

## Chapter 1: A Machine Sapient Goes Rogue

MARCUS SUND CAME AWAKE ALL AT ONCE. “Lights,” he said. The cabin remained dark. “Lights,” he repeated, louder this time, but with the same result. He sat up. The station hummed with life support—the ProFabber engines churned in their colossal duties—but something was missing from that profound vibration.

He dressed hurriedly, toggling the operations deck as he yanked his shirt on. “Report.”

“Sir, we have some minor failures in noncritical functions. We’re on it.”

Marcus left his cabin and hurried down the corridor. The lights browned and surged back again. The station exec knew his rig, down to the last bolt and data structure, and therefore he could feel through the soles of his feet that the hum was wrong, the vibration of the carbon polysteel deck plates a few cycles off. That worried him far more than the flickering lights.

The station’s military-grade ProFabber engines simultaneously churned out artificial gravity and monitored the Kardashev tunnel, calming it for company business—the business of interstellar travel. With such critical functions, the engines were under the control of the on-station machine sapient. Thus, if engine performance fell even slightly, and if the system hadn’t alerted Marcus Sund by now, that meant the mSap—the station’s sole machine sapient—was not paying attention. It was unthinkable that the machine sapient was not paying attention.

They were far from home. The Appian II space platform orbited a stellarmass black hole, stabilizing it. From their position deep in the Sagittarius arm of the Milky Way near the Eagle nebula, the Earth’s sun appeared as a mere dot in the constellation Taurus. Even with Kardashev tunnel transport, the Appian II depended utterly on the station and the twenty-third century AI that ran it. The platform contained living quarters for 103 crew, an advanced research laboratory, and Marcus Sund’s entire career.

As Marcus approached station ops, twenty-year-old Helice Maki met him in the corridor. Six years ago she had been the youngest graduate in the history of the Stanford sapience engineering program, a fact that she mentioned with annoying frequency. He didn’t like her, but he needed her now. By the expression on her face, she felt it too—that something was wrong.

“I’m going in,” she said, nodding at the Deep Room, site of the interface with the

quantum sapient.

“Go,” he said. The sapient had better not be in trouble, but if it was, Helice Maki could deal with it.

With a sickening blare, the klaxons burst to life. As Helice disappeared into the Deep Room, Marcus rushed to the operations suite a few doors down. Here, tenders were on task, deadly serious. The deputy exec reported that in the last two minutes, the ProFabber engines had powered down to maintenance level, abandoning the K-tunnel. It could hardly be worse news, not because the tunnel had to work, but because the mSap had to. They were dead without it.

“Lock out the mSap from expert systems,” Marcus ordered. He had to nod at his deputy to reinforce the order. They were isolating themselves from their central computation resource, a logic device with perhaps limitless capabilities. Now they must fall back on the workhorse savants—simple tronic computers, wickedly fast, duller than stumps. The K-tunnel as a transport route was off-limits for now, but they could clean it up later. They could get through this, Marcus thought, while the word runaway kept stabbing at him.

From the Deep Room, Helice’s voice came over the comm, her voice throaty with emotion. “Get in here, Marcus.”

Ops was erupting with reports from all stations, all decks: Tronic systems failing; K-tunnel functions, off-line; extravehicular communication arrays, off-line; life-support systems moved to auxiliary power. Onboard host experiments terminated; memory caches dumping data, slaved to the mSap for incoming data.

The deputy exec turned to Marcus. “The mSap is hijacking storage capacity from every embedded data structure on station, and slaving it to itself, commanding all station power, and locking out both human and savant overrides.”

Runaway. Marcus brushed the thought aside.

But people in the room heard the assessment, and exchanged glances of disbelief. Not one of them, including Marcus, had ever seen a rogue machine sapient. Stories had it that once an mSap got away from its handlers, it could quickly form goals of its own—a chaotic state known as obsession. Pray God this mSap had not acquired one.

Leaving his deputy in charge, Marcus hurried down the corridor to the sapient domain, took a chair in the anteroom, and punched up a screen so that he could see Helice Maki at work inside the Deep Room. She came on-screen, talking to him as she worked the sapient. “Secure this channel.” He obeyed.

Surrounded by the simulated quantum output, and talking in the sapient code language, she pointed her indexed thumb at sections of the sapient's mind-field. To Marcus, it looked like she was dancing—or conducting a symphony.

In between code talk, Helice spoke softly to him: "It's an incursion. We have a worm loose in here."

"That's not possible," Marcus snapped. He'd never used such a tone with Helice Maki before, especially given the rumors of her impending installation as a company partner.

She ignored him. "There are missing responses, rogue strands. I'm beginning error correction."

"Don't do that; we'll lose everything." It had taken three years to coach this mSap to oversee a space platform. Retraining it would be an ugly smear on his reputation.

"We've already lost everything. It's on a mission, and it's not mine. Or yours. Isolate the savants from this rogue."

"I've already done that."

"Okay, okay," she said, preoccupied. She pointed her hand where she wished to retrain, talking the gibberish of the sapient engineer, looking almost ecstatic, like a believer getting a dose of Jesus.

As he waited for her, he tapped into the comm. "Report."

"Marcus, we've got an imminent life-support failure on deck four. If we evacuate, we'll lose connection with the main nutrition fabber."

Food was the least of his worries right now. "Evacuate. Take all self-contained life suits off the deck." He knew how that sounded. Like they'd need them.

The sapient grooming staff trickled in, leaning against the wall in the small ante-room, waiting to help—or to throw themselves on the funeral pyre. Anjelika Denhov arrived first, with three postdocs trailing her, looking ill. Their research had been running on the mSap. They could pray they hadn't touched off this disaster.

Marcus saw his career imploding. He thought they'd live through this— Christ, this was a Minerva Company main K-tunnel station, of course they would survive—but his career was over. On his watch, they were abandoning a deck, yanking critical science lab work, dumping all data, and worst, retraining an mSap. His stomach tum-

bled in free fall, like his career, heading to a permanent landing in the warrens of the damned. There, the majority of people were unemployed, living off the dole, feeding on the Basic Standard of Living and virtual entertainments, sustained by the wealth of the Companies—the behemoth economic blocs that fueled the world. His parents took the dole, and all his siblings, and all his cousins. He was the only one who had tested strongly enough to groom the sapients, and then, groom the groomers. He had risen high. Looking down, he could see how high.

From the screen, Helice had stopped her dance. “Oh my God.”

After a beat Marcus prodded, “What, what is it?”

She stepped in closer to the knot in the display, a tangle of virtual quantum waves. She mumbled something in code. Then: “It’s a simple evolutionary.” She turned toward the optic and said, “Someone’s let loose a goddamned evolutionary program. And it’s in its three hundred and ninth generation.”

Marcus leaned into the audio pickup. “That could be EoSap, it still could be,” he said, wanting to blame Minerva’s arch competitor and not one of their own crew.

“No. This is a basic vector that any groomer could deliver to the sapient. Somebody sat in your chair out there, Marcus, and goddamn typed in an evolutionary training sequence.”

“If it’s simple, then yank it out,” Marcus pleaded.

She glared into the optic. “It’s not simple anymore.” She turned back to the cocoon of light surrounding her, mesmerized by the visions she saw in the Deep Field.

Runaway, Marcus thought again. If the mSap had broken out of control, it was in danger of grabbing every resource, every qubit it needed for whatever it was doing. Such things had been seen before. The Jakarta runaway, for one, when an evolution-driven mSap had nearly taken over the world’s entire fleet of orbiting comm satellites. Korea had responded with nuclear strikes, leaving the island of Java a radioactive slag heap.

“Who’s had access here?” Marcus glanced at Anjelika Denhov, who had better know what her postdocs were up to. The people in this room were the only ones who could have interfaced with the mSap.

Anjelika turned to her three gangly charges. “Well?” She eyed them each in turn.

No movement. The team looked slightly green in the glow from the Deep Field room.

“Anybody got a theory?”

Under her stare the newest of them, Luc Diers, swallowed hard. “It was me,” he said.

Marcus turned on the youngster. “Talk. Talk fast.”

“I was just trying to salvage my program.” Luc glanced at Anjelika, his PhD adviser. “I didn’t want to fail.” Realizing that he still had the room’s attention, he stumbled on: “I kept getting nonsense readings, and I couldn’t fix it. I had no idea the mSap would take an interest. Would commandeer everything.”

Marcus didn’t know if he was relieved or sickened that it was one of his own crew.

Luc told about his simple, evolving program that was supposed to recon- figure his experiment on fundamental extragalactic particles so that it was back on track and not outputting data on impossible particles. Particles never seen before. Luc was going home next week. He wouldn’t have time to restart the program. It was just a minor program running on the mSap. He thought no one would notice.

Listening in, Helice exploded. “You thought no one would notice? You let go of your program goal and assigned it to my sapient?” Luc stared at the floor, and Helice turned away in disgust, concentrating again on the Deep Field.

They all watched, transfixed by the sight of a woman trying to tame a quantum monster. The eerie light flickered on her face like a tormented mind probing for comfort from the one person on-station who could understand it. She murmured, “It’s analyzing an anomalous structure. A profound goal that it can’t reach. And it’s getting lost.”

“God help us,” Marcus said. He leaned into the comm. “Call Mayday.”

The audio responded, “Sending.” The nearest help was weeks out of the system.

Helice walked out of the Deep Room, pulling off her data rings. Glancing at Anjelika, she asked, “Which one?” Anjelika nodded at the unfortunate post-doc, who cringed under Helice’s predatory stare. “Name?”

“Luc Diers.”

“All right, Luc,” she said in a too-smooth voice, “describe the anomalous readings that you retrained my sapient to fix.”

Luc winced hearing this characterization of his crime. "Neutrinos," he said.

The group stared at him, waiting. He plunged on. "I had impossible neutrinos. Wrong angular momentum, wrong spin state. Reversed, actually."

"Meaning?" Marcus snapped.

Anjelika broke in: "Think of it like the direction of corkscrewing. Neutrinos go to the left."

Luc added, "And the ones I kept registering went to the right, if you want to think of it that way. And the readings were coming from everywhere at once. So it was garbage. Unless it was evidence of another dimension, it was garbage."

Helice put up a hand to stop others from interrupting. "What do you mean, dimension?"

"Space-time construct. Universe." Meeting blank stares, he went on, "Nature creates symmetry all over the place, except at the subatomic scale. So some folks figure the missing symmetry is in other universes. Like rightturning neutrinos are in the fifth dimension, and orthopositroniums' missing energy is there. It's all in other dimensions."

Marcus stood and fixed a blank and hopeless gaze on Luc Diers. "Kiss your ass good-bye, son."

Luc nodded. "Yes sir."

Helice said "Get out of here, all of you. Except Marcus and Luc. Make yourselves useful somewhere." When they left, she said, "The mSap wants this station, Marcus. And it's taking it."

He nodded, strangely calm, now that he knew the worst. Runaway. He glanced at the Deep Room. "Kill it."

"And kill the station?"

A small moan came from Luc as the reality of their disaster sunk in.

"Maybe we can still salvage life-support systems," Marcus said.

"You can't. It's dissolved your networks. You don't have any networks left."

"We've got expert systems."

“That can’t talk to each other.”

He glanced at the room again. “Kill it, Helice.” If they could. There was the Jakarta runaway. It had copied itself into a thousand home computers moments before decoherence.

“First I’m downloading the mSap output.” Leaning over the keyboard, she shunted the data into a high-storage optical cube. She was taking it home. She was leaving. “Prime the shuttle and get us a pilot. You can assign whoever you want in the remaining seats.” She cocked her head at Luc. “He’s coming with me.” Her face softened. “You come too, Marcus.”

He heard her as in a dream. “Put the sapient down, Helice.”

She looked at him a long moment. “Putting down the mSap.” She leaned over the control board and typed in the command to collapse wave function. To blow its quantum nature, that of being in several places at once, they needed to shatter the quantum isolation. Turning on the lights inside the domain could do it.

And did. In an instant, the \$1.3 billion demigod snapped into decoherence.

A soft whine came from the Deep Room, high-pitched and eerie. Aside from terror, Marcus felt relief. At least they could still kill it.

As they opened the door into the corridor, the sickening blare of the klaxons ballooned louder.

“Meet me at the shuttle bay,” she said, already heading out the door.

In automatic problem-solving mode, Marcus began prioritizing the remaining shuttle seats. Send home nonessential personnel. The researchers, the support techs, the . . . he let a wave of nausea pass through him. He decided on the six people who’d fill the remaining shuttle seats. He wasn’t among them.

His rig. His watch.

Hurrying down the corridor, Helice had Luc by the arm, heading for the shuttle bay, avoiding running but wasting no time. She clutched the data cube. The quantum platforms didn’t travel, of course. Too leaky, too vulnerable.

“I’m sorry,” Luc whispered.

Helice nodded. “Yes. Yes you are.” Sorry was only the beginning of his troubles. But

first they had to launch out of here. With the mSap down and the savants isolated from each other, the station now ran on human-powered thought, which, as the case of Luc Diers demonstrated, often went awry. Hurrying down the corridor, she debriefed Luc, wringing the salient details from him, of his research gone awry.

Then, herding him into the domain of the executive quarters, she made a quick stop for Guinevere, her pet macaw.

“Carry this,” she told Luc, passing the hooded cage at him. Guinevere gave a harsh bleat of protest as they rushed on to the launch bay.

A pilot, disheveled and pale, joined them there. Four others trickled in to join them, their faces betraying wild-eyed panic.

As they began finding their seats, she went forward to talk to the pilot. “Before you do anything,” she told him, “isolate your onboards from all station contact.” At his confused expression, she said, “Sapient’s got an obsession. It’ll eat your tronics for a snack.” The mSap was dead, with any luck. But it hadn’t been a lucky day so far. He nodded, somber.

“And go, go now.”

“Still waiting on two more passengers, Ms. Maki.”

“Not any more. Get out of here if you want to save the passengers you have.”

Back in the passenger cabin, she strapped Guinevere’s cage into one of the seats, then herself, as the engines hummed to life. Luc followed suit, looking stunned. She held her hands in a firm clasp to keep them from shaking. She didn’t give the station a snowball’s chance in hell. Go, go, she urged the pilot.

They launched, easing out of the bay, vernier thrusters working.

Holding the cube in her hand, Helice stared at it. She’d made a snap decision that Luc’s discovery was real. Because the mSap had taken rightcorkscrewing neutrinos seriously. Because it had marshaled the entire resources of the station to cache its output, pursuing a problem so deep and long that it must be the toughest question in the history of quantum sapients. Helice had known all this, standing in the Deep field, gazing into the obsession. It suggested not a sapient run amok, but a sapient probing the most astonishing question: Where had the right-turning neutrinos come from? And how could the source’s mass exceed that of the universe?

With the shuttle under way, she looked out the viewport, seeing the lights dim on the top deck of the station. Then another. Deck by deck, the platform was power-

ing down. They would freeze to death before their air ran out. She tried not to think about the dying, but the two empty seats next to her kept the thought fresh. She patted Guinevere's cage absently, seeking comfort.

They sped homeward. She clutched the data cube in her pocket, all that remained of the mSap and its journey next door. Into an infinite land.

## Chapter 2

ON A CLIFF OVERLOOKING THE PACIFIC OCEAN, Lamar Gelde sat in his sport vehicle, straining to see the panoramic view of the breakers and distant horizon. His car headlights tunneled a blind light into the fog, in a socked-in December landscape, dominated by saturated low clouds and the pounding surf. It had been decades since Lamar had seen the ocean; and he wasn't going to see it today, either. Instead he was going to see one of the most difficult men in the Western Hemisphere: Titus Quinn.

He brought good news, but Titus might not see it in that light. No telling how the man might react, especially as reclusive as he'd become these last couple of years. Lamar loved Titus Quinn like a son, and hated watching him throw his life away, here on this godforsaken coast where it rained forty- five inches a year and the nearest neighbor was fifteen miles away.

But this isolation was precisely why Titus Quinn retreated to the Oregon coast, to escape the company of his fellow men and women and to stay a universe away from black hole interstellar transport and the destinations that implied. Lamar carefully backed into the whiteout conditions on the road and sped toward his meeting, one that would take Titus by surprise. Titus's own fault. The man never answered the phone.

In the warmth of the car, Lamar drew off his gloves and gripped the steering wheel of the custom ZXI 600, loaded with after-market options, gliding through the hair-pin turns with a surge of power from the precision engine, worth a year's salary of a member of the Minerva board of directors. Retired or not, he could still afford it, even without the Minerva stipend that kept him on retainer. Now, Minerva had a little task for him, one Lamar intended accomplish, both for Minerva and for the sake of Titus Quinn's immortal soul. At thirty-four, Titus was too young to be living in the past. Today, Lamar hoped to recall him to life. That was how Lamar saw it, though he was pretty sure Titus would see it differently. He gunned the engine and grabbed roadway down the straightaway, wiping sweat from his hands so he wouldn't lose

his grip on the wheel. He hadn't seen Titus for over a year. He hoped Titus had mellowed a bit.

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Keep Out, More Private Than You Can Imagine. The sign on the sagging split log fence had been freshly redrawn. Turning down the rutted drive, Lamar squinted at the warning signs nailed to trees. Not Interested, Go Away. In another few yards: Contrary to What You Believe, You Are NOT an Exception. The road descended into green-black trees, dripping with moss and rain. Last Turn Around. Land Mines Ahead. Lamar sighed. He knew Titus had boobytrapped the property, but he trusted that Titus had not yet stooped to land mines.

Parking the car under a giant tree heavy with pea-green fans of cedar, Lamar struggled out of the low-slung car, hating the indignities of old bones and sagging muscles. He pulled his jacket close around him and tucked in his head against the rain that had now begun to patter through the overhead branches. Cold, soggy, godforsaken were the words that came to mind as he slogged down the path toward Titus's beach house.

A high whine needled at his hearing, followed closely by a crunch and the fall of a giant branch across his path. Still waving from the jolt of hitting the ground, a wood sign proclaimed: My Dogs Are Hungry. Lamar stepped over the crude barrier and shouted, "Titus? It's Lamar. Stop this nonsense, will you?" Fog rolled through the treetops, blobs of congealed wool. Through them, he could see the melted yellow of the sun, thin and cross-looking. It was high noon, ten days before Christmas. A miserable time of year to be on the coast. Ahead he saw the beach house, two stories, brown shingles, looking like a hole in the forest and not a proper residence. Rain trickled down Lamar's neck as he hurried down the path, surrounded by sounds of small explosions and the accompanying release of foul smells. No, Titus Quinn was not growing mellow. If anything, his property was worse than ever. Christ, we should visit the man more often. Keep him tethered to reality. "Titus?" he shouted.

Up ahead Lamar heard, "Who the hell is it?" A shutter slammed open on the second story of the cottage, and someone's head poked out. Titus.

"It's Lamar, for Christ's sake." "Go away." Titus disappeared from view.

Lamar shook his head. He'd known this was not going to be easy.

The porch that usually overlooked the ocean on the four days a year when one could actually see the ocean in this dreadful climate felt slick as snot, causing Lamar to grip the handrail and jam a Paul Bunyan-sized sliver into his hand. God damn, he thought, rapping on the front door, the things I do for Minerva Company.

He rapped again, this time using the oddly fashioned door knocker in the shape of a face. Eventually Titus answered the door. He looked resigned at seeing his old friend. But it was not a friendly greeting—in fact, no greeting at all.

“How did you get past my defenses?” Titus asked, turning back into his living room and leaving his guest to close the door.

Coming inside and throwing his gloves on the side table, Lamar said, “You can’t keep the world away forever, you know.” “Doing okay so far.” Doing okay would not be how Lamar would describe it.

But despite his reclusive lifestyle, Titus did look fit. A couple inches over six feet and athletically built, he hadn’t yet gone soft. He was handsome still, despite the white hair that had prematurely come upon him. He kept it clipped short, and it might as easily have been blond. In fact, except for the baggy plaid shirt, he might still be mistaken for Minerva’s top interstellar pilot, a man who’d won the heart of Johanna Arlis—a tough woman to please.

A whining sound from the direction of the dining room caused Lamar to flinch.

“Don’t worry, it’s not an incoming missile. It’s my new St. Paul Olympian locomotive.” Titus flipped on a light, revealing what Lamar had not noticed before: that the entire living and dining rooms were crisscrossed with miniature train tracks, both at floor level and elevated. One snaked by Lamar’s feet, making a turn at the lamp, past a miniature semaphore and telegraph post.

“The Blue Comet,” Titus said, as though Lamar should be impressed. The line of cars stretched into the back hallway.

Titus hit another button, and a sparkling green-and-gold locomotive came clacking around the sofa. “A new acquisition. Lionel 381, all steel, with brass inserts plus the original box. Paid eleven thousand bucks for it.” He frowned at Lamar. “Suppose I overpaid?” Lamar well knew that Titus could afford to squander a damn sight more than that. Minerva made sure Titus needed no money. That he need never succumb to selling his story to the newsTides, or to the insatiable fan base of those who believed that Titus Quinn had traveled to another universe. Two years ago. A lifetime ago.

Lamar reached out to touch the locomotive, now stopped at a crossing.

“Uh-uh,” Titus warned. “Gets skin oils on the moving parts.” Lamar retracted his hand and unbuttoned his coat instead. Removing his jacket, he looked for a place to put it amid the furniture cluttered with cast-off clothing, dirty dishes, and packing

boxes for model trains. Lamar hung the coat over a lamp.

"Titus," he began.

A hand came up, stopping him. "I go by Quinn now." Titus Quinn fussed with the Olympian, adjusting the switch in the tracks, ignoring Lamar, the man who was his last link to Minerva, who had been watching out for Titus's interests since the man himself didn't seem to care.

"I wouldn't have disturbed you if it wasn't important." Titus took the locomotive to the dining room table covered with miniature tools and boxes of spare parts. "Sometimes the wheel alignments need a few tweaks. It's three hundred years old, so I don't begrudge it a little tuneup." Lamar looked around at the place. Even in Johanna's time, it had never been tidy. Johanna had had canvases stored everywhere, and tubes of paint . . . but now, it was clearly a bachelor place.

"They've found it," Lamar said softly.

Tinkering. Titus used the small screwdriver with surprising precision for someone with large hands, and for working, as he was, in the gloom.

Lamar went on. "A way through, Quinn. To the other place." Titus didn't flinch or look up, but he stood immobile, screwdriver in hand.

Lamar let that statement settle. Looking around, he saw pictures of the family collecting dust on the fireplace mantel. At least Titus hadn't turned the cottage into a shrine. As pitiful as he was, he'd made something new for himself. Lamar resolved to be patient.

Titus turned the model over in his hand, as though seeing it for the first time. "Still got the original screwdriver-assembly kit. Otherwise I would only have paid half as much." Lamar looked about for a place to sit down, then gave up. "It was a fluke, really. Some physics geek let a program go haywire, and they found themselves in a barrage of impossible subatomic particles. Minerva thinks the source of those particles is quite . . . big." Titus's icy blue eyes met his own. When they did, Lamar said, "The source is large. Infinitely large. We think it might be the place you went." A lopsided smile came to Titus's mouth. "The place I went." "Yes." An eyebrow went up. "You mean, Minerva thinks I went someplace? You mean instead of abandoning my ship and hightailing it off to some backwater planet, I actually went someplace?" Lamar coughed. "Minerva owes you some apologies. I've always thought so." But Titus was still talking: "You mean you think you've found the other universe, and that I wasn't lying and crazy after all? You mean you think you've found Johanna?" He slammed the locomotive down on the table.

Lamar winced. Eleven thousand dollars . . .

“And Sydney,” Titus whispered.

Sydney had been nine at the time of the ship disaster. She was their only child.

Titus stood near his chair, body tensed, but with nothing to hit. Except maybe Lamar, and Lamar was practically his only friend.

“I’m telling you that they’ve found what may be the other place. Nobody knows what it is, much less who might be there.” He hated to bring up Stefan Polich’s name, but he couldn’t tiptoe around forever, and it was, after all, Minerva’s CEO who’d sent Lamar here in the first place. “Stefan thinks we know the way in.” From another room came the faint rumble of an electric train looping through the cottage. Lamar wondered just how extensive this hobby had gotten. Finally, Titus blinked. “Would you like a cheese sandwich?” Lamar closed his mouth. Then nodded. “That would be fine. Thank you.” He followed Titus into the kitchen, ducking under a two-track bridge overpass supported by pillars made of door moldings.

Titus leaned into the refrigerator, pulling out plastic containers with strange colors inside, and finally found a hunk of cheese to his liking. Lamar shook his head. Here was the man who once commanded colony ships through the stabilized Kardashev tunnels, who could run navigational equations in his head and repair cranky lithium heat exchangers at the same time. Living off moldy food. Playing with train sets.

He’d been a family man once. No one had ever thought Titus Quinn would settle down, but when he met Johanna Arlis, she’d tamed him before the colony ship that he’d met her on reached its destination. Well, neither of them were what you might call tame. Johanna was dark, flamboyant, passionate, and irreverent. Only Johanna had ever matched Titus’s appetites, and he’d not looked at another woman for the nine years they’d been married. Still didn’t, though Johanna was dead, tragically dead, and her daughter with her. On Titus’s ship, the *Vesta*, along with every other passenger. All dead, except Titus. For which Minerva had fired him, and for which Titus had never forgiven himself.

The sandwich sat in front of Lamar, remarkably appealing. And Titus tucked into his own sandwich with gusto, despite just having been told that the human race had discovered a parallel universe. One that, a couple of years ago, to the general derision of the civilized world, Titus had claimed existed.

Titus swallowed another mouthful of sandwich. “Why should I believe any of this?” “Because one of Minerva’s favorite sapients believed it, that’s why. Killed off an entire orbiting space platform to prove it.” “Oh. A crazy mSap thought it found another universe.” He shrugged. “Stupid machines with quantum foam for brains. I’ve

had collies that were smarter.” “They’re as smart as they’re supposed to be, without taking over the world.” After the Jakarta Event, the World Alliance had developed firewalls to forestall runaway machine intelligence. To forestall a posthuman world. Those firewalls apparently needed some rethinking.

Titus muttered, “So Minerva’s taken over the world instead. You and all the half-assed geniuses. Gee, why don’t I feel all proud and happy?” Lamar glanced away. He himself was one of those geniuses, a savvy, in the vernacular. Able to outthink a computing savant. That fact conferred on him status and privilege beyond the dreams of the average smart—and far beyond all the rest. Titus had scored at the right level, of course, but had squandered his opportunity for the life of a pilot.

“I thought you’d be more interested,” Lamar said. He took a bite of his sandwich.

Across the kitchen table Titus eyed him with a hot, blue stare. “Stefan Polich thought I’d be interested.” Of course Stefan Polich was behind all this. The president of Minerva Company would have to be. Lamar spoke through a mouthful of sandwich. “He’s said that he made a mistake. For a man like Stefan, that’s a big step.” Titus licked his fingers and wiped them on his wool pants. “Well, fine. We’re all settled then.” He stood up, carrying his plate to the sink. “Stefan Polich—” Lamar interrupted. “I know what you’re—” “Stefan Polich,” Titus repeated, somewhat louder, swinging around, his eyes glinting, “has decided to ask my pardon, eh? So sorry Titus, old man. So sorry you lost the one damn job you were any good at. So sorry I said you murdered your wife, that we put the word out that you went nuts and that you made up cock-and-bull stories about some flaming fantasy world.” Titus was still holding his lunch plate like he wanted to crack it on someone’s head. “So sorry that nutcases come traipsing onto your property, lurking about, hoping for a glimpse of the man who claims to have been the privileged visitor to another cosmos or what they’re secretly hoping for—their favorite gaming universe!” At the present volume of discourse, Lamar checked out escape options through the kitchen door, where two room-long trains were just passing over the bridge.

“And now,” Titus continued, “if I don’t mind, he’d like me to be interested in his new interest in the little universe next door!” He stared at the plate, then turned to the sink, ran water over the plate, and left it on the counter, his movements, precise, tense.

Lamar had to get the whole story out now, before Titus got further worked up. “One thing more. He wants you to go back.” Titus stared at him with eyes like old pack ice. “Get out, Lamar.” Lamar gazed at Titus, thinking how much he looked like his father, Donnel, the old man—for Christ’s sake, Lamar’s contemporary—who used to be in business with Lamar, who’d asked Lamar to take care of his boys when he died too young and no one remained to care for them. Lamar had done his best. And now Titus was throwing him out of his house. Probably he deserved it. They all deserved

it—Stefan Polich most of all—for not standing by Titus when he needed it.

After the ship broke apart in the Kardashev tunnel, Titus put his wife and daughter in an escape capsule, and the forty other survivors in numerous small pods, and sent them off. Then, at the last moment, when he'd done all he could to save the ship, he found that Johanna had kept her own capsule attached to the ship. He boarded and they launched just in time to watch the Vesta blow apart. The next thing Minerva knew, six months later, after all hope of survivors had been abandoned, Titus showed up on the planet Lyra, disoriented and his memory gone. Hair gone white. Tales of a barely remembered world. Claims that wife and child were there. That he had been there for years, though he'd only been missing six months. No wonder Minerva distanced itself. But for some reason Lamar himself had believed Titus. That was one reason why he was no longer on the board of directors.

Not that he expected any gratitude for that little act of faith.

"Get out," Titus repeated.

Lamar looked around at the cottage stuffed with Titus's old life and with his new hobby. "What have you got to lose? An expensive hobby that's taken over your living room? What are you afraid of, anyway?" But he was backing up as Titus herded him around the sofa and toward the front door.

Titus smiled, not necessarily a nice sight right now. "Not afraid, Lamar. Just tired of Minerva's nervous twitches." "Twitches?" "Yes, twitches. Makes you guys nervous, doesn't it, all the attention I get, all the crazies coming by, sniffing for the real scoop on invisible worlds. You're terrified that I'm finally going to give an interview on the global newsTide, really cash in, reveal what a piece of shit that ship was, that you sold as safe to all those colonists that died. Aren't you?" He grabbed Lamar's coat and shoved it at him. "Be somewhat easier if I just walked out a ship hatchway into the void. Regrettable space accident. Former pilot tragically dead in same K-tunnel where his family was lost. Make a nice, tidy ending to the sorry tale, wouldn't it?" "Christ, Titus, you think we're trying to kill you? You think—" "Don't call me Titus. That person's dead now." The gloves were shoved in his face, and the door opened before him.

Titus's face had lost its anger, the expression replaced now with a kind of thousand-yard stare. Lamar waited until Titus said, "You really think I'm going to believe you've found that place after all this time? After I begged you to search, to pay attention? Now, all of a sudden, Stefan has taken the big step of saying he was wrong?" He shook his head in some mirth. "Pardon me, Lamar, but that's such bullshit." It was time to convey the last piece of information. "Your brother," Lamar said. Damn, this was distasteful. It made even Lamar hate Stefan Polich. "Rob's turned forty. The only reason the Company keeps him is that he's your brother. I'll do all I can for

him, Titus, I swear it. But they'll let him go, you know they will." He felt like an ass. Quinn's voice was eerily quiet when he said, "If you touch my brother or his job, I'm going to put my trains away and come after you. All of you." From the yard came a crash, perhaps some jury-rigged tree limb, or a smoke bomb. As the sun broke through a tattered cloud, Titus's eyes glinted. "Now then. I'll turn off the system for three minutes. By then, you'd better be gone." The door slammed shut.

Lamar was left standing on the porch, staring at the door knocker in the shape of an oddly thin and sculpted face, both beautiful and disturbing.

Lamar spoke so that Titus would hear him through the door.

"Titus . . ." No, not Titus any longer; he wanted to be called Quinn. "Quinn, for Johanna's sake. I thought, for her sake . . ." From inside he heard the tinny hoot of the St. Paul Olympian racing through the living room.

Along with the damp cold, a sense of dread crept through Lamar's jacket. Quinn was wrong if he thought this was the end of it. As far as Minerva was concerned, it was just the beginning.

## Chapter 3

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A CRASH CAME OVER THE BOW OF QUINN'S KAYAK. A patchy, thin fog tore now and then to reveal a sky the color of what Johanna used to call cerulean. He sped northward, lulled by the rhythm of paddling. Brief glimpses of the horizon drew his gaze outward, to the limit of sight. Some days he thought he would try to reach that horizon, just paddle without stopping. He'd thought of that more and more lately. He'd even fantasized that he'd find—somewhere past the horizon—the place that eluded him, that kept Johanna and Sydney. The place that Lamar Gelde claimed was now found.

He kept up a brutal pace, propelling the kayak through the chop. It was no coincidence that Lamar Gelde had shown up just when the newsTides were nosing around to do a major story on Titus Quinn, one that would bring unwelcome attention to Minerva's stellar transport losses. To protect his coveted privacy, Quinn had no intention of giving an interview, but Stefan Polich couldn't know that. The man would do anything to shut him up, even concoct a story that they might have a lead on Johanna and Sydney.

He sliced the paddle again and again into the waves, reaching for exhaustion, for

peace. Not that peace was that easy to come by.

The ocean always conjured that other place, but when he tried to summon the details, all he grasped was fog. And a vast emptiness. In that vastness were his lost memories. This was the reason he couldn't move beyond what had happened. Because he didn't know what had happened.

A wisp of fog descended over him. On its fuzzy screen he imagined a strange river flowing. It moved slowly, more like lava than water, more silver than blue. . . . And the things that rode the river . . . The image receded, leaving him no wiser. Somewhere in the murk lay his memories of the other place. Ten or so years of memories. But the tests had all shown he was the same age as when he left Earth, still thirty-four years old. Of course, these contradictions only existed if one held to strict rules of logic. And Quinn's hold on strict rules had always been loose.

Up the beach he could see someone on his property. Paddling fast, he got close enough to see that it was his brother Rob. Caitlin and the kids were with him. They hadn't spotted him yet. He could still evade them, as he had been doing for two years now, for reasons not entirely clear to him. Rob with his normal family. Those kids. He was becoming a lousy uncle—eccentric, unpredictable, unavailable. He wearily paddled to shore. For Caitlin's sake, because she always thought the best of him, and he hated to prove her wrong.

As he pulled the kayak up the beach, his brother and Caitlin came down to help. Quinn nodded at them. "I thought you weren't coming until the twenty-third." Rob smirked. "Merry Christmas to you, too." Caitlin gave Quinn a big hug, which he returned with feeling. Her face always lit up when she saw him, the last human being who seemed to look forward to seeing him. She wore her light brown hair pulled casually back from her face—round, where Johanna's was oval, green eyes where Johanna's were deep brown. He couldn't understand what a fine woman like that saw in his brother, though he liked Rob, too, after a fashion.

"Uncle Titus," Mateo shouted, "I found a dead bird!" Down the beach, Mateo was holding a mass of greasy feathers.

"Good!" Quinn shouted. "Give it to your little sister!" Mateo began chasing Emily with the bird as Caitlin hustled down the sand to forestall a sibling fight.

Quinn gazed at his brother, seeing a mirror image of himself: big-boned, deep blue eyes—but gone a little soft with that desk job he liked so much. "I thought you said you were coming on Friday." "This is Friday." Rob gestured at the porch with his armload of presents. "Let's get these inside." He stared at his brother. "We are invited in? We drove three hours from Portland, Titus." "I haven't got any food or anything. For the kids." Well, there were some hard candies left over from last Christ-

mas.

“Caitlin brought the food, naturally. You don’t think we’d let you cook a turkey, do you?” Quinn helped to carry the presents, feeling like an ass that, again this year, he had more or less forgotten about Christmas. He cut a glance at Rob—Rob doing the brotherly thing, reaching out, doing Christmas. Rob the stalwart, the steady.

Rob hanging by a thread at the company.

Quinn began the unlocking procedures on his front door, fiddling with mechanisms he’d designed himself. Also he’d designed his door knocker. In the shape of an impossibly long face, with finely formed lips and brows, it was cast in bronze from his own carving. Rob took in the view. “It’s nice here.” “Yes. No one around for miles.” “That’s not what I meant.” To avoid a rerun of the lecture on becoming a hermit, Quinn made a show of bundling the packages inside and looking for a place to stow them. He dumped the parcels on the couch, on top of the kayak equipment he’d been cleaning that morning, while Rob carried bags of food into the kitchen. Thunderous jolts from the porch announced the arrival of Mateo and Emily, hollering and streaming sand.

Caitlin managed to grab Mateo by the collar. “Shoes off,” she ordered.

Quinn waved at them. “Don’t bother.” He looked around at the mess. “Little sand can’t hurt the place.” Emily was drawn to the dining room table, where the Ives New York Central locomotive sat prior to the new headlight installation Quinn had planned for that afternoon. Before his brother showed up a day early.

“Uh-uh,” Quinn said. “Don’t touch, remember?” His heart crimped a little looking at his niece, his memories of Sydney at that age poking up as always when Emily was around.

Emily nodded sagely. “Espensith.” Quinn smiled. “Very espensith hobby.” From the kitchen came his brother’s voice. “My God.” “Oh, that thing in the sink?” Quinn said. “It’s a jellyfish.” He got Mateo’s attention. “Ever seen one? You can see their innards through their skin.” Mateo dashed into the kitchen to confirm this marvel.

Looking around the living room, Quinn realized he should have picked up a little. He started lifting items off chairs, then spun around looking for where to put them.

“It’s all right, Titus,” Caitlin said. “Really. We don’t need to sit.” She took the pile from his hands and plopped it at the base of a pole lamp. Then, checking that Emily wasn’t listening, she looked him square in the eyes. “How are you? Tell me the truth.” Quinn cocked his head and put on a jaunty smile. “Good. I’m good.” “You are not.” “Am too.” “We haven’t seen you for months.” The words were reproachful,

but her tone made it go down just fine.

"Guess I've been too wrapped up in the hobby. You said I should take an interest in things." "I meant people, Titus." "Oh. Well. People are harder." He noted that the Lionel Coral Isle was going into the curve at the sofa a little fast and flicked his right hand into the digit commands that controlled his railroading models. He could have used a voice-actuated system, but he liked hand controls. He'd always been good with his hands, and wearing the three tiny rings on his right hand, he could manipulate the timing and performance of eight trains on five tracks, no problem.

Mateo was back. "Can I hold the new engine? The one that cost eleven thousand dollars?" Pointing at the St. Paul Olympian just emerging from the back bedroom, Quinn said, "Just for watching, Ace, not for touching." Mateo eyed the sleek train with its brass and die-cast trim pieces as it raced under the dining room hutch. "I wish I had a toy like that." "It's not a toy," Quinn said, rummaging in the coat closet for the presents he'd mail-ordered for the kids.

"Then what is it, if it's not a toy?" Mateo asked.

Rob had returned from the kitchen. "It's an escape." Emily pronounced, "It's a hobby." Retrieving the cardboard boxes from the closet, Quinn responded, "It's a way to keep from thinking." Then, seeing the worry on his sister-in-law's face, he put on a cheery grin. "Merry Christmas, to my favorite nephew and favorite niece." Mateo rolled his eyes at the old ploy. "We're your only nephew and niece." "Well, there you go, then." Quinn handed the presents to the kids, who received a nod from Rob as to opening them now. They tugged open the boxes, filled with tronic gadgets five years in advance of what either of them could figure out.

"Didn't have any wrapping paper," Quinn said.

"That's okay—" Caitlin was saying, but Rob interrupted. "For God's sake, Titus." He looked like he'd say more, then glanced at the kids.

Caitlin's hand came onto his arm again. Like a dog handler, Quinn thought. Why didn't she just let Rob have his say? He knew what his brother thought of him. Of his hobby, his crappy little cottage.

Instead of the expected rebuke, Rob said, "Join us for Christmas, Titus." Christ, the man had no idea what lay just around the corner, at his cushy little job.

The kids were punching buttons and causing lights to flash on their respective gifts.

Quinn managed a smile. "I'll try." Mateo, still fiddling with his present, said, "Kiss of death." "Out of the mouths of babes," Rob said. He locked a gaze on Quinn. "You

aren't going to come. Why don't you just say so, save us all from waiting up for you?" Quinn shrugged. "Okay, then." Rob snapped, "Fine with me." Kneeling next to the kids, he started repacking the gifts, shoving paper into the boxes while the kids watched in dismay.

Emily said, "I thought we were staying." "So did I," her father murmured.

Caitlin watched this familiar interaction play itself out, knowing better than to step between them until they'd each taken a hunk of flesh. If they didn't love each other, it wouldn't matter if Titus came for Christmas, but Titus could infuriate her husband in ten seconds flat, without even trying.

"Kids," she said, "play outside for a few minutes before we head back." She was letting her husband's edict stand, and Rob looked surprised.

"I'll keep them from drowning," Rob said, knowing when to get some distance from the heat of an argument.

You do that dear, Caitlin thought. You could look at the Pacific Ocean as a drowning pool or a beach adventure. Rob would be watching for beach logs in the surf every time.

Titus was smiling. Damn his blue eyes, anyway.

"I just don't do Christmas," he said, engaging and wry. But it wasn't going to work on her this time.

"You're slipping away, Titus. From us." As he started to shake his head, she added, "From yourself." He looked around his living room as though assessing whether this could be true or not. But it was true. No jollying the kids along, no earnest hobbies could hide the fact that her second-favorite man in the world was becoming one of her least favorite.

Titus's face relaxed, grew serious. "I don't much care anymore, Caitlin." She shook her head. "That'll be true in another year. It's not true right now." "It's not?" He looked hopeful that she was right.

He was giving her some power over him with that simple utterance, and it was a heady gift. "No," she said, "it's not. That's why you're coming for Christmas." He didn't answer, but she hoped he'd come. It would be a small gesture—for Rob, for the kids. She hoped her request wasn't just for herself. She always worried that she was the only one who felt electricity in any room where Titus Quinn stood.

Happy screams from the beach drew their attention to the open door, where they

could see Rob looking at them from the shore. He wouldn't like her begging Titus to come. So she hadn't. She'd commanded him. And Titus was at least listening to her, listening with a blue-eyed intensity that held her transfixed. She let herself imagine that he liked a woman who could match his strong will. Not that Caitlin would ever compare herself to Johanna, a woman she'd both loved and deeply envied. They'd been friends: the beauty and the plain Jane. The flamboyant and the responsible. Just once, Caitlin would have liked to trade places.

She picked up one of the toy boxes, using that moment to cover the heat that had come into her face. Standing, she put her hand on Titus's arm. "Say you'll come." He didn't answer, but he looked at her, all defenses gone. "I miss them, Caitlin." "I know." Let them go, she wanted to say, but hadn't the heart.

He reached toward her, and for a moment her breath caught on a snag, but he was taking the gift box from her grasp. "I'll put these in a bag," he said, and the moment was gone.

"Titus, at least see us off. Rob will take that for amends." "Which it won't be." She grinned. "No, of course not." At last they were packed and on their way. Quinn watched as Rob's truck climbed the steep driveway. The kids waved from foggy windows, and Rob honked the horn. All was patched up until it fell apart again. Quinn reflected that Caitlin was the best thing that ever happened to his brother. He hoped Rob knew that, or he'd have to give him a black eye.

As the truck disappeared up the road, he snapped on the juice to the property defenses. He always looked forward to seeing Caitlin, but he was glad she was gone. For a moment there, she had looked so much like Johanna.

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In a heavy rain, the copter swooped down the approach to Minerva/Portland, skimming over a vast and uniform lattice of Company buildings, a landdevouring sprawl that—combined with the other corporate holdings of EoSap and TidalSphere—stretched from Portland to Eugene. Helice Maki gazed out the rain-splashed canopy at the squat office buildings glued together with parking lots and roads.

Banking, the copter provided a view of the Columbia River slinking through the city, and in the distance, Mount Hood's white cone. These were the only things that hadn't changed about Portland, covered as it was with Company warrens stretching from here to the horizon. Dense canyons of office buildings might be smarter use of the land, but the masses preferred ample parking for their custom transport rigs. Helice shook her head. As the ultramodern world spun toward its sapient destiny, some things remained impervious to good planning and higher math.

In the cool cabin, her business suit sent a surge of warmth to maintain her comfort zone, but her hands were clammy from nerves. This was her first board meeting at Minerva, the Earth's fourth-richest Company. Slipping into fifth position, as Stefan Polich had admitted over drinks. Helice thought the events on the Appian II would change all that, but only if managed wisely, a task CEO Stefan Polich might fumble.

Approaching for landing, the copter sped toward the roof pad of a cavernous building housing at least eight thousand workers. As the craft settled on the roof, security crew sprinted across the pad to open the hatch, then stood back as Helice hopped out, ignoring helping hands. A short distance off, Stefan Polich stood, so lean he looked like he might disappear if he stood sideways.

He hurried forward, waving at the pilot, calling him by name. Helice winced. It was the wrong name. Stefan was starting to lose his edge.

"Helice, how was the ride? You could have taken the bullet train." He held an umbrella for her, ushering her into the building. Stefan handed the dripping umbrella to a staffer.

"It was fun." The private copter ride from Seattle's spaceport had provided the privacy she needed to prepare herself to meet the company on new terms—equal terms, as Minerva's latest partner. And to begin to put her stamp on things—starting with the proper handling of Titus Quinn.

Dismissing the security staff, Stefan led the way in his blue jogging suit and sneakers, making Helice feel overdressed. The black fabric of her suit sparkled now and then with little computing tasks. She stranded the data from her suit into the company data tide, that omnipresent stream of data cached in data structures embedded in the walls and carried by light beams through the work environment.

Amid his long strides, Stefan glanced at her. "He said no." "I know he said no. Titus will change his mind." It was essential. They needed his experience with the adjoining region, as it had been dubbed. Minerva's great hope was that the adjoining region, if it existed beyond the quantum level and if they could penetrate it—mighty ifs, no doubt—then it might be a path, plunging through the universe in a warped course, giving access to the stars. An access that might not rip apart a stellar transport like a barn in a tornado.

Stefan said, "He likes to be called Quinn, now." "I heard." Why did people insist on telling her things she already knew? Stefan kept up a good pace, in his habit of using the Company's long corridors to stay in shape. "He ran Lamar off the property." "I know that," Helice said. "Even the threat about the brother . . . what was his name?" "Bob." "Even that made no difference. But we'll let him stew a few days. He'll come around." When he did, when he agreed to go, Helice would go with him. Somebody

had to make the business judgments. Minerva wouldn't let him go alone, Stefan had already said as much.

The validity of the find was becoming more convincing every day. Earthside mSaps—tightly under control—confirmed the optical cube data Helice had salvaged. At irregular points in time and locale, Minerva sensors detected quantum particles that mirrored the proper quantum orientation. Shunning ordinary matter, they were devilishly hard to register. But the mSaps reasoned—with the nonchalance of machine sapience—that beyond the horizon of our universe lay another. It was incredible. And she wanted to see it for herself—wanted it with a fierce hunger that had slowly crept upon her during the interminable three-day descent on the space elevator. She didn't know who Stefan was considering for the junket, but she had to make her pitch now—now that she had him alone.

They power-walked through the savant warehouse, packed with technicians tending the savants and tabulators that in turn tended Minerva's data tide. Every tender aspired to administer to the mSaps, but that privilege fell only to the savvies, those who could, for example, solve complex equations on the back of napkin, or even without a pencil at all. Like Helice herself.

Here in the warehouse, young scientists on the make had only a few months to prove themselves. Failing in the Company, they might find a menial job—but most would opt for the dole, the guaranteed BSL, the Basic Standard of Living. Just shoot me, Helice thought, if I ever sit drooling in front of a Deep Vision screen.

The savant warehouse led to the central warrens, where the work cubes formed a vast lattice. Stefan broke into a jog and Helice followed. The occupants barely took note of the owners passing by, intent on their data entry quotas. This was where the data cycle began, where the information strands wound onto the skeins of the non-quantum trionics forming the broad base of the computing pyramid that embodied Minerva's collective knowledge. This scene was repeated at similar company nests at Generics, EoSap, ChinaKor, and TidalSphere.

And now Helice Maki was at the top of that pyramid. She took a moment to savor this, but the taste ran thin. The region next door towered in her imagination, casting a long shadow on the day.

She glanced at Stefan, "Still got a fix on the emissions? Three locales, right?" After the destruction of the Appian II, every Minerva installation in commercial space had joined in the search for anomalous particles. They'd found them in three other locations, across several parsecs of space, now that Minerva knew what to look for, and how to look, using a next-generation program of the one Luc Diers had inadvertently set in motion.

"One locale," Stefan answered. "Two of them dried up." Helice knew about the shifting coordinates. "That just reinforces my thesis. It's not merely a quantum reality. If it was, the readings would be constant. So it's a universe of greater than Planck length." "Right, it's bigger than that, but smaller than our universe. And it's not always in the same place." He banked around a corner and sprinted up a stairway, his face starting to redden.

On the first landing, Stefan bent over, hands on knees. He shook his head. "Damn, but I'd like to believe all this, Helice." "I know you would." He'd been a worried man since the day she'd met him. She'd heard that he used to be a driving force, but these days he was afraid of risks, looking for proof before making decisions. This was not the man to lead Minerva, or manage the real estate next door. He puffed, catching his breath. "Hell. What makes you so cocksure?" "No guarantees," Helice said, "but try thinking of it this way. How come we live in a perfect universe? Ever think of that, how we just happen to live in a space-time where things are stable and tend to support life? We just happen to have the exact force of gravity, the exact force of the strong nuclear force so that things cohere rather than not. That's a lot of fine-tuning for our convenience. Religion says that God arranged it that way. Nice answer, except it kind of stops further discussion." Stefan unfolded from the bent-over position and leaned against a railing. She had his attention.

"So you could say, of course the universe is finely tuned for us. If it weren't, we wouldn't be here to wonder about it. But then it leads to the idea that there must be other space-times where things aren't perfect for life. Where the fundamental particles have different values, and some universes—maybe the majority—will be cold and dark. And some, like ours, won't." "Right. The multiverse has some scientific logic behind it, if not scientific evidence." "No evidence. Until now." Stefan smiled. On his thin face, it looked more like a crack than a grin. "Wait until you see what we've got at the meeting." Frowning, Helice realized he'd kept something from her. "Tell me now, Stefan." She hated secrets. All her life she'd had a horror of people whispering, knowing things she didn't, talking behind her back. Being smart could be a curse in a world where intelligence measured your worth. Being smarter than her parents had been the worst, when they couldn't follow where she went, when she outgrew them before she'd even grown up. Stefan started the next flight, a little slower now.

Helice didn't move from the landing. "Stefan." He turned, waiting. This was her last chance to get him on her side.

"I'm your best thinker. Your best strategist. I'm young, in great shape. I don't have a family to hold me back. I'm new, and willing to put myself on the line to prove my worth." She wouldn't beg. But she could argue.

He let the words settle. "And if true?" She didn't like the hostile tone, but she

pressed on. "I want to go. With Titus. As his handler." She walked up to join him, standing finally on the same step, but he still towered over her. If he sided with her, she would be the first—along with Titus—to know what the new universe held. How could knowing mean so much? And yet it did.

"It'll be dangerous, Helice. Titus might not come back." "I've said I'm willing to risk a lot." "Maybe I need you here." She forestalled a harangue by a declaration: "I won't be content to stay behind." He watched her with narrowed eyes, appraising her. "I'll consider it." He turned and, breath returned, ran up the steps, leaving her to follow. Leaving her with hope, though not much.

She and Stefan arrived at the boardroom, and all faces, real and virtual, turned to them.

Around a smart table sat the other partners: Dane Wellinger, Suzene Gninenko, Peter DeFanti, Sherman Pitts, Lizza Molina, and special projects manager Booth Waller. Twelve others shunted in virtually, and their chairs silvered with their images. Looking at Booth Waller, Helice stopped and touched Stefan's arm. "I thought it was just the partners." "Booth is on track for partnership. You knew that." She hadn't known. Booth was an easy man to underestimate, a mistake she wouldn't make again.

The board members welcomed Helice with nods. She thought that one or two might even be sincere. She brought prestige to Minerva at a time when they needed it. And she'd brought them the Appian II. That was the contribution that really earned her the expedition. It was, after all, her region. She'd salvaged it from the Appian, ensuring its discovery wasn't lost to an obsessed mSap.

Stefan said, "We've made a little progress while you were in transit." He nodded, a motion that made his face look even more like a hatchet than it normally did. He voiced the table display, and in front of each board member appeared a V-sim projection of a small circle.

"It doesn't look like much at first," Stefan said. "Booth, take us through this thing." Booth rubbed his hands on his thighs and started to stand. Then, thinking better of it, remained seated. "It's not always in the same place, so we had trouble getting a lock on it. We finally got this result at the Ceres Platform," he said, referring to another K-tunnel outpost. "The physics team says we're bumping up against the membrane of another universe. Think of it like a bubble within a bubble, where reality is on the surface, or the brane. Sometimes the branes touch." Helice rolled her eyes. To be lectured on brane theory by this guy . . .

Booth noted her impatience and went on: "Anyway, at one of these brane interfaces we went in about nine hundred nanometers. We've consistently gotten in at least that far, proceeding a nanometer at a time, and recording the sights. We're confi-

dent we can transfer in a mass, but we're not to that point yet. We're using ultra-high-energy quantum implosions, followed by an inflation to macroscopic size." He shrugged. "If you want the gruesome details, we'll bring in the physics guys. But for now, think of it as a simulation of the Big Bang. But instead of creating a universe, we're punching through to one that already exists. Apparently exists." Helice tried to keep her voice even. "We know this, Booth." "Okay, then," he said, "what you're looking at is the picture so far." "The picture of what?" "The other place." Booth got the reaction he was hoping for. "I thought you'd be surprised." As the board members leaned in to squint at the display, he added, "We've been busy, as I said." Booth enlarged the sim until the center of the circle looked grayish, like a fried egg seen in negative. Vertical slashes appeared in the gray center. To Helice it looked like chromosomes in a nucleus. He enlarged the display again. Some of the vertical slashes were askew, or bent over. Booth pointed a wand at the display, changing angles of view, from the vector of the pointer. The scene began to look familiar, but not quite . . .

"We're not sure if the color spectrum is distorted, or how the transmission degrades through our interface." Helice peered at the V-sim. "Are you saying that this is a visual? Not just a graphic representation?" Booth coughed. "Yes. It's the adjoining region. What we've seen so far." Helice stared, and stared hard. They'd been talking about a mirror universe, a place, and until now—even as intriguing as those words were—it had just been talk. But here was a visual. It staggered her. The board members, silver and real, remained silent for a long while.

Then, from down the table Suzene Gninenko asked, "So what exactly are we looking at?" Stefan made a sweeping gesture at Booth. "And the answer is?" Booth's voice squeaked as he said, "Well, actually, our best guess is . . . that it's grass." It could not have been a more remarkable utterance if Booth had claimed to see angels dancing on the head of a pin.

The board members exchanged glances. Suzene Gninenko peered at the V-sim like she'd never seen a blade of grass before.

"Grass," Helice said. Now that the suggestion was planted, the picture did look like blades of grass.

Face beaming, Stefan looked at Helice. "Apparently the universe next door is not dark, barren, or chaotic. It has an atmosphere. It possesses life."

"The blades aren't green," Helice murmured, still strangely moved by the presence of those brave shoots of grass.

"We don't know what light is falling on it, or what the photosynthesis analog might be. Chlorophyll isn't the only option."

“What are the chances that grass would look so similar—over there?” She controlled her elation with difficulty. She had believed in it before anyone else. It shouldn’t come as such a surprise. But the implications of grass, of life, were almost beyond comprehension—as few things were to Helice Maki.

Stefan smiled, enjoying her reaction. “Maybe God plays in more than one realm.” Along with every other member of the board, Helice stared at the bentover blades of grass. She murmured, “Yes, but which god?” She intended to find out.