

# Lakes of Light

## STEPHEN BAXTER

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*Stephen Baxter (tribute site: [www.themanifold.co.uk](http://www.themanifold.co.uk)) lives in Morpeth, England. He is now one of the big names in SF, with more than twenty SF novels published to date, and a large body of short fiction. "I always thought of myself as writing hard SF, on a big scale maybe, but ideas driven, not romantic, so not space opera," he says. The Science Fiction Encyclopedia summarizes his early career thus: "He began publishing SF with "The Xeelee Flower" for Interzone in 1987, which with most of his other short work fits into his Xeelee Sequence, an ambitious attempt at creating a Future History; novels included in the sequence are Raft (1989), Timelike Infinity (1992), Flux (1993), and Rind (1994). The sequence... follows humanity into interstellar space, where it encounters a complex of alien races; the long epic ends (being typical in this of UK SF) darkly, many aeons hence." Since the mid 1990s he has produced five or ten short stories a year in fantasy, SF, and horror venues, occasionally one in the Xeelee Sequence, and did in 2005 again.*

*"Lakes of Light" was published in Constellations. It is a Xeelee story of alien supertechnology, somewhere between a Hal Clement and a Larry Niven setting. As the story progresses, new wonders are seen and new layers of insight are reached. This is the essence of hard SF*

The Navy ferry stood by. From the ship's position, several stellar diameters away, the star was a black disc, like a hole cut out of the sky.

The Navy ship receded. Pala was to descend to the star alone in a flitter—alone save for her Virtual tutor, Dano.

The flitter, light and invisible as a bubble, swept inward, silent save for the subtle ticking of its instruments. The star had about the mass of Earth's sun, and though it was dark, Pala imagined she could feel that immense mass tugging at her.

Her heart hammered. This really was a star, but it was somehow cloaked, made perfectly black save for pale, pixel-small specks, flaws in the dark mask, that were lakes of light. She'd seen the Navy scouts' reports, even studied the Virtuals, but until this moment she hadn't been able to believe in the extraordinary reality.

But she had a job to do, and had no time to be overawed. The Navy scouts said there were humans down there—humans living with, or somehow on, the star itself. Relics of an ancient colonizing push, they now had to be reabsorbed into the greater mass of a mankind at war. But the Galaxy was wide, and Pala, just twenty-five years old, was the only Missionary who could be spared for this adventure.

Dano was a brooding presence beside her, peering out with metallic Eyes. His chest did not rise and fall, no breath whispered from his mouth. He was projected from an implant in her own head, so that she could never be free of him, and she had become resentful of him. But Pala had grown up on Earth, under a sky so drenched with artificial light you could barely see the stars, and right now she was grateful for the company even of a Commissary's avatar.

And meanwhile, that hole in the sky swelled until its edges passed out of her field of view.

The flitter dipped and swiveled and swept along the line of the star's equator. Now she was flying low

over a darkened plain, with a starry night sky above her. The star was so vast, its diameter more than a hundred times Earth's, that she could see no hint of curvature in its laser-straight horizon.

"Astonishing," she said. "It's like a geometrical exercise."

Dano murmured, "And yet, to the best of our knowledge, the photosphere of a star roils not a thousand kilometers beneath us, and if not for this—sphere, whatever it is—we would be destroyed in an instant, a snowflake in the mouth of a furnace. What's your first conclusion, Missionary?"

Pala hesitated before answering. It was so recently that she had completed her assessments in the Academies on Earth, so recently that the real Dano had, grudgingly, welcomed her to the great and ancient enterprise that was the Commission for Historical Truth, that she felt little confidence in her own abilities. And yet the Commission must have faith in her, or else they wouldn't have committed her to this mission.

"It is artificial," she said. "The sphere. It must be."

"Yes. Surely no natural process could wrap up a star so neatly. And if it is artificial, who do you imagine might be responsible?"

"The Xeelee," she said immediately. Involuntarily, she glanced up at the crowded stars, bright and vivid here, five thousand light years from Earth. In the hidden heart of the Galaxy mankind's ultimate foe lurked; and surely it was only the Xeelee who could wield such power as this.

There was a change in the darkness ahead. She saw it first as a faint splash of light near the horizon, but as the flitter flew on that splash opened out into a rough disc that glowed pale blue-green. Though a speck against the face of the masked star, it was sizable in itself—perhaps as much as a hundred kilometers across.

The flitter came to rest over the center of the feature. It was like a shard of Earth, stranded in the night: she looked down at the deep blue of open water, the mistiness of air, the pale green of cultivated land and forest, even a grayish bubbling that must be a town. All of this was contained under a dome, shallow and flat and all but transparent. Outside the dome what looked like roads, ribbons of silver, stretched away into the dark. And at the very center of this strange scrap of landscape was a shining sheet of light.

"People," Dano said. "Huddling around that flaw in the sphere, that lake of light." He pointed. "I think there's some kind of port at the edge of the dome. You'd better take the flitter down by hand."

Pala touched the small control panel in front of her, and the flitter began its final descent.

They cycled through a kind of airlock and emerged into fresh air, bright light.

It wasn't quite daylight. The light was diffuse, like a misty day on Earth, and it came not from a sun but from mirrors on spindly poles. The atmosphere was too shallow for the "sky" to be blue, and through the dome's distortion Pala saw smeared-out star fields. But the sky contained clouds, pale, streaky clouds.

A dirt road led away from the airlock. Pala glimpsed clusters of low buildings, the green of forest clumps and cultivated fields. She could even smell wood smoke.

Dano sniffed. "Lethe. *Agriculture*. Typical Second Expansion."

This pastoral scene wasn't a landscape Pala was familiar with. Earth was dominated by sprawling Conurbations, and fields in which nanotechnologies efficiently delivered food for the world's billions. Still, she felt oddly at home here. But she wasn't at home.

"It takes a genuine effort of will," she said, "to remember where we are."

The scouts had determined that the stellar sphere was rotating as a solid, and that this equatorial site was moving at only a little less than orbital speed. This arrangement was why they experienced such an equable gravity; if not for the compensating effects of centrifugal force, they would have been crushed by nearly thirty times Earth standard. She could *feel* none of this, but nevertheless, standing here, gazing at grass and trees and clouds, she really was soaring through space, actually circling a star in less than a standard day.

"Here comes the welcoming party," Dano said dryly.

Two people walked steadily up the road, a man and a woman. They were both rather squat, stocky, dark. They wore simple shifts and knee-length trousers, practical clothes, clean but heavily repaired. The man might have been sixty. His hair was white, his face a moon of wrinkles. The woman was younger, perhaps not much older than Pala. She wore her black hair long and tied into a queue that nestled over her spine, quite unlike the short and severe style of the Commission. Her shift had a sunburst pattern stitched into it, a welling up of light from below.

The man spoke. "My name is Sool. This is Bicansa. We have been delegated to welcome you." Sool's words, in his own archaic tongue, were seamlessly translated in Pala's ears. But underneath the tinny murmuring in her ear she could hear Sool's own gravelly voice. "I represent this community, which we call Home..."

"Inevitably," Dano murmured.

"Bicansa comes from a community to the north of here." Pala supposed he meant another inhabited light lake. She wondered how far away that was; she had seen nothing from the flutter.

The woman Bicansa simply watched the newcomers. Her expression seemed closed, almost sullen. She could not have been called beautiful, Pala thought; her face was too round, her chin too weak for that. But there was a strength in her dark eyes that intrigued Pala.

Pala made her own formal introductions. "Thank you for inviting us to your community." Not that the Navy scouts had left the locals any choice. "We are emissaries of the Commission for Historical Truth, acting on behalf of the Coalition of Interim Governance, which in turn directs and secures the Third Expansion of mankind..."

The man Sool listened to this with a pale smile, oddly weary. Bicansa glared.

Dano murmured, "Shake their hands. Just as well it isn't an assessment exercise, Missionary!"

Pala cursed herself for forgetting such an elementary part of contact protocol. She stepped forward, smiling, her right hand outstretched.

Sool actually recoiled. The custom of shaking hands was rare throughout the worlds of the Second Expansion; evidently it hadn't been prevalent on Earth when that great wave of colonization had begun. But Sool quickly recovered. His grip was firm, his hands so huge they enclosed hers. Sool grinned. "A farmer's hands," he said. "You'll get used to it."

Bicansa offered her own hand readily enough. But Pala's hand passed through the woman's, making it break up into a cloud of blocky pixels.

It was this simple test that mandated the handshake protocol. Even so, Pala was startled. "You're a Virtual."

"As is your companion," said Bicansa levelly. "I'm close by—actually just outside the dome. But don't worry. I'm a projection, not an avatar. You have my full attention."

Pala felt unaccountably disappointed that Bicansa wasn't really here.

Sool indicated a small car, waiting some distance away, and he offered them the hospitality of his home. They walked to the car.

Dano murmured to Pala, "I wonder why this Bicansa hasn't shown up in person. I think we need to watch that one." He turned to her, his cold Eyes glinting. "Ah, but you already are—aren't you, Missionary?"

Pala felt herself blush.

Sool's village was small, just a couple of dozen buildings huddled around a small scrap of grass-covered common land. There were shops and manufactories, including a carpentry and pottery works, and an inn. At the center of the common was a lake, its edges regular—a reservoir, Pala thought. The people's water must be recycled, filtered by hidden machinery, like their air. By the shore of the lake, children played and lovers walked.

This was a farming community. In the fields beyond the village, crops grew toward the reflected glare of spindly mirror towers, waving in breezes wafted by immense pumps mounted at the dome's periphery. And animals grazed, descendants of cattle and sheep brought by the first colonists. Pala, who had never seen an animal larger than a rat, stared, astonished.

The buildings were all made of wood, neat but low, conical. Sool told the visitors the buildings were modeled after the tents the first colonists here had used for shelter. "A kind of memorial to the First," he said. But Sool's home, with big windows cut into the sloping roof, was surprisingly roomy and well lit. He had them sit on cushions of what turned out to be stuffed animal hide, to Pala's horror.

Everything seemed to be organic, made of wood or baked clay or animal skin. All the raw material of the human settlement had come from cometary impacts, packets of dirty ice from this star's outer system that had splashed onto the sphere since its formation. But there were traces of art. On one wall hung a kind of schematic portrait, a few lines to depict a human face, lit from below by a warm yellow light. And these people could generate Virtuals, Pala reminded herself; they weren't as low tech as they seemed.

Sool confirmed that. "When the First found this masked star, they created the machinery that still sustains us—the dome, the mirror towers, the hidden machines that filter our air and water. We must maintain the machines, and we go out to bring in more water ice or frozen air." He eyed his visitors. "You must not think we are fallen. We are surely as technologically capable as our ancestors. But every day we acknowledge our debt to the wisdom and heroic engineering of the First." As he said this, he touched his palms together and nodded his head reverently, and Bicansa did the same.

Pala and Dano exchanged a glance. Ancestor worship?

A slim, pretty teenage girl brought them drinks of pulped fruit. The girl was Sool's daughter; it turned out his wife had died some years previously. The drinks were served in pottery cups, elegantly shaped and painted deep blue, with more inverted-sunburst designs. Pala wondered what dye they used to create such a rich blue.

Dano watched the daughter as she politely set a cup before himself and Bicansa; these colonists knew Virtual etiquette. Dano said, "You obviously live in nuclear families."

"And you don't?" Bicansa asked curiously.

"Nuclear families are a classic feature of Second Expansion cultures. You are typical." Pala smiled brightly, trying to be reassuring, but Bicansa's face was cold.

Dano asked Sool, "And you are the leader of this community?"

Sool shook his head. "We are few, Missionary. I'm leader of nothing but my own family. After your scouts' first visit the Assembly asked me to speak for them. I believe I'm held in high regard; I believe I'm trusted. But I'm a delegate, not a leader. Bicansa represents her own people in the same way. We have to work together to survive; I'm sure that's obvious. In a sense we're all a single extended family here..."

Pala murmured to Dano, "Eusocial, you think? The lack of a hierarchy, an elite?" Eusociality—hive living—had been found to be a common if unwelcome social outcome in crowded, resource-starved colonies.

Dano shook his head. "No. The population density's nowhere near high enough."

Bicansa was watching them. "You are talking about us. Assessing us."

"That's our job," Dano said levelly.

"Yes, I've learned about your job," Bicansa snapped. "Your mighty Third Expansion that sweeps across the stars. You're here to assimilate us, aren't you?"

"Not at all," Pala said earnestly. It was true. The Assimilation was a separate program, designed to process the alien species encountered by the Third Expansion wavefront. Pala worked for the Office of Cultural Rehabilitation which, though controlled by the same agency of the Commission for Historical Truth as the Assimilation, was intended to handle relic human societies implanted by earlier colonization waves, similarly encountered by the Expansion. "My mission is to welcome you back to a unified mankind. To introduce you to the Druz Doctrines which shape all our actions—"

"And to tell us about your war," Bicansa said coldly.

"The reality of the war cannot be denied," Dano snapped back.

Some millennia ago, humanity had almost been destroyed by alien conquerors called the Qax. Since then, unified by the severe Druz Doctrines, humanity had recovered, expanded, conquered all—but one foe remained, the mighty Xeelee, with whom the final confrontation was only beginning.

Bicansa wasn't impressed. "Your arrogance is dismaying," she said. "You've only just landed here, only just come swooping down from the sky. You're confronted by a distinctive culture five thousand years old. We have our own tradition, literature, art—even our own language, after all this time. And yet you think you can make a judgment on us immediately."

"Our judgment on your culture, or your lack of it, doesn't matter," said Dano. "Our mission is specific."

"Yes. You're here to enslave us."

Sool said tiredly, "Now, Bicansa—"

"You only have to glance at the propaganda they've been broadcasting since their ships started to orbit over us. They'll break up our farms and use our land to support their war. And we'll be taken to work in their weapons factories, our children sent to a front line a thousand light years away."

"We're all in this together," Dano said. "All of humanity. You can't hide, madam, not even here."

Pala said, "Anyhow, it may not be like that. We're Missionaries, not Navy troops. We're here to find out about you. And if your culture has something distinctive to offer the Third Expansion, why then—"

"You'll spare us?" Bicansa snapped.

"Perhaps," said Dano. He reached for his cup, but his gloved fingers passed through its substance. "Though it will take more than a few bits of pottery."

Sool listened to all this, a deep tiredness in his sunken eyes. Pala perceived that he saw the situation just as clearly as Bicansa did, but while she was grandstanding, Sool was absorbing the pain, seeking to find a way to save his way of life. Pala, despite all her training, couldn't help but feel a deep empathy for him.

They were all relieved when Sool stood. "Come," he said. "You should see the heart of our community, the Lake of Light."

The Lake was another car journey away. The vehicle was small and crowded, and Dano, uncomplaining, sat with one Virtual arm embedded in the substance of the wall.

They traveled perhaps thirty kilometers inward from the port area to the center of the lens-shaped colony, Pala peered out at villages and farms.

"You see we are comfortable," Sool said anxiously. "Stable. We are at peace here, growing what we need, raising our children. This is how humans are meant to live. And there is room here, room for billions more." That was true; Pala knew that the sphere's surface would have accommodated ten thousand Earths, more. Sool smiled at them. "Isn't that a reason for studying us, visiting us, understanding us—for letting us be?"

"*You* haven't expanded," Dano said coolly. "You've sat here in the dome built by your forefathers five thousand years ago. And so have your neighbors, in the other colonies strung out along this star's equator."

"We haven't needed any more than this," Sool said, but his smile was weak.

Bicansa, sitting before Pala, said nothing throughout the journey. Pala wished she could talk to this woman alone, but that was of course impossible. Her neck was narrow, elegant, her hair finely brushed.

As they approached the Lake the masts of the mirror towers clustered closer together. It was as if they were passing through a forest of skeletal trees, impossibly tall, crowned by light. But there was a brighter glow directly ahead, like a sun rising through trees.

They broke through the last line of towers. The car stopped.

As they walked forward, the compacted comet dirt thinned and scattered. Pala found herself standing on a cool, steel-gray surface—the substance of the sphere itself, the shell that enclosed a sun. It was utterly lifeless, disturbingly blank.

Dano, more practical, kneeled down and thrust his Virtual hand through the surface. Images flickered before his face, sensor readings rapidly interpreted.

"Come," Sool said to Pala, smiling. "You haven't seen it yet..."

Pala stepped forward and saw the Lake of Light itself.

The universal floor was a thin skin here, and a white glow poured out of the ground to drench the dusty air. Scattered clouds shone in the light from the ground, bright against a dark sky. As far ahead as she could see, the Lake stretched away, shining. It was an extraordinary, unsettling sight, baffling for a human sensorium evolved for landscape and sun, as if the world had been inverted. But the light was being harvested, scattered from one great mirrored dish to another, so that its life-giving glow was spread across the colony.

Sool walked forward, onto the glowing surface. "Don't worry," he said to Pala. "It's hot, but not so bad here at the edge; the real heat is toward the Lake's center. But even that is only a fraction of the star's output, of course. The sphere keeps the rest." He held out his arms and smiled. It was as if he were floating in the light, and he cast a shadow upward into the misty air. "Look down."

She saw a vast roiling ocean, almost too bright to look at directly, where huge vacuoles surface and burst. It was the photosphere of a star, just a thousand kilometers below her.

"Stars give all humans life," Sool said. "We are their children. Perhaps this is the purest way to live, to huddle close to the star-mother, to use all her energy..."

"Quite a pitch," Dano murmured in her ear. "But he's targeting you. Don't let him take you in."

Pala felt extraordinarily excited. "But Dano—here are people living, breathing, even growing crops, a thousand kilometers above the surface of a sun! Is it possible this is the true purpose of the sphere—to *terraform a star*?"

Dano snorted his contempt. "You always were a romantic. Missionary. What nonsense. Stick to your duties. For instance, have you noticed that the girl has gone?"

When she looked around, she realized that it was true; Bi-cansa had disappeared.

Dano said, "I've run some tests. You know what this stuff is? Xeelee construction material. This cute old man and his farm animals and grandchildren are living on a Xeelee artifact. And it's just ten centimeters thick..."

"I don't understand," she admitted.

"We have to go after her," Dano said. "Bicansa. Go to her 'community in the north,' wherever it is. I have a feeling that's where we'll learn the truth of this place. All this is a smokescreen."

Sool was still trying to get her attention. His face was underlit by sunlight, she saw, reminding her of the portrait in his home. "You see how wonderful this is? We live on a platform, suspended over an ocean of light, and all our art, our poetry is shaped by our experience of this bounteous light. How can you even think of removing this from the spectrum of human experience?"

"Your culture will be preserved," she said hopefully, wanting to reassure him. "On Earth there are museums."

"Museums?" Sool laughed tiredly, and he walked around in the welling fountains of light.

Pala accepted they should pursue the mysterious girl, Bicansa. But she impulsively decided she had had enough of being remote from the world she had come to assess.

"Bicansa is right. We can't just swoop down out of the sky. We don't know what we're throwing away if we don't take the time to look."

"But there is no time," Dano said wearily. "The Expansion front is encountering thousands of new star systems every *day*. Why do you think you're here alone?"

"Alone save for you, my Virtual conscience."

"Don't get cocky."

"Well, whether you like it or not, I am here, on the ground, and I'm the one making the decisions."

And so, she decided, she wasn't going to use her flitter. She would pursue Bicansa as the native girl had traveled herself—by car, over the vacuum road laid out over the star sphere.

"You're a fool," snapped Dano. "We don't even know how far north her community *is*."

He was right, of course. Pala was shocked to find out how sparse the scouts' information on this star-world was. There were light lakes scattered across the sphere from pole to pole, but away from the equator the compensating effects of centrifugal force would diminish, and in their haste the scouts had assumed that no human communities would have established themselves away from the standard-gravity equatorial belt.

She would be heading into the unknown, then. She felt a shiver of excitement at the prospect. But Dano knew her too well, and he admonished her for being distracted from her purpose.

Also he insisted that she shouldn't use one of the locals' cars, as she had planned, but a Coalition design shipped down from the Navy ferry. And, he said, she would have to wear a cumbersome hard-carapace skinsuit the whole way. She gave in to these conditions with bad grace.

It took a couple of days for the preparations to be completed, days she spent alone in the flitter, lest she be seduced by the bucolic comfort of Home. But at last everything was ready, and Pala took her place in the car.

The road ahead was a track of comet-core metal, laid down by human engineering across the immense face of the star sphere. To either side were scattered hillocks of ice, uirple-streaked in the starlight. They were the wrecks of comets that had splashed against the unflinching floor of the sphere. Even now, as she peered out through the car's thick screen, at the sight of this road to nowhere, she shivered.

She set off.

The road surface was smooth, the traction easy. The blue-green splash of the domed colony receded behind her. The star sphere was so immense it was effectively an infinite plain, and she would not see the colony pass beyond the horizon. But it diminished to a line, a scrap of light, before becoming lost in the greater blackness.

When she gave the car its head, it accelerated smoothly to astounding speeds, to more than a thousand kilometers an hour. The car, a squat bug with big, tough, all-purpose tires, was state-of-the-art Coalition engineering and could keep up this pace indefinitely. But there were no landmarks save the meaningless hillocks of ice, the arrow-straight road laid over blackness, and despite the immense speed, it was as if she weren't moving at all.

And, somewhere in the vast encompassing darkness ahead, another car fled.

"Xeelee construction material," Dano whispered. "Like no other material we've encountered. You can't cut it, bend it, break it.

"You can see that here; even if we could build a sphere around a star and set it spinning in the first place,



it would bulge at the equator and tear itself apart. But *this* shell is perfectly spherical, despite those huge stresses, to the limits of our measurements.

"Some believe the construction material doesn't even belong to this universe. But it can be shaped by the Xeelee's own technology, controlled by gadgets we *call flowers*."

"It doesn't just appear out of nowhere."

"Of course not. Even the Xeelee have to obey the laws of physics. Construction material seems to be manufactured by the direct conversion of radiant energy into matter, one hundred percent efficient, Stars burn by fusion fire; a star like this, like Earth's sun, probably converts some six hundred million tons of its substance to energy every second..."

"So if the sphere is ten centimeters thick, and if it was created entirely by the conversion of the star's radiation—" She called up a Virtual display before her face, ran some fast calculations.

"It's maybe five thousand years old," Dano murmured. "Of course, that's based on a lot of assumptions. And given the amount of comet debris the sphere has collected, that age seems too low—unless the comets have been *aimed* to infall here..."

She slept, ate, performed all her biological functions in the suit. The suit was designed for long duration occupancy, but it was scarcely comfortable: No spacesuit yet designed allowed you to scratch an itch properly. However, she endured.

After ten days, as the competition between the star's gravity and the sphere's spin was adjusted, she could feel the effective gravity building up. The local vertical tipped forward, so that it was as if the car were climbing an immense, unending slope. Dano insisted she take even more care moving around the cabin and spend more time lying flat to avoid stress on her bones.

Dano himself, of course, a complacent Virtual, sat comfortably in an everyday chair.

"Why?" she asked. "Why would the Xeelee create this great punctured sphere? What's the point?"

"It may have been an industrial accident," he said languidly. "There's a story from before the Qax Extirpation, predating even the Second Expansion. It's said that a human traveler once saved himself from a nova flare by huddling behind a scrap of construction material. The material soaked up the light, you see, and expanded dramatically... The rogue scrap could have grown and grown, easily encompassing a star like this. It's probably just a romantic myth. This may alternatively be some kind of technology demonstrator."

"I suppose we'll never know," she said. "And why the light lakes? Why not make the sphere perfectly efficient, totally black?"

He shrugged. "Well, perhaps it's a honey trap." She had never seen a bee or tasted honey, and she didn't understand the reference. "Sool was right that this immense sphere-world could host billions of humans—trillions. Perhaps the Xeelee hope that we'll flock here, to this place with room to breed almost without limit, and die and grow old without achieving anything, just like Sool, and not bother them any more. But I think that's unlikely."

"Why?"

"Because the effective gravity rises away from the equator. So the sphere isn't much of a honey trap, because we can't inhabit most of it. Humans here are clearly incidental to the sphere's true purpose." His Virtual voice was without inflection, and she couldn't read his mood.

They passed the five-gravity latitude before they even glimpsed Bicansa's car. It was just a speck in the high-magnification sensor displays, not visible to the naked eye, thousands of kilometers ahead on this tabletop landscape. It was clear that they weren't going to catch Bicansa without going much deeper into the sphere's effective gravity well.

"Her technology is almost as good as ours," Paia gasped. "But not quite."

"Try not to talk," Dano murmured. "You know, there are soldiers, Navy tars, who could stand multiple gravity for days on end. You aren't one of them."

"I won't turn back," Pala groaned. She was lying down, cushioned by her suit, kept horizontal by her couch despite the cabin's apparent tilt upward. But even so the pressure on her chest was immense.

"I'm not suggesting you do. But you will have to accept that the suit knows best..."

When they passed six gravities, the suit flooded with a dense, crimson fluid that forced its way into her ears and eyes and mouth. The fluid, by filling her, would enable her to endure the immense, unending pressure of the gravity. It was like drowning.

Dano offered no sympathy. "Still glad you didn't take the flitter? Still think this is a romantic adventure? Ah, but that was the point, wasn't it? *Romance*. I saw the way you looked at Bicansa. Did she remind you of gentle comforts, of thrilling nights in the Academy dormitories?"

"Shut up," she gasped.

"Didn't it occur to you that she was only a Virtual image, and that image might have been *edited*! You don't even know what she looks like..."

The fluid tasted of milk. Even when the feeling of drowning had passed, she never learned to ignore its presence in her belly and lungs and throat; she felt as though she were on the point of throwing up, all the time. She slept as much as she could, trying to shut out the pain, the pressure in her head, the mocking laugh of Dano.

But, trapped in her body, she had plenty of time to think over the central puzzle of this star-world—and what to do about it. And still the journey continued across the elemental landscape, and the astounding, desolating scale of this artificial world worked its way into her soul.

They drove steadily for no less than forty days, traversing a great arc of the star sphere stretching from the equator toward the pole, across nearly a million kilometers. Although as gravity dominated the diminishing centrifugal forces, the local vertical tipped back up and the plain seemed to level out, eventually the effective gravity force reached more than twenty standard.

The car drew to a halt.

Pala insisted on seeing for herself. Despite Dano's objections, she had the suit lift her up to the vertical, amid a protesting whine of exoskeletal motors. As the monstrous gravity dragged at the fluid in which she was embedded, waves of pain plucked at her body. But she could see.

Ahead of the car was another light lake, another pale glow, another splash of dimly lit green. But there were no trees or mirror towers, she saw; nothing climbed high above the sphere's surface here.

"This is one of a string of settlements around this line of latitude," Dano said. "The Navy scouts have extended their coverage, a bit belatedly... The interaction of gravity and the sphere's spin is interesting. The comet debris tends to collect at the equator, where it's spun off, or at the poles, where the spin

effects are least and the gravity draws it in. But you also have Coriolis effects, sideways kicks from the spin. In the in-between latitudes there must be weather, a slow weather of drifting comet ice. Earth's rotation influences its weather, the circulation of the atmosphere, of course, but in that case the planet's gravity always dominates. We've never encountered a world like this, with such ferocious spin—it's as if Earth was spinning in a couple of hours..."

"Dano—"

"Yes. Sorry. My weakness, Pala, is a tendency to be too drawn to intellectual puzzles—while you are too drawn to people. The point is that *this* is the sphere's true habitable region, this and the south pole, the place all the air and water sink to. It's just a shame it's under crushing, inhuman gravity."

Bicansa appeared in the air.

She stood in the car's cabin, unsuited, as relaxed as Dano. Pala felt there was some sympathy in her Virtual eyes. But she knew now without doubt that this wasn't Bicansa's true aspect.

"You came after me," Bicansa said.

"I wanted to know," Pala said. Her voice was a husk, muffled by the fluid in her throat. "Why did you come to the equator—why meet us? You could have hidden here."

"Yes," Dano said grimly. "Our careless scouting missed you."

"We had to know what kind of threat you are to us. I had to see you face to face, take a chance that I would expose—" She waved a hand. "This."

"You know we can't ignore you," Dano said. "This great sphere is a Xeelee artifact. We have to learn what it's for..."

"That's simple," Pala said. She had worked it out, she thought, during her long cocooning. "We were thinking too hard, Dano. *The sphere is a weapon.*"

"Ah," Dano said grimly. "Of course. And I always believed your thinking wasn't bleak enough, Pala."

Bicansa looked bewildered. "What are you talking about? Since the First landed, we always thought of this sphere as a place that gives life, not death."

Dano said, "You wouldn't think it was so wonderful if you inhabited a planet of this star as the sphere slowly coalesced—if your ocean froze out, your air began to snow... The sphere is a machine that kills a star—or rather, its planets, while preserving the star itself for future use. I doubt if there's anything special about this system, this star." He glanced at the sky, metal Eyes gleaming. "It is probably just a trial run of a new technology, a weapon for a war of the future. One thing we know about the Xeelee is that they think long term."

Bicansa said, "What a monstrous thought... So my whole culture has developed on the hull of a weapon. But even so, it is my culture. And you're going to destroy it, aren't you? Or will you put us in a museum, as you promised Sool?"

No, Pala thought. I can't do that. "Not necessarily," she whispered.

They both turned to look at her. Dano murmured threateningly, "What are you talking about, Missionary?"

She closed her eyes. Did she really want to take this step? It could be the end of her career if it went wrong, if Dano failed to back her. But she had sensed the gentleness of Sool's equatorial culture and had now experienced for herself the vast spatial scale of the sphere—and here, still more strange, was this remote polar colony. This was an immense place, she thought, immense both in space and time—and yet humans had learned to live here. It was almost as if humans and Xeelee were learning to live together. It would surely be wrong to allow this unique world to be destroyed, for the sake of short-term gains.

And she thought she had a way to keep that from happening.

"If this is a weapon, it may one day be used against us. And if so we have to find a way to neutralize it." The suit whirred as she turned to Bicansa. "Your people can stay here. You can live your lives the way you want. I'll find ways to make the Commission accept that. But there's a payback."

Bicansa nodded grimly. "I understand. You want us to find the Xeelee flower."

"Yes," whispered Pala. "Find the off switch."

Dano faced her, furious. "You don't have the authority to make a decision like that. Granted this is an unusual situation. But these are still human colonists, and you are still a Missionary. Such a *deal* would be unprecedented."

"But," Pala whispered, "Bicansa's people are no longer human. Are you, Bicansa?"

Bicansa averted her eyes. "The First were powerful. Just as they made this star-world fit for us, so they made us fit for it."

Dano, astonished, glared at them both. Then he laughed. "Oh, I see. A loophole! If the colonists aren't fully human under the law, you can pass the case to the Assimilation, who won't want to deal with it either... You're an ingenious one, Pala! Well, well. All right, I'll support your proposal at the Commission. No guarantees, though..."

"Thank you," Bicansa said to Pala. She held out her Virtual hand, and it passed through Pala's suit, breaking into pixels.

Dano had been right, Palo thought, infuriatingly right, as usual. He had seen something in her, an attraction to this woman from another world she hadn't even recognized in herself. But Bicansa didn't even *exist* in the form Pala had perceived. Was she really so lonely? Well, if so, when she got out of here, she would do something about it.

And she would have to think again about her career choice. Dano had always warned her about an excess of empathy. It seemed she wasn't cut out for the duties of a Missionary—and next time she might not be able to find a loophole.

With a last regretful glance, Bicansa's Virtual sublimated into dusty light.

Dano said briskly, "Enough's enough. I'll call down the flitter to get you out of here before you choke to death..." He turned away, and his pixels flickered as he worked.

Pala looked out through the car's window at the colony, the sprawling, high-gravity plants, the dusty, flattened lens of shining air. She wondered how many more colonies had spread over the varying gravity latitudes of the star shell, how many more adaptations from the standard form had been tried—how many people actually lived on this immense artificial world. There was so much here to explore.

The door of Bicansa's car opened. A creature climbed out cautiously. In a bright orange pressure suit, its

body was low-slung, supported by four limbs as thick as tree trunks. Even through the suit Pala could make out immense bones at hips and shoulders, and massive joints along the spine. It lifted its head and looked into the car. Through a thick visor Pala could make out a face—thick-jawed, flattened, but a human face nonetheless. The creature nodded once. Then it turned and, moving heavily, carefully, made its way toward the colony and its lake of light.