

# Sticks and Stones

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Tom Jolly

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## Chapter 1

Captain Jennifer Kelley still called it a burial even though the body was just getting ejected into space. Some of the crew had collected a variety of flowers from the plants growing everywhere on the *Beagle-4* and placed them on Mary Cott's chest before they wrapped her in a vented bag. There was no torpedo tube or fancy coffin involved. They just took the corpse to an airlock, manhandled it through in zero g and awkwardly pushed it out. Chief Scientist Anita Blackthorn heard one of the techs, Bob Lowenstein, talking about it earlier. "We're just polluting space. You think just tossing out one body won't make any difference, but it's like beer cans. After a hundred years, you can't walk down a road without stepping on a few."

One of his friends laughed. Anita tried to ignore them and thought about this latest suicide, the corpse drifting slowly away from the ship, and the idea that she might be spending the rest of her life confined to an exploratory vessel with the likes of Bob. Mary Cott might have made the better choice, but now they were down by one biotech-engineer-cook, and Earth wasn't about to provide them with another. What Bob said wasn't true, anyway; they were coasting along at near light speed. When the body drifted outside their radiation shielding, interstellar gas, even as tenuous as it was, would start eating away at the corpse, turning it into a tiny gamma-ray source. In a year or two, there would be nothing to see.

"Haversham is taking it pretty hard," Anita confided to the Captain. "He was working with her studying the slime. I think he and Mary were paired up."

A sputtering squeak of a voice spoke on their comm, "The slime is listening."

"Oh, sorry, Rosie," Anita said. "I didn't realize you were patched in. This has to be boring for you." Rosie was a sub-body of sentient colonial bacteria removed from one of the moons of Rocinante in the Mu Arae system, where the ship's crew just spent a year learning about the world-sized organism and bargaining with it for passage on their ship. They'd beamed some advanced materials engineering they'd learned from it back to Earth, though Earth would have to wait fifty years to receive the soliton packet from the Mu Arae system. God only knew whether it would still be useful to them by then.

But being in contact with any alien biology meant that they could never go home, despite Coleway's Law about the inability for one alien ecosystem to infect and take over another. Most people classified the law as "a speculative hypothesis," only valid until a catastrophic accident proved it wrong. Despite the evidence of contact with several bacteria-level alien ecosystems, nobody wanted the crew back home again, a decision made shortly after their first encounter.

"I don't find this boring at all, Anita," said Rosie. "I am just surprised you didn't add Mary's biomass to the existing organic supply for the ship. Why, I could have even . . ."

"Don't say it, Rosie. Humans have strong taboos about eating each other," Anita said.

"But she was . . ."

"Stop. It's bad enough you slither around lapping up our dead skin cells like it's a gourmet buffet."

The comm officer, William Haversham, approached the captain in the viewing lounge from where they observed the burial. He looked pale and distraught, his attention torn between the space-burial and his comm pad. "Captain? We have a message from the Boden colony," he said softly. The captain could hear the pain in his voice.

"Boden? They're fifteen lights from here, aren't they?" she said.

"Yes, sir."

"It'll wait a few minutes, then, Comm." *Or days*, she thought. She leaned back in her seat, sighing, and watched Mary as her mummy-wrapped body tumbled slowly out of sight, finally becoming a winking white dot like a tiny pulsar lost against the background of stars. They really couldn't afford to lose more people. They had to find a home, and then encourage other explorers to find them. Thirty people weren't enough to start a new colony.

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Zero g had been desirable for the burial, but the warp field ramped back up shortly thereafter, and the *Beagle-4* continued toward the next unexplored star system on their manifest. Going from zero g to one g usually resulted in what the crew referred to as "the tomato catastrophe," where many of the ripe tomatoes came off their vines, somehow evading the confines of their planters, pots, and hydroponic trays to end up splattered on the floor, or rolling around looking for a place to hide until they rotted. Apples were a minor hazard, too, but they didn't make as much of a mess.

Over the years, a considerable fraction of the floor space and shelf space on the *Beagle-4* had been dedicated to a wide variety of plants, even though they didn't need them for food since they could synthesize everything from the recycler. But the captain felt the fresh food and greenery was good for morale, though the room with the sleep pods had been renamed "the graveyard" due to the number of flowering plants that ended up there. It was a nice environment in which to wake when you came out of a three-week sleep cycle, but the captain wished the morbid nickname hadn't stuck.

She found Haversham cleaning up tomato guts from the nursery with a little help from Rosie. "So what's the message from Boden?" the captain asked.

Haversham stood up and brushed himself off. "The colony's space telescope has picked up some strange readings from a planet orbiting a star they're calling Hermit," Haversham said. "It's less than ten lights from here."

The captain raised her eyebrows. "Really? That's pretty close. How come Earth didn't see it a hundred years ago?"

"Just bad luck," he said. "It was concealed from Earth's view by another star. Earth never saw it, and the proper motion of the two stars kept them lined up. It wasn't until Boden got their space telescope up and pointed toward the right patch of sky that anyone even noticed."

"What's so unusual about the planet?" she asked.

"What's not? It seems to be almost as big as Earth based on transit dimming, and it's orbiting fairly close to the G3 sun. But they see almost no solar wobble caused by the planet. They also detected organics and oxygen in the atmosphere. Based on the measurements, the planetary mass can't be more than 10 percent of Earth mass, perhaps a lot less. Maybe it's hollow?"

"You mean, like a spaceship?"

“Well, yeah,” Haversham said. “We can hope. It’s huge and light. Boden also forwarded us some news releases from their colony, speculating on the presence of alien technology. People are excited. There will be a lot of interest in this object.”

“They’re suggesting we check it out?”

“Better that we get infected by alien spudge than them. We’re already banned from Earth. And we’re the closest survey vessel and mostly moving the right direction. We’ll get there before anyone else can.”

“Yeah. I suppose.” Too much interest in the planet could mean warships and armed colonial vessels showing up to make claims. Worst case, the *Beagle-4* could do their job and just get out of the way of anyone willing to fight for it. “If it’s an alien spaceship, we wouldn’t be seeing any atmospheric measurements.”

“Maybe it’s leaking?”

The captain rolled her eyes, making sure Haversham noticed.

“Anyway,” Haversham continued, “there also appears to be a gas giant in a highly eccentric orbit around Hermit. Weird, though. These seem to be the only two planets—or objects—in the system.”

“Do we have a name yet for the small one?”

“Boden called it Hermit’s Cave.”

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Even with relativistic time dilation and continuous acceleration and deceleration, it would take them over one ship year to reach the new target. When Captain Kelley had been training for the mission, the trainers explained how the ship’s engines achieved this: “We create a flat, dense g-field sheet in front of us. The ship free-falls into the g-field at ten gs, but we don’t feel it because, well, we’re free falling. And the g-field is accelerating away from us at ten gs, so we never catch up. It’s a delicate balance of forces that we control. We add an extra g to produce Earth-like conditions inside the ship, and have a boom from the engine to the main ship so it doesn’t pull us in.”

“That must take a lot of energy,” someone mentioned.

The trainer nodded and said, “That’s what the hydrogen antimatter scoops are for.”

Ultimately, it meant they could go eight light-years in about a year of ship’s time. Eight real-years on Earth would pass for one ship year. And most of that year was spent in cryo sleep.

She’d tried to fill in some propulsion details from Raphael Mendez, one of their engineers, during their long flight, like understanding the *Beagle*’s radiation shields, but Raphael wasn’t the most patient teacher. Truth be told, as captain, she didn’t need to know a lot of the technical details of the ship, though it helped. Her job was more management than anything else. Keeping the crew in line and sane after years in close contact wasn’t an easy task.

The new destination was a cause for celebration, which the captain encouraged, as they expected Hermit to be six months closer than their previous target, and they were fairly confident based on the unusual measurements they’d received that it wasn’t going to be another slime-covered world, like the previous six. The conjecture kept them sane, in addition to drug-induced cryo sleep cycles that let them sleep twenty days out of twenty-five. This meant that usually only six of the crew were awake at any given time, and, unsurprisingly, this meant that members of the crew petitioned the captain to be paired with people they got along with.

The captain rotated her own waking periods between the cliques, and tried to make sure that all the necessary job functions were covered by each group.

The long travel times between less-than-spectacular planets took a toll on the crewmembers, and there weren’t enough distractions built into the ship to keep depression from setting in. Suicidal depression was something to watch for. Caring for the forest of plants covering most of the ship kept them distracted and busy, but it also reminded them that they could never go home.

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## Chapter 2

“I’m not really sure what I’m seeing here,” Sam Johnson said. “The world looks like it’s covered with five-kilometer-wide pits. There are metal rods on the sides of the pits, but they must

be huge.”

The *Beagle-4* was still over a million kilometers from the planet. It would be another day before they went into orbit around it. The planet was smaller than Earth, with a radius of just over four thousand kilometers.

“And the gravity from the planet indicates a density about one-hundredth of Earth’s,” Anita Blackthorn added. “How deep do you think those pits are?”

Sam shrugged. “We’re getting very little radar back. For all I know, the pits might go all the way down to the center. The surface atmosphere is thin, maybe a thousandth of a bar from what we can see. Judging by how cold this side of the planet is, and how close we are to the sun, I’m guessing that Hermit’s Cave is tidally locked to Hermit.”

“It won’t take long to verify that,” Anita said.

Their sensor resolution improved as the day passed, and eventually they could make out surface details. The planet appeared to be lifeless. Giant boulders or rocks seemed to be connected by huge metallic girders or poles, holding the entire surface together like a giant Tinkertoy project.

Most of the crew were awake by now, watching their approach to the strange planet, wondering what had created the organic signature that the Boden colony had detected.

“It looks dead,” Sam admitted. “No radio, no lights, nobody waving at us. No obvious air.”

Anita was glaring at the monitors, willing them to give her some tidbit of information. “Maybe down in the pits? What the hell did Boden see?”

“We did our own spectroscopic analysis a few weeks out and saw the organics and oxygen, too. So it’s in there. Somewhere.”

“Radar is starting to give us a little detail. Those girders and rocks? There’s more of them down lower. Like a three-dee lattice.”

Anita frowned. “Or a spider web.”

Captain Kelley, standing behind the two, nudged Anita. “Don’t do that. It’s creepy enough already.”

Anita grinned back at the captain, then returned her gaze to the monitors.

“Any chance this thing is natural?” the captain asked.

Sam shook his head. “Definitely artificial. Maybe they started with a planet and started to hollow it out, putting in the girders to stabilize it as they dug, leaving some of the big rocks as structural support. Or maybe the remaining ore just wasn’t worth mining.”

Anita looked doubtful. “Well, you’re the geologist, but it still doesn’t make a lot of sense. Say somebody dug it out, for minerals or whatever, and left this Swiss-cheese structure behind, then where did they come from? There aren’t any useable planets in this system, so they couldn’t have come from here. If they came from a different solar system, what’s so special about this planet that they’d mine the hell out of it and then disappear?”

“Dilithium crystals?” Haversham suggested.

The captain snorted. “Maybe you’ll find something interesting when you reach the surface,” she said.

“Anything is more interesting than this ship for another two years. Maybe we can settle here,” Haversham said.

The captain leaned over and stared at the strange planetary surface: gray rocks and glittering girders. How could this barren derelict be a home for anything?

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Captain Kelley, off-duty, swirled synthesized bourbon in her glass, sitting in the viewing lounge with Marta Rodriguez, one of the ship’s doctors. Two others were in the lounge, talking quietly. With the entire crew awake, every place on the ship seemed crowded now.

“A new planet,” Marta said. “Did you always want to live on another planet, Captain?”

“Not at all. I expected to go back to Earth after three ship years. So, twenty to thirty Earth years.”

Marta stared into her own drink. “I didn’t expect the ban either. I always thought we could go home.”

“We just need to make a new one, Marta. Somehow, we need to make a new place for ourselves.” She tossed down the rest of her bourbon and stood up. “You ready for another?”

“I’m good for now,” Marta said.

The captain walked over to the synthesizer, trying not to let her anger show. She couldn’t help thinking about her husband on Earth—probably dead by now. Hopefully dead by now. Lance Winston had been gunning for a Senate seat and figured that being married to an astronaut would be good for votes. Jennifer Kelley had found him attractive, suave, understanding, and sophisticated, so they got married. The “understanding” part evaporated when he figured out that her original three-year mission was going to take over twenty Earth years. He’d be middle-aged when she returned, a hero, and he’d just be an old Senator. She suggested he take the long sleep so they’d age the same, but he just couldn’t pull himself away from the power plays he was engaged in.

Captain Kelley left Earth.

Senator Winston became powerful in Congress, and his bitter irritation with his wife simmered for years. And once the *Beagle-4* landed on an alien world, a Junior Senator proposed a ban on their return, based on an infection that came from humans living on Mars: an entirely terrestrial infection. Senator Winston championed the proposal, finally finding a way to punish his wayward wife, while bemoaning the terrible sacrifice he had to make in order to protect the Earth from the ravages of alien bacteria.

He was reelected.

Captain Kelley sat down next to Marta with a full glass and stared at the depressingly gray planet. “If I get morose and start talking about my asshole husband again, just take my drink away and walk me to my room, will you?”

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After orbital insertion, they were finally rewarded with a view of the sunlit side of the small planet. In the center, facing the sun, was a grand pit nearly three thousand kilometers wide, extending far into the body of Hermit’s Cave, though high clouds and haze obscured the bottom. Surrounding the main pit were six other pits, each measuring over a thousand kilometers wide at the top, tapering like six cups surrounding a deep bowl, also facing the sun. As with the central bowl, the clouds hid the bottoms of the cups. The inside surfaces were covered with more of the huge rocks connected by straight metallic rods. Higher resolution yielded images of kilometer-wide boulders attached together with triangular trusses averaging five kilometers in length. Air filled the huge gaps between the rocks and trusses.

Above the clouds, like a dirty ring inside the cups, they could see shades of red and green.

“Dear God, look at the scale of this,” the captain said. “This isn’t a mining project, it’s a home.” *Our new home*, she thought. She felt giddy.

Down the corridor of the ship in the viewing lounge, the sounds of celebration, arguments, and wild conjecture were rising. Spirits were high, and though the captain didn’t want to dampen them, she could see the looks on Anita’s and Sam’s faces and knew that they weren’t bubbling over with great expectations. “What is it?”

“There’s no radio. No electrical noise. We’re getting the organic signatures loud and clear, but if there’s an intelligence there, it’s staying quiet,” Anita said.

“That might be good. Maybe someone built this place, and then they left. We could just move in,” Sam suggested. “Free rent.”

The captain squeezed her lips in a tight line and stared at Sam until he felt uncomfortable. “Or the ecosystem they created was unstable and they all died horribly,” she said. “This place could be toxic.”

“Worse than this ship?” Anita said. “We’re already killing ourselves.”

“Let’s go check it out!” a voice burred behind them. They all turned to see Rosie, four extruded appendages waving in the air excitedly.

“You aren’t supposed to be on the bridge, Rosie.”

The appendages deflated into the main body. “But I heard . . .” and then the voice faded away.

“You heard? Did you leave one of your buds in here?” the captain asked.

"I . . . think I'll go check the kitchen for crumbs."

"Wait." The Captain dipped her head under the control panel, felt around for a moment, then pulled a snotty glob from the under-surface and tossed it at Rosie, who absorbed it as it hit. "No more buds on my ship. You understand?"

The bacterial colony slouched. "Yes, Captain." It oozed slowly out of the room.

Sam stared after it. "It could infest the whole ecology if we let it touch down. It could turn it into another slime-world in a few years."

"I don't believe it would," Anita said. "Look what it did back on Rocinante. It gave up a thousand square kilometers to make room for a human colony. You remember how excited the main biomass got when we planted a tree there? It was so damned thrilled to find out there was other life out there besides the world-slimes."

"So you think that'll keep Rosie from eating everything on the planet? You remember how interested it was in how everything from Earth tasted." Sam said.

"Rosie might still have a bud in here, listening, you know."

Sam shrugged uncaringly. "Taste bud, probably."

"Anyway," Anita said, frowning at Sam, "yes, I do think that. The slime-world mind seems to thrive on interaction and variety. Besides, Rosie's body might come in handy on this planet. Or ship, or whatever this thing is."

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The *Beagle-4* sent out a soliton-packet report to Earth every day, one of Haversham's many duties, though his primary function was as a xenobiologist. Though the transmission method could, in theory, prevent any beam divergence at all, it wasn't desirable to regulate it too tightly. Small gravitational influences on the beam could cause it to miss Earth entirely over the twenty-seven light-year transit, so a little divergence was built in to broaden the target area. Haversham didn't have the transmitter pointed at Earth, however.

"So now the Garrison knows that we might have a viable planet to settle?" Sam asked.

"They'll know in fifteen years when this message gets to Hell. I sent them your message when we got the data about the organic signature from Boden eleven real-years ago. If they had a ship built by then, and were willing to send it this way without any solid data regarding the planet's viability, then heck, they could be here as soon as twenty-six years from now. Thirty-two years if they come here based on the message you just sent now."

Sam looked at the ceiling of the ship. "I could sleep that long."

"I don't think the captain's going to let you take the long nap. If this planet can be settled, she's going to want everyone working on building the colony. And do you really want to miss the first thirty years? Didn't you have a thing for Marta?"

He twisted his lips. "She's a little too independent for me, you know? Still, maybe I could train her."

"Yeah, Garrison trained. That's what every woman wants."

Sam's face darkened. "Fuck off, Haversham. When the Garrison gets here, they'll take this planet for their own. We'll be making the rules."

"It's really just about the real estate, isn't it?" Haversham said.

Sam stared at Haversham long enough for him to squirm in his seat. "You know, my granddad had sixty-thousand acres when I was a little kid. I remember him telling me, if you have land, you got to be ready to protect it. And if you have a hell of a lot of land, you better surround yourself with neighbors that do, too, because you all have a common interest. You're all in it together, and you have to fight together to keep what you got. The rest of you idealists," he waved a hand in the air to indicate the ship, "don't understand what we have here. A whole planet to ourselves. You all would just give it away."

"Sixty-thousand acres? Really? Why the hell did you leave Earth?"

"It was in the Oklahoma panhandle. By 2060, it was all desert. Good for snakes and lizards and not much else. Lost it all. When the chance came up to find new life-bearing planets, new territories, I jumped at it."

"And you think the Garrison is going to back your claim, huh?"

"I'm sure of it. Maybe I'll rent you an acre to farm when I'm set up, if I'm feeling benevolent."

"With the royalties I'll be getting from Stellar Biosystems, I'll be able to buy whatever I want."

"If your company still exists," Sam said.

"I could say the same of your Garrison, man-who-would-be-king. Anyway, as far as I'm concerned, you owe me. I sent your message. You want any other messages imbedded, you'd better come up with something I want."

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### Chapter 3

After orbiting the small planet for a few days, they had enough data to make some educated guesses.

Sam Johnson, their planetary geologist, was stunned. "Why did they build this? Millions of asteroids held together with metal trusses? Those giant cups?" Sam and Anita leaned over a table-top screen, scanning over hundreds of detailed images.

Anita shook her head in wonder. "Look at the atmospheric gradient. The pressure is near zero at the surface, then climbs up to half of Earth-normal in the first seven hundred kilometers, gradually working up to point-seven-five atmospheres near the bottom of the cups. This place has a human-survivable atmosphere over two thousand kilometers deep at low-g conditions. The deeper you go, the less gravity. God, two thousand kilometers deep. That's a lot of land."

"Land? It's a bunch of asteroids held together with steel trusses, and only a hundredth the density of Earth. Less mass than the Moon."

"Yeah, but look at the surface area. If the whole planet was built this way, the atmosphere permeates the whole structure. You could live anywhere inside. If the average asteroid built into it is only a kilometer wide, this place has a surface area twenty times that of Earth. Including the oceans."

"But half is pointing down," Sam said.

"Fine. Only ten times Earth," Anita retorted.

"Maybe. And most of it's going to be dark, anyway, right? Who wants to live in the dark?" Sam said.

"And thus, the reason for the deep cups and close proximity to Hermit," Anita said. "They could be piping the light to internal areas."

"But we're back to why? Why build this?" Sam waved his hands in the air. "Why not find a system with planets? Why not mine the asteroids normally, and make a regular space colony?"

"What if they just didn't have time?" Anita chewed her lower lip, zooming in on images of clouds. Below them, she could barely make out hazy objects hanging off the sides of the deeper asteroids and beams. Plants? Vines? Even though the planet was tidally locked, a few dozen orbits had shown them that there was some weather cycle going on below. Whether it was caused by a machine, some organic cycle, or some natural oscillation in the planetary physics, was yet to be discovered. "And what if they're still there? Let's get down there and find out."

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Captain Kelley picked Marko Barkowski to pilot the shuttle down to Hermit's Cave. Anita Blackthorn, the mission's chief scientist, picked Sam for his planetary geology specialization and Haversham as their xenobiologist and comm expert for the science crew.

"Your priorities, in order, are to find out what life-forms, if any, are there, and if any of them are intelligent. That's number one. Number two is to figure out where this planet came from." She looked around at the crew. "Number three is to make an educated guess as to whether we can settle here or not. I don't know about the rest of you, but I'm tired of living in a tin can." She looked at Marko and reminded herself of number four: finally starting a family if they settled down here. She'd had enough of being captain.

"And number zero?" the captain added.

"Stay safe," they said together.

Captain Kelley smiled. "Yup. Don't take any chances. We can't afford to lose any of you."

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The shuttle hit the thin atmosphere above the structure's terminator, flew over one of the

minor cups, and entered the center bowl. “That was a smooth entry,” Anita commented.

“Our orbit is slow,” Marko said, “so our entry speed was moderate. The planet doesn’t have much mass.”

Anita nodded and looked over the monitor screens. The display area covered most of the inside of the cabin, so it seemed like they were sitting in a bubble of glass, even though the vehicle had no windows. Below, multiple levels of pastel clouds blocked much of their view. To the sides, they could see gray asteroids connected together by the triangular frames of long metal trusses. Dark gaps like caves, many kilometers wide, filled the space between the asteroids, though reflected light let them see into the gaps far enough to tell that the broad, empty structure continued much deeper into the object, asteroids and trusses breaking hazy shafts of dusty light.

Though there was considerable evidence of ancient bowl-shaped craters marring the surface of the asteroids, the tops of most of them had been artificially leveled, as though to make way for future structures, farms, or forests.

“There!” Haversham pointed to a particularly broad flat space on a thin asteroid, bare rock extending for a few square kilometers before rolling off into a precipitous cliff, skewered by six giant trusses. “That’s where my house is going. Look at that view!”

Anita nodded toward a data screen. “Still too high. Not enough oxygen, air’s too thin. Nothing is growing here. Can we get closer to the perimeter as we descend?” Anita said.

“You bet,” Marko said, “Heck, at this speed I could fly through . . .”

“Take no chances, the captain said,” Anita reminded.

“Though that would be incredible,” Haversham added excitedly.

Anita shook her head. She was only a few years their senior but often thought of them as children. They watched the viewscreens in awed silence as the shuttle flew lower. “We’ve descended five hundred kilometers so far,” Marko commented.

“Look at that!” Anita pointed at some asteroids with bright yellow topsides. In the shaded areas, thin brown tendrils wrapped around the steel trusses. The roots of the gnarled plant grew out of the surface of an asteroid, climbing over a hundred meters down the truss. Anita thought, *a trellis*, and smiled.

“It looks dead,” Sam said. He froze the image, tapped, and zoomed. “A stick.”

Haversham tapped on the wall-screen and looked at a sensor overlay. “Pressure is point-four-two atmospheres, but it’s 5 percent humidity and 43C out there. Hot and dry. Oxygen is about 13 percent. I’m surprised there’s anything growing at all.”

Marko slowed to a hover. “You want to get closer?”

“What are those?” Anita pointed toward some spherical nodules on the vine. “This scale is confusing. They must be the size of basketballs.”

As they hovered, some of the nodules broke off and started drifting. “Either there’s a little breeze, or they’re self-propelled,” Haversham commented.

“We’re hovering,” Marko said. “The breeze is us. The pods aren’t falling, so there’s something inside making them buoyant. Um . . .” A couple of the pods burst open, spewing yellow clouds, swirling in the currents of air.

“Spores?” Haversham said. “I’m taking a sample.” He tapped on the wall to bring up the external air sampler and encapsulated some of the drifting powder.

“Shall we continue descending into the unknown depths?” Marko said dramatically.

“Yeah,” Anita said. “Let’s see where the real party is.” They picked up some speed and flew along the perimeter of the bowl, heading steadily downward. Along the side, there were a few over-sized pockets tens of kilometers deep and wide, terraced levels with broad flat areas where the gaps between the asteroids had been turned into giant platforms. Most of these were so badly corroded that only a skeleton of a frame remained, parts of the platform hanging down in holey kilometer-wide sheets, diverse green and yellow ribbons of life draped from them. The primary truss structure appeared to be unharmed, made from a different material than that of the platforms. Flying creatures began to appear on their screens.

“Low g and a dense atmosphere. There are going to be a lot of flyers living here,” Haversham

said. Though busy analyzing his spore sample, he kept glancing over at the view screens, not wanting to miss anything.

"How wide is the bowl here?" Anita asked. She looked to see if the far side was visible, but there was nothing but haze and clouds that direction.

"Based on our elevation, I'd say about 2,200 kilometers to the far edge. At the speed we're going now, it would take us about three days to skirt the whole perimeter. We're about seven hundred kilometers below the bowl's rim. Temperature is down, pressure is up. Oxygen is up a little, and our sunlight's a bit dimmer. Starting to look like Florida out there, if Florida was in space, and made out of asteroids. Hey, check out the rain."

Marko slowed the ship to a hover next to some dark clouds. Pellets of water appeared below, falling in slow-motion in the low gravity, droplets merging together into larger globules, some growing to the size of baseballs. Sunlight shot rainbows through them.

"Beautiful. But don't get caught in the rain, I'm thinking," Anita said. She turned to Haversham as Marko resumed his cruise downward along the perimeter of the bowl. "How's your sample looking?"

Haversham shrugged. "So far, it looks like a standard DNA structure, just different code strings and different proteins. The pharmas are going to love it. New handbag of tools for the gene splicers, too. We could get rich off this, if we had anything to spend money on."

"Maybe we can pay for a supply ship from Earth," Anita said.

"Boden's closer. It'd save at least ten years on transport time," Haversham suggested.

"Hey, don't go spending my cut," Sam said.

Outside, the plants were starting to thicken. Marko slowed the ship again so they could observe the area in more detail. Vines crawled for hundreds of meters onto the interconnecting trusses, some completely covered as detritus from above filled in the gaps in the truss structure, creating bridges of soil between asteroids, though there was no indication of any corrosion on the trusses. The tops of many asteroids were also covered with soil and plants, from patchy collections of what looked like low mosses and lichen, to taller, broader plants farther in. Tendrils of vines hung from the sides of the asteroids like straggly beards. The terraced nature of the asteroids in the planetary bowl structure presented a bright edge at the side of the bowl that faded softly into deep shadows broken by intermittent slashes of light, the internal surfaces partly illuminated by the reflected glow of the hazy skies. Some flying creatures darted past the ship, startled from their perches on rocks and plants. They glided on thin membranes extending out from their sides, eyes forward, thin tentacles trailing behind.

"They look like a bit like cephalopods. No hair. No feathers," Haversham said. He squinted at the image. "They seem to have legs, though."

"There's still plenty of planet to see," Marko commented. "Consider the diversity on Earth. And we have nearly two thousand kilometers of atmosphere below us, most of it at a livable pressure."

"Yeah, but even on Earth, all the land critters share the same structure, more or less."

"More or less," Marko echoed. "But with the extremely low gravity and nominal air pressure, this is more like an ocean environment. A rigid skeleton may not be necessary and mass may not be an issue. We might see some real doozies here." He pointed at a gray cloud swirling toward them, but the cephalopodic creatures tore through the cloud like sharks through a school of fish, and the cloud scattered. "Isn't their mouth on the wrong end for that?" Marko asked.

"You assume an Earth design just because they have a few similarities." Haversham zoomed in. The creature's side membranes had become bulging pockets holding the tiny squirming insects, too small to resolve well on their cameras. Some hidden tentacles extended from a pocket below its eyes, and wrapped around some of the insects. As the creatures started to drift down, bladders expanded, halting their descent.

"I dub thee 'bladdopods,'" Haversham said.

"Hydrogen bladders?" Anita asked. "Or maybe helium?"

"Reminds me that we haven't seen any electrical discharges yet," Marko said.

Sam pointed to the trusses and asteroids. "If most of the planetary structure is conductive,

you won't. Any static charges will ground to the structure and find a current path to any available opposite charges. Charges that can't be internally neutralized will migrate to the outer surface of the planet, and the solar wind will effectively neutralize them. The thermal conductivity of the structure might even contribute to a relatively even heat distribution throughout the atmosphere."

"There could be some activity in the middle of the bowl, where there's no structure."

Sam nodded. "Could mean all the critters tend to hang around the perimeter, then."

"Look at that," Anita said, pointing, though it was hard to miss. On the viewscreens, one of the locals had touched down lightly on two spindly legs, trailing a cluster of tentacles behind it, and grabbing on to the ship structure with two forward-facing tentacles. Colors shifted on its body. It examined the ship curiously, touching the camera projections that fed the monitors, looking closely at the small correction thrusters on the surface, and crawling below to peer at the larger thrusters. When a large shadow passed overhead, the creature froze, the drifting color patterns on its body mimicking the surface of their vehicle. The larger creature, bearing a similar design, but with talon-tipped tentacles, spun a slow circle around their ship, sheets of skin rippling along its sides like huge flapping blankets. It seemed to decide that their ship was too large to be a meal, and drifted away to find an easier target.

The smaller creature peeked around the bottom edge of their ship at the departing monster, then flung itself toward a large vine-structure growing on one of the trusses, quickly losing itself in the foliage.

"Except for the weird shapes, this reminds me a lot of Earth life," Marko said. "Eat or be eaten. Plants and animals. Flying octopuses with skinny legs. Feels like home already."

"I'm sure there will be more surprises," Anita said. "Let's land on a rock and take some samples. What's our depth?"

"We're about eleven hundred clicks from the top of the bowl. Pressure is over half an atmosphere, and oxygen levels are 16 percent. CO<sub>2</sub> is around eight hundred parts per million, plenty of nitrogen, measurable argon. The atmosphere is weirdly Earth-like," Haversham said. "Assuming there are no organic toxins in the air, this stuff should be breathable. Damn lucky break."

"I guess if you call spending billions of dollars on spectroscopic analysis of millions of exoplanets for a hundred years lucky, sure, let's go with that," Anita said. She pointed at a flattened butte with short brown-yellow plants. "Let's land there."

The ship drifted in toward the bright edge of the suspended asteroid, near the deep, soft shadows cast by the trusses and asteroids kilometers above them. They startled a herd of low grazing creatures with striped patterns arcing across their smooth backs. The creatures scrambled for the edge of the rock as a pack, leaping into the hazy air, the shadow of a truss sweeping over them as they flew upward.

"Beautiful," Marko murmured.

"Until you meet the insects," Anita said. "I hope we taste like crap to them."

"Bugs love crap."

"You know what I mean."

Bringing the shuttle down to land on the rock was relatively easy; the gravity was less than a twentieth of Earth gravity at this elevation, and the thrusters didn't have to work hard. They settled gently onto the short growth covering the artificially flat surface.

Marko gathered up a sampling kit while Haversham tried and failed to contact *Beagle-4* with their current status. "Too much rock, or too much metal, or too much atmosphere," he said.

"Or all three," Anita said. She looked straight up at the top of the shuttle, where the viewscreens shone with the circle of light that represented the top of the bowl. The sun, Hermit, looked like a bright eyeball staring down at them, the pupil offset from center due to their position in the bowl. The levels of connected asteroids with their shadowed depths framed the eye in a circle of darkness, spotted with cataracts of drifting clouds. She tried to shake the image from her mind.

The four of them suited up, though the atmosphere appeared to be breathable. Instead of air

tanks, they wore breathing filters connected to the necks of their suits. The suits were tough; if anything small tried to eat them, they were going to be chewing a while. Markus hoisted a flamethrower that they'd used to ward off attacks on other worlds. "What do you think?"

"I'd bet most of this stuff has never seen a fire," Anita said, "but I wouldn't want to be around when it does. You remember the bladdopods? Maybe hydrogen? Leave it here."

Marko grunted and put the flamethrower down. They still had energy weapons that could punch a hole through most anything without igniting it, but their wide-beam effect wasn't much more useful than a bright flashlight, worthless against a large group. He shoved his weapon into his belt, clearly irritated.

The ship's door opened, a ramp was extended, and they stepped from the airlock onto a new world. "We're home," Marko breathed. He adjusted his pack on his shoulders.

"Not on the inside of a damned ship, at least," Haversham added.

Anita glanced back at their shuttle, reluctant to close the outer airlock door in case they needed a fast retreat, but hesitant to leave it open in case the local fauna decided to crawl inside. The ramp wasn't quite touching the ground, but then, there were a lot of flyers out there. If anything small made it into the airlock with them, the automatic tracking lasers would kill it. If something big decided to join them, they had their weapons. She shrugged and left it open.

The four of them stepped onto a springy carpet of tan-colored succulents spread across the surface of the asteroid. Strange hovering creatures that looked like pea-sized jellyfish drifted over the tops of the plants, pausing over dusty coats of color on some of the specimens. Other things, more like stick figures with tiny tentacles crawled slowly across the plants. Nothing seemed to be approaching them.

Haversham knelt near the bugs and got out his sampling kit. "I dub thee jellibug and stick-thulhu."

Anita sighed. "Please stop."

Marko and Anita moved slowly over to the edge of the plateau, into the light at the edge of the bowl, staring in awe at the moving haze of pastel clouds and scattered flyers.

\* \* \*

In his peripheral vision, Marko detected movement, then heard a loud crack. Turning, he saw Haversham lurch forward, feet leaving the ground in the low gravity, bits of shattered helmet and blood spraying away from his head. Marko kept turning as he lost traction himself, rising into the air.

Something the size of a truck with lots of tentacles and a splotchy, color-shifting hide followed after Haversham as he drifted off the top of the asteroid, reaching for him. It looked a lot like the thing that had scared off the smaller creature inspecting their shuttle earlier.

Sam came into view, his weapon pulsing a narrow beam through the thick air to punch through the monster's tentacle as it grabbed for Haversham's limp body. The creature jerked its tentacle back and let loose an ear-shattering screech as it turned and swung at Sam. Marko's foot hit one of the thick vines that wound their way down toward a connecting truss. While grabbing for his gun and pulling himself down by the trunk of the vine, a bright flash of blinding light came from Anita's position. He heard her curse and saw her fiddle with her weapon.

With spots dancing in his eyes, Sam shot at and missed the creature as he stumbled backward toward the ship's portal, but the wild shot managed to punch a hole through the side of Anita's helmet. She cursed as hot plastic burned the side of her face. The creature, likewise blinded by the intense flash of light, flailed ineffectively at Sam, then retreated over the edge of the asteroid, grabbing vines as handholds as it quickly pulled itself away from them.

Marko saw that Anita was airborne, no real control over her exposure, and he grabbed her foot to pull her down toward the protection of the massive twisted vines. Haversham continued his slow fall down the curved edge of the asteroid.

Sam fell into the airlock and cycled it shut.

"Sam, what the hell are you doing?" Marko shouted into his suit mike.

"Retrieving Haversham before that big bastard grabs him," he said. "Unless you think you can tether yourself and jump out to him."

Marko looked down. In the twenty-some seconds since the thing attacked, Haversham had fallen only ten meters. But he hadn't brought a tether along, nor had Anita. He figured he could jump out, grab Haversham, then bodysurf in the atmosphere down to the closest truss or asteroid, but they'd both be relatively helpless while he was doing it. "Can you fly that thing?"

"Spent a whole hour in the simulator," Sam replied.

\* \* \*

Sam guided the shuttle out past the point where Marko and Anita hid within the huge serpentine vines and brought the shuttle up below Haversham. Not far away, he could see the creature that attacked him pulling itself along the vines on the side of the asteroid, closing in, apparently not scared of the ship at all.

He scrambled to cycle open the airlock, but by the time he could see Haversham, the creature had flown over, grabbed his limp body, and dragged him back into the tangle of vines, branches and leaves, headed downward along the truss. Sam fired at the creature from the airlock, punching a hole through one of the thin fluttering membranes waving along its sides. It screeched at him again and disappeared among leafy branches. Dense foliage hung from the truss for hundreds of meters, concealing the creature. Sam growled and closed the airlock door.

"It's got Haversham," he said into the suit mike.

"We see that. We're on the truss. We're following it," Anita said.

"Are you sure that's wise? I can pick you up. The ship can move faster." He flipped on the ship's outer floods, and the dark zone below the rock lit up with bright Earth-like sunlight. There was the monster, suddenly startled by the light, trying to hide behind the branches and leaves as it scurried down the beam. But toward what? Sam zoomed the image. A metallic structure came into focus, mostly concealed by plant growth. It appeared to be attached to the beam, not that far from another asteroid node. "Nevermind. It looks like it's headed toward a nest or cave about a half-klick below you."

"A cave?"

"Some artificial structure attached to the truss. Maybe a doorway, or portal. Hard to tell with all the damned plants. Whatever it used to be, it's a cave now. You should be there in a couple minutes. Vines are too dense for me to bring the ship in. I'll get as close as I can."

Sam guided the shuttle carefully through gaps in the gnarled woody knots and thick hanging tendrils while Anita and Marko closed in on the den. The creature peeked outside, then jerked back in. Sam turned the shuttle so the floods illuminated the entrance.

\* \* \*

"What's the plan, Marko?" Anita said.

"We shoot it and pull Haversham out," Marko replied. "We have guns, it doesn't."

"Unless it spits acid."

Marko scowled at her. "Yeah. Unless that."

Gliding down the huge truss, grabbing vines as handholds and propelling themselves forward, they covered the distance quickly; in the low gravity, their movement wasn't significantly different than the zero g they sometimes experienced in the *Beagle-4*. They reached the opening, crawling on the vines just above it. Other tendrils and creepers hung down in front of the entrance. Below the leafy covering, the structure appeared to be made of the same material as the trusses, untouched by corrosion and age.

"Going into the bear's cave," Marko said.

"And the bear is expecting us."

"Uh-huh." Marko turned on his belt light. He pushed away from the trunk of the vine, grabbed one of the hanging tendrils and let himself slide down slowly until he was in front of the door, gun ready, his suit light reaching farther into the depths of the hole than the shuttle's lights could penetrate.

When he was only five meters away, the creature inside suddenly thrust out toward Marko, airborne. Marko got one shot off before the creature wrapped him in a web of tentacles. The shot punched through one of its arms, and the thing screeched, but held on tight. Marko's arms were pinned.

Anita saw some of the arms fling wide, tossing—or spitting out—little patches of suit material into the air as a hundred small mouths chewed away at him.

“Marko?” Anita called out.

“Shoot the goddamned thing!”

“What if I hit . . .”

“Shoot! Shoot! Shoot!”

She shot through the core of its huge body, praying that Marko wasn’t in line with the pulse. It screamed again, rattling the bones in her body, and turned toward her, flinging away Marko in his shredded suit. She aimed for one of the huge plate-like eyes, hit near the edge, and the thing darted away, pulling itself farther down the truss, deep into the twisted vines.

Shadows changed slowly as the shuttle moved nearby. Dust motes from the shaken plants filled the air, glowing in the beams of light. “Are you guys all right?” Sam asked.

“I’m okay, except where you shot me in the head,” Anita said. “I’m breathing unfiltered air. Marko looks like he’s been through a paper shredder. Marko? You okay?”

“I’m alive. Those tentacle suckers, they have teeth. I think those tentacles double as throats, like an elephant trunk. No wonder I couldn’t see a mouth on its main body. I think I might be missing a chunk out of my leg, but the suit foam sealed and numbed it.”

“I can park the ship and join you,” Sam said.

“Stay there,” Anita said. “I want someone in the shuttle from here on out.” Keeping her gun in hand, she flicked on her own suit light and moved around toward the entrance. She could see Haversham tucked away inside atop a pile of alien bones and skin. Just inside the door was a flat panel made of the same material as the outside, unblemished and uncorroded. Not for the first time, she thought about how valuable a sample of the alloy would be. God only knew how long this place had been here.

She drifted over to where Haversham lay. “Haversham? Can you hear me?” She could see that the back of his helmet was shattered. Some odd stick-bug was crawling around in the matted blood, and she picked it off and squished it between gloved fingers, thinking, *at least we can probably eat each other. Good for a colony.*

He didn’t move. She gave him a little shake. “Haversham? Suit, display vitals from suit 17, please.” She drifted down to the floor and knelt next to him as Marko approached. Tiny animals scurried out from the pile of alien debris, scattering into the darkness. Marko didn’t say anything, just stood near her; he’d probably looked at the data for Haversham’s vitals, too, and knew what she did. Probably Sam, too. She sighed deeply and put her hand lightly on Haversham’s chest.

“Let’s move him back to the shuttle, then come back and explore this place. We might find out something about the builders,” Marko said after a minute.

“Okay,” Anita said.

Marko pulled straps out of Haversham’s backpack, then secured his body to his back. They launched themselves away from the structure onto the vines, and worked their way back to the shuttle in a series of long, slow leaps. Sam stood guard at the open airlock, gun ready, carefully scanning the area for movement.

As they neared the shuttle, Sam pointed and called out, “Look behind you!” They turned and saw three smaller creatures cautiously observing them from the mouths of vine-covered nests, but not approaching. The nests were only a few hundred meters from the alien structure.

“They don’t seem aggressive.”

“It’s the same kind of critter that was poking around on the outside of the shuttle earlier. They’re curious.”

“Maybe it’s related to the original builders? Or evolved after they left?” Anita suggested. “Seems kind of dumb building a nest next to where a giant predator lives.”

“They might have been here first, then the predator moved in. Those nests look old. Or maybe they’re smart enough to mooch off its scraps. Scavengers.”

“Maybe.”

They made it into the shuttle and strapped Haversham’s body into the small medical bay, then

returned to the structure, leaving Sam to man the shuttle.

Their suit lights illuminated narrow, low corridors. Debris from plants had deposited a thick layer on the floor over the years, and where outside light could reach, a variety of plants encroached. Of surface materials, nothing substantial remained unless it was made from the same superalloy that was used for the trusses; everything else was rust or dust, all plastics disintegrated and basic metals corroded so badly that only the skeleton of the superalloy remained. Panels in what looked like a control room were devoid of instrumentation or seals, hanging loose in their mounts. What might have been monitors were no more than thin, hollow frames.

Anita touched a pile of dust sitting in a puddle on the floor. "For this much decay, this place must be thousands of years old."

"It could be less," Marko said. "Obviously water could get in here. The doors are open to the environment."

"It all just rusted or wore away. Most of the internal doors are just gone. Steel or plastic, I bet."

They left the control room and traveled down the low corridor to another doorless room. There were a few unrecognizable pieces of alloy structure and a lot of debris, but they couldn't tell what anything used to be.

"Alien furniture? Bedroom, maybe?" Anita said.

"No idea." Marko picked up a small, rounded piece of the mysterious alloy. "This is a convenient sample-size. Earth is going to want an analysis."

Anita stared at the alloy sample thoughtfully. "We should probably sell them the formula."

"How's that? We're a government exploratory vehicle. Basically, whatever we find is government property."

"Not any more. Earth stranded us out here. We don't owe them shit. Once we establish an independent colony here, we'll be trading information for supplies from home. We'll need replacement parts if we're going to survive here. Seeds, supplements, tools, whatever. Earth isn't going to send us anything without us paying for it, somehow."

"Hmm," Marko said, "that probably goes for local DNA data, too, then. If the captain agrees with you. What do you think, Sam? You still awake?"

"Personally, I think I'm gonna stake as big a chunk of this world as I can. Once word gets out that we've found a useable world, there's going to be land rush here. And it's ours for the taking."

Anita glanced over at Sam incredulously. "There's not even thirty of us anymore. How much land can we use?"

"If I own a thirtieth of a planet, I can always sell a chunk of my kingdom," Sam said.

"If Earth doesn't just take it from you," Marko said.

"King Sam, huh?" Anita said.

"It just rolls off the tongue, doesn't it?"

"What's this?" Marko interrupted. He reached into a recessed rectangular hole and pulled out a flat box made from the superalloy.

"A box? What are the odds that anything inside is intact?"

"What if it's this world's version of the Dead Sea Scrolls?" Marko said.

"If it is, then it'll be just so much powder. Can you open it?" Anita asked.

Marko held the box carefully, not even tilting it for fear of damaging the contents. "Maybe we should wait until we're on the *Beagle*."

"Open it!" Sam urged, watching them over their suit cams.

"No, wait. Marko's got a point. If there's something fragile inside, we should open it in an inert atmospheric environment. Let's wait until we're back on the ship, in the lab. Except for bones left behind by the monster that tried to eat you, and some bits of scrap superalloy, there's nothing here of interest. Grab a few more biosamples from the animal debris and let's get out of here," Anita said.

They returned to the shuttle and began a slow ascent back to the ship, dropping a semi-autonomous drone to keep filming the environment, programmed to rise periodically so it could data-dump to the *Beagle-4*. Knowing what to look for, they found three more of the small structures scattered within the web of trusses, including one in near-vacuum that only Sam could

visit due to the ravaged condition of the other spacesuits. The structure in near-vacuum was in considerably better condition than the others, to the point that the metal thrusters on the outside were mostly intact. The structures welded into the planet's frame were spaceships, and based on what they'd already seen, the planet had to be littered with them. Every single structure also had a superalloy box just like the first. "Family bible?" Marko suggested. "If we've already found four of these things, there must be tens of thousands of them out there."

Finally, Anita gave in, and they figured out how to open one of the boxes.

\* \* \*

#### Chapter 4

"All the boxes that we recovered have the same thin superalloy sheets in them," Anita told the Captain. "Same diagrams, same marks. So the builders have, or rather had, a written language. And they apparently mass produced these packages, either for themselves to recover later on, or maybe left there for someone like us to find. Maybe they just wanted to leave a permanent record behind if they thought they were dying off."

"We think we might know what happened to their home planet," Marko said, handing the stack of thin metal plates to Captain Kelley. He tapped the top etching. "There are two pictures showing a side view of their solar system with six planets, and a top view. A long time ago, a stellar-sized object passed through the system and either tore apart the inner planets or flung them out of the system. One of the planets, the remaining gas giant, survived, but acquired a highly elliptical orbit. They knew it was coming, and couldn't do anything about it. They built ships and left their home planet and waited for the star to pass."

The captain thumbed through the other metal sheets. Diagrams, lots of tiny symbols, all printed with machine-detail. "I'm guessing they lacked the technology to survive going to another star, and tried to rebuild here using the sources available."

Marko and Anita nodded. "That's what we figure. Not enough mass for a small moon, even, so they gathered up all of the residue from the shredded planets and built this structure, large enough for billions to live on. Big enough and deep enough to retain an atmosphere, even with so little gravity."

"Then why did they leave? Or how?"

"They didn't," Anita said. "They're still there. They went from a home planet that had gravity to one that had very little, and it's likely that they started to die off. Perhaps the surviving members weren't a large enough population to prevent inbreeding, or to maintain an industrial base. We think that we may have encountered some of the descendants of the originals. They're curious, but they don't seem to be smart enough to communicate with, or able to use their own ancient technology. A few more trips down, maybe to the other cups, and we could nail the facts down. There's still a lot to explore."

Captain Kelley shook her head sadly. "So nobody really owns the planet at all. No indigenous intelligence, by any Earth-legal standards. If anyone comes by to stake a claim, there will only be us to defend whatever we've claimed for ourselves. They could just take it from us."

"Anyone might have intercepted the signals we've been sending," Marko said. "We could end up in the middle of a real-estate war."

She sighed and put the metal plates down on the console, studying them quietly, then tapped slowly on the top plate. "Their home planet. Was it torn apart?"

"Based on the diagrams, we think it may have survived intact. It was probably outside the Roche limit when the star passed through, but was tossed out of the system, anyway. But it's frozen solid for sure. One of the dark worlds, in between stars."

"Do you think we can we find it?"

Marko and Anita looked at each other, eyebrows raised. "It's possible," Anita said. "Depending on the mass of the rogue star and the planet, plus those plate diagrams, we can create a family of possible trajectories and estimate a velocity. Even after a million years, their home planet should still be radiating at about twenty to forty kelvins from the core heat, so we should be able to see it against the background radiation. The dark planet survey taught us that much."

"A million years?"

Anita shrugged. “Just a wild guess. We don’t know how old Hermit’s Cave is yet. But the effect of the solar wind on the sun-facing asteroid surfaces might give us a rough date of construction. There are other things we can date.”

“At twenty kelvins, would DNA last a million years?”

“Haversham would have known,” Anita said, her voice subdued. “I suspect degradation would be minimal. What are you thinking?”

“Let’s find that planet first,” the captain said. “I have an idea.”

It took a week to locate the wayward planet. It was within half a light-year, moving away from them at less than a kilometer per second. Based on the planet’s velocity, they calculated that Hermit’s Cave had been built a mere 160,000 years before.

The captain left a well-equipped crew of twenty to start building a colony on Hermit’s Cave. One of their first tasks was to bury Haversham on one of the asteroids. The remaining crew prepared to chase after the cold, dark sphere they’d named Hermit’s Home.

\* \* \*

## Chapter 5

“We’re going to Hermit’s Home to retrieve DNA from the original builders,” the captain explained to her core crew. “There should be a lot of it and it should be in pretty good shape, since it’s been stored at twenty kelvins all this time. The devolved version of the species on Hermit’s Cave hasn’t genetically drifted so far away that we can’t use their eggs to host the new DNA, or use their DNA as a template for any filler-code we might need. Earth did it with the mammoths and a dozen other species a decade before we left Earth, we can certainly do it here. Our genetics lab is top of the line. Well, ninety years ago it was, anyway.”

Sam frowned. “But won’t that invalidate any claim we have to the planet?”

“That’s correct,” the captain replied. “Part of our mission has always been to find planets that can support life, but above that, our primary mission has been to find intelligent life.” She nodded toward Rosie.

“But not create it,” Sam argued. “This is our planet if we want to take it. After this many years in space, we deserve this.”

“As far as I’m concerned, Crewman Johnson, if the code for the intelligent life exists, then that species still exists. Would you argue that you have no rights when you’re in deep sleep for twenty days?”

Sam crossed his arms and scowled. “That’s different, Captain. If I died tomorrow and you cloned me from my DNA, would that clone have any rights to my property?”

“From an individual perspective, no. From a species-level perspective, it’s different. My mission, our mission, means that we’re going to do this. We’re going to be raising these creatures . . .”

“Cephs,” Marko suggested. “From Cephalopods. I mean, they aren’t, but they look a hell of a lot like them.”

Captain Kelley nodded. “I like it. We’re going to be raising the Cephs as though they’re our own children. We will be living side-by-side, but make no mistake; this is their world. We will be guests.” She looked slowly around at all of them. “I hope.”

\* \* \*

The *Beagle-4* had been accelerating for a week before Rosie approached the captain.

“Captain Kelley, first, let me apologize,” it started.

The captain, with her feet propped up on a small desktop and a reader in her hand, puffed out some air in exasperation. “This better be good.”

“You know how you ordered me to not leave buds hanging around? So there was this one I forgot about . . .”

She held up a hand. “Wait. Is that even possible? Don’t your buds talk to each other all the time?”

Rosie waved a floppy extrusion in the air. “Not precisely. If the range is limited, say, by metal walls, sometimes they will store knowledge and send it to the main body when it becomes convenient to do so. Anyway, there was this stray bud hanging out in the long-range comm instrumentation room, and Sam was in there patching through a message to send.”

The captain shrugged. "So what? He's taking over Haversham's duties, and learning the system. I'd expect that. Go pick up your bud and leave him alone."

"He was preparing an audio message for a group called the Garrison. He told them, 'When I'm done, you will be able to take as much of the land there as you can control. There are only twenty-seven left in our crew. I'm sure you can handle that.'"

She sat up slowly, staring in disbelief at Rosie, anger slowly pulling her lips back from her teeth. Rosie backed away from her. "I . . . I'll go get that bud."

"Leave it right where it is, Rosie. You're sure he said 'Garrison'?"

"Yes. What is it?"

"It's a paramilitary cult created by a crazy billionaire on Earth. The group treated women like property. At least, they did ninety years ago. They built a colony on Titan, and the Garrison oligarchy claimed the whole moon for themselves, but the Earth government didn't let that stand. There was a fight, and the group ended up getting kicked entirely out of Sol system. None of the established colonies wanted them, so they ended up on a deserted colony planet called Hell. Not too pleasant, I'm guessing." She brought up a holo display above her desk and tapped on a planet. "It's fifteen light-years from here. I doubt that their founder is still alive. Anyway, they swore they would get their own world someday. One that isn't Hell. Man, why didn't they pick one of the slime worlds?"

"Hey!"

"Oh, sorry, Rosie. It's just, well, I kind of like Hermit's Cave. It's got wild plants, blue skies, clouds, and rain . . ."

"Man-eating monsters . . ."

She slouched. "Fine. It isn't perfect. But it's far better than living in a survey vessel and eating synth food." She reached over the desk and tapped a comm button. "Tara, could you join me in Control?" She had debated on whether to bring their security officer, Tara Zhao, along on this side-trip at all, but Tara was also trained as a backup for the genetics lab. If anything happened to Anita Blackthorn, Tara would become primary for the genetic sampling procedure.

When she arrived, the captain explained the situation to her. "I want Sam confined to quarters for now. I'll have Raphael go over the log of transmissions and see what Sam's been up to."

"Sam said, 'when I'm done.' What could he do to stop us?" Tara asked. "Unless the Garrison is much closer than we think, we'll be twenty some years into the rebirth project before they even arrive."

"He could damage our ship's engines, stranding us, but it sounds like the self-serving bastard wants to stay alive to reap his rewards from the Garrison. He could destroy our samples, or damage the genetics lab—" She drummed her fingers on the desk top. "After you lock him up, you and Pomeroy go through the lab with a fine-toothed-comb and see if anything looks out of place. She's good with tech troubleshooting. Check the sampling equipment for contamination, check the coolers for signs of sabotage. In fact, take a sample off the damaged spacesuits and run a full simulation of gene sample recovery and gene modification, just like we intend to do with the devolved Cephs. See where the simulation fails. If it succeeds, check out the shuttles. It could be that they're set to fail, although that seems less likely. It'd be tricky to set both the remaining shuttles to fail without the sabotage being discovered." She chewed on a knuckle, looking thoughtful, while Rosie and Tara waited, then glared at the two of them. "Well? Get on it!"

\* \* \*

Sam didn't resist Tara Zhou. He'd seen her fight before, and even if he got very lucky and was able to get the gun out of her hand, he knew he wouldn't be conscious long enough to find the trigger.

Despite the proof of his complicity with the Garrison, he refused to say anything about what he'd done or intended to do, and eventually Captain Kelley put him in deep sleep for the rest of the mission just so she didn't have to worry about him pulling some new stunt.

Inside the genetics lab, even before they ran a simulation, they discovered a circuit bypass that would have turned the cooling system for their samples into a heater. The bypass was neatly set up to destroy itself, and no one would have been the wiser if it had been activated. It would have

appeared to be a natural equipment failure, and Sam would have walked away, hands clean.

When they finally arrived at Hermit's Home, they found a dark world slightly larger than Hermit's Cave, and solid all the way through. It didn't take long to find thousands of Ceph bodies closed inside huge structures, buried in the thick snow of a frozen atmosphere. They acquired samples from sites all over the world to assure that they could create a minimum viable population and avoid inbreeding. It was easy to take the samples; often, a gentle hammer tap on the end of a tentacle provided what they needed.

Everything was remarkably well-preserved on the planet. The crew spent over a week cramming as much of the Ceph's ancient heritage into their cargo hold as they could fit. Someday, the Ceph descendants would come back here for more, but for now, this load would be all they owned to learn what their civilization once was. The value of the location of the planet was not lost on the crew; it might later become a bargaining chip, if they needed it.

*Beagle-4*, fully loaded, headed back to Hermit's Cave.

\* \* \*

Three months into the return trip, *Beagle-4* received a message. "Captain Kelley of the *Beagle-4*. This is Raphael Mendez, reporting from the Alpha Cup Colony on Hermit's Cave. We recently acquired a contingent from Dorian's Moon, about a hundred colonists in a lightly armed colony vessel. Apparently their colony intercepted Boden's message to Earth and decided they wanted a piece of the action here. Their biotech lab is more up-to-date than our own, and they could certainly help with our little project. Anyway, we're discussing arrangements with them to join our own colony in Alpha Cup. They seem okay with what we're trying to do here; more interested in the biotech than the property, I think, but they're all pretty excited about the place. Just thought you'd want to know. It could start to get crowded around here.

"We've located a cluster of about two hundred Ceph ships fairly high in the cup. The air is still breathable here, and the big critters don't seem anxious to come this high. Anyway, we're clearing out the ships and cutting in to some of the large vines to see if the wood is usable for construction. Should be nice and cozy by the time you get back. We're still living off the recycler, but starting to sample some of the local flora and fauna. We're being cautious, and it hasn't killed anyone yet."

Raphael continued with the colony report, describing how the rain at lower elevations collected into large spheres of water drifting on the wind, and the dark clouds of organic sludge even lower down that had their own class of scavengers, but Captain Kelley wasn't paying much attention to it, distracted by thoughts about the new colonists. The first time they were directed to Hermit's Cave, with little more than a nod-of-the-head to oxygen and organics, the signal had been in space, from Boden, for fifteen years, and it was another eleven years before the *Beagle-4* reached Hermit. That was a twenty-six year window in which other colonies and ships might have intercepted Boden's report and sent ships their direction, anxious for land, for research, or for profit. It would be a toss of a coin whether new arrivals would want to share the world or not, and be willing to work with *Beagle-4*'s crew in returning control of the planet to a reconstituted population of Ceph. This time, they got lucky.

It would be a good twenty-five years before the Garrison ships arrived, assuming they left Hell the year that Sam first sent them a message. The more guns they had on their side before the Garrison arrived, the better.

\* \* \*

## Chapter 6

"We were given the distinct impression that Hermit's Cave had no intelligent life," Captain Magnus Oberman stated.

Captain Kelley smiled, pushing back gray hair from her face. "I'm afraid your information is out of date, Captain," she said. Sam Johnson was still on ice, so the last information he transmitted to them was likely the last thing they'd learned about the planet: habitable, but empty. He'd also told them about their plans to bring the Ceph's back to life, so they knew that already. What they didn't know was that the project had been a success. Two other survey ships, banned from a return to Earth much like her own, looking for a place to settle down since Earth was off-limits, appeared

and settled their own crews on Hermit's Cave while the Native Rebirth Project was in its first five years, but they had no interest in broadcasting to Earth or anyone else that they'd abandoned their primary mission to take up asteroid farming. Likewise, the crew from Dorian's Moon didn't have any reason to announce to the Universe that there was a new planet to settle.

Captain Kelley pointed over her shoulder at Millie, who waved one of her several suckered tentacles at Magnus. She was one of the first Ceph's that were born from the DNA they'd harvested from the dark planet. After twenty-some years of being raised by humans and Rosie's family of buds, they'd developed a decidedly human perspective. In the background, Millie's mate paced back and forth, plumed tentacles trailing and squirming behind him.

"You were misinformed, Captain," said Millie. The sound of her voice was pleasantly melodic, subtle harmonies coming from several of the tentacles' suckers. "I assure you, this has always been our planet, constructed by my own ancestors."

The Garrison had arrived yesterday with three ships carrying nearly two hundred colonists each. There were obvious weapons mounted on the ships, but the Garrison hadn't expected local space to be so crowded. So well-protected.

Ten of the Ceph's construction robots, with their massive welders, had been refurbished and reactivated and separated from the outside surface of Hermit's Cave and orbited the planet like giant sentinels. Twenty-eight of the smaller Ceph ships, piloted by young but earnest Ceph's, had also been reactivated, selected from the near vacuum of the outer edges of Hermit's Cave, where they were least exposed to the erosive effects of life and water. A lot of rebuilding was required anyway, after 160,000 years of cold storage, but they had had over twenty years in which to do it.

In addition to the obvious alien presence, three local colonies had sent their own crews to claim a piece of the pie, but like every other human there, their colonial aspirations were limited to zones dictated by the "native" Ceph's.

"We sent you a message over a year ago," Captain Kelley said.

Captain Oberman of the Herald frowned at her. "Yes, we received that but assumed you were lying to keep everything for yourself. We weren't about to turn around."

Wow, she thought. *Blunt. What a sphincter.* "As you can see, the Ceph's are alive and well." *Even if there are only three hundred adults so far, but they don't need to know that.*

Millie added, "We've set aside an area in Gamma Cup that should be to your liking, if you expect to stay. We aren't monsters, after all." Here, she made a face at Captain Kelley, who could easily read the humor and sarcasm written there. When Millie first came on camera, Captain Oberman had visibly cringed. And Captain Kelley knew the spot in Gamma Cup that Millie had in mind; it was one of their earlier attempts at a settlement. It was too hot, too wet, and a seasonal host to swarms of odd disk-shaped flying suckers that more than made up for the lack of biting flies and mosquitos, but which didn't seem to exist in the main bowl or the other cups. Gamma Cup had evolved some voraciously nasty stuff in 160,000 years.

"We assumed we would be living in whatever colony you'd already started," Captain Oberman said.

*After you killed or subjugated everyone there,* Captain Kelley thought. "That isn't going to happen, Captain. The Garrison's misogynistic social structure isn't exactly in line with any other human, Ceph, or Slime culture on this planet. In fact, the first chance I get, I will personally offer asylum to every woman in your colony who's tired of your bullshit." *Try that for blunt, asshole.* "There is a small moon we found orbiting the gas giant you could colonize, if Gamma Cup isn't to your liking. Or, of course, you can turn around." *And go back to Hell where you came from.*

Oberman turned a deep red, glanced over to his left, looked back at Captain Kelley and Millie, then terminated the connection.

Millie said, "Was that wise? He has weapons."

"You have no idea how creepy and dangerous the Ceph construction robots look to humans. The Garrison won't attack. And besides, your robots are made out of that Hermitium you guys use for everything. The Garrison would lose that fight."

"Technically, our construction robots wouldn't try to fight them. They would try to gather them up and weld them into Hermit's Cave as raw materials. Anyway, the Garrison knows that you

recreated us from ancient DNA. They could argue that we aren't native at all."

Captain Kelley laughed. "It doesn't matter. They're outnumbered and outgunned. The planet already has three intelligent species living on it that all have a better legal claim to it than they do, since we were here first. That's the important part."

"True. But the current population of intelligent organisms here is barely double the number of Garrison's colonists, if we don't include pregnancies or Rosie's buds. They could still cause trouble," Millie said.

The captain glanced over at Rosie, who'd gotten into the habit of adopting a vaguely human shape over the years. Rosie shrugged. "My buds are autonomous once they reach a certain mass. If it's bodies you need, I'll make more."

"Something to keep in mind. We might need to do that."

"Captain, the Herald is hailing us again."

"On screen, Comm."

A new smiling face appeared. "Ah, Ms. Kelley, I'm Gerald Eberly, the Garrison liaison."

"That's 'Captain,' Liaison Eberly."

His smile faltered. "Oh, of course, Captain Kelley. My apologies. But, to the point. The *Beagle-4* left Earth some ninety years ago, with rare contact from Earth, while the Garrison's colony on Hell is only seventeen light-years from Earth, and we try to keep up with the latest tech there. Technology did not come to a standstill on Earth during that period, as rough as it was. We have biological and nanotech solutions to physical degradation in zero g that we brought with us. Medications you can take that don't require a spinning environment to simulate gravity, like the ones you presently have in orbit. On this world, of all worlds, these drugs would be infinitely valuable to you. If you give us what we want, you can have access to the products of our drug manufacturing capabilities. Or you can beam an order for a batch from Earth."

She ran a hand across her chin, thinking about the hundred-year round-trip that order would require, or if Earth would even talk to them. "It's decent trade material, I'll have to admit."

"Trade? What do you have to trade?"

Captain Kelley leaned back in her seat. "Information on how to survive on Hermit's Cave. How to raise crops. What will and won't kill you. Everything we've learned in our twenty-some years here. Local beer and whiskey. Heck, we might even be able to overlook your attempt to sabotage the Native Rebirth Project twenty-five years ago."

Gerald Eberly gaped for a moment, closed his mouth abruptly, then said, "We'll get back to you," and disconnected.

She drummed her fingers on the desk, lips tight, then glanced over at Millie. "This is going to take a long time, I can see."

"Do you really want them on Hermit's Cave?" Millie asked.

She shrugged and stood up. "As despicable as they may seem, I want their ships on our side when Earth forces get here in eighteen years. Thanks to Boden's original broadcast, Earth is expecting a gold-mine of patentable alien technology, no natives, and possibly a tiny colony of hungry, rebellious crewmembers from *Beagle-4*, whose 'stolen' ship is still technically Earth property. I expect they intend to lock us up as thieves, pirates, or mutineers, just so they'll have an excuse to take over. They aren't going to give up unless there's a lot of firepower staged against them, and the Garrison has three armed ships to add to our own hodgepodge fleet, to say nothing of having their own bone to pick with Earth. If we all have to live in one community, perhaps we can retrain the Garrison people to be civil again."

She looked around the room. "We have a planet with three cooperative, intelligent species on it. That's worth fighting for." She headed for the door. "Let's get back to the nursery. Deirdre's litter of Cephlings is due, and Marko and the kids are down there waiting to see them."

She stepped out of the Ceph ship that she'd claimed as a headquarters for operations, one of the large cluster that they'd discovered in the first year of exploration, then strapped on her wings and jumped off the deck.

Millie and her mate rippled with colors, and followed.