove it up his skinny little ass!”

The captain smiled. “Anyone else?” When no one spoke, he continued. “Good. For the record, there is no way in hell this ship is turning around while I am in command.”

There was a general murmur of agreement. Only Laura Dresser refrained from nodding. Landon noticed and turned to his chief engineer. “Laura, you have a better idea?”

“About getting away from here as quickly as possible? No. That is the best-damned idea I have heard since coming on this expedition. I was just thinking about the Voldar’ik.”

“What about them?”

“We left rather quickly, with no real explanation, and without paying our fees. It occurs to me that they may be curious as to why, curious enough to track us all the way to the stargate and to take notice when we don’t go through it.”

“You have an alternative?”

“I was thinking that perhaps we ought to go through the stargate.”

Landon frowned. “Head deeper into the Sovereignty? Haven’t you been listening to what Sar-Say said?”

“Mark obtained a great deal of astronomical data during his two weeks of database diving. One of the stars he identified was Nanda, which is an M-Class red giant a dozen light-years from here. Right, Mark?”

Mark was not listening. He was trying to isolate a stray thought that had been eluding him ever since Sar-Say left the compartment. Laura Dresser’s question jolted him back to reality. “What?”

“We were talking about the adjoining star system. You identified it in the astronomical data. Correct?”

“Yeah, Nanda. M3 class red giant. It has three stargates. The one from Klys’kra’t is at about Jupiter’s distance from the star. Why?”

“I am proposing that we use the Nanda gate to make our getaway.”

He thought about it, and then nodded. “Not a bad idea. That way, the Voldar’ik see us leave in a conventional fashion and then hopefully forget about us.”

Dan Landon looked pensive. “What are the risks?”

“From the technical side, none that I am aware of, Captain,” Laura Dresser replied. “Our Broan jump generator is operational. No telling who or what we might run into on the other side, but considering how far out the Nanda gate is, we can probably slip away without anyone noticing that we even arrived. By the time the gravity wave gets to somewhere else in the system, we will be long gone.”

“Any other suggestions?” When there were none. He thought about it, and then shook his head. “It’s a good idea, but too risky. We do not really know what we would find there. The information we carry is too valuable to take even a small chance. No, we continue as before.”

The mercurial chief engineer’s expression showed what she thought about the decision. She said nothing, however. She had had a year to learn the futility of arguing with the captain once he had made a decision.

Landon noted her expression and said, “Look people, the cargo of knowledge we carry is perhaps the most valuable in the history of the human race. We must get what we know back to Earth as quickly as possible. To ensure that it gets there, as soon as we have put a little more distance between Klys’kra’t and ourselves, I want everything we have put on a tight beam to *Columbus* and *Magellan*. Anything else before we get back to work?”

“What about Sar-Say?” Lisa asked, broaching a subject that everyone had been avoiding.

“What about him?”

“Do you really think the Broa can do what he threatened?”

“I am afraid this expedition has dispelled whatever doubts we had,” Raoul Bendagar replied. “We must now place all of our efforts into ensuring that the Broa never learn of our existence.”

“How do we do that?”

“We follow the *Terra Nostra* program,” Mikhail Vasloff said. “We abandon our interstellar colonies and pull back to our home star system. We control our electromagnetic emissions and pray they do not stumble across the radio noise we have already pumped skyward. If we don’t make ourselves conspicuous, then we should be safe for quite a long time.”

“We can’t just hide!” Lisa exclaimed.

“We can and we must,” Vasloff replied. “Sar-Say was right about one thing. My fears have always been low key and generalized. I had no idea that something like the Broan Sovereignty existed. If I had, I probably would have awakened every night screaming ... just as I will from now on.”

“But...”

Dan Landon raised his hand in a restraining gesture. “Enough, you two. What to do about the Broa is a decision made above our pay grade. Our job is to get the news back to Earth, and to do that, we have to get out of this system. Raoul, get everything we have on what we have learned and get it off to our consorts. Lisa, do you think you can still stand being with that little bastard?”

She nodded. Her eyes glistened with incipient tears, but her features showed a new determination.

“Good. I want you to pump Sar-Say mercilessly for information. We will interrogate him the whole way home if we have to. I want to know everything there is to know about the Broan Sovereignty, the truth this time. Check his quarters for anything he might use to injure himself. We do not want a suicidal monkey on our hands when he discovers that we have rejected his kind offer to allow us to be his personal slaves.

“What about me?” Mark asked.

“I want you to collate all of the astronomical data you have. Too bad we did not have time to complete our purchase of the Voldar’ik database. Still, we will go with what we have. Everyone know what he or she is supposed to do? Good, then let’s do it. We still have a mission to complete and not all of the bogeymen in creation are going to stop us from warning Earth.

#

The compartment was dark save for the ever-present blue night-light. In space, no one ever sleeps in the dark. Fumbling in the dark for one’s pants might well prove fatal in the event of a hull breach or any number of other emergencies. Mark woke and stared at the dimly perceived overhead. Something had awakened him, something far off, but infinitely disturbing.

Then he heard the quiet sobs and felt Lisa’s body shaking beside him. He rotated his body in the sleeping net and folded her into his arms.”

“What’s the matter?” he asked quietly, nuzzling her cheek with his lips. They were again in microgravity, having achieved all the velocity they thought prudent en route to the stargate. They would decelerate again, as though they planned to pass through, and then when they had swept past, would undergo a full eight hours of acceleration at 2.5 gravities. The plan was to get away from the stargate as quickly as possible, and disappear from the screen of any Voldar’ik who might be making periodic checks of their position. Lisa’s cheeks were wet with large, globular tears. He tasted the salt in them.

“I can’t get over how close we came to losing everything,” she sobbed. “And I was the one who argued that we let him join us aboard the station!”

He kissed her gently. "You didn't know."

"But I should have known. I have studied Sar-Say for more than a year and he fooled me completely. I even felt sorry for him when I realized the authorities would never let him return home. What a dolt I've been!"

That last had been more of a quiet scream than a statement. Into those few words, she had packed all of her doubts and her fury.

"Look, stop kicking yourself. You could not have known. No one could have. Sar-Say was clever. He was honest with you as far as he went. He told us everything we wanted to know and he told us the truth in a way that was not flattering to the Broa. It was damned clever of him. He gave us so much true information that it never occurred to us to wonder if he were holding something back."

"But the future, Mark. Mikhail Vasloff is right. We are going to have to hide in our one little system, quaking in fear lest some Broan listening post pick up a centuries-old game show."

"Mikhail is not right," he said. "I refuse to believe that the human race is going to quake in its collective boots merely because of the bullies next door."

"But what else can we do?" she sobbed. "If we allow our ships to leave the Solar System, sooner or later one of them is going to stumble across the Sovereignty. Worse, some people will convince themselves that they can do business with the Broa and will probably seek them out."

"I can't believe that people would be that stupid."

"Believe it. When it comes to being venal, corrupt, and just plain idiotic, you can't beat the human race."

"I wonder."

"Wonder about what?" Lisa asked, snuggling closer.

"I wonder if we truly hold the galaxy's title for venality, corruption, and idiocy."

"Huh?"

"You heard Sar-Say this morning. The Broa have internal arguments sufficient that his rivals sent a ship to kill him. That was a lucky shot that bounced the *Ruptured Whale* into the New Eden system."

"*Hraal*."

"What?"

"The ship's name was *Hraal* then."

"Whatever they called it. I submit that the day those two ships popped out of that wormhole and into the New Eden system was the luckiest day for the human race since the asteroid killed the dinosaurs." He felt a sharp tug from his conscience even before the sound of his words had died away. There had been at least one human being for whom that day had been far from lucky. He remembered her smiling face framed in a wild tangle of copper-red hair. Even after two years, it still hurt him to think of poor, dead Jani.

"Lucky? How do you figure?"

"Because we now know about the menace and have time to plan for it. Think of what it would have been

like to merely stumble across one of the systems of the Sovereignty. We would have been so fascinated by finding other intelligent beings in the universe that we would have fallen all over ourselves like anxious puppies to make friends. The first the Earth would have known of the danger would have been when a hundred wormholes formed in the Solar System and whole fleets of Broan Avengers came boiling out.”

Lisa moved close and kissed him tenderly on the lips.

He gazed at her in the blue gloom. Her eyes peered deeply into his. He continued his thought. “As it is, we have time to do something about the menace. Maybe Mikhail Vasloff has the right approach. Maybe we hide out and pray they do not find us. Frankly, that thought does not sit well with me either, but that may be what the authorities decide to do when we get home. Somehow, I cannot see us doing that. It is not our style. But maybe, just this once, we will let discretion be the greater part of valor.”

She kissed him again, this time making it abundantly clear that she was tired of talking about the Broa. “I love you. No matter how dark things seem, you always cheer me up.”

“I wasn’t trying to cheer you up. I was explaining...” His words were smothered by her kisses. He abandoned himself to her embrace, and soon, their sleeping net took on the look of a pupa from which the butterfly is struggling to emerge. Their lovemaking was quick and urgent. Later, he held Lisa until her breathing had turned from ragged gasps to a smooth, steady susurration.

He closed his own eyes, but sleep would not return. Too much had happened today and his mind refused to give up its hold on the memories. There was also that same nagging feeling that had come over him in the wardroom as Sar-Say had left. He was missing something important. If only he could think of what it was.

He was still wrestling with the thought when he drifted into a fitful sleep an hour later.

#

Breakfast the next morning was a somber affair. During the yearlong flight from Earth, it had become the custom for the morning watch to gather in the mess compartment and talk about the coming day. Mealtime gatherings had become important events in the life of the crew. It was a natural human reaction to being so far from home.

When Mark and Lisa arrived a few minutes after 07:00, they found the compartment half empty. Among those present were three others who had been present for the interview with Sar-Say. Mark noticed that Laura Dresser was in earnest conversation with Raoul Bendagar, with Mikhail Vasloff looking on. Of Captain Landon, there was no sign. He had not expected the captain to be at breakfast. Because of the “majesty” of command, the Landon usually ate alone.

“Good morning,” he said as he floated to his customary seat, slipped the covered tray into its microgravity restraints, and then belted himself to the bench. Beside him, Lisa did the same.

“Morning,” Bendagar replied. “How did you two sleep last night?”

“Not very well,” Mark replied. He thought the dark bags beneath his eyes that had appeared in the mirror this morning would have made that obvious.

“I slept fine,” Lisa said beside him. Perhaps it was his imagination, but Mark thought her tone carried with it a subtext that ought to have his ears turning red in a minute.

“Everyone recovered from the shock?” he asked.

“As much as we could have, I suppose,” Laura Dresser said before sipping from a drinking bulb full of black coffee. When she finished, she carefully returned the drinking bulb to its recess and reached for the magnetized fork beside her tray. “I still think we should go home through the stargate. The captain is correct that getting our news home the safest way possible is the only thing to do now. Still, I think we should worry about the impression we leave with the Voldar’ik. If they detect that we have not gone through the stargate, they are going to be very curious and word may get back to their masters. What do you suppose the Broa will do if they receive a report of a ship that left the system without transiting the stargate?”

“Besides,” Mikhail Vasloff said, “it will give you a chance to play with your toys.”

“There is that,” Laura agreed, nodding.

Buried in the *Ruptured Whale*’s hull was just about every sensing device ever invented by human beings. They watched surrounding space continuously and fed the data to the three oversize computers in the cargo compartment. Traversing a stargate would be a bonanza for the scientific community back on Earth.

“It seems to me that the stargate is the linchpin to this entire problem,” Lisa said around a piece of toast with butter and strawberry topping. The others regarded her while she chewed the mouthful and swallowed. Mark noted that she had a thin line of yellow butter on her upper lip, thought about telling her, and then decided that it looked good on her.

“What?” Lisa asked as she noted the four sets of eyes on her.

“You are going to put out that statement and say no more?” Laura Dresser asked.

“It’s obvious, isn’t it? The Broa depend on their stargates for everything. They are the doorways to the stars, and he who has the keys to the doors has control of the house. In addition, the stargate makes it possible for the Sovereignty to be as large as it is. We could never build a million-star empire with our technology.”

“Why not?” Vasloff asked.

“Because it takes us time to go from Point A to Point B,” Lisa replied. “Look at the trip out here. It took us a year to get from Sol to the Crab Nebula. The Broa can do the same jump in no time at all. Sar-Say is right. Had we let him contact the Voldar’ik, it would have been over, even if we had escaped. By the time we rushed back to Earth, the Broan occupation force would have been in place for six months.”

“Which is why our only defense is to make sure they never have a hint as to our existence,” Vasloff said, nodding sagely. “As soon as they know we exist, it will be over too quickly for us to do anything about it.”

“Please, Mikhail,” Laura Dresser said. “We all know your opinion on the subject. Let us try to get through one breakfast without hearing it again.”

“Are you saying that I am wrong?”

“No. In fact, I cannot think of an alternative, but that conclusion depresses me and I do not want to spend the day holding back tears. Let us just sit here and drink our coffee in peace.”

“Too bad,” Lisa said.

“What’s too bad?” Bendagar asked.

"It's too bad we can't defend the solar system against star gates," Lisa mused. "What we need is a fortress that blocks access to our system, like Gibraltar once guarded the entrance to the Mediterranean."

Suddenly, Mark knew what it was that he had been trying to remember for nearly a full day now. He was so surprised that he slammed his open palm down on the steel table. Everyone jumped at the explosion of noise. Even some of the crewmembers at other tables looked up.

"You scared me," Lisa accused. "What was that for?"

Mark smiled. He avoided laughing. It would sound too much like that hysterical cackling he had emitted in the wardroom after Raoul Bendagar had called Sar-Say a "cheeky little bastard."

"We don't need a fortress to guard our system," Mark said, in awe of the idea that had struck him like a punch to the stomach. "We already have one!"

CHAPTER 41

"I beg your pardon," Vasloff said.

"Your own words, Mikhail," Mark replied. "To prevent the Broa from exterminating us, we need to make sure they never learn of our existence. Failing that, we must *keep them from finding out where we live!*"

"What has this to do with a fortress?"

"Everything," Mark said, warming to his subject. "So long as the Broa don't know where to find Sol, they can't attack us. Our anonymity is our best defense. It makes Earth as impregnable as The Rock ever was. Our armor lies not in millions of tons of hard stone overhead, or in tunnels drilled kilometers deep into mountains. Our armor lies in the fact that the Broa have no idea that we exist. Moreover, even if they become aware of humanity, they still will not know where in the galaxy to look for us. There are literally millions of stars that might be our home and they can't very well search all of them."

"Wasn't that Mikhail's point, namely that if we keep a low profile, there is a good chance they will overlook us?" Laura Dresser asked.

"Oh, I agree that we should hide from the Broa," Mark said as a wild surge of hope jolted through his veins like a powerful drug. "But I don't advocate keeping a low profile. I propose that we use our anonymity as a weapon. We work secretly to destabilize and destroy the Sovereignty. By the time they figure out that we exist, it will be too late. They will have too many problems at home to come looking for us."

"Now I know you have gone insane," Vasloff exclaimed. "We can no more fight a million stars than we can fight a supernova!"

"You can fight a supernova by being somewhere else when it goes off," Mark retorted. "And we don't have to fight a million stars. At best, we only have to fight a single planet, and at worst, a dozen planets."

"I am sorry, but I missed something there," Raoul Bendagar said.

"Look," Mark said, "the Broa have problems already. Otherwise, their factions would not be sneaking

around, ambushing each other in stargates. We all know that they are not the most prolific species in the universe. If they bred like rabbits, or even human beings, it would not be a decade or more between Broan visits to Klys'kra't. They must have a home world, or at most a few worlds, where the bulk of them live. We seek out those worlds and target them."

"You mean we attack the Broan home world?"

"Sure, why not? Cut off the head of the snake and the tail won't bother you again."

"Won't that just infuriate them and ensure they exterminate us? After all, there will be a lot of Broa who survive any attack we make on their home planet."

"Then we give them something to keep their minds busy. We destroy their hold over the subservient species. In fact, if we do that well enough, we won't have to attack their home world. What is their power base?"

"Their monopoly over the stargates, of course. What if a large number of stargates were simultaneously put out of action? With our own starships able to move at will among the Broan stars, we could destroy their economy and social system over large parts of their domain before they could figure out who was responsible. Better yet, think of the confusion if several key species suddenly started building ships with our kind of stardrives!"

"The Broa would go ape," Lisa said with a smile, obviously unaware of the unintentional pun.

"You are suggesting that we start a revolution in the Sovereignty?" Vasloff asked.

"Why not? They are ripe for it. The Sovereignty is a pyramid with trillions of workers at the bottom and a few masters at the top. It is the sort of oligarchy that even Hitler and Stalin could not have thought up in their wildest dreams. Destroy enough stargates, disrupt their economy, hand out the secret of the stardrive wholesale, and the whole top-heavy structure will collapse of its own weight. I would bet my life on it."

"That is precisely what you would be doing," Vasloff replied. "Your life and the lives of every other human being in the galaxy."

"An interesting idea," Bendagar replied. "It will need a great deal of fleshing out before it becomes a plan, however."

"Of course it needs fleshing out," Mark said with a laugh. "I just thought it up over breakfast. It is not even an idea. It is a feeling. But unlike what Mikhail is advocating, it *feels* right."

"That's all you have? A feeling?" Vasloff screamed.

If Mark's outburst had angered Vasloff, it had clearly intrigued the rest of his companions.

"Just how would we go about this plan of yours? What is our first step?" Laura Dresser asked.

"You will like it. Our first step is to leave this system via the stargate. We are going to need both stardrive and stargate if we are to pull this off. What better time to begin learning the technology than now?"

"What do we need stargates for?" Bendagar asked.

"If we are going to take on the Broa, we can't spend a year in transit between their domain and our own. We'll need to set ourselves up in bases along the periphery of the Sovereignty, bases like we have on

Brinks.”

Ever since Mark had begun explaining his idea, Lisa’s mind had been awl with the possibilities. Like most good ideas, this one was breathtakingly simple in concept, but would be maddeningly complex to execute. His excitement was contagious. “Mark is right,” she said. “We will need stargates of our own if we are to challenge the Broa, and not only to establish forward bases. We will need them to set up an insurance policy, in case we lose.”

“Insurance policy?”

Lisa nodded. “Despite our cleverness, the Broa may somehow find Earth. On that day, we will face a cruel choice. We can either surrender -- and likely be exterminated when they figure out who and what we are -- or we can fight, and likely be exterminated when they overwhelm us.”

“Not much of a choice,” an obviously disgusted Vasloff muttered. What had begun as a quiet breakfast had turned into a nightmare. Mark Rykand had sucked the others into his fantasy and the Russian could see no way to pull them back.

“There is always a choice, Mikhail. I admit that it would be a shame to lose dear, old Earth; but the possibility is real whether we oppose the Broa or knuckle under to them. Obviously, if we are to follow Mark’s plan, we need to take steps to ensure the survival of the species. To do that, we need stargates.”

“How so?”

“Far from pulling back and giving up our interstellar colonies, we need to search for Earthlike worlds far from the Sovereignty. Once we find such worlds, we have to keep their location a carefully guarded secret while we colonize them. We will be able to move millions of people through the gates with all of their equipment in the same time we could only move thousands via starship. It will not be cheap and it will not be efficient, but we need to make these ‘lifeboat’ colonies self-sufficient as quickly as possible. That way, if the Broa destroy Earth, they won’t wipe out our entire species.”

“You speak rather blithely of the destruction of the Earth,” Laura Dresser said.

Lisa shrugged. “I am with Mark on this one. If we give in to our fears, we have no hope for the future. As it is, we toss the dice and take our chances. However, even if we lose, so long as a single unmolested human colony survives, we win. That is true whether we fight or whether we hide.”

Mark nodded. “I hadn’t thought of that, but you are right. My idea of using Brinks Base is also too limited. We are going to need at least a planet, and possibly several. That way we will not have to mount our operations directly from Earth. We can build shipyards and factories on our bases on the fringes of the Sovereignty. That way, even if they track us back to base, the home world will be protected.”

“A breathtaking plan,” Laura Dresser said. “But is it truly practical? Think of the cost.”

“Think of the cost if we do nothing,” he retorted. “No, it won’t be easy. It will require every erg of energy the human race has, but what other choice have we? We have the armor of our anonymity for defense. For offense, we have something far better than coastal batteries. We have the stardrive. Once we establish our bases on the Sovereignty’s perimeter, we will be able to move at will through their space. Our ships can drop sublight at the edges of their systems and spy on the Broa with impunity. While our war fleet is building, we can search out their points of weakness. We can secretly gain allies and spread sedition in the form of stardrive technology. Once we find their home worlds, we attack with overwhelming force and surprise on our side, and with as many allies as we can muster. We’ll keep them too busy defending their own home worlds to have time to look for ours.”

Mark was out of breath as he finished detailing his plan for turning Earth into the galaxy's Rock of Gibraltar. He could tell by the others' looks that they are intrigued. Only Mikhail Vasloff looked unhappy.

However, Captain Landon had been correct the previous day when he said that there was no way for a few specialists aboard the *Ruptured Whale* could make such a weighty decision. Whether humanity would choose to hide or fight was something for the First Coordinator and Parliament to decide, and ultimately, for the ten billion people of Earth. It was their task to alert the public to the danger and to give them alternatives. No doubt, Mikhail Vasloff and the other members of *Terra Nostra* would see to it that their own view was well publicized. It would be interesting to see which course of action the public would choose; or indeed, if they would choose either.

“Well, it has the virtue of being audacious,” Laura Dresser said. “Let’s go find the captain and see what he thinks of it, especially the part about leaving this system through the stargate.”

#

Mark Rykand and Lisa Arden sat side by side in the darkened Astronomy cubicle and watched the approach to the Klys’kra’t stargate while they listened to the interplay on the bridge. They were currently in freefall, although the ship had undergone short bursts of acceleration for most of the past hour. The stargate, which had been invisible for most of the approach, had just come into view on the long-range scanners. The gate, which was half-lit by Orpheus’s rays, stood out in stark relief against the blackness of the void. It was a simple toroid, a thin featureless ring that looked as though it had slipped off some giant’s finger. The *Ruptured Whale* had shed most of its hyperbolic velocity during the approach. It was now moving slower than an aircar in the lower traffic lanes. In a few minutes, it would enter the gate and don seven-league boots. The next step they took would be to another star.

Nanda was a large, reddish beacon that was clearly visible beyond the gate. Although it is difficult for the human eye to judge things in space, the axis of the gate seemed aimed at the star. Mark wondered if that was a coincidence. Maybe a stargate had to be aimed at its target like a rifle. That was a disturbing thought. It meant that when the Broan Avenger had thrown itself and the *Hraal* into the New Eden system by firing on the stargate, that it had done so along a predictable line. If the Broa ever realized that *Hraal* and *Wanderer* were the same ship, it would give them a vector toward human space.

“How did Sar-Say take the news?” Mark asked as he listened to the captain authorizing them to make their final approach to the gate.

“Better than I expected,” Lisa replied. “He seemed stoic about it. Sometimes I wonder if I truly understand him, or he, us.”

“I thought he had a pretty good idea of what makes humans tick.”

“Perhaps,” Lisa replied. “Still, you would have thought he would have predicted our reaction to his offer that we sell ourselves and our species voluntarily into slavery.”

Mark chuckled.

“What’s so funny?”

“Sar-Say,” he said. “He reminds me of a dog I once had. He was a big dog, a Great Dane. He used to drive my mother crazy by placing his butt on the couch and sitting like a people. My mother used to say all the time: ‘That dog thinks he is a human being!’ What she did not realize was that the dog did not think he was a human being at all. He thought we were dogs, and that was the way dogs were supposed to sit on the couch!”

Lisa laughed. It was good to hear the sound again after her depression. “What has that to do with Sar-Say?”

“Well, deep down I suspect that he feels we are just funny looking Broa. I know that we have a tendency to think of him as human. As a result, we react to one another as though we were members of the same species, never quite understanding that inside that other brain, there are some truly alien thoughts. Perhaps the Broa have a fatalistic streak in which they give up in face of overwhelming odds. He probably finds it shocking that we react to the same stimulus by fighting harder. You will have to watch him, you know. When it sinks in, he may try to harm himself.”

She nodded. “The captain has increased the security monitoring, if that seems possible. Now they will have a pair of eyes watching him every second. They’ve even put a camera in the bathroom!”

“So, use the facilities in our cabin before you go to see Sar-Say every day, or when you get back. Look, we are nearly there . . .”

The stargate had grown more quickly than they had realized, until it nearly filled the screen at minimum magnification. Up close, it looked no different than it had far away. It was a featureless silver ring floating in space. Whatever power source it used or control mechanisms must be inside because nothing marred the mechanism’s skin. Mark wondered if the featureless surface was necessary to the operation of the gate, or merely conformed to the Broan idea of beauty.

“All hands, stand by! We jump in two minutes.”

As the echoes of the general announcement died away around them, Mark reached out and took Lisa’s hand. He squeezed it as they watched the key to humanity’s future grow still larger on the viewscreen. If Earth were to become a space-based Rock of Gibraltar, an unassailable fortress from which would pour forth ships and men to do battle; then they would have to master this new technology. Master it they could and master it they would. All they needed was time and knowledge.

“Hopefully, we will be able to provide humanity with both,” Mark muttered.

“What?” Lisa asked.

“Beg your pardon?”

“You just said something.”

“Did I? Sorry, I must have forgotten to disengage my mouth. It was nothing.”

“You’re sure?”

He nodded as he watched one section of the gate touch the edge of the screen and disappear from view. Now it was not a ring in space, but rather an arch. A sudden force tugged him forward in his seat, indicating that they were slowing still further. On the intercom, the voice of the chief engineer was issuing orders to bring the Broan jump generators online.

This was where it could get dangerous. No one had ever tested the jump generators, not since the battle with the Broa. By themselves, of course, they were merely inert metal. When coupled with the field the gate put out, they would force the *Ruptured Whale* somewhere else for an instant, and then back into the real universe at a point a dozen light-years distant.

The chief sensor operator’s voice announced that all instruments were at high gain and recording. Whatever physical forces and energy patterns they encountered in the next few minutes, they would

capture it in their computers.

“Well, here we go ...” Lisa said.

There was a catch in her voice that told him that she, too, was frightened of the coming jump. Intellectually, he knew it was safe, but his racing heart was not listening to his intellect. If something went wrong, there would be *Columbus* and *Magellan* to carry the news home. Still, he did not want to be the second Rykand to die in space.

He had a mental flash of Jani’s smiling face framed in wild, red hair. He wondered how much of her memory had gone into fomenting the wild-eyed scheme that he had blurted out at breakfast three days ago. Whatever else Mark knew, he knew that it would be wrong to hide from the monsters that had killed Jani. In a dangerous universe, death is inevitable; but a pointless death is a tragedy. He could not bring Jani back, but he could do his best to avenge her, and that was the course on which they were about to embark.

Mikhail Vasloff was right about one thing. His Gibraltar Earth plan did not suffer from an excess of caution. He believed that it was necessary to ensure the long-term survival of the species, but that did not make it any less dangerous in the short term. In fact, it would subject the human race to the greatest risk it had ever known.

On the other hand, when had that not been so? The first men to venture forth from the caves to confront the saber tooth tigers had risked all. So, too, had the veterans of ten thousand wars, from the charioteers of Egypt, to the legionaries of Rome, to the combatants of four world wars. In an uncaring universe, everyone's life is at risk every moment. The dinosaurs had lived for hundreds of millions of years, only to be snuffed out in less than a single year when an errant rock fell out of the sky. The sun could go nova at any second. The *Ruptured Whale* could run into a pea-size meteorite and be vaporized faster than thought. Or, his heart could give up its pounding inside his chest.

No, to be alive was to be at risk. Mark’s ancestors had never shrunk from the challenge; nor, he was sure, would the current generation. It was not in the nature of human beings to cower in a hole to await inevitable discovery. Human beings do not cower, even when it would be smart to do so!

The Broa did not know it yet, but they had just acquired a competitor. Human beings from Gibraltar Earth would someday sweep outward to free the galaxy.

God help the overlords when they did!

#

The End

AUTHOR’S BIOGRAPHY

Michael McCollum was born in Phoenix, Arizona, in 1946, and is a graduate of Arizona State University, where he majored in aerospace propulsion and minored in nuclear engineering. He is currently employed at AlliedSignal Aerospace Company, Tempe, Arizona, where he is a senior engineering manager in the Pneumatic Controls Product Line. In his career, Mr. McCollum has worked on the precursor to the Space Shuttle Main Engine, a nuclear valve to replace the one that failed at Three Mile Island, several guided missiles, Space Station Freedom, and virtually every aircraft in production today. He is currently

involved in an effort to create a joint venture company with a major Russian aerospace engine manufacturer and has traveled extensively to Russia in the last several years.

In addition to his engineering, Mr. McCollum is a successful professional writer in the field of science fiction. He is the author of a dozen pieces of short fiction and has appeared in magazines such as Analog Science Fiction/Science Fact, Amazing, and Isaac Asimov's Science Fiction Magazine. His novels (all originally published by Ballantine-Del Rey) include *A Greater Infinity*, *Procyon's Promise*, *Antares Dawn*, *Antares Passage*, *The Clouds of Saturn*, and *The Sails of Tau Ceti*. His novel, *Thunderstrike!*, was optioned by a Hollywood production company for a possible movie. Several of these books have subsequently been translated into Japanese and German.

Mr. McCollum is the proprietor of Sci Fi - Arizona, one of the first author-owned-and-operated virtual bookstores on the INTERNET. He has completed the first book in a series titled *The Gibraltar Stars Trilogy*. *Gibraltar Earth* was the first original novel published on Sci Fi -Arizona. Mr. McCollum is now working on *Antares Victory*.

Mr. McCollum is married to a lovely lady named Catherine, and has three children: Robert, Michael, and Elizabeth. Robert is a newly minted engineer, and Michael is studying to be a police officer. Elizabeth is a student at Northern Arizona University, where she is majoring in communications.

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3. Antares Dawn - US\$4.50

When the supergiant star Antares exploded in 2512, the human colony on Alta found their pathway to the stars gone, isolating them from the rest of human space for more than a century. Then one day, a powerful warship materialized in the system without warning. Alarmed by the sudden appearance of such a behemoth, the commanders of the Altan Space Navy dispatched one of their most powerful ships to investigate. What ASNS Discovery finds when they finally catch the intruder is a battered hulk manned by a dead crew.

That is disturbing news for the Altans. For the dead battleship could easily have defeated the whole of the Altan navy. If it could find Alta, then so could whomever it was that beat it. Something must be done...

4. Antares Passage - US\$4.50

After more than a century of isolation, the paths between stars are again open and the people of Alta in contact with their sister colony on Sandar. The opening of the foldlines has not been the unmixed blessing the Altans had supposed, however.

For the reestablishment of interstellar travel has brought with it news of the Ryall, an alien race whose

goal is the extermination of humanity. If they are to avoid defeat at the hands of the aliens, Alta must seek out the military might of Earth. However, to reach Earth requires them to dive into the heart of a supernova.

5. Antares Victory - Coming, 2000

The long-awaited conclusion of the Antares Series will be available on Sci Fi-Arizona in the summer of 2000. Watch for it!

6. Thunderstrike! - US\$6.00

The new comet found near Jupiter was an incredible treasure trove of water ice and rock. Immediately, the water-starved Luna Republic and the Sierra Corporation, a leader in asteroid mining, were squabbling over rights to the new resource. However, all thoughts of profit and fame were abandoned when a scientific expedition discovered that the comet's trajectory placed it on a collision course with Earth!

As scientists struggled to find a way to alter the comet's course, world leaders tried desperately to restrain mass panic, and two lovers quarreled over the direction the comet was to take, all Earth waited to see if humanity had any future at all...

7. The Clouds of Saturn - US\$4.50

When the sun flared out of control and boiled Earth's oceans, humanity took refuge in a place that few would have predicted. In the greatest migration in history, the entire human race took up residence among the towering clouds and deep clear-air canyons of Saturn's upper atmosphere. Having survived the traitor star, they returned to the all-too-human tradition of internecine strife. The new city-states of Saturn began to resemble those of ancient Greece, with one group of cities taking on the role of militaristic Sparta ... \

8. The Sails of Tau Ceti - US\$4.50

Starhopper was humanity's first interstellar probe. It was designed to search for intelligent life beyond the solar system. Before it could be launched, however, intelligent life found Earth. The discovery of an alien light sail inbound at the edge of the solar system generated considerable excitement in scientific circles. With the interstellar probe nearing completion, it gave scientists the opportunity to launch an expedition to meet the aliens while they were still in space. The second surprise came when *Starhopper's* crew

boarded the alien craft. They found beings that, despite their alien physiques, were surprisingly compatible with humans. That two species so similar could have evolved a mere twelve light years from one another seemed too coincidental to be true.

One human being soon discovered that coincidence had nothing to do with it ...

9. GIBRALTAR EARTH - First Time in Print -- \$6.00

It is the 24th Century and humanity is just gaining a toehold out among the stars. Stellar Survey Starship *Magellan* is exploring the New Eden system when they encounter two alien spacecraft. When the encounter is over, the score is one human scout ship and one alien aggressor destroyed. In exploring the wreck of the second alien ship, spacers discover a survivor with a fantastic story.

The alien comes from a million-star Galactic Empire ruled over by a mysterious race known as the Broa. These overlords are the masters of this region of the galaxy and they allow no competitors. This news presents Earth's rulers with a problem. As yet, the Broa are ignorant of humanity's existence. Does the human race retreat to its one small world, quaking in fear that the Broa will eventually discover Earth? Or do they take a more aggressive approach?

Whatever they do, they must do it quickly! Time is running out for the human race...

10. Gridlock and Other Stories - US\$4.50

Where would you visit if you invented a time machine, but could not steer it? What if you went out for a six-pack of beer and never came back? If you think nuclear power is dangerous, you should try black holes as an energy source -- or even scarier, solar energy! Visit the many worlds of Michael McCollum. I guarantee that you will be surprised!

Non-Fiction Books

11. The Art of Writing, Volume I - US\$10.00

Have you missed any of the articles in the Art of Writing Series? No problem. The first sixteen articles (October, 1996-December, 1997) have been collected into a book-length work of more than 72,000 words. Now you can learn about character, conflict, plot, pacing, dialogue, and the business of writing, all in one document.

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15. The Astrogator's Handbook - Expanded Edition

The Astrogator's Handbook has been very popular on Sci Fi - Arizona. The handbook has star maps that show science fiction writers where the stars are located in space rather than where they are located in Earth's sky. Because of the popularity, we are expanding the handbook to show nine times as much space and more than ten times as many stars. The expanded handbook includes the positions of 3500 stars as viewed from Polaris on 63 maps. This handbook is a useful resource for every science fiction writer and will appeal to anyone with an interest in astronomy.