PROCYON'S PROMISE

A Novel By

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PROLOGUE: THE MAKERS

PROLOGUE

The Makers had never heard of *Homo sapiens Terra*, nor would they have been particularly impressed if they had. By their standards, mankind had little to brag about. The Makers' cities were old when *Australopithecus* first ventured out onto the plains of Africa. By the time *Homo erectus* was lord of the Earth, they had touched each of the twelve planets that circled their KO sun.

Individually, Makers were long lived, industrious, and generally content. Their population was stabilized at an easily supported fifty billion and war was an ancient nightmare not discussed in polite company. So, when the Makers came to the limits of their stellar system, it was with a sense of adventure that they prepared to venture out into the great blackness beyond.

The first ships to leave the Maker sun were 'slowboats', huge vessels that took a lifetime to visit the nearer stars. After three dozen such ventures, the Makers found they had made two important discoveries. The first was that life is pervasive throughout the universe. Nearly every stellar system studied had a planet in the temperate zone where water is liquid. Such worlds were found to be teeming with life. More exciting to the Maker scientists, on twelve percent of the worlds visited, evolutionary pressures had led to the development of intelligence. Two were the homes of civilizations nearly as advanced as the Makers' own.

The second great intellectual discovery was the realization that the Galaxy is a very large place, much too large to be explored by slowboat. In a spirit of curiosity more than anything else, the Makers set out to circumvent the one thing that retarded their progress. They began searching for a means to exceed the speed of light A million years of scientific endeavor had taught them that the first step in any new project is to develop a rational theory of the phenomenon to be studied. The Makers, being who they were, did not stop when they had one theory of how faster-than-light might be achieved.

They developed two.

Each was supported by an impressive body of experimental evidence and astronomical observation. Each should have resulted in the development of an FTL drive. Yet, every effort for a hundred thousand years ended in failure.

There is a limit to the quantity of resources any civilization can divert to satisfy an itch of its curiosity bump. The FTL program had long since passed the point of economic viability. Yet, the effort continued apace. For while the Makers were mounting their assault on the light barrier, they found a more compelling reason than mere curiosity to break free of their prison.

Their stellar system was beginning to run low on the raw materials Maker civilization needed to sustain itself.

The first signs were barely noticeable, even to the economists who kept careful watch over such things. Eventually curves could be projected far enough into the future to foretell a time when civilization must inevitably collapse of resource starvation. To avert catastrophe the Makers would have to obtain an infusion of new resources, either by importing raw materials from nearby stars or else transplanting their civilization to virgin territory.

Unfortunately, both options required a working faster-than-light drive.

The frustrated scientists redoubled their efforts. It was not until another hundred millennia had passed that a Maker philosopher began to wonder if they were asking the right questions. The Great Thinker had dedicated his life to the study of the years immediately following the slowboats' return from the stars. He noted that Maker science had taken great intuitive leaps in those years. The old records told of many cases where the combined knowledge of two races had led to discoveries unsuspected by either.

His questions were as fundamental as they were simple: "Could it be that our concepts of how FTL may be achieved are wrong? Is the failure to break the light barrier simply a matter of having missed the obvious? If so, might not some other civilization have avoided our error and found the true path to FTL?"

Once the questions were asked, they could not be ignored. A program was immediately begun to provide an answer. At first, it was a minor adjunct to the FTL research project. But as answers kept coming up negative, as each promising avenue of approach turned out to be a dead end, the program to probe the knowledge of alien civilizations grew.

By the time humanity discovered agriculture, it was all the program there was.

PART I: HOMECOMING

CHAPTER 1

Henning's Roost was renowned throughout the solar system. Its reputation stretched from the intermittently molten plains of Mercury to the helium lakes of Pluto, from the upper reaches of the Jovian atmosphere to the subterranean settlements burrowed deeply into the red surface of Mars' dusty plains. Wherever men and women worked at hard or dangerous jobs, wherever boredom and terror were normal components of life, *The Roost* was a standard subject of conversation.

Henning's was a pleasure satellite, the largest ever built. Its owners had placed it in solar orbit ten million kilometers in front of Earth. There was a story told of a spaceman who had arrived at The Roost with a year's accumulated pay in his pocket, stayed ten days, left flat broke, and pronounced himself well satisfied. It was a testimonial to the diversions provided by *Henning*'s management that the story was widely accepted as completely reasonable. Besides which, it was true.

Be that as it may, Chryse Haller was bored.

Chryse had arrived at *The Roost* two weeks earlier for her first vacation in three years. She had plunged immediately into the social whirl, sampling most of the diversions that were not ultimately harmful to one's health. She had played *chemin de fir*, blackjack, poker, roulette, and seven-card stapo on the gaming decks. Later, she had enlisted as a centurion in a Roman Legion on the Sensie-Gamer deck and slogged for two days through the damp chill of a simulated Gaul. Her first battle convinced her that the difference between ancient warfare and a modern butcher shop is mostly a matter of attitude, and she began to cast around for new diversions.

She turned to the most traditional sport of all, availing herself of the large pool of male companionship – both professional and tourist – that *The Roost* had to offer. The previous evening she had attended the nightly Bacchanal on Beta Deck. That had been a mistake She would become involved with a handsome young man whose only goal was to please her. Yet, in spite of the soft lights, the rich smell of incense, and the warm glow of two drinks within her; she found herself losing interest with each passing moment. She had ended up watching simulated clouds scud across a simulated sky. Afterwards, she made her excuses and left early.

There was no doubt about it. Lotus eating was definitely beginning to pall.

Playing with a fruit bowl, Chryse now sat alone in a breakfast nook pondering the curious emotional state into which she had fallen. Her reflection stared dully back at her from the polished depths of the table. The image was that of a woman in her early thirties, blonde, with shoulder length hair that framed a wide, honest face. The eyes were set wide apart above high cheekbones, a nose that seemed a trifle small, and a mouth just then twisted into a slight scowl. The eyes were brown in the simulated mahogany of the table, but green in actuality.

"Tenth-stellar for your thoughts."

Chryse looked up to find Roland Scott standing over her. Roland had been a member of her section in the Gaul campaign. They had mustered out together and she had taken him as a lover that same night. He had been good for her psyche and they had spent three glorious days

together before she suffered the minor disappointment of discovering that he was a *Roost* employee.

“Hello, Roland.”

“Why so glum?” he asked.

“Just a little tired, I guess.”

“Anything I can do to help?”

She shook her head. “I’m afraid there’s no cure for what ails me. You may have a seat if you like, though.”

He quickly slid into the opposite side of the booth. “Maybe it would help to talk about it.”

She smiled wanly at him, recognizing his automatic response to a professional challenge. Still, Roland really cared. He was paid to care. Of course, that was part of the problem.

“It’s this place,” she said, glumly.

“What about it?”

“It depresses me.”

His face acquired a look of surprise. “The Big Boss isn’t going to like hearing that. He has put billions into *The Roost*. No one is supposed to be unhappy here, least of all Chryse Lawrence Haller.”

“You weren’t listening. I didn’t say I was unhappy. I said I was depressed. Different emotion entirely.”

“If you say so.”

“Look around you, Roland. What do you see?”

“What am I supposed to see?”

“Have you ever looked closely at your clientele?”

He made a show of scanning the restaurant. “Okay, I’ve looked.”

“You’ve got a good cross-section of humanity here. Both sexes, all shapes and sizes, every color. Yet, in spite of our differences, we all have something in common.”

“Sure,” Roland said, nodding. “You’re all richer than anyone has a right to be. If you weren’t, you could never afford us.”

“True,” Chryse said. “I hadn’t thought of that. Hmmm, that makes things even worse!”

“How so?”

“Can’t you see it? All your clients are compulsive personalities.”

“Aren’t you being a bit hard on yourself and the other guests?”

“If anything, I’m not being hard enough. We’re all on holiday, yet each of us is so desperate for diversion that we play ourselves into exhaustion.”

“Considering the cost,” Roland said, “can you blame anyone?”

“I suppose that explains a few cases. But take old Joshua Voichek over there,” she said, gesturing toward a spry centenarian seated at a breakfast nook halfway across the compartment. “After my father, he’s probably the richest man in the system. He could spend a lifetime in *The Roost* without making a dent in his fortune. Yet, he wears himself out as quickly as the salesman who saves a dozen years to come here.”

“Your theory, Madame Psychotherapist?” he asked, trying to lighten the mood.

“We’re bored with life. The sense of adventure has gone out of us. There aren’t any frontiers left. No one climbs Mount Everest anymore.”

Roland chuckled. “Why should they? If you want to reach the Everest Summit Hotel, you board an airtram in Nepal. They leave every half hour.”

“Exactly! Where can you go in the solar system where you won’t find someone else’s boot prints?”

Roland shrugged, but did not answer.

“Know what I think? I think the human race is suffering from claustrophobia. We’ve learned the awful truth that there are limits beyond which we cannot go, so we invent places like this to help us forget.”

“Isn’t that quite a lot to blame on an overpriced whorehouse?”

She looked at him sharply, suddenly aware of the undercurrent of anger in his voice. “A trained entertainment specialist isn’t a whore, Roland.”

He raised one eyebrow quizzically. “Perhaps you can explain the difference to me sometime.”

“I didn’t mean to insult you. Put it down to overwork. Forgive me?”

“You don’t need my forgiveness. You can have me fired anytime you feel like it.”

“I guess I deserved that,” she said. She let her gaze slip from his angry face and move to the viewscreen at the end of the small restaurant. The view was from a remote camera somewhere out on the hull. It showed a jumble of I-beams, pressure spheres, and hull plates framed by the black of space. “Let’s change the subject before we have an argument. I have been staring at that thing all morning. What is it?”

He turned to follow her gaze. “Just an old worker dormitory used *during The Roost’s* construction. It’s abandoned now, of course.”

“I would think the owners would keep local space clear of all such hazards to navigation. Wouldn’t be very good publicity for a shipload of tourists to run into that heap on approach.”

He shook his head. “It isn’t as ramshackle as it appears. Look closely. See the thruster cluster jutting out near the airlock? There are twenty more scattered over the hull. That hulk and a half dozen others are slaved to the *Roost*’s central computer.”

“Sounds like a lot of trouble to go to for a junkyard,” Chryse said.

“It’s part of the service. The hulks make good destinations for clients with a yen to explore the mysteries of space.”

“The what?”

He laughed, his pique suddenly forgotten. “Haven’t you ever skin dived on a sunken ship?”

She shook her head.

“How about going up to Zeta Deck then? They have a near perfect simulation of the *Esmeralda* there. That was a Spanish galleon that sunk off Key West in the Sixteenth Century. They took sixty million stellars worth of treasure out of her back in the thirties.”

Chryse shook her head. “I’m tired of simulated adventure.”

He smiled, turning on the boyish charm. “That’s the reason for the hulks. They are the real thing. We could check out two vacsuits at North Pole Terminus and make a day long picnic of it if you like.”

She shook her head. The idea of exploring a twenty-year-old work barge did not appeal to her, but Roland’s suggestion had tweaked a stray memory. There was something in solar orbit she would very much like to explore.

“Do they rent ships at North Terminus, as well?”

“No need. The maneuvering gear on the vacsuits is first rate and well maintained. Oh, they’ll rent you a scooter if you want, but that costs extra.”

“I don’t want a scooter. I want a ship! Something with legs.”

“It’s expensive.”

“I can afford it.”

He shrugged. “There are a few rental jobs at North Terminus. I’m a fair-to-middlin’ pilot. I’ll take you anywhere you want to go.”

“No thank you. Where I want to go, I would rather be alone. Maybe a bit of solitude will snap me out of this mood I’ve fallen into.”

“Solo piloting is dangerous.”

“I’ll be all right,” she said. “After all, the computer runs the ship. If I get into trouble, it’ll scream for help, won’t it?”

He nodded. “Okay, it’s your neck. You’ll have to sign a release, of course.”

“Of course.”

“Where are you going?”

“I thought that I would go see the probe.”

#

Three hundred years earlier, a spacecraft had entered the solar system from the depths of interstellar space. Limited two-way communications were established almost immediately, and

it was quickly learned that the craft was an instrument package controlled by a self-aware computer.

The computer, which called itself PROBE, had been constructed by an advanced race of beings, that it dubbed “The Makers.” These Makers had been working to develop a faster-than-light drive for their spaceships for thousands of years. In all that vast time, they had been singularly unsuccessful. So, faced with dwindling resources at home and desperate to break free to the stars, they had hit upon the idea of sending life probes to the surrounding stars to make contact with other advanced species. Once a probe arrived in a strange stellar system, it bargained with its hosts to exchange their scientific knowledge for that of the Makers. When it had learned all it could, the probe returned home to add its cargo to the ever-growing pool of Maker knowledge. It was through this slow accumulation of the wisdom of many races that the Makers hoped to eventually break free of the star that had become their jailer.

Over the centuries, thousands of life probes had been launched outbound from the Maker sun. They cruised at speeds approaching ten percent that of light, taking centuries to complete their journeys. While they traveled, they listened to the cosmos, ever alert for the energy discharges that betrayed the presence of a technologically advanced civilization.

Life Probe 53935 had been unlucky. For ten millennia, it had searched for intelligence among the stars and not found it. Even when it finally pricked an expanding bubble of human radio noise, it was not sure that its luck had changed. For humankind was low on the Maker scale of civilization, perhaps too low to be of use to a life probe in need of an overhaul. The probe had considered the problem of human capabilities for months while it fell toward the Sun. Finally, at almost the last moment possible, fate had intervened to make the probe’s decision for it.

One hypothesis common to all FTL theories was that a vessel traveling at superlight velocity would be detectable in the sublight universe. Theoretically, any material object moving faster-than-light will create a shock wave in the interstellar medium, a wave that appears to an outside observer as a source of highly energetic, Cherenkov radiation.

For a hundred thousand years, the Makers and their far-flung probes had scanned the skies, searching for just such a phenomenon. They had done so in vain until, in the human year 2065 AD, just as it was approaching the solar system, the hyperwave detectors aboard *Life Probe 53935* began clamoring for attention. An intense source of radiation that closely mirrored the hypothetical properties of a starship’s wake had been spotted in the Procyon system a mere twelve light-years beyond Sol. The age-old dream of the Makers seemed finally at hand.

Except, there was a problem.

The struggle to climb to thirty thousand kilometers-per-second cruising velocity had cost the probe dearly in terms of fuel. To slow its headlong rush at journey’s end would cost more, leaving its tanks virtually dry. The probe had no fuel reserves with which to change course.

It studied its options carefully. The only sure way of reaching Procyon was a journey of two stages. The first stage required stopping in the solar system to obtain new fuel stocks and a general overhaul of its tired mechanisms. Once returned to a spaceworthy condition, the probe could launch outbound directly for the Procyon system. The journey would last more than a

century, but to a ten-thousand-year-old machine, such a trip was a mere local jaunt.

Thus, humanity owed its first visitation from the stars not to any accomplishment of its own, but to the fact that Earth was a natural way station on the way to more interesting vistas.

#

Chryse Haller sat at the controls of the rented daycruiser and finished off the sandwich she had made in the tiny galley aft of the control room. She was some fifty-two hours out from *Henning's Roost*, and decelerating for rendezvous, when the ship's computer interrupted the soft music that filled the cabin.

"We are being challenged."

Chryse leaned forward, her manner suddenly alert. "Identify challenger."

"Automated Guard Station, Department of Antiquities Registration Number 7155."

"Put it on the speaker."

"...WARNING. WARNING. YOU ARE APPROACHING THE RESTRICTED ZONE OF A PROTECTED HISTORIC MONUMENT. YOU ARE HEREBY ADVISED TO TURN BACK IMMEDIATELY. FAILURE TO COMPLY MAY LEAD TO CIVIL OR CRIMINAL PENALTIES BEING ASSESSED AGAINST YOU. WARNING..."

"Transmission, please."

"Ready to transmit."

"Attention, Guard Station 7155. I am Chryse Lawrence Haller, Ident MZH-93587116. I am countermanding you. Return to standby mode."

"ORDER RECEIVED AND ACKNOWLEDGED. RETURNING TO STANDBY. BE ADVISED, CITIZEN HALLER, THAT YOUR ACTIVITIES WITHIN THE BOUNDARIES OF THIS PROTECTED HISTORIC MONUMENT WILL BE MONITORED. ANY ATTEMPT TO DAMAGE OR DEFACE THE MONUMENT WILL BE IMMEDIATELY REPORTED TO EARTH."

"Acknowledged," Chryse said. She called for library function from the computer. "Reference: Life probe, visitation of same. Reference date: Twenty first Century."

"Data retrieved."

"Show me a picture."

A thirty-centimeter, translucent black cube materialized in front of her. Centered in the body of the cube, filling its interior, was a mighty spacecraft. Its structure consisted of two spheres – each two hundred meters in diameter – connected by a long central column. One sphere, labeled *CONTROL SECTION* in the hologram, was an open latticework of small beams arranged in the familiar pattern of geodesic trusses. There were gaps in the sphere where bits and pieces of machinery poked through, but it was otherwise whole. Arrayed around it were a number of long booms tipped with irregularly shaped sensing mechanisms.

Chryse shifted her attention to the sphere labeled *DRIVE SECTION*. As she did so, she let her gaze sweep along the full eight hundred meters of the probe's length. A number of long

cylindrical tanks were strapped to the thrust frame between the two major spheres. The drive sphere at the probe's stern was much more massive than the control sphere at its prow. The framework of beams was heavier, giving an impression of massive strength. The sphere itself was more densely crammed with machinery. Chryse recognized the central bulge of a mass converter and the familiar shape of an electromagnetic nozzle among the unfamiliar bits and pieces of alien machinery.

"Big, isn't it?" she muttered aloud.

"Null program. Please repeat," the computer responded.

"Cancel," Chryse said absentmindedly. Her eyes were suddenly drawn to a bright, starlike point inside the cube. "Center on Coordinates *X*-3, *Y*-5, *Z*-2. Expand view one hundred times."

"Acknowledged."

The view moved to one side and expanded to resolve the spark of light into a spacecraft whose hull reflected sunlight directly into the camera's lens. The ship was an antique model that had not been seen in the solar system in nearly three centuries.

"Now, let's see where we're going. Show me our destination in real time."

"Acknowledged."

At first, the view seemed to be the same as before, with the exception that the speck of light was gone and the viewing angle caused the probe to be considerably foreshortened. The daycruiser was approaching at a thirty-degree angle to the probe's major axis, with the control sphere closer than the drive sphere. Chryse called for a close up view.

The awesome machine, that she had viewed in its splendor just seconds earlier, was no longer hale or whole. As every schoolchild learned before they were ten, the probe had fallen victim to the most celebrated incident of treachery in the history of the human race. Chryse gazed at the wreck in the holocube and felt a tug of remorse at what her people had done.

The evidence of the catastrophe was everywhere and unmistakable. The perfect sphere of the control section had been caved in on one side, as though smashed by a giant fist. Opposite the blow, the sphere bulged noticeably outward, stretched nearly to the bursting point by an irresistible force. Large sections of interior structure had been vaporized in a titanic explosion and a twisted forest of support beams – transformed into odd shapes by the force of the blast – gave the play of sunlight and shadow inside the probe a surrealistic quality.

Chryse gulped. "I had no idea," she said. It was only then that she realized she had been holding her breath.

Not everyone, it seemed, had been happy with the discovery of the alien spacecraft on the edge of the solar system. Most objections had come from the newly industrialized nations of the Southern Hemisphere, each of which saw the probe and its cargo of knowledge as a threat to their hard-earned equality. It was felt that the older, longer industrialized nations of the north would be better equipped to use the advanced knowledge that the probe carried. The nation that emerged as leader of the opposition was the Pan-African Federation.

The struggle had been wholly political at first. A resolution welcoming the probe into the system was introduced into the General Assembly of the old United Nations. The Pan-Africans and their allies fought skillfully against it, but when it came time to vote, the southerners found themselves on the losing side of the tally. By the narrowest of margins, the resolution passed. Five months later, the probe took up a parking orbit around the Sun.

Negotiations between the probe and the UN began immediately. The complexities involved in arranging for both the probe's overhaul and the exchange of scientific knowledge were considerable. Before any agreements could be reached, there was much to learn on both sides. To speed the negotiations, the probe had split off a portion of its circuits to form a separate personality. This new entity, which the probe dubbed SURROGATE, was intended to act as translator between the probe and its hosts.

Shortly after the probe's arrival in the solar system, six Pan African spacecraft attacked humanity's first visitor from the stars. Two outgunned UN defenders and the probe itself met them. All six attackers were destroyed in a hard fought battle, but not before they were able to unleash an irresistible weapon against their target.

In the twenty-first century as in the twenty-fourth, ships of deep space were powered by tiny antimatter black holes known as I-masses. Human civilization was built on the limitless energy they provided. They lit man's cities, smelted his ores, and drove his spacecraft. When the Pan-African warships attacked the probe, they were used for the first time as deadly weapons.

Each marauding warship took great care with its approach to the scene of battle, placing itself on a precise trajectory for the probe. Even though each attacker was eventually destroyed before it could reach the target, the probe found itself the focal point of six converging I-masses.

Two reached their mark.

The primary probe personality was destroyed, but SURROGATE – housed at the end of one of the long sensor booms – survived. Even so, the age-old dream of the Makers seemed at an end. Damaged as it was, SURROGATE had no hope of reaching the FTL civilization around Procyon. Worse, the impact of the I-masses had destroyed all record of the Makers. The surviving probe personality possessed no single iota of knowledge concerning its creators, their history, their language, or the location of their star in space.

Out of this situation had come a bargain born of desperation. Since SURROGATE needed to secure the secret of FTL for the Makers, and humanity needed the Maker knowledge that had survived the attack, each party agreed to help the other. For its part, the UN agreed to build a slower-than-light starship and man it with a crew of ten thousand. When the ship was completed, the circuits that housed SURROGATE was placed aboard, and the ship headed out on the century long trip to Procyon. In exchange, SURROGATE agreed to share its vast library of knowledge.

The Procyon mission was launched outbound early in 2096. Allotting a century for the journey, and an additional decade for the crew to bargain for the secret of FTL with whatever native race they discovered, the expedition was expected to return to the solar system (by FTL starship) no later than 2205.

They were now 183 years overdue.

CHAPTER 2

If the probe seemed large from the daycruiser control room, it was gigantic from the vantage point of the outer framework of the damaged control sphere. Chryse Haller grasped a crossbeam as she carefully snaked a safety line around a jutting side beam. She glanced across the rounded plain and shivered at the suddenly realization of just how alone she felt.

"Status check," the daycruiser computer said into her earphones. Its voice contained metallic overtones of unease. The computer had been quite vocal in its opposition to her leaving the safety of the ship and going out alone to explore the probe.

"I want to see it with my own eyes," she had explained in announcing her intentions."

"You are seeing it with your own eyes," the daycruiser responded, referring to the holocube projection that hung in midair before Chryse's couch.

"No, I mean outside. I want to touch it, to feel its solidity, to make it real!"

"It is far too dangerous. You could be injured."

She shrugged, and then remembered that the machine only responded to voice inputs. "You'll be monitoring my vital signs. If I get into trouble, you can fly my suit back by remote control."

"I still recommend against this unnecessary risk."

"Life is an unnecessary risk," Chryse had said as she unbuckled from the pilot's couch and aligned her axis with the daycruiser's small central passageway. "I'm going."

She had suited up and let the computer do complete telemetry readout on her before entering the airlock. As in everything else relating to *Henning's Roost*, the suit was the best money could buy. Its air recycling system was good for a week or more, its water tanks and pharmaceutical stores were full, and its outer covering of armor made it virtually impervious to damage. If the need arose, she would be able to call the ship for help, have her message relayed to Earth, and wait for the rescue craft to arrive. It would not be comfortable, but it was safe.

Once outside the airlock, she had jetted across the two hundred meters of void separating the daycruiser from the probe and grounded on its outer frame. Above her, the sun blazed hotter than the hottest day Death Valley had ever seen. The beams beneath her boots reflected the light with a dull metallic sheen.

After she assured her mechanical nursemaid that all was well, Chryse turned her attention to the massive mechanism beneath her feet. She peered down into the depths of the open sphere, feeling for a moment like an ironworker in the upper stories of a megastructure. It took a few moments to orient herself and educate her brain to interpret the message her optic nerves were sending it.

The first thing she noticed was that not all the damage had come from the collision with the I-masses. Here and there, amid structures that appeared undamaged, were gaps that should not have been. These, she quickly realized, were the results of the salvage operation that had gone on for nearly fifty years after the probe's destruction.

She finished her inspection and glanced up at the daycruiser. “I’m going inside. I want to see what it’s like down where the main personality was housed.”

“I do not advise it!”

“Objection noted,” she said. “I’ll be careful.”

She made her preparations. As a last step, she unhooked herself from the safety lines and chinned a control in her helmet. Two joysticks extended from her backpack to where she could reach them with gauntletted hands. She took hold of the controls and gave each a small twist. Chryse felt the slight pressure of her backpack jets responding to the command. A faint hissing sound superimposed itself over the hum of her environmental control system. She began to move across the face of the control sphere toward a fissure in the framework that appeared to extend into the center of the structure.

It took ten minutes for her to work down into the inner framework of the probe. The cabling and twisted metal were like the trees of a dense forest. As she progressed ever deeper, she passed through alternating regions of bright sunlight and ever-darker gloom. As her surroundings grew dim, Chryse felt the sudden twinge of unease that is the legacy of a thousand generations of ancestors who feared the coming of darkness. She was considering turning back when a sparkle of light caught her eye.

Her fear vanished, to be quickly replaced by curiosity. She jetted forward to find herself in a stray beam of sunlight that penetrated the interior of the hulk. As she did so, the firefly speck died away. She moved closer, and was rewarded by a polychromatic flash directly into her helmet visor. She reached out, thrust her armored glove into a recess surrounded by the frayed ends of reinforcing fibers, and pulled a multifaceted crystal from its nest.

She held the crystal close to her eyes and laughed hollowly. The mystery was a mystery no longer. The crystal was an ordinary memory module, the medium in which the vast library of Maker knowledge had been stored. They were also the functional basis of nearly every electronic gadget invented in the last three hundred years. Billions were manufactured yearly, each identical to the original designs carried aboard the probe.

She carefully placed the crystal in her belt pouch and was in the process of resealing it when a mechanical voice suddenly blared in her earphones.”

“WARNING. WARNING. YOU ARE APPROACHING THE RESTRICTED ZONE OF A PROTECTED HISTORIC MONUMENT. YOU ARE HEREBY ADVISED TO TURN BACK IMMEDIATELY. FAILURE TO COMPLY MAY LEAD TO CIVIL OR CRIMINAL PENALTIES BEING ASSESSED AGAINST YOU.”

“What the hell?” she yelped, forgetting her souvenir. She got her emotions under control and cursed herself for being so jumpy. She growled her next statement: “Those idiots at The Roost must have sent someone to keep an eye on me!”

She considered the possibility that *Henning*’s management was chaperoning her, and then frowned. The thought did not feel right. Such a gesture was too extravagant, even for them. It could be another tourist, of course, but the fact that she had heard the warning meant that it

was being beamed in the wrong direction for a ship from Earth.

She began the delicate job of turning around and working back the way she had come. Five minutes later, she was once again at the outer framework of the probe. She shaded her eyes and craned her neck inside the helmet, scanning the black sky for some sign of the ship that had set off the guard station alarms.

“Status check!” she ordered.

For the first time since she had left the daycruiser’s airlock, the computer had nothing to say.

“Status check,” she repeated.

Again, there was only silence.

“Damn!” she muttered. She did not have time to consider the implications of the balky computer for it was at that moment that she saw the ship.

It was spherical in shape and getting larger by the second. Even with the difficulty of judging relative size in space, it was obvious that this was no rich man’s yacht. If anything, it was close to being the largest spacecraft Chryse had ever seen.

But its size was merely something she noted in passing, hardly worth mentioning when compared to the vessel’s obvious peculiarities. For almost as long as men had built spaceships, their craft had ridden on tails of plasma fire. A spacecraft drive flare was bright enough to be seen from one side of the solar system to the other – or to burn out the retinas of anyone incautious enough to stare at one for more than a second. Yet, the newcomer was decelerating with no sign of a flare. Whatever shipyard had built it, Chryse was willing to bet it could not be found anywhere in the solar system.

Mankind, it seemed, was about to welcome its second visitor from the far stars.

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Julius Gruenmeier scowled, as Achilles, the largest asteroid in the leading Trojan group, grew steadily larger through the bubble of the supply boat. He watched as the domes, observation instruments, and communications gear of the System Institute for the Advancement of Astronomical Observation – SIAAO for short – slowly rose into view over Achilles’ jagged horizon. Achilles Observatory (along with its twin on Aeneas asteroid in the trailing Trojans) looked farther out into space than any other observatory in the solar system. When Achilles and Aeneas were working in concert, they anchored both ends of a 1.3 billion kilometer long baseline – far enough to be able to separate binary stars in the Andromeda galaxy into their component parts.

Not that they would be able to maintain that capability for long. Gruenmeier, in his role as Achilles’ Operations Manager, was returning from a meeting with the SIAAO Comptroller. The occasion was the Comptroller’s yearly trip out from Earth, and the subject – next year’s operating budget. The news was bad.

It was common knowledge that the Institute had made some unwise investments in the last several years. What no one outside the Board of Trustees had known was just how shaky finances really were. They knew now. Operating budgets were to be cut drastically over the next three

years until the Institute's portfolio could be returned to its former state of health. The cuts were sufficiently deep that Gruenmeier did not see how he would be able to keep both Achilles and Aeneas operating.

He was still pondering ways to slash expenses without idling any prime instruments when the supply boat entered Main Dome's Number Three Airlock. Gruenmeier thanked the boat's two young pilots absentmindedly, unstrapped, and pulled himself to the coffin-sized airlock amidships. Since the terminal was inside the dome itself, there was no need to suit up. He exited the ship, grabbed hold of one of the guide cables that crisscrossed the terminal decking, and pulled himself toward the passenger lounge.

He was met by his assistant, Chala Arnam. Arnam was an intense woman in her mid-forties, a fair-to-middling neutrino astronomer, and the best administrative assistant he had ever had. He was grooming her to take over Institute operations on that inevitable day the Trustees forced him into retirement. He hoped there would be something to leave her when the time came.

"How did it go?" she asked.

"Not good," he answered.

She studied his dour expression intently, trying to read the degree of disaster there. "How bad is it?"

He sighed. "Very. They are not cutting out fat this time. They're amputating our whole lower torso."

"Are we going to fight?"

"How?"

"We could appeal directly to the Trustees."

"Simonson suggested that we do so. But you and I both know that his orders come directly from them, so what is the use? Besides, even if some of them were willing to listen, there is the distance problem to overcome. We are 800 million kilometers from home out here. The damned accountants are just down the hall."

"Perhaps you should plan a trip to Earth, Julius."

"I've thought of that, and just might do it if we can come up with a viable approach." He chewed on his lower lip as he always did when he was worried, and then abruptly changed the subject. "Anything interesting happen here while I was gone?"

"Not much," Chala said. "Doctor Chandidibya was in to see me this morning."

"Let me guess. He was raising a stink about not being able to monopolize the Big Ear, right?"

"Not this time. He complained about the service techs. Says they are doing their usual slipshod job. He thinks the whole lot of them should be fired."

"Does he have any suggestions as to how we can attract better people on the salaries we pay?"

"I doubt if Dr. Chandidibya cares about minor problems like personnel staffing and retention

– unless they adversely affect the operation of the thousand-meter radioscope, of course."

"How'd you leave him?"

"Grumpy."

"I'll try to soothe him at dinner. Anything else?"

Chala nodded. "The technical staff has been going crazy searching for a malfunction in the high energy monitoring equipment for the last two hours."

"What kind of malfunction?"

"They seem to be getting a ghost image of some sort. They've tried everything and it won't go away."

"Ghost?" Gruenmeier asked, suddenly happy to have something to think about other than the state of the Institute's dismal finances.

"I'd best let Doctor Bartlett explain it. As you well know, high energy optics ain't my field."

Ten minutes later, Director Gruenmeier found himself listening to the explanation of the Watch Astronomer.

"We first began picking it up on the cosmic ray monitors at 16:12, shortly after the start of Second Watch. The monitors kept insisting that they had spotted a diffuse source of cosmic rays somewhere out beyond Neptune. We ran the usual maintenance checks and found nothing, so I ordered the neutrino scopes and X-ray equipment to take a look. They can see it, too."

"What makes you think it's a ghost then?"

"Because there isn't anything out there! Besides which, the source is moving."

"Moving?"

"Yes, sir. Moving fast. It appears to be traveling radially outward from the Sun."

"Have you asked Aeneas to do a parallax measurement?"

"Yes, sir. Two-and-a-half hours ago. I expect their reply momentarily." As though to punctuate Bartlett's comment, several readout screens chose that moment to begin displaying data. The half dozen people in the Operations Center turned to watch."

"Well, I'll be damned!" Bartlett muttered incredulously a few seconds later. "They see it too."

"Have you got a velocity vector yet?" Gruenmeier asked.

The watch astronomer nodded, and then hesitated as he read the figures silently. He looked up at Gruenmeier and gulped. "It says here that the radiation source is moving directly away from the sun, toward Canis Minor, sir. The exact coordinates are: right ascension, 0738; declination, plus 0518. And get this. Whatever it is, it's moving at exactly the speed of light!"

Gruenmeier blinked. "It's moving *away* from the sun?"

"Yes, sir."

Gruenmeier turned to Chala Arnam. "Get me a top priority line to Earth. I will be sending a

coded message to the Board of Trustees in about ten minutes.

He turned back to Bartlett. “Get that data reduced fast. I want everything you can deduce about the source in the next five minutes. I will need it for my squirt to Earth. I also want every instrument we have focused on this contact. Aeneas, too. Understood?”

Gruenmeier stopped, suddenly aware of the expressions of his subordinates. “What’s the matter with you two? Hop to it!”

Chala frowned. “What’s the matter, Julius? What is it?”

“Don’t you see? We have a phantom source of high-energy particles moving away from the sun at 300,000 kps on a vector straight toward Procyon. That can mean only one thing.”

“They’re back, damn it. They’re back!”

#

Chryse Haller watched openmouthed as the starship completed its approach and began “station keeping” near the probe’s bow. The daycruiser, that floated motionless in space some two hundred meters over her head, was dwarfed in comparison to the great metal-gray sphere. She craned her neck and let her eyes drink in a myriad of construction details. Everything she saw seemed to support the hypothesis that the behemoth was extra-solar in origin. Yet, the starship did not give her the same impression of alienness that the probe did. There was something familiar about its lines.

She was so startled by the thought that she spent a few precious seconds analyzing it. Understanding came to her from a surprising direction.

Chryse Haller was an aficionado of old movies. Not the old movies of her mother’s or grandmother’s times, but the prehistoric works originally recorded on real celluloid, in 2-D, and frequently in black-and-white. The simple, uncomplicated lifestyles attracted her, making her wish she had been born four centuries earlier. Besides, at age twelve she had fallen in love with Errol Flynn.

In college, she had written a paper on the flaw of ethnocentrism (the egotistical assumption that things will always remain the same as they are now) that seemed to have been universal in the early cinema. Her subject had been the space adventures predating the first Moon landing – the *Buck Rogers* and *Flash Gordon* serials, *Destination Moon*, *The Conquest of Space*, and a few others. Each epic was filled with spaceships that were little more than obvious lineal descendants of the airplanes of the time. Even after man had gained a toehold in space, movie rockets continued to be aerodynamically sleek machines that darted about in maneuvers highly reminiscent of aerial combat.

The future, when it came, was nothing like that at all. Except for the shuttles and ferries that plied the routes between the Earth’s spaceports and low orbit, the ships of space were functional, ugly things. Like the probe beneath her boots, they were collections of geometric shapes hung together by naked beams, with all manner of things jutting out at odd angles.

The newly arrived starship was different. True, it was no winged needle, but it was streamlined. There seemed to be no protuberances at all. Nor was this smoothness of line an

accident. The starship's skin was broken by numerous airlocks, cargo hatches, machinery that might (or might not) be waste heat radiators, communications gear, and things that were not readily identifiable. There were even a number of lighted, oval windows arranged in circular rows around one end of the ship. At the center of the lighted rings was a large transparent bubble. Each of these discontinuities had been smoothed over and faired into the sleek roundness of the sphere.

Suddenly, her introspective mood gave way to a surge of adrenaline. Obviously, if this were a starship, then Earth had to learn of it, and quickly.

"Computer on!"

Her urgent words were answered by continuing silence from the daycruiser's central brain. She crouched down, preparing to jump for her ship, when she was brushed by a strong wind from out of the depths of space.

Her reaction was more instinctive than intellectual. She chinned her maneuvering unit controls, reached out to grasp the twin joysticks, and jumped for the daycruiser, all in one smooth motion. Once spaceborne, she savagely twisted her power control full against the stops while fighting to keep from going into a spin.

After ten seconds, she shut down her thrusters and twisted the sticks to turn head over heels. She felt her mouth go dry as she realized that she had picked up too much speed. She was already too close to the daycruiser and would hit with enough force to give her flat feet for life.

Knowing that she had no hope of stopping in time, she applied full power anyway. As she did so, there was the crackling of a static discharge inside her suit as every hair on her body stood on end. She watched in disbelief as the daycruiser suddenly slid off to one side and she began to float toward the starship. She could feel her heart pounding in her temples while her mind struggled with the impossible. She had executed what must have been a fifty gee turn, yet had not felt the slightest sensation of acceleration.

Whoever they were, they had her.

She was fast approaching the starship now, passing into shadow as its bulk eclipsed the sun. Chryse felt a chill that had nothing to do with the sudden drop in temperature on the outside of her suit. She noticed a wisp of vapor in front of her faceplate and realized that she still had her thrusters firing at full power. Whatever the nature of the beam, it seemed to trap her exhaust gasses close to her suit. She switched off her maneuvering unit.

She slowed to a stop in the same visually violent fashion as she had started the journey. Once again, there was no sensation of acceleration. One second, she was zipping along on a course she didn't wish to take, the next found her hanging motionless in front of a closed airlock. As she watched, the airlock opened, and perfectly ordinary light flooded out. Two figures stood silhouetted in the light. She gazed at them and felt hot tears suddenly well up in the corners of her eyes.

There was no mistaking the characteristic form of the vacsuits that the two creatures wore. They were biaxially symmetric, possessing of a single cluster of sense organs mounted on a short, movable stalk, with two each grasping and locomotive appendages emanating from a thick torso.

In other words –

They were as human as Chryse herself.

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3. Antares Dawn - US$6.00

When the super giant 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$7.50

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 – First Time in Print – US$7.50

After a century of warfare, humanity finally discovered the Achilles heel of the Ryall, their xenophobic reptilian foe. Spica – Alpha Virginis – is the key star system in enemy space. It is the hub through which all Ryall starships must pass, and if humanity can only capture and hold it, they will strangle the Ryall war machine and end their threat to humankind forever.

It all seemed so simple in the computer simulations: Advance by stealth, attack without warning, strike swiftly with overwhelming power. Unfortunately, conquering the Ryall proves the easy part. With the key to victory in hand, Richard and Bethany Drake discover that they must also conquer human nature if they are to bring down the alien foe …

6. Thunderstrike! - US$7.50

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$7.50

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$7.50

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 — $7.50

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. Gibraltar Sun – First Time in Print — $7.50

The expedition to the Crab Nebula has returned to Earth and the news is not good. Out among the stars, a million systems have fallen under Broan domination, the fate awaiting Earth should the Broa ever learn of its existence. The problem would seem to allow but three responses: submit meekly to slavery, fight and risk extermination, or hide and pray the Broa remain ignorant of humankind for at least a few more generations. Are the hairless apes of Sol III finally faced with a problem for which there is no acceptable solution?

While politicians argue, Mark Rykand and Lisa Arden risk everything to spy on the all-powerful enemy that is beginning to wonder at the appearance of mysterious bipeds in their midst…

11. Gibraltar Stars – First Time in Print — [US]$7.50

The great debate is over. The human race has rejected the idea of pulling back from the stars and hiding on Earth in the hope the Broa will overlook us for a few more generations. Instead, the World Parliament, by a vote of 60-40, has decided to throw the dice and go for a win. Parliament Hall resounds with brave words as members declare victory inevitable.

With the balance of forces a million to one against *Homo sapiens Terra*, those who must turn patriotic speeches into hard-won reality have their work cut out for them. They must expand humanity's foothold in Broan space while contending with a supply line that is 7000 light-years long.

If the sheer magnitude of the task isn't enough, Mark and Lisa Rykand discover they are in a race against two very different antagonists. The Broa are beginning to wonder at the strange two-legged interlopers in their domain; while back on Earth, those who lost the great debate are eager to try again.

Whoever wins the race will determine the future of the human species… or, indeed, whether it has one.

12. Gridlock and Other Stories - US$6.00

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

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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.

