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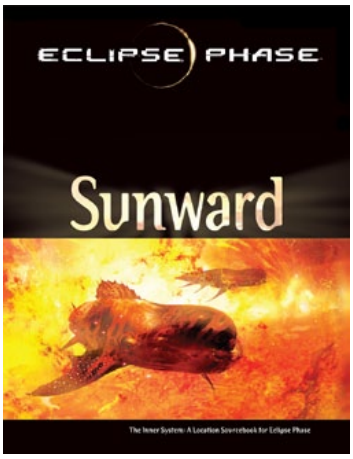

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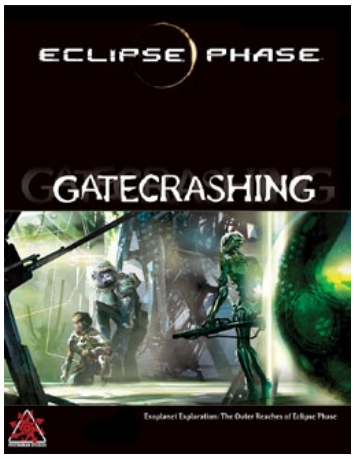

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EXPLORE EXTRASOLAR WONDERS

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AN INFINITE HORIZON

CARTER ■ IFTIKHAR'S MUSE

Iftikhar Quraini shivered, but not because of the cold that tightened his skin and turned his breath to fog. Sure, the gate room was frigid: walls carved from blue ice as hard as steel, air cold enough to freeze the water molecules on his skin as he cupped his hands over his mouth to preserve a tiny morsel of warmth.

But what was at the heart of the gate room was colder still.

The Fissure Gate.

It waited for him, a hollow sphere eight meters in diameter, built from arcs and swirls of gleaming metal, bisecting each other, hiding something darker within.

Iftikhar couldn't suppress a shudder. *Are you* sure *you can't tell me anything?*

[I can tell you many things,] said Carter, his muse, [but very little of it is likely to be useful. As I've told you many times, the gate experience is highly individual.]

A deep voice interrupted. "Nervous, kid?"

Iftikhar didn't turn to look at the chimpanzee named Brandon Sail. Instead he watched one of his teammates step into the sphere, her body marked by the odd, curling shadows of the sphere.

She stepped into the darkness at the center, and then she was gone.

Iftikhar winced.

He heard the soft panting of chimp laughter. "Man, you're really tweaked."

Iftikhar turned on Sail. "I am *not*," he said coldly. Everyone knew the chimp was a hypercorp agent and Iftikhar didn't really want to talk to him.

Sail issued a skeptical snort. His skin was the light color of cedar, his clear brown eyes as enigmatic as any human's. Fine black hair framed a face made comical by giant ears. At one meter, fifty centimeters, Sail was shorter than Iftikhar but more powerful. Chimpanzees weren't monkeys. They were *apes*. And this one probably had commando training.

"Look," said the chimp, "I've done this a dozen times. There's no reason to worry."

Iftikhar clutched at the comment like a man with a ripped vacsuit grabbed at the material around the tear, trying to hold in his life. "You mean it's really not that bad?"

"Oh, no. It's going to suck." Sail shrugged in his forest green vacsuit and flashed a toothy smile. "There's just nothing you can do about it."

Then the gate tech said Iftikhar's name, and it was his turn.

* * *

The singularity was black, but it was an *empty* black, like it wasn't really there—like nothing was really there. Iftikhar tried to look at the thing's shape, but it made his eyes water. Needle-sharp pain pricked his skull. The transhuman mind wasn't designed to look at wormholes. A flash of emerald lightning arced across its surface, actinic and bright but utterly silent.

Iftikhar took a step back.

"Any time now," Sail called.

Iftikhar put his helmet on and drew a deep breath. He rushed forw—

* * *

A moment of darkness, like being in a room during a power failure. No one and nothing there but the black. Iftikhar took a step, heard the click of his boot, felt something solid underfoot. Wherever he was, it was big. Big and empty. He could feel it. He could hear it in the echo of his single step. He was alone in a big nowhere.

He felt the throb of his pulse in his wrists. He had grown up an indent on Mars, spending far too much time in tin can habitats. The empty just *felt* wrong.

Something clutched his shoulder, a hand.

Inshallah.

A hand, cold like space, cold like the grave. Someone, *something,* whispered softly in Arabic.

I almost had you before. This time I won't let go.

* * *

—ard and stumbled into blinding sunlight and circular shadows, the ocean's voice loud all around him. The deep roar of it as it smashed itself into white foam, the sibilant hiss as it retreated.

He wasted no time making his way out of the gate's enclosure. Staggering and then collapsing on white sand, down on all fours and trembling, his breathing coming in great ragged gasps.

How long between?

[There was no "between,"] Carter answered. [Gate travel is instantaneous.]

But I was sure—I mean, I— He didn't have any way to finish that thought.

[Perhaps you suffered a hallucination?] said Carter, gently. [It may have been caused by the stress of wormhole travel. By the way, atmosphere is within standard transhuman range, as expected.]

Still breathing hard, Iftikhar reached up with shaking hands and unsnapped his helmet. The air tasted cool. It smelled of brine and anise, with a note of sulfur underneath. Very different from the antiseptic halls of Chat Noir.

Iftikhar looked up. Sail was staring down at him curiously, though no one else seemed to have noticed his arrival. He scowled and scrambled to his feet.

The gate rested on a sand spit that jutted into the green water like a knife. The beach was back-stopped by a high rock face covered with red-green photosynthetic shrubs that made their living on black volcanic rock. Mixed in with the shrubs were branching tubular structures that looked a little like coral. They were royal purple and sharp-edged. *Razorweed.* Weed, because they were useless. Razor, because they could cut.

"All right," said Krazny. "You were all at the briefing, you know the drill. Pelagic's mostly ocean, but as you can see there's some lovely island property."

Krazny was a tall, slim woman with skin the color of bronze. Her face was narrow and angular, framed by chocolate-brown hair tied back in a pony tail. She wasn't unattractive—but she wasn't exactly a knockout either. Her maroon vacsuit prominently featured a hand with the middle finger extended on her chest.

The Love and Rage Collective didn't care what they wore as long as it was practical.

"There's a small anarchist research station here to study the world's suitability for colonization," she said. "They missed a standard protocol contact check-in three days ago."

"Something must have happened," said Derrick Weaver warily. He was a short man with sandy-blond hair. Weaver was no one you'd notice until you looked into his pale green eyes. Then the menton *crackled* with intelligence. "The station AIs would've made contact on schedule, so clearly something has gone wrong."

Krazny shrugged "Possibly just a communications failure." She shook her head, her kinesics indicating that she didn't really believe that. "Anyway, Chat Noir wants to know for sure. I propose Weaver and Aqua check the comms substation. Sail and Quraini make contact with the main station. Reaper and I will coordinate from the gate." She glanced at the synthmorph.

The reaper was a disk carried on a skittering quartet of legs. Right now it wasn't showing any weapons—but that didn't mean there weren't any.

"You mean we'll *hold* the gate," said Reaper in a hard, brittle voice. It didn't *have* to sound that way. The ego riding the morph probably picked that voice for the same reason it hadn't told them its name. Trying to be scary. Why else ride a warbot unless you got off on that kind of thing?

"So there *is* danger?" asked Aqua, a sylph. She wore a turquoise vacsuit that hugged her pleasing curves and brought out the blue in her eyes. A mane of blond hair framed her perfect face.

"Look, we're just being careful," said Krazny. "Everyone's armed. Stay meshed and lead with your probes and everything ought to be fine."

No one spoke, but after a few seconds the group broke up into three teams.

As Iftikhar set off with the chimp, he couldn't help noticing that Krazny hadn't really answered Aqua's question.

* * *

Iftikhar didn't realize there could be so much *up* on an island. *Not a lot of islands on Mars.* His skin was slick with sweat under his vacsuit and his calves were on fire. Unlike the chimp, his body wasn't designed for scrambling through jungle. The ape kept slipping ahead and then coming back and saying things like, "I think there's a game trail five meters to the left," or "If you'd like to rest, we can."

This only made Iftikhar angrier.

After a while the chimp said: "You don't like me, do you?"

Iftikhar said nothing for a long moment, just staring. The chimp stared right back.

"You're from Luna," said Iftikhar.

Sail shrugged.

"I heard you *worked*"—he emphasized the word, to suggest he believed the tense was wrong—"for Direct Action."

"Work is not a dirty word," said Sail. "Martians work, too."

"Oh, we work," said Iftikhar bitterly. "My parents were killed in the Fall." He swallowed hard. "But they bought

a ticket out for me. I was eleven and alone. An infomorph refugee. It took *eight* years to work off my debt."

"Eight years isn't so very—"

"What?" snapped Iftikhar. "Long?" He lowered himself into a crouch, so his face was close to the chimp's. "It was my *childhood*."

Sail winced. "I'm sorry."

"Really? Wow. That almost sounded sincere."

"So, I'm a Consortium tool," said Sail softly. "Is that what you think, my young Barsoomian friend?" The chimp stared up at him with those big brown eyes, so like a human's. "If I'm so obviously a hypercorp spy, why did the anarchists invite me along on this mission?"

Iftikhar frowned. He had been wondering the same thing.

"All right," said the ape. "Here's another one. When does an anarchist act like a drill sergeant?"

He means Krazny, Iftikhar thought. Something clicked into place. "When she really is one." He paused. "Reaper's here for defense. Weaver to solve puzzles. Aqua because of her charisma."

"You're slow," said Sail, "but not irredeemably stupid."

"Something bad's happened."

"Maybe," said Sail softly. "But this world is too promising to give up, so …" The chimp spread his hands wide.

"They're checking it out," Iftikhar finished. He met the chimp's gaze. "If *you're* here they must believe there's some kind of corporate game going on."

The chimpanzee nodded. "Yes. That is a concern they have." He leaned forward, so his face was only centimeters from Iftikhar's and whispered, "But I don't think so."

Then he turned and raced ahead, disappearing into the green foliage.

* * *

BRANDON SAIL ■ HYPERCORP FREELANCER

They walked like that for a long time, Sail up ahead in the distance, Iftikhar struggling to follow. By the time Iftikhar reached the small research station, the chimp had already used the drone to search all the buildings.

[There's no one here,] he said.

Iftikhar studied the cluster of gray and brown prefab domes growing out of the jungle like toadstools. *I'd like to see for myself, if you don't mind.*

[Fine.] Sail's irritation came through loud and clear. [I'll search the jungle. Stay close.]

Iftikhar muttered a curse under his breath. Like he was going to follow the orders of some corporate sellout. He stepped into one of the big community domes. The power was out, the only light a faded parallelogram of sunshine from the open door. Iftikhar's boots clicked on the tile.

"Hello," he called.

No one answered.

A chill wriggled down his back. Suddenly he remembered his hallucination at the gate. *I almost had you before*. Death had nearly claimed him during the Fall.

This time I won't let go.

He wheeled around—

But there was nothing behind him.

[Iftikhar, *look*.]

He jumped—and muttered another curse. It was just Sail.

Iftikhar pulled up the chimp's real-time feed. Sail stared at the ground, bent over like he'd just been sick.

What is it?

[*This*.] The ape moved, loping on all fours, like he was too rattled to walk upright. He peered over a shallow ridge.

What the chimp saw was enough to wring a curse from Iftikhar. "There is no God, but God," he whispered, "and Mohammad is his Prophet."

* * *

KRAZNY ■ ANARCHIST GATECRASHER/COORDINATOR

REAPER ■ ANARCHIST GATECRASHER/WEAPONS SPECIALIST

UNKNOWN ■ POSSIBLE SURVIVOR

Krazny cradled the Medusan Arms Hammerstrike in her arms. Whatever had built this gate, it had owned a righteous tactical sense. She patted her automatic rifle affectionately. The gate's placement on a spit meant it could be defended by a single well-armed soldier. The beach was really a cove running 400 meters north-south and bracketed on three sides by steep walls of black rock. You could climb, you could slip across the narrow strips of sand to the north or south, or you could swim. That was it.

Krazny liked that just fine.

She glanced back at the southern approach. Reaper had that one locked down. She turned to look north—

Someone there.

She flashed on a humanoid shape in a silver hardsuit moving through the foliage, the helmet's mirrored faceshield hiding the morph's face.

[Contact!] she snapped.

[Got it,] answered Reaper, his ping filled with tension. [Targeting.] The warbot crouched down and extruded several weapons.

The figure held up its right hand, palm out.

[Are you rescue? Oh, thank God. Thank God.] The voice sounded male.

Without thinking, Krazny had leveled her rifle. [Sir, I need ID. Right damn *now*.]

[Yes, yes. Chetko. Artur Chetko. I—I'm a soil scientist.]

Without asking, Krazny's muse opened an entoptic checklist under the heading "Artur Chetko." Green check marks appeared next to Roster, Voice Match, and Crypto, all indications that it really was Chetko.

Krazny didn't relax. [What happened?]

[Virus. Holy God, it's bad. Some kind of respiratory thing. Virulent as hell. A third of us are dead. Damn it, we need *help*.]

Disease was certainly on the list of things that could've gone wrong. Not likely, but certainly possible. Especially if the virus had been engineered by some damn hypercorp. It didn't explain the communications failure, though.

[Stay there, don't move,] she told Chetko. Krazny used her private link to Reaper. [Go check him out.]

[Why me? You're closer, I'll provide cover.] Reaper wasn't the sharpest blade in the armory.

[Because synthmorphs can't catch respiratory infections, that's why.]

Reaper skittered down the beach, past Krazny's position, towards the scientist. He disappeared out of sight. The scientist moved toward Reaper, and she temporarily lost sight of him as well. She was briefly concerned, but then admonished herself. She knew Reaper could take care of himself.

A belief she held right up until comms went straight to hell.

* * *

The jungle's canopy filtered out most of the sunlight, allowing only stray beams to stab down from the green roof overhead. Heavy, verdant air pressed against Iftikhar. It was like breathing soup. He wiped sweat from his face with the back of his arm. The worst part was the strange sounds of hidden creatures: a xylophonic *burr,* a slide-whistle shriek, a deep, menacing growl.

Where are you, Sail?

[Just—*hiss*—hundred meters—*crackle* —due east.]

I think I can hear him better now.

[You're closer,] said Carter. [The interference seems to decrease with proximity. Go left.]

Left.

His foot found a tree root and he tripped, going face down into the moldering leaf litter. He grunted as the ground slammed the air out of his lungs and another root rapped him on the skull.

The leaves' sweet rot swirled around him, forced itself inside his chest. He set his hands in the moist soil and pushed his body up. A busy buzzing attested to the industry of insects.

And then he realized the perfume of rot *wasn't* leaves.

His breath caught. Suddenly he didn't want to breathe any more of this air. *Not any more.*

Holding his breath, he looked forward. The earth fell away from the tree, as if some giant had hollowed it out with a shovel, scooping away tons of soil and leaving a shallow pit. He edged forward.

Slowly, ever so slowly, he peered over the ridge's lip.

A scream wrenched itself from his chest before he could stop it.

Lying in the pit was a tumult of bodies. They were stripped naked, maybe a dozen of them, men and women, limbs bent this way or that, lying—no, *piled*—on top of each other in a way that no living thing would tolerate.

Something touched Iftikhar's shoulder and he shrieked and jumped. He wheeled and found the chimp behind him.

"Easy, boy, easy," said Sail softly.

"Before comms dropped out," gasped Iftikhar. "Krazny said something about a virus. Do you think—"

Sail shook his head. "Look closer."

Iftikhar inhaled unsteadily and made himself peer over the ridge. This time he saw what he'd missed before, what he'd *wanted* to miss before. The splash of crimson. Spilled blood.

The emblem of violence.

* * *

Klaxons were going off in Krazny's brain. Reaper wasn't responding. There was no sign of Chetko.

Except she didn't really *know* it was Chetko, did she?

It made perfect tactical sense. If you're going to attack a group, hit the strongest first—while you still have surprise.

Her mesh inserts were flooded with hissing, gray static. Someone was jamming. Sure sign of a hostile move.

Suddenly things were spinning out of control.

Her mind was racing. Was this some hypercorp gambit to seize control of the planet? Did they come through the Mars or Discord Gates? Whoever it was, they'd need the gate to get off-planet.

She quickly picked out the best tactical position on the beach, up against the back wall and under a small outcropping of rock, so she'd be difficult to hit from above. The position commanded the approach to the gate *and* the rubble from a rockslide offered cover from the northern half of the beach. Perfect.

She worked her way back into her little niche. The shade from the overhang must've crowded out the red-green shrubs because there was nothing but razorweed here. This stuff looked a little different from the regular kind, like it was slathered with raspberry jam. Probably the purple coral had entered some reproductive phase. The station biologists would probably think that was just swell—if any of them were still alive.

She moved carefully among the razorweed. No way she could avoid a few cuts, but she didn't want to reveal her position with a path of broken tubes.

The day was getting hotter. She spat on the ground and kept moving. She had to get into position before someone came around.

Krazny was panting now. She turned and spat again.

She froze.

Her mouth was already filled with more saliva and a warmth was spreading through her middle. *Did I—Did I just wet myself?*

Anyone with any kind of tactical sense would've picked this spot to defend the beach. *They knew I'd choose this place.*

She glanced down at her right hand. Some of the razorweed had cut through her glove. It wasn't a bad wound, hardly more than a nick, really, but—

She looked at the jam smeared on the razorweed.

Profuse salivation, shortness of breath, involuntary urination.

She wasn't certain it was a nerve agent until the convulsions began.

* * *

Iftikhar looked down at Krazny's broken and bloodied body laid out on the beach. The most terrible part was her head. Her skull had opened like the bloom of a delicate flower. He and Sail had returned to the gate to find Aqua and Weaver standing over Krazny's body. No one knew where Reaper was.

"One might posit that an unclassified carnivore killed Krazny," said Weaver. "But that doesn't explain what happened to the reaper."

"This is *crazy,*" yelled Iftikhar. "We're not detectives. Let's just go back. When they're resleeved they can tell us—"

"Iftikhar," said the chimp softly. "You know better."

He looked at Krazny's violated skull for a second before his eyes slid off and found another place to look. The realization hit him. They had taken her cortical stack.

Iftikhar shuddered. He understood why the killer might have destroyed the stack. If they hadn't, Krazny could identified her murderer, or murderers. But to *take* it—

That implied something far worse.

"All right," he said, "but let's *go*. Let's just go."

"*We can't,*" shrieked Aqua. "Don't you think we tried? Don't you think that's the very first thing we tried?"

"Someone took the gate control unit," said Weaver. "Without it, we can't interface with the gate."

"How long until Love and Rage checks back in here?" asked Sail.

"Five, six hours," said Weaver.

"Might as well be a hundred," snapped Aqua. "None of us could stand up to a reaper—we sure as hell aren't going to survive whatever can *kill* a reaper."

Iftikhar heard the hysteria in her voice and felt it welling up within him, too. *Get control.*

"The killer might not be powerful," said Weaver. "They might just be duplicitous. Maybe they lured Krazny and Reaper into traps."

Iftikhar found himself looking at the chimp, along with the others.

Sail folded his long arms across his chest and looked right back at them, his demeanor calm. Stoic.

Iftikhar looked at the other two. Their distrust was plain on their faces. He shook his head. "This is crazy. He was with me the whole time." And then he wondered if that was true. They *had* been separated for short periods of time.

"No one's saying *you're* innocent," snarled Aqua.

Sail looked at him. Raised an eyebrow.

Iftikhar had no reason to trust the chimp, but somehow, he did anyway. It just felt *right*. "Let's not do this."

"There's something strange going on here," said Sail.

"This is *ridiculous,*" shouted Aqua. "This is nothing more than some fucked-up hypercorp game." She stabbed a finger at the chimp. "And *he's* in it up to his eyeballs." She stalked off, moving south, down the beach.

Weaver glanced at her, that gigantic brain running through possibilities. Finally he turned and followed.

Leaving Iftikhar to wonder how he'd come to be the chimpanzee's lone ally.

* * *

Iftikhar turned on Sail. "You let them go. You knew you aren't the killer and you *let them go*."

Sail drew a deep breath. "You thought before I was a corporate plant. Well, you were right, Iftikhar. But that's not all I am."

"What's that supposed to mean?"

"It means that I'm not an anarchist like the rest of you. I'm a Consortium citizen. I freelance for various hypercorps. But that's not all I do."

"Who do you work for?" Iftikhar whispered.

"Firewall," said the chimp softly.

The young man shook his head. "Firewall? That can't—I mean, that's just a story. It's not real."

"Firewall protects transhumanity from the dangers that might destroy us all."

"No," said Iftikhar. "This is bad. It's murder, but—"

"Think, boy. This is more than just murder."

"But—"

The chimp placed both hands on Iftikhar's shoulders. "You did such a good job of figuring out why Love and Rage selected each member of the team. But you never asked yourself why *you're* here?"

* * *

Iftikhar lay on a narrow lip of black rock that jutted out from the sheer rock face, the unfamiliar seeker pistol clutched so tightly in his right hand that his knuckles ached. Below him was a descending carpet of greens: emerald and kelley and forest. The only non-green thing he could see was the black fur that covered the back of Sail's head, ten, fifteen meters from Iftikhar's ledge. The chimp was down far enough that the wall arced into a gentle slope.

Beyond Sail's perch, there was the beach and the sea.

And the gate.

The weapon ached in Iftikhar's hand.

I can't do this, he said to Sail over his mesh implant.

[You have to.] Static distorted Sail's words, but the chimp was close enough that Iftikhar could make them out.

Why can't you take the kill shot?

[No. The killer will expect a military-style ambush. He won't expect a double ambush. And he won't be looking for *you*.]

Because I am weak?

[No,] said the chimp patiently. [Because you *look* weak.]

But I'm not really?

[You trusted me, Iftikhar. Now why did you do that? Why did you trust a hypercorp agent?]

The hair on the back of Iftikhar's neck rose. He had asked that very same question of himself just a few hours before.

You're quite convincing.

[Yes,] said Sail. [But you're *not*. Want to try again?]

The question froze Iftikhar for a long, frightening moment, froze him as he stared down at the featureless expanse of green. *No,* he said and even in his mind it came out as a whisper. *No, I don't.*

[You were infected with Watts-MacLeod,] said the chimp. [You're an async, Iftikhar. You may not have been trained, but you have loads of psi talent. We just need a little bit of it today.]

But how did Love and Rage know? Why did they put me on the team? How do you know?

[It was Firewall that put you on the team. Whether you knew it or not, you have a keen intuition about the people around you. You know who is telling the truth and who is not, how they feel, how to persuade them.]

Iftikhar remembered trusting Sail even though he hated corporate drones. Remembered the flash of prescience he'd experienced at the gate.

[We knew these skills would come in handy,] said Sail.

Yeah. How exactly?

[I know a lot about you, Iftikhar. I've read your profile. You show talents in particular areas. One of your psi talents let's you see patterns more readily. You can pick them out where other people just see noise. Just look down at the foliage and concentrate. Concentrate on what doesn't fit.]

The killer could be anywhere.

[*Look.*]

Iftikhar drew a deep breath and concentrated on the sea of green. If Sail was right, somewhere down there an assassin was slipping through the forest, creeping up on the chimpanzee. All he had to do was divine *where*. If he put the ruby pip of the targeting laser on the right spot and pulled the trigger the micromissiles of his seeker pistol would take care of the rest.

But what was the right spot?

He would get nowhere looking for the well-hidden killer, he realized. He had to look at the trees, the shrubs. Broad fringed leaves gently waved in the sea breeze; the forest rippled in the wind, leaf and branch moving with the rhythm of sea.

Except *there*.

Iftikhar suddenly saw it. A bush moving in a way that didn't match. And then another. And another. All of them in a line that led to Sail's position.

Iftikhar raised his weapon in his shaking hand, settled the ruby dot over a patch of jungle between the killer and target and pulled the trigger.

* * *

The assassin had fallen in the shade of a grove of low trees, the victim of a combined assault by Sail and Iftikhar. It was a pleasant glen, out of the sun, cool and quiet, but when Iftikhar looked over the killer's body he could see the distant place where sea met sky through the trees.

He moved up on the killer slowly, not really believing they were dead. Each footstep a desperate act of will, his heart trembling in the cage of his chest. Whoever the killer was, they'd hidden their identity inside the silver skin of a hardsuit.

Iftikhar's micromissiles had smashed through the suit's centerline and fractured the helmet. Sail's hand laser had severed an arm. Iftikhar stopped a meter away from the dead killer in the suit.

"Go ahead," said the chimpanzee softly, from behind.

Iftikhar licked his lips and stepped forward. With the toe of his boot, he kicked away the fractured helmet.

He just stared, not really understanding what he was seeing. What was inside the helmet looked like a blue-green jelly dropped from the roof of a building. Flaccid stalks crowned with cilia were sprinkled across the creature's "face." Somehow the thing did not have the coppery smell of blood. Instead the corpse had the pleasant smell of a newly-mown lawn.

Iftikhar thought he might be sick.

"Now this is interesting," said Sail softly. "What do you know about Factors?"

The young man shrugged. "Same as everyone. Advanced alien race, communal organisms kind of like slime molds."

"It's been suggested they're predatory. Hard to explain their evolution otherwise. I can't imagine ambulatory pond scum hunting. But traps …"

"You're saying this thing has been setting traps for people. That it's after human colonists for *food?*"

Sail said nothing for a long moment. Then he looked up. "It'll have hidden the gate control unit. And the stolen cortical stacks. We probably won't find them, but we should search. So Krazny and Reaper and the others can regain their memories of this world—if they want them."

Iftikhar looked down at the suit, two arms, two legs, a head. "It was pretending to be human."

"In case someone saw it. So we would believe the killings were the result of faction fights, corporate politics—and not something else."

Iftikhar looked up, looked at the ape. "And what is the something else, Brandon? Why kill us on *this* world? None of it makes any sense."

The chimpanzee reached up and scratched his chin. Then he walked over to stand beside Iftikhar. For a long moment they stood there, man and ape, looking down at the alien body.

"Who knows," said Sail. "Maybe the Factor was a criminal exiled to this world. Or it was insane. Or it's a political dissident that came here to meet transhumanity and something went wrong.Who knows how aliens think?"

"How do we know it's the only one?"

Sail looked around. "We don't. But somehow I get the feeling this one was operating on its own. This doesn't have the feel of some major Factor operation. This feels more like lone wolf behavior."

Iftikhar frowned. "Or maybe we were right all along and this is some kind of hypercorp game."

Sail laughed. "You're slow," he said, "but not irredeemably stupid."

"Thanks," said Iftikhar dryly.

The chimpanzee put his hand on the young human's shoulder. "I don't know what happened on this world," he said softly, turning to look up into Iftikhar's eyes. "But whatever the future holds, if we stand together, I believe transhumanity can face it."

And somehow, calling upon some strange power he possessed but did not understand, Iftikhar knew the chimpanzee was right.

The young man was glad for Firewall's existence. Transhumanity was at the center of a strange political struggle whose rules it couldn't begin to even guess. There would be great danger.

But perhaps also great opportunity.

Iftikhar Quraini looked up, past the trees, past the beach, even past the broad ocean, his gaze settling finally on an infinite horizon.

GATECRASHING OPS

GAINING ACCESS

So you want to be a gatecrasher?

EXPLORATION

Everything you need to know to be a professional gatecrasher.

MISSION TYPES

What sends transhumanity through the gates?

ENVIRONMENTS

What lies on the other side of the gates.

Planet Types: The creators of the gates seldom picked locations with transhumanity in mind. ■ p. 34

Unusual Locations: Not all gates go to planets or asteroids, some go to far stranger locales. ■ p. 38

Xenolife: Knowing the difference between the next new vanity pet for the hyperelite and a toxic monster is vital. ■ p. 39

GATECRASHING OPS

Source: Entirely Unofficial Gatecrashing Wiki [Link]

WHAT WE KNOW ABOUT THE GATES

Posted by: Sagan Harris, Argonaut <Info Msg Rep>

Point of fact, there is very little that transhumanity understands about the gates. It's easier to classify what we *don't* know. We don't know who made them, what they're made of, how they work, or what their full capabilities are. We suspect they were made by the TITANs, but no one's really sure if that's true or if the TITANs simply found them first. We know that they are composed of some sort of programmable exotic matter, which has so far defied analysis. We think they create a wormhole in the fabric of space, though exactly how they do so is beyond our understanding. We know of five gates within the solar system and *thousands* of extrasolar gates, with the count rising almost daily.

About the only thing that transhumanity *has* figured out so far is how to interface with the gate control systems. We of course have learned how to open and close gate connections, but only after extensive periods of trial and error. The truth is, the vast majority of gate controls are not understood, and for the most part they are left untouched out of fear that some unforeseen event will be triggered. The gates within the solar system are all too highly valued and deemed irreplaceable, so the limited amount of experimentation that takes place with gate control systems is conducted on extrasolar gates that are suitably remote and considered slightly more expendable.

There is one thing we know with certainty: using the gates is an unpredictable affair. Despite what we have learned from half a decade of gate operations, our mastery of the control systems can be compared to that of a non-uplifted monkey seated in front of a car's manual controls. We might have figured out how to steer in order to go in certain directions, but the car is a mechanism far beyond our intellect and experience, with numerous functions that stymie and confuse us, and ultimately the whole situation is likely to end in injuries and suffering. The gates have an unfortunate tendency to act in ways that we don't understand. Even things we thought we'd figured out often go drastically awry.

Perhaps most significantly in the category of Things We Do Not Know is whether the gates are truly an opportunity—or a threat. Transhumanity has eagerly embraced the chance to expand out into the galaxy and explore new worlds and new life—perhaps too eagerly. Knowing as little as we do, we have no idea what dangers we may be placing ourselves in. We may find out that we have no control over the gates at all. In fact, we may not be the only ones *using* the gates. We strongly suspect the TITANs did, and it is completely possible that they still are. Many fear that the TITANs may one day return, using the gates, and finish the job of wiping us out. What if there is something else out there, however, some other threat? What if one day we open a gate to the homeworld

THE GATES: OPPORTUNITY OR X-RISK?

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[Public Key Decryption Complete]

You've asked why Firewall doesn't act to close the gates. The answer, of course, is complicated. I don't think any of the proxies are naïve enough not to realize that the Pandora gates pose a very real and credible x-risk. They provide an avenue not just for the TITANs to return, but for some as-yet-unknown hostile entity to reach directly into the solar system and attack us. Even if you consider the dubious notion that the gates can be defended as some sort of chokepoints, the expansion of transhumanity into the galaxy is itself worrisome to many. The more we make our presence known, the more traces we leave, the more noise we create, the more likelihood we have of making contact with other forms of intelligent life. Given that there is no certainty that this life will be friendly, we may be setting ourselves up for an unfortunate future encounter.

Make no mistake, there are elements within Firewall who decry the use of the gates and who argue, sometimes vehemently, that we must avoid using them. There are even rumors of some of these agents going off the reservation and taking up direct sabotage campaigns against the gates. The overriding opinion among proxies, however, is that the gates present a marginally better opportunity than they do a threat. Security is always a trade off, and sometimes you must accept a modicum of risk in exchange for a necessary gain. In this case, the fact that the gates allow us to expand transhumanity outward, making ourselves less centralized and not as easy to wipe out with a single stroke, is arguably the better choice. Additionally, the gates allow us to take a more pro-active approach, to learn from the galaxy around us and even from the ruins of dead civilizations we find. It is quite possible that long-dead species may provide us with answers or solutions to situations that might otherwise spell our doom.

There are no guarantees of course. Every trip through a gate is a potential danger. Keep that in mind, always. ☘

of some homicidal alien species, thus alerting them to our existence? What if the gates are already being used to spy on and monitor us, tracking all of our interstellar movements and colonies? With such a poor understanding of the gates, we have no way to know what dangers we are placing ourselves in simply by using them.

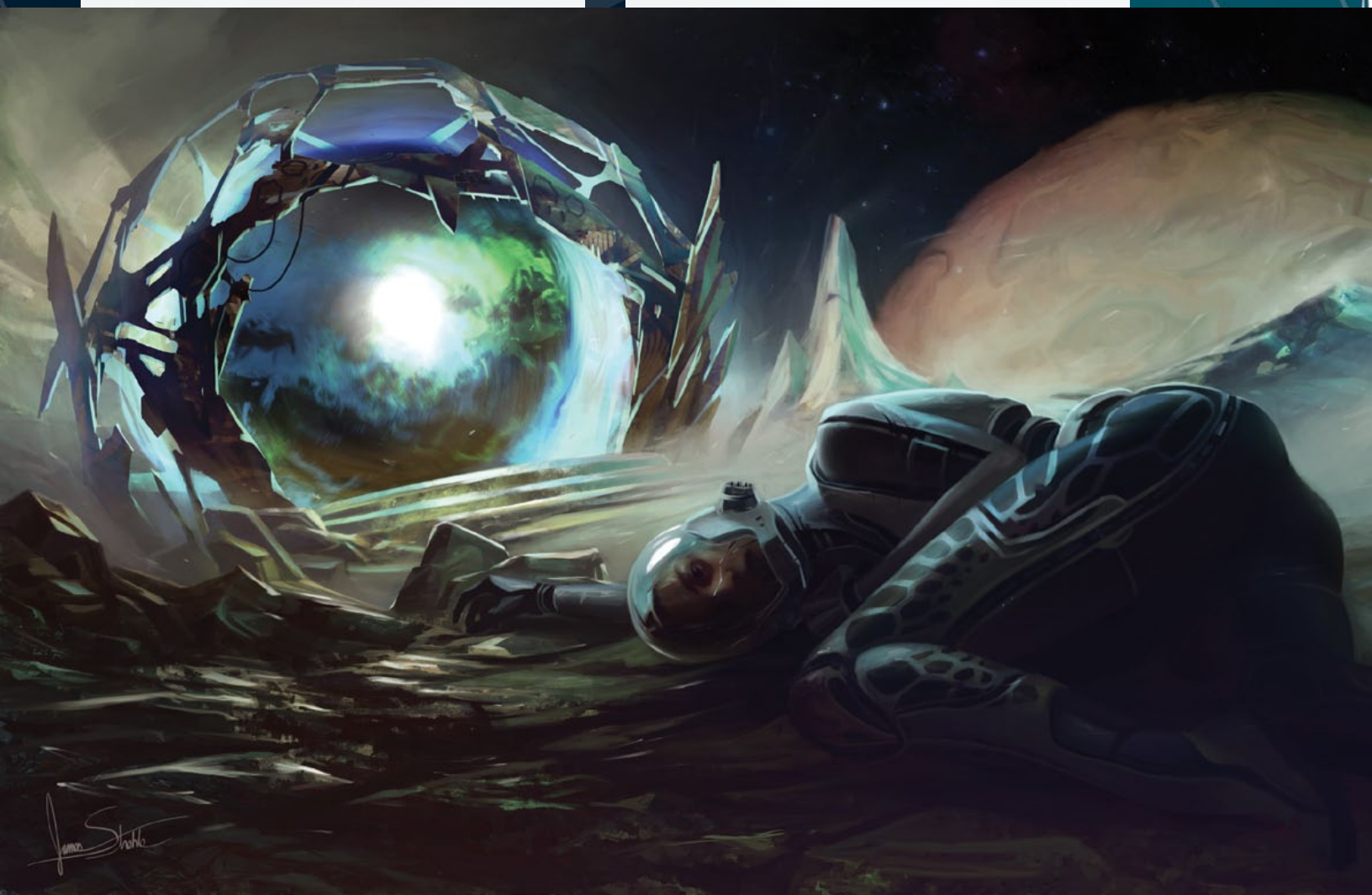
Pushing those happy thoughts aside, we must acknowledge the fact that transhumanity has already adopted the gates as another tool in our technological arsenal, despite the fact that we can't read or even identify the user guide and aren't really sure of the tool's intended purpose. Like many tools of our own devising, we are adept at conniving new and unexpected uses for the gates. Transhumanity is likely to continue to use and abuse the network of gates to its full extent—at least until something nasty comes along and convinces us otherwise. In the meantime, there are very good reasons to exploit the gates to our full advantage, from increasing our knowledge of the universe to expanding transhumanity's population and territory so that we might better survive any unfortunate future catastrophes. If the Planetary Consortium's propaganda memes are to be believed, the gates are the path to transhumanity's destiny as a galactic civilization. Despite the hubris, this is a goal for which many of us are more than willing to charge forth. It sure beats sitting at home.

GATE LOCATIONS

Posted by: Sagan Harris, Argonaut <Info Msg Rep>

The vast majority of gates so far discovered are physically anchored to some sort of astronomical body, whether that be a planet, moon, or small rocky asteroid. There are a few notable exceptions, such as the Aerie Gate free floating in the vacuum of space in a tidally-locked orbit around an extrasolar planet or the Vortex Gate that appears to be suspended by unknown means within the crushing depths of a gas giant's atmosphere. This standard placement, in conjunction with their size, implies that the gates are not intended to facilitate spacecraft travel, though some of them may be used for this purpose. (Most asteroid-locked gates, for example, require little in the way of escape velocity.)

The geographical placement of gates has varied widely, with some locations defying logic. Gates have been situated on open wind-swept plains, in cramped caverns, in deep underground tunnels, underwater, at the bottom of crevices, high atop mountains, and in at least one instance, embedded within an ambulatory ocean-surface biomass. They have been found on planets with toxic atmospheres, hidden within craters on remote asteroids, on surfaces ablaze with a nearby star's heat and radiation, exposed to the vacuum of barren moons, and buried within the methane ice of frozen worlds. Several gate locations



GEOLOGICAL STRATA IMPLICATIONS ON GATE AGE

To: Dr. Vargas, Ministry Science Advisory Group
From: Dr. Tiptree, TerraGenesis Geological Research Group 8

Thank you for inquiring into our research. Though our findings have been interesting, they are so far inconclusive. Assessment of the geological composition surrounding over three dozen gates has unearthed contradictory results. In a significant sample of our findings (over 40%), evidence overwhelmingly indicates the gate foundations to be extremely recent additions to their environments. Though exact timing is far too difficult to pinpoint, it certainly remains a strong possibility that these gates were put into place within the past decade, or around the time of the Fall, thus reinforcing arguments the gates were manufactured and located by the TITANs.

In many other samples, however, we have found gates that appear to have been established in time periods that are significantly less recent. In fact, some gates are so old as to be partially or entirely buried by the effects of time. Oddly, however, the dating on these samples varies wildly, ranging from several hundred years to billions. You read that right: *billions.* Some are so old as to predate the Earth itself, which implies that something vastly more ancient than the TITANs created these gates—or that the TITANs discovered time travel.

Naturally this information has wide-ranging implications. We tried to suppress it until the memeticists could find a good way to spin it, but with the argonauts jointly involved in the project, that was a lost cause. The cat is officially out of the bag, though various Consortium interests are managing the leak by arguing that the TITANs may simply have the means to embed the gates in ways that make them look incredibly ancient. I suppose that's a possibility, though why a vast machine intelligence would want to fuck with our heads like that is beyond me. Maybe it's their idea of a joke. In my mind, however, such arguments run far too similar to the desperate claims of pre-Fall religious creationists who argued that their deity stuck dinosaur bones in the ground in order to keep humans guessing.

A very serious possibility here is that the TITANs—and us—are but the latest in a series of intelligent life forms who have found and used the gates, eventually going on to create more of our own, adding to the network. If the TITANs did indeed discover a gate in our solar system, it is not a stretch to presume that their vast intellects could have found a way to copy it, and both find and create more. The archeological evidence strongly indicates that at least one other alien species, the Iktomi, also made use of the gates. This leads to the distinct possibility that the network of wormhole gates we now use are the relics of not one, but *many* alien civilizations. This position is gaining traction in research media and peer review circles.

The question then, of course, is: where did they all *go*? ☘

seem to be completely entombed in stone, with no possibility of actually passing through, even despite attempts to drill.

Most gates appear individually; it is rare for more than one to be found in the same star system. There are exceptions to this rule, however, and several nexus points have been discovered, similar to the solar system, with more than one gate.

GATE FACILITIES

Within the solar system, the Pandora gates are prized and protected, which is no surprise given their strategic and economic value. As the centerpoint of numerous activities, each of these gates has sprouted complex encircling settlements, as if vast bureaucracies, management ecosystems, and security apparatuses were fed and nourished by the entropy pouring from each wormhole. Though the individual setups vary, they share some notable features.

Each of the solar system gates are now housed within shielded artificial structures, sealing off the gates from outside view. While the gates themselves are protected within large warehouses, with plenty of room for operation, observation, and security measures, these are usually connected to larger campuses and structures. These linked buildings are home to prep centers, decontamination facilities, research labs, sensor arrays, armories, supply depots, fab labs, minifactories, repair centers, vehicle pools, medical wings, as well as housing and entertainment for the hundreds or thousands of staff who man these facilities. The gates used most heavily for colonization projects—notably the Martian and Vulcanoid Gates—feature additional facilities for training colonists and meeting the colonies' logistical/supply chain needs.

These gate compounds are often equipped with internal transportation systems for moving people and goods, potentially including rail lines leading right up to the gates themselves (and continuing at the colonies beyond). Spaceports are also located nearby, but a suitable distance away for safety purposes. The airspace near the gates themselves is universally off-limits and guarded.

GATE SECURITY

Gate facilities are among the most secure places in the solar system. These complexes are blanketed with several layers of sensor systems and defensive nanoswarms. Getting anywhere near them without passing through redundant rings of identity authentication and authorization is nigh impossible. Security guards and sentry bots are sometimes authorized to use deadly force against intruders. Combat shells, mechanized troops, and heavy weapons emplacements will bring major firepower to bear against more serious attacks. Interceptor drones and hunter-killer bots swarm any surrounding airspace, while fightercraft and warships stand guard over nearby orbits and space. Most gate complexes are in fact more heavily guarded than common military facilities.

Not all of these defenses are pointed outwards. The gates themselves are encircled with multiple defensive perimeters, designed to thwart or at least stall any offensive originating from the gates themselves. There is serious concern and worry that some hostile entity might employ the gates as an avenue to attack or even invade the solar system. It is wise to assume that most gates reside in the cross-hairs of orbital strike platforms or that they are mined with "last resort" nuclear or antimatter bombs.

Extrasolar Gate Facilities

Outside of the solar system, gate environs are significantly different. Only a few colonies boast gate facilities of any scale, much less anything close to that found within the solar system. Extrasolar gates are very much virgin frontier. Though it is common practice to monitor them with sensors and post robotic sentries, there is little in the way of major infrastructure or defensive installations. On many worlds, in fact, it is quite easy for a gatecrasher to approach a gate and access the control systems without interference. The more occupied an extrasolar site is, the more likely the local gate will be upgraded with supply depots, housing encampments, research labs, communications centers, weapons batteries, and so forth. In colony worlds that make extensive use of indentures, procedures are often put in place to keep conscripted laborers from accessing the gate site and escaping.

Gate Design and Appearance

Posted by: Sagan Harris, Argonaut <Info Msg Rep>

Though the Pandora gates are all very similar in look and function, in truth there are many notable differences between individual structures. First among these is size. Some of the gates are quite large, with the main spherical cage having a radius of over 30 meters and a volume of over 100,000 cubic meters, with openings easily large enough to drive a tank or push a shuttle through. On the other hand, most gates are significantly smaller, with the lower end gates having a radius of approximately 2 meters across and a volume of only around 30 cubic meters, just large enough for individual transhumans to pass through one at a time. There is some speculation that the gate sizes may be programmable, though no one has succeeded in reshaping one yet, or at least acknowledged such to the research community. It is possible to manipulate the wormhole size so that it is smaller than the gate; this is in fact standard procedure when connecting to unknown locations. In these cases, the wormhole is intentionally kept just wide enough to stick a microsensor through, while preventing anything larger from coming through.

All gates have the same basic form: a rough sphere of interlocking angled arms, like a round patterned cage. These black arms are solid and composed of an unknown form of stable and programmable exotic matter. Despite almost a decade of study, the exact composition continues to spur a raging debate in materials science and physics circles, and there seems to be some evidence that different gates may actually be composed of different substances, or perhaps change composition over time. The arms move and change shape when new destinations are programmed into the gate, though it is interesting to note that set destinations do not always produce the same arm configurations.

Physically, gate arms have a polished metal look, and they seem to be impervious to signs of aging or physical damage, having an inherent self-repair function. Aside from the Discord Gate incident, nobody has yet been willing to risk damaging a gate—at least that they've admitted—and so no one is quite sure just how resilient to damage these structures are. Analysis of the material properties suggests they can easily shrug off concentrated burns from even our heaviest beam weapons and are all but immune to personal weapons fire.

Disturbing to the Senses

One documented and much-discussed phenomenon regarding the gates is their unusual visual appearance. To many observers, the gates are odd and difficult to look at, with blurred edges and a seeming resistance to coming into focus—a visual feature that is acutely unnerving and sometimes invokes physiological symptoms such as vertigo and nausea. Various experiments attribute this to some metamaterial quality of the gates' physical structure, impacting the visual wavelengths. Scanning the gate cage in other electromagnetic wavelengths has produced similar oddities: they are all but invisible to higher and lower frequencies, including radar, microwave, terahertz, x-ray, and gamma-ray scans—which makes them notably difficult to spot with robotic probes and long-range sensor scans. Inactive gates are notably cool on thermal imaging, however, exuding very little thermal radiation, and so can be spotted by their contrast in warmer environments. Strangely, the material composing the gate arms fluoresces and shows up quite brightly in the ultraviolet band.

Most likely due to these metamaterial qualities, many transhumans find the gates to be physically unpleasant to view. As a consequence, the gates themselves are often shrouded from sight within gate facilities, meaning that gatecrashers only see the gates themselves immediately before stepping through.

There have been numerous recorded incidents of visual hallucinations in the presence of the gates, with various accounts describing fleeting images, hazy apparitions, and flickering distortions. The vast majority of these involved biomorphs, and the prevailing theory is that the gates in question vibrate at infrasonic frequencies in resonance with human eyeballs (19 Hz), creating visual illusions. The gates do indeed emit both ultrasonic and infrasonic hums when in operation. Several instances involving similar visual anomalies with synthetic morphs remain unexplained.

WORMHOLES AND TIME TRAVEL

One of the common questions that arises with the Pandora gates and the wormholes they create is: do they allow time travel? The answer, as far as transhuman science currently understands, is: no. At least, not exactly.

Part of the confusion lies with the fact that gates seem to allow superluminal (faster-than-light) travel. In other words, a gatecrasher traveling through a gate to a remote destination four light years away will arrive instantaneously, whereas light itself outside the wormhole will take four years to cross this same distance. This is because gate travel itself works by curving space so that two distant points connect. The speed of light is not exceeded *through* the gate; any light passing through the wormhole would still travel far faster than the gatecrasher. Special relativity only applies locally.

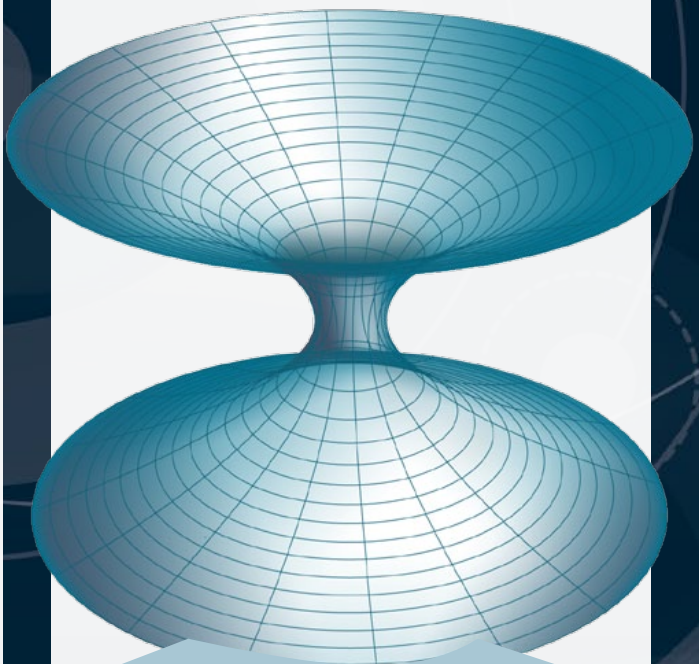
There are researchers who have argued, both currently and in the past, that wormholes could be manipulated to allow time travel. In order to do this, one end of the wormhole would need to be accelerated to a high velocity in relation to the other and then brought back. Within the wormhole, time occurs at a rate separate from that outside the wormhole; two clocks at each end of the wormhole will always remain in sync. To an external observer, however, the accelerated end of the wormhole would have aged much less than the stationary end, due to relativistic time dilation. This means that someone entering the wormhole from the accelerated end would exit the stationary end at a point *prior* to their entry. This theory has yet to be verified with actual experimentation, and numerous counter-arguments have been raised that suggest that quantum vacuum fluctuations in such a scenario would destroy any wormhole that enabled time travel—or at least anything passing through it, including information. This remains in accordance with the chronology protection conjecture, which strongly suggests that the laws of physics prevent time travel. Other theories have been suggested that could circumvent these problems, though all such debate remains abstract and unproven. ■

THE WORMHOLE

Though many variant theories have been postulated, the emerging scientific consensus is that the Pandora gates inflate a traversable Lorentzian wormhole from the quantum foam when activated, bridging two separate parts of the universe; a shortcut via a trick curvature of space. Intense electrical charges are generated by the gate apparatus, creating a palpable sense of electromagnetism at work nearby. Within the throat of the wormhole, however, researchers suspect some sort of negative energy field is at work, suppressing electromagnetic fluctuations to stabilize the wormhole and keep it open. Still others theorize that each wormhole is crafted using the negative mass of a cosmic string. A small minority continues to argue that the wormhole connections are in fact zero-width Planck-scale bridges through which only information is transmitted, and that the gate cages use unknown means to scan, disassemble, and reassemble anything that passes into them on the other side.

To viewers, the wormhole within the cage appears as a pure black sphere of nothingness, rippling with green static energy. Like the cage, the wormhole itself is effectively invisible on various electromagnetic wavelengths. The wormholes bleed Hawking radiation, however, so they show up very brightly and with a distinct signature on thermal scans.

The unknown fields surrounding each wormhole effectively keep the environments at each end of the throat or tunnel from interacting. This means that gatecrashers do not need to worry about suddenly losing atmosphere or getting sucked through if they open onto a vacuum environment, nor do they need to worry about the remote location's hostile atmosphere, radiation, or gravity until they pass through. No sensory data passes through the wormhole; it is impossible to see, hear, or otherwise sense what is on the other side without passing something through.



LORENTZIAN WORMHOLE

- Why didn't you tell me that asyncs are sensitive to the gates?
- I wasn't aware they were. Did something happen?
- Yeah, something happened all right. On the jump out she got all fidgety as we approached the gate. She tried to hide it, and I think the gate ops guards passed it off as newbie nervousness, but her kinesics told me she was well and truly spooked. When our turn came, I practically had to push her through. Then, on the other side, she goes catatonic. Just stood there in the way. Corpsec took notice right away, drawing a lot of attention I wasn't interested in having. Luckily she snapped out of it before it became an incident.
- I'm not aware of any of our asyncs reacting to a gate in this way before, and we've sent more than a few outsystem. What did she have to say about it later?
- She said the gate was talking to her. She said a lot of things, and none of them were good. I had to stop Mekhet from ventilating her braincase right there and then. She was on thin ice already. When she started talking spooky, we were ready to assume the worst. We let it slide, but that wasn't the bad part. That came when we were trying to extract ourselves back through the gate after pulling the op.

The job went according to plan, except that corpsec caught wind of our activities a little quicker than we'd hoped. We were back at the gate site, ready to open a link to the Fissure Gate on schedule, when they caught up to us. In the middle of the fight, our pet async suddenly went mental on us. She pulled some sort of mind trick on Fareed, convinced him to dial up a different gate than Fissure. No idea where she got the address from. Next thing we knew, she stepped through to who-knows-where. Didn't say a word to us. Fareed immediately snapped out of it, thankfully warning us before the rest of us stepped through. He barely had time to dial up Fissure again so we could get away before the heavy artillery showed up.

- So she's gone? Do you know where?
- No idea. But Fareed was with it enough that he still has the address she dialed in … ✽

PANDORA GATE RUMORS

There are many unverified rumors about the Pandora gates in circulation. These tall tales, spread word-of-mouth between gatecrashers, are typically exaggerated, with little or no basis in reality. They might be complete fantasies, propagated by misunderstandings of the physics involving wormholes, or the result of deliberate memetic sabotage. A few remain in the realm of possibility but are unverified with any sort of experimentation or evidence.

- **Pan-Galactic Wormholes:** To date, all wormhole destinations have led to remote locations within the Milky Way Galaxy. In fact, with a few exceptions, all lead to locations within Orion's Arm. No gates have yet been discovered that lead to other galaxies (rumors of a gate opening in one of the Milky Way's satellite dwarf galaxies are common but unverified). It remains unclear whether this is a physical constraint on the wormholes themselves, meaning that they are unable to bridge the immense distances between star clusters, or simply that we haven't yet established the right connection.
- **Cosmological Wormholes:** Some theories claim that wormholes should be able to create connections outside of this universe, establishing links to the bubbles containing other universes. In fact, a religious cult with a small following of gatecrashers known as the Cosmonomads believes that the gates do in fact link to a universe or universes that mirrors our own, one of myriad within a proposed multiverse.
- **Vast Simulation:** One philosopher has suggested that all of the experiences people have had traveling through wormholes are not real but part of some massive virtual reality simulation run by an unknown cosmic entity. According to this idea, the gates are in fact nodes or routers in some sort of galactic computer network. This theory has led to speculation that other intelligences are living within this computer network, monitoring and analyzing transhumanity.
- **Forknapping System:** Among those who worry that the gates are some trick or trap of the TITANs, some believe the AIs still control and monitor the gates and mentally scan and steal a fork of everyone stepping through. These copies are whisked away and incorporated into whatever hive mind or gestalt intelligence the TITANs have created, along with the millions of uploads they ran off with during the Fall. A variant of this rumor claims that the TITANs aren't stealing forks, but are physically copying everyone who passes through a gate, collecting millions of transhumans for some unknown purpose.
- **Alien Conspiracy:** On some underground mesh nodes, you will find a thriving network of people convinced that the Planetary Consortium is secretly in league with some alien species that uses the gates—and may even have built them. According to the more moderate conspiracy theorists, the Consortium has established a pact with these aliens that enables transhumans to colonize certain areas of the galaxy, but that makes other areas strictly off limits (the aliens have, of course, hardwired these limitations into the gate controls). More extreme rants claim that the Consortium leadership is in thrall to a group of alien masters, some of whom walk among transhumanity disguised. The stated intent of these aliens varies, though most suggest the aliens are some sort of parasite or view transhumanity as an entertaining slave race or food source. ■

GATE OPERATIONS

[Begin Transcript]

Transcript: Diogenes University/EGR-392 Pandora Gates/Session 2 Chat Log

Mod: ProfTex

Attendees: 18

ProfTex: Welcome class. Today we're going to expand upon our first lecture and take a look at the operation of a Pandora gate. Are there any questions about last week's discussion?

Atomik_Annie: Yes, sir. I read that the gates are made up of a niobium-silicon-yttrium lattice, according to Dr. Statham. What is the feasibility of building one of these gates?

ProfTex: Well, Statham has jumped the gun a bit there. Research has confirmed those three elements are present in several gate constructions, but only the outer layer. We've literally only begun to scratch the surface. The material composing the gates has some unusual physical properties and characteristics, to say the least, and is also mutable. Making materials like this is currently beyond our scientific understanding and nanotech capabilities. The real genius in Statham's research is just determining that much.

Anyone else? No? Okay. Gate operation. How do we operate a gate?

Kinalla_Ikla: We plug commands into the gate's control system?

ProfTex: Tell me about this interface.

Kinalla_Ikla: It was devised by the argonauts, after they made some breakthroughs researching the original gate on Pandora. It connects to and communicates with the operating system built into the gate structure, the growth on the gate arms.

ProfTex: Correct, though there are several models of gate interfaces now. The argonaut version is open source, and so is the one you'll be practicing on. Pathfinder and Go-nin have developed their own proprietary systems. So now tell me about the gate's built-in OS.

Y3K: It's some sort of biological computing system we think, based in the organic growth that is spread across the gates.

ProfTex: Also correct. The cellular automata in this algae-like growth seem to operate as an advanced computational network, unlike anything we can produce. It's an amazing achievement just to be able to get our primitive-by-comparison systems to talk to it. The chemistry of the setup is fascinating, but we'll get to that. Let's jump ahead. Who can tell me about the libraries?

Huan Hsu: Aren't the libraries the preset lists of locations contained within each gate's control system? Like the addresses to other gates?

ProfTex: That's right. And what do we know about them?

Huan Hsu: Each gate seems to have a different set of "addresses" in its library; they aren't the same. Attempts to copy addresses or entire libraries to other gates haven't worked.

ProfTex: Good. That may be because each address represents a set of spatial coordinates and conditions that are relative, and so unique, to that particular wormhole. The address used to connect to the Vulcanoid Gate from the Martian Gate is completely different from the address used to connect to the Vulcanoid Gate from Pandora.

BasilC: But we haven't really decoded these addresses yet, right? So it's possible that there's a way to use the same address at a different gate, but we won't know until we crack the code?

ProfTex: That's quite possible. We use the term "addresses" very loosely, because all we actually know is that there seems to be a particular bit of code, a particular reference in each library, that corresponds to each gate. Each address is in fact a rather large dollop of data, in the range of yottabytes, that we've only learned to identify by certain aspects.

Huan Hsu: And this is why we can't tell where each address goes, right?

ProfTex: Sort of. You may remember that I noted several studies that are researching the characteristics of different addresses, as charted against the locations of the gates they connect to, to see if they can discern any recognizable patterns. There in fact seems to be some progress here towards creating a useful taxonomy for the different addresses. For example, we may someday be able to tell what kind of a star the extrasolar system the gate opens will have by its address. Perhaps more interesting to gatecrashers, however, would be classifying the addresses by the likelihood that they will lead to something of value—habitable worlds, exploitable resources, etc—or, on the flip-side, lead to something dangerous, like the middle of a supernova. They are only just starting to break ground in this area, however, and so far the results are far from reliable. Speaking of reliability, have the libraries been consistent?

Kinalla_Ikla: No, you said that there are documented cases of addresses simply not working, disappearing from the libraries, and new ones appearing.

ProfTex: That's right, and that's one of the reasons we seem to have lost contact with several colonies, such as New Sacramento. That extrasolar system was regularly accessed from the Discord Gate for over two years, and then the address mysteriously disappeared—or at least, the gate techs can no longer access it. There have also been documented cases of addresses opening to new locations than they previously did, with no apparent change in the data, as far as we can tell. So let's not presume that the libraries are reliable.

Now, you're accessing the gate interface, you pull up the address you want from the library, and you send the commands to open a wormhole connection there. What happens then?

Tsokatos: The wormhole sucks you in and the TITANs eat your brain?

<Nervous Laughter>

Tsokatos: The gate's cage restructures itself, then generates a new wormhole?

ProfTex: How important is this restructuring, with the arm movements? How is it accomplished?

Atomik_Annie: Very. You said the locations and shape of the arms seems to impact the fields at the wormhole mouth and possibly energy outputs.

ProfTex: Yes, in order to affect the wormhole characteristics, the arms must move. Input from the gate's control system is passed through a network of nanoscopic computers—the programmable matter that makes up the arms—which connect to the machines around them to alter their shape, density, and other characteristics. Attempts to move the arms mechanically or with force have failed. In theory, if the arms were restricted in some way, the wormhole would not open or at least would not open properly.

Huan Hsu: Question, professor. How are the gates powered?

ProfTex: That's an astute question. While the gate mechanisms most certainly draw power from somewhere, we have not actually identified the source of this power yet. There are no recognizable batteries, reactors, or anything of the kind. Our best guess is that there's some advanced physics at work, allowing the machinery to draw energy from its surroundings, from the universe itself. It's a mystery. Maybe in twenty years, one of you will solve it, eh?

Ok, let's talk timeframes. How long does it take to establish a wormhole link?

Y3K: It varies. Anywhere from 10 seconds to 10 minutes. There doesn't seem to be consistency, even with the same addresses.

ProfTex: That's more or less true. In practice, the timeframes are relatively stable, but they've been known to change without warning, throwing off connection timetables. As a gate operator, your job will be to ride shotgun on this, making adjustments as necessary to keep things on schedule as much as possible. An extra 5 minutes spent opening a gate connection can mean 5 fewer minutes to transfer supply materials through to a needy colony, in order to make the next connection on time.

Kinalla_Ikla: Can gate connections be timed? Preprogrammed?

ProfTex: Absolutely. This is common practice, in fact, especially for extrasolar colonies, in case something happens to those skilled in gate operations.

Tsokatos: Excuse me, prof, but aren't the gate connections known to sometimes cut off prematurely? Ahead of schedule, without warning to the operator?

ProfTex: Yes, that's known to happen. Not often, but enough to be statistically significant. This could be some sort of safety mechanism, where the gate shuts down an unstable connection before something goes wrong. It seems to happen with some links more than others. Wormhole stability is a factor that plays into mission priority decisions. A few potentially sweet colony spots or resource finds have remain untouched due to dodgy connection rates.

RuiXue: What happens when a gate closes like this? Is there any warning? What if someone is transitioning at the time?

ProfTex: Let me put it this way: you don't want to be caught in the mouth when this happens. When the wormhole shuts down, anything that's passed through is through, anything that isn't isn't. If something is transitioning, it will be sliced in two. It's happened to people, with unfortunately messy results. Luckily, there's usually a few seconds warning, so pay attention to those claxons and entoptics, people. Sometimes, however, there isn't. So keep your backups up-to-date.

BasilC: I've also heard stories of gates malfunctioning and fusing people and things together. Is that true?

GATE EXPERIMENTATION

[Begin Report]
File 28387C—Extrasolar Gate Experimentation #322
1100: Stable wormhole connection opened to gate GLASS CHILL TANGO
1115: Assessment complete, connection status nominal.
1130: Experimental gate code BRASS WATER SKETCH entered into gate control system.
1145: Probe passed through with programmed return time of 1205.
1155: System check. Wormhole still nominal.
1200: BRASS WATER SKETCH activated.
1200: Alarms triggered. Wormhole link unstable. Mouth field scans report energy spikes.
1202: Imminent wormhole failure alert triggered.
1203: Wormhole failure. Gate control system temporarily deactivated.
Casualty Report: 5 members of the experimental team immediately killed by some sort of cone-shaped pressure field that emanated from the wormhole for .003 seconds. This field exerted over 6,000 newtons of force. Death was instantaneous, their shells were crushed, and cortical stacks were not recovered.
Evaluation: BRASS WATER SKETCH returned to Programming for further work. ■

ProfTex: No, not really, at least, not as far as I'm aware. If there's something in the way on the other side of the wormhole's mouth, you would simply be pushed into it, there is no melding of matter.

Kwaku_Nortey: What happens if a gate opens a wormhole to a gate that already has an active connection with a third gate?

ProfTex: There's a mechanism for this, a busy signal of sorts. The gate trying to make the connection will simply go on standby and wait for the remote gate to close its active wormhole. If more than one gate tries to link to an active gate, they'll essentially queue up.

Y3K: So, by default, a remote gate will automatically open when a gate tries to connect to it, as soon as there's no other active wormhole? The remote gate can't choose to block the incoming link?

ProfTex: Actually it can. By default the gates are set to a sort of open access mode, where they will take any and all connections. The Love and Rage Anarchist Collective actually figured out a way to restrict this, so that an incoming connection was only established with local gate approval. They originally used this to keep Pathfinder and the other gate corps from accessing worlds they wanted to keep free from hypercorp exploitation. These techniques were shared, of course, and now approving incoming links is SOP with the five solar gates, though most extrasolar ones remain in permissive mode. It's considered a safety measure to prevent an unauthorized connection from a hostile alien entity.

Typically, a bit of a cold war has developed over this feature. Pathfinder gate hackers figured out a way to remotely override this connection blocking protocol. Shortly after that, TerraGenesis found a way to tweak the settings in a way that blocked the Pathfinder hack again. And so it continues to this day. Whether or not a remote gate can be opened may depend on the hacking capabilities of the gate operators at either ends.

Y3K: So the remote gate operator, if there is one, can tell where an incoming connection is coming from?

ProfTex: In theory, yes. Assuming it's in that gate's library and has been pre-identified. As noted earlier, though, the libraries are prone to glitches.

Ok, enough about problems, let's get back to the basics. You've dialed up a remote gate and established a connection. Who can tell me what the wormhole looks like?

Langjökull: It's a black sphere, confined with the cage. Black as the void. Black as the Jovian Junta's heart.

ProfTex: I don't remember this class having a poetry component, Langjökull, so let's keep the politics out of it. Black is correct, however. All those ancient hack poets should be alive today to see one, to see what "blacker-than-black" really means. The sphere can't be pierced by visual or other wavelengths or indeed by energy of any kind. Shoot a laser into it, and it stops dead. The "surface" of the sphere is actually a bit shiny and reflective, at least up close. The fields at the mouth even have a small amount of surface tension, approximately one hundred kilopascals in most cases. The gates seem to change their surface tension to exceed that of the local atmospheric conditions. This prevents bleeding of the atmospheres or suction into a vacuum. Once the surface has been breached, there is a slight tug, around half a newton, pulling objects through.

Atomik_Annie: But you can pull it back, right? Like tethered probes?

ProfTex: Yes. It's not so much that a transhuman couldn't break free if they didn't want to step through, but if you leave an object spanning the threshold, it will slowly but surely be pulled through. This could be a built-in safety feature, to prevent items from being caught on the threshold when a wormhole closes.

Now, stepping through the gate is an instantaneous process. The moment you cross the mouth, you'll be coming out the sphere at the remote gate location. There is no measurable time delay in terms of the crossing. Blink and you'll miss it.

OK, I think that covers our review of last week's material. Let's move ahead to a more detailed examination. In your entoptic display you will see …
[End Transcript]

ORGANIZING MISSIONS

Posted by: Alisha Endowi, Gatecrasher <Info Msg Rep>

Exploring the universe isn't easy or cheap. Only a small segment of transhumanity even has access to the gates, and those that do tend to control them carefully, almost using them as chokepoints to prevent their rivals from exerting an extrasolar presence. Some of these gate controllers sell access, but buying wormhole time isn't cheap. The logistics of gatecrashing missions are also intimidating, even when just adhering to simple safety protocols.

SPONSORS

If you're interested in taking a gatecrashing jaunt, your best option is to find a sponsor. Sponsors generally break down into five categories: gate controllers, hypercorps, governments, researchers, and private ventures.

Everyone knows who the gate controllers are, in particular Gatekeeper, Pathfinder, TerraGenesis, and Go-nin. Each of these hypercorps controls a gate within the solar system and is actively exploiting its use for various types of missions. This means they hire personnel for through-gate operations, sometimes employing freelancers. As their operations are more extensive and well-established, however, getting in on the ground floor with these players can be difficult. The specific operations and procedures vary greatly depending on the entity in question. TerraGen focuses far more on exoplanet surveying and terraforming ops, for example, and so uses more geologists, xenobotanists, etc. Pathfinder is more focused on colonization, and so requires engineers, administrators, security, and social engineers.

Quite a few other hypercorps are engaged in extrasolar missions, however. Some of these are contracted by the gate corps for objectives that they lack the resources to pursue, consider too risky, or simply fall outside their main interests. Similarly, the gate corps also bring in contractors just to handle specific parts of a mission for which they lack the required staff. A thriving market has developed between numerous hypercorps that feed on these contracts, supplying everything from individual qualified personnel to supervising the logistics of an entire operation.

Many corps have their own extrasolar interests in mind, but lacking their own gates they must resort to buying gate time from a gate-controlling entity. These operations are often handled quite differently, with the logistics, planning, and sometimes even the objectives hidden from the gate corp. The gate corps provide some leeway in terms of exercising discretion for their client's sake, but they do draw the line on certain points. Outside gate operators are rarely, if ever, allowed to control the gate itself, unless they have been thoroughly trained and vetted by the gate corp in question—they must protect their assets after all. Likewise there are restrictions on what types of materials may be transferred through the wormholes. Nukes, biological weapons, experimental nanotech, antimatter, and similar potential threats are verboten. There are rumors that some hypercorps have obtained exclusive rights for testing specific weapon systems and experimental technologies in secret extrasolar locations, but such arrangements are rare and very strict.

The same rules also apply to government entities that are interested in extrasolar affairs. Outside of the Planetary Consortium (Pathfinder) and Titanian Commonwealth (Gatekeeper)—and maybe Morningstar if you count their ties to TerraGenesis—the other states lack direct gate access. The Jovians have so far shown little interest in the gates, and in fact openly object to their use as a potential security vulnerability that could threaten the entire solar system. The Lunar-Lagrange Alliance, however, has sponsored several small missions, negotiating with various gate corps as appropriate.

A few non-corporate entities take advantage of the gates for research purposes, also leasing wormhole time from the gate corps. Most of these work through Gatekeeper, which provides better terms, having been specifically established to further gate and extrasolar research. The argonauts in particular are very involved, though other agencies like the reclaimers (researching terraforming) and some mercurial groups (studying xeno-environments and alien life) have pursued missions, among others.

Naturally, numerous private concerns have taken an interest in extrasolar affairs, notably various oligarchs and gerontocrats who are wise enough to take the long view towards extrasolar expansion. Rumor is that several major figures have used their vast wealth to buy permanent gate access, funding missions of various stripes in exchange for gaining exclusive access to their own private worlds.

SELF-SPONSORSHIP AND BUYING ACCESS

Let's say you represent a resourceful person or group that wants to engage in their own extrasolar missions. Be prepared to pay through the nose and quite possibly other orifices because "gate time" is not even in the same mesh as "cheap."

The going rate for a single minute of gate time benchmarks somewhere around 50,000 credits. This is the bare minimum, with no extra logistical support, which also requires you to sign a metric ton of waivers and liability contracts. The longer it takes you to shove people and gear through, the more you'll get reamed in the bank account. This fee also doesn't include the set 100,000 credit gate operation fee, which is what they charge you simply for allowing you anywhere near the gate and plugging in the address you want. Keep in mind that the shortest missions possible still lose at least 30 seconds to standard gate opening protocols. This includes opening a micro-sized wormhole and poking the tip of a microsensor through, simply to ensure that

you won't be walking into a supernova and/or that an alien force is standing ready to invade as soon as the gate is opened a few millimeters wider. This is the bare minimum precaution that a gate corp is likely to take, and even then they'll only do so for locations that have been previously visited and determined safe.

If you are intending to explore an entirely new gate address, you are immediately looking at even more significant expenses. "First-in" missions, as they are called, follow a careful set of procedures to ensure that the solar system-side gate will not be coming under any threat (direct or indirect) from the remote side. The fees for the personnel and equipment these procedures require start at 500,000 and go up. If your mission needs any specific logistics support, whether that be security bots, assisted transport through the wormhole, additional sensor scans, remote drone surveying, decontamination modules, and so on, then you can expect to pay significantly higher rates than you would find elsewhere.

The prices listed here are just a mean of the costs publicly noted by various ventures. For your specific mission, they may be much higher, especially if you have any distinct needs. The gate corps themselves are not necessarily equal or consistent with their pricing. Go-nin is known to charge much higher rates than TerraGenesis, and use of the Discord Gate comes with the additional costs of reaching the solar system's rim and avoiding any unpleasantness between Go-nin and the exhumans that have taken an interest in the gate.

In rare cases, gate-tending corps have been known to waive and reduce fees for causes they deemed particularly noteworthy (in terms of scientific achievement) or even humanitarian (for the positive publicity). They do of course lower the costs for missions that expect to have a monetary reward, as long as they are guaranteed a cut.

THE LOTTERIES

For those with little hope of being hired to work a gatecrashing op, much less funding their own missions, there are the lotteries. The main gatecrashing lottery is run by Gatekeeper, as they pursue the most exploration missions, though both Pathfinder and TerraGenesis have on occasion run their own limited lottery systems. The lotteries provide an opportunity for anyone who seeks to raise themselves out of poverty, strike it rich, or get the adrenaline-soaked adventure of a lifetime. Anyone can sign up, except indentures, simply by digitally signing a form on the mesh. Doing so guarantees you an equal shot in the next lottery drawing with the hundreds of thousands of other applicants.

If you are lucky enough to be drawn, your egocast expenses to Pandora will be covered, as will the cost of a synthmorph. Applicants can arrange their own sleeves on Pandora if they prefer something different and have the means, assuming Gatekeeper approves. On occasion, Gatekeeper will assign specific morphs more suited for certain tasks.

In reality, Gatekeeper does not leave the selection of candidates for missions entirely to chance. When lottery winners are picked, Gatekeeper assesses all of the data that can be pulled up on each. Specialized AIs sort through the profiles and assemble teams from individuals judged to work together the best. Teams are rated accorded to competency, and then three teams of varying skill level are set aside for each particular lottery mission. (Periodically, Gatekeeper also runs a lottery option for pre-existing teams rather than individuals. This gives groups that hope to work together a chance to do so.) When a wormhole has been opened to the location in question, Gatekeeper performs a quick assessment on how promising—and how threatening—the remote locale is. If it looks promising, they grab a highly rated team. If it looks like a hunk of barren rock with a heavy radiation count, they grab the collection of useless misfits and send them on their way.

Lottery gatecrashers are afforded fewer resources than sponsored missions. They are typically assigned the basic minimum in required equipment and training in order to minimize expenses. Gear quality is serviceable if not ideal, though there have been noticeably higher rates of equipment failure on lottery missions. Gatecrashers are not guaranteed backup or resleeving options; these must be taken care of on the individual's own accord.

A MOBILE GATE?

Gatekeeper Corporation
Rescue Mission Log
Order 1583-45
Classification: Tier B
Priority: High

First-in team was sent to explore an unknown exoplanet orbiting a red dwarf. Initial scans indicated the planet had characteristics indicative of a super-earth. Pickup was scheduled for 24 hours. Upon re-establishing the connection, the first-in team failed to check in. A search-and-rescue bot was deployed, which returned at the scheduled time 12 hours later.

The bot succeeded in finding the team 150 meters from the gate, but all were dead. Little remained of their bodies; all had been crushed by some sort of extreme force. Their bodies were literally pasted and pulped, and even the cortical stacks were damaged. They were identifiable only by DNA scans of the remains.

The bot did recover one intact recon drone the team has deployed shortly after reaching the exoplanet. This bot did not record anything unusual, but an analysis of its sensor readings did uncover one anomaly. According to its geospatial sensors, the gate was not in the same location it had been in when the drone was initially deployed. According to its readings, the gate was originally 150 meters away; exactly where the bodies were found. ♣

SOLARCHIVE SEARCH: GATEHOPPERS

Gatehoppers is an idiomatic term used for a particular subculture of gatecrashers. Gatehoppers take the act of exploration via the Pandora gates a step further. Instead of simply passing through one gate, exploring, and returning, gatehoppers go on an indefinite journey from one gate to the next without ever returning the way they came. Each time they reach a remote gate, they choose a new address before using that remote gate again.

Very few gatehopper groups exist, in part due to the extreme dangers of such activities. Most gatehoppers are never heard from again. Whether they fell victim to hostilities or some danger is unknown; they may have simply passed beyond the sphere of current transhuman extrasolar expansion. Some gatehoppers have eventually come across a transhuman-visited world again, however, and so have reconnected with transhumanity. One gatehopping group claims to have visited over 200 extrasolar gates in succession before returning to the solar system.

Some gatehoppers are careful to arrange for backup insurance before they leave, so that if they do not return by a predetermined period, they are resleeved from backup. Others consider it the ultimate risk to head out without such a safety net. Still others intentionally fork before they go, leaving an alpha copy of themselves behind.

Many gatehoppers have been drawn from the scum barges and habitats throughout the solar system, but members of other factions, particularly brinkers and singularity seekers, have participated in gatehopping trips as well. ✤

Assuming the gatecrashers survive the operation, they earn a minimum reward for returning with the required amount of sensor data and samples. This amount is enough for the individual to survive on for a short period or to seek medical care or repair as appropriate. Unless the gatecrasher behaved particularly inappropriately, they are then given the option of undertaking more exploration missions under the same terms. Many lottery winners have gone on to become professional explorers on Gatekeeper's behalf. Many others have died, gone insane, or been irretrievably lost.

If the lottery mission succeeds in finding something of value, such as an exploitable resource, alien artifacts, signs of life, or some significant scientific discovery, they are given a one-time reward commensurate with the discovery's value, though only a small fraction of its overall worth. The rights to these discoveries belong to Gatekeeper, as per the lottery contract.

A few long-time gatecrashers have succeeded in negotiating higher rates and even royalty percentage claims on discoveries by leveraging their skills and experience.

AUTONOMIST GATES

In contrast to the closed nature and inaccessibility of the gate corps, the Fissure Gate is run in a decidedly autonomist manner. The gate is open to anyone to use, assuming they are vetted by the Love and Rage Collective and adhere to certain restrictions. The anarchists who control the gate carefully screen those who seek access in order to keep out hypercorp spies and inner system saboteurs. @-List rep is very important here and can mean the difference between getting a 1-minute slot and a full hour. There is a waiting list for gate usage, which is generally handled on a first-come, first-served basis, though priority is sometimes granted for emergencies or specific missions deemed to hold more significance to transhumanity as a whole. Prospective gatecrashers must make their own way to Oberon, of course, and since the anarchist resources are limited, mission organizers are expected to handle most of their own logistics support. This sometimes means that missions are undertaken without the full support they need.

The caveat to all missions passing through the Fissure Gate is that the rewards must be openly shared with transhumanity, without restriction. Since this is how the autonomist society of the outer system is organized anyway, it makes little difference to them. This restriction effectively nullifies use of the Fissure Gate for entities seeking to privately exploit resources, claim extrasolar real estate, or otherwise profit. On the other hand, the Fissure Gate is highly regarded in research circles, and so is a major base for the argonauts and various research groups that pursue unrestricted knowledge.

The Love and Rage anarchists have occasionally operated their own lottery, pooling resources in order to bring unlucky souls from the inner system out to where they can take a chance and make a new life for themselves among the autonomists. They run an additional lottery that is just for indentures, buying the contracts of indentures who win so that they can be free.

EXTRASOLAR EXPLORERS

Organizing gatecrashing missions on the extrasolar side of the gate network is a far different affair. A few extrasolar colonies engage in gate exploration operations, much like within the solar system. A few of these are hypercorp research stations with no other purpose. Those colonies that don't pursue exploration tend to maintain some measure of control over their local gates, often locking them on the address of the originating solar system gate, if nothing else out of a concern to protect themselves should some hostile entity come through the gate network.

There are many, many extrasolar gates, however, and the vast majority of them are unrestricted or only nominally monitored and controlled. This enables committed

and well-equipped groups to pursue their own private gatecrashing endeavors. All one really needs to do is get out of the solar system with a portable gate control unit (a "blue box") and a working knowledge of gate control operations. Once on the other side, such a team can use that remote gate to begin their own exploration. Several such remote base camps have been set up by enterprising explorers, many of them on cold, lifeless rocks with no interesting qualities other than the gate itself. A few intrepid autonomist groups have gone through the Fissure Gate to adopt an entirely nomadic lifestyle, moving through remote gates from one world to another, occasionally finding their way back to known space, sometimes not.

GATECRASHER TEAMS

Though gatecrasher teams are almost always tailored for the specific mission at hand, it is beneficial to have members with a wide range of skill sets. Scientists, technical experts, equipment operators, mission leaders/coordinators, and security personnel are par for the course. Astrobiologists and xenoarcheologists are in high demand, as are anyone trained in mining operations or setting up colony operations.

When it comes to exploration gatecrashing, these missions tend to draw a specific set of psychological profiles. Adrenaline junkies on the look for adventure or new experiences are high on the list, though these types often do not work well with teams and are sometimes known for putting others in danger. The explorers, wanderers, and curiosity seekers are more staid and careful in their approaches to different scenarios, but they sometimes lack the drive and initiative for which mission sponsors are really looking. Researchers and learners are useful, though their focus on specific discoveries can sometimes slow down operations or be a hindrance. The final common type, the desperate, are wild cards. These are the ones who pursue gatecrashing because they have personally fallen into a situation from which they have no better recourse. Many of these live up to their tasks and duties, even becoming great explorers and heroes. Just as many, however, are hindered by depression, self-loathing, or similar negative thoughts and end up being a burden or, worse, a threat to their own teams.

EXPLORATION MISSIONS

Posted by: Alisha Endowi, Gatecrasher <Info Msg Rep>

That nagging itch we call curiosity has spurred the momentum towards exploring the gate network. Exploration missions are both the most dangerous and the most important kind of gatecrashing mission. These initial surveys often determine if transhumanity will return to a given place and are crucial for finding exploitable resources or identifying scientific curiosities. They are the most likely to make a significant find and may be the point of first contact between transhumanity and new life forms. They could also conceivably put transhumanity at risk by bringing us to the attention of unknown entities and threats. For these reasons, exploration missions are the most critical type of gatecrashing op.

FIRST-LINK PROCEDURES

"First link" is the term used for the first time a wormhole is opened to a new gate address. Because no one knows what lies beyond, these events can be as exciting as they are dangerous. Given the possibility of encountering hostile life or some other threat, gate operations adhere to strict safety protocols for connecting to new remote gates.

The first thing to understand is that no one ever goes through a gate without at least some reconnaissance. No one wants to send gatecrashers out to be instantly flash-fried, fed to a pack of TITANs waiting eagerly on the other side of the gate, or come back crawling with some sort of hungry self-replicating nanotech, least of all any gatecrashers with even the smallest amount of sense or survival instinct. The incident where crashers died going from Pandora to the Fissure Gate for the first time convinced people to be slightly more careful.

The initial procedure is to create a micro-sized wormhole just large enough to stick a small sensor probe through. It takes readings on the atmospheric composition, radiation levels, and temperature. It also feeds back a live audiovisual recording of the surroundings. The typical gate probe is rated for pressures from 0 to 250 atmospheres and temperatures from –250 C to 600 C. Its actual mechanism is in a shielded Faraday cage, so it's pretty much unhackable. Only the tip is stuck through the mouth, making it unlikely to be detected. Typical deployment only lasts for about 1 minute.

If the probe is damaged, they try again. If two probes don't come back, the policy is usually to close the gate, stick a warning label on that gate code and wait for someone to try to come up with a better plan to see what's on the other side. Very few of these addresses are revisited.

If the probe survives and the site looks promising (which usually means not immediately threatening in any way), the wormhole is widened a slight bit and an explorenaut or similar drone is sent through, tethered to the start side. This bot conducts radar and lidar scans, analyzes the soil/rock/ground, and monitors radio wavelengths for any signs of activity. It also sends more detailed audiovisual data back. If the immediate area is designated as clear, these second-stage probes will scout around the remote gate itself and, if possible, use thrust-vector jets to get a small bit of altitude (just a few meters) for a more thorough look around, while remaining tethered. Any signs of biological growth are sampled and brought back through for analysis. If stars can be seen, the bot will also attempt to get a fix on the remote gate's location in the galaxy. These probes are typically pulled back after 10 minutes of reconnoitering.

If the extrasolar site still looks promising, the third step is to send another tethered robot through with a scout missile. This will be programmed to get an aerial map of the remote gate's area, out to 5 kilometers in each direction. As long as no potential dangers are logged, any sites of interest are noted and a first-in gatecrasher team scrambled.

First-In Missions

A "first-in" mission is when a group of live transhumans are sent through to a new address for the first time. Usually this is done right after a successful run of first-link protocols. In some cases, first-link procedures are skipped due to lack of resources (common with ops stemming from extrasolar gates) or because the sponsor is seeking to save on time and costs. First-in missions are notorious for being the best route to striking it rich or making a name for one's self, even though the odds of finding anything interesting are low, and also because of the significant chance the gatecrashers will end up dead and have to be restored from backup. Most experienced gatecrashers have stories of first-in missions that their current ego never actually experienced.

For optimal gate time use, the wormhole link is usually severed right after the first-in mission steps through. It will be re-opened at a designated time, usually between 4 and 12 hours later, following protocols similar to first link. If the first-in team fails to check in at this time, a search-and-rescue bot will be pushed through and the gate closed once again, to be re-opened at an arranged backup time. If the team remains missing, the address is flagged with a warning and the known details are filed for review. Usually, it is deemed too dangerous and not economical to attempt to find or rescue missing gatecrashers unless the extrasolar location seems especially worthy of further research and exploitation. This means that gatecrashers that run into trouble better hope they do so in a place littered with uranium or similar precious resources that would inspire a gate corp to take a second look, despite the evident dangers. Otherwise they are likely to be cut off.

First-in teams have a rough start. They wait for long periods on standby, holed up in a ready room while Gate Control runs through first-link protocols with addresses from the library. As little as ten minutes before they go in, the gatecrashers may have no idea whether they'll be sent to an airless rock, the frozen oceans of a radiation-battered gas giant moon, or the lush jungles of an alien paradise. They'll have access to the live feeds from the sensor probes and incoming data, but precious little time to absorb it and switch out their gear before they are ordered through the gate. Gear must be run through sterilization protocols (so as to avoid infecting any alien ecosystems with transhuman microbes), meaning that if something wasn't pre-approved, they might be barred from adding it to their gear list last minute. Adaptability is key. Once on the other side, they'll have to quickly acclimate to local conditions, get their bearings, and go about fulfilling objectives—all while hoping they aren't about to get killed by some previously unnoticed menace. It's tough, stressful, and dizzying work. The excitement of exploring alien landscapes is often overridden by confusion and the sheer terror of trying to stay alive.

Most first-in teams have a standard list of objectives. This is a common run-down:

1) **Record Everything.** If something happens to your team, your recordings may still get recovered and they will let others know what happened. In the rush to explore a new setting, details are often overlooked

that may be useful later. It is common practice to review mission recordings to gather additional data on the extrasolar environment.

2) **Secure the Remote Gate and Establish a Perimeter.** The gate is your way back out. Protect it, and your path to it, at all costs. You will also likely spend much of your excursion time in the gate's proximity. Some teams immediately assign members to keep the gate area guarded. Others don't like splitting the group or wasting manpower and will leave that task to bots and sensors instead.

3) **Map the Immediate Area.** You may already have data from a scout missile run. If not, hopefully you brought your own. For environments that aren't conducive to such measures, recon drones and old-fashioned scouting around on foot are just as important. It helps to identify key landmarks, which may help you find your way later. If you're in a landscape that is changing, or difficult to see/map due to extreme weather conditions, you may want to set up your own radio beacons or mark trails with a breadcrumb positioning system.

4) **Identify Potential Dangers and Threats**. You don't want to overlook the fact that some local predatory creature is about to lunge at you while you set up camp or that an avalanche or mudslide could bury the gate at any minute. If anything else looks really likely to keep you from getting home and you have a QE communicator on hand, use it to ask for immediate pick-up. Sure, you may have lost your chance and will need to wait a few days or even a few months for another try, but you'll also be around for another try. Being stuck on some volcanic rockball waiting for the lava flow that surrounds your gate to cool sufficiently is a wretched way to die.

5) **Establish a Basecamp.** Pick a defendable position, just in case you are attacked. Some prefer to stick right on top of the gate, others prefer to be hidden nearby but still in visual range of it, just in case the gate ends up being a spot of activity for something else.

6) **Run Scans and Take Samples.** This is what you're here for. The more you can collect, the more chance you have of stumbling upon something interesting. It's also the best way of detecting some unforeseen menace, like perhaps noticing the cold planet you're on is like Mercury and gets blasted due to close proximity to its sun when day rolls around, which could kill you if you were unprepared.

7) **Investigate Anomalies and Items of Interest**. Strange radar echoes. Unusual energy readings. Unlikely trace elements. All of these can lead to the sort of Big Find that could break you out of poverty.

8) **Explore.** Once the basic securing, grunt work, and investigation is done, it's time to explore. At least at first, stay in sight of each other. Just because things look normal doesn't mean that there can't be all manner of unexpected surprises or sudden radio interference. Grid out the most promising sectors and go take a look, while sending bots to search other areas.

9) **Look Before You Touch.** Unless something starts moving on its own, by far the best policy is look before you touch. Even if something really tempting is waiting right in front of you, check out your surroundings.

10) **Get Back to the Gate on Time.** If you miss your rendezvous, you could be in for a long, long stay.

The official goal for first-in missions is to gather enough information to determine if further investigation is warranted. Specifically, this means determining if the remote gate locale is of special interest for colonization, resource exploitation, or research. This can be a challenge, simply because the evidence for this might be nowhere near the gate site. The gate might open onto a mundane, uninteresting moon, like millions of others in the galaxy, but another planet in that extrasolar system could harbor an Earth-like environment, a motherlode of rare materials, or the buried remains of an extinct species. The clues may simply be outside of the first-in team's reach; in fact, for all we know, many previously visited systems that were bypassed as not notable might hold fantastic undiscovered secrets, as there simply aren't enough resources to thoroughly explore them all. In some cases, though, the first-link scans may have already indicated the site is of interest, like if the gate happens to be situated near an open vein of precious heavy metals or amidst some obvious alien ruins. Any extrasolar spot with even traces of biological life, alien artifacts, or a previous TITAN presence automatically fits the bill. In this case, the secondary goal is to ascertain how dangerous and/or difficult it would be to establish a transhuman presence there.

For many gatecrashers, particularly lottery winners, the real goal of the mission is to make a Big Find. This means that such teams often waste time and resources tracking down leads, investigating anomalies, or just exploring rather than conducting tests and making scans. This is a regular tension between gatecrashers and gate corps that sometimes jeopardizes follow-up missions.

WHAT TO BRING

There's very little that will get a bunch of experienced gatecrashers arguing like discussing what you need to bring. The basics are obvious; anyone who isn't bringing a survival belt, a robomule, a shelter dome, a sidearm, a standard vacsuit, and a life support pack is either stupid or suicidal. Anyone who can afford to go gatecrashing can afford this sort of gear and there's no excuse to not bring it along. Even lottery winners will be kitted up with basic exploration gear.

Part of the difficulty in preparing for first-in gatecrashing missions is the inherent mystery in knowing where you'll end up. For this reason, most gatecrashers rely on standard gear that is useful and necessary in most environments. You'll never know if the air on the other side is breathable, for example—assuming there's an atmosphere at all—so a vacsuit is mandatory. At best you'll have a few precious minutes to evaluate the remote gate location while

the first-link protocols are run, giving you just enough time to switch some gear out. Your life may rest on the decisions you make.

Beyond the basic gear that you'll find in the standard explorer's kit, things get complex. Versatility is critical, however, so in that vein a desktop cornucopia machine and a good library of blueprints are your friends. If you can afford one, bring it. Otherwise, make do with a fabber or maker instead.

Though the remote location you'll be visiting has hopefully been mapped by the first-link team, there's always a chance this can go wrong, so you'll want to bring your own scout and mapping missiles. The gate may have opened underground, for example, so you'll be glad you brought one with when you finally break your way through to the surface. If you're stuck underground, recon hoppers or snakes will do the job just as well.

Other than that, there are two other major considerations: vehicles and communications.

VEHICLES

The main reason for bringing along a vehicle on a first-in mission is to investigate anything interesting that shows up on the reconnaissance that is too far to walk. Problem is, gate corps and other sponsors often consider vehicles an extraneous risk expense and may veto them. According to their mission specs, first-in teams should be focusing on the gate region and letting drones investigate farther afield. More detailed exploration involving vehicles is for follow-up missions. If you don't mind putting your own assets at risk, however, they'll rarely complain if you bring your own along.

Not all missions are suited for vehicles. The extrasolar environment can severely impact the utility of any vehicles you bring. There's no use bringing anything to an exoplanet that's similar to the surface of Venus or dayside Mercury, for example, unless it can withstand the heat and/or pressure. Likewise, a flyer of some type won't do you much good if the remote gate ends up being underground or airless. On the other hand, if the first-link scans show the gate's on a small island, bringing along a boat is a smart plan just so you can get somewhere else in the vicinity.

Unless you need to fly halfway across the planet you're visiting, stick to bringing a couple of portable planes through. I personally think backwings are a gimmick and bringing through jets is a waste of money. Portable planes, however, are exceptionally reliable, easy to use, and they let you get anywhere you need to go. The only time you want to look at anything else is if the world is a seriously unfriendly environment. Vacuum planets require rocket buggies or, if you only need short range mobility, a GEV. Both are expensive, but they're worth it on worlds where you'll otherwise be living in your vacsuit.

COMMUNICATIONS

Communications gear—specifically, QE comms—are another contentious issue among gatecrashers. One thing that every first-in team has to consider is that once that wormholes closes, you are on your own until the scheduled pick-up time. There is no one remotely close enough to come to your aid in an emergency. Even if you brought a vehicle big enough to carry a neutrino transceiver, you are light years away. It could be decades before anyone else even hears your message.

The obvious solution to this is to bring a QE communicator for emergencies. Because they circumvent light speed limits, you can be on the other side of the galaxy and still call back home for help. The drawbacks to this are two-fold. One, QE comms are expensive and beyond the reach of many gatecrashers, especially lottery winners. Second, there is no guarantee that anyone will come to rescue you—or at least reach you in time. Many mission sponsors have no-rescue clauses in their contracts, simply because they don't want to pay the exorbitant fees the gate corp will charge them to break from the schedule to run a rescue op. Lottery winners are also typically laden with no-rescue clauses; another reason to backup before you crash. Even if your sponsor is willing to stage a rescue, simple logistics may get in the way. If your call for help comes in right after they spun up a wormhole link to a major colony for their monthly supply drop and they only just started shoving things through, Gate Control may very well just tell your rescuers that they're going to have to wait 20 minutes for the gate to be clear.

Despite the drawbacks, many teams consider QE comms a requirement, even if only to use for emergencies. Some will use them for other purposes, like requesting assistance or asking for exceptionally urgent data. Perhaps you end up in a situation where you need to nanofab something but lack the proper blueprints. Spending qubits to ask someone for the right tool or medicine design specs or whatever you might need to save your lives and get you home might be really expensive, but is probably well worth the

WHAT ABOUT GO CYCLES?

From: Mbanefo37Aa

Not bad advice, except you missed something important. Unless the terrain is too steep for anything else, walking is slow and tiring and you're not going to carry much back with you. Out on Willowane, my team had to leave behind most of the artifacts we found, meaning later gatecrashers picked them off. Also, planes are expensive and a single vehicle like a crasher truck can break down, leaving you back to walking. One go-cycle a person is an ideal choice to add to the basic kit. They're cheap enough that there's no reason not to take one. You've got far more mobility, you can haul away lots, and if one breaks, you just have two people in your team double up. ♣

A GHOST FROM AFAR

To: <Encrypted>
From: <Encrypted>
Comrade, I want to point your attention towards something interesting. The People's Body Bank on the extrasolar colony of Etched picked up an interesting package on their neutrino transceiver, on a channel normally used for emergency farcasts. After analyzing the burst, the transmission did indeed seem to be the backup of a gatecrasher, sent from another exoplanet when their emergency farcaster was triggered. The retrieved infomorph is only partially intact, having suffered some signal degradation and loss. Initial research seems to indicate that the backup was sent over 5 years ago from an extrasolar system approximately 5 light years from Etched. Our solar system is approximately 74 light years away from where the gatecrasher seems to have died, so it was pure luck and chance that the Etched colony picked up the signal first.

A copy of the retrieved infomorph was run in simulspace for standard debriefing. The deceased's story was confused and garbled at best, which may in part be due to corrupt neural structures from the damaged signal. Two things immediately stood out. First, this crasher seems to have some sort of special ops/commando training and was employed by a hypercorp (most likely Direct Action, but this remains unconfirmed). Second, during the interview the infomorph repeatedly stated that their mission was to "establish contact with the TITAN base."

We've attempted to access the gatecrasher's personal records and figure out what particular mission they were on, but our efforts have been stymied by uncooperative Consortium officials. In the meantime, I'm passing this along to you, in the hope that your, ah, watchful friends might be interested.

price. Similarly, if you suddenly hit a first-contact situation or something equally big, then you might want to turn it over to professionals. You'll get a big reward and lots of acclaim that way. If you go all lone wolf and accidentally start an interspecies war, people might not even bother to resleeve you from your backup.

One additional argument in favor of QE comms is the problems inherent to radio and other communications methods your team may use. If your radio can't punch through rock or interference, you're out of contact with the rest of your team. If something happens to you, a QE communicator may be the only way to find and help you, especially if you end up underground or someplace equally inaccessible. Way too many disasters can block radio, and the ability to request back-up from your own team on this side of a gate is a vital one to many gatecrashers.

Emergency farcasters deserve mention here. Like neutrino transceivers, they are of limited usefulness to gatecrashers given the vast distances involved. Still, they provide a security of mind to some gatecrashers who feel safer knowing that their backup could still be retrieved, even if takes years for it to cross interstellar space.

WHAT NOT TO BRING

One major concern for all gatecrashing ops, and first-in missions in particular, is that you never know what you're going to run into. One possibility is that you may run into an alien entity—and it might be hostile. According to this line of thought, bringing anything along that might help such a life form is an unnecessary risk. To some, this includes any technologies that could help an alien species understand transhumanity or perhaps increase their own technological development. Opposing this view is the fact that some of these technologies are considered necessary for a gatecrashing team's ability to survive.

Each gate-controlling body handles this matter differently. A ban on information that might be useful in pinpointing the solar system's location in the galaxy is common, sometimes enforced with mandatory searches of all information storage systems. Many restrict, or at least limit, the equipping of nanofabbers and nanoswarms, at least for first-in missions. Similar restrictions are often placed on technologies like large weapon systems, weapon designs, antimatter, biowar information, and other x-risks. Go-nin goes so far as to ban the use of AGIs through the Discord Gate, a policy sometimes echoed by Pathfinder at the Martian Gate.

Though often inaccessible to gatecrashers anyway, gate control units fall in this category and are banned from first-in missions. No one wants to risk accidentally giving the technology to use the gates to another life form that we haven't thoroughly examined and vetted. This is unfortunate for many gatecrashing teams as having one can be the difference between staring into the face of imminent death while you count down the clock for the scheduled wormhole connection to be made or just opening a new link to anyplace else so you can get the hell out.

MISSION PROTOCOLS

First-in missions, as well as follow-up exploration ops, tend to follow set guidelines for different discovery scenarios. Sponsors don't want their gatecrashers contaminating alien ecosystems, despoiling archeological sites, or failing to adequately mark a resource claim. To this end, gatecrashers are expected to know and follow established protocols. Those that diverge find themselves blacklisted from further gatecrashing ops.

FINDING LIFE

Given any sign of non-intelligent xenolife, even the lowliest extremophile micro-organism, first-in

gatecrashers are expected to maintain separated environments. This means staying sealed up in vacsuits or other compartments and not spreading germs among the locals—or picking up any. If there is a breach, gatecrashers are expected to keep it contained. Any exposure to alien life is expected to be reported immediately upon return so that proper quarantine procedures can be followed. Meanwhile, gatecrashers are expected to catalog whatever life they encounter as thoroughly as possible and to bring back relevant samples.

This particular protocol is a stickler among preservationists who argue that transhumanity must be careful not to contaminate alien ecosystems. This opinion is a minority one, however, particularly among gate corps, who see alien life as a potential revenue stream. In practice, maintaining sterile contact is exceptionally difficult, even when advised. Many micro-organisms are hardy, long-lived, and difficult to eradicate completely, even with cleaner swarms. Nano-ecologists argue for a sensible approach, utilizing nanoswarms to limit contamination on either side until research can determine the relative safety of interaction. Preservationists, however, protest even the use of nanotech in alien environments.

Finding Relics

Unless a gatecrashing team has a xenoarcheologist in their midst, the standard for finding alien artifacts or ruins is to document but don't touch. This is partly to protect potentially fragile relics from being mishandled or to prevent a future archeological site from being trampled, thus destroying potential evidence. It is also to protect the gatecrashers, as these artifacts are sometimes dangerous and/or protected by lingering defense systems. To maintain a relic site's integrity until professionals arrive, gatecrashers are instructed to map it thoroughly, take sensor scans to determine the site's size and potential locations for buried goods, and otherwise record it all as normal.

In practice, gatecrashers often break this protocol, whether out of greed at scoring a Big Find with some intact alien mechanism or simply because they want to bring back a souvenir. Looting of valuable archeological finds remains a major problem in the gatecrashing community, fueled as it is by the high price paid for alien artifacts on the gray and black markets, especially in hyperelite circles.

Finding Resources

One of the main interests of gate hypercorps is to find and exploit certain naturally-occurring materials that remain rare and in high demand or are monopolized by rivals. Specifically, these include metals, helium-3, and complex organic materials. Of metals, heavy metals are the most valuable, especially uranium, gold, tungsten, and titanium.

Locating signs and traces of these exploitable resources is a key function of many gatecrashing teams. If located, crashers are expected to take scans and samples in an effort to determine the availability, quality, and ease of exploitation. While advanced surveying is usually left for follow-up missions, gatecrashers are expected to at least mark the claims on their sponsor's behalf, to protect them from late-coming rivals.

First Contact

Contact with any sort of intelligent aliens is a big deal. Transhumanity has not yet met a living technologically advanced sentient species via gatecrashing. There are dozens of archeological sites, with the oldest dating back to well before the first vertebrate life evolved on Earth. However, with the exception of the Factors, there's a distinct shortage of recently active intelligent life. The problem seems to be that once a species develops advanced technology, it doesn't stick around for more than a few hundred-thousand years, and most last far less long. Of course, given the Factors' reluctance to use Pandora gates, some researchers believe that the problem isn't that technologically advanced intelligent species don't last long, but that species who use the gates either don't last very long or stop using them after short periods. There isn't a lot of evidence to back up this theory, but it's worth considering. I would stay out of the mesh debates on this topic, though; the crazy-to-sane ratio is far from good.

Voice from the Past

To: <Encrypted>
From: <Encrypted>

This is notification that I'm taking my leave.

Remember that time I told you about the voices, on that one crash? You told me it was nothing, and I was ready to write it off myself. One time is just a hallucination, right?

But that wasn't the first time.

That was the fifth gatecrash where I experienced voices while passing through. Five trips, five different voices, all talking about the same thing. I couldn't just write it off.

This last time through, I made sure to get a morph with mnemonic augmentation. Maybe that was a mistake.

My mesh inserts said it was just over a second to walk through. In my memories, there's a whole minute more.

It was a female voice this time. Before the words had been confusing, unclear, easily forgotten. This time I can play them back, over and over again.

They're telling me to go somewhere. To do something. Back on Earth. Back to Dubai.

Maybe I'm crazy. Maybe I'm foolish. But I knew that voice.

I'm going home. ♣

Making contact with an intelligent species, even if they have low or no technology, will be an impressive and noteworthy affair and will guarantee the gatecrashers who do so with wealth and/or fame. The key is of course making a successful contact. Playing conquistador and committing atrocities is an excellent way to end up facing either formal charges or frontier justice.

No one has any firm rules for alien contact because there's been so little of it. If you don't happen to have an astrobiologist or first contact specialist on your team, the standard protocols say to keep contact minimal, give away as little information on transhumanity and our technological capabilities as possible, don't do anything that could be remotely construed as offensive or aggressive, pull back, and call in some experts. Based on what little experience we have, and the projections of scientists, communication with an alien species will be exceptionally difficult and mistakes are practically guaranteed. Our mental architecture and evolutionary histories are likely to be very different from any sentient xenolife we encounter. There's likely to be a serious lack of shared points of reference.

HOSTILE CONTACT

Sometimes the things waiting on the other side of a gate aren't friendly. Carnivorous critters, automated defenses left by extinct aliens, traps laid by rival gatecrashers—these are all good reasons to carry weapons and defenses. There's always the possibility of running into hostile technological sentients, though so far we've been lucky in this regard. There is also the possibility that a nervous or reckless gatecrasher might initiate hostilities with something they encounter, though shooting first is rarely considered acceptable behavior.

ISSUES AND ETHICS OF FIRST-CONTACT SCENARIOS

Among the various factions of transhumanity, there is some concern about who is best situated to represent our species and serve as ambassador and negotiator to an intelligent alien life form. Demagogues in the Consortium argue that the Pandora and Fissure Gates should be seized away from autonomist influence and that the technosocialists, anarchists, and other radicals in the outer system should be barred from extrasolar expansion, as they could corrupt any meetings with intelligent life and portray the wrong image of what transhumanity is and what it stands for. On their end, many autonomists fear that the hypercorps will make first contact and exploit it to their own selfish advantage, perhaps acquiring new technologies that they could use to grow in power. The argonauts have presented themselves as the best candidates for handling inter-species dealings, given their political neutrality, commitment to supporting transhumanity as a whole, and cadre of trained xenosociologists. It seems unlikely that the various factions will agree on this point, however, so any first contact scenario is likely to be tainted by maneuvering and political infighting.

Perhaps more relevant to this situation is the question of whether seeking out other forms of life is even a smart idea. Many caution that transhumanity's unchecked exploration and expansion into the cosmos is far too reckless and could draw the attention of an alien species that is hostile or otherwise at cross-purposes. These voices argue that our extrasolar activity and use of the gates should be far more cautious and kept in check, to ensure that we do not put ourselves at further risk. In both the inner and outer system, however, these please for caution are drowned out by those entranced by the adventures and opportunities of expansion, or those who see it as a phenomenon that cannot be stopped, as well as those who argue that spreading transhumanity out is also a form of security.

Along with issues of representing transhumanity in a first contact scenario are the ethical considerations in how our dealings with alien life should be handled. Do we attempt to limit our contact and involvement, so as not to interfere with their culture and their own development as a species? Do we directly engage with them, sharing ideas and memes that might create rifts in their own society, and in reverse, expose our own cultural identity to their outlooks? Or do we even intentionally interfere with their affairs if by doing so we can greatly increase their quality of life? Do we, as some argue, have a duty to do so?

These are just some of the initial questions that xenosociologists debate and discuss. What if we encounter a species with strict, fanatical religious beliefs? Do we challenge or respect those beliefs? What if they are remarkably primitive by our technological standards? Do we share technologies that could rupture the fabric of their society? What if their evolutionary biological development has resulted in a hierarchical caste system, where some members of their species or a client species are ruthlessly enslaved or subjugated? Do we interfere and emancipate their servants? What if they are sufficiently more advanced than we are? Do we prostitute ourselves for a taste of their technologies and developments, or do we keep to our own path?

The answers to these questions are unlikely to be resolved before contact is achieved. This means that our dealings with any alien life we encounter are likely to be organic, dynamic, and littered with potentially dangerous pitfalls. No matter what occurs, it will be a growing experience that could forever change the face of transhumanity. ■

The rule of thumb for encountering any acts of aggression is to defend yourself appropriately but disengage at the first opportunity and then evaluate the situation. There's likely a way to defuse the situation, work around the threat, or otherwise keep from getting killed. If the threat is ongoing, bug out and figure out a way to approach it from safety. If the gate itself comes under threat, gatecrashers are expected to protect it as capably as they can. Not only is it their way out, but they should be keeping hostiles from accessing and using the gates for their own purposes.

As a rule, any contact with the TITANs or anything they have left behind is considered hostile contact. Some gatecrashers, eager to protect their own skin, will torch any sign of TITAN technology as soon as they come across it—a stance often supported by their sponsors. There are others who see value in studying TITAN remnants either for scientific purposes or self-advantage, however, though even these advocate a cautious approach. Most gate corps have strict policies against bringing TITAN relics back through the gate; anything recovered must be examined by experts on the remote side and deemed safe before being allowed through. Many also invoke gag orders on any missions that come into contact with TITAN artifacts. They don't want anyone freaking out about the potential dangers just as much as they want to protect their valuable finds.

One point of caution: there are a fair number of singularity seekers in the gatecrasher community that actively look for TITAN signs out of misguided desires to pursue or maybe even join their ranks. These types can be exceptionally dangerous, leading your team into potentially hostile environments in pursuit of their fantasies.

Returning Home

Your mission doesn't end once you walk back through the gate—far from it. Every first-in team comes back through not to an open reception, but to a portable quarantine zone. Various equipment will be on hand to deal with any issues the extrasolar environment may create when you return. For example, if you were on the blazing surface of a near-sun asteroid, and you come back through with a suit radiating enough heat to melt metal, you'll be cooled down before you step on anything vital. If a transition of atmospheric pressure might create problems, a pressure chamber will be rolled into place. Dr. bots will be on hand to deal with any medical emergencies, with skilled doctors and surgeons overseeing via telepresence. You will be scanned in just about every measure conceivable to ensure you haven't returned with any hidden passengers, like a TITAN nanoswarm or mind-controlling parasites. You and your material will be hosed down with cleaner nanoswarms to ensure you don't accidentally bring back anything too small to be seen. Your team will be placed under supervised isolation for a set period, depending on where you were. If you visited a cold, lifeless rock, this period will be a short 24–48 hours. If you found evidence of biological life, the quarantine will last considerably longer to ensure you don't bring back some microbe that could cause an interstellar plague. Teams lacking biomorphs get through this process easier. Some gatecrashers or sponsors prefer to destroy exposed biomorphs as a safety precaution.

While you sit through decontamination procedures, you will be subject to a thorough debriefing—otherwise known as an interrogation. Your sponsors will want to know every little detail about the mission and all recordings will be thoroughly reviewed. This is partly to catch anything interesting that the gatecrashers may have overlooked. It is also part to analyze each subject's response, to ensure that they're not hiding anything or otherwise acting suspiciously. Sponsors are wary of crashers who think they can hide a Big Find so that they may capitalize on it on their own at some later point.

If there were any unusual incidents, deaths, or encounters with alien life, alien relics, or TITAN artifacts, this review is likelier to be much lengthier. Part of the process of laying a claim on an exoplanet is enforcing the claiming body's legal authority

MISSION BONUSES/REWARDS

Many hypercorp-sponsored gatecrashing ops, particularly lottery missions, offer bonuses to the gatecrashers for particular discoveries. Here are a few common rewards:

Discovery	Average Rewards (in Credits)
Alien artifacts	10,000
Alien life (non-sapient)	5,000
Alien life (sapient)	50,000
Another extrasolar gate	10,000
Exoplanet ripe for colonization/terraforming	5,000
Exoplanet with Earth-like conditions	20,000
Exploitable resource	5,000–20,000

PROPERTY CLAIMS

The issue of claiming and owning extrasolar property is a thorny one. Among the inner system gate corps and hypercorp mission sponsors, the same doctrine of "property rights without sovereignty" that applies to much of the solar system is also accepted for extrasolar space. What this means is that discovery alone is not enough to claim ownership, but that instead *continued usage* of the territory is the basis of property rights. In practice, whomever first takes a spot and puts it to use can claim ownership of a chunk of real estate, and they will continue to hold those property rights for as long as they exploit them. If they let the territory go vacant and unused, however, others may freely move in. Claimed areas also extend to relevant airspace and orbital paths.

According to the terms of their contracts, most explorer gatecrashers are legally bound to claim whatever discovery they make on behalf of their sponsor. Such claimed stakes are temporary, however, and if their sponsor does not move to exploit that claim quickly, they become forfeit.

The gate-controlling corps hold a huge advantage here as they literally control the portals to the new frontier. Pathfinder, for example, automatically marks a claim on any location they open a wormhole link to via the Martian Gate. This claim is waived, in whole or in part, when a particular mission is sponsored by a client, presuming the client pays the substantial claim fee (hypercorps that are members of the Consortium receive a deep discount). Even when they waive the claim rights to other mission sponsors, they almost always reserve the claim for the remote gate itself and the area around it to a radius of 5 kilometers. This way, they ensure control over the gate network itself. This means that a prospecting hypercorp might end up owning an extrasolar world that the mission they find claims, with the exception of the gate on that world. If they want to use that extrasolar gate, they must pay royalties and/or do so according to the conditions of whomever claims that gate.

Naturally, there have been many property and claim disputes. Some exoplanets have been independently "discovered" through different gates and claimed by rival parties at different times. Among Consortium hypercorps, these matters are technically supposed to be resolved legally, with competing claims considered by the Ministry and rewarded to one claimant or the other, usually on the basis of who settled and/or exploited the territory first. Additionally, some precedence has been set that physical occupation by robot (whether controlled by AI or telepresent jammers) is substantial enough to count as usage. Outside of the Consortium, disputes are handled by old-fashioned negotiation. In practice, TerraGenesis, Gatekeeper, Pathfinder, and their individual partners honor each other's claims based on usage rights. Go-nin has taken a more aggressive stance, however, sometimes refusing to yield claims without some sort of compensation for themselves or their mission-sponsor partners. In response to these issues, Gatekeeper has established a directory of claims, subject to independent review, that everyone is encouraged to contribute to, in order to better resolve disputes.

On remote worlds, far from prying eyes, however, it is not uncommon for disputes to be resolved with deceit or even force. Some claims are simply ignored, with fly-by-night mining operations moving in to extract a resource and leave before the violation is discovered. More than one hypercorp has protested that their robotic installations were subverted or destroyed and their Gatekeeper claim registry hacked by rivals. Others have simply slugged it out with mercenary troops on distant planets. With no over-abiding authority, frontier justice applies. A few hypercorps, disliking the monopoly the gate corps wield over the gates themselves, have seized remote gates to use as they wish. Complicating matters is the fact that some claims are intentionally not registered so as not to alert rivals to potential sites of interest and wealth.

In contrast to this system, most autonomists reject the idea of property altogether. They make no claim on the exoplanets they find, instead saying such things belong to everyone. When conflicts arise with hypercorp claims, they are sometimes resolved amicably and just as often not. Some autonomists simply refuse to respect hypercorp claims, though they do not actively interfere with their operations. Others take a more aggressive stance that hypercorp claims are a crime of theft against transhumanity and actively sabotage and oppose any attempts to exercise such claims. ■

there. This means that gatecrashers are liable for their actions according to the laws of whomever sponsored their mission and claims the remote gate location as their property. The Planetary Consortium, for example, has not been hesitant to prosecute gatecrashers for crimes committed on first-in missions, if just to lay the groundwork for their extrasolar legal authority. In certain cases, gatecrashers have even been subject to psychosurgery and virtual interrogation, among other investigative methods.

Follow-Up Missions

The success of the first-in mission is often key to determining if an extrasolar gate will ever be visited again. Though one would suspect that whomever built the gates chose each location for a reason, this is not always apparent. It is possible that the reasons are long gone, buried, or simply unapparent to an non-advanced species like transhumanity. The majority of gatecrashing trips have found nothing of interest, or been to locations too hostile and dangerous to fully explore. Those that hold something of value to transhumanity are not always immediately recognizable, and so even the sites that show no promise at first are evaluated for potential follow-up missions.

Before any follow-ups are launched, the data from the first-link and first-in missions is carefully analyzed. Each gate is then ranked according to its potential value, with higher-rated sites given priority. Sometimes the analysis of scans and samples turns up something the first-in operation missed, bolstering its chances for a second look.

Follow-up missions have the advantage of being more directly geared towards the environment and likely use of the extrasolar world. These missions often involve setting up a semi-permanent base camp from which further exploration can be undertaken. They are more likely to bring vehicles along, specifically to search further afield. Some follow-up missions even involve exploring other worlds beyond the one the remote gate lies on, and so require bringing through spacecraft. Secondary priorities typically include acquiring a more detailed map of the exoplanet and setting up a satellite network in orbit. The satnet facilitates communication and mapping and reduces risks. Though expensive, they are often considered vital to further exploration.

Many gate corps farm out follow-up mission logistics to contracted hypercorps, particularly if the world's usefulness is beyond their primary agenda. In some cases, the rights to a world or find are sold outright.

Mission Dangers

Exploration missions are notorious for their high casualty rates. There could literally be anything waiting for a gatecrasher on the other side of a gate, from a horde of TITAN death machines just over the horizon to an active volcano about to dump hundreds of tons of ash on the expedition. The various dangers roughly break down to categories: natural threats, stellar phenomena, accidents, and unnatural dangers.

Risks from nature include everything from predatory local wildlife to dangerous environmental conditions. Weather systems on exoplanets are notoriously difficult to predict; more than one expedition has found themselves suddenly endangered by hurricane-strength storms, flash floods, or extreme temperature changes. On an even larger scale is the threat from regional astrophysics, whether that be lethal doses of radiation emitting from a neighboring gas giant, periodic asteroid bombardments, or communication-killing solar flares at a critical moment.

Far too many gatecrashers succumb to lethal accidents. The skills required for gatecrashing operations are numerous and complex, and despite AI help and built-in safety features, issues with vacsuits, temporary shelters, or heavy equipment can bring a quick end to a mission.

Though much rarer, there are other risks not originating from carelessness or the environment. Traps left by dead civilizations, hypercorp mercenaries protecting a secret claim, or mutating TITAN nanoswarms—gatecrashers never know what to expect.

Fools But Not Ghouls

Subject: Recovery Missions
From: Rayna Akiloye

Everyone knows the recovery bonds are a great idea, but I also hear lots of talk about the advantages of going and collecting them. I even know a few gatecrashing teams who make a good bit of their living going after them. The only problem is most of them have had to be restored from backup at least once.

Some will call people doing this sort of work ghouls and worse, but you don't hear anyone who's been rescued by one of these teams talking that way. I don't see anything wrong with looking for bonds, except that it's an awesome way to lose both your morph and your stack. The downside to recovery bond missions should be obvious: they've already left someone dead or helpless. Sure, they might have been stupid, but if they could afford a decent recovery bond, they could also likely afford equipment as good as yours, and maybe they weren't all that stupid.

A recovery mission to a destination where at least one team of gatecrashers have visited and returned safely can occasionally be a good deal, if you're really careful. However, a mission to recover a first-in team is bait for greedy idiots. Some insurance companies won't issue bonds to recovery teams going to destinations that no one has come back from, and the few that do require at least double the normal payment. If you make it back, you may end up a hero, and you'll have both the bond reward and a claim to any rights the exoplanet has to offer. You're also likely to get the previous teams' data and artifacts as salvage, so it's a great way to visit a new destination, if you don't mind the fact that it has already proven itself to be deadly. ✱

Recovery Bonds

One big topic among folks who are both fortunate enough and crazy enough to gatecrash regularly are recovery bonds. They aren't much talked about with outsiders, but the basic idea is simple. You take out an insurance policy on yourself, you pay the insurance company a hefty premium, and if you don't come back within a stated time period, anyone who comes after you and retrieves you, or at least your intact cortical stack, gets the reward. Of course, if you come back on your own, the company keeps the money you paid them.

The higher the pay-off, the more recovery teams are likely to come after you, but the more you're going to be paying. I've never seen much need for an expensive bond. If a world turns out to be a complete death-trap, no amount of money is likely to get you back, and if it's not then you're not going to be the last gatecrashers going there. That said, a moderate bond is a wonderful incentive for someone to take time away from survey work or treasure hunting to look for you or your remains and to do so in a fairly speedy fashion. If you can afford to go gatecrashing, you can afford to pay for a bond that makes getting you back worth someone's while. Anyone who thinks they'll never need one is a fool. There can be something bigger, badder, and hungrier than you'll ever be on the other side of any gate you walk through, and everyone's luck runs out sometime or other.

Extrasolar Environments

Posted by: Dr. Stev Unruh, Physicist <Info Msg Rep>

One never knows what to expect at the remote end of a gate wormhole. Though the majority of Pandora gates lead to exoplanets of various types, or similar bodies such as moons, there are many exceptions. As a result, gatecrashers need to be prepared for dealing with an array of environments, most of which are simply unsuited for transhuman life. The simple truth is that the environmental range that unprotected and unmodified transhumans thrive in is severely small, and thus quite rare. Thankfully various synthetic shells and bio-modifications expand the environmental ranges that transhumans can exist and even thrive in, though such conditions often have a major impact on the lifestyle of transhumans that do so.

There are literally hundreds of billions of exoplanets in the galaxy. Despite advances in exoplanetary research via long-range astronomy, and the direct experience with thousands of extrasolar systems via the Pandora gates, transhumanity still has much to learn regarding the origins, evolution, and environments of exoplanets. This is in fact, a major component of gatecrashing programs, collecting and cataloging data on new systems. Some lessons can be drawn from the existing data, however, providing gatecrashers with a small measure of what to expect—with the caveat that nothing is certain. For all that we know, the Pandora gates may be placed around systems that are unusual or exist outside of standard norms.

EXOPLANET CLASSIFICATIONS

Most exoplanets that gatecrashers come across orbit main sequence stars, similar to our own sun. This is because other star types tend to have had conditions that were detrimental to planetary formation or underwent changes (such as a supernova) that destroyed any planetary bodies in the vicinity. The most common stars (~75%) are M-class red dwarfs, with the rest usually being yellow-white F stars, yellow G stars (like Sol), and dim, orange K stars. There are occasional exceptions, such as the cryoplanets around brown dwarf stars, rogue planets, and non-main sequence stars and other stellar bodies.

Many of the known exoplanets can be grouped into typical categories, described below. It should be noted that these are just some of the larger and most notable groups—they are many exceptions on record.

GAS GIANTS

These massive planets, often easily ten times or more the mass of Earth, are known for their dense atmospheres and turbulent cloud layers. They are uninhabitable by transhuman standards, with unbreathable atmospheres and severe radiation, and even their core surfaces have crushing atmospheric pressures and high gravity. Though several remote gates are believed to open into a gas giant's hellish depths, they remain unexplored. Gas giants commonly have a large number of moons, however, some of them reasonably habitable. Numerous gates are situated on gas giant moons. Transhumanity's primary interest in these gates is resource extraction from the gas giant atmospheres (notably helium-3), mining of heavy metals on the moons, and colonization.

Gas giants can be broken down into four categories:

Cold Jupiters: Much like Jupiter and Saturn, these massive gas giants have cold outer system orbits. They feature thick, heavy atmospheres of helium and hydrogen swirling above dense rocky or metallic cores. Their planetary system typically features numerous moons and sometimes rings. The moons are often more habitable, though the region is plagued by radiation.

Ice Giants: Sometimes called cold Neptunes, these are large planets, much more massive than Earth, with far orbits that make them quite cold. Their thick atmospheres tend to be heavy in hydrogen and helium, and sometimes nitrogen and hydrocarbons, with numerous cloud layers. Upper clouds tend to be methane, giving them a blue color. Their rocky surfaces feature solid water, ammonia, and methane ices. They commonly have ring systems, a magnetosphere, and multiple moons. Eccentric orbits around their parent star are not uncommon.

Hot Jupiters and Hot Neptunes: Hot Jupiters are simply cold Jupiters and ice giants whose orbits have migrated closer to their parent star. They tend to have a much higher surface temperature as a result, in additional to bleeding their atmosphere away (eventually becoming chthonian planets).

TERRESTRIAL PLANETS

Terrestrial planets tend to have orbits closer to their parent star and are composed of either silicates or carbon rocks. Much like the planets of the inner solar system (Mercury, Venus, Earth, and Mars), they feature a solid metallic core (usually iron), a rocky surface mantle, and a thin atmosphere (compared to the gas giants, at least). The larger the planet, the more likelihood there is of volcanism and tectonic activity due to the planet's internal heat.

Most terrestrials lose their primary atmospheres (the hydrogen and helium accumulated from the accretion disk in their star system's formation) over time. The larger terrestrials will develop their own secondary atmospheres thanks to volcanism and comet impacts, as icy materials in the surface sublimate. These atmospheres vary greatly in composition, but are usually dominated by nitrogen or carbon dioxide, depending on various factors, though methane and ammonia atmospheres are also possible.

Terrestrial planets that lie within a solar system's habitable zone are the best candidates for finding extraterrestrial life. Even if the conditions are not Earth-equivalent, terrestrial planets are much more

FIRST-LINK REPORT: GAS GIANT MOON

[Planetary Science Panel Review Transcript]

White: This gate seems to be situated on a minor moon orbiting a gas giant. At first look, it appears to be close to its companion star and probably rapidly losing its atmosphere. There's a chance it could be well on the way to becoming solid, but I wouldn't hold my breath.

Moira: Sweetie, you're an infomorph.

White: Figure of speech. The telescope is already picking up signs of other moons. There's probably dozens of them.

Cadbury: Initial scans tell me there's plenty of hydrogen and even some water in the gas giant's atmosphere. However, I'm detecting a not-insignificant amount of radon. That means there's a lot of radium on the planet itself. Actually, I'm getting signs of radium 226, which means uranium 238, which means over a millennia of radioactivity. I, for one, wouldn't even bother with this place. I'm not saying we couldn't do it, it's just too much work when we have better options available.

Moira: Agreed. It's a bunk planet, I don't expect to find much here.

White: You can't win them all. Maybe the first-in team will find some pretty artifacts. Choose the synthmorph-heavy team. Tell them to pack lead aprons. ■

FIRST-LINK REPORT: QUATERNARY SYSTEM

[Planetary Science Panel Review Transcript]

White: This is interesting. We seem to have a quadruple star system here. That looks like a ring around the two stars too—probably the inner two.

Moira: It's terrestrial, at first glance, and of a reasonable temperature. It's cold, but I wouldn't say it's any colder than Mars before the terraforming efforts.

Lyden: Hrm, if those dust rings have ice, they'll provide a renewable source of water.

Cadbury: That means easier terraforming. But how would the multiple suns affect it?

White: The atmosphere looks thin, so we should expect cool temperatures and higher levels of solar radiation. It's an interesting shade of pink.

Cadbury: It's extremely alkaline. I could see modified desert plants here.

Lyden: The pressure is low, though. That might be a chief concern for any terraforming efforts.

White: That's not a massive endeavor. It's not unlike what's going on with Mars right now.

Moira: Look over there, on this sensor feed. I think that's a lake. Its composition is questionable, but my readings tell me we're right above 0 Celsius.

Lyden: I'm guessing the planet has an almost perpetual daytime situation because of the four stars, with only a minute fraction of the year under true darkness.

Cadbury: That could lead to interesting situations for the plant life. I don't even know how we'd approach something like that.

Lyden: It's a hotbed for experimentation.

White: Moira, has the probe run a test on the water yet? Cadbury, look into the radiation trends.

Moira: The water is water. It's full of minerals, but probably nothing harmful that couldn't be filtered out.

Cadbury: Radiation is present. It's not in force. Minor alpha and beta decay. I wouldn't camp on the soil, but it shouldn't be anything a morph can't handle for a short period in a rad suit.

White: Take samples. That's an important distinction. If it's safe, we're in luck. If it's not, we can write the planet off for a worthwhile expenditure of resources.

Cadbury: Preliminary work looks good, but I'll tell the first-in team to be comprehensive. ■

FIRST-LINK REPORT: TERRESTRIAL WORLD

[Planetary Science Panel Review Transcript]

White: Holy shit! Are you seeing this?

Moira: I know I am. That's a damned heavy atmosphere. Those colors, it's unmistakably nitrogen and hydrogen, probably some oxygen. I can't place what else it might be.

White: And you know what that means?

Lyden: Might be habitable without drastic intervention.

White: How do you manage to make everything sound less exciting, kid?

Lyden: Sorry, I'm just not thinking straight. This could be a revolutionary find.

White: And most importantly, it's a revolutionary find we're going to be sending a team through to in just a few minutes. Let's pick a team heavy in biomorphs. Standard vacsuits should do them fine.

Moira: Surface air is registering at 8 C!

White: We've stumbled on a god-damned gold mine. These crashers better not be fuck-ups.

Lyden: Scanners are showing trace signs of life. Nothing more than a cell.

White: Trace signs are trace signs. Tell the sensor team to prioritize the samples. We want air and soil composition reports, and we want them to identify and categorize these life patterns. I want to know if the planet supports greater life.

Moira: The sample reports are coming in now. There's a heavy level of carbon dioxide in the air, and more sulfur than I'd subject a flat to. There's a lot of nitrogen, oxygen, with trace hydrogen. I think the heavy gases are why the planet's as warm as it is. If we were going to openly terraform, we'd have to supplement the atmosphere because trees would eat right through this. If we could introduce a heavy contingent of O_3 to the atmosphere, and maybe some water vapor and methane, we could emulate a pre-Fall Earth atmosphere I think. Due to the planet's location, it'd need to be dramatically thicker though, so it'd be a sensitive job if we wanted to take it that far.

Lyden: That soil is nitrogen-rich, likely due to single-celled organisms. Without further analysis, I'd say this particular land is a glacial till, which means the planet's not on its earliest stages of having atmosphere or water. There's iron, manganese, and silicon, with a lot of sulfur on the top layers. It's a strong combination. I'm surprised we don't see plant life. I see no reason this soil couldn't support traditional plants.

Cadbury: I've got an answer for that: life isn't there yet. These organisms are basic; I would be surprised if we found anything even approaching advanced. Give it a few million years; we'll probably see plant life. It's good, though. It's a nice, clean slate to work on. It also means we won't be stepping on toes. ■

habitable than others, and so are ideal for colonization and resource exploitation.

Super-Earths: Several examples of "super-Earths" have been found via the gates. This rare type of terrestrial planet is significantly larger and more massive than Earth. They are rocked by more vigorous geological activity (volcanoes and earthquakes) and have higher surface gravity (typically between 2 and 3 g).

Chthonian Planets: When a hot Jupiter or hot Neptune is drawn closer to its star, its hydrogen and helium atmosphere is slowly stripped away over time. The remaining core planet is similar to terrestrial planets, though more like Mercury than Earth. The chthonian planets discovered so far have been ideal sources for heavy metal mining.

Dwarf Planets

Dwarf planets occupy the gray area between asteroids and planets. By definition they are massive enough to be rounded by their own gravity (usually meaning they are at least 400 kilometers in diameter) but have not cleared their orbits of asteroids and other debris. Dwarf planets are rocky, lack atmosphere, and are notable only for their potential metals or silicates.

Ice Dwarfs: This sub-category of dwarf planet is built around an ice core and lies in an orbit far from its star. They are colder and even less interesting than dwarf planets, but there seems to be far, far more of them.

Ocean Planets

Though rare, the Pandora gates have confirmed the existence of several ocean planets. Unlike terrestrial planets, ocean planets began as icy proto-planets far from their parent star that lacked the mass to grow into ice giant status and migrated to an inner orbit. As the ice melted, they were transformed into water worlds with vast, exceptionally deep oceans—as much as hundreds of kilometers. Below their crushing liquid depths is a small rocky core with a mantle of ice VII (an exotic form of ice that forms under intense pressure). Above the oceans is a thick helium and hydrogen atmosphere, hot with greenhouse effect. Like terrestrial planets, ocean planets are good candidates for finding alien life, given the availability of surface water.

The Rarity of Earth-Like Conditions

One thing that gatecrashing has so far indicated is the rarity of exoplanets with Earth-like conditions—that is, an atmosphere, temperature, and gravity that would allow an unequipped and mostly unmodified transhuman to survive. Though they are not entirely absent, such Earth-like worlds are the gems in the extrasolar collection.

Statistically, this is not unexpected. When you look at the long history of the Earth and its capricious surface conditions, it has only existed in a state habitable to humans for about 1% of its lifetime. On top of this, there are many other factors that affect a planet's habitability. First is simply being in a habitable zone

FIRST-LINK REPORT: OCEAN PLANET

[Planetary Science Panel Review Transcript]

White: Next on our agenda is an ocean planet. The bugger's smaller than we're used to seeing in Jovian planets, and the surface density says it's definitely water, with a hydrogen atmosphere.

Moira: It appears cooler than most water worlds. Interesting, since it's so close to its parent star.

Cadbury: But the star is small. It probably couldn't support a big enough system for any real variance or extreme heat.

Moira: You're probably right, Cadbury.

Lyden: It's like a Lil' Neptune. I recommend novacrab morphs for the first-in team.

Moira: The view on the visual sensor feeds is beautiful. The sunlight cascading through the water, it's like the water itself is orange. I've never seen anything like it!

White: I don't think the conditions are suitable for terragenesis.

Lyden: You're probably right. Underwater habitats might take advantage of the water pressure and its extreme heat as a backup energy source. If you put highly pressurized and hot water through an opening, it'll turn to steam and can move almost anything. With only simple machinery, the habitats would have a backup if their main power plants fail.

Moira: But the planet's atmospheric loss rate is alarming. I probably wouldn't advise adding habitats, because the conditions will change rapidly enough that settlers would need to adapt their habitats in relatively short order.

Cadbury: I'm also curious if there's any use for all this ice VII. There's also some amorphous ice. While this planet consists almost entirely of water, it has a fascinating spectrum of ice phases, thanks to the shifting pressure and the unique convections caused by its composition. I'd consider floating habitats, but the atmosphere is just not conducive to a lasting environment.

Moira: But there's a lot of potential, here. It's not ideal, but I would say it might even be more forgiving than the Uranus system's moons. Getting the resources in place to establish a habitat might be difficult, but I think it'd be a great expansion.

White: I don't see a lot of difference. It's too hot and the pressure is too intense for carbon-based life. We're fooling ourselves if we think this planet is any more valuable than others. We should prioritize others. ■

of the galaxy; in other words, not in a part of the galaxy that is lethally irradiated like the core, in a heavy-metal poor area like most of the galactic rim, or in the path of a supernova, black hole, or other cosmic threat. Second is being in the habitable zone in that star system, the orbital region where a planet's temperature is conducive to maintaining surface water, like on Earth (whereas Venus was too hot and Mars too cold, so the water boiled or froze respectively). Water is a solvent for carbon-based life, and thus a critical component in its evolution.

Finding an exoplanet that exists within this range, at the proper time period of its planetary evolution, is thus an uncommon occurrence. Nevertheless, the placement of Pandora gates does seem to be skewed in favor of habitable planets, such that a higher percentage of them have been found via the gates in relation to their expected distribution throughout the galaxy. Still, most gatecrashers are unlikely to find Earth-like exoplanets on their expeditions; those that do are lucky.

Unusual Remote Gate Environs

Not all gates open onto exoplanets as described above. Some gates are situated on rocky asteroids, comets, or stranger places. Some are free-floating in space, perhaps orbiting nearby stars or planets, though just as likely buried deep within nebula of interstellar gas and debris. A few of these unusual locations deserve mention.

Pulsar Planets

When a star goes supernova, the blast of its detonation is likely to be lethal to nearby planets. If the massive shockwave produced by the dying star does not destroy a planet outright, the planet is likely to be scorched and transformed into a lifeless rock. Nevertheless, several exoplanets have been found via the gates in orbit around pulsars, the spinning neutron stars that were left behind in the wake of the supernova. It is possible that some of these planets may have accreted from the debris left behind in the supernova's explosion. The ionizing radiation emitted by the pulsar ensures that no life will ever develop, and is dangerous to gatecrashers who venture here.

Why at least two gates were built in such a hostile environment remains a mystery.

Rogue Planets

At least one remote gate has been found on a rogue planet—a proto-planet that was long ago ejected from a forming star system and flung into space. This particular planet survives in deep space, far from a companion star to give it warmth. It is suspected that the lack of a star helped it to keep its thick hydrogen and helium atmosphere. Internal heating from its own geothermal energy and tidal forces from a large moon were sufficient to melt water ice on the surface, enabling water oceans. Though this particular example was lifeless, it was tectonically active, and the presence of volcanoes could mean that similar rogue planets might harbor the pre-requisites for life.

Brown Dwarf Cryoplanets

Brown dwarfs are stars that are not massive enough to maintain fusion in their core, and so are dim and cold. The frozen planets circling stars tend to be unlikely places to find life, but a few have been found with oceans beneath their crust that are kept warm by tidal forces, much like Europa.

Xenolife

Posted by: Reggie Higginbotham, Astrobiologist <Info Msg Rep>

One issue that needs to be addressed that a lot of crasher teams overlook is what to do about xenobiologicals, and by that I mean native xenoflora and xenofauna—alien plants, microbes, and animals. A lot of early first-in missions would kit up, wait for the mappers and robots to do their thing, and then pop on through, good as you like. If the immediate area around the gate is a high-density biome, this can be a problem. Endowi's advice of "look before you touch" is a good rule of thumb, but for the sake of clarity I feel it's worth outlining some of the more detailed aspects of xenobiology.

Microbial Xenolife

The most immediate concern when you step through the gate and encounter your very first alien species is the preeminent danger of bacterial or viral contamination. The overwhelming majority of xenolife is microbial in nature, which means that disinfecting yourself and your gear, either with chemicals or nanotech, is a high priority. Microbial xenolife is a major threat to transhumanity simply because transhuman immune systems have never been exposed to these new life forms and thus have never had the opportunity to develop resistances. On the technological side of things, because we have not had the time to accurately identify the staggering variety of different alien microbial species, we have not been able to create selective technological responses. In other words, when you crash into a new environment, you can either wear a suit that is hermetically sealed or you can risk exposure to xenomicrobial contamination.

Because bacteria commonly engage in horizontal gene transfer with other bacterial species, we need to be aware that there may be plasmid exchange between species of xenobacteria and the Earth-origin bacteria that lives in and on crashers' bodies. While most organizations that control the Pandora gates have a good system of decontamination in place, one cannot be too careful about what you may inadvertently bring back from another world. The often-mocked threat of a system-wide countermeasure-resistant pandemic becomes terrifyingly real once you realize that many crashers by accident or by design carry xenobacterial plasmids within their own native bacteria. We simply do not know how alien genetic material will interact with ours on that scale. Every crasher that returns from another world without undertaking absolute decontamination increases

SOLARCHIVE SEARCH: SUNRISE WHIPLASH

The whiplash is a highly motile planimal species native to the exoplanet Sunrise. Similar to a terrestrial sundew, this species grows in and migrates through tree boughs. When fully mature, it extends a sap-covered vine towards the arboreal floor. Once a creature is caught in the sap, the vine rolls up and draws the creature into a digestive sac, which slowly excretes complex acids that dissolve the creature over a matter of days. The whiplash is the largest carnifloral species discovered so far and the first that actively preys on non-arthropods. Its diet consists mainly of small birds and lesser ground-feeding mammals that are attracted to the sweet-tasting sap. It is estimated that the whiplash could grow to a size that could feasibly dissolve and digest a large dog.

A group of enterprising genehackers has experimented with implanting whiplashes with a cyberbrain. While non-intelligent, planimal species like the whiplash are minimally aware of their surroundings, they have taken extremely well to cyberbrain technology. With enough engineering, this particular species of carniflora will be suitable for pod development in the near future. ☘

the risk of a cataclysmic system-wide pandemic. I recommend dropping a bio-defense unit at your feet before you head home and comprehensively decontaminating on the other side, just to be sure. (I'm extremely paranoid about bringing back some kind of superdisease, so I have my stack pulled in a sterile environment and my morph torched every time I come back through a gate.) It doesn't destroy the plasmids that are already transferred, but it gets pretty much everything else. Don't take any risks.

XENOFLORA

Xenoflora is usually the first thing that crashers notice, but not always. For most destinations that have breathable air, decent water presence, and a comfortable climate, there's bound to be some evidence of xenoflora. When you step through to a destination like Bluewood, the xenoflora is everywhere. Even in harsh xeno-environments with incredibly low temperatures, xenoflora can hide and thrive in warmer places like submarine geothermal vents or inside colonists' structures. Xenoflora usually poses no major threat to crashers. It might grow and get into everything but there's no real danger unless it is ingested in large amounts or exudes toxic compounds. This is not an excuse to let your guard down, however. While we are familiar with the threats posed by Earth-native flora, the kind of exotic botany that we're discovering on a daily basis is merely the tip of the iceberg when it comes to what's actually out there, and that means we need to be prepared for every eventuality. With the exception of a particular species of Sunrise carniflora, we've yet to encounter maximally motile xenoflora, so the main threats I want to note are those that have direct harmful properties.

Certain xenoflora tend to be anti-herbivorous, which is a fancy way of saying they're generally sharp, pointy, poisonous, or otherwise unfriendly to those who would want to disturb their normally peaceful existence. Thorns, spikes, and other passive defenses are easily avoided by the prepared and the perceptive, but it should be noted here that in many cases the defenses are simply a delivery system for toxins. Many biotoxins borne by such xenoflora are easily countered by our current medichines and toxin scrubbers, but there have been instances where these toxins have slipped past some of the low-end scrubbers used by novice crashers, causing serious medical emergencies, and in a few cases, body death. An interesting side note is that if you encounter such anti-herbivorous plant life, it's a sure-fire indicator of complex herbivorous xenofauna, with the size of the xenofauna roughly proportional to the size of the physical defense employed by the xenoflora. Small thorns or spikes tend to indicate smaller herbivores, while larger defenses indicate the presence of larger xenofauna species. Be aware of this, as these herbivores themselves may pose a threat; you are, after all, interfering with their food source.

Pollen and histaminics are easy to overlook as a threat. Our biologies, no matter how tailored they may be, just aren't accustomed to receiving foreign pollen and other histamine triggers. In other words, allergies can be a big problem. It takes some time for us to document and catalog each individual histaminic trigger, which means it will be some time before we can deliver a broad-spectrum technological solution to alleviate the allergy issue. Until that time, I recommend that crashers be aware of airborne pollen and microseeds and not disturb flowering plants unless taking scientific samples. One recent first-in mission through the Pandora Gate resulted in a team

UNUSUAL LIFE

Much of the xenolife so far discovered on remote exoplanets has been carbon-based, with water as a solvent in their biochemistry. Though rarer, life forms with biochemistries based in other elements has also been discovered. This includes life built upon silicon, a nitrogen and phosphorous combination, or even arsenic rather than carbon. Solvents such as ammonia, hydrogen fluoride, or various hydrocarbons are also used as a substitute for water. Most of this life has existed only in the simple microbial range, though there are several examples of the evolution of more complex flora and fauna. Many of these survive not on oxygen but on elements such as sulfur, chlorine, ammonia, or nitrogen dioxide. ■

MISSING COURIER

- Mem, remember that gate trip to Nova York, the one with the specially-bonded PrivaCor courier?
- The one who disappeared?
- Yeah, the one with the customized morph. Had that swept-back face with those thin purple ripples sculpted on his forehead and jaw, the extra eyes, and the long ears.
- How could I forget? That was trippy. I remember you stepping through, him stepping through, and then me right after. Then on the other side you and I are just looking at each other with that confused "where'd he go?" expression. That was freaky. It still weirds me out every time I pass through a gate. I wonder if they ever found that guy. I suppose they just booted him from backup.
- It gets weirder. Check this footage out. [Link]
- Merde, is that him?
- It certainly looks like him. And that morph was a custom-job, sculpted by a famous high-end biosculptor on Venus. It's a one-of-a-kind design.
- Where was this taken? Who's he with?
- That's the weird thing. This was taken a week ago on Takshaka 9, a backwater colony. A group of gatehoppers showed up, stayed for a few weeks, and then departed again for destinations unknown. That courier seems to have been with the gatehoppers.
- But, wait, he didn't check in, tell anyone he'd been lost, or anything like that?
- No, for all intents and purposes, he seems to be integrated with the gatehopping group.
- I wonder if he ever delivered his payload? ☘

succumbing to toxic pollen that triggered a hallucinogenic response. While this toxic pollen has since been synthesized and is now making its rounds on Venus as a high-end party drug, this reinforces the very simple idea that you should always err on the side of caution. Since first-in missions are going in blind, if you must disturb any kind of xenofloral entity, don't assume your biomods and medichines will protect you.

Some xenoflora are carnivorous and actively consume suitable fauna that would trigger their sensing apparatus. Contrary to what a lot of old fiction will tell you, carnivorous plants aren't a big threat to transhumans. That said, be aware that not all carnivorous plants are alike; just because we don't know of a carnifloral threat at present does not mean they don't exist. While we have an extensive library of data to draw upon from Earth, the kinds of carnivorous plants that we are encountering on Sunrise and other xenoflora-abundant worlds are extremely diverse, even from an Earth standpoint. Many older models of carnifloral behavior need to be rewritten.

The color of plant growth is dependent on the type of sun and the exoplanet atmosphere, each affecting the wavelengths of sunlight that are available and most promising for photosynthesis. Anyone familiar with gatecrashing X-casts knows that the common colors for xenoflora are yellows, greens, and oranges, with reds, purples, and blacks being less common, the latter typically indicating flora that feeds on a wide spectrum or even infrared wavelengths.

XENOFAUNA

Perhaps of more interest to the layperson is xenofauna. Simply by virtue of accessing other life-bearing worlds, we have expanded our biological knowledge by magnitudes. Many existing theories of primordial life needed to be rewritten, with new discoveries coming thick and fast. With every new world explored through the use of the Pandora gates, we expand our genetic database. This has both good and bad repercussions.

It shouldn't need repeating, but you really, really shouldn't interact with xenofauna if you can help it. There are a whole host of issues that come into play if you interfere with xenofauna in its natural habitat; cross-contamination of microbiologicals and disease, ecological disruption, and direct physical harm (to either party) are just a few of the problems that can pop up. Xenofauna is much more likely to cause body death in crashers than xenoflora, so everything you have been taught about avoiding unnecessary contact with xenoflora goes doubly so for xenofauna.

Complex xenofauna are both easier and more difficult to deal with. Many species of xenofauna are somewhat similar to Earth-native fauna, so we tend to deal with them in the same way. In the first few crashes to life-abundant worlds, sampling life forms was a priority, which meant that those early crashers did what any pioneering, foolhardy explorer has done for the past ten thousand years: they ate a lot of strange critters. Given my earlier statements about xenobacteria, you can understand how terrified this made me. Still, I admire their tenacity, if not their temerity. Complex xenofauna runs the gamut from microscopic arthropods to aquatic and terrestrial creatures larger than anything ever seen on Earth. Documenting the xenofauna of different worlds is a massive undertaking, with the complete ecology of even a single world providing a transhuman lifetime of research data.

On worlds such as Bluewood and Echo IV, where the terrestrial ecology is primarily arboreal, small mammals and avian creatures are dominant, with reptiles and amphibians filling in the ecological gaps. On worlds where the terrestrial ecology varies more substantially, the dominant species tend to vary between biomes. The hidden gem of these alien ecologies is the aquatic life, with a simply staggering array of life hidden beneath the waves, from air-breathing aquatics to cyanobacteria dwelling on ocean floors. Worlds with large, Earth-like oceans are popular with octomorph crashers, for obvious reasons. They are eminently suited to investigating and documenting the biomass beneath the waves, and it is expected that as more octomorph gatecrashers make good use of their unique physiologies, our understanding of aquatic xenospecies will accordingly blossom.

BIOEXPLOITATION

With any exploration of a new ecological region, there comes the risk (some might say opportunity) of biological exploitation. For each new world's xenofloral and

xenofaunal range opened up, sampled, and cataloged, there are hypercorporations looking to make money on the discoveries. Many xenofaunal (and one xenofloral) species have already been developed for use as pods. Countless new pharmaceuticals have been developed, for both medicine and for pleasure. New metamaterials based on biological compounds are being developed with exciting potential uses in the future.

A major concern for preservationists is that many crashers may be covertly operating for hypercorps or other organizations with an interest in acquiring the genetic biodiversity of other worlds. There has been a bigger push in recent months to accurately document and delineate hypercorp interests with regard to the biological resources of other worlds. Some of these interests are totally overt, such as through Gatekeeper or Pathfinder. Others are a little more gray-market. The Go-nin Group, for example, relies on ultimate mercenaries to hold the Discord Gate, and as we all know mercenaries by their very nature sell to the highest bidder. This has resulted in a gray market of xenobiological material flowing from the Discord Gate to various interested parties, with the Go-nin Group seemingly unaware of the transactions taking place (at least according to the ultimates who are selling the material). However, it is my estimation that the Go-nin Group are cherry-picking the material to make sure that they have the best samples before allowing it to be sold on to other hypercorps.

Individual marketeering of genetic samples is endemic among teams that do not have strict policies in place. It doesn't take much to pocket a few seeds here or a blade of grass there. If gate facilities and the organizations running them are not absolute in their decontamination policies, samples will slip through the gaps (and Ecologene wonders why their proprietary xenobiological sample data was all over the mesh in the early days). Often, these samples are small and not of particularly high quality, but can still fetch a good price in the inner system for those looking to offload them quickly. Thankfully, the hypercorps are really clamping down on loose xenobiologicals these days, but for a while after people started crashing, it was pretty much the Wild West, at least as far as ethically-challenged xenobiologists can be considered cowboys.

Colonization Missions

Posted by: Narayanan Ramachandran, Freelance Consultant <Info Msg Rep>

Colonization projects are pursued and sponsored by hypercorps, scientific institutions, governments, and even powerful (and insanely rich) individuals. Divided as transhumanity may be, many factions are actively involved in or preparing for one colonization project or another. These can range from hypercorp indentures hoping to establish a new life for themselves to brinkers literally pushing the boundaries of isolation even further to ambitious mercurials attempting to create their own society, and everything inbetween. The Planetary Consortium seeks to claim the galaxy for their own one colony at a time, while the autonomists try to prevent exactly that from happening. Terraforming hypercorps research new ways to turn

a piece of rock into a habitable environment, hackers and rogue scientists seek places to experiment in safety and isolation, and crime syndicates set up secret bases to do god-knows-what. Rich oligarchs stake out their own private fiefdoms, while those concerned about transhumanity's collective future spread out to the stars just to make our species harder to extinguish.

The five Pandora gates within the solar system serve as a chokepoint for these efforts, giving definite advantages to certain actors and impeding others. The Pathfinder Colonization Initiative is the juggernaut, founding new colonies on a monthly—and soon to be weekly—basis and maintaining an infrastructure on Mars to support the dozens that have already been established. In the race for new *lebensraum,* the Morningstar Constellation and the Titanians lag behind the Consortium, followed by the autonomists, numerous hypercorps, and other factions. Among the most under-represented are the LLA and the ultra-paranoid Jovian Republic, each maintaining nothing in the way of extrasolar colonies.

Where to Start

Colonization missions mean two things—someone before you had all the fun exploring the unknown, then someone else decided to set up a permanent camp. While preparation is essential, the actual planning, creation, or acquisition of gear and other resources differs from one project—and also from one sponsor—to another. While the Consortium has access to almost every possible resource you can think of, acquiring the components and nanofab blueprints for certain colony necessities can be a challenge for the Love and Rage anarchist collective controlling the Fissure gate. Likewise, the Consortium and hypercorps have a seemingly inexhaustible supply of indentures to employ as near slave labor simply by promising a body and a home, whereas the autonomist and others rely on finding intrepid individuals willing to set aside everything they know and step boldly into the unknown.

Filling the Roster

Once a colonization project is approved, the sponsors select the cadre of first-generation colonists. Depending on the colony's future purpose and the resources allocated to the colony, selection processes range from thorough evaluation of required skill sets and psychological profiling to downloading random indentures into cheap synthmorphs and throwing them through the gate to lay the groundwork. Vacant scientific, managerial, or even therapeutic positions or missing skill sets are bought, programmed, requisitioned, or even confiscated and added to the roster, given adequate funding.

The final mission selection typically consists of a variety of scientists, technicians, engineers, manual laborers, and security experts, accompanied by a small team of doctors and psychologists. An average first-gen colonization crew runs between twenty to sixty people, not counting any indentures or AI brought onboard for simple manual labor and administrative tasks. Given the extensive (and lucrative) media coverage, aesthetics as well as social and rhetoric skills are given higher priority in many Consortium- or hypercorp-sponsored projects.

Laying the Founding

Despite nanofabrication, minifac capabilities, and automated habitat construction options, erecting and maintaining a colony is hard work. To stabilize a habitat or fortify an initial complex of shelters as quickly as possible, colonists rely heavily on construction drones and robots controlled by AI, infomorphs, and manual laborers sleeved in synthmorphs, worker pods, or other morphs more fit for the particular exoplanet environment.

The first priorities for any new colony are shelter, security, sensors, and communication. Pre-fabbed or auto-erecting habitats provide limited living and work space until larger facilities can be constructed. Pioneering colonists can expect their quarters to be cramped and crowded at best. As the colony grows, new additions are tacked on in an organic fashion, though any extra space these might provide is often occupied by secondary waves of colonists. Security and sensors both keep an eye on the safety of the colony and nearby gate, while recording as much data on the exoplanet as possible for long-term study. Where possible, satnets and mesh routers are put into place so that colonists may constantly keep in contact and monitor their new environment.

Supply Chain and Logistics

Though colonies become more independent over time, few are self sufficient. To ensure a colony's survival, a well-coordinated supply chain needs to be set up to source, coordinate, and distribute whatever goods, minerals, equipment, technology, or other resources are needed. In a worst-case scenario, a colony's logistics must be prepared for a communication breakdown or gate malfunction isolating them from the basecamp on the other side for an extended period. Despite mapping missiles and surface scans identifying available natural resources, many colonies have to improvise with what they brought with them through the gate and send out scouting parties to hopefully find local resources identical to or similar enough to elements known to transhumanity. Managing the local logistics associated with local mining, farming and harvesting, or even chemical processing is another challenge for which a colony needs to be prepared and equipped.

While most settlements are centered in the gate's immediate vicinity, special circumstances might favor a colony to be erected further away. Archeological sites located around the ruins of an unknown alien culture or mining camps erected nearby significant natural deposits often become permanent colonies and outposts from which transhumanity expands further.

When supplying remote colonies, a semi-permanent base is erected close to the gate as a logistics and

DEBRIEFING THE DEAD

- Please tell me your name.
- Kyla Free Aster.
- And your birthday?
- December 27, 1983.
- Where were you born?
- Chicago. Lived there most of my life.
- In the city itself or the suburbs?
- City. Rogers Park, with all those lakefront liberals. <laughs> I still managed to be to the left of them!
- Do you remember what you did during the Fall, Ms. Aster?
- The Fall? Like Autumn? Well, I—
- No, the Fall of Earth.
- I'm afraid I don't know what you mean. I remember the war, of course. Did something happen to the Earth?
- Can you tell me how you ended up with the group of gatecrashers on Skoyz, Ms. Aster?
- No, like I told them, I'm not sure what happened. I remember some, some sort of machine landing on my shoulders, but then—
- This happened on Skoyz?
- No, no, I was in Chicago. I was headed home, there were alarms. And then somebody's robot landed on my head. After that, well, everything's a bit fuzzy. Somehow I ended up in, um, Skoyz, I guess, with that group of people. The gatecrashers, as you call them.
- According to the first-in team, there were four of them when they stepped in to the gate and five when they stepped out. They said you just appeared in the middle of them, stepped through the gate like you were one of them, but then claim to remember nothing.
- I, uh, yeah, I don't know. I'm not sure what's happening, really. This whole gate thing is new to me. Look, I'm a bit concerned. Did something happen to the Earth?
- Yes, Ms. Aster, it was lost. Ruined and left to the machines. We call it the Fall. That was 10 years ago. According to our records, you never made it off the planet.
- What … what are you saying? Are you saying that I—that I died on Earth? During this war?
- That seems to be the case, yes. Ms. Aster, perhaps you can tell me one thing?
- I—yes?
- Where did you get that body?
- This body? Is something wrong with it?
- There's nothing wrong with it, but it is most definitely not yours.
- I've never resleeved. I—I thought something felt weird. But it's all been so confusing. Wait. W-whose body is it?
- Funny that you should ask that, Ms. Aster. It's mine.

supply hub. Loading and transportation equipment is used repeatedly for each supply run to the colony and then secured for storage until the next delivery, or left with the colony in case of deliveries inward from the gate. Transportation mostly consists of all-terrain ground vehicles or skimmers, in rare occurrences a small spaceport is established for colonies on nearby moons or asteroids. As of yet, no (known) colony has become big enough to warrant the construction of a space elevator.

RUNNING A COLONY

Once a colony survives the initial labor pains, don't assume its existence will get any easier. Keeping a colony alive can be as difficult as establishing it, maybe even more so. Over time, colonies can be afflicted with all manner of crises. Gate malfunctions may cut them off from their home base for indefinite periods of time, leaving them without critical supplies. Tensions between people living in stressed, cramped conditions may erupt into civil disturbances or violence. Sudden environmental changes like volcano breakouts or tectonic shifts could threaten their very existence.

SUSTAINABILITY

With the exception of a few colonies specifically tailored for synthmorphs, most colonies have at least some biomorphs who are dependent on the habitat's life support functions; should it fail, they would be in extreme danger. For this reason, and given the many indentures found in colony populations, many colonies have high percentages of synthmorphed personnel. This also has the benefit of reducing the supplies the colony requires. Those who do sleeve in biomorphs often choose biomods that are less resource-intensive and customized for close quarters living.

Nevertheless, many colonies seek to create sustainable living for biomorphs to limit supply needs and to be better prepared for emergencies. Greenhouses and faux-flesh carniculture vats are common, and when possible local sources of water are tapped (often by harvesting and melting ice). Even in hypercorp colonies, community makers are common, and cornucopia machines are often pre-loaded with major blueprint libraries and less restricted than within the inner system, in order to fulfill the colony's early needs.

Energy sources range from solar cells to nuclear batteries and fusion reactors, often in combination and with backups. Some colonies use power plants that take advantage of abundant local fossil fuel supplies.

SECURITY

Depending on the sponsor's resources or the colony's expected profitability, security might vary from a few hunter-killer drones to a platoon of combat morphs and an AI-controlled military satellite network. Besides protecting the colony itself, guarding supply convoys between the settlement and the gate is the second main task of security forces. Security teams also specialize in guarding long-range expeditions for

matters like resource surveying, scientific studies, and xenoarcheological digs.

Protecting a colony from outside threats isn't the only thing security is on hand for, of course. Mining colonies and other settlements with large numbers of indentures often boast additional physical security to act as a police force, keep the labor force in check, and prevent internal strife and dissent among the population.

Most sponsors subcontract out security operations to hypercorps or freelancers that specialize in these services. This work can be tricky, as security contractors often find themselves embroiled in disputes between workers and management or between hypercorps fighting over resources or property. In Pathfinder/Consortium-linked colonies, security forces and colonial regimes are expected to abide by Consortium laws. In others, local laws or simple frontier justice may apply. Autonomist outposts are, of course, self-policing.

Psychological Effects

Living in a smelly, overcrowded tin can on a snowball circling an alien sun for months on end can be stressful for everyone involved. Add in the fact that you are light years from the nearest other transhumans, connected only by a device that everyone fears and few trust, and maintaining a positive attitude can be a challenge. Add in the social fault lines inherent in indentured servitude and similar hierarchical relationships and cultural divisions, and it is not uncommon to see tensions between different colonist sub-groupings come to a boil.

Various colonial initiatives seek to remedy these problems with regular psych profiling and counseling as well as offering numerous media diversions, especially VR. They also often turn their heads to less savory reliefs, such as recreational drugs, prostitution, and gambling. The costs of gate transfers usually inhibit options like rotating staff or mandatory vacations. A few strict colonies employ more controlling measures, such as mandatory psychosurgery sessions, implants, or drug regimens.

Productivity

Though some colonies are established purely to beachhead transhuman expansion and grow new population centers on extrasolar worlds, the majority of them are founded with additional purposes in mind and are effectively support bases for resource exploitation, archeological digs, scientific labs, and similar projects. This means that the colony is not only dependent on that project's success, but that it is answerable to whoever sponsored it. If a colony becomes too expensive, doesn't meet production quotas, or threatens to become ungovernable, there is a very real chance that the plug will be pulled. There are already dozens of failed or deliberately abandoned colony attempts, leaving behind littered traces of transhuman settlements on various exoplanets. A few of these have been resettled by other sponsors, but many remain unused.

The primary drawback to answering to remote bosses, of course, is that those in charge usually know very little about the colony's actual conditions. Sometimes this is deliberate, through careful management of information sent back home by colonial administrators. In practice, this means that orders suddenly come through the gate that are exceptionally inconvenient or otherwise

Memo to All Proxies Regarding "Lost Colonies"

Last year we initiated a new project to catalog information on "lost" extrasolar colonies. Rumors of various lost colonies had been circulating for years, with Firewall being aware of several actual incidents of disconnection, both accidental and intentional. The reconnection with the Synergists brought even more attention to this phenomenon. The various gate corps have kept most such situations under wraps, for fear of bringing negative light on extrasolar exploration and colonization. Our archives now contain correlated and verified information on all known lost colony situations, which our scanners will consistently update.

There are some things that all proxies should know. First, there are indeed multiple accounts of wormhole connections no longer being able to be made to established colonies. At current count, we are aware of fourteen such incidents; there may well be more. It is highly possible that many, if not most, of these colonies are still operational, and that a link may someday be re-established. The manner in which these connections were lost seems almost entirely to be based in anomalous gate behavior. There is no indication of the cut-offs being due to some sort of threat or hostile intent—or at least a consistent one.

Aside from Synergy, there have been three other colonies to which contact was temporarily lost but later regained. For one, the address simply began working again, and the colonists were rescued despite some casualties from severe stress and hunger-related health issues. For the second, contact was accidentally re-established via an excursion through another remote extrasolar gate. In the third incident, however, contact was re-established via the original gate, only to find the settlement intact but completely abandoned. The colony's mesh was intentionally wiped, and there is no evidence of what became of the several hundred colonists there.

On top of these incidents, we are aware of several other colonies labeled as lost that were, in fact, intentionally cut off. One was a Pathfinder colony that underwent an autonomist revolt. When an initial attempt to pacify and reclaim the colony met with stiff resistance, Pathfinder instead opted to lock the colony out. Pathfinder forbids any wormhole connections to be made to this colony via any gate under their control. Their intention seems to be to starve and weaken the colony to seize it at a later time.

The final two incidents are more disturbing and of more direct interest to Firewall. According to the records of both affairs, routine contact with each colony suddenly became anomalous. When the situations were investigated further, evidence of widespread TITAN and/or exsurgent activity was noted. Following protocols, contact was immediately withdrawn (though in one case, a nuke was shoved through right before the gate was closed). These addresses are now restricted.

For further details on these incidents, please check our archives.

First-Link Report #75432587k
[Begin Audio Transcript]
Operator 1: Wormhole engaged. Deploy initial probe.
Operator 2: Probe inserted.
Operator 3: Jupiter's Balls, are you seeing this? That's one hell of a crater.
Operator 2: Looks like the remote gate is smack in the middle of it. Does the insertion height seem off to you?
Operator 3: Check the gate's base. See that? Looks like the ground melted at one point and the gate sank into it.
Operator 2: You're right. It survived an asteroid strike?
Operator 1: I have a suspicion it survived worse than that. Run the rest of the scans, I want to get the full sensor package in there.
[Transcript Break]
Operator 2: Probe 2 deployed. Sensor activated. Scanning.
Operator 4: Radioactivity is through the roof. Gate's in a hot zone.
Operator 3: Are you thinking what I'm thinking?
Operator 1: I'm thinking a bomb. Something detonated here, left a crater full of molten slag. Gate survived but settled in, or maybe rebuilt itself.
Operator 2: Is that machinery? There, in the shadows?
Operator 1: Let's get a bot over there to see.
Operator 3: Careful, it could be weaponry.
Operator 5: Excuse me, sir. See those small impact craters, in the highlighted quadrant? Those look like high-speed projectile impacts. And that striation there? I'm guessing energy beam weapons fire.
Operator 1: How old do you think those markings are?
Operator 5: Hard to say, but given the likelihood of local weather patterns, I'd hazard an initial guess of quite recent.
Operator 4: I'm picking up radar echoes. Strike that. We're being pinged.
Operator 1: Find the source.
Operator 2: Did that thing just move?
Operator 3: I'm detecting nearby energy transmissions. AI says the probe has been locked. We're under attack!
Operator 2: Holy fuck look at that thing!
Operator 1: Kill the link! Kill it now!
[End Transcript] ♣

problematic to the colonists. No one likes being told they have to double their resource extraction in the middle of an ice planet's blizzard season, or hearing that their water supply will be rationed until their mother hypercorp gets around to sending a new water filtration plant through, or receiving orders to delay a project critical to the colony's well-being in order to pamper an oligarch's nephew who is visiting the colony for an adventurous lark. These sorts of disconnected priorities and interests between colonists and remote sponsors are a leading source of unrest, sabotage, and even outright revolt.

COLONIAL MEDIA

While exploration gatecrashing missions draw an impressive amount of consumer media interest, there is just as much public attraction to the lives and daily circumstances of extrasolar colonists. Many colonies contract with media hypercorps that chronicle the fate of the colony in high rez detail in serialized installments. Embedded journalists produce local news reports that are periodically distributed back to the solar system and even back out to other extrasolar colonies. The gate corps are known to use AIs to review, edit, and censor these reports, however. A select few colonies are in effect reality experience shows, with key colonists X-casting their lives, all bundled and sold as an entertainment package to audiences back in the solar system.

Many colonies are a calculated investment risk for their hypercorp sponsors, so it is no surprise that they go to great lengths to make colonial affairs seem exotic, dramatic, and just dangerous enough to be adventurous and thrilling but not scary. Among the Consortium media, in fact, expensive ad campaigns extol the virtues and glamor of being a colonist, co-sponsored by the Pathfinder Colonization Initiative. Those who buy the hype and sign up are usually in for a shock when they end up assigned to some backwater mining camp on the thirtieth ice moon of a nondescript gas giant.

RESEARCH MISSIONS

Posted by: Dr. VB Pitaevskii, Theoretical Physicist <Info Msg Rep>

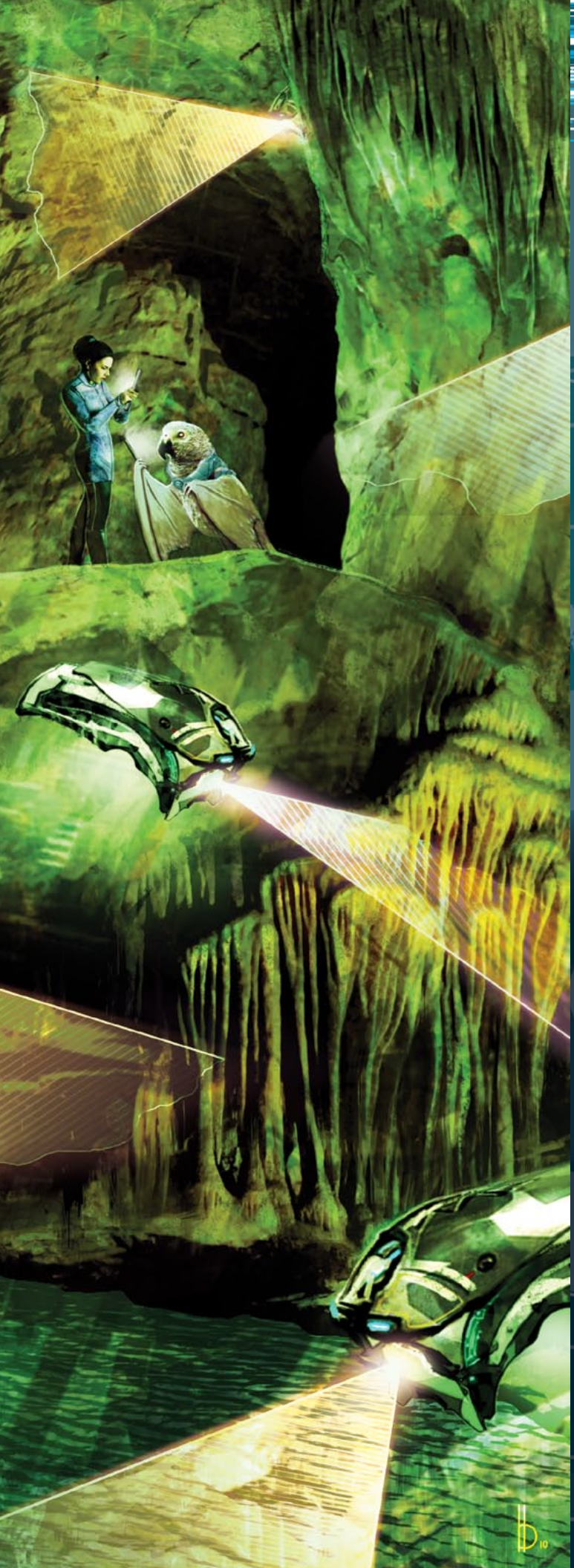
Transhumanity doesn't know everything. Indeed, the more we discover, the more questions arise. The galaxy is massive and full of mysteries. The Pandora gates allow us to seek out and find new things, examining phenomenon we never could have measured from our own solar system and running experiments we could not have considered elsewhere.

Conservatives express distaste at much of the extrasolar research being conducted, and sometimes they even raise direct opposition to investments or to specific missions. In their view, transhumanity already has the means and the tools to live perfectly fulfilling lives. They also view unbridled science as the factor that nearly led transhumanity to its extinction, bringing about the TITANs and ultimately the Fall.

So why invest effort into further, often risky, research?

First, transhumanity's curiosity goes away when the species does. Curiosity drives the species to success. While it's also driven the species near extinction, the sheer magnitude with which curiosity improved life cannot be ignored. Without exception, every member of the species lives today because of scientific advancements. Since the advent of fire, every step of scientific advancement added a facet to basic existence. Every tool broadens the pallette.

Second, increased understanding in post-Fall existence is necessary for continued survival. As



transhumanity discovers more evidence of outside life, general levels of understanding decrease. Without an understanding of these life forms and their fundamental traits and features, transhumanity puts itself at risk in any dealings. Knowledge is power, and every day, transhumanity discovers that its knowledge is distinctly lacking in many places. Since the TITANs, most everyone recognizes that a little knowledge is very dangerous. But only an extremist will state that a complete lack of knowledge is better than a comprehensive knowledge.

Both of these elements play heavily into why transhumanity insists on traveling to remote locations for research opportunities. Ultimately, though, the reasons are as varied as the individuals (and the hypercorps) that are resourceful enough to initiate such missions.

A Typical Mission

A typical mission is a misnomer. Every research mission is conducted with express intentions in mind. Some are one-shot experiments. Others involve placing sensor packages to be picked up or remotely accessed later. Some require long-term basecamps or extensive installations and are essentially colonies with specific research studies as their goals. There are a few standards in science expeditions, however. For example, during the first few manned missions to a given location, travelers are encouraged to bring all necessary supplies and resources; at least until the availability and usefulness of local resources can be verified.

Since most research ops involve sensor scans, measurements, and similar forms of data retrieval, the required equipment is usually quite portable. The current state of technology is such that the standard gear for thorough geological, biological, and physical surveying is usually a handheld scanner. In a relatively stable environment, nanobot swarms can not only emulate, but exceed traditional equipment. Unfortunately, nanobots don't take well to intense surroundings. Where a heavily structured synthmorph might be able to handle pyroclastic fallout, nanoswarms are just less hardy. Depending on the research, however, the work may involve larger sensor arrays, heavy mining equipment to sink deep probes, larger spacecraft or robots, or similar heavy gear. With the exception of hypercorp-backed missions and certain projects funded by wealthy, private patrons, science missions often tend to be underfunded and operating on extremely tight budgets. As a result, they often cut corners on other essential equipment, sometimes impeding the safety and security of the mission.

Anomalies in Physics

In the 21st century, humanity expanded its space travel programs with the express intention of using low gravity and vacuum environments to expedite and intensify scientific exploration. As a result, humanity discovered the differences between the laws governing macrophysics and quantum physics. After the Fall, transhumanity has pursued new, similar opportunities for scientific discovery on the other sides of Pandora gates. Many of these projects have been in pursuit of rankling scientific questions, such as "why do neutrinos have mass?" or "can the proton decay?" or "are quarks made up of even tinier objects?" Others investigate remote locations in which the supposed standard laws of physics seem to break down or not apply. These anomalies may be explainable in ways that don't require rethinking some of the major assumptions currently underpinning physics, or they may result in some breakthrough or revolution in our understanding of the universe. The true uses for these anomalies have yet to be

tapped or even conceptualized, but the potential is evident and well worth the risk to most scientifically-minded individuals.

A few of the more intriguing extrasolar scientific discoveries and ongoing research projects are noted below.

Genesis of Mass-Energy

Arguably the most interesting of these points is a pocket of space near a free-floating gate with one important anomaly: every few seconds, a small amount of matter comes into existence or alternately vanishes from existence. This phenomenon occurs in time with the pulse of a nearby star. Scientists don't suspect the star is causing the situation, but they do believe that the star's pulse has something to do with the phenomenon. Probes sent to the pocket come back with trace amounts of elements that didn't exist there previously, with no apparent explanation for how they arrived there. These trace elements invariably disappear some time later, only to be replaced by new elements later on.

Thermodynamic Efficiency

The third law of thermodynamics disallows for perfect thermodynamic efficiency. On a frozen rogue planet floating inside a distant nebula, however, a group of Pathfinder scientists have documented several instances that seem to be an exception to this law. The planet possesses no discernible atmosphere and has an exceedingly low temperature that is stable at a few thousandths of a degree above zero Kelvin. On the surface, sampling probes have discovered a handful of small black minerals in "puddles" that gave inconclusive results to infrared thermal scanners. When externally manipulated by the probes, these minerals appear to break down into near nothingness from an already superfluid state.

If the conditions are indeed at absolute zero, the implications are almost infinite. Molecules at such a state would be the greatest conductors known to transhumanity, and may allow for differentials in energy transference unlike anything seen before. If this were correct, light could be manipulated, slowed and stopped to a point where it could be directly converted into electrical current. Unfortunately, the conditions are so very fragile that the Pathfinder scientists are still searching for a proposed method of harnessing or manipulation that is even worthy of testing.

Variance in Light Speed

A team of argonauts working through the Fissure Gate have reported an unusual phenomenon at a remote gate location. This particular wormhole connection leads to the interior of a dark nebula, where the remote gate seems to be free-floating in a densely packed cloud of debris and super-heated gasses. Though thick with dust and plasma, the nebula is dynamic enough that it still lacks any substantial bodies or accumulation of condensed matter. The shocking discovery made by various probes launched here, however, was that light itself moves slower than expected. Due to the hostile conditions of the nebula, this anomaly is difficult to investigate. Most probes sent through so far have lasted a matter of minutes. If the reason for this unusual phenomenon could be discovered, it could be a key element in the development of faster-than-light travel.

Resource Exploitation Missions

Posted by: Narayanan Ramachandran, Freelance Consultant <Info Msg Rep>

Resource extraction missions are the most straightforward of gatecrashing ops. Aimed at generating maximum output/profit with minimal input, exploitation ops break out the sledgehammers, shovels, and drills once scouting teams and surveyors confirm the existence of natural resources.

Surveying

Whenever an exploration mission detects traces of exploitable resources, and the conditions for mining seem optimal, a survey team is sent in to assess the claim and look for others. These surveyors are often contractors from a hypercorp focusing on such operations, though some larger corps use in-house teams. Extrasolar surveyors are usually experienced with working in alien environments and the fine details of through-gate operations. They also usually specialize in a particular field; finding helium-3 requires a different skill set from locating precious metals.

Survey teams investigate natural formations and geology utilizing a variety of scanning systems. Their main tools include hyperspectral satellite imagery and similar remote sensing tools, magnetometers to search for magnetic anomalies in the exoplanet's magnetic field, Geiger counters to detect radioactivity (particularly for uranium), geochemical surveys of soil and regolith, and a wide range of exploratory geophysics techniques to detect mineral deposits. Some scanners will run into problems depending on local geology, either with conditions interfering with remote scans or the inability to positively resolve what is being scanned. In these cases, more direct physical sampling and surveying is called for. Sampling is a balance between time, equipment, and storage capacity. If a team has enough time and equipment, they can do a detailed analysis. A team in a hostile environment might just be able take a dozen scoops of soil and a few rocks prior to hustling back to the gate.

The goal of these teams is to identify resource-rich areas, map out deposits for exploitation, and generate specific plans for drilling and mining. A good team will not just find the best deposits, but will come back with a thorough plan for how to extract the resources in a quick and efficient manner.

Mission Preparation

Any selection of personnel and equipment to be transported to and operated on the other side depends on the specific resource(s) being targeted. The degree of automated technological support is higher on exploitation missions than on colonization or exploration

missions. Mining mission parameters are clearly defined and allow a much more detailed and customized selection of tools and equipment. Depending on remote conditions and various economic factors, ores and other resources may be processed on site or may be shunted in raw material form back through the gate for refining.

The two primary concerns of exploitation mission sponsors are sustained operability and a secure transportation chain. Though every hypercorp is planning for the long run, the quicker they get their ROI (return-on-investment), the better, which in this case means the quicker and cheaper the method of exploitation, the better.

Personnel

Mining operations require a combination of expert personnel and non-skilled manual laborers. Trained scientists and surveyors are needed to analyze the data gathered from scans, mineral probes, and other means of on-site prospecting. Though hypercorps sometimes entrust a mining operation's science tasks and even administration to a cadre of AIs customized for this purpose, most still benefit from the transhuman factor and management. When discovering unknown materials or material compositions, analyzing contradicting or unidentifiable scan results, or dealing with disgruntled staff, the limits of AI programming become obvious. The transhuman mind still possesses an advantage over pure synthetic intelligence when it comes to the illusion of synthetic intuition. The necessary transhuman element, however, does not always equal a physical presence. For cost, as much as for security and administration reasons, infomorphs are preferred by the hypercorps as scientific, lab, and bureaucratic personnel.

Physical labor is almost always handled by indentures given cheap or utilitarian robotic shells, though it is just as common to see drone networks controlled by AI or infomorphs. Sometimes a single skilled foreman will oversee and coordinate an entire workforce of unskilled indentures or bots.

Physical on-site security is minimal and mainly directed against outside threats and acts of internal sabotage. In larger camps, they may be relegated to keeping the peace among the personnel, which often boils down to keeping the sex workers, alcoholics, and drug abusers in line.

Operational Security

For obvious reasons (ecologic impact, disregard for health or security regulations, etc.) exploitation missions are the least glamorous of all gatecrashing ops. Security surveillance replaces any media coverage common with colonization or lottery gatecrashing, as hypercorps don't want details on their major revenue streams broadcast over the mesh, alerting the competition and other vultures. After the initial discovery of an extrasolar resource find, many sponsors go to great lengths to keep their exploitation endeavors hidden from prying eyes, whether by PC-sanctioned media censorship, unsanctioned information sabotage, or even more drastic actions.

Due to the limited and tightly-controlled mission budgets for resource extraction gigs, low operating costs are favored over quality of equipment, personnel, or security. As service tenders and bidding models from third-party service providers are used to keep the costs for outsourced equipment, (mobile) facilities, or the (indentured) workforce as low as possible, many missions sooner or later must deal with data leaks or the theft of the yield generated. Inexplicable "shrinkage," organized smuggling, and data theft are common problems. Most often an inside source is involved, whether motivated by greed, anti-corporate or extremist ideals, or blackmailed by a criminal organization. As transportation security and surveillance is mostly directed against outside threats, identifying an inside source becomes more difficult (and costly) the more parties and stopovers are involved in the entire supply chain.

Short Versus Long Term

While mining outposts are often similar to other colonies, fundamental differences often exist between the two. Colonies are intended for long-term duration and are usually established with growth models in mind. They also tend to make the best use of the exoplanet's ecosystem to support its population's needs for food and energy. Mining camps, however, are almost always established on a temporary basis, even for long-term extraction operations. Compared to colonies, they are brutal—sometimes reckless—operations set up for maximum output quota with little or no regard at all for the exoplanet's ecosystem or environment (with the exception of some autonomist mining operations, which aim for minimal impact). It is also not uncommon for mining operations to expose their own crews to toxic chemicals, bio-agents, or radiation, all of which are considered justifiable for a short period of time (though long-term projects require adequate shielding or other protection for the transhuman workforce). Though most mining contracts provide basic medical packages and follow-up treatments, mutations, neuropathy, and other health problems are common among experienced miners.

Mission Complete

After a deposit has run dry, surveyors are brought in one final time to perform a last thorough scan before the operation is disbanded. Depending on the costs associated with a complete disassembly of the base and equipment, the installation might be broken down and transported back through the gate, destroyed to prevent unauthorized use, or simply abandoned and left behind in case none of the former options are considered feasible. This last option is the most common for mining outposts in toxic and unstable environments, but sometimes operational bases and surrounding habitats are simply left behind to avoid the costs of taking them down again. Remaining facilities are then shut down electronically and sealed manually/mechanically.

RESOURCE EXTRACTION: MAJOR INTERESTS

Undertaking a project like extracting two tons of gallium from thirty-eight tons of ore typically requires the sort of resources and backing that the hypercorps excel in. Though some anarchist syndicates and Titanian microcorps pursue extrasolar resource exploitation projects (and often admittedly in a manner more sensitive to the exoplanet's environment and ecosystems, at least by nano-ecologist standards), various inner system and Extropian hypercorps are the true heavyweights in this field.

Fa Jing is the biggest of the prospecting giants, along with Pathfinder, Tolstoj Mining Concern, and M-5. These hypercorps handle all aspects of mining operations, from surveying and extraction to refining and transportation. Numerous other hypercorps specialize in particular functions. ExoTrek and Geomatic are the prospecting and survey experts, the latter holding an exclusive contract on all ops via the Discord Gate. Though hundreds of corps focus on different types of extraction operations, Iberon is at the top of the heap, with KDRX and Black Crow currently on the upswing. Omnicor, GazPro, and Vitachem are the go-to corps for various refining and processing facilities. ComEx and TWA are the two biggest shipping interests.

In addition, there are the buyers and sellers that may never leave the solar system but definitely affect the industry. Starware, Gorgon, and Tri-Cor are all in the metals market, while Prosperity Group and ChevEx buy large-chain organics. On the supplier side, Zbrny continues to sell mining equipment to various parties, though few will discuss the details of these negotiations. Competing with them is the ambitious DigGud, who not only make mining, drilling, and digging equipment but also sensors and transportation options. TerraGenesis is a major provider of the soil sampling and satellite imaging systems upon which prospecting gatecrashers often rely. ■

NEW RECRUIT

- Welcome to your orientation, Gema. I'm Sgt. Bartumeu and I'll be leading you through an overview of what we do here, how we do things and what you'll be doing. I see you've done plenty of merc work in the past?
- Yes, sir, I contracted with Gorgon for just over a dozen remote gate ops.
- Excellent. That's a fine outfit, but we'll be doing things a bit differently. You'll be running security, but let's be clear, this is not a military outfit, it's a surveying concern. We don't do exploration, we don't do colonies. We trek out into the alien wilderness and look for resources to harvest. Our customers are hypercorps, governments, organizations, and individuals, all of whom think they've found something interesting. They hire us to take a closer look, verify the worth of exploiting it, and come up with a plan for doing so. Oh, and see if we can find anything else worth digging up while we're out there. Our teams are composed of scientists, navigators, scouts, transportation, surveyors, and security—that's you—to protect everyone else.
- Will this be previously-explored territory or new ground, sir?
- In most cases, it's been mapped and scouted only once by the first-in teams. Sometimes we'll get gigs in areas that have been more thoroughly traversed.
- What are we looking for?
- Depends on what our clients are looking for. Trace metals turn us a good profit. Tantalite ore, for example, you just can't find much of that stuff. Funny, when I lived on Earth, iridium and osmium were so rare, but with all those asteroid miners it isn't the amazing find it used to be. Now we keep an eye out for some of the old standards: gold, uranium, wolfram/tungsten, silver, and so on. Helium-3 has a good market, and hydrocarbons are always popular. On the hydrocarbon side, we look for the big molecules. Methane's pretty easy to come by, so making other hydrocarbons is possible. We just have to find stuff that is cheaper to extract than it is to make. The break point is generally around octane, but it can really depend on the hazards involved and how remote it is. The bean counters figure that out.
- That all seems straightforward.
- It is, but every so often we get asked to go after something weird—or something weird finds us.
- Something weird, sir?
- Yeah. We don't get called in for alien artifacts or ruins—other corps handle that side of the biz. But sometimes we'll be contracted to review the possibilities for harvesting organics. Exolife biomasses. Plant life. Weird goo with strange properties. There was even a job where we assessed some large growths of potential non-organic life. We haven't stumbled on the Holy Grail yet, though.
- Holy grail, sir?
- Computronium. Matter optimized for computation. That, my friend, is the ultimate treasure hunt. ♣

XENOARCHEOLOGICAL MISSIONS

Posted by: Dr. Alozie-uwa Oboyomi, Xenoarcheologist <Info Msg Rep>

Xenoarcheology is perhaps one of the most over-hyped and under-appreciated fields of science that transhumanity studies. Anything coming from an extrasolar world is bound to be gazed upon with awe and wonder, even if it is the simplest of trinkets. Of course, some of this awe is warranted; less than ten years ago, we were alone in the universe. We all remember where we were when we first heard that transhumanity had made contact with another sentient race, the Factors. We all remember where we were when we heard about the first extrasolar ruins, proving that the Factors were not the only game in town, and that our solar system was but one of many inhabited and inhabitable places.

Since those days, the awe among xenoarchaeologists has faded, but the excitement is still there. While the general public may look upon our profession as a sort of secret fraternity, gifted with knowledge and insight that none may ever possess, we all know that's not true. We are simply detectives, examining evidence and assembling facts to provide a narrative of who lived where and when. My particular focus within xenoarchaeology is bioxenoarchaeological artifacts (or as most system press terms them, relics).

A number of corporations, universities, and research groups sponsor archeological digs, often in conjunction with each other. The argonauts, Titanian Autonomous University, the University of Mars, and Oxford-Shackleton are some of the largest sponsors. Several anarchist archeological collectives are sponsored by the Love and Rage Collective. A few inner system oligarchs—notably Exotech's Morgan Sterling—have also taken a personal interest in this area, investing their resources into operations pursued by some independent big-name xenoarcheologists. The majority of xenoarcheology missions originate from the Pandora or Fissure Gates, as the fees charged by the corps controlling the other gates are too prohibitive. Gatekeeper Corp sponsors and even funds a number of archeological missions with argonaut support.

PLANETS OF THE DEAD

The Fermi Paradox continues to haunt transhumanity. With so many star systems, so many planets, and so many opportunities for intelligent life to develop, the question remains: where are the sentient aliens? By simple math alone, we should have encountered far more alien civilizations by now.

In truth, we have found those civilizations, or at least some of them—and so far, with the exception of the Factors, they are all dead. To date, we have found evidence of at least eight extraterrestrial civilizations that once existed, but that now seem to be extinct. The majority of these seem to have reached a level of technological advancement equal to or greater than transhumanity. At least one of these dead cultures, the Iktomi, seem to have used the Pandora gates before us. Every one found so far has been dead for centuries.

In most cases, surprising little evidence of these once-thriving species still exists. Their achievements have been erased by the passage of time, broken down by the elements and destructive forces of nature, buried under the slowly shifting landscapes of forgotten home-worlds. Some of their ruins have been so thoroughly leveled that it would seem to indicate that some force intentionally wiped them out, doing as thorough a job as possible in eradicating all traces of their existence. It is possible that similar but even more thoroughly wiped civilization remnants might exist on exoplanets we currently occupy, without us being the wiser.

These planets of the dead offer us many challenges and possibilities. We study them to determine what these alien creatures were like, how they evolved, how they thought and acted, in order to better understand our own evolution and the possibilities of finding more xenolife elsewhere. We investigate the causes of their downfall, to determine if there is some challenge or threat that transhumanity may yet have to face, that could destroy us just as thoroughly. We research their lives, interests, and arts, to understand the essence and meaning of intelligent life.

THE PROCESS

Digging up relics from long-dead civilizations can be really, really dangerous. There's a romantic view of us in the press back home that has us swanning around in cargo pants and t-shirts, recklessly tromping through ruins, picking up whatever looks pretty or interesting. The reality is far less glamorous. Unless a site is clearly benign, a lot of the time we have to use digger pods to go into a site and trigger any safeguards that may have been left behind. We don't get a lot of booby-traps or deliberate acts of alien sabotage, but it happens, and we need to play it safe.

Once we make sure a ruin is clear and the work area is stable and safe, we go in. If possible, we make the area breathable to facilitate work, erecting domes to maintain a consistent environment. This also helps protect the dig site from any environmental factors that might disrupt the operation or damage unearthed structures and items. Xenoarchaeology isn't a one-day thing, so while we're waiting for the pod operators to do their job we set up camp a good distance away (any given dig site of note is a long-term gig, so we tend to make ourselves at home). When we get the all-clear from our crew chief or dig leader, we head in. We found out early on that some relics are sensitive to electromagnetic fields at close ranges, so we tend to use a lot of low-tech or shielded equipment. For the most part, we use the same tools archaeologists have used for hundreds of years: shovels and brushes.

I should clarify that the use of digger pods is by necessity rather than by choice. If we had our way, we'd go in with synthmorphs all the way, simply because they're cheaper and easier to maintain; it's simpler to replace a severed wiring bundle than to repair a broken leg, even in our technologically-enlightened time. As I noted, however, many ruins are electromagnetically sensitive, which for the most part eliminates fully synthetic morphs as a good medium for initial site

exploration. When we were first digging out Sunrise, we used modified pleasure pods of all things. We found that their limber nature worked well when exploring a site for the first time, that their mostly biological makeup wouldn't trigger electromagnetically sensitive locations, and the fact that we could run them remotely using their puppet sock. We simply jacked in and drove them around like cars. Over time, we've tweaked the design a bit, mostly to be more unobtrusive, and many teams in the field are using actual digger pods for the first time with great success.

Once we've cleared a site and isolated items that we feel are worth investigating a bit more, we first give them a scan to see if they're sensitive to particular frequencies of sound, light, and electromagnetic radiation that we may use in everyday situations. If it appears to be an electronic device, we then hook it up to an adaptive interface to see if we can discern its nature and perhaps map out any circuit paths. Items deemed electromagnetically-sensitive are usually studied on site. Other relics are carefully removed from the dig site, packaged in inert containers, and shipped back through the gate so they can be better studied on the other end.

In reality, even identifying an alien device as a relic is sometimes a challenge. We simply do not understand the creators of these artifacts enough to fully understand the initial purpose of many relics we uncover. Some of the things we dig up may for all we know be worthless trinkets, the alien equivalent of kitsch and kipple. Others may be smaller components of larger items, whose purpose we are unlikely to ever determine without finding other parts and piecing them together. Still others may be highly-advanced devices that to our inexpert eyes seem as innocuous as paperweights or doorstops. So our approach is to research and catalog everything we find, no matter the mystery it presents. It is our hope that through detailed study and further exploration, our picture of the alien species and their culture becomes clearer. Usually this starts by piecing together a picture of their anatomy based on how they designed and used items, and then building onward from there to guess at what purposes these devices may have had or what the characteristics of their society was.

TITAN SITES

Though most evidence of TITAN activity is treated as a hostile contact and either avoided, quarantined, or actively destroyed, a few sites have been set aside for research. Those conducting the research have made the argument that it is important—possibly even crucial to transhumanity's future survival—to have some idea of what the TITANs have been up to since they left the solar system and where they may have gone. Each of these sites is heavily guarded and restricted, often with a military unit nearby on standby, and usually investigated remotely using shielded synthmorphs.

There are also some less-ethical xenoarcheologists that treat sites that are clearly TITAN in origin as simply another dig site to be explored and exploited. While relics that come out of these TITAN sites are clearly illegal in most political entities, I have it on good authority that there is a burgeoning trade for them on the black market, especially since some of the factions holding the Pandora gates are not particularly rigorous with their artifact screening procedures on the home side of the gate, either through ignorance or by design.

GATES AND COMMUNICATIONS

Posted by: Starlink, Comms Hacker <Info Msg Rep>

Because the wormholes that the gates create are theorized to fold space-time together, they allow for a form of faster-than-light (FTL) travel. What this means, of course, is that gate travel exceeds the speed of standard electromagnetic communication channels, such as radio and laser commlinks. If a gatecrasher leaves from the Vulcanoid Gate, stepping through to the Martian Gate, and a radio message is beamed outside of the gate from the Vulcanoids to Mars at the same time (the physical distance being close to 12 light minutes), the gatecrasher will arrive approximately 12 minutes before the radio message. This is not time travel, it is merely a consequence of the vast scales involved in communicating across space. The same result can be simulated using FTL quantum-entangled communicators.

The unknown fields at the mouth of each wormhole prevent electromagnetic communications from passing through. What this means is that even if a gate is open, connecting Mars to an exoplanet, for example, you could not send a radio signal through the gate in the same manner as you can send a gatecrasher. The only way to achieve FTL communications using the gates is to pass some sort of physical link through, such as a fiberoptic cable. It is thus possible to pass a cable through the gate, connected to a repeater or similar communications device on the other side, so that data passed through the cable and the gate may be broadcast once reaching the other side. Most colonies and exoplanets with regular traffic have a repeater stationed at the remote gate for exactly this purpose.

EXOPLANET MESH NETWORKS

Every colony has their own local mesh network, but by its remote nature this mesh is isolated from the networks of the solar system back home (or other exoplanets). Any messages or other data to be sent back to the solar system (or to any other transhuman settlement in the galaxy) is simply queued up. When the periodic wormhole connection is made back to the solar system, these messages are passed through (via a physical cable connection). Likewise, any messages to that colony are saved up and stored at the gate, and passed through when the next scheduled link is made.

This means, however, that whoever controls the gate has the capability to intercept, scan, and even filter or censor unencrypted communications that pass through these channels. Pathfinder is known to do this, censoring any news from its colonies that it deems too negative, as well as cutting out anything subversive or pro-autonomist.

Occasionally exoplanet colonies will open connections to each other, so in this manner the chokepoint of information at the solar system gates is bypassed.

Getting Used to Isolation

One problem that plagues many newbie gatecrashers is the lack of deep mesh access. When you walk through that gate to a new alien world, you will find yourself suddenly deprived of the immediate access to information you have been used to for much of your life. Your mesh searches will be limited to the local network carried by you and your team, and whatever data sources you happen to bring along. Now, this is not always problematic, given the capabilities of modern electronic storage. Many gatecrashing teams are careful to bring along storage units with detailed archives on important topics that are likely to be of relevance to the mission at hand. Even so, there will be many information queries that you will be unable to process thoroughly, given restricted resources.

Similarly, you will be cut off from real-time interaction with your social networks. This means that any positive or negative scoring will be queued up until you regain connection with an established mesh network and they can propagate through the social network. If you happen to run across or interact with other transhumans, you will be unable to access their full socnet records, and will have to make do with whatever profiles they make directly public.

Emergency Protocols

Posted by: Alisha Endowi, Gatecrasher <Info Msg Rep>

Gatecrashing is dangerous business and all manner of unexpected troubles can happen. We don't pretend to have answers for everything and once you walk through a gate there are no guarantees that you'll ever manage to find your way back to the solar system. However, gatecrashers and the groups running the gates have learned to manage many of the most common problems.

Gate Failure

One of the biggest fears of any gatecrasher is gate failure. On occasion, a gate refuses to open to a previously-visited destination, like the place you currently are. Such incidents are fortunately rare, and in most cases, the connection can be re-established within 48 hours. However, occasionally reopening the gate takes far longer, and a few have yet to be reached again.

If you're on the remote side of a gate and the incoming connection that you're expecting fails to occur on schedule, there's a fairly standard series of protocols to follow. The first step is one of the major reasons that all gatecrasher teams are advised to bring along QE comms—let the gate crew know that you are still there. They now know your gate didn't suddenly explode and you know that the problem is gate failure and not that the TITANs ate the gate operators.

Some of the gate operators have a mutual agreement to help each other out. If Gatekeeper fails to make a connection within 48 hours, for example, they will quite often turn to either TerraGenesis or Love and Rage to see if either of those gates can access the remote destination. This usually doesn't work simply because the address to an extrasolar location from one gate is usually not functional when used at another gate. Sometimes, however, the other gate is able to extrapolate an address that will work with their settings, or they may have already reached that location independently and so already have it in their library.

If you happen to have a portable gate control unit with you, you can of course attempt to open a connection from the remote side. This sometimes works, but just as often does not. If that fails, you can try making a connection to another extrasolar gate. If this works, you'll have revealed a new pathway between two known worlds and may get a bonus. Depending on where this takes you, however, this may not be the end to your problems. You will at least have the option of escaping from a hostile environment, if you aren't equipped or capable of staying there for long. At this point, however, you're playing gate roulette. You might find a more hospitable world or even another extrasolar colony, or you may just be taking the first step on a long journey of wandering aimlessly through the gate network, perhaps never to see any signs of transhumanity again.

If you do head through the gate to another setting, or if for any reason you need to leave the vicinity of the remote gate you're at, protocol states to leave a record behind with details on where you've gone. This allows any potential rescuers to follow your trail and potentially rescue you. The common methods to leave a note like this are to use a solar-powered radio broadcasting unit, place a well-marked document printed on durable plastic, or etch it with a laser into a rock.

Barring these options, the recommended course of action is to establish a camp near the gate and wait it out. If you're equipped with a cornucopia machine and decent shelter, you may be able to survive indefinitely, barring boredom and other problems.

For colonies facing this sort of gate failure, plans are usually prepared in advance for food, energy, and resource rationing, especially if the colony is not self-sufficient. Action plans and protocols vary by sponsor. In severe circumstances, radical measures may be called for such as life support-induced hibernation or even voluntary/lottery-selected suicide.

Hostile Gate Users

Though transhumanity has yet to make contact with any intelligent users of the gate network, there is an ongoing concern that we might encounter hostile entities who might employ the gates as a vector to assault transhuman colonies, or even our home solar system. In the off-chance this occurs, plans have been put into place to counter the threat.

Luckily, the gates themselves are effective chokepoints, as they can be programmed to block out incoming connections. There is a concern, however, since our understanding of the gate control systems is incomplete at best, that a hostile entity might know or be able to devise a method to remotely disable such defenses. To counter this, there are options to destroy the gate's functionality. The first is to take down the gate's operating system, theoretically leaving the gates intact but nonfunctional. The other is to simply destroy the gates themselves. This would take

OPPOSITION TO GATECRASHING

Not everyone supports the use of the Pandora gates. Several political and ideological factions argue that the gates are a potential threat, while others protest the exploitation and contamination of alien biospheres.

BIOCONSERVATIVES

To the mildest biocons, the Pandora gates are TITAN technology and thus Not To Be Trusted. To the more conservative elements, they are an active threat, an open door through which planet-eating AI war machines might enter at any moment. To their eyes, use of the gates is the equivalent of a child playing with a nuclear bomb, and yet another sign that transhumanity is not mature enough to handle the technologies at our command.

The Jovian Republic, the most dominant bioconservative voice in the solar system, regularly denounces the use of the gates as an invitation to TITAN or alien invasion. Some extreme biocons take this quite literally, spurring some cults and terrorist cells to view military action against the gates and gatexploitation corps as justified. These same bioconservatives also proclaim that continued xenogenetic research will complete the transformation of transhumanity into something (genetically) inhuman or unleash an alien plague within the solar system. As a result, several hypercorps and research groups focusing on astrobiology have suffered from protest, sabotage, and armed attacks.

PRESERVATIONISTS

Preservationists are primarily concerned with preserving the pristine nature of exoplanet ecosystems. Their primary cause is arguing that transhumanity may be contaminating, interfering with, or otherwise despoiling indigenous life on alien worlds by our mere presence there, especially in environments where we spread our own microbes, germs, and other forms of life. They argue that we should be respecting the diversity of other forms of life by protecting it and studying it carefully, rather than interacting with it directly and exploiting it. They argue that we may be even be affecting forms of life that we don't yet recognize. Some liken transhumanity's efforts to genocide and ruthless genetic imperialism.

Hardline preservationists see it as their duty to act as the defender for alien life that cannot protect itself from transhumanity's excursions. Some of these have actively infiltrated hypercorp and gatecrashing operations in order to sabotage them from within. Preservationist cells have also been blamed for mesh warfare, attacks on automated convoys to remote extrasolar outposts, and even kidnapping xenogenetic researchers. In one infamous action, a preservationist sympathizer managed to delete the gate address to a Fa Jing extrasolar mining operation, effectively cutting off the camp and personnel from contact with transhumanity. Preservationist saboteurs are known to be active on at least two extrasolar worlds rife with xenolife, hoping to protect these alien species from further contamination or exploitation.

NANO-ECOLOGISTS

Though supportive of gate exploration, resource exploitation, terraforming, colonization, and similar activities, nano-ecologists are critical of unrestricted operations that do not temper transhumanity's impact and balance it with other concerns. Nano-ecologists try to occupy a middle ground between transhumanity's needs and preservationist concerns, arguing for a measured and ethical approach to these matters. Quite popular even in hypercorp circles, the nano-ecologists nevertheless fall in a position where they are attacked by both sides. ■

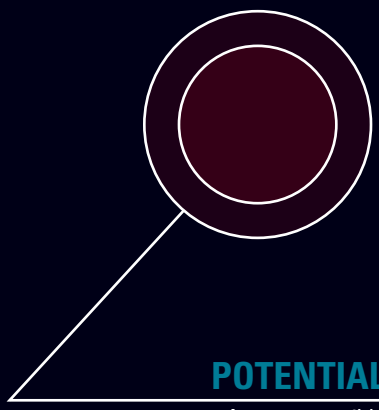
particularly potent weapons, which have the benefit of likely destroying any force invading through the gates. This sort of scorched-earth policy would unfortunately destroy our own gate capabilities, but this measure might be necessary to buy us time to prepare defenses against a more capable foe. It is assumed that destroyed gates will rebuild themselves as the Discord Gate did, so such measures are temporary at best anyway.

RESCUE OPERATIONS

The standard response when a first-in team or other expedition fails to check-in at a pre-established time is to send a search-and-rescue bot through. If this bot fails to return, finds evidence of the team's demise, or finds nothing, the typical response is to write the gatecrashers off as lost, pull their backups, and flag that extrasolar location as potentially dangerous. If the bot finds that the team is alive but in danger, and is unable to help, then a rescue mission may be called in (also assuming that a rescue is in the sponsor's contract and they are willing to pay the exorbitant costs). On rarer occasions, rescue missions will be sent in to search for lost teams on exoplanets that look particularly promising for one reason or another and are likely candidates for revisiting. Occasionally, sponsors will pay for their own rescue missions rather than relying on the gate operators' forces.

The current school of thought governing rescue missions is, quite simply, overkill. If there is the possibility of encountering a hostile presence, it is better to overwhelm that obstacle with numbers and firepower. To this end, rescue missions are usually led by a platoon of mechanized infantry. Combat morphs, battlesuits, armored vehicles, and heavily-armed combat drones will swarm through, bearing an assortment of offensive options, with the intention of securing the area, rescuing the survivors or their remains, and bugging out. Any opposition is faced with overwhelming concentrated fire to buy time for an orderly rescue and escape.

PANDORA GATES



POTENTIAL AND FAR-FLUNG GATES

THE MAIN GATES

The five known gates in our solar system.

PANDORA GATES

Source: The Entirely Unofficial Gatecrashing Wiki [Link]

SOLAR SYSTEM GATES

There are five known Pandora gates within Earth's solar system, each controlled by a separate entity: the Vulcanoid Gate (TerraGenesis), the Martian Gate (Pathfinder), the (original) Pandora Gate (Gatekeeper), the Fissure Gate (Love and Rage Anarchist Collective), and the Discord Gate (Go-nin Group). Each gate installation is set up differently and though operations are often similar, there are some fundamental differences, noted below.

THE VULCANOID GATE

Posted by: Angelique Sjoholm, terraformer
<Info Msg Rep>

As one of only two gates within the inner system, and the only one of those not controlled by the Planetary Consortium, the Vulcanoid Gate holds an interesting position in inner system and hypercorp politics. TerraGenesis's willingness to work with almost any partners, regardless of political affiliation, provides access to a gate for those inner system entities outside or even hostile to Consortium interests. Despite the restrictions placed on gate ventures due to a recent attack on the facility, the Vulcanoid Gate remains the go-to place for those concerned about Consortium interference.

HISTORY AND OVERVIEW

The Vulcanoid Gate was discovered in the polar region of an asteroid known as V-2011/Caldwell. Though originally discovered decades earlier (being in fact the first confirmed and cataloged Vulcanoid), Caldwell remained unvisited and untouched until after the Fall.

Exactly how TerraGenesis came to own the Vulcanoid Gate is a murky affair. The official story is that the gate discovery was sold to the ecosystem and terraforming cooperative by the team of Venusian prospectors who accidentally stumbled across it, and that these miners specifically chose TerraGenesis because they were worker-owned and not a part of the Planetary Consortium. Several sources have disputed this story, however, noting that the original discoverers have since disappeared and questioning why they did not choose a Morningstar-based corporation instead. TerraGenesis writes off these concerns as Consortium-influenced propaganda, claiming that the well-rewarded discoverers used the unlimited gate access they were given to go off on a gate-hopping jaunt.

TerraGenesis focused on exoplanet exploration for the first few years, but it spent that period transforming Caldwell into a well-equipped spaceport and staging area. The cooperative's focus has since switched to extrasolar terraforming operations and geoscience research missions, though not exclusively. A small bit of gatecrashing exploration is still encouraged, and a notable chunk of gate time is leased to TerraGen's numerous partners.

THE CALDWELL INCIDENT

In AF 9, an unknown group managed to penetrate the Vulcanoid Gate facilities and initiate an attack. Though the perpetrators were never identified and no reliable party has claimed responsibility for the incident, what is known is that a cell of reaper morphs managed to penetrate deep inside the facilities, almost to the gate itself. More worrying was the fact that this cell was carrying a thermonuclear warhead, which they presumably planned to use to attempt to destroy the gate (and gate facility) itself.

Though no stranger to terrorism (TerraGen terraforming operations on Mars are a frequent target of preservationist saboteurs), TerraGenesis was nevertheless shocked by how close this attack came to succeeding and how thoroughly the perpetrators had managed to infiltrate the facility and bypass various security measures. A complete overhaul of the Caldwell infrastructure was overtaken and a host of new security regulations implemented. These new restrictions also extend to TerraGen's numerous partners, putting much heavier burdens on participating in gate missions.

TERRAGENESIS

The cooperative congress that manages TerraGen's business takes a direct interest in Vulcanoid Gate affairs, which is no surprise as it remains one of the company's key assets. As usual for TerraGen's structure, however, local workplace councils are given authority over various aspects of the Caldwell infrastructure and operations. The council directly in charge of gate operations, for example, is completely separate and autonomous from the workplace council in charge of spaceport traffic or those in charge of the various geoscience labs. A separate Coordinating Group oversees communication and coordination between the various councils.

TerraGen's approach to gate missions seems to be taking the long view. Given the small percentage of exoplanets that are actually suitable for (unassisted) transhuman life, thus limiting prime colonization options, TerraGen has instead decided to make their own habitable worlds. Having identified dozens of worlds that are ripe for terraforming, TerraGen has initiated projects to transform an untold number of them. Though most of these will take decades, if not centuries, to transform, each already bolsters a small colony to pave the way for civilization on these new homeworlds.

One advantage to working with mostly-uninhabitated exoplanets is that TerraGen can experiment freely, sometimes using geo-engineering methods deemed too dangerous or extreme to use elsewhere. This has drawn them some flak from preservationist groups who condemn them for destroying whatever ecosystems those planets already have.

Partners

Though TerraGen retains its own defense force for the facility, it also contracts with two separate mercenary hypercorps for ground- and space-based defense, respectively. Novafire provides a small armada of patrol drones, fightercraft, and various space defense systems to complement TerraGen's own, including a destroyer permanently stationed in Caldwell orbit. The Sol Brigades provide security checkpoints and heavy defenses for Caldwell's numerous domed facilities, though surveillance and defense of the gate dome itself are handled by TerraGen Security forces.

TerraGen leases gate time to a large range of partners, from hypercorps to private interests. The cooperative has significant ties with various Morningstar hypercorps and research interests that prefer the Vulcanoid Gate to dealing with the Consortium-controlled Martian Gate. The few extrasolar colonization efforts specifically initiated by the Morningstar Constellation are also handled though this gate. Several mining hypercorps have contracted with TerraGen for lucrative extrasolar resource extraction operations, providing heavy metals and rare elements that are easy to transfer to the inner system.

Political Rivalries

The complex and intricate web of inner system politics means that TerraGenesis often finds itself caught between opposing interests. The Planetary Consortium has often voiced concern at the favored status TerraGen provides to Morningstar entities and has even gone so far as to encourage sanctions against these partners in exchange for favored status and contracts in Martian terraforming efforts. TerraGen has so far refused these deals, and so the Consortium has escalated the stakes and now openly discusses taking more direct sanctions against TerraGenesis itself. Likewise, the Consortium is uncomfortable with TerraGen's links to some reclaimer groups, and has gone so far as to implicate TerraGen in some of the memetic attacks they have launched against reclaimer interests.

On the same front, TerraGen has an ongoing rivalry with the Consortium's own Pathfinder. Though TerraGen has never made any public accusations, there have been several notable incidents of sabotage that others have deemed most likely to have originated from Pathfinder itself.

TerraGenesis has also needed to balance between the opposed interests of some of their smaller partners. In one infamous incident, hostilities erupted on Caldwell between two hypercorps who were disputing a mining claim on an extrasolar planet. Though one hypercorp was accessing that particular exoplanet through the Martian Gate, it happened to also be engaged in another operation via the Vulcanoid Gate. When the conflict came to blows on the exoplanet, one team returned through the Vulcanoid Gate to encounter another team from the rival corp in the staging facilities, and so blood was spilled. Both corps have since been banned from Caldwell.

TerraGen has permanently banned several others from access to the Vulcanoid Gate, notably their rival Ecologene.

Caldwell Facilities

With a length of 4 kilometers and a diameter of only half a kilometer, Caldwell is not a large place. The Vulcanoid Gate complex consists of six large pressurized domes on the surface of Caldwell and a subterranean network connecting them together. Four of these domes are clustered together at one end of the asteroid, which has an elongated, spindle-like shape. These are dedicated to scientific research labs, spaceport facilities, supply chain logistics, and residential quarters/entertainment areas respectively. Four kilometers away, at the asteroid's other pole, lie the other two domes. The larger of these is the staging area for gate operations, while the other houses the gate itself.

While security is tight throughout the complex, it gets increasingly more strict as you approach the gate dome. The surface, underground tunnels, and air space within three kilometers of the gate are heavily restricted, with an automatic shoot order engaged on all intruders. A close watch is also kept on all spacecraft within several hundred thousand kilometers.

Vulcanoid Gate Operations

The gate control operators on Caldwell follow the standard protocols used by most other gate controllers within the solar system. The bulk of gate missions here—possibly half or more—are dedicated to periodic link-ups and supply runs to various worlds on which TerraGen is engaged in terraforming or running research stations or other scientific projects. Most of the rest of the gate operation time is assigned for missions initiated by various groups who have leased gate time. Less than 10% of Vulcanoid Gate operations are currently assigned to exploration ops, though TerraGen does maintain a small dedicated program to search out new worlds.

Gatecrasher Incentives

TerraGenesis offers several incentives to gatecrashers who sign up for freelance exploration ops with the cooperative. First, they offer full medical care for any gatecrashers injured on a mission they sponsor. Second, they offer bonuses to crashers that sign up for multiple missions, raising the standard finder's fees to about 10% higher than those offered by Pathfinder and Gatekeeper, presuming the crasher commits to three missions within a year.

THE MARTIAN GATE

Posted by: Karen Li, freelance journalist
<Info Msg Rep>

The Martian Gate is the icon for the Planetary Consortium's dreams of galactic empire. Easily the busiest gate, it sees the most traffic, is kept to a strict schedule (regardless of loss of life), and has the most significant support infrastructure in place. Given its place on Mars, the new homeworld of transhumanity (at least to the Consortium), it is the one within easiest reach of many of these desperate enough to turn to gatecrashing as a solution to their problems.

MA'ADIM VALLIS CANYON

Though it pales in comparison to Valles Marineris, Ma'adim Vallis is one of the largest canyons on Mars. It runs roughly 700 km from Mars's southern lowlands to Gusev Crater. In some places, the canyon is as wide as 20 km and as deep as 2 km.

The Martian Gate itself lies at the very northern end of the canyon, hidden away in a cave less than a kilometer from its mouth. The impressive Ma'adim Research Park has taken over this section of canyon, while the nearby Pathfinder City has arisen in short order to meet the demands of the Pathfinder Colonization Initiative (PCI) and other gate missions.

PATHFINDER AND THE PCI

In the wake of the Martian Gate's discovery, Pathfinder was quickly assembled by the Consortium to control the gate, settling all quibbling over it by hypercorp interests and ensuring that it would be put to use in ways that would benefit the Consortium as a whole. A subsidiary of the Consortium itself, Pathfinder's stated purpose is to spearhead the Pathfinder Colonization Initiative and lead the Consortium's charge to explore, colonize, and exploit the stars.

Given their mission, it is no surprise that Pathfinder focuses heavily on finding habitable or near-habitable worlds on which it can dump indentures and plant a flag for the Consortium. The bulk of the infrastructure it has built around the gate is geared towards this effort. Resource exploitation is its second largest concern, with a number of ongoing mining operations bringing heavy metals, hydrocarbons, and even organics from distant exoplanets directly through to Mars.

Weighing heavily on Pathfinder's shoulders, however, is the fact that as a warden of Consortium interests, it finds itself answering to hundreds of Consortium hypercorps and their individual interests. Though the directives of the Ministry and Hypercorp Council take priority, Pathfinder's mission includes providing incentives to other hypercorps that are part of the Consortium itself. Many of these corps view this as a mandate for Pathfinder to bend over backwards to meet their demands, which sometimes leads to harsh exchanges when things don't go as desired.

MA'ADIM RESEARCH PARK

The canyon immediately surrounding the gate has been covered, walled, and pressurized to hold breathable atmosphere. This habitat may in fact be one of the most secure areas in the solar system. Nothing gets within 25 klicks that Herzog Security hasn't tagged and authorized without getting turned into a smoking pile of slag.

Inside this installation, Pathfinder houses a staging area for gate operations, decontamination chambers, secure and clean research labs for immediate study of interesting finds, emergency supply depots, and impressive defensive systems (aimed both outwards and inwards at the gate itself). The equipment alone in this facility is worth billions. The sensor probes used to scan and analyze new exoplanets include some of the most sophisticated systems transhumanity has yet devised. Pathfinder is fortunate enough to have a small army of inventive hypercorps at its back, each willing to contribute their latest developments to the cause, as long as they get a cut.

PATHFINDER CITY

While Ma'adim Research Park is all business, Pathfinder City is where all of the real action is. Though still relatively small and less than a decade old, this settlement is the fastest-growing habitat in the solar system. New hypercorps and masses of desperate people swarm here on a daily basis.

Glommed onto one wall of Gusev Crater 40 klicks to the north of the gate, Pathfinder City has plenty of room to grow. The initial dome constructed for the city is already nearly filled, and so the groundwork for a secondary dome is being laid. New construction towers in every direction, from crater-wall-hugging settlements to new skyscrapers.

THE ARES MYSTERY

[Begin Audio Transcript]

Per the ongoing cataloging of the Vulcanoids, one of our probes recently took a look at an asteroid known as V/2016 Ares. On a close flyby it discovered what on closer magnification reveals to be recently-dug tunnels on the asteroid's surface.

We aren't aware of any ongoing mining concerns with this asteroid, though it could be unreported activity. Our engineers, however, think that these could be the beginning of a beehive tunnel complex. Built either during or shortly after the Fall it's believed that whoever started the digging made little or no effort to conceal the entrances from satellite or other forms of surveillance.

Given the ongoing concern about the proximity of the Ecologene's ongoing RA project, we're initiating a mission to investigate these tunnels. For deniability purposes, we'll be hiring freelancers through a shell company.

[End Audio Transcript] ■

PATHFINDER: RELIABLE SPONSORSHIP

Don't be fooled by the gimmicks others use when hiring gatecrashers. Pathfinder offers straightforward terms for our gatecrashing contracts. No hidden terms or unreasonable bonus goals. Your team knows up-front how much they will be paid for their services. Pathfinder knows exactly how dangerous gatecrashing can be, and the last thing we want is a team worried about their pay when they are in a dangerous situation. ♣

Many have remarked that the growing city is taking on the color and vibrance of old-Earth cities such as Tokyo, Hong Kong, or Las Vegas. Much of the burgeoning infrastructure has little to do with the gate itself and everything to do with making Pathfinder City a Place To Be. Casinos, gambling and gaming dens, dollhouses, and petal pods draw the desperate and unlucky, priming them for a future with no option but to sell themselves for gatecrashing or colonial efforts. Sports activity is also on the rise, spurred by the wave of gamblers eager to take risks on low-g air racing, canyon parkour, and more traditional sporting outlets. Media icons and metacelebrities are drawn here in increasing numbers, and even the hypercorp glitterati are starting to view Pathfinder City as a worthy stopover on their hedonistic tours.

The action and nightlife is most concentrated in the central part of the dome, an area called the Hub, where credits flow like water. The areas near the crater wall remain mostly residential, though a significant portion of these homes are transitional. Pathfinder pulls in heavy numbers of potential colonists, barracking them here until they can be shipped out to homestead a new life on a distant exoplanet. North of the Hub is the corporate sector, where most of the corps involved in gate missions of various stripes have physical offices, depots, or facilities.

THE CRASHER'S BAZAAR

Located just south of the Hub in Pathfinder City, the Crasher's Bazaar is perhaps the most complete community for gatecrashers located anywhere in the solar system. Not only will you find the latest equipment, but specialists in the bazaar can easily handle any upgrade or modification you might need for your morph.

Beyond gear, the Crasher's Bazaar offers many specialized services. Does your team need to hire a specialist with a particular knowledge or skill? For a reasonable fee you can access private mesh locations where information about individual gatecrashers is kept. You can use these to find crashers with specialized skill sets, experience with specific environments or situations, or particular affiliations. A burgeoning ExploreNet reputation network allows gatecrashers and sponsors to evaluate each other based on past missions and e-rep feedback from other crashers.

Both Pathfinder and the various mission sponsors take advantage of these networks in the bazaar to announce new crashing opportunities. Most of the announcements are general in nature and often request teams to either visit a specific site or office for more information. Most corps simply treat this as the first step in finding the kind of team for which they are looking. Some very specific missions are not posted on the public nets at all. Instead, hypercorp representatives contact the crashers they are interested in having do the job, and direct them to a private mesh location for more information. These private missions usually require discretion, deniability, or more serious risks—but the payouts are significantly better.

GATE OPERATIONS

Pathfinder Gate Control operators are masters of efficiency. Gate connections are established like clockwork, with everything scheduled down to the second. Due to staging considerations, missions are typically grouped in blocks according to type. Two hours of first-link and first-in exploration missions, for example, with probes and first-in teams cycled through a gate every ten minutes, will be followed by an hour of explorer retrieval ops, where gatecrashers

PATHFINDER CITY CRIME

Though Pathfinder does all it can to keep any criminal activity out of Ma'adim Vallis, the waft of desperation and vice lures in criminal cartels. These syndicates provide everything that the hypercorps do not: illegal dollhouses, drugs, XP, weapons, and more. Pathfinder has been forced to crack down on the rise of underground dueling circuits these groups have spawned.

Given their proximity to the gate, these criminals are eager to get involved in the action, whether that involves selling counterfeit alien artifacts, dealing in restricted xenobiologicals, or smuggling drugs and XP to extrasolar colonists. Some of the groups are actively seeking to establish a presence in the exocolonies, hoping to get in on the ground floor of galactic expansion.

Such fertile, open ground means that numerous criminal syndicates have been drawn here, though none has yet gained dominance. Currently a delicate dance is going on between the various groups as each seeks to carve out and dominate their own niches without sparking an open conflict with the others. It is only a matter of time before lines are crossed or room for growth runs out, however, and open syndicate warfare breaks out. ■

MARTIAN SABOTAGE

The Martian Gate, Pathfinder, and Pathfinder City are unpopular with several factions. The nomadic Barsoomians hold a dim view of Pathfinder's affairs and the control they have over the gate, particular in light of the fact that the sufis who originally discovered the Martian Gate were brutally slaughtered by the Consortium. To the sufis in particular, the gate was stolen, and belongs back in the hands of the Martian people. Similarly, the more anti-hypercorp elements of the Barsoomian Movement consider Pathfinder's heavy usage of indentures for colonization purposes to be tantamount to slavery. As a consequence, the rail lines and supply trains to and from Pathfinder City suffer periodic sabotage incidents.

Various Martian preservationist groups also take offense at Pathfinder's despoilment of exoplanets, when they're not too busy protesting the terraforming of Mars. Aside from waging memetic attacks and online disruption campaigns, they are known to sometimes take direct action against colonization assets or new construction efforts in Pathfinder City. The preservationists are primarily interested in raising the costs for the corps more than killing people. ■

previously sent through have just a short minute of opportunity to step back through before a search-and-rescue bot is shoved through and the gate cycled to the next address. The decontamination chambers, sample containment units, and medical gear are then wheeled out of the way so that several hours of colony check-in and supply missions can be run, with materials carried through by drones or in some cases shipped right through on rail lines that run right up to the gate and connect with rail lines on the far side. With the exception of rare debugging and maintenance operations, the gate activity never stops.

Given the busy schedule, Pathfinder Gate Control is notoriously ruthless about timetables and gate usage. They will only keep a wormhole open for as long as the sponsor has paid for and not a nanosecond more, barring an executive command from the upper hierarchy, which oversees all gate ops in real-time. They have been known to intentionally strand wounded gatecrashers who were limping towards the gate when their window of time ran out, or even cut short supply trains to colonies and research posts mid-transfer, regardless of the hardships that might mean for the colonists. In the rare cases they do extend a wormhole's duration, the extra charges applied to sponsors are astronomical.

GATECRASHER BENEFITS

Though Pathfinder only runs a limited number of exploration ops, they are known to pay some of the best rates for gatecrashing ops among the major gate entities. The drawback, however, is that their bonuses for discoveries are average and they offer nothing in the way of medical care or benefits. They also only provide the bare minimum of necessary gear; anything extra must be brought by the gatecrasher or paid for out of their commission.

Many crashers suspect that Pathfinder actually sets the rates for crashing agreements, and the other Consortium hypercorps just copy Pathfinder's policies. While most go along with what Pathfinder does, some crashers have started complaining that Pathfinder needs to change its attitude towards paying people. Of course those who complain too loudly about how the corps pay their crashers often find it difficult to get missions.

THE PANDORA GATE

Posted by: Sagan Harris, argonaut <Info Msg Rep>

The gate on Saturn's moon Pandora was the first to be discovered and the first to be activated and used after extensive study. In terms of activity, it remains the gate most dedicated to extrasolar exploration and research.

PANDORA

Pandora is an undistinguished moon of ice and rock. It is small as far as moons go, measuring out to roughly 100 × 80 × 65 km, with an average diameter of about 80 km. Surface gravity is a whopping 0.0034 g, making it an effective microgravity environment. With the exception of the Gateway settlement, the nearby Pohl Research Labs, and the distant spaceport, stationed 50 kilometers away, it remains largely uninhabited and is off-limits to unauthorized personnel. A watchful defensive network provided by Gorgon Defense Systems monitors all spaceborne approaches and any signs of intrusion on the moon itself.

GATEKEEPER

When the Pandora Gate was first discovered by a Titanian-sponsored survey and research team, the Titanian Commonwealth was the first authority to step forward and claim stewardship. Establishing a microcorp to safeguard and study the mysterious find, the Titanians were careful to invite other governments, hypercorps, and autonomists to investigate the artifact. Though some of the solar system powers were wary of leaving the Titanians in control of what could be a dangerous weapon—or worse, some lingering trick of the TITANs—this discovery was made just shortly after the Fall and most of these entities were busy consolidating their power and establishing their positions in the solar system's new ecosystem. For their part, the Titanian Commonwealth's Plurality made it clear their stated goal was to study and understand the Pandora Gate on behalf of all of transhumanity.

Once the gate's secrets were unlocked, true to their word the Titanians shared this knowledge of how to use the gates with the rest of the solar system

(enabling the argonauts and others to create open source gate control interfaces). Once gate exploration began and the potential value of the gate as a tool for colonization, resource exploitation, research, and more became apparent, many of the other powers in the solar system placed heavy pressure on the Commonwealth to surrender its sole control. As a gesture of good faith, the microcorp that had been given stewardship of the gate was transformed into Gatekeeper, an independent hypercorp. Though the Titanians still hold a major (but non-controlling) stake, many of the others who participated in researching the gate (or funding the research) are also shareholders. These include the argonauts, several hypercorps (notably ExoTech and Nimbus, among others), a few individual wealthy investors, and the Planetary Consortium itself. Several autonomist research collectives are also nominal shareholders. Though the Consortium and others still balked at the level of Titanian influence, these concerns were mitigated as other gates were discovered.

Gatekeeper's agenda continues to be exploration and pursuit of new knowledge on behalf of transhumanity. To this end, they offer grant programs, discounts, and other incentives to research groups and other non-governmental and non-hypercorp entities. They work closely with the argonauts to ensure that knowledge gained is shared with the public at large, and in fact a select group of argonauts serve as science advisors to Gatekeeper's Executive Board. To fund its costs and operations, Gatekeeper also leases gate time to hypercorps and other powers. As part of its commitment to accessibility, Gatekeeper also opens its gate complex to tourism and media interests, making it a popular destination for both physical and virtual fans of gatecrashing. What Gatekeeper is perhaps most known for, however, is its lottery system of offering gatecrashing team slots to the poor and desperate throughout the solar system, paying the egocasting and resleeving costs of winners to bring them to Pandora.

GATEKEEPER ECONOMICS

For the most part, Gatekeeper adheres to Titanian economics, though it also still keeps one foot in the transitional economy of the inner system. What this means is that, for the most part, Gatekeeper and the Gateway habitat eschew the use of actual currency in day-to-day operations. Like much of the outer system, participation is voluntary and rewarded with @-rep.

Like other Titanian microcorps, however, Gatekeeper also benefits from investments of social money issued by the Plurality itself. Unlike other currencies, social money is purely used as an investment tool for public works. Measured in kroner, these investments come from the social money accounts of individual Titanians and various microcorps, many of which take an active role in various types of transgate operations. In practice, this means that the Titanians still have a rather large effect on Gatekeeper's direction and activities. The easiest way to get a gate mission pushed through Gatekeeper's bureaucracy is to get a Titanian investor or microcorp behind the project.

Because Gatekeeper deals with so many hypercorps and other entities entrenched in the transitional economy of the inner system, it works with several banks that specialize in converting credits to either kroner (social money) or reputation network favors. Several of these maintain a presence on the Gateway settlement to simplify cross-economy transactions.

For gatecrashers, Gatekeeper's economic fluidity is the best of both worlds. Gatecrashers are rewarded in kroner (and sometimes @-rep) for their missions, which is perfect for autonomists. Non-autonomists, however, can easily convert this kroner reward to cold hard credits at one of the aforementioned banks.

GATEWAY

The massive Gateway complex forms two large semi-circles around the Pandora Gate enclosure itself. Despite strict security measures, it retains an open and inviting atmosphere, in stark contrast to similar gate facilities elsewhere. The outer ring of the habitat houses offices, museums, and educational centers open to the public. Many of the entertainment options are geared towards informing the public about the details of gatecrashing missions, the history and function of the Pandora gates, and experiences with various exoplanetary environments and xenolife.

One quarter of the habitat, colloquially known as the Crash Course, features outlets geared exclusively towards gatecrashers and other off-duty gate workers. Gatecrashers rarely have use for money or rep on the other side of the gate and, with the dangers involved, many are looking for enjoyable ways to blow off steam and reap the rewards of their work. Tourists are frowned upon in this quarter, and entoptic advisories do their best to steer them away. The Crash Course is an excellent place to find quality second-hand gear, as many gatecrashers return from missions with equipment they barely used. Similar to Pathfinder City, the ExploreNet social network is gaining traction here, enabling gatecrashers to judge each other based on e-rep scores.

Gateway operates according to Titanian Commonwealth economics. The Titanian kroner is used for the exchange of goods and services between microcorps and some hypercorps, and is sometimes awarded by Gatekeeper, the Plurality, or other microcorps for other efforts on the public's behalf. Basic living amenities are available to all, and reputation is relied on for most other information, goods, and services needs. Some vendors will make exchanges in credits under the table, to satisfy the needs of visitors from the inner system or Extropia, though Gatekeeper frowns on this practice. The settlement's small but thriving black market also operates on credits, though various operators also offer conversions at exorbitant exchange rates.

The inner half-circle of the Gateway complex features sections that are off-limits to visitors: massive storage facilities, transportation hubs, quarantine zones, staging areas, and defensive emplacements, all hidden behind layers of secrecy and security. While the surrounding habitat is relatively open and relaxed, behind these walls everything is all business.

Both areas of the habitat also extend below ground, into a large beehive warren of caves in Pandora's porous subsurface. A train system serves the complex itself and also connects it to the Pohl Research Labs and spaceport.

THE GATE ROOM

Beyond multiple and redundant layers of security, at the very center of the Gateway complex, is the gate room itself. The structure enclosing the Pandora Gate is ten meters tall, twice the height of the impressive gate itself. Two airlocks separate the sealed room from the rest of the structure, while polymer alloy walls that are over a meter thick provide solid protection for anything just shy of a nuclear strike. Aside from the gate itself, nothing in the room remains in a fixed position. Everything is modular and mobile, so that the equipment and infrastructure can be quickly adapted to the specific needs of each mission type. For exploration missions, for example, probes, sensor stations, decontamination rigs, and defensive batteries are rolled in. These can easily be switched out for the supply trains, cargo drones and carriers, and personnel movers necessary for colony logistics missions.

Unique among the gates of the solar system, Gatekeeper maintains a heavily-shielded and secure observation deck from which tourists and VIPs can directly observe gate mission proceedings. Data from the sensors and probes—and sometimes the gatecrashers themselves—is piped through a feed directly to the viewers here. This deck is only open for select missions and times, and the waiting list for access is quite long. Access to this deck is also granted for various media projects that provide coverage of gate missions and ongoing gatecrashing x-casts and specials.

GATE OPS

Following its initial charter mission, Gatekeeper's primary focus is on exploration missions, with over a third of its gate operations devoted to sending gatecrashers into the unknown. In fact, a major part of this effort is the compilation of an extrasolar index, cataloging known systems and worlds. To fulfill the personnel needs for these missions, Gatekeeper employs a steady stream of freelance gatecrashers. Periodically, it bolsters these ranks with a new slew of lottery winners, bringing the desperate from across the system to give them a shot at striking it rich—or die trying.

Research and xenoarcheology missions run a close second to exploration ops, as Gatekeeper and their numerous scientific compatriots seek out data that will enable a richer understanding of the universe. Much of this work is directed towards developing new models of star system and planetary formation and evolution of life. Knowledge gained is immediately turned around for practical use on exploration runs, allowing a more nuanced grasp of what planets are most likely to harbor life or be ripe for colonization or resource extraction. These latter missions are rarely handled by Gatekeeper directly, and are instead outsourced to hypercorps, Titanian microcorps, or even interested autonomist syndicates.

Though Gatekeeper does sell off a significant chunk of gate operation time to hypercorp partners, it seeks to make the Pandora Gate a resource for everyone, and so a substantial amount of mission time is rewarded to outer system autonomists as well. This has the additional benefit of keeping Gatekeeper and the Titanian Commonwealth in good standing with their immediate allies and neighbors.

MEDIA

Though Pathfinder and the Martian Gate are gaining ground as a media attraction, Gateway is still the crowd pleaser when it comes to newsfeeds, research specials, x-casts, and reality shows. The sheer number of exploration missions still launched from here plays a major role in this, as media consumers are far more attracted towards new alien vistas and the travails

LOST IN NEVERWHERE

Jokingly referred to by some as Pandora's own moon, *Lost in Neverwhere* is a scum barge that has taken up semi-permanent residence in Pandoran orbit. Considered by some to be the true gateway to Gateway, *Lost in Neverwhere* is an ideal starting point for gatecrashers looking to load up on black market gear or items that are otherwise hard to find on Pandora itself. It is also the premier market for auctioning off goods found in extrasolar systems, some of which were carefully smuggled past Gatekeeper's own customs and quarantine procedures. Though a substantial amount of these are in fact counterfeits manufactured by the scum themselves for gullible tourists, trade remains brisk. XP-casts from gatecrashers are also a strong commodity here. For gatecrashers, the barge is also an excellent place to meet with paranoid clients, pick up off-the-record work or dangerous missions, or score some entertainment options that Gateway cannot provide. A regular shuttle service operates between the *Lost in Neverwhere* and Gateway's spaceport, though the barge also has excellent egocasting and resleeving facilities and an interesting variety of customized morphs to select from. ■

of gatecrashers than more staid colonization and research projects. Gatekeeper broadcasts recorded feeds of many first-link and first-in exploration missions via various outlets. The Gatekeeper media machine does its best to draw romantic comparisons between gatecrashers and the noble explorers from history, or even sometimes to the popular heroes of mainstream media properties. Though the reality of gatecrashing is often quite mundane, Gatekeeper splices this material up with actions cuts from previous missions, commentary, and even dramatized simulations.

POHL RESEARCH LABS

Named for the first scientist to die on a gatecrashing mission (though Pohl continues to gatecrash to this day, and is one of the most experienced gatecrashers on Pandora), these research labs are dedicated to studying a wide range of extrasolar phenomena, from planetary geosciences to astrobiology to exotic physics. Primarily operated by Gatekeeper, the argonauts have their own wing and several cooperative hypercorps and autonomist groups also have dedicated subsections. Scientists from across the solar system vie for opportunities to get a posting to study or do research here. The site's mesh network holds some of the most impressive archives and data banks on planetary sciences, astronomical evaluations, xenogenetics, and xenoarcheological studies. The highly-secure vaults buried underneath the labs hold the largest collection of xenoarcheological artifacts and relics collected so far.

THE FISSURE GATE

Posted by: Kieran Glavin, Oberanian hydroponics engineer <Info Msg Rep>

Located on Uranus's frozen moon Oberon, the Fissure Gate is valued highly by the autonomists of the outer system.

OBERON

This cold and distant moon of Uranus is composed half of rock and half of ice. Its surface is a pock-marked mass of craters and canyons—an easy landscape to get lost or hide in. It is home to the anarchist spaceport and outpost of Chat Noir, housing about 8000 transhumans. Another 2000 or so are clustered around the moon in small tin can outposts or at the Fissure Gate facilities.

Because of Uranus's sideways tilt, the hemispheres of Oberon alternate spending 42 years in complete darkness or complete sunlight. Though Chat Noir and the Fissure Gate are currently on the sunny side, the equinox is approaching in a few years, after which they will be plunged into darkness for four decades.

Oberon has a surface gravity of 0.035, making it a microgravity environment.

CHAT NOIR

Chat Noir has the flavor of a frontier town, despite the high-tech amenities. A dome habitat with a subterranean warren of ice tunnels, like most anarchist outposts various public services and infrastructure duties are handled by collectives, syndicates, or

ad hoc working groups. There are no laws or legal authorities, but reputation matters and the locals are quick to organize a community response to anyone that overstays their welcome or threatens the safety of the populace.

Chat Noir is also the primary stopover point for long-haul transfers in and out of the Uranian system, so there is a regular rotation of new ships and their crew through the town. Though most of these are autonomist, there are occasional visits from hypercorp missions, ultimates, or even brinkers on re-supply runs.

Given the importance of the Fissure Gate, and the fact that it remains the only gate in completely free hands, the Chat Noir anarchists are wary and suspicious of hypercorp personnel and other non-autonomists. Though a few inner system hypercorps (mostly Extropian) maintain relations with the Love and Rage Collective, along with some Titanian microcorps, there have been enough hypercorp attempts to sabotage operations here or even seize the gate outright to keep the anarchists well-armed, concerned, and prepared. Almost the entire settlement can be quickly mobilized as an ad hoc militia. Incoming spacecraft are scanned at long ranges by probes to ensure they are not carrying nukes, and again when they arrive to ensure they are not carrying any other WMDs or invasion forces. The airspace for 50 kilometers around the Fissure Gate is strictly off-limits, with Love and Rage shooting anyone who violates it down. A wary eye is also kept on any craft approaching within 500,000 kilometers of the moon. Though the Oberanian anarchists do not discuss their defensive networks, autonomist weapon and defensive designers from around the solar system have contributed their work to Chat Noir and Fissure Gate's safety and longevity.

As a settlement, Chat Noir is slowly but steadily growing in size, given the attractive lure of the gate. The habitat already boasts extensive egocasting and resleeving facilities, and the spaceport is ramping up to become an even more sophisticated transportation hub. Entire collectives and work groups have relocated here to help the Oberanians meet the demands of their growing community.

Love and Rage

The Love and Rage Collective was formed out of necessity from the original anarchist working group that assessed the gate discovery and brought the gate to active status (with the help of some argonaut gate experts and open source gate protocols and control units). Though originally an open group that swelled its ranks with various anarchist scientists, engineers, explorers, and administrative organizers who took a keen interest in the gate and its potential uses, it has since become a closed group that takes in few new members. Though there is some concern in autonomist circles about the potential pitfalls of the collective accumulating too much power and influence, the collective has so far done an admirable job in making their operations fair, transparent, and accountable to their autonomist comrades. Should the collective start behaving in an unprincipled manner or become too entrenched in their position, it is likely they would receive heavy censure from other anarchists and would quickly be ousted.

The Fissure Facility

Love and Rage has dug out an entire facility in the Oberonian ice, above and around the Fissure Gate itself, capped by a set of surface domes. Though not as large as the hypercorp gate complexes, it is just as high-tech and well-defended. The habitat is pressurized for atmosphere and heated, though the gate room itself is kept at a deliberately cold temperature.

One of the surface domes is actually non-human in origin. The heavily-scorched structure is believed to be the partial hull of a destroyed alien spacecraft, found drifting in orbit around an unremarkable exoplanet. Though it had to be cut into pieces to be brought through the gate, and they had to enlarge one of the elevator shafts to bring it to the surface, the anarchists succeeded in bringing it back, reconstructing it, and sealing it for habitation. Known as *Enemy Mine,* it is now the most respected saloon in the Neptunian system and features a fine assortment of anarchist beers.

The facility goes quite deep, down 500 meters underground to where the Fissure Gate stands. A memorial to the eleven gatecrashers who died when they first traversed here from the Pandora Gate is set off to one side of the entrance to the gate room. Across from it, another chamber is dedicated as an open "memory room," where gatecrashers leave real and virtual testimonials, mementos, artwork, and graffiti about their travels, experiences, and lost comrades. Here one can find dried flowers from an alien moon, entoptic displays of alien vistas, a library of XP-casts from different missions, and tear-drenched hand-written letters to lost friends and lovers.

The Anarchist Approach to Gatecrashing

In accordance with the collective's libertarian socialist ideals, anyone is free to use the gate, with the exception of those who pursue commercial interests or who might endanger the gate or others. One additional requirement the anarchists place on missions through this gate is that any rewards they reap be shared with transhumanity, rather than sequestered for private gain. This effectively bars hypercorps from using the gate, though a few have done so anyway for missions that weren't specifically for-profit.

In practice, if you want to use the gate, you simply register your mission with Love and Rage and wait your turn, unless you have good reason to

argue for priority placement—and the rep to back to it up. Unlike the frenzied schedules and operations of the various hypercorp gates, Love and Rage operations are more relaxed and laid back, though still with a high degree of efficiency, planning, and safety measures. The sheer volume of missions here is significantly less. Love and Rage also provides only minimal support for various missions; gatecrashers are largely expected to be self-reliant, though they may always call in favors and ask for help when needed.

One notable difference with Love and Rage is that the anarchists will take the time to resolve an issue or conduct a rescue, even if it means bumping the schedule. Mutual aid to gatecrashers in need is considered a stronger priority than timetables, and the collective actually includes buffer time in the schedule for such situations.

Most of the missions through the Fissure Gate are exploratory or research missions. Many research outfits who cannot afford the exorbitant gate time fees elsewhere come here to work with the anarchists instead. Per their requirement for sharing the data with all of transhumanity, this means the anarchists and other outer system autonomists are often able to reap the rewards from these experiments and studies before the hypercorps of the inner system can.

There is also a steady assortment of autonomist extrasolar colonization projects underway, if nothing else just to ensure that the Consortium does not come to dominate the entire galaxy. There is a stronger emphasis on making these colonies more self-sufficient from the start, however, so they are not perpetually reliant on support from Chat Noir. More than a few religious cults and odd brinker groups have passed through here, unable to afford the inner system gates but eager to find their own world on which they could start their own society, far away from the influence of others.

Given the accessibility of this gate, there is a small but interesting number of missions that fall outside the standard routines. These range from artists installing their creative pieces in lonely extrasolar environments, where no living creature may stumble across them again for centuries, if ever, to more whimsical matters like rousing easter egg hunts or similar games on alien worlds. A few biohacking groups have been making use of the Fissure Gate to find lifeless worlds on which they compete to establish new ecosystems with their own neogenetic creations. A well-loved anarchist orchestra (without a conductor, of course) schedules a yearly concert in a different stunning alien environment each time, drawing hundreds of gatecrashers for the performances. One rowdy group of anarchist gatecrashers chooses different exoplanets for periodic games of capture the flag.

THE DISCORD GATE

Posted by: Zinovy Peikoff, ultimate mercenary
<Info Msg Rep>

Those who glibly name the Discord Gate by its history of violence fail to see the metaphorical context of the actual nexus of conflict the gate embodies. The struggle for control of the Erisian Gate is reflective of the wider on-going battle between various ideological factions for the future of transhumanity. The weak-willed and disorganized anarchists who discovered the gate were the first to lose control of it, a clear sign that their philosophies are already collapsing under external pressure. The exhumans, who posit that transhumanity is fit only for subservience to their Machine Gods, briefly held the gate, but were forced to flee much in the same way that they have abandoned their own humanity. While the hypercapitalists now retain nominal control of the world, exploiting it ruthlessly, they fail to see their own weaknesses and to understand that their presence there is reliant on the support of the ultimates who enforce that control. The wise are aware that it is in fact the overhumanists, the ultimates who guard the gate from overhead, that are dominant in this situation. This is a sign of the enduring power of our remastered minds and bodies, that we will soon come to fulfill our heritage and steer the course of human history.

ERIS AND DYSNOMIA

The dwarf planet Eris lies 55 AU from the sun. Like other Kuiper Belt and Scattered Disk objects, it is a cold and barren mass of rock, water ice, and methane ice. Its surface gravity is a weak 0.068, roughly half that of Luna.

It is said that only the brave and foolish venture this far out. Here, the sun is small and insignificant, but the actions of the strong and free are powerful and potent.

Largely uninhabited, Eris's major population center is Go-nin's Torii complex and its nearby spaceport. No other settlements are tolerated here, and space within 500 kilometers is restricted to Go-nin approved craft and closely monitored out to 500,000 kilometers or more.

The moon Dysnomia is home to Pharos, the base for ultimate operations in the Erisian system. From here, we protect the gate from those who would pervert its purpose. Though Go-nin considers it theirs, they would do well to consider that they operate here at our discretion. Without the overhumanists to protect them from our genetic inferiors, it is doubtful they could engage in the petty exploitation that marks the limits of their own imagination and potential.

GO-NIN GROUP

The ruthlessness with which the Go-nin Group's leadership pursues profit is to be admired. Their

corporation is a well-oiled machine, tuned to the vision and interests of their directors. The other hypercorps they provide contracts to, each pursuing their own specific resource extraction, research, exploration, or colonization interests, pale in status to Go-nin. Yet the keiretsu is woefully limited, their strategy extending only to business and economics, and missing the larger picture of the future before us. Though they have shirked the bonds of petty morality, they remain tied to outdated concepts of honor, and they do not strive for the genetic superiority that would mark them as true visionaries.

THE OVERHUMANISTS

The Pharos base is more than a military outpost. It is the focal point for the surging tendency among the ultimates that we call *overhumanism*. Considered one of the leading schools of thought in ultimate circles, overhumanism rejects the puerile and decadent philosophies of egalitarianism and humanism, instead embracing the potential for genetics and biotechnology to compensate for the shortcomings spread by certain of our species' demographics. Equality is clearly a lie when a remastered transhumanity can boast physical and mental fortitude far beyond that of our feeble forebears. The time has come to embrace this superiority and place the future in stronger, more intelligent, and more willing hands.

The anarchists and other parasites of the outer system shrink in horror from this timeless truth. Labeling us "technofascists," they ignore the degeneracy and natural inequalities that plague their own so-called utopias and reject any efforts to bring a more enlightened guidance towards transhumanity's future. The only question among overhumanists is whether to seize the solar system from their hands or to leave them here to wallow in their own depravity, and instead to use the Erisian Gate to create a new era of overhumanism among the stars. Already some ultimates are establishing exoplanet outposts and paving the way towards this path.

TORII

The habitat Go-nin has built around the Erisian Gate is almost entirely underground, carved from methane ice. Only a spaceport, defensive batteries, and a few above-ground depots marks its location—and, of course, the massive crater half a kilometer deep that resulted when the gate was temporarily destroyed and the previous base eradicated. This crater has since been covered, and is now topped with a fresh layer of ice many meters thick.

INTERROGATION

[Begin Simulspace Audio Transcript]

- Wha? Unh … Where am I?
- Shut up. From now on, you only respond to our questions. Got it?
- Or what? Wh—
- Five seconds, level 3.
- Aggghhh! Ow ow ow! Stop!
- Name?
- Ju—Justin Männikkö
- ID?
- Four five alpha tango seven foxtrot.
- Where were you posted, prior to the incursion.
- What?
- Seven seconds, level 5.
- Agggggghhhhh! The maze! In the maze! Sublevel thirteen. It was Clato and me.
- Describe what occurred.
- The alarms went off. We heard screams over the open channels, something bad was happening in the gate room. The entoptic feeds were so chaotic, we couldn't quite tell what was going on. I heard a lockdown order, but it was immediately superseded. We got all sorts of confusing orders. Stay put, hold fast. Retreat to reinforced positions. Move down and engage the enemy. Must've been kaos AIs running rampant on the local mesh. Clato took off, went for reinforcements. I headed for the gate.
- You abandoned your post?
- Ye—No! I mean, we couldn't tell what orders were legit. Our position was vulnerable, and we were getting some gruesome images on the tac feeds—bodies being torn in half by some sort of reptilian-looking things. I—I left because it looked like people needed help.
- Dereliction of duty filed, ignoring direct field commands filed. Give him level 9.
- Arrrrrgggghhhh! Ahhhh. Arrrgghhh. Agghh. No … please … please, no more.
- Continue. Tell me what you saw.
- I … I made it to the gate room. We were keeping them contained, but just barely.
- Keeping what contained?
- I—I don't know. Exhumans maybe, hard to tell. Some looked like lizards. Others looked like, I'm not sure, bullfrogs or something. They were tough, well-equipped, hard to kill. They could jump, too. They were lethal to get close to, saw one disembowel an armored trooper. They—they were coming through the gate. They were everywhere, all over the ceiling and walls. We started dropping grenades into the room, but then they broke through.
- Destruction of corporate assets, filed. What did you do then?
- I barricaded myself in the control room with some others. But they started cutting through.
- What else can you tell us?
- I'm afraid I don't remember anything else.
- All right, we're through here then.
- Wait! What about my backup?
- Backup? Your corporate backups are subject to fulfillment of your contractual obligations, which you clearly violated with your dereliction of duty.
- What? No, wait—

[End Transcript]

GO-NIN GATE OPS

To: Mr. Tamahashi
From: Hiratsu Nomura

The honorable and esteemed Tamahashi-san,

I thank you for the opportunity to evaluate Go-nin Group's holdings on Eris. Please review the summary of my findings at your pleasure. The full report can be found here.

Asset management designates the current value of the Torii facility at 154 billion credits. Even a conservative asset recovery rate of 5% would be below the strategic goal of 7%, however with an income of just over 2.4 billion this past year, the return rate of 1.6% is far below our expectations. I feel it is important that you be better informed what assets and liabilities we have associated with this resource.

The most extensive cost overruns and exaggerated expenses have arisen from extra security and rebuilding operations. The Torii complex has required elaborate extensions of its facilities in order to accommodate the extra traffic and logistic requirements of gate operations. Recent sabotage incidents and restructuring from past armed conflicts has required millions more in repair and reinforcement. The rates imposed on us by our contracted mercenaries continue to rise, and the extra expenses incurred from the numerous security incidents they have responded to and resolved have raised costs further. A larger in-house military presence would allow us to cancel this contract, offering savings of approximately 350 million credits a year.

Go-nin Group members continue to show mixed profitability when it comes to extrasolar initiatives. Kintaki Enterprises has had several successful colonization projects and has increased their market share for agricultural offerings by 4% since last year, while VB-Ganz GmbH has increased their profit margin 14% by cutting expenses and increasing sales of xenobiological-inspired drugs. Hondai, however, has seen its profits fall by nearly 5% due to logistics-chain issues in its heavy metal extraction operations. I suggest re-assigning Robert Richter, President of Hondai Eris.

Another significant shortfall is our direct income from gate operation contracts with strategic partners. The demands on gate availability have proven much lower than projected, and attempts to entice new contracts and partners have shown lackluster results. Our corporate account managers are convinced that the operating costs are simply too high for many of our prospective clients, and are investigating means to make our offers more competitive with TerraGenesis and Pathfinder. One promising initiative is to offer concessions on contracts that specifically pair clients with Go-nin Group members or their assets.

One final observation. Operation Icebreaker continues to be a major drain on Torii-assigned finances and assets. If this project does not show results soon, I strongly recommend we discontinue it before it hampers our situation further.

Your Loyal Servant,
Hiratsu Nomura

The Torii settlement is composed of kilometers of tunnels and warrens, worming their way around the crater. Go-nin has carved out a new set of well-organized caves in the upper layers. These facilities house residential quarters, warehouses, science labs, communication centers, egocasting and resleeving chambers, medical bays, and military garages and barracks. Everything is managed efficiently and without fanfare, adhering to Go-nin's stoic corporate culture. Though some areas are dedicated to the logistics of their hypercorp partners and contractors, the entire complex is strictly guarded and off-limits to outsiders.

Below these levels is a more chaotic labyrinth of frozen tunnels, as found here by the gate's discoverers. Many of these lengths are still scorch-marked and bullet-pocked by conflicts of the past. Though Go-nin has carefully mapped this maze and laced it with mesh routers for easy navigation, it is not uncommon for equipment failures to leave some personnel lost and stranded in these depths for hours.

The gate chamber itself lies at the bottom of the crater, surrounded by several massive caverns filled with supplies, sensors, and staging equipment. The entrance to the gate room is marked by the impressive wooden *torii* that gives the habitat its name, a traditional Japanese gate, rescued from a shinto shrine from Earth and shipped here at great expense.

The defensive emplacements around this gate are numerous and reinforced. It is no lie that at least one exhuman excursion has originated from the gate itself, and so Go-nin is quite careful to guard against another such invasion. A platoon of ultimate mercenaries remains permanently stationed nearby, ready to defend the installation and repel intruders as necessary.

EXHUMAN ISSUES

The threat posed by the exhuman militants in the Erisian system is sorely overstated. The few cells of these addled addicts and self-created monsters that posed a threat to the gate were mercilessly wiped out by ultimate soldiers. The few times they have dared approach the Erisian system since then, we have driven them away or destroyed them outright. The best these Robot God cultists can do is interfere with the occasional long-haul shipment or make temporary incursions to sabotage Go-nin's operations. The fact that we have not yet eradicated them as a threat is simply a testament to their tenacity and proof that they lack the super-intelligence for which they strive; a more intelligent opponent would have realized the futility of their efforts long ago. The anarchists of Ilmarinen, still sore that they were forced to surrender the gate to their betters, are just as annoying with their periodic mesh subversions and isolated incidents of terrorism. In time, the actions of the bright and bold will outshine the petty antics of these inferiors.

RUMORED GATES

Posted by: Webley, scavenger <Info Msg Rep>

Okay, people and post-people, we've been dancing around this subject for a while, so I think the time is finally right for us to dive in and look at what other gates might be out there in the solar system and where we think we can find them. And especially for you ultra-conspiracy nuts out there (Hi Shadrach!), a little discussion on what gates may already be in full use without most of us knowing about it.

First, there's no logical reason for us to believe that there are and always will be only five Pandora gates. Sure, when we found the first one it seemed kind of unique, but then the others kept turning up, and by now we've all got the sense that we're just in a gap between gate discoveries. There's more out there, and once we find them, some corp or other group will be very happy.

So if there are more gates out there, where are they?

OPTION 1: EARTH

Let's stick with logic for a few more minutes. We may not know everything about how the TITANs came to be, but we know *where* they started, and that was back on good-ol' Earth. Since one theory is that the gates are relics of the TITANs, it only makes sense for them to start their whole gate project on Earth.

But if that's the case, how come we don't know where it is? The TITANs were very thoroughly monitored in the last days of the Fall, so you'd think something like a large nexus point that they were using for interstellar travel would be noticed. It wasn't, however, so that leaves three alternatives. First, there was a gate down there somewhere, but it was destroyed in the conflict (possibly even by the TITANs themselves). The gates seem nigh indestructible, however, so that seems unlikely. Second, the TITANs concealed the gate extremely well. Perhaps even somewhere like down in the Mariana Trench, some place they could get to a whole lot easier than those of us who like oxygen. Hell, for all we know, they may still be using it. Third, the gate exists and isn't entirely hidden—someone knows about it and may even be using it, but they're not sharing what they know. In that case, who has it? Is some hypercorp hiding it as an ace in the hole? Is the Consortium aware of it, but hiding it because they want everyone to forget Earth still exists? Or maybe even that whole Earth quarantine is a way of keeping it for themselves? Maybe some survivors used it as an exit strategy, but they're pissed at the rest of transhumanity for leaving them behind, so they hid it good?

OPTION 2: LUNA

A lot of gate-hunters have paid close attention to Luna, which has the advantage of being near the birthplace of the TITANs without being a radiation-soaked hellish deathtrap, like certain formerly blue planets I could mention. We know the TITANs were

THE SEARCH FOR NEW GATES

Though five gates have been found in the solar system so far, many are convinced there are more yet undiscovered. Even the possibility of such a find is enough to make many major powers scramble. Control over a gate provides tremendous opportunities and, if Consortium propaganda is to be believed, may well determine who will be the dominant forces in transhuman affairs in future times to come. For this reason, most political powers keep a watchful eye open for any sign of a new gate within the confines of the solar system. Many search more actively, commissioning ongoing projects to scour the system. Hundreds of individual prospectors also scramble about the system, checking into various nooks and crannies, hoping to make a find they can become rich selling to an interested power—or with more personal interests in mind. Though such searches are considered by many to be a waste of time, there are others who view immortality as a means to take the long and thorough road to their goals.

The quest to find new gates is confounded by the fact that gates are notoriously difficult to find. They are invisible to many types of electromagnetic scans, so thermal sensors and standard visual recognition are primarily used. An active wormhole can be detected by the Hawking radiation it emits, though this only applies to gates that are in use, and so is no use in finding dormant gate structures.

Earth is generally regarded as the most likely place to find a gate, making the interdiction particularly irksome to hopeful gate discoverers. The logic goes that if the TITANs did indeed have the capability to construct the gates, then the Earth is the most likely place to find one. The fact that such a gate might still be active and/or protected by TITAN defenses is lost on no one. Nevertheless, some gate searchers have teamed up with scavengers or even reclaimers in order to pursue their investigations on transhumanity's despoiled homeworld, though so far all have returned empty-handed, when they returned at all.

Others are convinced that the only way a gate within the solar system can still remain undiscovered is if it was in a particular obscure and out-of-the place. To this end, they have taken to scouring the asteroid belt, taken to inspecting lone asteroids and comets, or launched themselves towards the Kuiper Belt and Oort Cloud. There is some speculation that some hypercorp interests have deployed small flotillas of self-replicating probes towards these solar system nether regions in the hopes of making such a discovery. ■

here—*cough*New Mumbai*cough*—so it deserves serious consideration. The biggest problem with this theory is that we've packed a fair number of people onto that dusty little rock, and none of them have stumbled across the gate yet. But the TITANs have revealed that they are some of the best hide-and-seek players the solar system has ever seen, so there could be one sitting there somewhere, right under the Lunars' noses.

OPTION 3: EARTH ORBIT

One theory I like combines the virtues of the Mariana Trench theory with the Luna theory—proximity to Earth and an environment only a TITAN could love. This theory says the TITANs tossed a gate into orbit around Earth, and it's floating there still, along with the copious junk our ancestors left behind and did not manage to disintegrate while they were busy toasting the stuff on the surface that actually mattered.

If there's a gate in Earth's orbit, my money says it's the one that will be found next. Unfortunately, this area is traversed as much as Luna, so it seems increasingly unlikely that one is here that we haven't discovered yet.

OPTION 4: VENUS

As I said before, the TITANs were great hide-and-seek players, and one of the best hide-and-seek techniques of all time is hiding very close to the seeker while remaining completely out of reach. The TITANs might have taken some perverse delight in dropping a gate on the second-brightest object in Earth's night sky, so that the inhabitants of Earth could watch it sail in the sky above them without ever being able to reach it.

There are good reasons to plant a gate on Venus. It would be easily hidden and there are material resources lying in wait beneath all that poisonous atmosphere. The logistics of dealing with the hellish heat and pressure is something the TITANs could have easily handled.

Fact is, this is one of the more persistent rumors out there. In fact, some rumors say that this gate is already in operation, a major boon to someone like Cognite, with the capability to operate in secret for years. Some evidence has even surfaced that Cognite is up to something sketchy, down there in the clouds. I'm not on board with this story—I mean yeah, Cognite has the ability and the attitude to pull something like that off, but I think they'd find more advantage in holding it publicly.

OPTION 5: THE FRINGES

The solar system is a big, big, big place, and there are plenty of small chunks of rock and ice zipping about that would be quite easy to hide a gate on. There are hundreds of thousands of asteroids and comets orbiting the sun, most of which have never been visited by transhumans or even thought about more than being found in a telescope and listed in a catalog. Many of these are way out in the Kuiper Belt, Scattered Disk, and Oort Cloud. And that's not counting all of the other small dwarf planets and moons that are mostly boring, uninteresting, and uninhabited.

The main question here is, why would the TITANs bother? Sure, a lot of these rocks are useful for raw materials, but those are also plentiful elsewhere. Isolation and obscurity are themselves bonuses, particularly if the TITANs left behind any ongoing long-term projects that they don't want us to stumble across just yet. Certain comets and asteroids act as nice slow shuttles across the solar system, potentially useful if the TITANs want to drop something in the orbital path of a planet or something. Most of these reasons seem unlikely, however.

EXTRASOLAR GATES

Posted by: Sagan Harris, argonaut <Info Msg Rep>

Every wormhole established through one of the five Pandora gates in the solar system leads to another gate somewhere else. There have been hundreds if not thousands of extrasolar gates discovered so far. Though they sometimes vary in size and features, they are all quite similar in form and function. The gate control units adapted to work with the solar system's Pandora gates work with these gates as well.

Most extrasolar systems seem to have only one gate. Several have been found, however, that possess multiple gates, much like the solar system. These are gate nexus systems. Naturally these gate nexi are highly-valued by gatecrashers.

GATE TRAVELOGUE

Posted by: Kastan Gruber, gatehopper <Info Msg Rep>

ENTRY 1

Our respects are paid, our gear assembled, and our spirits are high. Tomorrow we leave through the Fissure Gate. We have a gate control unit, and our goal is to wander the universe.

There are five of us. Amna Mazam is in pursuit of scientific knowledge. She hopes to increase her knowledge of the galaxy and the way things work. Jaume Ferrús and Mwai Odinga, both experienced gatecrashers, and celebrating 20 years together as lovers, view this as the next stage of commitment towards each other. Siouxzi Chu wants to meet an alien. Myself, I merely hope to reach the edge of the galaxy, and maybe beyond.

ENTRY 2

Our first gatecrash went perfectly. We traveled to the autonomist colony of Kropotkin, an outpost on an icy moon not unlike Oberon. We chose this location for two reasons. First, it is a nexus point, with two other gates existing on the moon. Second, it is one of the locations known to be most distant from Sol itself, some two thousand light years away. From this far point, we hope to move beyond the bubble of transhuman expansion quickly, and head out into true frontier.

The locals here are very courteous and entertaining, and have thrown a large party in our honor. We think they are in part simply quite glad to have visitors. They were eager for news of the solar system. I would write more, but one of the women here has caught my eye.

ENTRY 3

Our plan is to move fast and not linger. Ideally, we will spend one day in each place before moving on. That is the minimum that Amna requires to run her tests. She would like to have more, but does not want to hold us back. We have agreed to loiter in places that are of exceptional interest, but even then no more than 3 or so days.

It was sad to leave the anarchists at Kroptokin behind. They may be the last transhumans we see for some time to come. Half of the settlement came out to send us off.

We were careful to run through our first-in protocols. We don't want to be wandering straight through to an environment that is immediately deadly. The process is time-consuming, but necessary.

Our new destination is cold and quiet. We seem to be on a large asteroid orbiting somewhere around a massive blue-white star. Our scout missile may have located a series of cave openings, but they are too distant for us to explore. Amna thinks she has found several local planets in her survey of the skies, but none of them seem too interesting. Tomorrow we move on.

ENTRY 7

After 4 days of barren, lifeless rocks and alien suns, we have wandered into the realm of transhumanity again. Naturally, the first thing they did was shoot at us.

Our first-in sensor check immediately detected signs of transhuman habitation at the remote gate. Strangely, there was no registration or claim marker. We went through anyway, and were immediately fired on by a set of sentry bots. Siouxzi's leg was injured, but our own bots engaged the guardians. Jaume and Mwai also showed off their combat skills, protecting the rest of us and making short work of the bots.

As it turns out, we have stumbled on some sort of hypercorp mining operation. We were lucky enough to run into some of the indentured workers first, and they have gone to some lengths to conceal our presence and the firefight at the gate from their overseers. They are reluctant to tell us who they are enslaved to or what resource they are extracting, but they seem honestly concerned about our well-being. Amna suspects they may have had unexpected visitors before, and the bosses may have had them killed.

Siouxzi's leg is healing nicely, and we plan to leave soon. One of the indentures has asked to join us. We are reluctant to bring along someone we don't know too well, and who may not be prepared for the hardships ahead, but we cannot simply leave them to rot as a corporate slave either. The decision is difficult.

ENTRY 11

Today we have found a place as mysterious as it is beautiful. The gate here exists on what seems to be a lonely mountain top or plateau. The atmosphere here is clean and peaceful, if not breathable. Down the steep cliff faces of this massive height, the land below is obscured by heavy, noxious clouds. It reminds me a bit of Venus, watching the swirling currents from such a height. The probes we have sent into the cloudy depths have failed and not returned.

Adding to the intrigue, we have discovered clear signs of alien ruins. Amna is convinced these traces are unlike any other xenocivilizations discovered to date. We may stay the full three days, to give her time to study and take samples. I even found what

seems to have been some sort of small manufactured item. None of us can discern its purpose. For all that I know, I have discovered an exciting set of alien nose hair trimmers.

Mohammad, the indenture, has been holding up well. His case morph is unfortunately in poor repair, most likely due to planned obsolescence, but we may be able to upkeep his maintenance with our fabber.

ENTRY 17

Today was disastrous. A clear lesson in the hazards of gatecrashing, and gatehopping in particular.

At first, the world seemed of moderate interest. The landscape was orange, dusty, and rocky, all craters and sand dunes. The atmosphere was cold and thin, heavy with nitrogen. Amna detected traces of ice and water vapor, and was looking for signs of life. We ranged quite a distance from the gate, enjoying the trip, when suddenly the storm hit.

The storm front was like nothing I'd ever seen. A wall of sand and dust raged towards us at frightening speeds. Leading the charge were massive tornadoes—easily half a dozen of them.

We nearly made it back to the gate when the storm overtook us. We lost our vehicles and bots to the tornadoes. Worst of all, Jaume was struck in the head by a large rock, debris flung from the storm. He was dead before we hit the gate.

It was only worse from there. With no time to make a good selection, Amna chose a random gate address. Eager to escape the searing sand, we dove through recklessly—only to discover that the remote gate was *underwater.*

Lucky for us, it was only a few meters deep, and just off the shore of an island. We almost all made it, just barely. Mwai even dragged his lover's corpse the whole way. But Mohammad, in that lightweight shell and unable to swim, was caught in a current. We haven't seen him since.

Two worlds. Two lives. Now we mourn.

ENTRY 19

This morning we buried Jaume. Mwai kept his cortical stack. He plans to carry it with him, so they will still be together on this journey. He is holding up well, despite his loss.

Having seen no sign of Mohammad, and without the means to truly search for him, with so much of our gear lost or destroyed, we opted to move on. We swam back to the underwater depths of the gate and found ourselves a new world.

This new exoplanet would be a paradise if we hadn't so recently suffered such a tragedy. Now it's vibrancy and life seems to mock us. If our lost comrades could but see this.

This planet is teeming with life. So much so that we fear for our safety—we have seen signs of large predators at work here. The local wildlife seems non-sapient, but there is much variety to it. Siouxzi seems to have befriended a small local creature. It is somewhat like a crab, albeit with three legs. It is playful and inquisitive. Amna is practically frantic, trying to study as much as she can before we must leave again.

ENTRY 27

Today, we stepped through from one frozen mudball to another. The locations were in fact so similar that it was almost haunting. But what was truly spooky was the way that Amna simply disappeared.

I was right behind her when we stepped through the gate, with Mwai in front of her. When I came through, however, it was only Mwai. Siouxzi came through after, and confirmed that Amna has stepped through before me. Mwai went back through to look for her, but returned shortly after. She was simply gone.

We made the unusual decision to leave the gate open for the duration of our stay.

Twenty-two hours later, as we made preparations to leave and move on, Amna stepped through the gate. She seems as confused as us, wondering at first how we had established camp so quickly. She remembers no time lag, but she cannot account for where she was.

I see the way Mwai eyes her now. He keeps his weapons near at all times. He no longer trusts her.

ENTRY 35

I fear the cohesion of our group. Siouxzi is growing increasingly agitated. She feels the strain of being so far, of potentially never seeing another transhuman outside our group again. Amna also grows increasingly distant. She hasn't been the same since her unexplained disappearance. Mwai is quiet and resourceful as always, but I can see the paranoia in his eyes.

The place we are at now, however, has made us forget all of that. We seem to be on a dead world, most likely scorched in the supernova that killed its sun. Surrounding this lifeless chunk is a glorious nebula of swirling gas and plasma. It is by far the most beautiful thing any of us have ever experienced. And so we sit here in our shelter, quiet and distant, in awe of the universe.

ENTRY 42

Today, unexpectedly, we encountered life: transhuman life. We seem to have wandered back to the colony of Bluewood. On one hand, this is a disappointment, a feeling that we did not get as far as we hoped. On the other it is a major relief. Mwai is already making arrangements to have Jaume resleeved. Amna is hard at work, sharing her research and discoveries with the colony's scientists. Siouxzi is off looking for her pet tricrab, it seems to have run off shortly after we reached the colony. Hopefully it won't destabilize the local ecosystem.

Me? I am relaxing with a stiff drink and a nice sauna bath, and contemplating the incredible extremes of our universe.

Life is good.

4

FIREWALL'S WATCH LIST

Locations that could pose future exothreats; treat with care.

WONDERS OF THE UNIVERSE

Natural wonders discovered through the gates.

EXTRASOLAR SYSTEMS

TRANSHUMAN COLONIES

Living lives on the edges of the known galaxy.

XENOARCHEOLOGICAL SITES OF INTEREST

Evidence of ancient civilizations.

EXTRASOLAR SYSTEMS

Fellow Proxies,

With new exoplanets being discovered on a daily basis and the catalog of known extrasolar environments growing to an encyclopedic level, it is a challenge for our operation to keep abreast of the latest developments—particularly those that present real or potential existential threats. To facilitate matters, I've put together this brief guide to some extrasolar locales that I think every proxy should be aware of. This collection includes only extrasolar systems that I think are of particular interest to Firewall's mission. Not all of them directly relate to x-risks, but they may be of major interest for intelligence, resources, or other purposes. This short guide does not focus on the mundane or ordinary exoplanets, of which there are thousands, even if they happen to be major centers of activity. Instead, these present substantial x-risks to watch or opportunities to exploit. In some cases, Firewall has unique data on these locations that is not universally known and may even be exclusive to other intelligence-gathering operations.

ARCADIA

Let me guess, you've never heard of Arcadia, right? That's all right, nobody has.

Arcadia is not an exoplanet you will see discussed in the mesh. Even in the gatecrashing community, its existence is nothing more than a rumor. The gate address and star system designation for Arcadia remain unlisted in public databases. This is because the group that has chosen to establish a private hideout here has gone to great lengths to conceal its existence, including the fact that there is activity between the Martian Gate and this system.

While Pathfinder is, of course, aware of Arcadia, as they are cognizant of most activity involving the Martian Gate, even in upper ranks of the Planetary Consortium there is little hint of Arcadia's existence. The particular group of gerontocrats who have initiated and bankrolled the construction of an aerostat habitat in this cloudy planet's atmosphere have also worked hard to convince Pathfinder to remain close-mouthed about it. If it weren't for an information leak that has passed minor details on the project to certain privileged circles in the Consortium, even Firewall would have no inkling of its existence.

SOLARCHIVE SEARCH: EXOPLANETS OF NOTE

Précis List :: Custom Filtered :: Attributes (Type/Star/Gate)

Ascension (Terrestrial/F8V/Martian): This Earth-like world is the shining jewel of the Planetary Consortium's Pathfinder Colonization Initiative and the largest extrasolar colony to date.

Chrysaor (Hot Jupiter Moon/G2V/Vulcanoid): This exomoon is the closest extrasolar location to Earth so far discovered, approximately 51 light years away circling the star 51 Pegasi, in the constellation Pegasus.

Dyggvi (Ice Moon/B6V/Pandora): This colony was the first to be considered an extrasolar adjunct of a solar system polity. Dyggvi is treated as a full member of the Titanian Commonwealth and is home to the Titanian Extrasolar Embassy.

Haplopelma (Terrestrial/K0V/Martian): One of the exoplanets known to have been visited by the Iktomi, though little of their presence remains. This colony is now a major center and pilgrimage site for xenodeists.

Hiranyaksha (Super-Earth/M4V/Vulcanoid): Of all the extrasolar colonies, this planet is the largest (23,000 km diameter) and has the highest gravity (1.9 g).

Logos (Ice Giant Moon/M7V/Fissure): Established by AGIs, this station is a haven for mercurials and their supporters.

Moria (Ice Dwarf/M1V/Pandora): This colony, founded in a series of immense and stunning natural underground caves warmed by geothermal activity, is considered one of the most breathtaking extrasolar settlements.

Ne No Kuni (Cthonian/M2V/Discord): This Cthonian planet, rich in metals, holds the largest extrasolar mining operation. It is exploited primarily by Go-nin Group subsidiaries and partners.

Templeton's World (Terrestrial/M0V/Fissure and Martian): Originally a Pathfinder colony thought lost when the cavern housing it collapsed, the survivors here defected to the Titanian Commonwealth after regaining contact over a year later and finding that under Pathfinder policy, their resleeved backups were considered their legal selves and they, now considered aberrant forks, had no civil rights and were legal non-entities. ♣

Who is behind this project? What are their intentions? Why do they desire secrecy? These questions remain unresolved, despite some efforts by Firewall vectors to dig deep into the mesh. The answer could be as mundane as a private resort for an exclusive club of the undying rich. It could be something more intriguing, such as a base to research dangerous technologies. It could be something unexpected, like a secret arrangement for a particular organization to meet remotely with the Factors, far from prying eyes.

Until we have some indication of a potential x-risk, this data rates low interest from Firewall. We will of course continue to monitor for mentions or signs of the project, however, just to keep on the safe side.

Floating Above It All

[Begin Personal Log Transcript, Source Unknown]

Stepping through a gate is a disconcerting affair, even if you're fully prepared for the different environment. There's always that sudden moment of change, when you find yourself in new gravity, under a new sky, seeing by new light, and something in the back of your mind goes *hey, you've just shifted X million light years, so stop feeling like you're in control of anything*. If you're unlucky, the direction of the gravity field is skewed or you find yourself looking down the barrel of some paranoid security goon's gun. If you're really unlucky, well, you're dead. Or worse.

Stepping through from Mars to Arcadia, the change is simply that there's suddenly not much gravity at all. That, and you're likely to find a whole planet hanging over your head—a ball of whirling clouds, luminous in local sunlight or glowing gently back lit. The local gate is parked on a rocky moonlet, Overlook. The workers haven't bothered to roof it over yet; that's part of a later stage in the construction process. They've been too busy mining the moonlet for materials for their development project. Rather than push whole spacecraft through a piece at a time, they set up a string of autofactories and loaded them with the minds of engineers who were happy to work totally virtual for a few months in exchange for fat bonuses.

The engineers haven't been told that they're actually forks that will be deleted after their terms. The people behind this project are quite serious about no one knowing their secrets.

So now the moonlet is measurably lighter and there's a working spaceport a couple of hundred meters from the gate. On my visit, after I'd gotten over the philosophical twitch in my hindbrain and stopped gawking at the planet (even though I've seen Venus and other planets from orbit, I'm still a sucker for space porn), I picked up my kit and kicked off, floating over to the port and the next stage of my work trip.

Five hours later, I finally finished arguing with the minds and systems running the port, and they arranged for me to be on the next suitable shuttle down to Cloudtop, the oh-so-misleading working name for the aerostat project here in Arcadia's upper atmosphere. They were confused why anyone would want to haul a meat body down into the gravity well at this point in the project. I didn't explain, but I insisted. Of course, I could've pointed out that their masterpiece will be no damned good to anybody if it can't be reached by the people who want to use it when it's finished. But, okay, fair enough, it's not finished yet.

Which is why the luxury shuttles haven't been constructed yet. Those will be two-stage affairs, with fusion-powered orbiters circling between Arcadia and its moonlet and a vectored-thrust aircraft to carry the passengers that will detach from the orbiter at high speeds, deploy wings, and s-l-o-w right down to dock with the aerostat. (Hmm. Maybe egocasting from the moonlet and resleeving on the aerostat *will* feel safer as well as cheaper after all. Oh well, not my worry.) Instead, I had to go in with a consignment of materials that were delicate and valuable enough to get a relatively smooth trip down. I got a nice well-padded pod, and they even gave me a real-time display of the flight procedure—presumably to remind me that I was taking a stupid risk should I be in danger of getting bored.

First, the streamlined cargo container was fitted with a detachable fusion thruster/scramjet/variable-geometry aerodynamic array, then it kicked off the moonlet and spent a few minutes killing some of its orbital velocity. That dropped it into the upper atmosphere, where it could

Arcadia

Type: Terrestrial (Venusian)
Primary Star: M3V (Red Dwarf)
Gravity: 0.94 g
Diameter: 10,300 km
Atmospheric Pressure: 96 atm
Atmospheric Composition: Carbon Dioxide (92%), Nitrogen (5%)
Surface Temperature (Mean): 480 C
Day Length: 95 days
Orbital Period: 193 days
Satellites: 1 (Overlook)
Gate Access: None (accessed via Martian Gate to Overlook)

Overlook

Type: Tidally-Locked Rocky Moon
Satellite of: Arcadia
Gravity: 0.01 g
Diameter: 630 km
Atmospheric Pressure: Negligible
Atmospheric Composition: Trace Argon and Nitrogen
Surface Temperature (Mean): 160 C
Day Length: 15 days
Orbital Period: 15 days
Satellites: None
Gate Access: Martian Gate

take advantage of the wonders of aerobraking for a couple of decaying orbits—in other words, a couple of hours of tedium for me. Once it had decided that it was now an aircraft, the wings deployed and the pilot systems shed most of the remaining velocity with no more than a few bone-jarring bumps. Finally, the flight system unceremoniously dumped the cargo container, fired up its scramjet, and returned to orbit, with a near-audible electronic sigh of relief from its controlling AI.

At which point, if either of the two consecutive braking chute systems had failed … well, I'd be resleeved back on Mars, without even a tale to tell. Fortunately, they didn't, and they even put me in about the right place, gently drifting down at subsonic speeds. The container shed the second chute, pushed out a buckytube-mesh balloon, fired up a fusion burner to fill it, and quietly transformed itself into a Zeppelin, floating gently through the Arcadian clouds. Half an hour after *that,* the radar display I'd been keeping half an eye on between reviewing work schedule reports from the aerostat went *beep,* telling me that it'd found our destination. A few directed fusion pulses carried me over until the tug-copters could scurry out, latch on, and tow the cargo container in.

As I emerged from the passenger pod, the supervisor that was fussing over the offloading of the consignment did a very definite double-take. (This was evidently my day for confusing or annoying synthmorphs.) It turned out that the moonlet port systems had neglected to tell it, at any time, that some inconvenient meatbag had insisted on coming down this way. I guess that this may actually have been deliberate comedy, and to be fair, the joke worked.

So I spent ten more minutes explaining myself to the local construction management systems, and then I finally walked out of the cargo bay. Which is how I got to be the first real, protein-bodied, human-minded transhuman being to gaze upon the artificial world of Cloudtop.

(That name *has* to change.)

I began to unlatch my helmet, and the synthmorph who had hastily been assigned to me jumped forward. "That may not be advisable, Mr. Hussain," it said.

I paused and stared hard at it. "And why not?" I asked. "All the reports assured me that the interior now contains a fully breathable atmosphere."

"Well, yes …" The ego controlling the morph was human—an engineer named Haliassos—and I could hear the nervous squirming in its voice. "The atmospheric mix is completely breathable, and the pressure is fine, of course …" (Of course; it was slightly below external pressure, which at this altitude on Arcadia is one-Earth-normal.) "But there's a lot of construction work still going on … some exotic solvents are in use … the soil mixes in the landscaped sections are being sprayed …"

I gave him my best I'm-not-laughing smile. "Nonetheless, you reported the atmosphere as *breathable*. If it proves otherwise, responsibility *will* be assigned as appropriate." I finished the manual unlatching, told the suit to release the helmet, and lifted it away, watching Haliassos stand there in paralyzed confusion all the while. Then I took a deep breath and smiled a little wider. "There," I said, "that all seems fine. You people just need a little more confidence in your work."

Haliassos turned to lead the way, the robotic shell displaying complicated human body language cues. I've no doubt he was still expecting me to drop any second.

Actually, my suit had been telling me for several minutes that the air was fine for my morph, especially given its enhancements. However, it never hurts to keep people off balance.

Another five paces took us out from the entrance chamber where this little exchange had occurred and into the main dome-space of the aerostat. Then I did stop to look around and take things in, and I did honestly feel quite impressed.

Calling this structure an "aerostat" makes it sound like a zeppelin—a glorified, stretched-out balloon, like the final shape of the shuttle system which had brought me here. (Well, it does to me, anyway, but I'm old enough to be old-fashioned.) That's not how Venusian-style float-colonization works, of course. These balloons are dome-shaped, weighted and constructed to float with the flat base downwards, and the inhabitants simply live within the balloon. Perhaps you've seen images from the interiors of Venusian cloud cities, and this aerostat wasn't actually any bigger than a lot of those—but it was uninhabited as yet, which meant that most of the space was wide open, with dim levels of local sunlight filtering in and mixing with the glow of the internal artificial lights.

I looked over to Haliassos. "I see that the other reports are also accurate," I said, "so presumably the problems with the timetable are exactly as bad as I understand."

He looked back at me. It looked like he was getting his confusion under control and deciding to start prevaricating. "We are having some routine ups and downs," he said. "Can I just clarify what your position is, exactly, and what the purpose of your visit is?"

"You can," I said. "I report directly to the Beni Qasim Directorate. Unlike the construction staff, I am not a contracted temp worker or indenture, nor have I signed a set of non-disclosure agreements so restrictive they can make your robotic eyes water." (Nor am I an edited fork contracted for a limited term of work followed by deletion, I most diplomatically did not add.) "Unlike the compartmentalized work groups here, I am privy to the entire project plan. I am the Directorate's *representative on Arcadia,* Andreas Haliassos, and I need to sort out this little problem. So shall we proceed?"

Haliassos nodded and trailed along behind me as I made my way towards the main control deck. I hoped that my reading of his profile had been correct, in which case that hammy little speech would have

thrown him off balance just enough to keep him worrying about his job—and maybe even his personal safety—without giving him time to think about whether I'd told him the truth about my real mission. Unless, of course, he was the source of the problem I'd actually come to fix, in which case he most likely had me pegged as a threat from the start.

Chances were, somebody on the aerostat was already wondering if I'd come to track them down. The information leak identified by the Beni Qasim's intel team was subtle, but definitely indicated that someone—some *outside* agency—had at least one informant in place somewhere on the construction team. And this was a leak that I was going to stop, as quickly as possible.

I had not lied to Haliassos, but I told him only part of the truth. I do in fact report to the Beni Qasim Directorate—because I am one of the Beni Qasim. Not all of us are spoiled sybarites and old-money heirs; some of us earned our places and like to keep our skills honed. Likewise, the Beni Qasim have their objectives and priorities, and we don't like to waste our money, even if we did inherit it; so when we spend rather a lot of it building a private hideout beyond a secret gate setting, we look to keep our secrets.

This was going to be fun.

BABYLON

The Babylon gate opens on to an unremarkable moon in a tidally-locked orbit around a scorched terrestrial planet quite close to a yellow sun. The second extrasolar location to be explored, the moon was named after the mythological city once known as the "Gateway of the Gods." Initial studies by Gatekeeper researchers found nothing of interest aside from some oddities in the shape and patterns of the impact craters scoring Babylon's surface.

Later, the Martian Gate was also found to open here, and shortly after Babylon became headline news. One of the study teams brought to the moon by Pathfinder had the luck of detecting an unknown object orbiting within the star's corona. Further analysis determined that it was most likely a spacecraft of unknown origins.

Despite the launch of several probes to investigate the object, further attempts to study or even reach it have been largely futile. The craft maneuvers away from approaching aircraft and seems to employ cloaking measures that enable it to effectively hide deep within the corona. The probes that have gotten close have been disabled, presumably destroyed by unknown defensive systems. Gatekeeper initiated one recon of the object with a team of explorers sleeved in sundiver morphs; these were all destroyed. Further efforts to reach and study the ship are underway by both Gatekeeper and an inner system hypercorp, Sirius Surveys. Recent maneuvering has taken the ship closer to the star's chromosphere; should it be able to take shelter there, it will remain out of our reach.

None of the planets or moons in Babylon's star system seem likely candidates for having developed life. Though it is possible the makers of the craft originally accessed this system via the gate, building the ship here, it remains a distinct possibility that the craft originated from another system and is indeed capable of interstellar travel.

BABYLON

Type:
Tidally-Locked Rocky Moon

Primary Star:
G4V (Yellow Dwarf)

Satellite of:
Agade

Gravity:
0.09 g

Diameter:
950 km

Atmospheric Pressure:
Negligible

Atmospheric Composition:
Trace Oxygen and Helium

Surface Temperature (Min/Mean/Max):
–150 C/60 C/450 C

Day Length:
1.5 days

Orbital Period:
1.5 days

Satellites:
None

Gate Access:
Martian Gate, Pandora Gate

IMPACT CRATER ANALYSIS

[Begin Excerpt from Sirius Surveys Report on Babylon Surface]

I am now reasonably convinced that the atypical and precise nature of the scoring marks over the surface of the satellite are inconsistent with the original micrometeorite impact theory postulated by Dr. Edhino. It is easy to see why it would be the prevailing assumption, with the obvious similarities to Earth's moon and the fact that mysteries require more work and thus a longer stay here—and who wants that? I have begun to suspect that they actually indicate weapons fire, though why someone would be using this moon for target practice is beyond me. Well, unless they've been stationed here as long as I have, in which case "boredom" strikes me as an adequate reason.

Note these samples. Here we have multiple sites found with deep scoring, sand fused. The average depth reaches five meters below the surface, with some going as deep as thirty meters. As suggested in advanced modeling, sites are invariably parallel. The spacing between glass furrows is consistent. It almost looks like strafing runs.

Also of interest are the atypical silicates found at thirty-nine impact locations. These samples match each other within a 7.05% variance. We have not found any evidence of the silicates at other (more traditional) impact sites or as part of the moon's crust. Though precise calibration is difficult, the youngest of these samples I estimate to be around thirty years standard, accounting for surface erosion, which is minimal. I'd place the oldest at three thousand years minimum, possibly far older. It is quite possible that more ancient samples may be undetectable due to erosion and other environmental factors.

[End Excerpt]

INCIDENT DEBRIEFING REPORT

Subject: Obano Bunuel, Operations Agent, Cyan Clearance
Assignment: Babylon Rascal Project
[Begin Transcript]

We took a nice, slow approach and followed all of our standard operating procedures to the letter. We made a sweep of the area first, establishing that our ship was the only one in the immediate vicinity, not that we expected much to be out there. We analyzed the coronal environment carefully to make sure there were no hidden surprises lying in wait. We measured the star's output against our records to ensure consistency. We tracked Rascal's position and profile for any signs of response.

Everything was exactly as we expected to find it. Any deviations were well within accepted tolerance levels.

Satisfied that all was according to plan, we steered ourselves on a gradual intercept course. When we were about four hours out, Fernanda initiated the scan sequence. We knew to expect some interference from the solar EM, but we figured it was a safe range from which to start. We were wrong.

Thirteen seconds into our scans, Rascal's telemetry suddenly changed. We saw a ripple along the outer hull and fluctuations in the outer shell. Seams appeared where there had never been any before. We were all so excited. Rascal was online, and we were receiving pings. It was scanning us back. I think Zander was the only one with the sense to be afraid.

I was watching Rascal through the long-range sensors as it turned and a series of long narrow flanges or doors of some kind opened on one end. We actually started receiving some data on the interior, but I couldn't make a lot of sense of what was on the monitors at first. Then I realized: Rascal was organic. It was alive.

That's when we were hit. I'm not sure what the pulse was, but it took out both Fernanda and Zander and crippled my systems. I had just enough time to egocast back out. Then I woke up here.

I know from the review that those last sensor readings we received didn't make it back. But I remember, right before I evacuated, that the scans were picking up some intriguing energy patterns from inside Rascal. Four of them, in fact.

If you ask me, I'd say I was picking up readings of four things that were *alive*.
[End Transcript]

DAY IN THE LIFE OF A SALAMANDER

Public Lifelog Excerpt
Source: Islar Tennin, salamander-sleeved engineer, Ukko Jylinä
[Begin Excerpt]

I'm telling you, I've seen nothing like it. Not even that storm with the crazy flare patterns two years ago can compare. There must have been almost two thousand of the big guys in harbor to see the presentation. I've never seen that many suryas together. Gatekeeper had pulled out all of the stops on this recruiting mission. The new broadcast rig they hooked up made our old tower look like garbage. "Oh, keep it, regardless," they say, with a careless wave.

So what was all the fuss about? Well get this, they want to recruit a squad of Solarians to gatecrash! They want to shift us to a system called Babylon, to make contact with something they think is living in the corona of the star there. None of the old singers have ever been through a gate before, but Gatekeeper's proxies were all smiles, confident that it could be done. "All parameters have been explored satisfactorily," which I guess is hypercorp speak for "no problem" or something like it. Ushoma and I are betting that they already crammed a mindless surya through a gate without just getting sushi on the far end, so they figure they're good to go.

Despite the danger, this proposal was actually hot buzz. I've never seen so many surya spot to each other so quickly. No surya had ever swam in the corona of another star before. It screams adventure to them. There's already talk of forming a new tribe, of spreading the family to other suns.

You ask me, they're crazy. One sun is all I need. I joined the sun swimmer culture to get away from working with corps and signing my life away in contracts. This little newt can see the danger all too clearly in the teeny, tiny fine print.
[End Transcript]

BLUEWOOD

Type:
Terrestrial (Earth-like)
Primary Star:
G1V (Yellow Dwarf)
Gravity:
1.04 g
Diameter:
15,300 km
Atmospheric Pressure:
1.02 atm
Atmospheric Composition:
Nitrogen (75%), Oxygen (22%)
Surface Temperature (Min/Mean/Max):
–90 C/14 C/55 C
Day Length:
21 hours
Orbital Period:
411 days
Satellites:
None
Gate Access:
Fissure Gate

BLUEWOOD

Bluewood is notable as one of the few true Earth-like worlds discovered so far. It is also one of the first to be colonized by autonomists via the Fissure Gate.

Named for the vast expanse of blue forest that covers its land masses, Bluewood is both fascinating and potentially dangerous. The flora and fauna exhibit properties that have not been found anywhere else, leaving some to believe Bluewood's life was manufactured—or at least modified—by unknown entities. The manner in which the forest has overwhelmed transhuman colonies and

penetrated information networks is alarming. So far, the forest seems harmless, but not everyone is convinced that it will remain so indefinitely.

Firewall Mission Report 319947D

Operative: Slider Zone

The first thing you notice when you look at a map of Bluewood is the forest, which is also the first thing you see when you exit the gate. Water covers 60% of the planet and all but 9% of the land area is part of a single equatorial supercontinent. Almost the entirety of this supercontinent that is not mountainous or desert is covered by a vast contiguous forest, carpeting ~60% of the land mass and visible on orbital maps as a solid and uniform slate blue. This forest is composed of trees with large lapis-colored leaves and thick, pale, slate-blue trunks that range from 3 to 5 meters in diameter and 8 to 20 meters high. Some of the biologists I've talked to refer to these plants as separate trees, but others say that they aren't. The roots of these trees all connect to those of nearby trees. I'm told that the vast forest most closely resembles a huge and woody rhizome.

It's worth pointing out that blue is an uncommon color in terms of plant life. When it comes to converting sunlight to energy through photosynthesis, the blue wavelengths of light provide some of the best energy conversion ratios. In terms of growth, plants that absorb blue light have an evolutionary advantage over plants that reflect it (as blue leaves do). Nevertheless, blue has come to predominate Bluewood flora.

Harmonious Ecosystem

The bluetrees, as the locals call them, form the basis for the entire land-based ecosystem. There are a variety of flying and arboreal life forms that live on and in these trees and other creatures that live on the ground beneath them. Some of these animals drink sap from special pockets on the trees; others devour fruit, dead wood, or fallen leaves. Several years of careful observation have determined that none of these life forms live off the live trees themselves or even so much as damage them. Even the insects do no harm to living trees. More surprisingly, none of the life forms attack or feed directly off each other. The entire dynamic of predator and prey is absent on Bluewood. The few carnivores, for example, are scavengers that feed only on corpses. There are parasites that live on the trees and on various animals, but they do no harm to their hosts. The only time one being on Bluewood eats another is if the prey has died by accident or natural causes.

As some of the more spiritually-inclined colonists repeatedly point out, the entire ecosystem lives in harmony. Biologists have noted that this harmony seems specifically designed to benefit the bluetrees. Animals that eat dead wood rid the forest of dead trees and cut away portions of bluetrees that have died without harming the rest. Other animals eat the trees' turquoise fruit, either carrying the seeds or defecating them in locations where bluetrees have recently died, thus spurring regrowth. There are a wide variety of complex chemicals in bluetree sap and fruit and there is some speculation among astrobiologists that the bluetrees may communicate with or control the animals that feed off of these compounds.

The Defended Forest

Despite the lack of predators and the unusual ecosystem of peaceful co-existence, the forest's harmony vanishes if the bluetrees are threatened or harmed. Biologists first observed this behavior when

explorers cut down trees and researchers took core samples for study. Small squirrel-like creatures, normally passive and serene, swarmed and bit those harming the trees. Avian creatures swooped down to peck and claw at the aggressors. Digging animals attacked with their large, sharp claws. These animals were clearly unintelligent creatures with no grasp of tactics, but they were exceedingly persistent and clearly acting to defend the bluetrees. Thankfully, they ceased attacking as soon as the trees were no longer in imminent danger.

Initially, several explorers and researchers were injured by creatures defending these trees. The colonists have since learned that if they need to obtain samples, clear a path, or otherwise trim or cut a tree, to use small and durable robots, like a dwarf or a servitor. The locals make certain that visitors know collecting dead wood or even breaking off dead sections of living trees is fine. However, otherwise harming a bluetree may be putting yourself in danger.

In contrast to the animals' defense of the bluetrees, attacking any of the local animals directly causes them to flee. Most fight back if cornered, but others of their kind do not join in the attack. Having no local predators, most Bluewood creatures are not skittish or shy of transhumans and will not automatically flee. Sometimes they exhibit curiosity, following or landing/climbing on visitors to watch what they are doing.

Current research has not yet revealed why a world without predators would evolve such unusual responses. Several of the biologists I talked to believe that bluetrees and the ecology of this planet are an artificial creation or were at least modified and guided in their development. As further evidence towards this, many animals exhibit behaviors that can only be interpreted as cultivating bluetree growth. For example, some creatures disassemble fallen trees and clear the way for new bluetrees to grow.

Study and Colonization

Initially, Bluewood was a biologist's dream as well as an obvious choice for limited colonization. Bluewood's ecosystem is very different from anything found on Earth, but as long as visitors avoid directly harming the trees, the bluetree forest was exceedingly safe and easy to study. Bluewood is devoid of predators, the air and water are both acceptable to transhumans, and the waters are free of all hostile life, including dangerous microbes.

Biologists set up the first botanical research station five years ago. A year after that, a group of 8,000 autonomists from across the outer system answered the call put forth by a Love and Rage colonization initiative to determine the potential long-term habitability of Bluewood. Within two years, the population of Bluewood had grown to 10,000, including several hundred biologists. Naturally, the biologists strongly advised against cutting down or damaging any bluetrees to construct the colony. Instead, both the colony and the three research stations were constructed just outside the edge of the forest, where the ecology was far simpler.

Swelling the ranks of the anarchists and autonomists here are a large number of idealists attracted to a planet where the entire ecosystem is based on harmony and cooperation. A significant percentage of the colonists are pacifists committed to non-violence who hope to emulate Bluewood's cooperative ecosystem. These include several spiritual and religious sects, from neo-buddhists and techno-creationists to pantheistic neo-pagans. Though dedicated to a harmonious lifestyle, it would be a mistake to consider these colonies vulnerable to aggression. They retain weapon templates in their cornucopia machines and, with some exceptions, are likely to fight for survival if threatened.

Today, the Bluewood colony consists of a pair of settlements 15 kilometers apart. The original settlement, Arborea, is home to approximately 6,000 transhumans and is located on the western edge of the bluetree forest, less than 50 kilometers from the Bluewood Gate. The second settlement, Harmony, was founded 2 years after Arborea, approximately 150 kilometers south and west, and sits less than a kilometer from the continent's coast, 15 kilometers from the edge of the forest. It is currently home to approximately 3,000 transhumans.

Arboreal Invasion

Within a year of the founding of Arborea and the various biological research stations, the scientists and the colonists here discovered just how invasive the bluetrees could be. Despite being located atop a ridge clear of bluetrees and some distance from the forest edge, the original settlement was soon surrounded by bluetree saplings that invaded between buildings and other structures. These saplings grew rapidly, and an extension of new growth soon connected this pocket to the larger forest. Outlying research stations experienced a similar encroachment. Any structure erected within 3 kilometers of the forest soon found itself overgrown.

The bluetrees growing around settlements tend to literally encompass buildings, with limbs growing right along the surface and intertwining with branches from other bluetrees. The growth avoids moving parts like doors or mobile sensor arrays that move at least once every few days, but everything else is encased in web-like patterns of slate blue branches. The structures located closest to the forest are now largely encased in wood. So far, the bluetrees have not entered closed structures, nor do they block regularly-traveled thoroughfares.

The bluetrees inflict no damage or pressure on any of the structures they grow on and around, but they are impossible to dislodge. Though the colonists have refrained from any large-scale efforts to uproot, poison, or destroy the overgrowth, all attempts to cut back the branches has encouraged growth and provoked attacks from Bluewood's native wildlife. A month or two after cutting a portion of a structure free from its covering, the area is once again covered by a network of branches. Even nanotech bio-defense units have had limited effect in deterring bluetree growth.

The settlement of Harmony, far enough from the forest to remain undisturbed, is a haven for colonists worried about the long-term prospects of living in the bluetrees' embrace. Its population swelled as over a third of Arborea's residents relocated. The remainder of Arborea's inhabitants and the researchers in the science stations have adjusted to living in environments surrounded by and penetrated by bluetrees. These residents remain largely unconcerned and do not consider the trees to be harmful to themselves or their buildings. Opinions differ in Harmony, however, where many inhabitants fear the bluetree activity is in some way dangerous.

Electrical Abnormalities

The unusual encroachment of the bluetrees on transhuman settlements isn't the only anomaly to be reported on Bluewood. In Arborea and similar bluetree-infested outposts, a demonstrable drain on active power sources has been recorded. Evidence indicates that this energy is in fact drawn off by the bluetrees themselves. On wired power systems, the current drain measures up to 4%, presumably leeched away by some form of near-field siphoning. For wireless energy transfer systems, the power loss can be as high as 10%, believed to be drawn away by some form of biological resonance coils in the bluetree limbs. It is not known what use the bluetree electrochemical metabolism has for this power, though researchers assume the power is distributed throughout their root system. There is some evidence to indicate that this energy drain may fuel growth and repair of injuries, as the bluetrees invading transhuman structures seem to both grow and heal at faster rates.

A similar drain on wireless mesh networks has also been reported, with an unusually high rate of data loss occurring on data transfers in bluetree-enveloped areas. A slight but measurable interference effect on wireless communications originates from the bluetrees, though the exact mechanism behind this remains unknown. Even more oddly, there is an equally high rate of data artifacts appearing on these mesh networks. Analysis of these artifacts indicates that they may be a side effect of the interference, elements of data noise injected into data transfers and communication links. If that's the case, then there's a major mystery in how these interference effects mimic mesh protocols enough to inject data and why standard filters don't process the noise out.

These discoveries have led to speculation that the bluetrees are actively monitoring transhuman mesh activity and may even somehow be working to infiltrate local mesh networks. Though there is little direct evidence to back up this claim, research into bluetree biology has found protein filaments that function as microbial nanowires with extremely complex patterns of electrical currents. These filaments connect different trees together and along with other electrochemical interactions suggest that there may be some sort of data transfer from one tree to another.

Other Anomalies

The bluetrees grow so densely in significant parts of the continent that the forest is effectively impassable. Some of these areas have been explored with microbots and nanoswarms, revealing a thick lattice of woodwork teeming with life. Bluewood astrobiologists estimate that they have so far cataloged less than 1% of the planet's species.

The mysterious off-limits interior and abundance of seemingly-modified alien life have spurred numerous tall tales and rumors. A common story spread among colonists tells of wood-lined tunnels offering passageway deep into the forest's heart. Others tell of desperate hypercorp missions sent to investigate artifacts buried behind a fortress of living wood. Still others talk of the intelligence that crafted Bluewood's flora and fauna and how it still remains active, lurking in the forest depths, tweaking its creations and adapting new life forms to the planet's ever-changing

Gatecrashing Rumors: Blue Stragglers

Transcribed from an interview with an anonymous gatecrasher.

Go-nin's keeping this under wraps, but they've found evidence of an elder civilization they're not telling anyone about. They have an observatory set up in an extrasolar system, and the astronomers there found a trio of blue stragglers practically next door. What's a blue straggler, you ask? It's a giant blue luminous star that is a sort of anomaly in stellar evolution. Y'see, most main sequence stars, after they've lived a long stellar life, will eventually burn through all of the hydrogen in their core. At that point they start fusing the hydrogen in their outer shell, which makes them expand into a red giant. With a blue straggler, though, you have a star that normally should have eaten all its hydrogen and turned into red giant a long time ago, but somehow it managed to increase its mass and fuel supply and is still going. Usually you only see these stars in globular clusters, out in the halo of our galaxy, where stars are so densely packed it sometimes becomes easy for a star to cannibalize fuel from a neighbor and postpone that red giant phase.

It's almost unheard of to find a blue straggler within the main galactic disc, much less three. So what does this have to do with elder aliens? Well, let's say you're an advanced civilization that has been around for a long time. Long enough that you have to consider the threat of the stars that your home or homes orbit turning red giant on you, ruining the habitability of those homes. If you were advanced enough to somehow mix the outer layers of that star into the core, you'd give it more fuel to burn in the core and slow the process of inflation down—ending up with a blue straggler. ♣

conditions. Those who believe in this latter rumor fear that the transhuman presence may one day be viewed as too invasive or destructive and that the forest will be redesigned to wipe the colonists out. Needless to say, there is no evidence backing any of these tales or claims. Nevertheless, these rumors are popular, particularly in Harmony, where a defensive mindset is setting in among the settlers. This paranoia is even extending towards the residents of Arborea, whom some Harmonistas believe to be growing increasingly "off" and somehow affected by the bluetrees.

BRAK KODEL

To: Sergei
From: Callistrio

Okay, we applied that decryption key your woman got us out of Mars, and it worked fine. Good stuff—especially as it got us the attached. Interesting reading. Looks like Pathfinder has found themselves just as bad a can of worms at the Brak Kodel setting as we thought. It's no question why they're keeping this so quiet—the situation raises a host of disquieting ethical concerns. It remains to be seen how they'll play it, but we need to define our own policy on this issue sooner rather than later. This isn't just a humanitarian concern, after all, there's a serious x-risk factor. Fortunately, it looks like there might soon be ways that we can get a few sentinels in on the ground here to assess the situation and stay primed to act.

CONFERENCE TRANSCRIPT

Meeting Code KU-19TT-Delta
Company Security Level 1
Security Class KARNAK-B3
Transcription by Secured System SCARLET THETA RADIUS.
Present:
Helen Rasmussen *(Board Representative)*
Karol Karlinsky *(Security Contracts Division)*
Qin Shu Feng *(Scientific Assessments Coordinator)*
Sandrine Lapousse *(External Interactions Supervision)*

Lapousse: Thank you for your attention at this meeting, everybody; I thought that it was time to decide what to do next about this Brak Kodel business …

Karlinsky: You know what I think already. Close down the base, pull everyone back, and push a nuke through the gate with a 30 second countdown. Forget we ever found it for a decade and then come back once the glowing has died down a bit.

Feng: Yes if I recall you pushed for that stratagem before and we're still dealing with, ahem, fallout from the information gap created by our hasty action.

BRAK KODEL

Type:
Terrestrial (Mercurial)
Primary Star:
K9V (Orange Dwarf)
Gravity:
0.77 g
Diameter:
9,200 km
Atmospheric Pressure:
0.04 atm
Atmospheric Composition:
Carbon Dioxide (92%), Nitrogen (4%)
Surface Temperature (Min/Mean/Max):
–220 C/30 C/330 C (25 C in valleys)
Day Length:
17 hours
Orbital Period:
89 days
Satellites:
None
Gate Access:
Martian Gate

Karlinsky: Why you little … You'd be fucking dead or worse if I hadn't acted with clarity and purpose. And Brak Kodel is shaping up into a similar situation. The sooner we nip it in the bud the better.

Lapousse: Yes, we are aware of your position, thank you Karol. However, there are additional considerations.

Karlinsky: Do I really have to remind you that we are dealing with a probable *TITAN* operation? One showing all the regard for transhumanity that we'd expect? A damned *lab experiment*, and one that doesn't appear to have been closed out completely yet? Every time we transfer an ounce of matter through that setting, we are increasing the risk that we'll attract attention. Or worse, that we're already doing exactly what they want, what they've been planning.

Feng: But if the TITANs come back to any of the gates, anywhere, we'll have that problem. The agreed countermeasures are in place against that eventuality. I don't see that the supposed increased risk in this case is significant. The Brak Kodel situation also offers returns to match—more than match. It's a transhuman-habitable settlement. There is new technology here—potentially dangerous, yes, but nonetheless valuable. And there is value in getting a chance to study the TITANs' work, to see how they design and think.

Karlinsky: Brak Kodel is not a transhuman-habitable world. *[invokes an entoptic display, with Brak Kodel and its star depicted; full information attached]* It is a rock ball with only trace atmosphere in close orbit around a star that's barely out of the red dwarf category. There are a handful of valleys that were roofed over by the previous owner *[invokes a new entoptic display, apparently showing an enclosed valley on an airless world with semi-chaotic terrain; image attached]*, sealed up, and pumped full of air—

Feng: And with a complete, stable mini-ecosystem installed, may I remind you? That's a scientific gold mine on its own.

Karlinsky: Most of that ecosystem's biochemistry is also more or less toxic to terrestrial life—so much for "habitable." According to the reports I've just seen from your own people, it doesn't even use terrestrial-analogue *DNA*. What the fuck are we dealing with there, Feng? Answer me that! Your people can't even tell me if we're opening up ourselves to long-term health risks just being around these, these things. The biomorphs that the TITAN left there all have radically modified

digestive and immune systems, just to allow them to eat the food and avoid a mess of allergies. The place is no more valuable as living space than any station we could build ourselves. Less. And more dangerous. And it's already occupied.

Rasmussen: Yes, and that's another factor. There is a humanitarian consideration in the case. These people that we found here, these *survivors*, have all been victims of of some ghastly experiment. All other concerns aside, if it ever gets out that we'd left them to rot, or simply killed them, we'd be made to look like monsters.

Lapousse: Absolutely.

Karlinsky: As opposed to importing monsters to the solar system. Monsters created by a TITAN for Mars knows what purpose. I know your bleeding heart aches for the poor abused natives, Rasmussen, but I think you've got the wrong referent here. These aren't people. They're abominations. They're experiments gone wrong at best, as Feng would like to believe, or weapons pointed at our heads at worst. I'd be remiss in my duties if I didn't point that out to you.

Feng: I disagree with that description. Those are, so far as we can tell, all human minds, whatever the oddities of the bodies they've been given.

Karlinsky: They *were* human beings, back when the TITANs harvested their heads on Earth. Even your own team admits that some of those morphs look like … botch jobs. Weird, and frankly sloppy. They have an insane array of genetic problems, which is why half of them have cancerous or pre-cancerous—

Feng: Not half, no, barely a quarter. Again, the biomorphs themselves are an item of scientific interest. As far as we can tell, these were not cloned from human stock, and their genetics are an approximation of human genetic code. It's as if their makers created them from scratch, using a recipe in a cookbook. It's a fascinating lesson in neogenetics.

Karlinsky: Whatever. This *[invokes a new entoptic image, a composite of human-looking biomorphs; image attached]* is not a transhuman in any sense we recognize it. You've all seen a lot more pictures than this; you know how inhuman some of them look, even if they're nominally "healthy." But that's *not the point*. The *point* is that their brains are much less human. Those egos have been through Mars knows what, installed in facsimiles of human bodies where they don't fit, and toyed with by some machine monster. And they've adapted. They have become monsters.

Rasmussen: Well, that's one of the issues still under evaluation, yes? Can we extract these egos and repair them? Restore them to transhuman brain structures, provide them with therapy?

Karlinsky: Fucking hell, Rasmussen, do you even read the reports on Brak Kodel or are you too busy swapping beads for whuffie and dancing around a drum circle with the economically challenged primitives of the outer system to keep up?

Lapousse: Karol. Please.

Feng: Unfortunately, that would be, well, rather a large project. We know that their brain structure is indeed different. We're fairly confident we could map it and upload them, and we're looking into it, but …

Karlinsky: But there are some *serious security concerns* regarding infection, of course, so it's a slow process to make sure nothing goes wrong. Let's just admit it, shall we? We're trailing along behind demons, trying to work out how they do that thing with the pitchforks and the fire. And you want to douse us in gasoline and jump in to see how hot the flames are.

Lapousse: Well, then. If we're not going to shut the place down, and we can't easily evacuate the, ah, displaced persons—or we don't want to, thank you, Karol—can we work with them? Establish some kind of stable order there while we set up an installation? I understand that there's the beginnings of a government in place over there.

Karlinsky: Calling it a government is being too goddamned generous.

Lapousse: Then what is it? Please enlighten us.

Rasmussen: The, ah, the faction who call themselves the Servants in Truth like to claim a certain amount of authority—and they can back that up, because they have control over some remnant technology. But it's really more of a tribal society like existed in certain parts of the sub-Saharan regions of the African—

Lapousse: What do you mean when you say "remnant?"

Feng: Left over by the … by whoever or whatever created the Brak Kodel enclosed environment.

Karlinsky: The TITANs. You can say it. Of course those gibbering idiots, they don't understand it—nobody human could—but they have some idea how to work the controls. They've got machines that can synthesize not just the sort of items we could get out of a cornucopia machine—clothes, simple tools, temporary building materials—but also a few complex items we've not seen before, the stuff that has had Feng's people so excited. And they can control the opacity of parts of the roof material, which gives them a degree of control over the microclimate in places. We also think that they've got remote surveillance capability.

Lapousse: I sense a "but" coming here.

Karlinsky: They aren't rational. I think that they think they're servants of the gods. Any conversation comes back to how they're superior to you, and you shouldn't forget it. There's some left-over Earth religion mixed up in their jargon, and they love talking about "the Godhead" and "Perpetual States of Grace." They have this disgusting statue that they worship at the lakeside of the main valley, a pile of junk and rotting matter. They all get out and bow down before it and howl and prance about like fucking animals.

Feng: I'm afraid that Karol is right. They aren't a government, just a self-appointed priesthood. It's impossible to get much in the way of useful sense out of them.

Lapousse: I understood that one of them was proving quite helpful. Umm, "Kyle McMillan," wasn't it?

Karlinsky: Huh. Turned out that *he* wanted us as allies against a couple of other sub-factions. And by the way, the enemy groups were also both being led by Kyle McMillan.

Rasmussen: Pardon?

Karlinsky: Took us a while to work this out—the subject seems to be a bit taboo—but the TITAN had a twisted sense of humor with its experiments. It created forks of quite a few of its captives; sometimes it ran them in a lot of very different morphs, sometimes it created a bunch of identical minds in identical bodies. Some forks form tight little cliques, others are in denial—like I said, taboo—and some of them want to gut each other. Usually literally.

Lapousse: What about the other factions?

Feng: Not a chance. We can talk to the Ungifted—that's what the Servants call them, and I'm afraid we've picked up the habit—but it's hardly worth the effort. They're generally apathetic at best, and … well, we think that many of them are borderline schizophrenic. I'm afraid that things were very unpleasant there for the first couple of years after the population was resleeved, and a lot of those people couldn't handle it. The hormones in those bodies don't help; some of them are prone to extreme mood swings. We can tell them what to do, and so can the Servants, and they'll often do it—but they really need therapy.

Rasmussen: You could always talk to the Feral. I have reason to believe—

Karlinsky: Ha! I could also go talk to one of the killsats around Earth and ask if I can just take a quick trip down.

Rasmussen: Pardon?

Feng: I'm afraid that Karol is joking and Helen is being perhaps overly optimistic. There is a third category of, ah, "native" on that world. As I said, things were very unpleasant there for a few years …

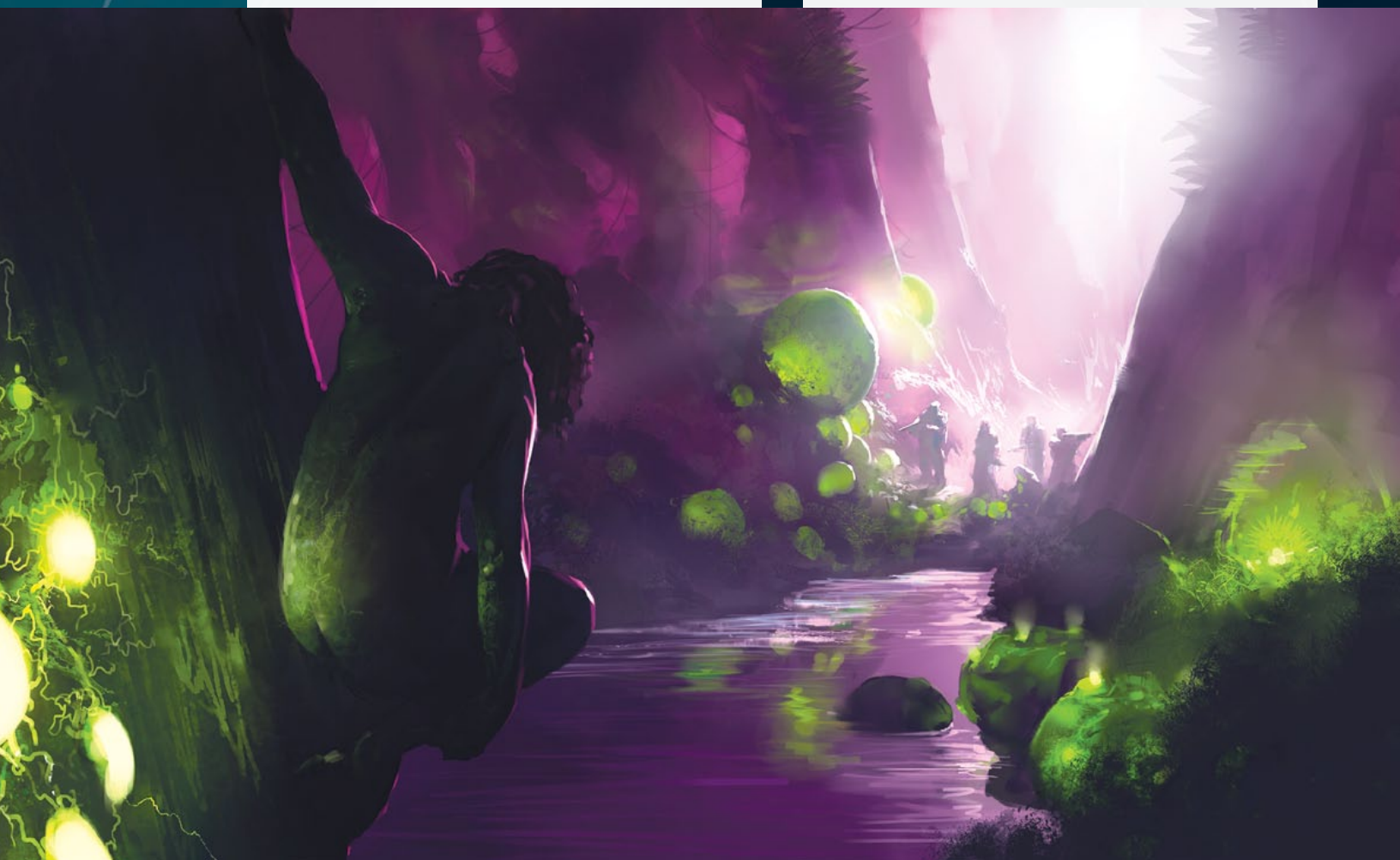
Karlinsky: "Unpleasant." What a useful word.

Feng: As I was saying, things took a while to settle down even as much as they had by the time we arrived. And the—yes, okay, let's assume it was a TITAN—it evidently didn't even try to control or assist all of the groups, it left one as a sort of control group. Some of them presumably decided to survive by any means necessary, and some of them had been given morphs that were well suited to this attitude. In other words, perfectly adapted to living in the sort of tropical jungle analogues that exist in the valleys.

Karlinsky: In other words, they voluntarily gave up on humanity and decided it was kill or be killed.

Rasmussen: Sounds like you'd get along swimmingly.

Feng: Ahem. Really, we don't know what happened. There's a whole set of taboos attached to discussion of the topic of the Feral among the other two groups.



Rasmussen: And some very interesting folklore and a rather evolved oral storytelling tradition.

Karlinsky: Which should tell you plenty in itself. People snatched up from their homes, murdered, then brought back to life in insane conditions. Feng, it was your people who found the remains, who scanned the graves and the ashes of the cooking fires.

Feng: Thank you, yes. The Feral are a small group, I'm glad to say, but they do retain some dangerous habits of mind and their dietary choices are often, well, taboo I think covers it. I think that one way we could get the Servants in Truth on our side would be to offer them some security equipment and assistance, actually.

Karlinsky: They'd just use stuff like that to keep the Ungifted in line and to settle their own quarrels. My security consultants have already been twitchy, ever since the incident where two of them were killed. We're still not completely sure it was the Ferals that did them in, I still think the Servants may be playing us all. Giving them weapons would be the last thing to do in that case.

Feng: We could provide self-managing systems, with built-in constraints.

Rasmussen: Yes, indeed we could. And that, I think, is where we should start. We'll recruit a specialist social structures unit—Sandrine, that's your area—and give them as much security assistance as necessary; Karol, we'll sort you out an additional budget for protection of those units.

Karlinsky: This is under—

Rasmussen: Your protest is *noted,* Karol. However, as of now, we're going to see what we can make of Brak Kodel, and what we can get out of it. I need to report to the board on all of the projects and their concern is the bottom line and patentable innovations. There's no sign of ongoing TITAN activity here, just some traumatized survivors, and there may very well be some exploitable technologies here. It's worth investigating further. But, Sandrine—

Lapousse: Thank you … Uh, yes?

Rasmussen: I don't want you to think you have free rein. If Karol thinks that the risks here are too high … well, we employ Karol for her *proven judgment*. She is completely right that in any other situation where TITAN influence was detected, we would cauterize and never look back. The only thing Brak Kodel has going for it is that the TITANs seem to have moved on, and nothing they've left behind so far seems to be infected. We cannot ignore the possibility that this is a trap, however, or that the TITANs meant for us to find this little colony of theirs. You and Feng are to extract as much valuable information from this setting as you can *as quickly and efficiently as possible*. If we change our minds and pull out in a hurry, I still want you to have something to justify the effort. Do you understand me?

Feng: I understand.

Lapousse: Yes.

Rasmussen: Secondary to finding something we can capitalize on, I want a complete census of these survivors. If there's anyone interesting in there that we thought was lost during the Fall, I want to know ASAP. Any heads of state, corporate execs, leading scientists, anyone with a name that matters, bring them to my attention. If it turns out that we have some Nobel laureate or the grand-daughter of some hyperelite dynasty sitting around in the muck worshiping their machine god, we may have to put a different spin on things. In general, we need to identify who these people were and where they came from, and maybe that will help us determine what the TITANs were doing with them.

Feng: Well, as noted in my reports, the Servants we've talked to so far all seemed to have been, um, harvested by the TITANs from the same three cities on Earth: Kiev, Mexico City, and Osaka. It's worth highlighting that they all speak English on Brak Kodel, even those that had no proficiency for the language when the TITANs took them.

Rasmussen: Okay, that's another question for which we need to find an answer. Like I said, the board wants results but they also put me in charge of recruitment as well as image management here. If and when word about this exoplanet leaks out, I want us to be seen doing whatever we can to help those people. So we'll go multidisciplinary on this and look for all the answers we can. Find out about these freakish morphs, find out how to cure their cancers, and find out if there are going to be any issues with resleeving them. Play nice, get some cooperation from anyone there who isn't trying to kill you. If we end up having to bug out and sterilize the place, I want us to have solid grounds for doing so—a looming threat. Whatever; you know your businesses. I want preliminary plans and budget requests in my inbox within fifteen hours. So move.

GATECRASHING RUMORS: MYST TREE DEATH

Transcribed from an anonymous gatecrasher interview:

The next morning, Hirvelo was simply gone from camp. He had suited up and cycled the airlock, so we went looking for him outside. Eventually, we found his tracks. They went right up to the myst trees. Yeah, that's right, the damn myst trees that he would never shut up about. The tracks led right up to a tree, then just stopped. No other tracks around, not even any disturbances in the dust for at least a dozen meters. It's like he disappeared.

You ask me … well, nobody just disappears like that. Those things are supposed to be made out of nanofog, right?

Yeah, it ate him all right. ♣

CARNIVALE

I'm aware that there's been some worry regarding the creation of weapons of mass destruction or even seed AIs on Carnivale, so I went searching for a good account that we could pass on to field sentinels regarding the place. First off, I question whatever agency in the universe thought it was a good idea to let an entire scum flotilla relocate through a gate and set up shop on the other side. Second, talking to any of the actual inhabitants of Carnivale is pointless. It's rather like having a conversation with a very drunk, very perverse random conversation generator. It's like all the inhabitants are constantly high and in on a joke that you are not part of. Quite frustrating. Third, I am aware of standing policy to not treat anything Mr. Astrides says as a legitimate source of information, however, his account of Carnivale is by far the most coherent and contains the most potentially useful information of any I was able to collect. Finally, I heartily recommend that only agents able to deal with highly fluid social situations and coming from rimward backgrounds be assigned to any missions on Carnivale. I fear those used to dealing with inner system operations may have difficulty adjusting if even half of what Astrides says is true.

A WORLD OF SCUM

The following is a transcription of a conversation between Sentinel Luo and Donovan Astrides at the Blasted Brinker on Huisland Station in the outer system.

Okay, boyo, you've been staring me down all night. If you fancy a fuck I may be able to oblige you, but you're likely to be disappointed since I don't got any fancy bells and whistles in this body that make such activities more fun than just routine fluid swapping. If you're here to kill me, well bring it. This place is deadly boring and I could use a good spot of exercise. Either way I'm headed off to bed soon—yours, mine, or one in the infirmary, don't much matter to me. So what's your pleasure?

Questions? Oh bugger off. Are you serious? Well then, make it interesting, otherwise I got fifty kroners that says I can shoot you right here and toss you out the airlock without anyone here raising a finger to help you.

Carnivale. Now there's a name to conjure by. Good memories, or at least good fragments of what may be memories—or may be dreams. Are you thinking of going? If so, I hope you're paid up on your insurance. No, not because it's dangerous, at least not in the way you're probably thinking, but it will probably kill you. But that's the fun of it. Everyone jokes that they'd like to die fucking, but on Carnivale that's the least of the entertainments.

Carnivale is where good little scum girls, or boys, or both, or neither, get to go as a reward. It's kinda like heaven for people who think the idea of having to wait for an afterlife is a load of shit and there's no good reason not to kill yourself with fun, repeatedly, rather than hope there's some reward for not doing so right damn now. If that's your thing, then this is your Shangri-la, courtesy of a very lucky band of scum called the Monsters. That crew includes more than a few pre-Fall media stars who decided to start over with the scum and know what partying to excess looks like. Remember Angelina Germanotta? Yeah, she's one of their more infamous members, even passing herself off as their spokesperson, grande madame, dark mistress, exalted witch-whore-priestess, or whatever she's in the mood for that day.

Any and all delights you can imagine are to be had on Carnivale. Forget what places like Parvarti on Venus promise, they pale in comparison. The problem with the hypercorp sleaze dens is that they cater to people who have been told not to do something their entire lives, told that there's a morality that you gotta adhere to, and if you don't then you're a bad, bad boy. So naturally all those fuckers want to slink off somewhere in the clouds and get off doing just that. Boooooooooring.

Their idea of transgressive is to sleeve into something forbidden, like, gasp, a neo-hominid, and then get their monkey rocks off in a giant orgy with a couple dozen pleasure pods. This is what the scum of Carnivale would call "vanilla."

Of course, being part of a giant moaning sweaty pile of fuckmeat does have an appeal all on its own, but if that's the end-all-be-all of your ambitions then you can do that here and now. No, Carnivale is for people who realize that morality, at least when it comes to things like sex and propriety, is flexible, and that true pleasure comes from running every last urge you have, carnal and otherwise, into the ground in a process of orgiastic self-discovery. This isn't just sex for pleasure, it's sex and violence and substance abuse taken to extremes of existential enlightenment.

You don't go on vacation to do the shit you could do back home, and that's the beauty of Carnivale. You may question why the autonomists gave oversight of a transhuman-habitable planet to a bunch of scum, but you're thinking about this wrong. Imagine you're part of that first group to go through the gate. You find yourself on the other side, standing on a windswept cliff overlooking an endless ocean, and

CARNIVALE

Type:
Terrestrial (Earth-like)

Primary Star:
B8V (Blue-White Dwarf)

Gravity:
0.42 g

Diameter:
8,900 km

Atmospheric Pressure:
0.82 atm

Atmospheric Composition:
69% Nitrogen, 23% Oxygen, 6% Carbon Dioxide

Surface Temperature (Min/Mean/Max):
–120 C/15 C/80 C

Day Length:
68 hours

Orbital Period:
16.9 years

Satellites:
4

Gate Access:
Fissure Gate

your suit is telling you that, fuck yeah, there's oxygen and the bacteria and other gunk in the air is a negligible nuisance for your medichines to adapt a solution for. The temperature is balmy, the gravity is half of Earth's, and there's good air pressure at sea level. So you take a risk, because you're a risk taker—that's why you jump through gates and travel halfway round the universe. What's this in comparison to that? You take off that helmet and let your internal systems integrate and BAM! You get a rush like you just took a hit of buzz and you're feeling good, really good, and you realize that the "grass" you're standing on has a pollen that gives you an endorphin rush like nothing else. Well, friend, let me ask you, who better to set up shop and keep watch at this place than the system's favorite good-time girls and boys?

Of course, the Monsters granted mucho rep to the Love and Rage Collective for letting them set up shop on Carnivale—I mean, wouldn't you? It was a win-win for everyone. Well, except for people who think recreational murder between consenting sapients is a bad thing, but who the fuck cares about them, they're not invited.

CORSE

Corse is a fresh gate discovery, still kept out of the media feeds. It is believed to be the farthest gate from Earth so far discovered, by an order of magnitude (the vast majority of remote gates have been within Orion's Arm). Recent events here are of particular interest to Firewall, given a high likelihood of TITAN or alien activity.

MISSION JOURNAL

[Begin Recording]

This is the personal log of [erased]. In two hours, I step through to a new exoplanet. Based on prelim reports, this one looks fascinating. Let's hope nothing goes horribly awry this time. I have enough gaps in my memory.

DAY 1

I step through the gate, the new gravity tugs until I adjust, and then I look up—and stop. The pictures didn't do this justice. That's the *galactic lens* out there—the Milky Way galaxy, far as we can tell, but the astronomers are still plotting quasars to be sure. An ocean of stars lies before me.

We're on the edge here, where stars thin out to total blackness. This is going to be interesting, even if this world doesn't look much to write home about at first. Just a big icy rock, part of a thin, open ring system around a gas giant that happens to rise dramatically over the horizon a few minutes after I arrive. All well within the parameters of the accepted models. I'm here to manage some automated manufacturing facilities, which we can use to bootstrap an industrial base, and run up some robot probes and instruments to analyze the system.

Time to start work.

DAY 4

The planetary survey team has come up with something. Something *bad*, almost certainly.

Turns out this place isn't as bare as all that; they've found a bunch of structures about thirteen kilometers from the gate. Just local rock, cut and shaped to form some kind of structural complex, but obviously significant. There's also evidence of high-temperature effects in the vicinity of the structures. Even an amateur like me, looking at the survey drone images, can recognize the scars of a spaceship take-off or two when I see them.

First assessments of this stuff are very tentative, obviously; we're an academic team, so we don't leap to wild conclusions ahead of the evidence. But someone said that everything points to all this stuff being *recent*—within the last few years. (Makes sense. Things would obviously have blurred and ablated over longer periods.) In other words, these aren't relics of an ancient space-faring race; they're junk left behind by someone else who came through the gate just prior to us, presumably from our own solar system.

In everyone's minds, of course, this means TITANs. Suddenly, this place looks deeply bloody scary, not just *interesting*. Now we're all walking on eggshells. However, the astronomy team says that there's no sign of activity that they can detect in local space. So maybe whomever (or *whatever*) it was have gone on to wherever they want to be, and we're alone here. We can hope so, and nobody wants to scream and run for the gate until we have proof to the contrary—we're all far too interested in the science. So we're making snap evacuation plans but carrying on as before, for now.

DAY 7

Interesting chat with Hans today about this whole system location. I commented over lunch that sitting at the edge of the galaxy makes for a wonderful view, but doesn't really represent prime real estate in a civilization's grand scheme of things. Star systems and worlds are sparse and spread thin, for a start. Not much in the way of heavy metals or resources.

"Maybe not," he said, "but if you can make full use of things, it could be a useful sort of environment."

I asked him to explain.

CORSE

Type:
Tidally-Locked Rocky Jovian Moon

Satellite Of:
Himmelsk

Primary Star:
A2V (White Main Sequence Dwarf)

Gravity:
0.01 g

Diameter:
520 km

Atmospheric Pressure:
Negligible

Atmospheric Composition:
Trace Water Vapor and Nitrogen

Surface Temperature (Mean):
50K

Day Length:
13 days

Orbital Period:
13 days

Satellites:
None

Gate Access:
Pandora Gate

"It's thermodynamics," he said. "Don't think about how much crude energy you have in a system—think about the *entropy*. What really matters is information processing, isn't it? Large computational structures running fast and reliably. We can still assume that, if you have enough processing power and some ability to influence the physical universe, you can work out how to get whatever you want, in material terms, by nudging things into place just right."

"So you think that an advanced civilization would mostly just be a big mass of, what, the fabled computronium?" I asked.

"Who knows?" Hans smiled. "But I do think it would want big, powerful computers, using the smallest possible components. Computronium, yeah, if you insist. And for that sort of thing, heat is just *noise*. It's a nuisance; it makes processing less reliable. Out here would be a great place to site your planet-sized computers, away from the sort of starlight that'd warm you up too much. Away from gamma ray bursts and supernovas, too, for that matter. They mostly show up in the spiral arms, and presumably they're trouble, even for an advanced civilization."

I asked if an "advanced civilization" wouldn't put a stop to things like GRBs and supernovas, but Hans just said something about not getting into fights if you can walk away. And I pointed out the shortage of material resources in this area of the galaxy, but he just shrugged. "There's some," he said, "and in any case, you can always use gates, can't you?"

He's crazy, I reckon. But he's an entertaining talker.

DAY 8

Stellar Astronomy is getting tetchy. Their observations of the local star field fit the standard models less and less well the more that they look at them. "Excessive entropy in the system," one of them said. I suggested that they take another look at the theoretical models they use, and they basically threw me out of their office.

We'll have the first probe units launched tomorrow. Be interesting to have a view of the ring system from another angle.

DAY 19

Another synthetic anomaly in the neighborhood—and this one looks weirder than that TITAN launch complex or the subtle stuff that some of the departments have been waving around since then. One of the probes was positioned to pull an intercept on an asteroid that is passing through the ring system on what looks like a hyperbolic path; its spectra didn't look like the dirty ice that makes up most of the rings (and this moon, for that matter), so we assumed that it was a sample local independent rock—maybe even nickel-iron, which should be relatively scarce in these parts—and decided to take a look.

The intercept was fast and distant, but we've given those probes decent senses, and everybody involved sat around watching the data flow and eventually the images. Those were flagrantly interesting; the thing was somewhat regular, with a very smooth surface in places—not actually symmetrical, but I think that everyone that's looked at it agrees that it's probably artificial. The spectroscopic measurements would seem to support that; most of the exterior was something other than rock. The details are still hazy, but the metallurgy expert systems reckon that it's some kind of complicated alloy. And there were other parts that we can't analyze at all confidently from this pass—too dark, not enough reflected energy. From the IR imagery, I'd guess that we're looking at exposed technological systems.

So a lot of us were getting nervous and talking about TITANs again at this point, but Shelly from Xenology said that this didn't fit the pattern—as if there's any sort of reliable *pattern*. Still, that calmed us down while a couple of high-magnification images came in, and somebody pointed out that the casing looked like it was scarred and dust-pitted, very heavily. Shelly insisted that the thing was *old*—centuries to millions of years, depending what sort of space environment it's been passing through. Which makes it very interesting, but hardly likely to be a TITAN artifact. It's very, very old junk.

Then someone pointed out the obvious thing we'd all forgotten; the lack of IR radiation. The thing is basically at local background temperature. Whatever it is and whoever built it, it must be stone cold dead now. Still, we need to know more. Once we have proper space capability, we'll have to chase after it.

DAY 21

Stellar Astronomy's latest grouse is the local dust cloud—a big, dense thing within a parsec of this system. They say it's much too massive. They reckon there must be some large bodies in there, though this is yet another thing that doesn't fit standard models.

They're assuming it's just full of a bunch of rocks, of course—they're only slightly excited. But I keep remembering something Hans said about screening large, highly advanced computronium systems from thermal interference. I'm beginning to think that the edge of the galaxy may be a cool place to be. Literally. Perhaps the bigger kids know that too.

DAY 32

This is getting serious.

Astronomy's automated sky-watchers threw up an alert earlier today; they'd picked up a moving IR trace, quite a strong one. We turned a couple of the probes to triangulate, and they confirmed that it's in this system, though some way off as yet. Just from the visuals, we guessed that we were getting an oblique view of a fusion drive flare; spectroscopy confirmed it.

So we plotted the thing's velocity and position and took some best guesses as to its previous course. Tracking back, we're guessing that it started from this moon—from the gate—launched itself out towards the edge of the system and then very recently turned

around and started heading back this way. It must've been running cold for a while, which is why we hadn't spotted it. Now it's decided to burn fuel and not care about being seen.

The word is that everyone who wants can evacuate at the first opportunity, though there's a call out for volunteers to stick around and continue observations. The trouble is, access to and through the gate is limited, so the evacuation is proceeding rather slowly. It didn't help when the people on the other side used one spell of access to haul something through to here from there. A big package. Rumor says it's a nuke, or maybe an antimatter bomb, which I guess makes sense. Still, no one's panicking yet.

I tried to find Hans, to ask his opinion on the situation, but apparently he managed to arrange to be one of the first people evacuated. He's smart.

There's an idea I'd love to bounce off him. Every time I look at that fusion flame—that TITAN, let's not mince words—and the trajectory plot that goes with it, I find it harder to believe that it's an irritated property owner, coming back to clean out the pests in its yard. Does it even know that we're here, I wonder? Does it care right now?

Because to me, it looks like it's running *away* from something. Running for its life.

DROPLET

Anytime we find ruins of an alien civilization, Firewall pays attention. Maybe the extraterrestrials had bad luck and fell victim to circumstances beyond their control. Maybe they were stupid and did themselves in. Or maybe something else had it in for them and took them out. No matter what the scenario was, they ended up dead. Kaput. Extinct.

If it can happen to them, it can happen to us. So anytime we run across dead things, we pay attention. We look into it cautiously. We see if we are vulnerable.

And if we are, we put plans in place to run or fight, as necessary.

ABUNDANT LIFE, ABUNDANT DEATH

Posted by: Peacock Jones, Proxy

Droplet is a large world, slightly less dense than Earth, that is covered in deep oceans. It superficially resembles Earth, if Earth was slightly larger, if sea level was almost a kilometer higher, and if gravity and atmospheric pressure were higher. Dry land makes up only approximately 8% of its surface.

Droplet is well known as one of several worlds with Iktomi ruins, strongly indicating that the Iktomi also made use of the Pandora gates. Even more intriguing are the archeological ruins of an even older civilization that seems to have arisen and died out here. Perhaps topping both in curiosity value and age is a large, unique construct known as the Toadstool.

Given its habitable environment, its native wildlife, and its archeological value, Droplet has attracted quite a bit of interest and now boasts a sizable colony.

DROPLET

Type:
Terrestrial

Primary Star:
K0V (Orange Dwarf)

Gravity:
1.12 g

Diameter:
15,300 km

Atmospheric Pressure:
1.4 atm

Atmospheric Composition:
89% Nitrogen, 8% Oxygen, 3% Argon

Surface Temperature (Min/Mean/Max):
–80 C/18 C/65 C

Day Length:
29 hours

Orbital Period:
182 days

Satellites:
None

Gate Access:
Pandora Gate

NATIVE LIFE

Other than seaweed-looking plant-like organisms growing on land, all of the land-based life on Droplet is amphibious. There is an entire class of triphibian flying creatures that begin life as water dwellers and metamorphose into flying creatures that can also walk on land and swim in Droplet's seas. Though Droplet's gravity is slightly higher than Earth's, its atmosphere is considerably denser, allowing flying creatures to grow as large as 100 kg. Some of the larger flying predators occasionally attack transhumans.

Much life on Droplet is larger than the average transhuman, and the oceans are infamously filled with large and hungry predators that are not averse to eating transhumans or even small bots or vehicles. Though the largest of these predators are confined to the oceans, there are several species of large, multi-legged, shelled predators with both paddles and legs that are equally swift and deadly in and out of the water. The largest of these grows up to 6 meters long. All long-term installations on Droplet are surrounded by barriers fitted with stunners and agonizers to drive away native life. Visitors are warned of the dangers of wandering outside of these protected regions and everyone on Droplet carries some sort of weapon.

EXTINCT LIFE

Droplet's native life seems to have given birth to an advanced, sapient life form approximately 4 million years ago, which developed a technological civilization around 1 million years ago. Dubbed Amphibs by the first xenoarcheologists to examine their remnants, the natives of Droplet are believed to have been a six-legged amphibious species with one pair of hands, one pair of legs, and a pair of intermediate limbs that could be used for either walking, swimming, or manipulation, as circumstances demanded. Study of the Amphibs is hampered by the fact that at least half of their ruins are underwater, since they built all of their settlements on the coast and built both above and underwater equally. It is speculated that plate tectonics have moved much pre-existing dry land

below sea level in the centuries since, moving many ruins underwater. The wet environment both above and below water has also accelerated decay. Xenoarcheologists believe that the amount of ruins still recognizable is a testament to how widespread and sprawling their society had become. Most have left traces that are only visible using advanced satellite imagery. Current evidence indicates that the Amphibs managed to develop industry and electronics at least as advanced as those found on Earth in the late 20th century. There is no indication whether they ever ventured beyond their world, by either space travel or Pandora gate. They did, however, have microcircuitry and may have had fusion power.

The end of the Amphibs is as mysterious as much of the rest of Droplet. The Amphibs clearly had the beginnings of an industrial culture when their planet entered into a severe ice age. Though their technology continued to advance for several more centuries, they then suddenly disappeared. There are three leading theories about their disappearance. One is that the severity of the ice age wiped them out. According to another, they learned how to operate the Droplet Gate and their entire species traveled through it to a warmer and more hospitable world. The recent discovery of images of the gate in late Amphib art supports this idea, but only circumstantially. The final theory, backed by some evidence of cratering and irradiated materials, is that the Amphibs died in a cataclysmic conflict, wiping themselves out in a world war or suffering destruction from some unknown force. Some proponents of this later theory look toward the unusual Toadstool as a potential factor—and a lingering potential threat to transhumanity as well.

Whatever the facts of their disappearance, the Amphibs did leave one thing behind aside from ruins. The Amphibs had domesticated a species of sentient but only semi-sapient creatures as similar to them as gorillas and chimpanzees are to unmodified humans. When the Amphibs vanished, they left many of these creatures behind. Known commonly as hexanewts, these creatures still inhabit the more intact Amphib settlements. At first there was speculation that hexanewts might be the devolved remnants of Amphib civilization living in the ruins of their former glory, but recent research indicates the hexanewts were domesticated companion animals. A current debate rages among astrobiologists over whether the hexanewts were domesticated or genetically engineered.

THE TOADSTOOL

This unique alien construct rises from the floor of a shallow ocean, just offshore from Davis Island, approximately 600 kilometers from the Droplet Gate. It is shaped like a mushroom with a stalk 80 meters in diameter, rising 90 meters above the ocean's surface and extending 80 meters down to the ancient volcanic bedrock that makes up that coastline. Above this "stem" is a flattened ovoid, 460 meters in diameter and 110 meters thick. It is clearly artificial and seamless, made of unknown but sturdy composite materials. After detailed examinations, scientists now believe this structure is over a billion years old, likely established well before the evolution of the Amphibs, when Droplet itself was a much different planet. Despite its age, the Toadstool appears to be in perfect condition, as if it was created no more than a few years ago. Close scrutiny has revealed that its walls swarm with specialized nanotechnology that keep it in perfect repair, removing algae-like biological growths that would normally accumulate from the ocean.

Researchers also assume that these nanomachines—or some other unknown mechanism—are responsible for the fact that the stem of the Toadstool is only 200 meters from the shore despite a billion years of erosion and slowly shifting geology. Though the Toadstool has proven to be impenetrable to all forms of scanning, a careful examination of the underlying rock indicates that this structure is mostly hollow. So far, all attempts to gain entrance

UNUSUAL CONTACT

To: <encrypted>
From: <encrypted>

Jaques, there's something I need to share with you, something I was afraid to bring up before. When I was with that team investigating the Iktomi's theorized research, I spent several weeks on Davis Island, near the Toadstool. During this period—especially the times when I was in close proximity to the artifact—I was constantly plagued by headaches and phantom acoustic phenomenon. The longer this went on, the more I became convinced that this was a consequence of being an async. Something about the Toadstool was impacting my psi awareness.

I tried to focus my sleights, to see if I could hone in on the source. This was not like making mental contact with another or psi awareness of another entity, it was … like staring into the sun. The more I felt I made progress, the stronger the "signal" became—to the point that I was impeded by actual physical pain. I thought maybe I just had to try harder, to push through and make a breakthrough, so I took a night off and focused. I'm not sure what happened. I have a hazy memory of intense pain and phantom stimuli. I woke up late the next morning with an ungodly migraine and signs of hemorrhaging. I had given myself an effective concussion.

I spent the rest of my time there trying to shut out whatever I was experiencing. I can't say I was fully successful; whatever it was lingered in my sensorium, nagging at me. Eventually it drove me to seek reassignment and leave early. Most of the psi contact I'm used to has a feeling of … I don't know, familiarity I guess, the warm fuzziness of dealing with another transhuman mind. This had nothing of the sort. It was cold … cold and alienating.

to the Toadstool have failed. The walls are made of exceptionally hard materials and repair themselves within moments of any damage being done. No one has been willing to use nuclear weapons or other similarly devastating means to breach this construct's walls, since the goal is to get inside and not to destroy it.

Extensive Amphib ruins have been found in the vicinity of the Toadstool. The native life forms clearly built a large city around it and considered the Toadstool important to their culture. There is no evidence that they ever learned more about it than transhumanity currently knows, but simple graphics of the Toadstool can be found on many of their items that were in daily use.

The Iktomi Ruins

The higher gravity and the relatively dense atmosphere make it an exceptionally unlikely place for the Iktomi to settle, but Droplet is home to a small number of Iktomi ruins, mostly clustered around Davis Island. Though more recent (only around 10,000 years old) and made of highly durable materials, their ruins are exceptionally weathered. It seems as if these arachnoid aliens were as interested in the Toadstool as we are and most likely investigated the Amphibs as well. Presumably they also sought a way to access the Toadstool's interior, though there is no sign whether they succeeded or not.

Xenoarcheologists believe that, at their height, there may have been as many as 5,000 Iktomi living and working at their primary base here, with another 4,000 scattered around other settlements. Like sites on other worlds, the Iktomi seem to have disappeared suddenly and completely, taking much of their belongings with them. Explorers have, however, discovered a number of mysterious artifacts now referred to as dream shells. More than 300 dream shells have been recovered from Davis Island. These devices, like the other bits of Iktomi technology recovered from the ruins on Droplet, were found in carefully sealed storage compartments. Researchers believe that the Iktomi found Droplet's wet environment and dense atmosphere to be extremely alien and took many precautions to ensure that items they stored on Droplet would remain functional. The few intact storage compartments that have been found were made from unknown but exceptionally durable materials and were filled with argon gas.

Deep Discoveries

The most recent discovery on Droplet was by a remote submarine probe, which located what seems to be the remains of an underwater settlement 1.2 kilometers below the surface. Though only preliminary data is available, the settlement appears to be moderately intact, though clearly ruined and long abandoned. It does not resemble any of the Amphib settlements, nor does it fit their pattern of locating settlements within 5 kilometers of shoreline and at depths of no more than 100 meters. Several xenoarcheologist groups are currently competing to be the first to send down submarines to investigate these ruins more closely.

ECHO

Named for its twin suns, the Echo system has two notable exoplanets: Echo IV, an Earth-like terrestrial planet with abundant life, and Echo V, a barren and desolate rock upon which the first Iktomi ruins were found.

ECHO V: TANGLED WEBS

Posted by: Lord Of Light

Echo V is fascinating not for its desolation, which is apparently all too common in the galaxy, but for its ruins. The dusty remains of a fellow but long-gone sapient civilization brings to mind dear Ozymandias, but do not despair! Lo, I have knowledge to impart to you, oh scion of burning hedges!

The Iktomi, arthropodal alien chaps that they were, favored web-like constructions for their habitations. Tall spires were interstrung with thick cabled pathways. Very little of these settlements remain, time having scoured most of them down to nothing. From all indications, however, the Iktomi had spun their communities far and wide, populating this world by the hundreds of thousands. Yet the data indicates this was not their home—or at least not the world they evolved on.

Echo V's blasted landscape is misleading, you see. Once—quite recently in fact, on geological and astronomical terms—it was home to native life. Though not as crawling with microbes and bugs and larger things as its more Earth-like sister, and considerably colder, it was hospitable, at least as much as Mars. It is not clear how long the Iktomi, who presumably arrived via the gate, were here—maybe millenia, perhaps only a few decades. Long enough to spread out, settle in, and make their mark.

Something happened, then, something most likely bad. The geologists and xenologists and planetologists are still scratching their heads. Whether the Iktomi left or were wiped out is unclear—perhaps both. In the same time frame as their sudden disappearance, a mere 10,000 years ago at best guess, the nascent life forms of Echo V all went with them. This event was most likely as remarkable as it seems. There is evidence that indicates that Echo V was heavily transformed. Its atmosphere, for example, changed significantly. Teams of scientists from all different persuasions continue to try and wrap their neural processors around this puzzle. One of the leading questions is why Echo IV did not suffer a similar fate.

ECHO V

Type:
Terrestrial (Martian)

Primary Star:
K0V (Orange Dwarf)

Gravity:
0.48 g

Diameter:
7,800 km

Atmospheric Pressure:
0.5 atm

Atmospheric Composition:
89% Carbon Dioxide, 8% Nitrogen, 2% Argon

Surface Temperature (Min/Mean/Max):
–80 C/–45 C/25 C

Day Length:
22 hours

Orbital Period:
284 days

Satellites:
None

Gate Access:
Pandora Gate

IKTOMI PICTOGRAPHS

Though Iktomi ruins have been found on other worlds, the remnants on Echo V are more extensive and have yielded more items useful for research. Perhaps unsurprisingly, given their nom-de-guerre, Iktomi artwork is heavily influenced towards things spidery. This is also true of their pictographs, found on many long-abandoned structures, particularly in the region right around the Echo Gate. For quite some time now, xenolinguists have been unable to decipher the meanings locked within these pictographs. Indeed, some stated that the unusually raised and fluted forms had no discernible purpose save ornamentation. It is in the storms of adversity that the stoutest hearts are found, however. One researcher, refusing to surrender the fight, discovered entirely by chance that when viewed through compound eyes, the pictographs overlaid and created discernible patterns. Eureka screamed the chorus! And a new effort began to clean eons-old dust out of the pictographs.

Invested with this knowledge, once more into the fray went a few well-chosen intrepid interpreters. They drudge yet as you read, comprehension is hard won across oceans of time and species, yet this they know: the Iktomi worried often about the dread

IKTOMI BASILISK HACK?

To: <encrypted>
From: <encrypted>

We have tracked down the rumors about the Iktomi music and verified it ourselves. Some samples have indeed produced a reproducible effect in listeners—but only async listeners. According to our studies, asyncs who experienced these tracks were subject to the same dreams. The dreams were muddy and unclear, but prominent elements involved twin suns, spider-like creatures, and curious devices, with little variation. Different tracks produced different dreams, and some had no effect at all. Our async subjects experienced these dreams at different scales of resolution. Some received only the briefest glimpses, others could articulate their dreams in explicit detail. We are still analyzing the results for useful clues.

The quality of the recordings does indeed seem to be a factor, and experiencing the music in person seems to register a greater effect than listening to a recording. Notably, efforts to reproduce the compositions with our own musical software and instruments did not have the same effect.

things beyond the Weave. A warning, an admonishment, a statement of principle, and a truism: *Mind the Weave*. Over and over again, thirty seven times and counting across various structures: Mind the Weave.

What is the Weave? Well that pictograph was awfully clear—it looks just like a big web with a Pandora gate sitting right in the middle. What are the dread things? We don't know, sentinel, but you may get to shoot one some day. Isn't that marvelous?

Alarming revelations aside, the Iktomi's pictographs seemingly revealed very little about them other than creeping paranoia.

Iktomi Music

Echo V itself decided to give transhumanity a hand in revealing one of the Iktomi's other great mysteries. A great dust storm was kicked up out on the alluvial plains, and as it blew into a recently unearthed Iktomi settlement, wonder of wonders, the structures sang! Or rather, the wind blowing through the web-like architecture of the Iktomi created a series of aurally distinguishable patterns. As news of this spread, other research teams quickly set about exposing structures to the elements and removing scaffolding and other paraphernalia that was blocking the wind's access to the Iktomi's chosen instruments. Then, recording instruments at the ready, they waited.

The music—if that's what it is—is alien and haunting. It is noticeably different from transhuman rhythms and melodies, yet it still stirs the soul. Of course, we may not be experiencing the full composition—it is being "played" by ruins after all. A single downed spire or cable web may be transforming a happy tune of idyllic memories into a moody dirge, for all we know. Or we may be wrong thinking it is music entirely, and so right now thousands of transhumans are downloading the latest recordings of what is actually an alien culture's high-tech bug deterrent, driving insect pests away with the proper frequencies. Nevertheless, the samples have proven increasingly popular and are now spreading throughout the mesh and being remixed into current pop music hits.

Alexander

Alexander is the largest transhuman settlement on Echo V, home to around 7,500. It is a dome habitat, ensconced in a topped-over valley around 1,500 kilometers from the Echo Gate, right next door to one of the largest set of Iktomi ruins yet discovered. Founded by Gatekeeper and argonaut xenoarcheologists, it is effectively an independent city, run along Titanian technosocialist lines. The argonauts have established their Xenology Institute here, their largest extrasolar project, dedicated to the study of extraterrestrial life and civilizations. Numerous other hypercorps, minicorps, and autonomist collectives focused on xenoarcheology have a presence here, sharing data on the arachnoid aliens and collaborating on solving various mysteries. Gatekeeper CEO Xander Rabin keeps a private home here, taking a personal interest in the effort to reconstruct Iktomi society.

Alexander features a modest spaceport for the occasional shuttle trip to Echo IV. It also has a farcasting facility and body bank with a meager supply of available morphs.

Echo IV: Megafauna Paradise

The unimaginatively named Echo IV has no Pandora gate, which means you are either taking a standard shuttle (of which there are presently two in-system) or farcasting over from Echo V. Seeing as the local choices for morphs are, in general, less than desirable, I would shuttle it or arrange for a decent morph to be shuttled over way in advance. Morph-wise, I would lean towards either "large and dangerous" or "small and unobtrusive" because Echo IV, paradise or no, is swarming with tooth-filled megafauna who will regard you as edible. I know, some of you are thinking, "Ha! I'll get a synth!" or some other such brilliant scheme that will take you off the food chain, but sadly, no, the charming natives of Echo IV are long on appetite and short on brains.

I hope you like trees, because you will be seeing a lot of them. A whole lot of them. In point of fact, there are almost more trees than there is ground over large portions of the two megacontinents that make up the bulk of Echo IV's land mass. The equatorial regions without trees have the quickest natives with the biggest teeth, as opposed to the arboreal sort who prefer to land on their meals from above. Of course, if you like small trees where that sort of thing doesn't occur, you can hang out in the stunted cloud forests of the equatorial mountains. There you only have to worry about the oh-so mischievous clown sprites that do nothing more than steal small shiny objects, large unbolted-down objects, be adorable on command in order to save their skins, and occasionally try to trick you into being consumed by large angry poisonous plants. I must in good conscience note that I'm not certain the plants are angry. The land anemones may just be hungry—all the time.

The main draw to Echo IV is bio, genetics, and pharma research. A number of hypercorps have set up research shops here, all well-defended

Echo IV

Type:
Terrestrial (Earth-like)

Primary Star:
K0V (Orange Dwarf)

Gravity:
1.08 g

Diameter:
12,200 km

Atmospheric Pressure:
1.1 atm

Atmospheric Composition:
70% Nitrogen, 27% Oxygen, 3% Argon

Surface Temperature (Min/Mean/Max):
–90 C/13 C/70 C

Day Length:
28 hours

Orbital Period:
202 days

Satellites:
None

Gate Access:
None (access via Echo V)

from wildlife predators and nuisances. One of them has set up with an exotourism outfit that sells big-game safari packages to hyperelites, capturing specimens that they turn over to the labs. The place also draws exotourists who come to hike and see the wildlife—and then usually to run from it screaming. I suspect we've had a few sick adventurers here who just came for that eaten-alive experience. Oddly, there is absolutely zilch in the way of spider-people ruins, though that hasn't kept various xenoarcheologists from scouring the planet, looking for Iktomi spoor. No one has any solid ideas for why they never made a presence here; they were around recently enough that things on Echo IV weren't so different. Maybe the Echolalian wildlife triggered their squick response.

FORTEAN

You call us mad because we see the potential inherent in the science of this age. Like ignorant medieval villagers you chased us out of your solar system, torches in hand, calling us monsters and fiends. But we are the new gods, the creators of life and the bringers of the mythic into reality. Who are you to judge until you've seen a griffin flying above you or sighted a bunyip emerging from her den? We have created new life and brought into being myth and legend—and in so doing advanced our understanding of synthetic biology immensely. Every new creation, every lost species brought back to life, is a victory for the transhuman spirit.

—Dr. Yu Ping Dalton

Fortean is a brinker colony that is rapidly gaining a reputation as an enclave for freakish oddities. To those who live and work there, it represents the potential of transhuman science wedded to imagination run riot. To outsiders, it seems like an extrasolar campus of Mad Scientist University. Fortean has drawn a cadre of brilliant biologists and genehackers who seek to avoid the constraints of law and custom in the solar system and pursue their dreams of bringing neogenetic creatures to life. In particular, the scientists of Fortean are obsessed with cryptids and mythological creatures, resurrecting the beasts and monsters from transhuman history and fairy tales. Their research has also attracted a small but prominent community of mercurials who take an interest in variant biomorphs for uplifts.

Firewall's attention was drawn to Fortean with the emigration of Dr. Dalton to the colony. Dalton has a controversial profile in the inner system, in no small part due to an arrest for her connections to an exhuman cell responsible for a small plague outbreak on Luna. Her vocal support for singularity seekers and scientific research considered taboo by the Consortium resulted in her self-imposed exile. Though Dalton is not considered an active threat, the lack of concern for safety measures and necessary precautions exhibited by her and her colleagues in their neogenetic and enhancement research is considered a potential risk. She remains under observation.

MONSTERS IN ISOLATION

To: The Love and Rage Collective
From: Gentle Dawn, on behalf of Fortean Station

Forty-one months ago we asked for and were given access to the exomoon then called AX-102, which we have since rechristened Fortean for reasons that will soon become apparent.

Following your own rules, we do not restrict access to opportunities to emigrate to Fortean. While the initial wave was mostly our own kind—that is, scientists interested in pursuing particular paths of neogenetics—we also attracted a number of mercurials, reclaimers, nano-ecologists, and preservationists. Our biggest coup, however, was recruiting Dr. Dalton and her colleagues. Yes, they have embraced a singularitarian mindset that is alarming to some, but they in fact have a strong commitment to positive transhumanism. Their sins are not those of attempting to follow the TITANs down into hell but of embracing the science of our times to make advances that others consider, quite literally in some cases, monstrous.

With Dalton and her fellows on board we've managed to make several breakthroughs in experimental biology and have created several new species, many based upon legendary creatures from Earth's past. Additionally we've been very successful in filling a niche long underserved in providing the uplifted with more morph utility. We have open-sourced these creations and shared them with others.

What brings me here today, however, is an issue of security. Many of our community members have experienced persecution for their work. Some fled from legal dangers posed by the small-minded nature of the inner system governments. Others have been ostracized or called abominations because the visions they wished to fulfill did not appeal to the moralistic and conservative attitudes of those who do not yet grasp the capabilities modern technology puts in our hands. Residents of Fortean on

FORTEAN

Type:
Icy Moon

Satellite of:
Baron

Primary Star:
K2II (Orange Giant)

Gravity:
0.07 g

Diameter:
4,700 km

Atmospheric Pressure:
0.12 atm

Atmospheric Composition:
55% Hydrogen, 35% Helium, 9% Methane

Surface Temperature (Mean):
–80 C

Day Length:
41 hours

Orbital Period:
3.1 years

Satellites:
None

Gate Access:
Fissure Gate

leave back in the solar system have received death threats, and one of our researchers was assaulted during a symposium on Titan.

We understand that your collective, while discouraging propertarianism or seizing what the gates provide for private gain, also recognizes that extrasolar colonies have a right to self-management. You respect that colonies may establish their own rules and customs, as long as no one is compelled against their will.

Given these circumstances and our community's interests, we find it necessary to increase our own security measures and deny those who lack the requisite @-rep and r-rep entrance. As you are aware, we exiled two recent arrivals, both bioconservatives of the deep green anarchist persuasion, earlier today. It was apparent that their presence in our community was not well-intentioned. Despite their protests of mistreatment and claim that they should have free access, they were handled politely but firmly and will not be allowed back. In our opinion they have no appreciation for the type of scientific research we are engaged in and would seek to harm the unique living beings that we create.

We are asking for your solidarity, respect, and support in this matter. We don't ask this lightly. We know that access to exoplanets should be encouraged. Other than our research station, however, Fortean has precious little to offer the casual visitor. The moon itself is a wretched miasma of hydrogen and helium clouds clinging to a bitterly cold landscape of rocks and methane ice. The exterior of Fortean Station is a hellish landscape best only visited as a synth. We do not deny the right of others to visit and explore the bleak Fortean landscape; we simply ask that you screen such visitors for potential hostile intent before you let them through.

Obviously the station holds some interest itself, but we are afraid we must restrict access to casual visitors. We are not a zoo, we are a community dedicated to serious research and some of our creations could potentially be dangerous to the casual visitor. We understand there is a demand from the curious and inquisitive, so we are discussing establishing an observation facility back in the solar system, for those who wish to see and be delighted by our cryptid creations firsthand.

We hope that we can come to a mutual understanding. We are happy to discuss this further.

GIZA

Giza is the most dangerous exoplanet in the known universe.

Yes, that's a dramatic opener and yes, I did it to stick it firmly in the front of your mind. Make no mistake: It's not an exaggeration. Other planets have nice, easy-to-understand hazards, but I don't write briefings about why falling rocks, alien weapons, or TITAN drones are bad things.

Giza's especially dangerous because it *doesn't* have obvious dangers. On the surface, it's an inviting world at the dawn of an evolutionary Renaissance. Plant-like life has just colonized the land and it's been good enough to pump a thin, breathable atmosphere around the planet. A flat with a thick coat, a big tank of oxygen to supplement the air, and a wide-brimmed hat (for stellar radiation) could blunder around just fine. At about half of Earth's gravity, it wouldn't be too trying on the flat's legs, either.

For a stereotypical thrill-seeking gatecrasher, like the ones who discovered it, Giza must've seemed like the jackpot. It's in that bullseye of transhuman habitable worlds and it has artifacts of alien manufacture.

Why is it the most dangerous exoplanet? Because of what those artifacts appear to be, what they appear to offer, and what we've found out—much to our detriment—they actually are.

Once Firewall became aware of the threat, we moved to eliminate it. Though the results of this operation are unclear, the Giza threat seems to have been neutralized—for now.

THE CRYPTID CREATIONS OF FORTEAN

To: Dalton
From: <encrypted>

I am more than pleased to continue our exchange of data. Please find some of our current research findings attached. I am most satisfied with our successful implementation of reptile genetics into the chimera genome and our progress in creating a neogenetic approach to naptha glands for our next generation of fire-breathing cryptids. I've included a partial list of the creations we're working on or have already completed work on:

Basilisk	Chupacabra	Griffin	Kting Voar
Bunyip	Diprotodon	Grootslang	Makara
Centaur	Garou	Jackalope	Phantom Cats
Chimera	Giant Anaconda	Kappa	Sasquatch

THE RUMORS ARE TRUE

To: <encrypted>
From: Breki Price, Xenologist, Proactionary Partnership

All right, I'll spill, but only because I know I can trust you, and I think your knowledge of xenoarcheology could help us.

The rumors are true. The blackboxes are real and they're on Giza. You can walk up, hook up, and talk to aliens.

I'm not sure how the rumors are getting out. Someone within Proactionary is talking, and that's not at all a good thing. If Go-nin or anyone else with influence gets wind of what we've found, it's game over for our little operation.

Honestly, it's sheer luck Go-nin didn't grok to it already. They did the initial probing for that gate address, and even though Proactionary had paid for the priority claim, they almost didn't give it to us when they saw how terrestrial it was. Luckily their probes somehow managed to miss the valley just a short drive from Giza's gate. Our first-in team didn't, and they were smart enough to keep it quiet. Go-nin has no idea what we've been playing with right under their noses.

The first artifact is 1012 meters into the valley, visible from the moment you enter it. It's a big, black, four-sided pyramid that's responsible for Giza's name. (The real pyramid at Giza had five sides, counting the bottom, but it looks similar in silhouette.) The valley contains another 529 smooth, black objects, all shaped like Platonic solids. They range in size from 3 to 198 meters across. Each is about 30% sunken into the valley's mix of silica, volcanic ash, and light, lichen-like plantlike life forms. The artifacts are comfortably warm, with an average surface temperature of 27 C—right around a baseline human's body temperature. They're opaque to all of our attempts to scan them.

We've destroyed three of the objects for research purposes. Well, one was research—the other two self-destructed when we tried to uproot them to carry them back through the gate. We also think previous-visiting aliens subjected other, lost artifacts to the same destructive inquiries. Traces of the artifacts' component elements suffuse the local soil along with fragments of alloys and synthetic fibers. Blackbox artifacts are tough, but not indestructible. You can cut into one with a torch heated to at least 6,000 C, but at that point the artifact collapses into a pile of dust: mostly carbon, iron, gadolinium, and outgassed hydrogen and neon. A burst of gamma radiation accompanies the process. This last phenomenon inspires speculation that each artifact contains antimatter or exotic elements. We think the artifacts are solar powered.

I've attached some of our data on the artifacts so far. Now that you're in-the-know, I'd like to get you out to Giza to take a look at them firsthand. I'll save the details on the alien chat-line for a more direct conversation. It's not the easiest interface in the world, and we do have some concerns. Suffice to say, though, it's an opportunity like transhumanity has never seen before.

GIZA

Type:
Terrestrial (Earth-like)
Primary Star:
G2V (Yellow Dwarf)
Gravity:
0.53 g
Diameter:
10,200 km
Atmospheric Pressure:
0.86 atm
Atmospheric Composition:
Nitrogen 88%, Oxygen 6%, Carbon Dioxide 4%
Surface Temperature (Min/Mean/Max):
–100 C/5 C/50 C
Day Length:
12 hours
Orbital Period:
412 days
Satellites:
5
Gate Access:
Discord Gate

TORII PRIME ARCHIVE 2341: GIZA STRATEGIC BRIEFING

Security Clearance Tengu Five

Intelligence confirmed our suspicions regarding Proactionary and an operation was launched to seize their Giza operation and assets for violation of contract; specifically, failure to report alien contact, failure to report alien artifacts, transporting contraband technology and information, and failure to pay royalties on exploits from these finds.

Our teams found and raided a Proactionary encampment near the remote Giza Gate, in the vicinity of a valley cluttered with large, black alien artifacts in various shapes and sizes. Our agents reported these to be communication devices that somehow enable real-time translation and interaction with extraterrestrial entities.

During the raid, our personnel captured Proactionary's lead xenotechnologist and forced her to illustrate how the devices were operated. Our operatives immediately noted that almost anyone approaching within 3 meters of an artifact received a request for contact via an open mesh connection. According to the xenotechnologist this is a recent development; the artifacts have apparently learned

BLACKBOX LOG EXCERPT: FIRST CONTACT

Blackbox: Someone is trying to contact you. Do you want to respond?
Marka: Hell yes.
Blackbox: What do you want to call them?
Marka: Call them Ishmael? No, let's track this. Contact One, I guess.
Contact One: Hello.
Marka: Wow.
Marka: Hi, I'm Marka
Blackbox: Sharing your name is not allowed. Your name has been edited out of your statement.
Contact One: Do you want to trade genomes? ■

enough from interaction with Proactionary personnel to ping any transhumans that now approach via standard, unencrypted mesh protocols. She thinks whatever internal AI systems exist inside the "blackboxes," as they call them, initially require a period of exposure and acclimation to new species to analyze language, culture, and communication protocols. This implies that the artifacts perform some active and even intrusive scanning, though our analysts have yet to detect any active signal besides the radio waves a device uses at the moment of contact.

Each initial contact was the same: a simple, standardized text message, in the user's native language, auto-rendered in voice. Here's the greeting in English:

> *This service allows you to make anonymous contact with sapient beings from elsewhere. Would you like to use it? Reply as you would if you were using one of your own information systems.*

Personnel who answered no were then asked:

> *Is this a permanent decision?*

According to the xenotechnologist, those who reply no are never contacted again (nor are any forks). If you say yes, however, the relic instructs you to establish physical contact. The xenotechnologist did so by placing her hands on its surface and kneeling beside it. The artifact exuded silvery tendrils from its surface that laced over her hands and penetrated her skin, connecting to her nervous system. According to the Extropians, this process also works on synthetic morphs, establishing a connection to its internal network, and they have even observed the tendrils to penetrate a hardsuit in order to reach the person within. When questioned about the wisdom of allowing an alien device to directly access a transhuman mind, the xenotechnologist said the first interaction occurred entirely by accident, in the course of examining the structures. Considering the damage done, they saw no point in withholding further contact, given the potential gains.

Our own analysts preferred a more cautious and limited approach. Several carefully edited delta forks were used to interface with the devices, their experiences then retrieved and analyzed in an isolated virtual environment. Each underwent a different subjective experience. The blackbox initially injects a menu interface modeled on standard transhuman entoptics and simulspace controls. This menu includes options for creating a public profile message, apparently broadcast to others on the blackbox network. These messages may be simple text, media like images or holo, data files, or even XP clips.

Amazingly, the system works as described: it allows the user to talk to aliens. The user can browse alien profiles and their messages and send or accept contact requests with whatever captures their interest. These initial forays counted a minimum of 115 available contacts, often much higher (the Extropian xenotechnologist claims they have counted as many as 100,000 online contacts).

Initiating contact, however, is a messy affair. Our forks engaged multiple contacts, some of which outright failed, presumably due to incompatible protocols. Others were able to establish a connection through auto-translated text dialogues, or were able to share images, XP, or other media. Still others were drawn into a simulspace-like interaction that seemed to allow a sort of filtered mind-to-mind communication link. This latter experience was found by most of the forks to be exceptionally alien, unnerving, and alienating, to the degree that one suffered a breakdown and then collapsed into a fugue state, though this may have been the result of our own psychosurgeons' sloppy neural pruning. Most described the affair as creepy and invasive, or as one fork put it: "like being mentally raped by a horny and lonely alien's awkward wet dream." The Proactionary researchers report similar difficulties.

The blackbox systems do seem to enforce a set of strict rules for communication. As far as we can tell, all connections are filtered in real time, preventing the exchange of unauthorized information. These rules are not pre-established, users are simply informed when they have broken them. Despite this opacity, our researchers have boiled the rules down through experimentation to four principles:

- ***Anonymity:*** *The blackbox artifacts censor any details about the user's personal identity, location, and home star system. It does not allow users to provide a personal name or physical description, and occasionally clamps down on descriptions of personality traits—presumably anything that might distinguish the user from another of their species. Still, the system allows the user to share some information that should clue an alien in if it has access to additional, observable data (planetary spectra, etc.). The most popular theory among our analysts is that the ban is contextual, based on what the blackbox devices think each participant could know, based on their current light cones and perhaps other, more obscure factors like cognitive abilities and culture.*

  The artifacts seem able to detect tricky behavior designed to bypass anonymity. One of our experimenters was banned from access after repeatedly attempting to bypass the rules.
- ***No Sapient Transfers:*** *The blackboxes block the transmission of any data such as egos, forks, or even AI code. It does permit a trade in snippets of code that could be used to build intelligent software, but never permits entire intelligences to pass. Our experimenters have tried to send infomorphs piece by piece, but it didn't work; the system simply refused to pass along anything after a certain point.*

- **No Local Conversations:** *Giza-based users are unable to see or connect to other local users.*
- **The X Rule:** *This is a catch-all for the simple observation that sometimes the blackbox network simply disallows certain actions or communications without providing a reason or cites a reason that doesn't fit previously observed protocols. Our analysts think the system may customize its rules by site or species and may even apply custom policies to individual users.*

It should be obvious to all that this find is unprecedented. If we can leverage these communication links for scientific knowledge, new technologies, revelations on gate use, exoplanet data, or other exploitable uses, we can transform Go-nin from a leading hypercorp to the leader of transhumanity. Our teams are already at work training a new set of edited forks for harvesting maximum output from this alien knowledge base.

PRIORITY SERVER DISCUSSION: GIZA X-RISK

Transcript of dialogue between Proxies A, B, C, and D (Anonymizing Activated)

Proxy A: You've all been briefed on the information provided by our sleeper inside Go-nin. We've confirmed that Go-nin has seized control of the artifacts and is engaged in systematic efforts to exchange information with alien sources. I'm concerned enough that I've already assembled a group of sentinels capable of infiltrating Go-nin operations, but I'd like to achieve a consensus on how to handle this situation before we act.

Proxy B: I propose total sanction. We have an explosive situation on our hands that needs to be dealt with quickly and thoroughly. These idiots are putting our entire species at risk. We know the artifacts are not invulnerable, so let's take them out before Go-nin gets their hands on something nasty—or gets infected with something nastier.

Proxy C: Isn't that a bit extreme? I admit there is some risk here, but this is also a fantastic opportunity. For the first time we may have a chance of sidestepping the Factors and actually conversing with other civilizations, rather than being kept in the dark. This is a tool just like any other. We just need to steer Go-nin to use it properly, or better yet force them to go public and share it. We could learn something crucial to our survival.

Proxy B: Right, I'm sure the creators of these blackboxes are Very Nice Aliens who want nothing more than to get everyone in the galaxy together to have some tea and a nice chat. Maybe if we're charming and entertaining enough, and laugh at all their jokes, these benevolent ETs will ration out just enough tech to accelerate our development and maybe, just maybe, if we spread our legs for them they'll let us join their League of Very Nice Space-faring Civilizations. Aren't we lucky the universe is so fair.

Proxy D: I must admit that I have concerns that this could be an elaborate TITAN ruse or a trick by hostiles to learn the full extent of our technological and social progress. I'm quite alarmed that we don't know what information Go-nin or the Extropian outfit before them has been sharing. Any sort of information sharing like that should be handled with transparency and oversight in my opinion, else it can easily amount to treason against our species, even accidentally.

Proxy C: I think you are over-exaggerating the threat here. Have you looked at the data provided on the Go-nin research so far? Of the initial 237 contacts initiated by Go-nin and their research teams, there was nothing in them to suggest that this wasn't what it appeared to be: a machine for initiating random conversation between two parties separated by vast distances. Approximately 15% of contacts were able to coherently communicate, amenable to talking to us, and had useful information they were willing to trade. Of the remainder, at least 35% were what Go-nin categorized as "bad faith operators" who seemed primarily interested in acting in a manner to provoke annoyance on the part of the user by attempting to discover what they found vulgar and offensive and spewing it back at them.

Proxy B: Yeah, the aliens were trolling us. We now have a shockingly large image file filled with what we believe are alien genitalia. That doesn't

BLACKBOX LOG EXCERPT: CONFUSED LINKS

Contact Twelve: My species communicates through sound-symbol sets and arranges them into pleasing forms.

Marka: Words, letters, and characters? Stories? Poems? Yes, we do that too.

Contact Twelve: Excellent. I could send you what you desire in exchange for at least 44 million bits of these sound-symbol forms but I would need a sample of the work first. I must determine if the sounds and meanings are pleasurable.

Marka: Accepted. This is called a sonnet. This is considered to be one of our most pleasing examples.

Marka: Shall I compare thee to a summer's day?

Blackbox: You may not describe cognitive transformations arising from sexual stimuli to this user. Would you like to see a list of suggested revisions?

Marka: What?

Contact Twelve: Unfortunate. Artificial nucleosynthesis is a useful technology, but I cannot share it without payment. ■

mean the next contact won't be handing Go-nin a template for a free energy machine that pumps out negatively charged strangelets, turning our entire solar system into quark-matter wreckage.

Proxy D: That is a key factor—at what point do the risks outweigh the benefits? Even if the majority of aliens making contact through this thing are non-threatening and willing to share, or even if they're griefers or mostly harmless immature alien children, what concerns me is that we have no way of filtering the friendlies from the hostiles. By using these devices, we may be passing valuable intelligence on to killer ET civilizations that may be using it to gather data on the latest uppity species to mark for destruction. Hell, since we're not even sure how the system works, they may also be hacking the hell out of everyone who makes contact to learn their secrets, replicate them at some remote facility, or even turn them into quislings.

Proxy A: It is true that the system almost seems intentionally designed to appeal to greedy, curious civilizations that are likely to destroy themselves. It's alluring. And that smells to me like a trap.

Proxy C: Oh c'mon, what intelligent civilization wouldn't look forward to making contact with others, even if just out of scientific curiosity or to establish that they're not alone in the cosmos? You're letting your paranoia and conservative clique agenda get ahead of you here. Get past your cognitive biases here and acknowledge that we can manage these risks if we're smart and careful.

Proxy B: Firewall maybe. Go-nin is not smart or careful, they're self-interested.

Proxy A: I'm not sure even Firewall could be trusted here. Our ignorance as a species is the problem. Giza represents the temptation early humans must have felt when they not only discovered the secret of fire, they discovered the fact that not *everyone* had it. They used the power of others' ignorance to enrich themselves, to hoard power and shore up gaps in their own understanding. They traded fire for better stoneworking, crafts for agriculture, the Greek Phalanx for the Hanging Gardens of Babylon. It's a memeplex that thrives on hierarchies: the gaps between administrators and rules, or workers and slaves. If we use the blackboxes from a position of ignorance, we're not going to get the good end of the deal—and we won't even know who our rulers are.

Proxy B: Agreed. Even if we managed to get these artifacts away from Go-nin, it would take quite a bit of effort and preparation to approach this "opportunity" in a way to ensure that we're not falling for the galaxy's biggest con game. The reality, however, is that we have no practical options for removing Go-nin from the equation, simply because they control the Discord Gate. Wrestling that from their pneumatic grip would be a major undertaking. Meanwhile, every second we waste is one they might be downloading something that will wipe us all out, or worse yet, make them our overlords.

Proxy C: That's not true, we have options. We can take it public. Go-nin has plenty of hypercorp peers that won't like the idea of Go-nin controlling the only open channel to the galactic community. Go-nin will realize they're in a vulnerable position, where everyone might turn on them, and will be forced to make it public access. We can pull strings to ensure the argonauts or someone with common sense and a good mind for the trade-offs of risks and benefits oversees the whole thing. It will be difficult, but not impossible.

Proxy D: I'm inclined to think that will take too long. Given the grasp Go-nin has here, I lean towards a total sanction option as quickly as possible. For all we know, Go-nin could have already been handed a poison pill by some entity that has decided transhumanity needs to go.

Proxy C: This is outrageous. You people are willing to throw away the best opportunity we've seen yet to make contact and get answers, to take transhumanity to an all new level, and you're going to destroy it out of some displaced notion that you suddenly know what's best for everyone? Your paranoia and conservatism in regards to security concerns is choking the life out of real opportunities for progress here. I'm blocking consensus here, I say we take this to an e-vote among the proxies.

Proxy A: Your objection is noted, but I think the rest of us may feel the situation is dangerous and imminent enough to push ahead with immediate action.

Proxy B: Absolutely, take them out now.

Proxy D: Agreed.

Proxy C: I knew joining this server was going to be a battle. You people are fools. I'm going to take this decision and this transcript to the others and make sure you all are held accountable.

Proxy A: I'd expect nothing less.

AFTER-ACTION REPORT

To: <encrypted>
From: <encrypted>

It's been three days, and Go-nin still hasn't been able to connect to Giza. Their techs have pulled out every trick they know, but they can't establish a wormhole link. I think we can assume that means mission accomplished, though we'll be sure to keep monitoring the situation. We know the sentinels infiltrated successfully and passed through the gate with the package without incident. That was the last time a connection was made.

I'll wait out the predetermined two week period before I have the sentinels resleeved, just in case.

I know this wasn't an easy decision, but I still think we made the right one—despite the hits our reps have taken. I know you're avoiding the discussion, but my muse has been keeping me appraised on the discussion threads, and the proxies seem very equally divided on the issue. Our call on taking immediate action has gotten us the worst criticism; even those who support the sanction feel like we should have taken the time to poll the proxies.

Personally, I've been through worse firestorms, I've made poorer decisions. What concerns me more about this incident is that if we understand these blackbox things correctly we're likely to run into more of them. If so many aliens are using them, they must be fairly widespread, right? I just hope that the next time we stumble across them, we're in a situation where we can handle them openly and with caution, rather than this mess.

One last thing. It's possible the Giza Gate was destroyed and is reassembling, as we've seen them do before. That means it will re-open for Go-nin at some future point. We won't know until then if all of the blackboxes were destroyed. Hopefully, we've at least bought some time for Plan B.

GIZA'S LOOSE ENDS

To: Coach
From: Miller

Remember that Giza situation, with the blackbox communicators? I've been following up on some dangling threads, and I found something interesting. You know the Extropian corp that first found the artifacts? Proactionary? It turns out Go-nin wasn't as thorough at shutting them down as we thought. A number of them escaped custody. What's more, they seem to have gotten away with some secrets they acquired from Giza. They had access to those devices for weeks before Go-nin caught them. There's no telling what sort of information they got their hands on—or how they plan to use it.

This all came to light because one of the Extropians was recently uncovered. Turns out he was selling designs for an experimental high-yield solar cell to the highest bidder. The corp that won the auction went on to implement the design, only to discover it was highly unstable. The explosion severely damaged one of their installations and forced over a dozen workers to be resleeved. The Extropian disappeared shortly after. I think Go-nin may have found him before we did.

A look into their records shows that 5 more are still on the run. We need to track them down and find out what they have—before anyone else does. ♣

JUST IN CASE

Don't say I never brought you anything nice.

Some time back, Firewall got wind of rumors of interesting product being shunted through the Vulcanoid Gate. We stumble upon talk like that all of the time, of course, and cursory checks turned up some interesting tidbits, but nothing that really triggered any x-risk flags. So it was shuffled to the low priority list, which of course never gets touched unless something on it happens to catch our attention in other ways.

Then we started seeing a familiar name scrolling across our entoptics. Someone named Justin Case seemed to have multiple appendages dipped into all sorts of unusual projects. Whomever this was, we tagged him as a major player, because he was linked to a lot of clandestine affairs. His relationship map was huge; we linked him to a score of hypercorps, some of them Extropian, and he also had serious connections within TerraGenesis and Venusian politics. We pegged him as the go-to for one of the oligarchs.

We were wrong. Justin Case wasn't a person, it was a project—and a place. Just In Case is right up Firewall's orbit. In a nutshell, it's a project to safeguard transhumanity's continued existence.

PARALLEL INTERESTS

Field Report, Sentinel Svet

I pulled some favors with a TerraGen coordinator that has a few secrets she'd rather not see mentioned and got our "work crew" assigned to the shipment we were monitoring. It turns out that Just In Case is one of TerraGen's secondary terraforming projects—a young and lifeless terrestrial planet with an unfriendly atmosphere that will take a long time to alter to fit our needs. Not that TerraGen is waiting—the planet already boasts significant facilities for transhuman habitation, though much of this is lightly populated. The reason being, Just In Case is viewed as a retreat should transhumanity need to evacuate or abandon the solar system. The exoplanet is capable of handling an influx of millions already, though much of this would be in cheap, temporary, inflatable dome habs. There are plans, however, to extend this capacity. Though food would be an issue, at least at first, water is readily available. They have data vaults capable of housing untold numbers of egos as well.

JUST IN CASE

Type:
Terrestrial (Young Earth)

Primary Star:
F7V (Yellow-White Dwarf)

Gravity:
0.78 g

Diameter:
9,900 km

Atmospheric Pressure:
0.8 atm

Atmospheric Composition:
75% Nitrogen, 20% Carbon Dioxide, 3% Neon

Surface Temperature (Min/Mean/Max):
–75 C/16 C/70 C

Day Length:
11 hours

Orbital Period:
15.5 months

Satellites:
4

Gate Access:
Discord Gate, Pandora Gate, Vulcanoid Gate
(all via its moon, Basilica)

One reason for choosing Just In Case as transhumanity's safe house is the gate situation. This system's gate resides not on the exoplanet itself, but on Basilica, the smallest of its four small, rocky moons (tiny enough, in fact, that it almost counts as a meteorite). Should the gates be viewed as a probable attack vector or other danger, Basilica can be blown out of its orbit—presumably on a trajectory that will eventually take it into the sun. I suspect it is laden with antimatter bombs for good measure.

The Basilica Gate is also reachable from the Pandora and Discord Gates, in additional to the Vulcanoid Gate. Word is that they are working on linking it to other gates, including extrasolar gates, to increase the number of avenues refugees can be evacuated here. They're also already in the process of constructing a space elevator using one of the other moons as an anchor weight.

Who's behind this? Where's the money coming from? That's an interesting question. We've tallied numerous hypercorps that are tied into this project in one way or another, as well as the Morningstar Constellation. From what we've heard, the initial impetus may have come from none other than Morgan Sterling, the head of ExoTech. They certainly have an impressive presence here, including a major AGI research lab. TerraGenesis is in on it, of course, as are many smaller outfits. Even a number of Extropian businesses are involved.

The real question to ask, however, is who *wasn't* invited to the party? That becomes readily apparent when you look around: the Consortium. There isn't a single Consortium corp here. Possibly this is because the Consortium most likely has its own contingency plans in place should the TITANs return or some other menace rear its multiple heads. More likely is that this place is *also* a contingency against the Consortium asserting dominance and somehow seizing control back in the solar system.

This place gets even more interesting when you realize that many of the corps involved aren't part of the survival bunker thing, they're actually working on other things. Like solar sail and experimental drive research. Like building a next-gen space-based laser propulsion system. Like an orbital shipyard, geared towards constructing small craft—say, something just large enough to fit a high-dive module with a cornucopia machine and nanodiamond storage filled with blueprints and egos. Keep all that in mind when you look at Just In Case's placement in a region of space that is dense with young stars.

There may be dozens of habitable or terraformable planets within a dozen light years.

A lot of this is still in its infancy, but the foundations are being laid for a world that transhumans could not only retreat to in safety, in large numbers, but could also soon begin expanding out into the galaxy once again—only using good ol' slower-than-light travel. Someone is thinking ahead—or at least hedging their bets.

What we keep asking ourselves is: why isn't Firewall aware of this project? Why aren't we part of it?

KRYPTON

Visit a world of glittering crystals, unworldly beaches, and fantastic nebula!

Travel through a Pandora gate and into the galaxy beyond! Take a break on Krypton, a world where gigantic crystals glitter in the extraordinary light of a blazing red sun! A world where the pristine beaches are lapped by volcano-warmed waters! A world where the night sky is illuminated by unbelievable nebula and our luxury resort hotel will tend to your every desire!

The Krypton Hotel, complete with spa facilities and everything you'll need to enjoy your tour of the limitless, fluorescent crystal fields and the warm fjords, is now booking for its fifth season. Our exceptional indentured staff will fulfill your dreams and desires!

Well, there you have it. Interstellar travel turned into a soulless PR pitch for an overpriced shitty hotel hyped up with dubious facts. Though it is one of the premier extrasolar resorts (less popular than Sky Ark, but more oriented towards socialites, inner system glitterati, and the lifestyles of refined hyperelites), and it does possess some features that are mild scientific curiosities, the planet is lifeless and there's very little in the way of extinction threats here. So why is Firewall interested?

Traffic.

To be explicit, one of our scanners was trying to track down a suspected secret hypercorp research project that might have involved Things We Do Not Involve Ourselves With Anymore, if you catch my drift. In pursuit of that goal, said scanner managed to score some records of material transfers through the Pathfinder Gate to various exoplanets. When the investigator ran this data through some customized search strings, they found an anomaly. Only it wasn't the anomaly they were looking for, and in fact had nothing to do with their search. It did, however, alert them to the fact that something strange and unreported was going on with shipments to and from Krypton—something that someone within Pathfinder was suppressing. Naturally, we assigned some sentinels to dig a bit further.

KRYPTON

Type:
Terrestrial (Martian)

Primary Star:
M3V (Red Dwarf)

Gravity:
0.32 g

Diameter:
8,700 km

Atmospheric Pressure:
0.4 atm

Atmospheric Composition:
Nitrogen 69%, Carbon Dioxide 21%, Methane 5%, Oxygen 3%

Surface Temperature (Min/Mean/Max):
–100 C/–40 C/30 C

Day Length:
9.1 days

Orbital Period:
40 days

Satellites:
0

Gate Access:
Martian Gate

NOT THE VACATION SPOT YOU EXPECTED

Field Report on Krypton :: Sentinel Aneki :: Part One

I booked myself a nice vacation on Firewall's tab and took the wormhole express over to Krypton. My immediate impression is that the adverts are indeed hype, but perhaps not as badly as it may seem. They manage to spin Krypton's peculiarities quite well.

Just to start with, there's nothing very special about the light of a red sun. I mean, c'mon, there are billions of the things. It's simple enough; smaller stars are more common than large, because it's more likely that small amounts of mass will fall together and form a star than large amounts. But those sorts of dwarf-sized stars can't muster much in the way of high-energy fusion reactions, so they burn cool and dim; they just glow red, in fact. Many are just plain dull, though admittedly, some are given to throwing up dramatic flares.

We do know that Krypton's sun, unusual for its kind, isn't prone to flares; everything looks pretty stable in those parts, even over astronomical timescales. The planet orbits fairly close in, though not so close that it's become tide-locked. Local temperatures are on the cold side, which means that with the exception of the beaches (which I'll explain later), it's too cold to leave the resorts unless you happen to be equipped for extreme temps. The atmosphere is also thin and low oxygen, meaning that unequipped biomorphs will find it a bit hard to breathe and will soon pass out. I understand that terraforming is being considered, though there's no feasible plan in place yet. With enough Earth-like alternatives to choose from out there, it makes you wonder why they chose this place as vacation spot—but their reasons were sound.

First, Krypton seems to have had an interesting geological past. Some process or event in that past somehow created the "crystal fields"—an understatement of a name, really, given that the crystals cover most of the planetary surface. These crystalline structures are indeed amazing and beautiful, especially given the exotic trace compounds that cause them to fluoresce in certain light—like when they reflect the colors of the nebula at night. It's a pretty

place, I'll grant them that. The crystals remain a draw for several scientific teams too, who are still trying to figure out exactly what caused them to form.

When the tourists aren't getting massages and mai tais in the resorts or guided tours of the crystal fields, they're at the beach. How do you comfortably hit the beach on a cold planet where you can't breathe? With science, of course.

The Krypton Hotel happens to be situated on the coast of an equatorial continent. Following an ice age with some heavy glacial activity, this continent was warmed up by a chain of supervolcanoes about 20,000 years ago. That chucked a bunch of methane into the atmosphere and sulfur into the water, all courtesy of underground microorganisms. Most of them perished, so it was bad for the ecology but great for the beaches. This is what you get when volcanic activity and a natural greenhouse effect follows a period of glacial activity: lots of warm fjords with hot springs and clean beaches that stretch for thousands of kilometers. That pristine quality is the result of a big fat die-off. There's no muck in the water (it's very deoxygenated too) and nothing crawling the beaches; the planet is now lifeless. It's all white sand here, but you can find black sand, red sand, green sand—all gorgeous and glittering.

The Hotel is conveniently parked in an area of the continent where the waters are warmed by thermal currents from undersea volcanoes. In the summer, the atmospheric temperature gets just high enough that a standard biomorph would be comfortable hitting the beach; not hot, just warm. They even shot a couple of satellite mirrors into orbit, to direct some more solar rays on this particular area.

You may be thinking that taking a dip with a rebreather on isn't all that attractive, and you'd be right, but the clever bastards thought of this. The fjords used by the resort for beach activities are all partially capped with transparent ceilings. The beaches are also dotted with mushroom-shaped air towers. These process oxygen and release it into the air, and they also fabricate biodegradable seed-pod capsules that are sprayed across the beaches, where they lay on the ground and release their payload of oxygen throughout the day. This whole process maintains a warm environment with a breathable atmosphere inside the fjords during the summer months. Granted, you have to be careful not to leave the fjords without gear, but most of the tourists just hop the train back to the hotel's comfy habitat.

One thing they don't advertise: Krypton stinks, literally. All those sulfates in the water really smell the beaches up. They solve this problem by scenting the air in the tourist fjords, I kid you not. Still, when you come out of the water, everyone around you knows it.

Aside from that, the most interesting thing about this place is the vacationers. Krypton draws from the solar system's upper crust, though perhaps not quite the top ranks. The facilities are a bourgeois dream, with every amenity accounted for. You'll find Venusian socialites, Martian politicos, hypercorp executives, high-end consultants, media icons, famous x-casters, Consortium congress-critters, dynasty brats, and similar rich and/or famous types cluttering the halls and beaches. I suspect the true oligarchs and power players find this setting beneath them, but there are undoubtedly still some important get-togethers happening here, meaning this place might be good for spy ops, blackmail, or similar intrigues.

The hypercorp venture behind the Krypton Hotel is Daxam, formed by the gatecrashers that originally surveyed Krypton and their venture capitalist backers. Aside from some high-level connections with inner system elites, there's nothing that stands out about them from a surface scan.

Still, there's no sign yet of what might be drawing extra resources here for hidden purposes. More on that as I dig in.

PROJECT PRIORITIES

To: Davos Khan, Project Lead
From: Cassie Schmidt, Research Lead

Look, I really do have to protest about the priorities being assigned to incoming traffic. It's bad enough that we only get a wormhole access window every third Thursday—or whatever the current rule is—but now, 86% of the time it is open, it's being used to shift construction material for the resort expansions through, a ridiculous amount of staff turnover, and, of course, tourists and their seemingly unlimited amounts of luggage. I am well aware that the research teams are the red-headed stepchildren of this endeavor, and that we do little right now to contribute to the company's profit margins. I must hope that you are not so near-sighted as to see some of the real coups we can make if we can get a grasp on how these crystals developed. This side of the company is an investment that requires time and patience—which includes not shunting our resource requests to the sidelines on a consistent basis. The conditions here are really growing quite intolerable, to the point where they are affecting our progress. I'm not above taking this issue to the board if I have to.

To: Davos Khan, Project Lead
From: Marek Kai Shan, Commercial Lead

I am pleased to report that work on our expansion proceeds ahead of schedule. Our fifth season is already 87% booked and we should hit all of our benchmarks en route to the gala opening.

Again I'd like to request that the scientific staff be taken off project at least temporarily. Not only does their gate usage take up valuable time and materials transfers, but I find that I have to spend an inordinate amount of time babysitting their petty concerns and squabbles. On top of that, she seems to have re-prioritized the work orders for large number of indentures

without proper clearance, effectively impeding my staff's capabilities. I cannot even fathom why she needs as much labor as her requisition forms seem to claim.

To: Irina Aronyan, Daxam CFO
From: Davos Khan, Project Lead

Ah yes, the other wonderful thing about work on the Krypton project: Cassie Schmidt and her memos.

I understand entirely why she was given worker/partner status; we need pure research scientists to tackle the mysteries this planet has to offer as well as practical engineers to figure out how to exploit that knowledge for profit. We're all aware that this place is a huge scientific oddity that calls for closer examination and that this research will take time and money and more time before it produces something we can capitalize on. She made a clear case to the board for keeping the research program online alongside the money-spinner tourism project. Plus, a number of people who'd worked with her really wanted to send her a thousand light years away.

The problem is, she feels obliged to keep up a continuing low-level political war to preserve her little Empire of Science, and it's a type of war she only knows how to fight one way: with sheer persistence. She's getting more and more outspoken and may need monitoring to make sure she doesn't do anything too rash, her science experiments are all well and good but in this case they take a back seat. Her constant pining about research getting the shaft is bordering on spam.

What can we do to shut her up?

Interception and Confusion

Field Report on Krypton :: Sentinel Aneki :: Part Thirteen

We took a break from our laps at the beach and private poker games to take a closer look at what might be going on behind the scenes. Thankfully, most of the security here is oriented towards protecting the privacy and safety of the guests; the hotel's internal security is almost laughably ineffective—you'd *really* have to try to be more incompetent. With the help of some discreet bribes, some digital smoke and mirrors, and a little B&E, we managed to access the inventory controls and even sniff out some of the cargo following a direct shipment. What we found is … perplexing.

It was immediately obvious when we started comparing records and physical cargo that there were some discrepancies. Someone is covering something up, though it's not immediately clear whom. Whoever it is, they have high-level access. It's either an inside job or they've penetrated the security here extensively.

Whatever's going on, we haven't quite deciphered it yet. Here's what we do know. A lot of the material coming through is being billed as resource requests by various sub-projects, but then it's immediately getting shifted off on another track. It's intentionally confusing. Much of the extra stuff is getting funneled into a void—there's no official datatrail of where it's going. Quite a bit is getting shifted onto the resort's expansion project, but some of the goods don't match the hotels needs—they seem more conducive towards building a bunker. Perhaps most concerning of all is the personnel absences. A lot of indentures, both morphed and digital, are flowing into Krypton, but a significant percentage of them drop off the books.

All of this has the marks of a secret hypercorp project, but we still have no idea what that might be. We'll continue to look into it.

Resleeve Order

From: Proxy Stitch
To: <encrypted>

We've lost contact with Sentinel Aneki and his team. Initial research confirms that they've gone missing, though Krypton Hotel records list them as checking out and returning through the Martian Gate. We'll wait the standard period before resleeving. In the meantime, let's get another team in there to pick up the trail.

Lassiter

[Identity Confirmed]
[Quantum Encryption Enabled]

You're only reading this because Astraeus has vetted you and given you clearance. If you don't know who or what Astraeus is, don't be surprised—it knows all about you. For reasons my primitive mammalian brain can only guess at, it's decided that you're trustworthy. That also means it probably wants something from you. Try not to let your status as a potential pawn of a superintelligent—but hopefully friendly—Promethean worry you too much.

You'll never find Lassiter in any of the exoplanet lists—not even the top secret files that Firewall maintains. It officially doesn't exist, its gate settings don't accept incoming links, and it only connects to a single remote gate on a randomized and confidential schedule. There are measures in place to prevent Lassiter's address from even showing up in many other gate interface systems.

The Lassiter Gate exists on the 16-kilometer-wide rocky moonlet of an exoplanet believed to be in the Sagittarius Arm, much closer to the galactic core. Lassiter itself is a large gas giant rich in helium and with a ring system laden with high carbon and silicate deposits, not to mention a number of other good-sized moons that can be mined for additional raw materials. The only known link to this location is via the Carnivale Gate. Friendlies and agents among the scum crew that maintains that gate are aware that a connection is being kept hidden, but they know no details. This arrangement has the upside that any attempt to track activity between Lassiter and the solar system must compromise both the Fissure and Carnivale Gate facilities, making infiltration especially difficult.

Astraeus itself chose the location. Since you're already aware of the Prometheans, you're also likely aware of the debate that has raged within Firewall for years now over what role these allies of ours should be playing. Up to now, the Prometheans have been limiting themselves to both build trust and avoid unwanted consequences. But these limitations mean that they are not the valuable resource they could be for Firewall and for the greater cause of transhumanity's survival.

To this end, Astraeus has relocated itself to the Lassiter system. There it has begun its work directing a drone swarm in disassembling Lassiter's smallest moons, with plans to dismantle two others in the future. The goal is to refine the raw material from these moons and produce a lattice similar to the samples obtained from Codename: TILION and similar samples recovered from the Ozma installation on Mars last March. We believe that we have significant leads on a process to create computronium, or at least a low functioning computronium analog prototype. This will enable Astraeus to build a computational environment for itself that should be an exponential step up in terms of processing power from anything currently available. This will expand Astraeus's abilities, which it can then apply to our operations and needs, increasing our effectiveness.

We are fully aware that the very presence of an advanced AGI like Astraeus or a project of this type could draw unwanted attention and so we have prepared a number of contingencies. Due to the controversial nature of this project, information is being restricted on a need-to-know basis and is not widely disseminated among the proxies. Frankly, there are too many who still think the Prometheans need to be kept on a short leash—or even destroyed. However we believe that the potential gain far outweighs the risk here.

The project is ramping up to full functionality and so we are increasing our requests for trusted security personnel like yourself. I know most sentinels would prefer to be engaged in active field work, but we want to be prepared in the case that this project attracts unwanted attention in order to keep it as protected as possible.

LASSITER

Type:
Gas Giant

Primary Star:
K7IV (Orange Subgiant)

Gravity:
1.23 g

Diameter:
122,700 km

Atmospheric Pressure:
9.20 atm

Atmospheric Composition:
92% Hydrogen, 4% Helium, 2% Methane

Surface Temperature (Mean):
–110 C

Day Length:
41 hours

Orbital Period:
37 months

Satellites:
37

Gate Access:
Carnivale Gate (via moonlet)

LUCA II

Type:
Terrestrial (Martian)

Primary Star:
M0V (Red Dwarf)

Gravity:
0.97 g

Diameter:
12,400 km

Atmospheric Pressure:
1.4 atm

Atmospheric Composition:
88% Nitrogen, 9% Oxygen, 3% Argon

Surface Temperature (Min/Mean/Max):
–90 C/–50 C/15 C

Day Length:
3.4 days

Orbital Period:
32 days

Satellites:
None

Gate Access:
Fissure and Vulcanoid Gates

LUCA

At first glance, Luca is not an impressive or inviting system. A dim red star keeps the few planets cold, and the presence of two asteroid belts and only a single gas giant mean that asteroid impacts are a real problem to consider before settling here.

Nevertheless, Luca is intriguing for several reasons. First and foremost, the second planet in the system, Luca II, is transhuman habitable with breathing equipment or mods and makes a good candidate for terraforming. Secondly, it possesses the ruins of an alien civilization, though one which never achieved significant technological development.

Also of interest is Luca's still-unpinpointed location in the galaxy. The Luca system is currently situated between two large star-forming regions and several massive dust clouds (Luca II has an interesting night-time sky view). This has made it difficult to precisely triangulate its location, even using pulsars as reference. The predominant theory is that Luca resides far around the Cygnus Arm, close to the galactic core, in a region of space normally obscured from Earth by the galaxy's center. If correct, this makes Luca the gate farthest from Earth so far discovered.

HABITABILITY

Though a far cry from Earth, Luca II is roughly as habitable as Mars. Though closer to its star than Earth, due to its dimness, Luca II is cold and more than a quarter of the world's surface is covered by glacial ice. A hot summer day at the equator is rarely above 25 C. Any transhuman with a rebreather and cold weather gear can survive here, and of course rusters and synthmorphs tolerate it just fine.

One of the major drawbacks to Luca II is the risk of an asteroid strike. The planet is heavily cratered, with asteroid impacts at least 50 times as common as they were on Earth. At least one moderate impact has occurred in the few years since transhumanity arrived here. Since then, colonists have put up a network of orbital telescopes to warn of the next major impact.

About the only good result of all these impacts is that they help keep Luca geologically active. Volcanoes

may not be at the top of your new exoplanet home wish list, but they keep things (relatively) warm. In the middle latitudes of the northern and southern hemispheres, there are entire ecosystems based around geothermal heat, the most famous being the large geothermal bogs in the north. If not for the geothermal activity, this region would be barely above freezing in the summer and there would be little life. Instead, there are thriving, sulfurous, stinking, bogs filled with abundant low plant life and surrounded by cool fungal meadows. This is a perfect environment for the hive insects that the Lucans used to eat, and the area around these bogs are the site of many Lucan ruins.

Though it's not the most comfortable world, the proteins are mostly compatible with ours, and so the risk of serious reactions to contact with native life is minimal. You won't get much nutrition from eating life here, and I'm told that it mostly tastes terrible, but you'll get some calories and it won't kill you. As a result, the local plants and fungi are fairly ideal feedstock for shoveling into a maker to get food. The soil is fine for growing crops, though this requires heated and well-lit domes.

Colonization and Terraforming

The Luca gate on Luca II's northern hemisphere is accessible from both the Vulcanoid and the Fissure Gates. The anarchists arrived here first, establishing a couple of research settlements by the time a team of TerraGenesis explorers came through over half a year later. The anarchists and the hypercorp co-op struck a deal, working together to evaluate the planet's potential and establish the first major colony. Currently, there are 16,000 transhumans living on Luca, making it one of the most populous extrasolar colonies. Luca's rich biosphere and the presence of the Lucan ruins have made it a popular destination for astrobiologists and xenologists.

TerraGenesis has taken particular interest in Luca II for terraforming research. Now after several years of study, TerraGenesis is moving into phase two of their plan, where they actively engage in terraforming the planet. Though many anarchists are in support of adapting the planet to transhuman life, the TerraGenesis project faces heavy criticism and opposition. The xenoarcheologists investigating the extinct Lucan culture fear that terraforming may harm relics and hinder their research, while various astrobiologists argue that a planet with an already-existing biosphere should not be tampered with. The terraforming plan is also considered suspect for how quickly it was assembled—many scientists feel that nowhere near the proper amount of research has been done to minimize harmful impact. As TerraGenesis prepares to initiate the project, several preservationist groups have established a presence here, arriving via the Fissure gate. Civil actions to stop the terraforming and turn Luca into a major cause are underway back in the solar system. Minor acts of sabotage at TerraGenesis facilities indicate that some preservationist direct action cells aren't waiting to see how protest and public pressure play out.

Banshee

Banshee is the only major city on Luca II, though there are dozens of smaller research stations, xenoarcheologist camps, and similar outposts. Banshee's current population exceeds 13,000 and is one of the few actual extrasolar cities. Half of it is underground, as a protection from asteroid impact, with the remainder sitting on the surface. Numerous tunnels, dug via fusion drills, lead to a massive emergency shelter located half a kilometer below ground.

This cavern should be safe from anything but a direct hit by a large asteroid, and the elevators that go there are capable of evacuating the entire population to the shelter in under two hours. At least, that's the theory—twice-yearly drills run 3–4 hours in practice, but no one knows how well an evacuation would go during a real incident.

Banshee gets its name because of its location on aptly named Howling Plain, an area that was once a center for Lucan civilization. The trees in the knee-high forest that carpets this plain have branches that shiver in the strong and regular winds, producing an eerie howling drone. It's not all that loud inside Banshee, and the locals tell me that you stop hearing it after a week or two, but I count myself lucky that I didn't have to stay there that long.

Other than the howling and the risk of asteroid impact, Banshee is a decent city for an exoplanet settlement. The colony is an odd mix of autonomists and hypercorps, with roughly an equal population split. The city itself operates on anarchist principles with various confederated and self-organized cooperatives, collectives, and syndicates tackling major municipal duties. A rotating council composed of delegates from various neighborhoods, groups, and hypercorps tackles city-wide policy and emergency decisions, backed by and responsible to real-time citywide referendums via mesh. Several areas of the settlement have been designated as hypercorp zones where traditional inner system currency and legalities apply, though some anarchists have been known to willfully ignore such claims to authority or property. TerraGenesis and its various partner hypercorps have the largest presence, though Nimbus also maintains a high-bandwidth QE comm center that's available for anyone who can pay their prices.

THE LUCANS

The Lucans have been gone for slightly more than a million years, their society and culture wiped out by a genocidal asteroid impact. At the absolute height of their civilization, they used porcelain, were experimenting with crystal radios, and defended themselves against attackers with spring-powered dart guns and large blades that they strapped to their digging claws. They had yet to see any sort of shift into widespread industrialization and remained at a largely feudal technological level.

Physically, Lucans looked a bit like six-legged aardvarks. They walked on their fore and hind limbs and their forelimbs were equipped with impressive digging claws that could also be used as crude and very strong manipulators. Their middle limbs were very long and slender and ended in exceeding dexterous seven-fingered hands. When not in use, Lucans kept their mid-limbs tucked up against their bodies. Adult Lucans were typically one meter high at the shoulder and slightly less than three meters long.

The Lucans evolved by preying upon huge colonies of insect-like creatures known as octs. Unlike the Lucans, the octs are still around. Octs are eight-legged bugs that come in a variety of highly specialized castes that range in size from the fist-sized soldiers and diggers to the thumb-sized cleaners and nurturers. Oct hives contain millions of these creatures and the largest can cover half a hectare. Octs build low mounds between one and two meters high and up to five meters in diameter around the circumference of their colony. These mounds are used as staging points for both foraging expeditions and defense. However, the vast majority of their colony is buried underground with the deepest portions extending as far down as 200 meters.

The Lucans fed on these creatures, opening up the above-ground oct mounds and using their powerful digging limbs to excavate tunnels deep underground so they could attack the buried oct breeding chambers and food stores. The current theory is that Lucan intelligence was so much higher than earthly insect mound predators because octs were individually at least as intelligent as lower vertebrates like rats. The octs use both ultrasonic and pheromone communications and they engage in complex attack and defense tactics. A swarm of octs could have killed a careless and foolish Lucan.

Lucans possessed vision that extended from the lower end of the baseline human visual spectrum to thermal infrared. In addition, they used ultrasonic imaging like the sonar of bats and dolphins. They may also have used their sonar to either disrupt the octs' ultrasonic communication or to send out false messages that the octs would react to as if they were messages from other octs.

These days, the octs are a major object of study. According to some of the researchers I talked to, the octs are the most advanced hive species yet discovered, and there is some evidence of near-sapient behavior by some of the larger and older hives. An individual oct is no brighter than a rat, but collectively some researchers think they may be something far more.

THE RESURRECTION PROJECT

Even more controversial than the terraforming plans is the ongoing discussion over recreating the Lucans. Slightly more than a year ago, researchers working near Luca's south pole found a small Lucan settlement that was buried under an avalanche. The scale of this avalanche was sufficiently large that most of the inhabitants of the small settlement were buried almost instantly and remained well-preserved until they were recently uncovered. Seven of the nineteen Lucans found in this settlement had recoverable genetic material, and researchers are now certain that they can recreate the Lucans. The seven specimens provided sufficient genetic diversity that the xenologists involved in this effort believe that a population of several hundred Lucans could create a viable breeding population. Using extensive Lucan artifacts that have been recovered, scientists also believe that they could introduce the Lucans to a partially-reconstructed

Lucan culture. Unfortunately, despite the presence of large amounts of what we believe to be Lucan writing, no one has managed to decipher more than a few of the most obvious nouns and so our understanding of Lucan culture and cognition is woefully incomplete.

Current arguments over the proposed Lucan resurrection are focused on two points: the rights of the resurrected Lucans and the fact that no one knows how to raise a Lucan. Some locals believe that the best method would be to raise them in an environment that mimics their extinct culture as best as we are able, even if this recreation is obviously incomplete, completely artificial, and interpreted through our own very different minds. Others believe that this would be travesty and that the Lucans should simply be raised as transhumans, using our own cultural mindsets, to best adapt them for our society. Many here believe that any recreated Lucans should be raised with a little interference as possible, in a reconstruction of a Lucan city, and allowed to develop on their own. Most xenologists agree that the later method is by far the most likely to produce psychologically well-adjusted Lucans, but a substantial number of the inhabitants of Banshee oppose this choice as inhumane since it effectively turns the Lucans into laboratory animals that transhumans would observe but avoid helping.

MISHIPIZHEU

One of the first extrasolar worlds with a habitable biosphere discovered via the Discord Gate, Mishipizheu is a water world hosting a variety of interesting non-sapient life forms. Once a frozen ice ball in the outer part of its system, the planet has over time drifted inward, and was warmed even further when its sun expanded into its red giant phase 700 million years ago. The waters of this planet became a crucible for life, spurring the evolution of new aquatic species and ecosystems.

Mishipizheu is home to two mysteries. First, its moon, Nanabozho—on which the Pandora gate for this system is situated—is peculiar for its type. According to standard cosmological models, there's no explanation for how an outer system ice rock like Mishipizheu could have come to possess a rocky companion like Nanabozho. How the moon came to be there is a puzzle, compounded by some anomalous readings

Second, recent studies of Mishipizheu's star strongly indicate that it is quite near the end of its hydrogen burning phase and will soon resort to helium fusion in its core. This is unusual, because an analysis of the star's age and composition do not match; it should be burning hydrogen for another 600 million years. The repercussions of these findings are immense—at least for life on Mishipizheu. It is estimated that sometime within the next 1,000 years, the red giant will undergo a helium flash and then will begin shrinking once again. This means that Mishipizheu will once again cool as its distance from its star expands. This event, though many years away, is certain to spell doom for the indigenous creatures of Mishipizheu's oceans as the water once again freezes.

MISHIPIZHEU

Type:
Ocean Planet

Primary Star:
M4II (Red Giant)

Gravity:
0.66 g

Diameter:
7,100 km

Atmospheric Pressure:
0.5 atm

Atmospheric Composition:
90% Carbon Dioxide, 5% Nitrogen, 3% Oxygen

Surface Temperature (Min/Mean/Max):
–60 C/3 C/58 C

Day Length:
34 hours

Orbital Period:
4.4 years

Satellites:
One

Gate Access:
None (access via Nanabozho Gate)

DOOMED TRANQUILITY

Transcript from the personal log of Rodolfo Cavazos, Chief Astrobiologist, XenoPharma

I had all three of those argonaut pricks expelled from our station and sent back home today. The gall of those freeloaders to expect us to just hand over all of our research and data, just because life on Mishipizheu is now considered "endangered." Apparently they don't understand business models; we're not pursuing this research at great expense because we feel like being altruistic and sharing it with everyone, we're here to capitalize on genetic and biotech patents. Their open science ideology is too influenced by outer system dogma. If they want to reap the rewards of studying Mishipizheu's ecosystems, they can pay to do it themselves—only they can't, because we splurged on an exclusive contract with Go-nin for sole bio-genetic exploitation rights on this exoplanet. Guess they'll just have to find their own exoplanet.

If only they knew what they were missing out on. The native life here uses a completely different set of amino acids, unusual protein formations, and a unique RNA equivalent. Some of these amino acids are completely new to transhumanity; aside from the IP value, we're already getting some intriguing results when applying them to transhuman biochemistries. I estimate that we'll have some exciting new drugs synthesized and ready for distribution in just a few years. The shareholders will toast Mishipizheu's aquatic life as they celebrate their ROI.

I must admit some sentimentality myself towards this water world's beasts. The ecosystems that revolve around the massive reefs of gas sac creatures floating just below the surface and at neutral buoyancy at various depths are incredible in their diversity. Some of these reefs are hundreds of kilometers long. It is intriguing that most life here seems to be invertebrate, with the possible exception of the elusive lamprey-like beasts we have yet to capture. The

bewildering variants of waterjet-wielding pseudo-nautilids have their external shells of course, and seem to be the dominant life form, though even these are stalked by the megajellies that haunt the depths.

Luckily, I am fully confident that we have plenty of time to harvest and catalog the denizens of this exoplanet long before they go extinct. Their commercial value is simply too much to ignore.

NANABOZHO'S ANOMALIES

To: Kuroshi, Fowles Assets
From: Munroe, Fowles Research

First I'd like to report that our research continues to reinforce this moon's peculiarity. A rock of this size and composition is simply out of place this far out in the system. Without a working knowledge of what the system was like before the star expanded, we can't confirm or deny the likelihood that some sort of unlikely event bounced this moon away from its orbit around an inner system planet and into a position where Mishipizheu somehow captured it, without the two colliding. Our predictive models estimate the probability of this being almost negligible. So how did it get here?

Our recent test results have only reinforced the mystery. Given the moon's size, composition, and apparent density, its gravity is far too weak. Either it has a core of marshmallow, or something does not add up. We've been running some long-term gravimetric scans, but the results are … odd. If we're reading them correctly, then there are large masses within the moon that are somehow moving.

My clever companion Abdulhaqq is increasingly convinced that Nanabozho is either hollow or artificial. I much prefer the option that someone is hacking our sensors and playing a very elaborate practical joke.

Frankly, I'm at a loss as to how to proceed from here. If we start bringing over equipment to dig under the moon's mantle or perform more extensive research to verify these assumptions, Go-nin is going to catch on fast that we have some sort of massive artifact or xenoarcheological situation on our hands. They'll be sure to invoke the contract clause that enables them to step in and essentially take over—or at least re-assess our terms. Our only alternative is to cut them in, which seems like it might be a very costly mistake.

NANABOZHO

Type:
Rocky Moon
Satellite of:
Mishipizheu
Primary Star:
M4II (Red Giant)
Gravity:
0.08 g
Diameter:
2,800 km
Atmospheric Pressure:
Negligible
Atmospheric Composition:
Trace Argon and Helium
Surface Temperature (Mean):
–65 C
Day Length:
31 days
Orbital Period:
33 days
Satellites:
None
Gate Access:
Discord Gate

MORAVEC

Type:
Terrestrial
Primary Star:
K0V (Orange Dwarf)
Gravity:
1.09 g
Diameter:
13,600 km
Atmospheric Pressure:
0.9 atm
Atmospheric Composition:
79% Nitrogen, 7% Oxygen, 11% Carbon Dioxide
Surface Temperature (Min/Mean/Max):
–60 C/17 C/68 C
Day Length:
21 hours
Orbital Period:
395 days
Satellites:
None
Gate Access:
Pandora Gate

MORAVEC

Moravec was immediately notable as a near-terrestrial world with a variety of non-sapient aquatic life. Its value only increased further when evidence of a previously-existing intelligent civilization was uncovered. It took several years of colonization and research to discover the fact that a still-active global computer network existed here, housing the digital remnants of a physically extinct species.

DEAD LAND, LIVELY SEAS

Excerpted From Exoplanet Wiki: Moravec

Moravec is a strange and disturbing world. Though its atmospheric pressure and gravity are appealing to transhumans, the air is not breathable without modification or the proper equipment. The amount of oxygen is too low for most transhuman needs, and the high level of carbon dioxide is poisonous; an unprepared transhuman will suffer dizziness and pass out in minutes.

Large seas cover two-thirds of the planet's surface. These waters are filled with a wide variety of life that has been keeping marine biologists happy for the last four years. The land masses, however, are a very different story. These deserts, rocky plains, and mountainous crags are largely barren and lifeless. Only a smattering of coastal areas and isolated regions boast anything like plant life and a few rodent-sized creatures. Major portions of Moravec are geologically unstable, rocked by tectonic activities and scarred by volcanic eruptions.

The remains of a now-extinct intelligent species, dubbed *Moravecians,* can be found in various locations on the exoplanet. Though they are believed to have died out only 160,000 years ago, xenoarcheologists have found surprisingly little evidence of what their physical form and culture looked like. The Moravecians are believed to have had three arms and four legs and to have looked very vaguely like three-armed centaurs with large eyes

and heads like rounded cones. Their civilization's technology seems to have been slightly in advance of ours. However, there is no evidence that they used the Pandora gate on their world. It is believed they had space travel, but it was far more limited than transhumanity's. The fact that their world didn't have a moon and that the only other rocky planet in their system is a Mercury-like hell-hole may have limited the appeal of exploring their solar system, at least with colonization in mind.

There is evidence that Moravec had more land-based life in the past but that this flora and fauna largely died off with the Moravecians. The Moravecians may have brought about this extinction themselves, perhaps through global climate change or other measures.

Active Network

Excerpted From *An Examination of Alien Computer Architecture*, by Gema Wulandari, Titan Autonomous University, AF 9

Likely the most remarkable discovery on Moravec was that a series of artifacts found in multiple ruins, previously identified as some sort of carbon nanotube/fullerene analog with an unknown purpose, was in fact an active molecular computing system. Not only were these devices powered, but in many cases they were actually networked together over vast distances. (It remains to be seen if this network is global or if some of the nodes are isolated from other parts of the network.) Almost universally, these network devices are located in tectonically stable/geologically inactive regions. This massive network was designed to last and includes massive redundancy and a capacity to self-repair that continues to interest nanotech experts. It is indefinitely powered by simple and exceptionally durable geothermal power plants and coastal generators running off of the temperature differential between warm surface water and the cold waters of the depths. Scientists believe that as much as 97% of the original network is still operational, and at least 90% of it will still be working 10 million years from now.

As researchers discovered while examining this amazing find, some of the major network nodes are equipped with active robotic repair systems. These bots, normally hidden away in secure bunkers, are activated whenever the network devices are damaged or tampered with. The robots normally ignore other life unless it happens to interfere with their repair duties or threaten the network. There have been three recorded instances of these bots attacking researchers. It is quite possible that these bots may also be responsible for sterilizing the network regions of newly-evolved or arrived life forms that could pose a long-term threat to the network, so researchers are advised to act cautiously.

Though xenocomputation researchers have identified access junctions and some elements of the Moravecian network code, the network remains inaccessible. If there's a wireless component, it's invisible to researchers. Several teams continue to work at the project, however, given the enormous breakthrough this might entail should transhumanity gain access to an entire civilization's electronic archives. As this work continues, multiple anomalies have been noted by researchers on Moravec. On several occasions, repair bots or fixed machinery that is part of the network have used laser emitters to generate holograms in the presence of transhumans. These transmitted images have been strange, flickering, and seemingly nonsensical, though in several instances they have mirrored the look and movements of the transhumans they manifest near. These displays never last longer than 3 minutes and have never been recorded as occurring with no transhumans present. Prevailing theory is that these may be attempts at contact initiated by infomorphs or alien AIs active within the Moravecian network.

The Graveyard Theory

Our current leading theory is that the Moravecians uploaded their entire species into this complex, globe-spanning network. This could have been in response to a dire impending global catastrophe or extinction event, a species-wide decision to pursue an entirely digital/virtual future, or the result of an intelligence singularity event based on uploading technologies. The best guess we have is that the network was manufactured approximately 160,000 years ago, with a presumed mass uploading or extinction event soon thereafter—or at least the extinction of their physical bodies. The xeno-archeologists' best estimate is that the pre-upload population was approximately 3 billion, and that all of them were uploaded in less than 300 years. Since that time, Moravec has largely been a world of infomorphs and sea life.

The Interface

Excerpted from *Gatekeeper Security Report 73824292Z*

Our researchers have made some headway with the mysterious interface device. We're still not sure where it came from or who made it; forensics and surveillance logs verify that the object was not present at that location as little as three days before it was discovered. We cannot at this time rule this out as the (perhaps accidentally) abandoned project of some unknown party, nor can we prove that it is not, say, a TITAN trick. Extreme caution and top security protocols are still recommended.

As the initial evaluation suggested, this device serves as an interface between transhuman computer networks and the Moravecian network's hardware and protocols. The translation still seems buggy and flawed, but it has enabled some limited exploration of the alien network's environment. At this point, we've literally sent thousands of non-sapient AIs flooding into the network, mapping it

out, testing its parameters, and analyzing data. We have also initiated some limited forays with AGIs and forks, though these have fared poorly.

The findings so far depict a nearly infinite and exceptionally complex and confusing digital environment containing thousands of virtual worlds. Estimates suggest the network is vast enough for three billion inhabitants to each have their own exceptionally detailed private simulspace, where every bacteria and dust mote is as real as those in the physical world. Some of these digital environments are clearly based on Moravec, or more accurately what seem to be historical reconstructions of the planet and various incarnations of its native civilization, while others seem derived from alternate history versions of the world or fictional settings. The exact nature of these simulspaces is difficult to pinpoint, as they cannot yet be experienced in the traditional way we would experience our own virtual spaces. They are, after all, designed for alien brain structures and consciousnesses. Though the interface enables some interactivity, our conclusions are largely based on evaluation of code and limited experiential snippets.

Despite this network's capabilities for housing hundreds of quadrillions of infomorphs in lavish comfort, exploration so far seems to indicate that it is empty of sapient life. Billions of constructs remain, as do trillions of simple AIs, but nothing equivalent to our own infomorphs or AGIs. What we have is an almost endless virtual ghost town. The possibility remains that we may simply be facing a communication failure or that Moravecian mindsets are so alien to ours that we have not yet properly identified them. Alternatively, the Moravecians may have gone extinct, having never uploaded en masse. It is also possible that they linger within the network, carefully hidden from our prying attempts, watching us and waiting for the right time to reveal themselves. For this reason we continue to operate with air-gap and sanitization protocols. They may also have abandoned this network, moving on to a digital life elsewhere in the universe. We may be wrong in thinking that they never used their Pandora gate; perhaps they did, leaving their home network behind.

The final possibility is that the Moravecians may have undergone a second extinction event, dying virtually in addition to physically. Whether this was an intentional mass suicide, a slow withering away in an abyss of digital hedonism, a mistake or hostile action in the form of a genocidal computer virus, or something else entirely remains unknown. Until we know more, the possibilities are open-ended.

To intensify our exploratory analysis of this network, several researchers have dedicated forks to permanently inhabit and evaluate the network from within. It is our hope that these infomorphs will acclimatize to the network's digital environments more rapidly and lead to breakthroughs in understanding this unique alien artifact.

Network Concerns

Excerpted from Firewall Vector Analysis:

Moravec Network, Section 29

Our agent within Gatekeeper's Moravec Network Analysis Project continues to keep us appraised of research developments. Despite the internal stance Gatekeeper Security is presenting, the network is not quite as dead or innocuous as they would make it seem. Our agent has compiled notes on numerous anomalies that keep us concerned:

- Several non-sapient AIs have reported brief contacts with digital constructs that *might* be sapient beings. Each of these encounters were enigmatic and lasted only a few minutes (perspective time).
- Hundreds of AIs and six forks sent into the network have failed to return. This may simply be due to issues with failed software protocols or other glitches; both AIs and infomorphs/AGIs have reported how easy it is to get "lost" within the network. The possibility exists that there may be software defenses of some kind that we have so far failed to identify.
- Two forks sent into the network have undergone noticeable alteration, similar to the effects of psychosurgery. One suffered a significant change in artistic preferences, another suffered severe memory loss. There is slight but inconclusive evidence of subtle alterations to other infomorphs as well. For now, this is a minor issue, as no forks/infomorphs are reintegrated/resleeved or allowed outside the interface environment.

Aside from first-contact scenarios, Firewall's primary concern is the discovery of alien databases and the potential dangers contained within. So far, our agent reports that very little has been found in the way of accessible or useful data, despite efforts to unlock more secrets of Moravecian civilization.

NIRVANA

The gate to the pulsar PSR B1976 +10 A, or Nirvana as the locals like to call it, is more unusual than most. It is free-floating, originally attached to nothing, orbiting the pulsar in a long elliptic loop about 32 degrees off the system's invariable plane. The pulsar is known to have two barren and desolate planets further out, long dead from the radiative bombardment of their star's stellar evolution.

Though one would expect that a location such as this would be a scientific treasure trove, the Planetary Consortium seems content to maintain only a token scientific expedition here—and a consistently underfunded and undersupplied mission at that. Efforts by various groups seeking access to the pulsar for study have almost universally been denied by Pathfinder. The research station consists of half a dozen zero-g habitat modules, locked together in a cluster around the Nirvana Gate.

The skeleton crew of scientists are not the only inhabitants here, however.

PSR B1976 +10 A

Star Type:
Pulsar

Rotational Period:
8.75 milliseconds

Satellites:
2

NIRVANA

Station Type:
Cluster

Primary Star:
PSR B1976 +10 A (Pulsar)

Gravity:
Microgravity

Day Length:
N/A

Orbital Period:
2.8 years

Gate Access:
Martian Gate

Another dozen modules belong to a small sect of buddhist monks that has established a monastery here where they can meditate on the all-consuming blackness and the piercing high-frequency beacon of light.

What drew Firewall's gaze, however, was an additional half-dozen modules that are officially regarded a prison—digital storage for criminals who have violated Consortium laws and been exiled for extended periods of virtuality and psychosurgery. This is not that unusual unto itself, but when an attempt to follow the money trail of funds diverted by Project Ozma led to this place, we took a closer interest.

One of our agents, an infiltration specialist, was dispatched to Nirvana, under the guise of installing a new habitat module. He recovered some interesting information drawn from VR interrogations; these transcripts speak for themselves.

THE HEARTBEAT OF A DEAD STAR

Interrogation Transcript of Subject ID: Takehiro Izawa

Izawa: What form of the illusion is this?

Bhinravi: You are Takehiro Izawa, a monk from the Kurohoshi Monastery on Nirvana?

Izawa: Yes. But, please, to whom am I speaking, and where am I? Your phrasing implies we are no longer in the shadow of the dark star.

Bhinravi: No. You're in virtuality. If you answer my questions, I can promise that nothing will happen to your physical morph or ego.

Izawa: Ah. I assure you there is precious little you can do that would disquiet me. However, you may wish to look within yourself at the turmoil your actions provoke.

Bhinravi: Stow it, monk, I'm not here to be preached to. Tell me what purpose your sect serves at the prison on Nirvana.

Izawa: None. We are unconcerned with the prisoners. Our purpose there is to mediate in the darkness of the dead star.

Bhinravi: Surely the Consortium must have a reason for allowing your monastery here. What services are you providing to them? What role do you play?

Izawa: One who sits high in their councils had grown tired with this reality and visited our abbot on Luna often. In their conversations, this place came up, and the abbot asked if we might make a pilgrimage here to meditate on the nature of death for even the greatest of living things, a star. His request was granted.

Bhinravi: Just like that? Some hypercorp oligarch just waved his hand and you were allowed to set up shop here?

Izawa: Yes. You often seek to overcomplicate things with hows and whys, but in this instance it is just that simple. Not everything need be a complex tapestry of deceit and lies.

Bhinravi: What about the ones in the prison then? The ones running it? What can you tell me of them?

Izawa: Nothing. We are forbidden contact even should we desire it, which we don't. We sit and measure and meditate to the song of a faded sun. Our only contact is with the scientists, and even that is infrequent.

Bhinravi: What can you tell me about their work? Is it all above-board?

Izawa: We do not involve ourselves with their work. The only thing that I can tell you is what it feels like to bathe in the radiation of death, to acknowledge that even the greatest can die but be reborn by spreading its essence across the galaxy. But of matters with which you are concerned? No. I am afraid not.

Interrogating an Interrogator

Interrogation Transcript of Subject ID: Unknown

Bhinravi: State your name and affiliation for the record. We know you are employed to interrogate prisoners.

Unknown: I have no idea what you're talking about. I'm a life support tech. Charlie. Echo. Niner. October. Romeo. Hotel. Five.

Bhinravi: Your automated search algorithms won't pick that up, this is a secure virtual environment.

Unknown: What is this? Who are you?

Bhinravi: I'll be asking the questions. Let's talk about a little project called Ozma. Heard of it?

Unknown: Does this have something to do with pulsar research?

Bhinravi: You're a terrible liar. Let's just drop the pretenses, shall we? I've worked my way through a chain of Ozma agents to get to you. You know Mimura, the one who funnels your resources through Pathfinder? Her fork died screaming here.

Unknown: Ah. So it's to be torture, then? And to whom do I owe the pleasure? Firewall? Or are you just some lucky anarchist who got past those Oversight rent-a-clowns? Either way, you're too soft to really get anything out of me. Charlie. Echo. Niner. October. Romeo. Hotel. Four.

Bhinravi: Would you stop that. Yes, Firewall. You may have heard that Firewall is reluctant to use certain interrogation techniques circumscribed by transhuman rights organizations. You've heard wrong. In my case, at least, I am perfectly willing to flay your psyche layer by layer to get the information I want. Now, does this facility hold the egos of Janeel Dre, Kelton McFarlane, Iris Li, Leila Mosvani, or any egos who were aboard the Psiclone research vessel *Empiricism*?

Unknown: I have no idea what you're talking about. I'm not sure what assumptions or possible narcotics you're operating under, but this is a simple data processing center for habitat air quality studies. Charlie. Echo. Niner. October. Romeo. Hotel. Three.

Bhinravi: I've had enough of that. Execute interrogation protocol Icepick.

<Screaming>

Unknown: Charlie … E-echo … Niner … October … Romeo. Hotel. T … two.

Bhinravi: You'll talk. We will break you. You bastards have a lot of lives to answer for what you did on *Empiricism* and for what you're doing here. Icepick again.

<Screaming>

Unknown: Charlie! Echoniner … <heavy breathing> October … Romeo … H-h-otel. One.

<Screaming and then distortion of sound quality>

Bhinravi: What the fuck is happening? What do these readings mean?

Tethyon (Muse): Bhin, the stored ego seems to have had a pre-conditioned trigger state. It is mentally destroying itself, driving itself insane. This is an alarming development. I don't believe we'll be able to continue interrogation while it's in this state.

Bhinravi: Fuck. Stop it. Halt all processes. Halt Icepick. Pause the virtuality. Do something!

Tethyon (Muse): Too late. The subject's ego file is essentially corrupted. She drove herself mad.

Bhinravi: Well, shit. Ditch the copy and load a new one. We'll try again.

Unintentional Oversight

Interrogation Transcript of Subject ID: Peter Grissom, Oversight Security Auditor

Bhinravi: Let's start with your identity. I know the cover you were operating under is fake. You are Peter Grissom? An Oversight Auditor? What were you doing on this station?

Grissom: Yes. Am I dead? Or merely captured?

Bhinravi: Dead, I'm afraid. You resisted my attempts to subdue you rather strenuously. I had to neutralize you quickly lest you summon aid. This is a virtuality I'm running your stack on.

Grissom: Ah, then what questions do you have for my shade? Oversight will resleeve me in due course. And with any luck I won't be sent back to this hellhole. With any luck I'll come back ignorant of its existence.

Bhinravi: Are you sure you're Oversight? You don't sound like any Oversight agent I've ever encountered.

Grissom: And you're not what I expected an Ozma interrogator to be like.

Bhinravi: Ozma? What's that?

Grissom: I'm going to make a leap and assume you're toying with me. You got the drop on me, and you're not Ozma, but I'm thinking you were looking into affairs on Nirvana much as I was. That means that even though we're not on the same team, we have a common interest. So if you're Firewall, well, why not tell me? I'm not ever going to remember this conversation.

Bhinravi: Fair enough. Firewall. And yes, I'm keenly interested in Ozma's operations here.

Grissom: Ha. From the outer system then, are ya? Expect us auditors to be cold-eyed accountants of life and risk and to serve our masters without question or hesitation or some such? Yes, we're professional. We're damn good at what we do. But what we do is safeguard the Consortium habitats and worlds and all of the people therein. If we are cold and calculating, it is because that is what is necessary for the good of all. You would call us controlling and tyrannical, perhaps, but that is because that is what people need. That is what transhumanity needs to continue. Your way is madness. Allowing all to follow their whim while we dance on the edge of annihilation will only hasten our extinction. But we too can go too far. Ozma are the true masters of this place, and in this place they have created monsters, monsters the likes of which may also hasten our end.

Bhinravi: Whoa whoa whoa, slow down there, man. What are you on about?

Grissom: This place. The emissions from the pulsar. It has some … unusual properties. Officially this is a research station, but why so few researchers then? That's because someone wants to keep a very tight lid on the findings here. The less people, the smaller the operation, the easier it is to control and manage the information.

Bhinravi: What about the prison then? What's that a cover for?

Grissom: Oh, it's a prison. That's not a front. But it's also more than that. Those prisoners are research specimens. They try to get ones that are already exposed. You know what I'm talking about. The thing you and them circle around, trying to get a lead on, and the rest of us pretend doesn't really exist. I've seen shit down in the outer modules. They infect people. People that are fine, people who just committed a bit of crime. And now, now they're something else. It ain't right.

Bhinravi: Ozma is experimenting with live exsurgents here?

Grissom: I didn't say that. We can't say that, ever. Not allowed. But it's not safe, what they're doing. What if it gets out?

Bhinravi: Why here? Is it the prisoners? A constant source of specimens?

Grissom: It's the pulsar. I'm going to assume you know about asyncs, about Watts-MacLeod? About what certain infected types can do with their minds? Well, the pulsar seems to have some effect on that. I can't say what, but Ozma is very, very interested in it. Enough that they'll turn people into monsters to experiment on them. This isn't what the Consortium is about. You may hate us, but you, us, we're only doing what we think is right by people. Ozma, I'm not sure anymore.

Bhinravi: How difficult do you think it would be to gain access to those imprisoned egos?

Grissom: Don't be a fool. How would you know it was clean? How could you trust anything it says? If you're smart you go back to your friends at Firewall and tell them to destroy this place, and any other facilities like it. On this matter, you have an auditor's support.

Bhinravi: I'll take that under consideration.

NÓTT

One would expect to find little of interest on a frozen moon such as Nótt, but Pathfinder has kept a tight lid on the situation since establishing a small research station here. Thanks in part to a journo's infiltration, we now know what Pathfinder was hiding: a major scientific discovery and a potential hostile life form.

COLD CALCULATIONS

by Clarin Daylight, Locus Loom

Editor's Note: This segment of the *Locus Loom's* award-winning column by Clarin Daylight sees our intrepid journalist continuing her ongoing quest to find out just what is occurring on the far side of the Pandora gates. This month she turns her investigative eye towards the icy moon known as Nótt.

The *Locus Loom* would like to inform readers unfamiliar with Ms. Clarin's style that many of her subjects are in fact unaware of whom she actually is during their interviews. Indeed, some are unaware that they are being recorded. Ms. Clarin's appearance is exceedingly flexible and due to the nature of her articles, she has found it highly edifying over the years to interview certain subjects multiple times in different guise—the better to get at the truth. Footage of all interviews is available on the *Locus Loom's* mesh.

OPENING: CLARIN DAYLIGHT

Nótt. In the mythologies of old Earth, she was the daughter of Nari, a figure from Norse mythology. Nótt is night personified, a masker of dark deeds. Nótt is also one of the Pathfinder hypercorp's frontier worlds, an icy satellite found on the far side of the Martian Gate. Nótt boasts a research team of over three hundred souls and an environment nearly as harsh as

NÓTT

Type:
Icy Neptunian Moon

Satellite Of:
Nari

Primary Star:
M4V (Red Dwarf)

Gravity:
0.078 g

Diameter:
2,850 km

Atmospheric Pressure:
0.02 atm

Atmospheric Composition:
Trace Nitrogen and Methane

Mean Surface Temperature (Mean):
–258 C

Day Length:
6.3 days

Orbital Period:
6.3 days

Satellites:
None

Gate Access:
Martian Gate

anything transhumanity has been willing to deal with. Rumor holds that unseen xeno-predators are killing the scientists, hunting them across the icy wastes and picking them off one-by-one. So what justifies this frozen base, what does Nótt have to offer Pathfinder?

Gatecrasher Anari Detenamo

Not a damn thing. It's an ice ball and ice we got in abundance. Frozen nitrogen, water ice, dry ice, methane ice, ice volcanoes, you name it. I was in the initial crash, one of the first in, and this before all the precautions they're using these days. I'm lucky the family jewels didn't freeze solid. We were ready for cold, but the surface temperatures on Nótt are barely survivable. We were so determined to find something, anything. I mean, if you're going to put up with the Devil's own cold, you want to get something out of it, yes? We ran every test we could think of, made up some new ones, and sent back for equipment to do yet more in the hopes of finding a breakthrough. Zilch. I joke with my old team that the main reason Pathfinder is so keen on Nótt is because they need to justify the expense of all the material we requested and paid for. In reality, though, they must have found something on a second look. Something good, because they wrapped it up tight after that. It burns me, to think that we almost scored, but instead we just paved the way for some other asshole to claim it.

Head Researcher Zerind Firkusny

The natural conditions of this world make a great deal of research possible that would be far more costly elsewhere. The cold assists in so many areas. We have had a few significant breakthroughs due in no small part to the environment here. I'm not at liberty to discuss their nature of course, but it has certainly made this station worthwhile.

What? Oh yes, the fabled snow beast. Truly, I hope what the security teams have been telling us is wrong and that there is some xeno-predator out there. What a wonderful development that would be! Sadly though, I believe it is just the ice that's the culprit. It's just too unlikely that anything evolved here. It's unfortunate that the very conditions that make this world useful also make it perilous.

Researcher (Indentured) Linford Sobers

They tell you that you won't be able to feel the cold, not even the arctic blasts of ice-volcano plume that ripple over this frozen hell I've been consigned to. That's what Pathfinder told all of us before we signed up to be shipped here. If my shell can take space, it can take this, they say. Yeah, right. They also said that five years of my life was a bargain at the price and certainly better than an eternity of software cold storage.

The cases froze solid just after the first week here. Poor bastards just locked up one by one where they stood. I bet you Pathfinder told them they would be "just fine" out in the cold, too. Due to the surface conditions, it took more than a week to bring them all into the central bay. By the time we got to the last ones, a few of them had lost it completely. No doubt some accountants somewhere ran the numbers and decided there was no sense throwing good money after bad, so they wiped them and made us use their spare parts to repair the others. I doubt any of them had backup insurance or they certainly wouldn't have come to this place. I actually signed on at the pod level, myself. More years, but a better morph for the duration. I was pissed when they told me I was getting a synth for this little jaunt, but I figured out why real quick. Frostbite isn't very fun.

So why am I telling you this? Because I want you to understand that they truly don't give a damn about us. I have no idea why we're stuck out here. I mean, don't get me wrong, I signed on the dotted line, I knew the consequences. They get to send me wherever they please. But this place is a cold, dark hell with nothing to show but bad weather and worse weather. Sure, we run all kinds of tests. They're clearly looking for something, though they're not telling us what, and I don't think they're finding it. I don't see what they could hope to find on this satellite they couldn't get easier someplace else. If all they want to do is just kill us off, there have got to be far more efficient ways than this.

Maybe I'm looking at this the wrong way. Maybe what they really want is to get a good look at whatever is hunting us out there on the ice … we're just the bait. Oh, you've heard the rumors, eh? You're good at your job, lady. I heard they tried to keep that bit quiet. Yeah, it's true. Something's out there picking us off. We used to go out by ourselves to check various readings and such, but it's buddy system all the way now, with a persistent real-time feed monitored by AIs back at the base. What? No, nobody has seen it. Whatever it is, it's damn fast—and strong too. There's hardly anything left when it's done, and it always takes the bodies. Doesn't matter either, bio or synth. It's either not a picky eater or it's scavenging what few resources it can get. They claim not to believe us, like we're making it up. They've sent four teams now, all of which have turned up absolutely nothing. They even accused us of helping the others to escape. Escape. Can you believe that shit? Escape to where exactly? The impassable icy mountains to the east or the perilous frozen lakes to the west? Please. They control the damn gate. There's no way off this rock without them knowing all about it.

Security Chief Ufilis Hutniak

There's nothing out there. Oh, I can certainly imagine what you've been told. "Pathfinder is out to get us" or some other such nonsense. But really, think about it, where's the profit in that? Time and resources are all precious; everybody knows that. If what headquarters wanted to do was eliminate people, you and I would never have heard about it and they certainly wouldn't have wasted gate capital on it. Fact: every time that

gate opens, they want it to be producing money for the company.

I'll tell you another fact, Pathfinder does care about its people, indentured or not. We have literally covered an area over eighteen thousand square kilometers looking for these phantom snow beasts in order to insure that our people are protected. They are nowhere to be found. No, the answer is far simpler: the missing team members slipped into the ice caves. This planet is highly unstable. The geothermal activity is completely unpredictable. We have seismographs and theoretical models and an AGI that does little else than watch for surface fractures—but it is still dicey. The second you go into one of those crevices, all contact is lost. Yes, something in the ice interferes with broadcasts if you're deep enough. What does Pathfinder want then? Lady, I'm a grunt, what do I know? Maybe they want radio-disruptive ice.

COMMENT: CLARIN DAYLIGHT

Nótt was also the granddaughter of the greatest and most devious trickster that the Norse sung of, for her father Nari was the son of Loki. It has been this reporter's experience that no hypercorp does anything without a very good reason.

HEAD RESEARCHER ZERIND FIRKUSNY

I take it the head office was impressed or they wouldn't have sent you, eh? You just have no idea, the models we've run—the possibilities are staggering, absolutely staggering. I mean, the sheer elegance of it … What? Oh, I'm sorry, sir, I'm just excited. Understandably, I should think. To think that we'd ever stumble on a natural source of Bose-Einstein condensate, it's just amazing. I assure you, the first discovery in the core sample was no anomaly. We've found solid evidence of latticework deposits in the ice. The trick, of course, will be accessing them in a manner that doesn't cause the condensate to evaporate. Yes, yes, it will be expensive and difficult, but very, very worthwhile. I don't need to explain to you, of course, the potential use for such condensates: positronium, fusion fuel, and numerous uses for working quantum effects on a macro level. This is a gold mine, no doubt about it. And I'm just talking about the condensate as a resource—the real wealth will be in figuring out how it came to be!

GATECRASHER ANARI DETENAMO

I guess I shouldn't complain too much; they did pay us a nice bonus for finding nothing. I've never understood why they paid so much, honestly, though there was a clear implication to not ask questions and not look back. There was nothing there. You know what Pathfinder was really concerned about? Keeping the gate settings absolutely secret, I mean even way beyond their normal paranoia, like they didn't even want their own people to know what they were. Weird, huh?

SECURITY CHIEF UFILIS HUTNIAK

I can't tell you much else, sir, anything useful was all in my report. I understand those memos seem never ending at times, don't they? Well our solitary witness is dodgy at best. It's a muse, carried in the ecto of one of the missing workers. The ecto was badly damaged, and the muse itself partially corrupted. For all we know, we're just being treated to a twisted rehash of a vid show from eighty years ago. Yes, her name was Inessa Michacoff, nice girl. Indenture, no official backup on file, though of course we have a copy. She called the muse Yany. It keeps asking after her. Once we're certain we can't get anything else out of it, I'll wipe it. The images we pulled off it don't show much and what they do show makes it worse. There's a hint of white fur and what looks like a metallic appendage, though even optimized it's hard to tell. Oh yeah, no way are these things entirely natural. I'd guess there are multiples, though it's hard to say. We had simultaneous attacks in two zones in one instance. If they weren't coordinated, it was one hell of a big coincidence.

Yany says that whatever it was came in quick and silent—maybe even ambushed her from a hidden spot in the ice. Inessa didn't even register it until it was on top of her. We haven't found any bodies, no sign that they've been eaten or anything like that, and of course some of the victims were synthetic. We've lost a number of bots too, for that matter. We've seeded sensors all over, but whatever it is seems adept at avoiding them.

COMMENT: CLARIN DAYLIGHT

First denial, then confirmation. First a mystery, now a treasure. What do the disappearances have to do with this valuable resource discovery? Has Pathfinder truly stumbled upon a natural source of condensate—something believed impossible by modern physics? Or is something stranger afoot? Befitting her namesake, Nótt has yet to relinquish all of her secrets.

OLAF

Olaf was originally hailed for a find because it featured a transhuman-friendly environment and there was immediate evidence of alien artifacts in the gate's vicinity. Despite some difficulties with opening and maintaining gate connections, numerous follow-up missions were planned to ascertain the world's full potential and to investigate several perceived anomalies. Further research brought these unusual features—and the significant dangers that accompanied them—into focus. Not only is Olaf guarded by an active orbital defensive system, but it is now believed that the entire world is artificial.

OLAF EXOPLANET SURVEY SUMMARY

Source: Iszo Survey Archives

Jairus, I've prioritized this first-in report because our initial survey indicates we have a real winner. The temperature and atmosphere are almost perfectly suitable for transhuman habitation. Sampling of local flora and microbial life showed a low likelihood of toxicity and a good match for compatibility. Other environmental factors are also positive, pushing this exoplanet to the top of our colony candidates list. I've taken the liberty of priority scheduling follow-ups already.

It gets even better, though. The team found concrete evidence of previous residence or visitation by extraterrestrial life. In fact, there's an entire partially-buried complex of ruins in the vicinity of the remote gate. Preliminary dating benchmarks them as approximately a million years old. There's no evidence of "recent" (astronomically speaking) visitations, so no TITAN worries, and this initial site is enough to get an entire flock of xenoarcheologists drooling. The first-in team already brought back some recovered artifacts—we're analyzing them now. It's all in the reports. I'll follow up soon.

The only hitch so far involves some apparent gravimetric anomalies that Gunderson is raising. He threw some figures at me that were ludicrous; I really wonder how that guy maintains his rep.

OLAF UPDATE SUMMARY 3

This report is almost unbelievable. If it's true … we have an unprecedented situation on hand. We sent up three drones; two of them reached an altitude of five klicks. Their data on atmospheric pressure, curvature, and gravity vs. altitude calculations all match up and form a clear picture. According to all the data we have, this world is more than 2 million klicks in diameter. That bastard Gunderson may be right. The implications are mind-boggling.

The team that went through today will be launching a satnet for an orbital survey. With the latest data in, everyone is eager to see Olaf from orbit. We would've gotten them in sooner but the techs have reported some instability with the wormhole link to this address; they had to make multiple attempts to get a connection.

All craziness aside, down on the ground Olaf is looking really interesting. Xenoarcheology reports that the relics brought back so far don't even come from the same alien civilizations—in fact, there may be artifacts from three different life forms represented, just in the initial batch. It's looking increasingly like Olaf was a prime spot for previous generations of alien gate-crashers. I'm already getting bombarded by requests from dirt-scratchers looking for assignment there.

OLAF

Type:
Dyson Sphere

Primary Star:
K2V (Orange Dwarf)

Gravity:
0.78 g (equator) to 0.91 g (poles)

Diameter:
2,140,000 km

Atmospheric Pressure:
1.1 atm (equator) to 1.2 atm (poles)

Atmospheric Composition:
80% Nitrogen, 16% Oxygen, 4% Argon

Surface Temperature (Mean):
12 C

Day Length:
50 hours

Orbital Period:
1.2 years

Satellites:
None

Gate Access:
Martian Gate

OLAF UPDATE SUMMARY 8

It's official—there are some sort of active defenses in orbit around Olaf. Our initial attempt to set up a satnet was delayed due to the fact the escape velocity is insanely high. We had to custom build a multi-stage rocket—when was the last time you heard of one of those? When it was finally deployed, however, the damn thing was *shot* down. We're still hoping that this is some long-abandoned automated system. There hasn't been any follow-up—no signs of anyone or anything coming to investigate the source of the launches. It just seems like something doesn't want anything from getting off-world. There are some serious potential negative implications to that, of course, but I'm withholding judgment until we know more. For now I'm keeping our presence there minimal and protected, with frequent check-ins.

OLAF UPDATE SUMMARY 12

Curiouser and curiouser. We finally got through today. The team was fine, but the gate techs are now convinced that there's some sort of active interference in the gate controls that makes opening and maintaining wormhole links to Olaf difficult. They're working on countermeasures, or so they say, which I suppose means they'll sacrifice some chickens and do a voodoo dance around the interface.

The team did have some additional bad news. They've still had no luck getting anything in orbit, though they've initiated long-range drone recons with no issues. Every report from the drones reinforces the data that Olaf is ridiculously large. They also completed an initial astronomical survey of the system. The results read like nonsense, but crazy Gunderson says it all makes sense. If he's right, the fact that there don't seem to be any planets in this system fits with Olaf being artificial—the rest of the system presumably ended up as building materials. Olaf is also warmer than expected, given its distance from its star. Gunderson claims this is due to it being built around a small star. I'd love to dismiss him as a crackpot, but given the data, he's likely right. I'll keep cracking the whip until we get answers.

OLAF UPDATE SUMMARY 14

The consensus is in. Based on the evidence we have so far, Olaf is almost certainly artificial. The leading theory—from Gunderson, of course—is

SOLARCHIVE SEARCH: DYSON SPHERE

A Dyson sphere is a theoretical megastructure built entirely around a star, encompassing it completely in order to capture 100% of its solar energy output. This would be the ultimate achievement for a Kardashev scale II civilization, harnessing all of the energy from their star. Various programs initiated to search for extraterrestrial life have at times focused on finding on finding Dyson spheres, as the shifted radiation output from a star enclosed within a Dyson sphere would be observable by telescopes and distinguishable from normal stars. Many variations of Dyson spheres have been proposed, from complete solid shells, potentially built for habitation on the interior surface, to swarms, bubbles, nets, and ringworlds. No Dyson spheres or similar megastructures have yet been located. ✤

that we're dealing with a Dyson sphere, an artificial shell over two million kilometers in diameter. It's most likely built around an M6V red dwarf, entirely encapsulating the star in order to capture all of its energy output. That means this was originally a binary system, until someone cannibalized the other planets in this system to build this structure around one of the stars.

If this is correct, we're dealing with a megastructure unlike anything transhumanity has seen before. The entire planet is an artifact. It rotates at an an unprecedented rate. Unlike most theoretical models of Dyson spheres, Olaf is constructed for the outer side of the shell to be inhabited—though for all we know the interior may be habitable as well. It has an exterior surface area more than 25,000 times that of the Earth. Its size almost dwarfs our ability to comprehend it. The vast distances involved throw up heavy roadblocks to exploring or even mapping this thing.

OLAF UPDATE SUMMARY 17

We lost a xenoarcheologist today. She was coming back from Olaf, stepped through, and never arrived. The gate system threw a serious error and initiated a forced shutdown of the wormhole just after. I've already filed the insurance claim.

OLAF UPDATE SUMMARY 30

We lost the connection for two full weeks this time. In my opinion, it's getting worse. We still have too many unanswered questions to give up now.

OLAF UPDATE SUMMARY 34

Gunderson's research team has gone AWOL. From what we can ascertain, they didn't like the return order, especially given that the facts were matching up to Gunderson's theories. They abandoned camp, most likely heading towards the nearest ruins our limited scans have identified, a small set of structures approximately 70,000 kilometers from the gate. Traveling as they are by ground vehicle, their journey will take months. Rather than strain our resources chasing them, I've opted to let them go. We'll keep an eye on them as we continue our scans.

OLAF UPDATE SUMMARY 54

As expected, our recent orbital insertions have once again been neutralized, though they did last longer this time, most likely do to the advanced stealthing measures we implemented. Our high-altitude recons continue as planned, though we have so much ground to cover that this process is slow.

So far, orbital surveys of the surface have revealed no radio broadcasts or laser links and no well-lit cities or other signs of active habitation. If intelligent beings still inhabit the surface, they either use some completely unknown technology or are pre-industrial primitives.

Our limited surveys indicate that Olaf's surface is divided into more than a dozen enormous supercontinents as well as countless smaller "islands," most of which are larger than Eurasia. Around one third of the surface seems to be vast sandy or rocky deserts with, at most, very sparse life and another third of the surface is covered with shallow seas. However, the remaining third of the surface is covered in vast life-bearing jungles and forests and nearly endless plains. Any colony founded here will have effectively endless room.

Few of the orbital images reveal the presence of any cities or other sapient constructs in any of the portions of the surface that contain living ecosystems. Some researchers believe that this is because most of these regions were never inhabited, others are convinced that Olaf is sufficiently old that ruins from the early days of its construction would have long ago worn away in any but the driest and most desolate environments. Scans of two of the desert regions do in fact reveal the presence of what seems to be the ruins of ancient cities. The nearest large set of ruins is approximately 300,000 km distant from the gate.

The information on vegetation colors and patterns provided by orbital images indicates that other continents and supercontinents may contain completely separate alien ecologies. There's some evidence to suggest that there may be distinct ecologies active even on the same land masses, though separated by distance. Our astrobiologists are extremely anxious to see how life forms from two or even three different worlds can all exist alongside

one another in the same environment. No one knows if this distribution of life is the result of some long-term biology experiment or if having some continents colonized by life from several different worlds is the result of organisms expanding beyond their original habitats.

Current estimates of the structure's age place it between 15 million and 50 million years old, but continued study is expected to determine its age far more precisely.

We've abandoned the idea of piloted rocket travel for exploration. The escape velocity is too high to be practical, and the weapon systems in orbit are likely to shoot anything we launch down. Though we've carried a jet through the gate, its range is limited to 20,000 km, assuming it carries enough fuel to return. I currently have the team working on constructing a fusion-powered jet for longer-range exploration. This aircraft will have an effectively unlimited range, but will have top speeds of only 1,000 km/hour, so it would still take us almost a year to circumnavigate the sphere.

Our attempts to analyze the orbital defenses have so far failed to reveal anything useful. Current speculation is that the system is designed to prevent Olaf from being disturbed by asteroid impacts, though the possibility also remains that the weapons are intended to prevent any life from ever blasting into orbit and escaping the surface.

OLAF UPDATE SUMMARY 58

Our efforts to find a way into Olaf's interior have so far proven fruitless. Excavations into the surface reveal a layer of soil and clay between 50 and 200 meters deep. Below this, there is a 400-meter layer of synthetic and somewhat porous rock that acts as an aquifer, which seems to be pierced by a network of pipes ranging from 0.5 cm to 10 m in diameter, carrying a variety of substances, including water and silt suspended in water. This synthetic rock and the pipes within it also gradually repair themselves, closing the excavations we've made in a matter of days. The pipes seem to be part of some system that compensates for erosion and helps to maintain the surface ecosystem. Current theory is that these pipes carry silt from the oceans back up to the tops of mountains, where special vents disperse it over the land area, continually rejuvenating the soil. Before it is dispersed, some unknown device modifies this silt to enhance the nutrients in it.

Beneath this layer of synthetic rock is an unknown substance of an unknown thickness. This substance is substantially harder than diamond and has a melting point higher than that attained by industrial laser and plasma drills. As a result, no attempt to drill or cut through this barrier has done more than produce extremely small scratches on it. Whatever this material is, it fits the model for a Dyson sphere. The stresses on a structure of this size require construction from a material sturdier than fullerenes to avoid it

tearing apart. Current theories suggest that nuclear weapons could cut a hole in it. Deploying nuclear weapons or any similarly destructive devices on this unknown and clearly still active artifact seems an unwise plan, however, given both the serious damage this might cause and not knowing what sort of automated or intelligent response it might provoke.

Our excavation team reported traces of localized radio emissions coming from beneath the surface, suggesting there may be some active technology in one or more of this world's lower levels. Unfortunately, these emissions are too faint and degraded to gain any information from them.

Speculation continues on what the interior might hold. Already this structure seems thicker than likely. Even assuming it was constructed by dismantling all of the objects in this star system, it's thickness should be in the range of 5 to 10 meters, yet it is substantially thicker. This implies that material must have been transported from elsewhere—possibly through the gate. This entire situation raises numerous questions. Did whatever created the gates manufacture Olaf? Are there more gates here? What happened to the sphere's creators? Are they hiding on the shell's interior surface? What else lies within the structure's interior? How many levels are beneath the surface?

Olaf Update Summary 60

Damn it, we've lost the connection again. Two weeks and counting. The techs are looking into it, but they seem mystified that their rain dances aren't working. We better not lose this location like we've lost so many others.

Olaf Update Summary 61

What the hell is this order about? Is this for real? You can't seriously expect me to hand control of this op to some Consortium agency I've never even heard of! This is outrageous! Even Oversight couldn't lay their hands on this without a fight. I'll go straight to Gada if I have to.

Penrose

Penrose Station represents one of the most unique environments in the galaxy. It sits, quite literally, on the edge of a black hole. This, of course, makes the station of immense scientific value, before we even consider that the station itself is of extraterrestrial manufacture and contains alien artifacts.

Unfortunately, Penrose has proven to be an exceptionally hostile situation. Four attempts to probe and explore the station have all resulted in disaster, with multiple lives lost. The Love and Rage Collective has handed off study of the situation to an autonomist astrophysics syndicate (AAA, the Association of Autonomist Astrophysicists). They have also placed Penrose on its restricted access list; however, this will not prevent AAA members or someone with sufficient reputation or sway from gaining access to it. Through our contacts among the anarchists, we have arranged so that all scheduled openings to the Penrose Gate address will be flagged for Firewall's attention.

Penrose Station

Station Type:
Cluster

Primary Star:
Hekate Black Hole

Gravity:
1.47 g

Station Size:
3.2 km by 7.1 km by 2.2 km (estimated)

Atmospheric Pressure:
3.6 atm

Atmospheric Composition:
Halon (91%), Nitrogen (5%), Carbon Dioxide (3%)

Temperature (Mean):
7 C

Day Length:
N/A

Orbital Period:
Unknown

Satellites:
0

Gate Access:
Fissure Gate

On the Edge of Black

Posted by: Yáahl

Yulia,

Per your call for information, I'm attaching a report I gave at a symposium a few weeks back about the Penrose situation. The talk was to a select group of my fellow neo-avian AAA members, but it may also be useful for trusted Firewall personnel who may become involved in the situation. Obviously my advice has not, and likely will not, be followed. They are blinded by the scientific carrot that dangles in front of their noses, unaware of the butcher's cleaver that hangs over their heads.

Penrose Potential: Boon or Threat?

As requested this is my official report on the end destination for setting 7M-42V-K-28832, hereafter referred to as Penrose Station or just Penrose. My frank analysis, backed by three months of time analyzing the data we've compiled from previous failed expeditions and expectations of future payoffs, is that we may be better off cutting our losses and destroying Penrose before it falls into the hands of less responsible caretakers—if it is not already in the hands of something hostile to transhumanity, that is.

Now now. I know this is a shocking thing to suggest to a group of scientists and I do not do so lightly. Like you, I recognize the immense scientific value—and I will get to that—but I also want to address the concern that we are trifling with something immensely dangerous. I speak now not just of the location or its thorough automated defenses, but also to the fact that something may have cleaned out Penrose of its previous inhabitants, something with which we are all possibly familiar, and it is not at all clear that this threat has vacated the premises. The fates of our four expeditions attest to this. Right now, we have only circumstantial evidence to suggest that something is still active in the bowels of Penrose, but I strongly disagree with Dr. Singh's contention that an active resident or residents would already have shown

their hand. But I digress. I'm not here to rehash old rivalries but to educate you on Penrose, our efforts thus far, why it matters, and what we should do.

I'll begin by explaining briefly what Penrose is and why we've been willing to sacrifice so many resources to understand it. Penrose is a station of unknown manufacture that sits on the edge, or stationary limit, of the ergosphere of a Kerr black hole we've named Hekate. The ergosphere is the portion of a black hole where it is still possible for light and matter to escape prior to crossing the event horizon. Furthermore it has long been theorized, first by Roger Penrose but later by others, that it would be possible to siphon a large amount of energy from the black hole using the ergosphere. The process is one where an object enters the ergosphere and splits in two, propelling one portion of its mass into the black hole while the other then leaves the ergosphere. The ejecta draws a tremendous boost of energy from the black hole's rotation, leaving the other half with negative energy as it is consumed by the black hole. The applications of this are tremendous; a black hole represents potential energy on a level we've never been able to access and Penrose station seems to have been created for just this purpose. We originally assumed the station was in orbit around Hekate, but we now believe it is parked in a stationary position, using energy from the Penrose process to counteract the black hole's gravitational pull.

This is the closest we've ever been able to get, indeed likely ever will be able to get in a stable static manner, to a black hole. That alone is a major scientific coup. It was also the initial reason we viewed this gate setting with such optimism. The initial recon probes brought back images *<invokes a stunning false-color panorama of a black hole filling up the entire viewpoint>* and readings of what they had found, some of them taken through observational ports of the station. We initially feared that the station was already inside the black hole's event horizon. Later probes verified that Penrose sat at the stationary limit of the ergosphere and seemed to be designed for the process.

Unfortunately, the first-in team simply disappeared and are presumed dead. We still have no idea what happened to them; we never found any traces. They were originally sent through on a 72-hour window, but they missed both of their check-ins. A second team was sent through, equipped for search and rescue. This team was also lost, though they had the foresight to transmit and log their XP-casts back to a data unit left at the gate. This was successfully retrieved, and playback indicated that the team met an unfortunate end when the section of the station they were in suddenly and unexpectedly opened to the vacuum of space. The team was suited up, in part because the station has an unbreathable internal halon (bromotrifluoromethane) atmosphere. The forceful decompression of this atmosphere into space took the explorers and their equipment with them.

GATECRASHING RUMORS: GRAY SKIES

Transcribed from an interview with an anonymous gatehopper.

We had sent a probe through, so we knew what to expect, but when I stepped through … well, it was something different. I had been expecting breathable atmosphere, but I walked into vacuum. Barren, airless rock. I knew the feeling, so I immediately exhaled, curled up, and reached for my breather. I rolled backwards and somehow made it back through the gate. For the few seconds I was looking up at that alien sky, though, I didn't see black … I saw gray. And I saw stars … thousands of them. Densely packed and bright. But they were purple. Purple stars.

I chalk it up to the anoxia. At least I hope to hell it was the anoxia.

They are certainly dead, or rather, are eternally dying, as they stretch apart in Hekate's event horizon.

After much debate, a third team volunteered to go in (actually including several resleeved members of team two). Aware that the station might be trapped and working against them, they proceeded even more cautiously—to no avail. Again, the XP-casts were retrieved, though the transmission was interrupted several times, including the few minutes surrounding their deaths. Portions of their bodies and equipment were recovered by probe, all heavily damaged (no cortical stacks), with signs of radiation burns and radioactive particle decay; yttrium and cobalt isotope exposure, we believe, source unknown.

Perhaps attesting to transhumanity's tenacity, a fourth team was assembled. They fared no better, and in some ways, worse. Just a few hours into their mission, three members of the team intentionally split off. Though their reasoning was unclear at the time, later analysis of the personnel records by Love and Rage strongly indicates that they were operating under false identities. Most likely, they were agents of a faction opposed to the autonomists, eager to ascertain Penrose's value for their own purposes. The remainder of the team attempted to track them and ultimately met the same fate as the third team. We do not know what became of the three defectors.

This is the current situation. Given the chance of hostile action, Love and Rage has restricted access. We have explored only a small percentage of Penrose Station's estimated layout. We know nothing about the designers, what happened to them, or whether any active intelligences remain there. We may simply be facing a station that has a very sophisticated set of automated defenses, to deter intruders. Efforts to map the site with nanoswarms or small drones have also been cut short. Why the station's defenses do not simply guard the gate is a question. Perhaps much of the station is off-limits to guests, but we don't know enough to ascertain the visiting sections from restricted areas. Perhaps the defenses are trained to monitor intruders first, in order to learn things about

them, before eliminating them as a threat. In this case, the more we try to explore, the more it learns about us and our weaknesses.

The station itself suggests the builders were capable of material science far advanced of ours; significant elements seem composed of unknown metamaterials. We have found nothing yet in the way of retrievable artifacts, nor anything resembling usable control systems; this may be because we are not advanced enough to understand the function of the station around us.

The question we must now ask, however, is what is the value of continuing exploration attempts when balanced against the likelihood of future hostile encounters?

Let us assume first the station is inhabited. It would seem that the residents have then decided that instead of contacting us they would rather eliminate us. So we must assume hostile intent. In this case, we must take into account that rather than waiting for us to keep coming to them, they may attempt to come to us. So in this scenario, the station poses a clear potential threat.

If we consider another scenario, that the base is uninhabited but protected by automatic defenses, then we have a mystery: what happened to the station's builders? Here we have an alien civilization capable of harnessing immense amounts of energy. The station itself is literally a device for the manipulation of black holes and as such has immense scientific and strategic value. Yet, somehow, something has happened to a civilization of this potency. We must consider that whatever happened to them might also happen to us.

There are other factors to account for. We do not know that this station is of alien design. It may, in fact, be a TITAN structure. We may be stepping on the toes of our nemeses.

We also have a situation where a trio of agents, presumably hostile towards autonomists, may still be active on the station. They may have succeeded where we have failed. They may be able to deliver the secrets of this station into the hands of our adversaries. Can you imagine what authoritarian regimes such as the Consortium or the Junta would do with the power of black holes at their disposal, not to mention other scientific insights this artifact might offer?

In the face of all of the knowledge we stand to gain, I am asking that we abandon Penrose and place deterrents on the other side of such magnitude that, should it fall into less scrupulous hands, those hands will be blown to cosmic dust. Every time we open that gate, we run the risk of allowing an x-threat to slip through to our side, we run the risk of sending good people to possible death or worse.

I ask you to support me to our fellow astrophysicists in getting our syndicate to enforce a ban on further activity to Penrose. We have enough on our plates as is, we need not go looking for more trouble.

PORTAL

Portal is distinguished as one of a handful of nexus points: like our own solar system, Portal possesses more than one Pandora gate. Unlike our own solar system, Portal's six gates are not only all on the same exoplanet but are clustered together within a 1-kilometer radius.

Though a frozen, unfriendly environment, Portal is home to one of the largest transhuman settlements outside of the solar system: Isra. This colony, originally founded by a group of Muslim gatehoppers, is largely populated by outer system autonomists, brinkers, and independent gatecrashers. Its three domes house the most prominent collection of gatecrashers outside of the solar system. Though not very well known back home, it is regarded as the place-to-go for serious career gatecrashers. It is also the primary launching point for most gatehoppers.

PORTAL

Type:
Terrestrial (Frozen)

Primary Star:
Binary System: O2V (Blue Dwarf) and DZVII (White Dwarf)

Gravity:
0.26 g

Diameter:
5,700 km

Atmospheric Pressure:
0.5 atm

Atmospheric Composition:
45% Helium, 38% Hydrogen, 16% Methane

Surface Temperature (Mean):
–93 C

Day Length:
36.3 hours

Orbital Period:
9.2 years

Satellites:
0

Gate Access:
Fissure Gate, Pandora Gate, Vulcanoid Gate

ISRA

… Initiating Isra AI Contact …

Welcome to Isra. This habitat is consensually organized under anarchist principles of liberty, equality, solidarity, and respect (learn more). When in doubt, Wheaton's Law applies ("Don't Be A Dick.") Community nanofabbers are available for all (locations). Certain items, such as weapons of mass destruction, are proscribed by community sanction (complete list). Participation in the Isra militia is voluntary but encouraged, should Isra be threatened by hostile outside forces (details). Hypercorp personnel are encouraged to log their presence on the community forums; failure to do so may affect your rep. Newcomers are advised to sign up and help maintain and improve Isra's infrastructure. If you're interested in gatecrashing, we have numerous resources available (gate schedule, Mi'raj knowledge base, Gatecrashers' Guild). We recommend backing up before you go at our Last Call community body bank. For any other questions or assistance, Isra's AIs are available at all times.

MI'RAJ

… Processing Query: Mi'raj …

Mi'raj is a separate dome habitat from Isra, just two kilometers away and accessed by light rail. Mi'raj encloses all six of Portal's Pandora gates in segmented areas (for quarantine purposes) as well as facilities for staging missions, storing equipment, and trauma care.

The Gatecrashers' Guild handles most gate operation tasks, though gates may be scheduled for private operation. Unlike gate facilities in the solar system, the gates here are not all held to strict rotating time schedules and short windows of operation. Several of the gates may be scheduled for long-term wormhole links, enabling real-time monitoring of remote operations for extended periods. Gate availability is handled on a first-come, first-served basis, within certain guidelines (monopolizing gate time is discouraged, and rescue missions are granted priority status). For further details, contact the Guild.

GATECRASHERS' GUILD

… Processing Query: Gatecrashers' Guild …

The Gatecrashers' Guild is a free association of gatecrashers and gatehoppers dedicated to mutual aid and support. Members of the Guild work together to operate and maintain the Portal gates, organize new expeditions, share skills and knowledge, and collaborate on various research and xenoarcheology projects. The Guild offers training programs for prospective gatecrashers and gate operation techs. Its workshops provide an environment for fabricating exploration gear, bots, and vehicles, as well as crafting new designs for future missions. The Guild also works with sister organizations such as the Galactic Exploration Institute to analyze, archive, and share data acquired from gatecrashing missions.

GALACTIC EXPLORATION INSTITUTE

… Processing Query: Galactic Exploration Institute …

The GEI is an argonaut project based in Portal. Its mission is to gather data on the gates and extrasolar locations into a central cross-referenced repository for dissemination to the larger scientific and gate exploration communities. It maintains an up-to-date catalog of exoplanets, Pandora gates, known missions, extrasolar colonies, and alien life. It is also responsible for the Galactic Map Project, the most comprehensive survey of star systems and galactic knowledge compiled by transhumanity to date.

ALIEN VISITATION

… Processing Query: Alien Visitation to Portal …

Xenoarcheologists strongly believe that Portal was visited by extraterrestrials via the Pandora gates. The primary evidence for this are the remains of some sort of very large and seemingly automated wheeled ground vehicle that flipped over on its side long ago, found in the ice approximately 200 kilometers from Isra. Though little remains of the vehicle except its durable outer shell, researchers believe it is approximately 900,000 years old. An intact container was retrieved from the vehicle, however, slightly more than three and a half meters long and almost two meters wide and deep. This container held more than 2,400 well-packed and perfectly preserved devices that have been dubbed "fixors." When activated, these small orange ovals remain fixed in place relative to the local gravitational field. Neither the manner in which they function nor the technology underlying them are understood, and they seem in fact to violate known physical laws. Though many fixors remain under study, several hundred have been distributed for use; they can be found in the hands of gatecrashers and other scientific groups or even in the hands of collectors back in the solar system. The limited amount of dating that has been possible on the fixors and the foam-like material they were packed in indicates that they are more than 17 million years old. The fixors seem unrelated to and far more advanced than the technology use to create the alien vehicle they were found in, leading most researchers to conclude that the aliens operating the vehicle had found the container of fixors in some other alien ruins and were transporting them somewhere when the vehicle overturned.

Portal is one of several extrasolar sites known to host so-called myst trees, another artifact of presumably alien origin.

XENOTECH BLACK SWANS

To: <encrypted>
From: <encrypted>

Given that nexus points like Portal and Sunrise may have seen quite a bit of alien traffic in the past, I'm betting that more devices like the fixors will show up. The fixors scare me. They break physical laws in ways we don't remotely understand—and someone found a *truckload* of them. I worry what we're going to find in the next truck. We're not going to be able to duplicate any of the really advanced gadgets, but several dozen or several thousand devices that cancel inertia, alter the strong nuclear force, or whatever else they might do could seriously destabilize transhuman society. We need to have plans in place for the next batch of working xenotech relics that turns up, just in case they're dangerous or paradigm-shaking, or things might spiral out of control very quickly. ♣

MYST TREES

... Processing Query: Myst Trees ...

Myst trees are presumed to be alien artifacts left by an unknown civilization in at least three known extrasolar locations, of which Portal is one. Myst trees are stable, carefully shaped clouds of nanofog between 6 and 30 meters high. Myst trees are slightly less dense and sturdy than aerogels and have a consistency and density similar to soap suds. However, they are also active devices that rapidly repair all damage and disruption. Moving your hand through a myst tree creates only a temporary disturbance; within a few seconds, it looks the same as always. Though explosions or exceedingly high heat may be able to destroy them, myst trees can reform from almost any damage done to them. Analysis of the myst trees suggests they may be storehouses for massive amounts of data, though no one has yet discovered how to interact, decipher, or read these data modules. The prevailing theory indicates that myst trees may be as much as three million years old.

The grove of six myst trees on Portal stands in a semi-circle approximately half a kilometer south of Mi'raj and the Portal gates.

RORTY

Earlier this year, the exoplanet colony of Mockingbird was assaulted and nearly destroyed. Three single synthetic attackers emerged from the remote gate, wreaked havoc on the settlement's meager defenses, and deflated two of the three inflatable domes, killing dozens of colonists. A stellar example of self-sacrificing heroics on the part of some colonists managed to disable two of the machines with improvised suicide bombs, and a concerted resistance forced the third to flee back through the gate. In the aftermath, the three raiders—originally assumed to be TITAN war machines—were determined to actually be exhumans. Further research indicates that these exhumans may be part of the same group that briefly controlled the Discord Gate, before being ousted by the Go-nin Group's ultimate mercenaries and escaping through the gate to areas unknown. The extrasolar location from which this trio of attackers traveled is assumed to be an exhuman base. Firewall has reason to believe these exhumans may be launching raids on other colonies via Rorty and other exoplanet staging points.

An analysis of the synthmorph wreckage from Mockingbird indicates that the exhumans were not solitary individuals, per se. Each is believed to have been running five or six combat-trained egos in a shell akin to a small tank. Experimental cyber-brain units, with no partitioning for individual egos, combined the exhumans in a single neural network for shared control of the morph.

RORTY

Type:
Terrestrial (Frozen)

Primary Star:
K6V (Orange Dwarf)

Gravity:
0.13 g

Diameter:
4,700 km

Atmospheric Pressure:
0.2 atm

Atmospheric Composition:
34% Hydrogen, 30% Helium, 28% Methane

Surface Temperature (Min/Mean/Max):
–150 C/–110 C/–90 C

Day Length:
41 hours

Orbital Period:
37 months

Satellites:
2

Gate Access:
Discord Gate, Mockingbird Gate

LIFELOG TRANSCRIPT, EXCERPTED

Note: *One of the egos recovered from the exhuman synthmorphs that attacked Mockingbird was extracted and subjected to psychosurgical analysis. The following account was recovered from that interrogation.*

FRANCISCO CAPALDI: ENTRY AF 7 OCT 11 22:54

We're almost through, Capaldi thought. *Just one more line of defenses to go, one more push before we wipe these exhuman bastards from existence. Our unit will be the first to reach the gate. These less-than-human fools may have thought they could take it away from the mealy-mouthed, weak-willed credit counters of the inner system, but they are no match for our over-human methods and tactics.*

[Tango squad is pinned down, Foxtrot hold position. Repeat hold position. Do not advance on the gate until your flank is covered and backup is in position.]

Damn it, Capaldi cursed at the orders. [Every second we wait gives them an opportunity to regroup,] he sent back.

C3's voice was calm and firm in Capaldi's head. [Too late for that. Recon bots show a counteroffensive is being launched on your position. Brace to hold.]

[Here they come!] beamed one of Capaldi's squad mates.

Capaldi toggled to IR-only, screening the distracting flares and flashes from the carnage all around. His muse hunted up and down the visual spectrum for a split second, then found the optimum false-color assignment for the situation. The smoke faded away to a slight swirling in what now appeared to him like clear vacuum. The ad hoc structures erected by the exhumans here, around the crater of the old Go-nin habitat, fell into sharp focus, mostly in shades of green that verged on being calming. There was an instant reminder that this wasn't a calm place when a livid scar marked a nearby wall—a near miss by a minimissile, pulsing in false-orange tones.

The heat of battle, Capaldi thought. Then he called up a the feed from a surviving recon drone, getting a view just around the nearest corner, and had his first clear view of the enemy.

[That's ... new,] he muttered, though his muse, rapidly searching through morph recognition databases, was already offering qualifications to the statement.

There were only four attackers—not a seeming impressive counter-assault at first glance. The low-slung, unmarked synthmorphs bristled with turrets and hardened sensors. A couple of meters long, they moved on six rugged, clawed legs each, efficiently emulating insectoid articulation.

The lead synthmorph paused, and Capaldi just had time to notice that one of its turrets was coming to bear on the recon drone providing his view when the signal died, dropping him back to his suit's visual systems. He shouldered his plasma rifle and aimed it at the point where he expected the synthmorph to come around the corner.

Capaldi's discipline was absolute, but he permitted himself a smile. The exhumans thought that they were his enemies, but they were mere tools in the hands of an unthinking, hostile universe. He was being tested for fitness, and he would pass the test.

The vibration of the synthmorph's mechanical feet on the floor halted and a silence began to stretch. Capaldi turned to his right to flash a message to Kuzawa but recoiled from the searing flash and boom that erupted before his eyes. His enhanced vision attempted to recover but he knew it was too late for Kuzawa. The afterimage of the man's helmet exploding in the plasma beam still lingered.

Capaldi tried to rise to his feet but was slammed hard to the ground from behind. Sparks danced in his already damaged vision and his entoptics flashed urgent warnings of integrity breaches in his suit. A mechanical whir sounded inside his helmet before something hard and unyielding whipped into the back of his head, rendering him unconscious.

Francisco Capaldi: Entry AF 7 Oct 12 02:04

Capaldi snapped back to consciousness. The norepinephrine surging through his system helped counteract the worst of the pain, and his medichines reported they were hard at work repairing various injuries, but he was cold. His remade biochemistry was tolerant of extreme temperatures, but this was too much. He was freezing.

Weak and disoriented, he managed to get only a partial report from his suit. Its environmental sensors were offline and its air was depleted. He was surviving off his internal oxygen reserve, which appeared to be damaged and running low. His muse was mute and a quick scan showed that a virus of some sort was trying to co-opt his mesh inserts.

Go ahead and try, you fuckers, he thought to his unknown assailant, secure in the superior technology of his ultimate brethren.

Capaldi could feel a swaying sensation as though he were riding atop some vehicle but could hear nothing but a rushing in his ears. He tried to open his eyes but found they were sticking shut. With a concentrated effort, he forced them open—only to immediately screw them shut again.

Too late. The chill was intense and had burned his eyes, turning the liquid to ice and causing blood vessels to burst. Worse, the sudden pain had come too quick and he opened his mouth to gasp, allowing cold air to rush into his lungs. Furthermore, he realized he was not in a breathable atmosphere and began to choke.

There was a brief pause in the swaying motion as Francisco Capaldi asphyxiated to death on the cold, unforgiving atmosphere of an alien world. Once his spasms subsided, the motion of whatever was carrying him began moving again.

Francisco? Capaldi?: Entry AF 9 Nov 8 04:41

The dreadnought gestalt mind rarely ventured onto the surface of Rorty, the exoplanet that was their new, temporary home. There was very rarely any practical need. Only occasionally did the automated mining systems, of negligible intelligence but very adequate functionality, require maintenance. Rorty's crust was rich with precious minerals and ores, and so their needs were very adequately met.

Some of their component egos made a habit of volunteering for these dull repair tasks. This had been noted, of course; it might indicate a dangerous lack of focus. On the other hand, it could simply indicate a willingness to apply innate skills to best effect. In any case, the leaders of the community had no actual objection to individuality; they simply could not permit any personality quirks which might diminish the survival chances of the group, which were in turn assumed to be directly proportional to fighting efficiency.

As they crawled across the frozen terrain, they turned a sensor pod toward the sky. Rorty's feeble sun was well above the horizon, but they were looking away from it, towards a patch of the sky that was relatively clear of stars. According to their star-mapping, that was the direction in which Earth and its solar system would lie. The ego stared in that direction with a deep sense of nothing. Some of the egos composing the gestalt might once have felt yearning or regret before they were integrated, but those had been assessed and appropriately modified. Even the most recent addition, a former ultimate mercenary, no longer held such distracting and detrimental human emotions. They were unified in their abandonment of the flesh, in their shrugging off the chains of morality and weakness. The solar system and its backward transhumans was simply a reminder; change was inevitable. The only thing good coming from the tendrils they spread throughout the galaxy, with their extrasolar colonies and research stations, was a greater likelihood that the exhumans would find their prey and hone themselves even further.

It was only a matter of time before their experiments with gate settings found one of these colonies. And then a reckoning would come. The ego considered that possibility with pleasure. Blood would soon be spilled—the blood of creatures who were foolish enough to regard the possession of blood as anything more than a disposable weakness.

SKY ARK

Sky Ark is a unique and vibrant place filled with the life of Earth. Several amazing research projects are ongoing here, drawing a wealth of talented and experienced scientists. It is also the largest draw for exoplanet tourism.

A NEW TERRA

<From "Sky Ark: A Tamer's View," posted on Biology Blogs>

Sky Ark is a world early in its evolutionary history. It possesses a humid but breathable oxygen atmosphere and abundant microscopic life in the shallow seas that cover slightly more than half of its surface. Though there is native life, the most advanced are primitive plants similar to Earthly mosses and lichens. Due to its favorable terrestrial environment, TerraGenesis chose Sky Ark for its project to reconstruct the lost life of Earth, establishing the exoplanet as a preserve for terrestrial life. Though this project has been protested by astrobiologist and preservationist coalitions that wished to study a world this early in its development of life, support arose from reclaimer groups and others interested in seeing the legacy of Earth continuing on—and flourishing.

SKY ARK

Type:
Terrestrial (Earth-like)

Primary Star:
G6V (Yellow Dwarf)

Gravity:
0.88 g

Diameter:
11,100 km

Atmospheric Pressure:
0.9 atm

Atmospheric Composition:
78% Nitrogen, 14% Oxygen, 2% Neon, 2% Water Vapor

Surface Temperature (Min/Mean/Max):
–70 C/24 C/75 C

Day Length:
21 hours

Orbital Period:
212 days

Satellites:
Two

Gate Access:
Vulcanoid Gate

The world's eastern and western hemispheres are divided by a narrow sea that rings the planet from pole to pole. Opposition to the preserve has so far limited the recreation of Earthly life to the eastern hemisphere. The western hemisphere remains a wilderness of moss and lichen and is home to two separate research stations. The eastern hemisphere is where the action is. Here, TerraGenesis and its partners funded a massive, continent-wide effort to resurrect every Earthly ecosystem that they can manage. After several years, the project remains ongoing. The major work being done now involves recreating the South American rain forests and populating the arctic tundra and taiga.

The newsfeeds back in the solar system tend to focus on recreating the animals and plants and getting them all settled, but that's only half of the effort. TerraGenesis is also engaged in a major terraforming operation here, working to transform the world even closer to Earth-like conditions. Terrain sculpting, building rivers, and designing other

THE FROZEN ZOO

To: Durschmid
From: Gordon

We've confirmed the coordinates and we have reliable orbital imagery indicating that the frozen zoo located in Sharjah is still intact. Consider this a confirmation on the mission and an order to proceed. To reiterate the details, your team will penetrate Earth's defenses, locate the genetic archives, and loot everything that is still a viable sample. An advance has been deposited in the escrow account, per instructions. Additional rewards will be compensated once the haul is appraised, per our previous rate discussion. A resleeving bonus will also be paid for any members of your team that fail to return.

Good luck. If you pull this one off, I can guarantee you more work. I've done some tracing back up the chain, and I'm very confident that our employer has significant ties to TerraGenesis. You know what that means. So get to work and don't fuck this one up.

FUGITIVE PRESERVATIONIST

To: <encrypted>
From: <encrypted>

Stellar Intelligence has confirmed that Rei Coronado has indeed passed through the Vulcanoid Gate to Sky Ark using a fake identity. Contrary to initial reports, efforts to eliminate Coronado three months ago on Vo Nguyen only succeeded in killing a beta fork. Though her backups, held in a reclaimer black body bank, were confiscated, we verified that her alpha darkcast to Gerlach beforehand. Subsequent trailing identified her new guise as Elizabeth Erin, a paleontologist/biogenetecist with a forged history. Using this ID, she took on freelancer work with a hypercorp engaging in pteranadon resurrection efforts, which relocated her to Sky Ark. She has subsequently gone missing.

We consider it highly likely she has achieved contact with an eco-terrorist cell local to Sky Ark. Given her proficiency in organizing heavy-impact attacks, we consider it only a matter of time before this cell strikes.

landscape features is big business here. I'm told that using fusion bombs to create a real volcano was the most impressive thing they've done so far. The entire terraforming and preserve project employs almost 3,000 people. If you've got the skills, the pay is high. Geologists and terraforming engineers are currently in high demand, but a good biologist can write their own ticket.

BRINGING THE PAST TO LIFE

In addition to resurrecting Earthly life that went extinct during the Fall, the research teams working on this project have been reconstructing animals that went extinct hundreds, thousands, or even tens of thousands of years ago. The dodo, aurochs, stellar sea cow, and moa are their most widely known successes. Their most recent projects, however, are far more ambitious.

A Venusian hypercorp team, Millipore, leads the effort to reconstruct a number of Pleistocene creatures by reassembling DNA fragments found in their remains. They have already resurrected imperial mammoths, wooly rhinoceroses, and ground sloths, and are currently attempting to create glyptodonts and dire wolves. Another team is working on reconstructing dinosaurs. Given the lack of DNA, these researchers are using current data to attempt to create entirely new transgenic and neogenetic creatures whose skeletons and other physical features are identical to those known for dinosaurs. Several biologists that I talked to here dismiss this entire project as vanity and said that all that is being created are our ideas of dinosaurs, but the results certainly are still impressive. I have no idea if a real allosaurus looked like what I've seen here, but the one they've created could still eat any morph I've seen in two bites or less.

THE TOURIST ZONE

Terraforming and genetic research are expensive, but TerraGenesis and their hypercorp partners know that there are many people who want to experience a trip through the Pandora gates and who also either miss Earth or want a taste of exotic wildlife. These folks, and any other gatecrasher who has some spare funds, can go romp in the wilderness among the animals. A 100-square-kilometer area along the coast, near the equator, is offset by a huge fence with defense beacons. All of the large animals in this area are fitted with neural implants that cause them to become docile and non-aggressive if they come within 30 meters of a tourist. You can watch all of the animals go about their lives, and you can even walk right up and pet a lion or a mastodon. There's even a 10-square-kilometer area where there are a hundred or so recreated dinosaurs that have all been chipped. I'm told that some people enjoy riding a T. Rex—given that they smell like week-old carrion, I fail to see the attraction. The only problem with the tourist zone is that a few tourists ignore the warning and go out and try to pet unchipped animals outside the TZ. I've heard several locals talk about orbital footage that revealed that a single tiger ate at least three of the six tourists who have gone missing this way.

SOLEMN

Solemn is a terrestrial planet with a thin but breathable atmosphere and oceans covering 70% of its surface. Due to its proximity to its star (0.6 AU) and long day, the planet has wide temperature range, at the higher end of which (85 C) the oceans literally boil (the local boiling point being 79 C).

The most interesting aspect of Solemn, however, is its local life. One of the original gatecrashers here described it best, in this piece of prose:

PARADISE LOCKED

[Personal Log, Lunah Speedwell, Neo-Avian]

Such promise she has, as when you look upon a fledgling, see the potential gleaming in their eyes, happy caws bursting from curving beak. Yet this newborn's bill offers a sharp edge to the unwary, oh yes.

The wild ones came to us, hats in hand, with a call to adventure that could not be denied, for who can resist the song of winds yet untested? I was in the first flight, brazen and proud. Through the Fissure Gate we went, ten strong and certain. New worlds to claim, but not to conquer, as others would suggest. What wonders we beheld then! Oh, how the grass gleamed in orange sheen, how glistened the dew on lichen-licked rocks! In the air, cries so familiar, tongues unknown, distant kin.

Thin, that sky, but not so wafty that I could not soar above, scouting the landscape about our gate site. Like to Old Earth she was and still is, so struck were we all that solemn vows were spoken to never exploit her. Irony, thy name is bitter on our tongues. Barely was camp erect when valiant Khaleel spoke of pain within his eyes. Soon thereafter Yong-mei's skin was tarnished, viscous stain spreading across shining metal limbs.

Our equipment packs were not light on remedies; cures were sought to no avail. Khaleel was not born with his eyes, souvenirs from a previous conflict, they slid from his skull as Yong-mei fell, dissolving before us. Soon enough followed our ectos, muses screaming piteously to the sobs of their friends. Our gear was not far behind, slipping and sliding to pool in the mulch.

Solemn has no use for the materials of men. Metals and plastics and polymers all, all brought low by a handful of dust. A merry band we started out, a ragged motley we returned, tail feathers low, burdened with sorrow. Our sympathies to Yong-mei whose brain case was shattered, her soul tortured by the memories of a slow, dissolving death to the Luddite winds of Solemn.

Beaten is not defeated, stout hearts will not lie still for long. Counsel was sought amidst the trees of Mahogany. Wisdom was taken from Ilmarinen's long halls. If metal is not the answer, then have we no diamond, hardest of coatings? Back went scouts to canvass the hillsides of Solemn, back went surveyors in vestments of stone. Difficult those garments and long in the making, but the labor was rewarded when they came home. In the breath of that world flit creatures most wondrous, smaller than eyesight, alien, unknown. Wrapped through the foundations of Solemn's ecology, tricky contenders for our would-be throne.

Tiny wars are fought with the smallest of soldiers. Swarms of nanobots let us hold our own. But all too vigilant must be our travelers, a single cut can lead to troubles unknown.

The tale should end there with cheers for the victors; the tale should end there, for then you could go and see the plains of bright orange grasses, see the lichen stalks that men do not know.

Sadly, then, the tale continues, soon enough a tale of woe. A village was built in the fields of lichen, a research center built high like a tree. Crafted from wood, hardened from resins, pinned together with diamond nails. Out went the call, come see the wonders! Out went the call, this world is lush and unspoiled! Came they did, with war in their hearts, came the neo-prims with clear intent to deceive.

Word gets around, as they say in the habs, word gets around and then anything goes. Soon enough came the pilgrims to look on the new world, the Promised Land of their philosophies. Some said the day was long in the coming, pleasant their demeanor, and eloquent their words. But no matter how many ways you bisect it my friends, they didn't want to share "their" world with us heretical birds.

Strange that the haters of all things technical will pick up a gun with scarcely a thought, but Solemn they took for theirs as granted and so they intended to take it with fire and shot. Their raid was unexpected, but well planned and precise. Their weapons prepared for the effect of the climate and we knew then that a traitor was among us. They staged their raid while a gate shift was occurring, their knowledge of our ways almost brought off their crime.

SOLEMN

Type:
Terrestrial (Earth-like)

Primary Star:
K1V (Orange Dwarf)

Gravity:
0.84 g

Diameter:
10,830 km

Atmospheric Pressure:
0.45 atm

Atmospheric Composition:
62% Nitrogen, 35% Oxygen

Surface Temperature (Min/Mean/Max):
–110 C/13 C/85 C

Day Length:
288 hours

Orbital Period:
193 days

Satellites:
One

Gate Access:
Fissure Gate

A world hard fought for will not be easily lost. Unexpected was our great fury at the pilgrims' betrayal, we unleashed secret new arsenals built for the travails of Solemn. They responded in kind, five days and six nights we lit up the hills. So great was our rage that a full six days passed before we paused to consider if the time had not come to turn our reckless course aside.

A treaty of sorts was placed before them, grudgingly accepted, if not for all time. Now they plot against us from their hideaways in the hills, their villages a model of what they think best. They believe that we are no more than ignorant pests, incapable of enjoying their new paradise.

This cagey bird knows a hawk from a handsaw. I've heard the whispers of our unwelcome guests. A single plague, a setback unlooked for, and their fine convictions will fail at the test. Already they murmur of the sick and the wounded. Already the wind carries the tang of their fear. The turquoise moon rises on the forests of Solemn, our troubles may soon fly far from here. But what will they carry when they go from the forests and where will they take it if they should move on?

The moon rises on the hills of Solemn, but sleep often fails to come to me here. I think of the places without small soldiers, I think on those places and quiet my fears.

A NICE PLACE TO VISIT, SANS TOYS

[Exoplanet Wiki: Solemn]

The native flora consists predominately of lichen-type organisms, many varieties of which can be found across the planet. Interestingly, the ubiquitous spores from these growths literally consume plastics at an alarming rate. In conjunction with this, a host of local bacteria is metal-eating and acidic, meaning that unprotected metals quickly corrode. In practice, this means that gear brought here by gatecrashers is under constant threat. Synthmorphs have a particularly difficult time, and even biomorphs with surface implants have suffered. Though there are precautions that will minimize these risks, it impedes the viability of long-term operations here.

Given the effect on technology, Solemn is seen by some bioconservatives as an ideal exoplanet home. Initial settlement by a group of neo-primitivists went awry, however, when conflict broke out between these colonists and a group of neo-avian researchers.

SUNRISE

Type:
Tidally-Locked Terrestrial (Earth-like)

Primary Star:
M2V (Red Dwarf)

Gravity:
0.91 g

Diameter:
12,400 km

Atmospheric Pressure:
1.2 atm

Atmospheric Composition:
82% Nitrogen, 15% Oxygen, 3% Argon

Surface Temperature (Mean):
–59 C (nightside), 7 C (terminus), 49 C (dayside)

Day Length:
NA (Tidal Lock)

Orbital Period:
37 days

Satellites:
None

Gate Access:
Vulcanoid Gate

SUNRISE

Sunrise has earned scrutiny both as a nexus world, with no less than seven Pandora gates, and as one of several exoplanets where Iktomi artifacts have been found.

FIELD REPORT

Posted by: Peacock Jones, Firewall Proxy

Sunrise is aptly named. It's always sunrise when you walk through the gate, and this never changes. The Pandora gate from the solar system is located at a latitude where the exoplanet's cool red sun remains perpetually just above the horizon. It is close enough that the star appears to be three times the diameter of the full moon on Earth. Since Sunrise is tidally locked, there is no day/night cycle. Instead, shadows never move and its sun always remains in exactly the same place in the sky. Half the world is trapped in perpetual night, while half of it is in perpetual day, with a band in the middle in perpetual twilight. Even if you have some good circadian hacks in place, this places messes with your head; everything has a somewhat timeless feel for at least 100 hours or so after you arrive.

The weather here is also pretty wild. The two most extreme locations on Sunrise are the hot pole, where the star is always directly overhead, and the cold pole, which is on the opposite side of the planet, locked in eternal night. Temperatures on the hot pole are continually around 80 C, while temperatures at the cold pole are always around –70 C. The area near the region in perpetual twilight ranges from 15 C to –13 C. Another fact of Sunrise that is immediately obvious to all visitors is the wind. Because hot air rises and cold air falls, winds on Sunrise perpetually blow in the same direction. Near the surface, cool winds blow from the cold pole to the hot pole and high in the atmosphere, the warm winds blow from the hot pole to the cold pole. Depending upon the local terrain, the winds range between 20 and 40 km/hour and are continuous and unceasing. Only areas immediately on the dayside of mountains or large hills are protected from this constant gale.

NIGHT VS. DAY

Sunrise's nightside is a strange and forbidding environment. Tough plants with large leaves grow within 1,500 kilometers of the terminus. Further in, temperatures go from cold to exceptionally frigid. In this lightless region, the surface of the oceans are perpetually frozen and frigid wind constantly blows from the cold pole. The remainder of Sunrise's nightside is

a barren wasteland where life can only be found in tiny pockets around hydrothermal vents, hot springs, and other volcanic hot spots. What life that is present there is exotic to the extreme and only distantly related to the rest of the native life on Sunrise.

The dayside of Sunrise is considerably more habitable, though also rough. The 2,500-kilometer radius around the hot pole is a dry and barren desert that is only inhabited by the toughest native life. Further from the hot pole, regular rainfall keeps the land moist and the landscape is a mixture of savanna, steaming jungles, and warm shallow seas. The portion of Sunrise's dayside that lies near the terminus is teeming with life.

The terminus region, a 2,000-kilometer strip of perpetual twilight, is the most hospitable environment for transhumans. The few settlements established so far have all been constructed in this circular zone.

Exotic Life

Since this world's sun never appears to move in the sky, the equivalent of plants on Sunrise have evolved to move. These exotic beings were christened planimals by the first gatecrashers to visit Sunrise. While most of the larger, tree-like planimals can move only slowly, the equivalent of grasses, ferns, and undergrowth can all move long distances at moderate speeds. In addition to mobile roots that can gradually dig into or wriggle out of soil, these creatures also possess short tendrils that allow them to drag themselves slowly across the ground. Most planimals move at speeds of between 0.1 to 0.5 kilometers per hour and many migrate constantly. Most of the slower-moving planimals simply shift locations when they have exhausted their local soil or to avoid shade from a larger planimal. The vast majority of planimal species can be found in the temperate zone between the hot pole and the terminus. Some of the swifter planimals, however, actually cross the terminus, traveling into the cool and sparsely inhabited nightside in order to accumulate nutrients from the soil. They then travel back to the dayside to soak up sunlight and process these nutrients. The fastest move as much as 10 kilometers per day and go as far as 1,500 kilometers away from the terminus in each direction.

Though planimals are relatively slow-moving creatures, some possess sharp spines that they can move to defend themselves from harm. Planimals are hunted by the local equivalent of herbivores, which can more accurately be described as predators. These carnifloral creatures are in turn preyed upon by faster and deadlier predators. Sunrise never seems to have been home to intelligent life.

The various planimal species and the ecology of Sunrise have attracted a great deal of attention from astrobiologists. There are no local equivalents of animals, plants, or fungi here; all creatures on Sunrise belong to the same kingdom and have the same basic cellular structure.

A World of Many Gates

Sunrise is unique in that it possesses seven different Pandora gates (the most, in fact, ever found on a single exoplanet or in a single star system), all of which are located within 2,500 km of the equator. Each of the seven gates on Sunrise has a long and seemingly unrelated library of addresses, making Sunrise one of the major nexus points for interstellar travel. Unlike nexus-worlds like Portal, however, the various Sunrise gates are all some distance apart. Three are found on the dayside, two on the terminus, and two on the nightside.

The Windharps

Even people who haven't visited this world have likely heard about its biggest claim to fame: the several dozen constructs called windharps. The windharps are exceptionally durable but delicate-looking sculptures. They are composed of a series of thin and slightly flexible metal ribbons arranged in large and abstract coils approximately 6-8 meters across. These metal ribbons are all enclosed in oval frames of inflexible material that stand on narrow pillars between 3 and 5 meters high. All of these constructs are arranged in open areas so that the local winds perpetually blow through them, creating eerie, sometimes melodic, sounds that can be heard from kilometers away. Though they are only slightly worn, these artifacts are at least ten thousand years old. Due to the similarity of various elements of their design with relics found elsewhere, most xenoarcheologists now believe the windharps were made by the Iktomi.

Given recent developments on Echo V in recording music from Iktomi architectural webs, xenoarcheologists are now analyzing the songs of Iktomi windharps and comparing them with recordings from Echo. There are distinct differences between the two, though the meaning of this is unclear. The windharps have also been found to resonate in deep subsonic tones detectable by seismograph over dozens of kilometers.

The windharps are always found in proximity to Pandora gates. Each gate has between two and seven windharps within 500 meters of it. Several of the researchers I talked to believe that instead of, or possibly in addition to being musical sculptures, these windharps may in some way be monitoring or reporting on the status of the various Pandora gates, possibly by means of the sounds they produce. It's a nifty theory, but so far there's nothing to back it up.

Iktomi Signs

Other Iktomi ruins have been found on Sunrise, strengthening the argument that the windharps are also their design. On the nightside of Sunrise, where life is sparse and erosion and wear are slow in areas well protected from the wind, gatecrashers recently found the ancient remains of a small Iktomi settlement 1,900 km from the terminus. Excavations of the ancient permafrost around this region has also uncovered several hundred Iktomi dream shells, similar to the ones found on Droplet.

Other Visitors

There is ample evidence that suggests that Sunrise has been visited by a variety of different alien species, which makes sense given the number of gates. The Iktomi ruins and windharps are but one sign of visitation—perhaps the most recent. An exceptionally worn complex of buildings near the Gamma Gate, located 300 kilometers into Sunrise's nightside, is the oldest set of ruins. Judging by wear patterns and various dating methods, these buildings were constructed slightly more than 300 million years ago. Today, all that remains are some badly eroded walls made from an unknown material that is harder than diamond and fragments of circuitry embedded in several areas. At this point, all that can be determined about these aliens is that they seem to have been quite large; their doorways are all 4 meters high and 2.5 meters wide, and the remains of the few controls placed on the walls are all 3 meters above the ground.

Given the number of gates here on Sunrise and other nexus points, some xenologists argue that we should focus our resources for first contact on worlds like these. There is a significantly higher chance that should an alien gatecrasher wander through a gate that it will be at a nexus point such as this. This perhaps is something that Firewall should keep in mind when preparing contingency plans for such events.

Synergy

Everyone's heard the story. The second extrasolar colony ever established was mysteriously cut off for over five years. When finally recontacted, they had transformed—some might say evolved—into an unusual group mind. Considered strange—and to some, frightening—the Synergists have largely opted to continue on their colony as a group effort.

Visiting a Transhuman Hive Mind

by Charles Prasong, writing for *Humanity+: Adventures in Transhuman Variation*

Some consider what happened to the Synergists a horrible tragedy. To the Synergists themselves, it was a godsend. Despite risking their own minds to test out a prototype mesh interface, being stranded on an alien world, cut off from transhuman civilization for half a decade, and suffering through various problems that could have spelled the end of their colony, they persevered and even thrived. It is difficult to say whether the group mind state they evolved was purely a conscious adoption (as many Synergists say) or the result of their unique hypermesh implants and the stress of their survival situation. If it was not a willing choice, would any of them be able to say so?

Despite the title of this article, the Synergists are often careful to make clear that they are not a hive mind, per se. They have not all become one single entity, shared among different bodies; they are a group mind, sharing access to each other's thoughts, memories, sensory input, and emotions, while retaining their individuality. The distinction is important, if not only for the negative stigma associated with the concept of dissolving one's self into a homogenous mind-state. The Synergists also strongly imply that they can isolate themselves from others in the group mind, maintaining the privacy of their own thoughts or feelings or shutting out the others. At the same time, they clearly prefer to remain linked in and exhibit signs of stress if separated from the others for too long. Is this truly a choice? Or only the pretense of individuality?

Unless it's completely impractical to do so, Synergists rarely travel outside of their settlement alone. The smallest common grouping is three. The region around their settlement and all of their frequently traveled areas are littered with wireless hypermesh nodes, so that they can maintain contact with the colony even from a distance. If a Synergist is cut off from the rest of their population, they attempt to regain contact as swiftly as possible. Over short periods, these isolated individuals function normally and do not appear seriously distressed. These separations can actually be useful in certain circumstances, and groups of between five and twenty Synergists occasionally disconnect themselves from contact with the rest of the community when they are engaged in particularly difficult or demanding tasks, presumably so that their sub-collective can focus more effectively on a single task. None of them do this for more than half a day, however. When they are cut off for longer periods, the change in their behavior and demeanor is almost disturbing. In the one instance I experienced, the individual could still act and talk, but she became cold and withdrawn, emotionally distant—almost dead, in fact—as if she was suffering a deep depression. I've heard of other instances where Synergists deprived of their group mind for too long were seized with other personality disorders and in at least one instance turned manic and violent. This does not bode well for maintaining individuality, though some might say it is a sign of withdrawal. Having never experienced the intense social bond their group mind enables, it is hard to say. (The Synergists refuse to provide XP to non-Synergists.)

Synergy

Type:
Terrestrial

Primary Star:
G9V (Yellow Dwarf)

Gravity:
0.98 g

Diameter:
15,100 km

Atmospheric Pressure:
1.7 atm

Atmospheric Composition:
59% Nitrogen, 35% Helium, 4% Oxygen

Surface Temperature (Min/Mean/Max):
–90 C/6 C/50 C

Day Length:
25 hours

Orbital Period:
183 days

Satellites:
None

Gate Access:
Pandora Gate

Of course, at least one group of Synergists has left the group mind: the neo-synergists now living on Octavia. I actually spent some time with the neo-synergists before visiting Synergy. The two groupings are very similar in behavior, but the Synergists are notably less social with outsiders; perhaps the neo-synergists have simply adapted to living among other transhumans again. It seems clear, however, that the neo-synergists also retain more of their individuality—or at least that was the case among the sampling with whom I interacted. The Synergists, on the other hand, display an intimacy of personality that is unnerving. They often finish each other's sentences or switch off between each other mid-conversation, so that sometimes you are not sure exactly with whom you are talking. Most of them can learn not to do this around outsiders, but when they become excited or distracted, all of them forget not to do this. The range of personality types also seems slimmer, perhaps more amalgamated, among the Synergists. None of them struck me as holding demeanors that differed radically from everyone around them. This may be a side effect of our inherent social mimicry, but if so it is an order of magnitude different than transhuman norms.

DRONES

When their world was cut off, the Synergists had a number of advanced technological tools at their disposal for dealing with some survival needs, but in others were completely lacking in resources. Digital locks on their few fabbers and the lack of blueprints sometimes prevented them from making the things (or enough of the things) they required. Their makers and food supplies were also not enough to provide for the colony over long periods, so it became necessary to grow their own food (or rather, more food than they were initially set up to provide).

With a population of only 250 and very few bots, one of the colony's first needs was simply more manpower. Due to the colony's status as an implant research experiment, it was luckily equipped with well-stocked medical facilities, including limited cloning capabilities. One of the colony's first initiatives was to produce a number of pod morphs equipped with hypermesh implants. These pods were not equipped with AIs, but were incorporated via their implants into the group mind. Any Synergist can operate one of these pods as a remote drone, parking it in a convenient location when finished.

This is not so unusual, though what is more disturbing is the Synergists' attempt to breed. A number of children were born into the colony early on, using the settlement's limited number of exowombs as well as traditional childbirth. These children were networked into the Synergy group mind as soon as their brains could handle the implants, which was when the infants were slightly less than two years old. This effort was a tragic failure. Sadly, their brains failed to continue to develop or mature. All of the infants had their personalities disperse, absorbed into the group mind, until there was essentially no ego within their bodies. When the children stopped using their bodies, their morphs were modified with partial cyberbrain implants, much like a pod. This enables Synergists to use these bodies much like their drone pods. The Synergists speak as if the children are still with them, part of their unified mental gestalt. Independent examination, however, indicates that the children's bodies are essentially vacant when not remotely manipulated by other Synergists.

MULTIS

One interesting byproduct of the hypermesh link is long-term forking. Some Synergists are known to have as many as five forks running for extended periods before re-integration. These forks do not diverge from their original alpha, given that they maintain consistent mental contact via the group mind-state. Strangely, forking seems to be persistent among only a small sampling of Synergists. The best answer I received when inquiring about this is that they didn't need more of a particular person. That's the same answer you get when you ask why there are no more than five forks of any individual.

CURRENT STATUS

Now that the Synergists have re-established contact, their colony is far more stable. Their numbers have grown as they have drawn some interested people and even some researchers into their mind-state. So far, with the exception of the neo-synergists, who went on to create a separate group mind back in the solar system, no one has voluntarily left their group (nor have there been any expulsions—at least that they speak of). On two separate occasions, groups of around twenty Synergists visited the solar system, but only for a short period each time.

At this point, their population consists of 476 Synergists, of which 152 are forks. They also have approximately 120 drones, and their colony usually has around two dozen non-Synergist visitors at a time. The Synergists have only been linked together for around 6 years, and it's clear that they are still evolving. I'm betting that in another decade or two, they will seem a whole lot more like a single multi-bodied organism than like individuals. If anyone ever develops QE comms that can be used for extended high-bandwidth communications, they're going to spread, a prospect that both fascinates and worries me.

THE PLANET

Synergy is a large, low density world. It is somewhat poor in heavy metals, though its iron core is sufficiently large to generate a strong planetary magnetic field. The world's size, combined with the relatively weak solar wind generated by its star, means it has an exceedingly thick atmosphere. Though unbreathable to transhumans without modification, the climate is comfortable enough to survive with proper clothing and an air supply.

THE AMBISCIENCE MYSTERY

[Incoming Message. Source: Anonymous]
[Public Key Decryption Complete]

You're right in that Ambiscience's apparent demise was glossed over by the feeds when Synergy was rediscovered. When you look into it, things certainly get more intriguing. For starters, the hypercorp's three owners now seem to hate each other with a passion. One is working for Cognite, another was hired by ExoTech, and a third apparently went brinker and took his fortune somewhere to the fringe's of the outer system. The distribution of their assets is convoluted, to say the least. On top of that, the firm's two leading neuroscientists are MIA since the corp was dissolved. I suspect they were poached by someone interested in the tech, but it's quite interesting that they haven't shown up since the Synergists re-appeared. Their third main researcher was actually on Synergy when the colony was lost; he apparently became part of the group mind. He's the one behind the neo-synergists and their upgraded hypermesh link. He's now located on Octavia.

I'm still tracking down the rumors that Ambiscience had a secret hypermesh experiment running in the solar system. I'll keep you posted if I find anything.

As a result of thick air, Synergy is a planet filled with flying creatures. Many of the animals can either fly or glide and most plants disperse their seeds by growing small hydrogen gasbags that range in size from tangerines to soccer balls. These balloons carry seeds or fruit dozens or even hundreds of kilometers. This sky fruit forms an important food source for the local animal life, as does the airborne mats of algae like plants that are supported by the hydrogen gasbags growing at the edges of the mats.

Synergy is the single most pleasantly alien world that I've ever seen. The combination of the relatively low gravity, feather trees that regularly grow 100 meters tall, and the abundance of flying life makes it the only alien world that looks like some of the old pre-Fall sci-fi art depicting alien worlds. The presence of a flying creature that's large enough to ride also helps. The Synergy roc, called a sroc by the Synergists, is vaguely reptilian, like much of the local life, but is warm blooded. Like one entire branch of Synergy life, instead of eyes, it has large infrared receptors that look like patches of colored skin, so it's equally at home during both the day and night. If you don't mind riding something that looks like a scaly bat with no eyes, then you're in for a great time. The wild ones are supposed to be fairly aggressive, but the Synergists have neurally-modified some with implants to domesticate them, so that they are calmer and can be mentally commanded. The fact that many of the Synergists clearly really enjoy riding srocs is one of the things that gives me hope that it's really possible for us to find common ground with the Synergists. I also know that the Synergists are hoping to make a killing in sroc cloning once Mars's atmosphere gets a little thicker. At the moment srocs can fly on Mars, but only just, and they can't carry a rider.

TANAKA

Named for Mariel Tanaka, the first gatecrasher to die here, Tanaka is the steamy moon of a hot Jupiter that orbits opposite the spin of its yellow dwarf sun. Tanaka circles within the gas giant's radiation belts and plasma torus, making it a hostile environment for long-term visitation or habitation for biomorphs. Nevertheless, Tanaka is home to its own native non-sapient life, though its exobiology has raised more questions than answers. To complicate matters, the indigenous wildlife seems to be almost unnaturally hostile to transhuman presences. With rare exceptions, gatecrashers (including synthmorphs) and their vehicles have been assaulted. Astrobiologists are at a loss to explain the peculiar behaviors of these creatures, nor have they developed an understanding of the evolutionary models to explain such life and its actions.

Access to Tanaka is not currently restricted, but visitation is discouraged without ample safeguards and precautions. Currently a team of Titanian astrobiologists makes occasional research forays, hoping to unravel Tanaka's mysteries.

INVESTIGATING TANAKA'S CURIOUS LIFE

Posted by: Ann Carias, Astrobiologist, Titan Autonomous University

Despite being awash in radiation, one of the first thing any gatecrasher notices when stepping through the Tanaka Gate is that the planet seems to be layered with life. A wide variety of large (given the weak gravity) flora carpets almost every available surface. Upon initial inspection, most of this life also seems to be more alien than is commonly found (so far) in extrasolar locales, in terms of morphology. There is nothing quite like trees, bushes, flowers, or grasses; instead there are looming stalks, massive truffles with wavering filaments, thick and twisted root-like hedges, feathery fronds, domed growths that resemble fruiting bodies, and thick fields of dark and slimy mold-like sheets. Most of this flora have a sturdy, almost-chitinous casings and dark tan, brown, or black coloration. The air is dusty with something akin to spores or pollen. Further investigation shows that this flora in fact shares much more in common with fungus and slime molds than with true plant life.

The original explorers of this exoplanet, observing what they thought was this ecosystem's fauna, commented on its unusual tall, spindly, and chitinous appearance. Even after some of these specimens

attacked them, killing several of their members, they did not quite grasp what they were dealing with. Much as Tanaka lacks plant life, it also lacks animal life. These creatures are, in fact, ambulatory—and apparently predatory—fungi, or something close to it. We have since been classifying Tanaka's pseudo-mycological life as either sessiles or motiles, depending on their ambulatory capabilities.

Already we have a number of unanswered questions. How did fungi come to dominate over plant life? Did plant life even evolve here, and if not, why? How can fungal life, which normally feeds on decomposing plant or animal matter, grow in such conditions? What were the environmental conditions that would spur fungi to evolve the ability to move (the moon after all, is not tidally locked)? Under what conditions would such life evolve predatory herbivorous characteristics?

Then we took a look at the genetic samples, and things *really* got interesting.

All life on Tanaka shares the same genetic systems, which is to be expected, though their information-carrying molecules utilize different proteins and sugars than our own DNA. The structure of these molecules is also more compact than our own and carries a significantly higher count of what would be their chromosome analogs. What is outright amazing, however, is that every single organism we first sampled on Tanaka had the *exact same genetic identity.* At first, we thought there had been some error or mix-up, but further samples have confirmed. Every single pseudo-fungal entity has the exact same genetic code. They are, effectively, all clones.

Many organisms, of course, reproduce asexually, effectively breeding clones of themselves. What is unusual here is that there is clearly a vast difference in morphological genetic expression. Sessile mushroom-like entities have the same genes as motile pseudo-fungal-crabs with prehensile appendages. The mechanisms for how this might occur is far beyond our understanding.

To confirm these results, we have retrieved samples from far-flung distances using flying drones. We discovered that the spread of cloned organisms is vast, but not total. To date, we have confirmed two other genetic identities among Tanaka's life, both of these a significant distance (over 1,000 kilometers) from the gate. These other genetics were quite similar, however, indicating a common and close lineage. Both of these genetic identities dominated their areas of Tanaka, much as the original did.

We are, of course, fascinated by the evolutionary challenges Tanaka's ecosystem poses. Further research is warranted, despite the curious and unmitigated hostility of the motile life forms. Every single expedition we have sent through has eventually been attacked, often suffering injuries. These wounds are quite often fatal, given the mycotoxin-like characteristics of these creatures. In one instance, an entire research team of eight was wiped out, save one lucky gatecrasher who was miraculously spared, despite being at their mercy. In fact, this is the only instance we know of when motiles have failed to attack when given the opportunity. In any case, we plan to proceed using airborne methods, as the exoplanet seems to lack any life with flying capabilities.

CLUES FROM A SURVIVOR

To: Ives, Proxy
From: Squee, Scanner

Hey Ives, check this out. I was collating some more data for our Tanaka file, and I happened to run the name of the sole survivor of the motile attack—Ananda Petroda—through a search. Turns out, we have her listed as an async, exposed to Watts-MacLeod during an incident on Mars a few years after the Fall. She was actually employed as an Oversight auditor for a few years until she happened to step on the wrong oligarch's toes. She was forced out and her c-rep took a big hit, so she turned to gatecrashing.

Call me incredulous, but I happen to find it highly interesting that the only transhuman whom the life on Tanaka hasn't tried to eat has turned out to be an async. There's gotta be something going on there. Either the critters decided she wasn't food because her brain was emitting the right psi-vibes, or maybe the entire population there just happens to be one big exsurgent party … which could explain the hostility. If the latter's true, and we have one big infected planet, we need to pull the plug on that gate setting ASAP.

Can we get some sentinels out to talk to this Ananda Petroda? We should pick her brain on what went down out there on Tanaka—she may have some illuminating insight.

TANAKA

Type:
Terrestrial Jovian Moon

Satellite of:
Unnamed Hot Jupiter

Primary Star:
G0V (Yellow Dwarf)

Gravity:
0.21 g

Diameter:
4,900 km

Atmospheric Pressure:
1.3 atm

Atmospheric Composition:
59% Nitrogen, 35% Carbon Dioxide, 4% Oxygen

Surface Temperature (Mean):
30 C

Day Length:
18 days

Orbital Period:
48 hours

Satellites:
None

Gate Access:
Pandora Gate

TIRION

Tirion crosses Firewall's radar not because of some extrasolar anomaly or threat, but because of evidence of potentially dangerous—not to mention amoral—experiments being conducted there. The following report comes from a sentinel with ties to mercurial organizations.

DUVALIER'S ANIMAL FARM

Posted by: Perasuke

Now I may just be a simple hyper-evolved parrot from an asteroid in the Jovian Trojans, but even I know what's right and what's wrong. And I'm here to tell you there's something very, very wrong at the Singer Institute for Biological Anomalies.

The science of uplifts is still one where we have a lot to learn. Even now, a fair number of uplift attempts fail or the uplifting process doesn't take, resulting in atavism on the part of the subject. Here on Titan, we regard such attempts as cases to be handled with understanding and empathy. We respect the rights of the uplifted when it comes both to new research and applying new procedures but also when engineering new uplift children at the request of a germinating party. If, as is rarely the case, a new uplifting procedure fails or a new uplift child retains atavistic traits impeding socialization, we respect the wishes of the germinating party and usually allow them to care for the disabled uplift.

Our more enlightened stance is not one that is shared across the system, however. Despite the prejudices still held by large segments of the public against uplifts and mercurial organizations in both the Planetary Consortium and Lunar-Lagrange Alliance, these polities continue to engage in extensive research and study with regards to uplifts. Their approach to incomplete and disabled uplifts, however, is not one of compassion but rather reflects the lack of rights guaranteed to uplifts in their legal systems.

To many citizens of the inner system, uplifts aren't people, in the same way AIs aren't people. We're all "created" and that means we're property. Given that none of the major inner system blocs, not even the Morningstar Constellation, has established or enforced a universal legal decree regarding the rights of uplifts, the legal status of our kind is entirely subject to each local habitat's laws. In many jurisdictions, uplifts are still considered the registered *property* of whatever lab created them or the person who purchased them. Killing or stealing an uplift is not murder or kidnapping, it's vandalism and theft.

To these people, uplifts are property and experiments, and when one of your experiments fails then naturally you want to study it to understand what went wrong. That's where the Singer Institute for Biological Anomalies (SIBA) comes in—or as it's called by its own staff, the Animal Farm.

When former Somatek CEO Rael Duvalier asked for the rights to a scorched and barren chunk of rock with a nitrogen atmosphere orbiting a little more than half an AU from a yellow primary, Pathfinder took the money being offered and didn't ask any questions. I'm guessing they assumed Somatek wanted it for the same reason most of the hypercorps wanted access to their very own exoplanet: secret projects and similar black-bag type stuff that they didn't want their competitors laying eyes on.

Pathfinder probably assumed that Duvalier was acting on behalf of Somatek, but they should have inspected the deal a little more closely. In fact, Duvalier purchased the exoplanet personally. When

he was later booted from—er, ahem, excuse me—when he later stepped down from Somatek's board, he kept possession of his very own exoplanet. Pretty exclusive even for a monied bastard like Duvalier.

Duvalier had already established SIBA by this time as a personal project, funneling a decent amount of Somatek R&D into it. When he left, many personnel were replaced by staff from his other privately-funded projects. Duvalier's initiatives and private labs were facing a steady opposition campaign from various mercurial groups at this time, including actual attacks from saboteurs like the Sapient Liberation Front. This heat was partly responsible for his removal from Somatek's board. As important as the media campaign was, however, the threats to the labs and researchers themselves were just as important in shining a light on what he was doing and scaring off new research personnel.

Tirion changed all of that. Shortly after he resigned, Duvalier relocated SIBA to his personal exoplanet, building new facilities and moving key people over there. This has made it exceptionally difficult for mercurial groups to stop or reveal SIBA's projects, since it's much more difficult to get someone past Pathfinder's security, across the gate, and into the Animal Farm.

What we currently know about SIBA comes almost entirely from two intercepted attempts to infiltrate the facility and from the temporary defection of one SIBA researcher's fork, before it was hunted down and deleted. From these, we know that the conditions there are hellish for the uplifts and smart animals. SIBA has been paying top credits to other animal and uplift research labs for their "failed" specimens. Most of these places are happy to hand over their disabled uplifts since they have neither the time nor inclination to dwell on their failures. This means that SIBA has acquired a large population of "research subjects" that are confined in the limited space of the lab's underground facilities. Images smuggled out show horrific conditions of cramped quarters, insufficient feeding, and experiments that push the bounds of science, drifting over into pure sadism.

SIBA seems primarily concerned with acquiring better control over smart animals and uplifts. The recent incident where police baboons on Mars beat two tourists to death has shaken public confidence in using smart animals in service settings. Duvalier hopes to settle these fears by offering more thoroughly enslaved smart animal and uplift servants.

I know Firewall doesn't always see these things as immediately pressing or even important to its mission. Issues of personhood and basic civil rights are not in the same category as x-risks, after all. There may even be members of Firewall who share the popular prejudices of the inner system, who don't consider uplifts—and certainly not disabled uplifts—to be real people, right? Imagine if these experiments were using malformed human children, however. Would you feel the same? While most of the specimens at the Animal Farm are flawed, many still have speech, or the learning abilities of a ten year old, or at least can communicate their pain.

If that doesn't convince, however, perhaps this will. Our recent efforts to uncover Duvalier's activities has turned up this nugget. SIBA recently hired a batch of new researchers, and quite a few of their names can be found in Firewall's databases. Why? Because they were researchers who worked on the Futura project. Among other members of the original Futura research team, they acquired Suzanne Casson, who oversaw the secondary Futura site. Also included in this batch of recent hires are several scientists who are quite familiar with the Watts-MacLeod strain.

What is Duvalier planning on doing with these researchers? We know for a fact that Duvalier is soliciting donors for a project where he promises to produce completely docile smart animals with "extraordinary mental abilities." Putting the pieces together, we believe they are pursuing efforts to breed smart animals with async abilities.

Surely Firewall might be concerned with that?

TIRION

Type:
Terrestrial (Mercurial)

Primary Star:
G4V (Yellow Dwarf)

Gravity:
0.79 g

Diameter:
9,900 km

Atmospheric Pressure:
0.2 atm

Atmospheric Composition:
98% Nitrogen, 2% Hydrogen

Surface Temperature (Mean):
38 C

Day Length:
4.4 days

Orbital Period:
9 months

Satellites:
0

Gate Access:
Martian Gate

VOHAUL

Transhumanity never ceases to disappoint. Just when you think you've seen the worst our civilization can offer, some creative element from the dregs of our species comes through with some new way to squick you out or make you rethink if Firewall's mission is such a good idea after all.

Apparently the fact that we were doing such a great job of trashing the Earth even before the TITANs came along still hasn't registered with some people—or at least with Pathfinder. This ambitious and young hypercorp is well on the path to reviving practices that we should have discarded as a species long ago, such as polluting entire planets. One can only assume they think that since they have access to so many (thousands!) of exoplanets, there's no harm in turning one into a permanent garbage dump. That's what Vohaul is—a world for Pathfinder and friends to easily dispose of things that might otherwise take some extra effort. Why run the biohazard protocols for medical waste disposal, or haul something too dense and sturdy for

the disassemblers to an industrial incinerator, or shoot the radioactive goop into the sun, when you can just open a wormhole, shove it through, and forget about it?

What's Firewall's angle here? A minor concern perhaps, but many of the materials being discarded on Vohaul fall into the category of extremely toxic and/or dangerous. The site is littered with hazardous wastes on which certain hostile groups might love to get their hands. They'd have to get past Pathfinder's security, of course, but that's been done before—or they might get lucky and find a way to connect from another gate.

The other consideration is that we really have no idea what else Pathfinder and friends are dumping here. If the corps are treating Vohaul as the deep, dark closet they can shove a problem into and never have to worry about it again … well, what happens if that problem somehow returns?

VOHAUL

Type:
Terrestrial (Super-Venusian)

Primary Star:
K7III (Orange Giant, theorized)

Gravity:
1.63 g

Diameter:
15,100 km

Atmospheric Pressure:
8.9 atm

Atmospheric Composition:
Carbon Dioxide 89%, Oxygen 5%, Sulfur Dioxide 3%, Nitrogen 2%

Surface Temperature (Mean):
411 C

Day Length:
41 hours

Orbital Period:
7.3 months

Satellites:
Unknown

Gate Access:
Martian Gate

CHRONOLOGY OF WASTE

Pathfinder Gate Operations Archive Services …
Collating all files tagged with "Vohaul" …

ADDRESS 45F-6D-7-69829: FIRST-IN EXECUTIVE REVIEW TRANSCRIPT

This world appears to be Venus-like in conditions. The gate is at surface level, in less-than-optimal conditions. Initial surveys and first-in team reports reveal little of interest. There's an excess of silicates in the atmosphere, and an unusual level of oxygen. There's no sign of life, microbial or otherwise; unsurprising given the ferocious temperature and pressure. The gate seems to be situated near the confluence of three major lava channels from nearby volcanoes.

This is simply not the kind of place you can do too much with. It's high gravity and surface conditions make it unlikely to ever be considered for habitation. The effort to explore it further for exploitable resources or other factors is simply not energy efficient. We've seen dozens just like it.

Assign it a random designator and dump it in the file-and-forget bin.

UNAUTHORIZED GATE SESSION REPORT: GATE OPERATOR TRANSCRIPT

Due to an unfortunate sequence of events, I was forced to open an unscheduled but short wormhole link to address 45F-6D-7-69829, recently designated Vohaul. This operation did not impede our schedule and in fact prevented a potentially embarrassing incident.

In case an explanation is needed, this is what occurred. Due to a wormhole malfunction with an earlier setting, we were running 20 minutes behind schedule. Given some priority links, we were forced to readjust the schedule. This unfortunately meant that we received a shipment of unprocessed nuclear waste from Project [REDACTED] through the gate 2 minutes too late for it to make its train. We had also just received a late notice that we were due for an inspection visit from Minister [REDACTED] momentarily. With nowhere to put the waste for the time being, we made an emergency decision to open a wormhole link to an uninhabited and safe extrasolar location to temporarily deposit the waste. This link went off without a hitch, and cleared the operation center just minutes before the minister arrived.

GATE SERVICES AUDITOR: VOHAUL RECOMMENDATION

The issue of Vohaul and the displaced nuclear waste shipment recently came across my desk. My recommendation is that we do *not* schedule a pickup. From a cost-benefit standpoint, we are better off leaving it there. A quick environment impact assessment shows that we have nothing to be concerned about.

Furthermore, I'd like to recommend that we consider this option for future waste disposal initiatives. The cost of funneling some waste materials from exoplanet colonies and/or from Ma'adim Vallis Research Park—or even Pathfinder City—to appropriate processing points is far greater than the costs of establishing a universal waste disposal site on Vohaul. All we need are a few quartz morphs with AIs to manage the site and some excavation machinery. The volcanic flow will actually carry much of our deposits away from the gate site for us. Additional storage bunkers can be constructed nearby.

I'll assemble a complete plan with cost projections and comparisons. This site could easily facilitate our disposal of the following hazardous wastes for just a few minutes of gate time each month:

- Radioactive substances (primarily from nuclear and medical research).
- Biohazardous waste.
- Corrosive substance waste.
- Other toxic and reactive wastes.

GATE SECURITY MEMORANDUM: VOHAUL LINKS

Despite the fact that the original recommendation for action came from someone with influence, we've received an official reprimand for improper usage of gate settings for security purposes. So the next time we happen to have two Barsoomian saboteurs in custody in the Gate Operation Center, we are *not* to dispose of them by shoving them through the gate into Vohaul.

I'm sure some of the boys got a good laugh at that one, and we certainly appeased someone higher in the food chain, but the fact is we have protocols for a reason and we need to stick to them. So let's play it by the book next time, okay?

GATE SERVICES AUDITOR: VOHAUL INDENTURE INTERVIEW

File Classified
Decryption Complete

Sir, we debriefed the indenture as ordered. This is what he had to say:

- *Honestly, when I first saw it, I thought the stress of working in that environment was getting to me. The Q-morphs are unbelievably, agonizingly slow, each step starts to feel like it takes 5 years. It starts to feel like the next load will take a lifetime. A lifetime in that hell.*
- *Anyway, I was in the loading dock, grabbing the next batch of drums. At first, I think I'm starting to go crazy because, well, I'm millions of light years away from home and stuck there for who knows how long, right? But then I see it again, and this time the window, the exterior airlock window, gets sprayed with something. I'm sitting there and looking at the evidence as it slides down the viewport and I'm thinking, "What the fuck?." Because I know it ain't transhuman. Last I checked, quartz morphs didn't spit.*
- *So I went through the airlock and took a look. I waited for about twenty minutes—no hurry, right?--and after a while I'm rewarded when something comes bobbing to the surface of what I assume is a pool of sulfuric acid nearby. It was serpentine and I thought scaled at first, but when I realized it must be silicon based I thought maybe crystals. It had pores or vents of some sort underneath the scale/crystals from which it expelled the liquid. I could see the trail it left in the pool before it dissipated. It seemed to use the expelled liquid to move about, even propelling itself into the atmosphere briefly. I'm not sure it could "see" me but it definitely sensed that I was there, and soon it was joined by several more. Each had a different shaped configuration of scales and as I watched two shrugged out of their scales and traded them.*
- *I was, quite frankly, amazed, these things were social and perhaps even sentient. I wasn't able to get a scan but my best guess is that they are silicon based and the liquid I saw them expelling is some sort of silicon-dioxide mixture.*

There are no traces of narcoalgorithms or contraband software in his system, and he has nothing to gain by this claim—quite the opposite. The Vohaul shift is mentally stressful, but he's not exhibiting any other unexpected signs of psychological trauma.

How shall we proceed? Should we alert Astrobiology?

GATE SERVICES AUDITOR: VOHAUL INDENTURE INTERVIEW RESPONSE

File Classified
Decryption Complete

Negative, do not alert Astrobiology. This claim is exceptionally unlikely and we can't afford to raise costs or impede the schedule with unrewarding investigations. Have the indenture wiped and restored from a pre-Vohaul backup. Lock these files down and make sure no one from Security or Astrobiology gets any wind of this, understood?

WORMWOOD

Wormwood would be dull if it weren't such a fascinating mystery. It appears to a cold and lifeless abandoned beehive asteroid. Efforts to map its length and find the surface, however, have so far come up short. As the initiative to explore this relic intensifies, more and more quirks arise. Soon, most likely within the next 6 months, we should know if Wormwood is an ideal colony site, a complex worthy of serious investigation, or a death trap.

FIELD REPORT

Operative: Jomo Achibe
Assignment: General Update

The interior of Wormwood consists of an array of tunnels and chambers similar to many beehive asteroids that I've seen, except that it's empty of both life and artifacts. The tunnels bored into the rock of the asteroid are smooth and curved, ranging from 4 to 50 meters wide. Despite the microgravity environment, many feature a flattened "floor" that is sufficiently rough to provide traction. The rooms range from closet-sized squares to massive circular auditoriums. The rock itself is a mixture of metals and silicates similar to many asteroids in the solar system, except that the balance of elements clearly reveals that it comes from another star system. The atmosphere is thin and inert, unbreathable to transhumans. The maze is lit by glowing disks 13 cm in diameter that are always exactly 4.21 meters apart. These disks are bonded to the rock and consist of a small amount of some super-heavy radioactive element with a long half-life encased in a material that transforms this radiation into a warm orange light. The light is similar to that emitted by a K0 to K3 star and the overall level of illumination similar to an exceedingly cloudy early evening back on Earth. These lights should continue providing light for the next 11 million years and appear to have been providing light for at least the last 8 million years. The temperature of Wormwood is a constant 9 C, but there is no clear evidence as to exactly what is maintaining that temperature.

Wormwood's single Pandora gate is located at what is believed to be the exact center of the asteroid. The asteroid rotates and the regions outside of the central gate area experience a gentle microgravity,

up to 0.2 g. The labyrinth of tunnels has yet to yield up a path to the surface, and attempts to measure the asteroid's thickness with thermal and sonar scans are inconclusive. At best guess, the asteroid is at least 670 km in diameter. The farthest point explorers have mapped so far is 290 km from the center, so the research team stationed here is confident that they will reach the surface of the asteroid within the next month or two. They are still searching the tunnels, but if necessary they are willing to bore through the rock. No one knows what the system outside this asteroid is like, of course. Experiments with gravimetrics and neutrino detection have convinced local researchers that the rock is in orbit around a gas giant.

There is no sign of who constructed Wormwood or why. No artifacts have been discovered, nor any microbial life or forensic evidence; the habitat has been effectively scrubbed clean. Xenologists have failed to ascertain any facts about the creators from the design or layout, other than the possibility that they came from an orange dwarf star and possibly breathed methane.

Several groups have petitioned to set up colonies on Wormwood. Obviously, it's a world that would be exceptionally easy to make habitable. The main research team has already sealed off sections of tunnels and filled them with breathable air. A small fusion reactor has been installed, making the research settlement nearly self-sufficient. There is plenty of room for multiple colonies. Currently, explorers have mapped more than one million km of tunnels, and our best estimates are that there are actually between 10 and 20 million, enough space to comfortably house 100 million transhumans. None of the colonization requests have been accepted yet, however, and I strongly advise that this policy continue. We have absolutely no idea where Wormwood is or what waits outside of its walls. For all we know, it's in a system swarming with TITANs or orbiting a star that will supernova in less than a decade. There is no telling what we may find on the surface or elsewhere in this star system.

Wormwood

Station Type:
Beehive

Satellite of:
Unknown

Primary Star:
Unknown

Gravity:
Micro (0.02 max)

Diameter:
Unknown (at least 670 km)

Atmospheric Pressure:
0.7 atm

Atmospheric Composition:
55% Carbon Dioxide, 23% Nitrogen, 18% Methane

Temperature (Mean):
9 C

Day Length:
Unknown

Orbital Period:
Unknown

Satellites:
Unknown

Gate Access:
Pandora Gate

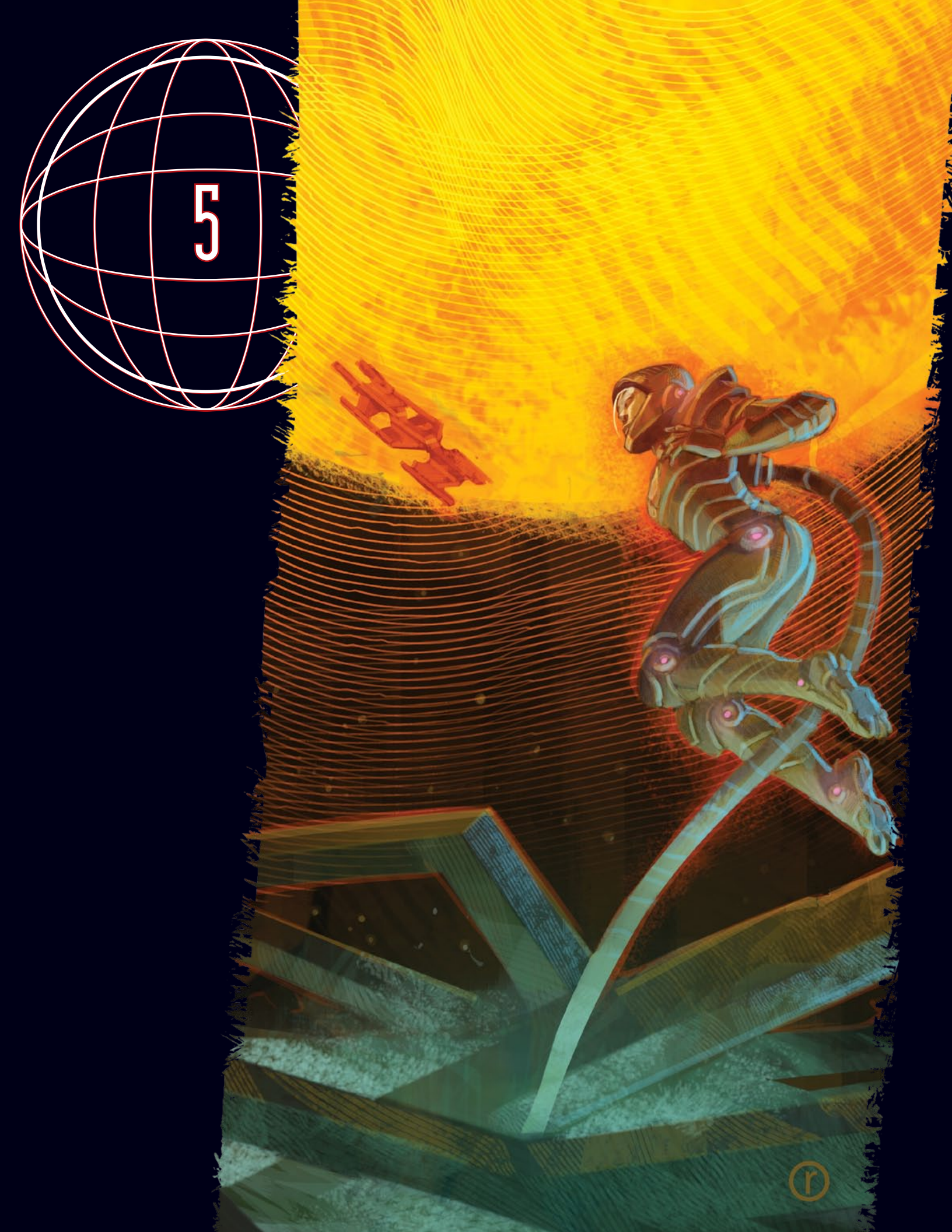
Dangers and Mapping

There are many millions of kilometers of tunnels in Wormwood, including a sufficient number of connections and shortcuts that it is easy to become lost. Though radio repeaters and mesh motes have been placed in regularly used tunnels and some other mapped areas, it is not difficult to lose contact with these by moving only a kilometer down the tunnels, as the solid rock blocks signals. As a result, anyone engaging in long-range exploration must be careful to maintain a breadcrumb trail or they may lose mesh and radio contact. There are no known dangers, but three months ago a gatecrasher named Carlos Chao vanished. He went on a solo mission to find the surface and was riding in a go-cycle. Search parties have found no trace, and his disappearance is currently theorized to have been due to a failure of his navigation software.

Rumors and Possibilities

Researchers are currently assembling an army of networked mini-bots which they plan to send forth en masse to map out every available route. The bots are programmed to share their mapped routes with each other whenever they meet or are in range. Researchers will monitor this map as it is constructed in real time, ready to send out exploration parties to check out any anomalies or potential surface access points.

It is possible, however, that this mapping exercise might not uncover everything. Analysis of several recent scans of the tunnels, using a combination of x-ray, t-ray, radar, and seismic readings, revealed that, contrary to previous expectations and assumptions, all of Wormwood's tunnels might not interconnect. In other words, there may be one or more additional and completely separate networks of tunnels that explorers and robot probes have yet to find. Discussions of using fusion cutters, boring drills, or nanotech disassemblers to cut passages into neighboring tunnels are now underway. As soon as a likely tunnel that seems to be separate from all nearby explored tunnels is discovered, one or more teams of gatecrashers will attempt to see if there really are separate tunnel networks and what they might contain. I advise any operatives embarking on such missions to use extreme caution. Just because the known tunnels are devoid of artifacts and life does not mean that all tunnels must be. Unless they have the ability to shield their activities from sensors, we know that none of Wormwood's known or unknown tunnels is home to an active technological civilization, but this does not preclude the existence of other visitors coming through another Pandora gate, ancient but still-active ruins, or a small population of the descendants of the original inhabitants. Some researchers have suggested that the existence of these separate tunnels networks may be connected with the disappearance of Carlos Chao, but all such ideas remain idle speculation until we obtain some hard data.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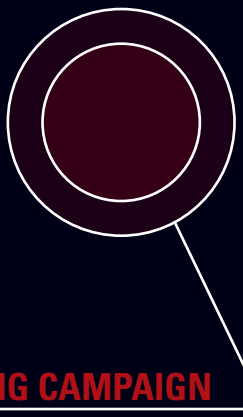
GAME INFORMATION



RUNNING A GATECRASHING CAMPAIGN

NEW GEAR

Items that make exploring distant worlds easier.

This chapter provides rules for operating the Pandora gates, new morphs and gear for gatecrashing, gamemaster advice for gatecrashing adventures, and behind-the-scenes details on the various exoplanets described in the previous section.

PANDORA GATE RULES

The rules here expand on the information provided in *Gate Operations*, p. 18, and are presented as guidelines. When it comes to the gates, nothing should be assured or predictable—there is always the chance that something may have changed, may not work as planned, or may go horribly, horribly wrong. Every once in a while, gamemasters are encouraged to throw something out of left field at the characters, just to reinforce the fact that using the gates is akin to playing with the Tools of the Gods. It is important not to abuse this unpredictability, lest the gates be seen as too fickle or threatening. Unexpected variations should be treated as plot devices, temporary diversions, and the occasional injection of pure adrenaline, weirdness, or terror.

DETECTING GATES

It is incredibly difficult to find or detect Pandora gates from a distance. They are invisible on most electromagnetic frequencies. Radar, microwave, terahertz, x-ray, and gamma-ray scans will pick up nothing. They are detectable in the visual spectrum, assuming they are not covered or camouflaged in some way. On thermal/infrared frequencies, the gate structure is always cool, so it may stand out in an exceptionally warm environment (+10 to +30 Perception Test modifier at the gamemaster's discretion when using mid-long infrared). Likewise, the wormhole created by an active gate is very bright on a thermal scan, and so may contrast with a cold environment (same +10 to +30 modifier). Gates are also bright in ultraviolet frequencies; apply a +20 modifier for Perception Tests in this spectrum.

The gates are known to hum at infrasonic and ultrasonic frequencies, which can help to detect them within a close (1 kilometer for ultrasonic/seismic, 50 meters for infrasonic) range. Gamemasters should apply a +10 to +30 Perception Test modifier for using these methods, depending on circumstances.

VIEWING THE GATES

Not only are the gates disturbing to look at, they sometimes inflict visual hallucinations on onlookers. Whether this is symptomatic of the gate resonating at certain frequencies, an unknown psi effect, or something else is up to the gamemaster. Characters who experience these hallucinations must make a WIL x 3 Test or suffer 1d10 SV.

THE GATE INTERFACE

Thanks in part to the secret help of the Prometheans, transhumanity has developed a functional system for interfacing with the gates and controlling them. As described, this interface is incomplete, glitchy, and prone to misinterpretation and error. The interface systems used on the 5 solar system gates are all large, stationary devices. The ones used by TerraGen, Gatekeeper, and Love and Rage are the original open source system devised by the argonauts. Pathfinder and Go-nin have their own proprietary knock-offs. If a gate operator is using a system that they are not familiar with (they weren't trained on it or haven't had enough time to familiarize themselves with it), apply a –10 modifier to all gate operation actions.

A smaller, portable gate control unit—known as a "blue box" (p. 155)—is available for gatecrashers and remote gate use.

GATE SKILLS AND SPECIALIZATIONS

Characters may wish to take advantage of several new specializations and a new Knowledge skill field when it comes to gate use:

Academics: Gate Operations: This new field for Academics encompasses the knowledge transhumanity has of the gates' operating system, the theories behind it, and the practical applications for interacting with it.

Infosec (Gate Hacking): This new specialization for Infosec pertains to hacking gates via gate control units.

Interfacing (Gate Operations): This new specialization for Interfacing applies to any use of gate control units.

Programming (Gate Interface): This new specialization for Programming is useful for understanding the underlying code interactions between gate interfaces and the gates' actual operating systems, as well as decoding the gate libraries and manipulating the operating systems of the gates themselves. ■

If the gamemaster is so inclined, some gate interface systems may be better or simply more efficient at certain types of operations. The opposite is also true—some systems may be inferior. In this case, the gamemaster can apply a positive or negative modifier as appropriate.

Gate interfaces follow all of the standard rules for electronic devices; they require user authentication, they may be hacked, etc. Gate interfaces come equipped with a security AI (p. 332, *EP*) as a matter of course, though their operators often install other defenses as well.

Without a gate control unit, the Pandora gates are effectively impossible to use. A user will simply be at the mercy of remote operators, preprogrammed wormhole links, and the fickle nature of the gates themselves.

Network Connections

Gate interfaces, stationary or portable, require a direct wired connection to the gate structure itself. There is no wireless component. However, it is possible to connect an interface already hooked up to a gate to an external network or transceiver.

Gate installations within the solar system typically hook their interfaces up to a larger, air-gapped, wired, and highly secure network that is actively monitored and defended. This enables oversight from multiple specialists, who can keep tabs on different aspects of a gate's functions while it is in operation. It also puts control of the gate operations in the hands of gate operators who are well protected and not in the gate's immediate vicinity. Depending on the particular setup, individual specialists may have the access privileges to issue commands directly to the gate or gate interface (so they could, for example, close a wormhole link if some of the readings exceeded safety limits), or they may only be able to send suggestions to a central gate operator who has sole authority to manipulate the wormhole.

Extrasolar gate control setups vary wildly. Some locations, especially newly discovered ones, have no gate interface on the extrasolar side at all; the gatecrashers and others there are reliant on scheduled wormhole links established by other gates. More established colonies have stationary gate interfaces protected within their own gate installations and connected to a secure wired network. At smaller colonies, stations, and camps, the locals rely on a portable gate control unit kept hooked up to the gate itself, though locked away and protected by active surveillance and sentry bots. In others, the blue box is kept in the possession of the local commander or security teams and only hooked up when necessary to prevent unauthorized gate use.

In rare cases, usually only when major bases are established far from the gate site, the gate interface is linked to a local mesh (typically via secure VPN) or made accessible via a secure communications channel, such as a dedicated laser link or satellite radio link. Quantum encryption is almost always used for these remote gate controls (see p. 254, *EP*).

Operating a Gate

Controlling a gate via a gate control unit is roughly like using any other commercial electronics device. The user interface is smooth and intuitive, if sometimes complex. It allows operators to search the library, open new wormhole links, close wormholes, and to accept, hold, deny, or lock out incoming connections. It also enables the operator to manipulate the wormhole's size. For example, when first linking to a new location, the wormhole can be kept small enough to pass a sensor through, but that's all.

Whenever a character unfamiliar with a gate interface attempts to manipulate one, or whenever an experienced user attempts something that is not guaranteed of success, the player should make an Interfacing (Gate Operations) Test with an appropriate modifier. Characters with a Gate Operations specialization receive the usual +10 modifier.

The real test of using a gate control interface is figuring out what to do when something goes wrong—which, of course, happens frequently. This may call for an Interfacing (Gate Operations) Test, a Programming (Gate Interface) Test, or an Academics: Gate Operations Test. Additional suggestions for using the gates and tests to apply are given below.

The Gate Library and Gate Addresses

Unless otherwise modified, anyone with user privileges on a gate control unit can access the gate's library of addresses. In theory, each address corresponds to a different remote gate. The address for a remote gate in one gate's library will not work if copied into another gate's library. The libraries are also dynamic, meaning that new addresses might appear and old ones disappear (perhaps to reappear later). Gate libraries can be backed up, but attempts to reintroduce deleted addresses usually just result in the address being immediately removed again.

This library is linked to a catalog of known extrasolar locations built into the gate control unit, making it easy to correlate between the two. For this catalog to be kept up to date, it must periodically be synced with catalogs maintained online. Catalogs kept in extrasolar and portable gate control units are often sadly out of date.

Scientists believe that the addresses incorporate information about the remote gates themselves, and are looking for ways to decode or correlate this data. This would be a significant breakthrough if it occurred, as it could give transhumanity the ability to easily find colonizable worlds, locate worlds with numerous resource to exploit, or avoid major threats—not to mention simply saving time on gate exploration. This breakthrough, however, is years or even decades off, assuming it's even a possibility.

In the meantime, gamemasters can allow characters to attempt to decode, analyze, and correlate

gate addresses, but this should require difficult tests (usually a Programming Test at –30) and at best steer the characters in the right direction, rather than pinpointing details with any sort of accuracy. This is best applied only when it's important for a story. For example, if the characters need to get to a specific extrasolar location but only have the address for it from a gate other than the one they're using, they could try and compare that address's characteristics to their own gate's library and try to find a match. At best, they could narrow the field down to a sampling of possibilities, which they could then cycle through hoping to get lucky and find the one they want. Alternately, if the characters really need to get to a system with a Type O star, for example, a Programming Test at –30, using Academics: Astronomy or something similar as a complementary skill, may get them a list of likely addresses.

Opening and Closing a Wormhole Link

Opening and closing a wormhole is not (usually) an immediate affair. The exact time frame required is up to the gamemaster and should be chosen as best fits the needs of the story. As a default, establishing a new wormhole connection takes 5 minutes (with a minimum of 10 seconds and a maximum of 10 minutes). Closing a wormhole is simpler, with a default timeframe of 1 minute (minimum immediate, maximum 5 minutes). Attempts to speed up or slow down this time should be treated as an Interfacing (Gate Operations) Task Action.

If an operator is attempting to close a wormhole from one end while an operator at the other attempts to keep it open, treat this as a Variable Opposed Test. The closer has an advantage in this contest, as there are many variables in the wormhole that can be adjusted to affect the wormhole's stability, and thus exploited to make the wormhole close. Apply a –30 modifier to the opener's part of the test. If the closer succeeds and the opener fails, the gate closes as normal (reduce the closing timeframe by 10% per 10 points of MoS). If the opener succeeds and the closer fails, the gate stays open. If both succeed, the closing will still occur, but increase the timeframe by 10% per 10 points of MoS the opener achieves).

Unexpected Closings

Gates are occasionally known to close a wormhole without warning or much more quickly than expected. Again, this is primarily up to the gamemaster as best fits the plot. At the gamemaster's discretion, any critical failures rolled on Interfacing (Gate Operations) Tests can result in immediate cessation of the wormhole link. Gate control units carefully monitor for such events, and can usually provide 3 seconds or so of warning, in the forms of loud claxons, flashing lights, and/or broadcast entoptics, giving people 1 Action Turn to act before the wormhole closes.

Anyone or anything caught in transition when the wormhole stops is simply severed. Limbs may be lost, machinery may be split in half, etc. This can be instantly fatal if characters are not careful. The gamemaster decides how lethal to make this situation, perhaps giving characters a REF x 3 Test to pull in or out at the very last second.

The Wormhole's Tug

When a wormhole is active, anything that is transiting through will feel a slight tug. Anyone or anything left stationary on the threshold will gradually be pulled to one side or the other (whichever has the least resistance). Most likely a safety feature to prevent things from being caught in the wormhole when it closes, gamemasters can use this device to slowly push collapsed characters or dropped items out of harm's way.

Receiving Incoming Links

By default, most gates are set to automatically accept incoming connections from remote gates. It is possible, however, to change this setting so that incoming links must first be approved; this is how the five gates within the solar system and those situated at major colonies are configured. In this case, the operator receives a message, including information on the remote gate's address and its corresponding extrasolar catalog info. They can then choose whether to keep it on hold, open the link, deny the link, or permanently lock out all further links from that address. If the gate being connected to already has an open link, the operator attempting to connect receives a "busy signal" and is automatically put on hold until the gate is available again.

Gate operators who are attempting to dial into a remote gate that is not set in permissive mode (i.e., it does not auto-accept incoming connections) may flag their link as a priority or emergency in the hopes of making a connection sooner or more likely.

Preprogrammed and Timed Connections

Gate operators may program a wormhole link to open at a specified time. Though this is allegedly a simple task, in reality it is prone to error. Preprogramming a connection requires an Interfacing (Gate Operations) Task Action of 1 minute.

Similarly, open (or preprogrammed) connections may also be set to automatically close after a certain time period. This requires the same test as preprogramming.

As a rule of thumb, failure in either of these tests means that the connection or time period seems to be preprogrammed, but will actually be 1 minute off per point of MoF. Whether it occurs sooner or later is up to the gamemaster as befits the story.

Gate Hacking

Gate control units may be hacked just like any other electronics device. This is easier if the interface has a wireless link or is hooked up to a local mesh; for security purposes, however, this is rarely the case. Hacking a gate interface usually requires direct physical access to the unit and/or the local network to which it is wired. The encryption on that network

GATE SUBVERSION EXAMPLES

MODIFIER	SKILLS
–0	Open/close wormhole, accept/hold/deny incoming connections, preprogram/time a connection
–10	Access/copy the library, manipulate wormhole size
–20	Modify the library
–30	Shut the gate control unit down, lock out an incoming connection, force open a connection

must also bed defeated. The Gate Subversion Examples table lists some example gate hacking options and the modifiers that apply.

FORCING OPEN A WORMHOLE LINK

When a link is put on hold, denied, or locked out, the operator attempting to dial in has few options. There have been several hacks developed over the years to bypass these blockades, but over time defenses have also been constructed against most of them (or at least the known ones). If a character were to acquire one of these known exploits (treat it as a specialized version of exploit software) and use it against a remote gate equipped with a gate control unit that is not up-to-date on its defenses, they might be able to override the block and force open a connection. To do this requires a Programming Test with a –30 modifier.

Developing new override hacks—or defenses against existing ones—is difficult and requires knowledge of the gates' "operating system." To create such an exploit or counter-exploit requires an Academics: Gate Operations Test at –30. This is a Task Action with a timeframe of 1 month. If successful, a new exploit or defense is developed, which will likely be quite valuable until deployed.

GATES AND PSI

Psi sleights may not be used "through" a wormhole. An async on one side of a gate may not, for example, use Ego Sense to detect someone standing on the other side. An async may, however, reach through a wormhole and use a sleight on a target they are touching. If an async wishes to use a sleight with range, they must stick their entire head and brain through to that side of the wormhole.

Asyncs wielding the Grok sleight (p. 224, *EP*) have a minor advantage when dealing with the gates. Though they cannot simply control or manipulate the gates with their minds, lacking any way to interact with the gates' operating systems, they can achieve an understanding of a gate's working with a COG x 2 Test. This could, for example, be used to hook a blue box up to a gate or gain an understanding of what another gate operator is doing.

Asyncs with the Ambience Sense sleight are extra-attuned to the emissions of gates; they receive a +20 modifier (rather than the usual +10) to Perception test when trying to locate a gate.

GATECRASHING CAMPAIGNS

Whether your group of characters needs to make a simple extrasolar trip or whether they are playing a group of hard-bitten gatecrashers who repeatedly put their lives on the line out of desperation, thrills, or to make a Big Find, the following notes and rules may be relevant to your campaign.

TYPES OF CAMPAIGNS

It is easy to center an entire campaign around gatecrashing and extrasolar environments, focused in the open frontier where transhumanity's future could be defined. These are but a few of the options and relevant themes with which gamemasters and players can run.

EXPLORERS

The biggest draw to gatecrashing is the thrill of exploring the unknown, taking major risks to seek out new worlds, new life, and new threats. The most daring pursue careers as first-in teams, waiting endlessly on hold with just a few minutes to prepare and absorb information before crossing over into a new alien environment. This is tough and demanding work with high death and casualty rates, leading many gatecrashers to suffer from mental stress and traumas. This is the provenance of thrill-seekers, the brave and foolhardy, and those so desperate they will try anything to make progress in their lives. Explorers who prefer a bit more stability can take on follow-up missions, enabling them to be more prepared and to have a better picture of what to expect and what to look for—though surprises are still very much a likelihood. Those truly dedicated to exploring will pursue gatehopping—leaving everything behind and heading off on a trip into the unknown, possibly never to return.

Explorers must be pragmatic and resourceful, capable of coping with a wide variety of environments and situations, with a broad skill base to cover the tasks their jobs require. Major themes include facing new challenges, keeping a small group of diverging personalities together in stressful conditions, and experiencing the majestic splendor of the universe as it tries to kill you.

RESEARCHERS AND XENOARCHEOLOGISTS

The best aspect of gatecrashing to a scientist is the discovery of new knowledge, whether that be a breakthrough in astrophysics, an exciting new form of microbial life, or the lessons and secrets left behind by a dead civilization. Researchers flock to areas of scientific interest, braving harsh environmental conditions and other hazards to learn something new. Many are motivated by the reward of solving mysteries or they seek fame and renown in their chosen profession. Others simply have an insatiable taste for knowledge. Many are content to accumulate data to verify and solidify theories that have lacked evidential support

until gatecrashing presented new opportunities. There are also those who seek to make a discovery that will elevate transhumanity's technological capabilities, though whether they plan for this to be accessible to all or for only their sponsor to exploit is a significant question. Research is sometimes a competitive affair, while other times it unveils a major x-risk that could spell doom if not averted. Major themes in these types of campaigns involve questions of ownership of and access to knowledge, the challenges of pitting egos and rewards against principled research and the scientific method, and the ethics of impacting other ecologies and life forms with our own.

Hired Contractors

Many gatesploitation hypercorps rely on freelance contractors to handle tasks and duties that fall outside their main focus. This is good work, whether the contractors have a steady employer or take jobs from different corps as the need arises. The holy grail of this field is to score a contract with one of the major gate corps: TerraGenesis, Pathfinder, Gatekeeper, or Go-nin. The work can range from colonial administration to resource surveying to manning scientific sampling expeditions. Security contractors are in high demand, whether to guard claims from being poached, police colonists, or ward off hostile wildlife.

The drawback to contract work is that the characters may find themselves stuck on a backwater planet for months at a time. This might fit right into a campaign however if the story involves a host of mysteries and problems plaguing a particular exoplanet colony. On the other hand, this type of work might provide a backstory for being transported to new extrasolar locations on a frequent basis—with an employer footing the bill. This type of campaign also presents opportunities for characters with various specialist backgrounds to shine in their chosen field, while putting them on site when a new mystery or opportunity emerges. For example, a group of characters skilled in Geology and various Earth Sciences may be brought in to oversee a mining camp, placing them at the forefront when the newest mining tunnel breaks into a cavern full of alien relics or active TITAN machines.

Colonists

A more focused campaign may place the characters in the role of a small group of hypercorp, brinker, autonomist, or mercurial colonists, looking to establish a new home far from transhuman society. This provides an opportunity to explore small group dynamics, particularly if the colonists also include a number of unique NPCs with differing outlook and agendas. This type of campaign would focus more on scenarios that deal with the various challenges such a colony might face, including acclimating to an alien environment, coming to terms with local life forms, coping with the stresses that come with colony life and removal from transhuman society, dealing with conflicts resulting from the group's internal dynamics, and of course any larger mysteries or dangers the settlers may suddenly find themselves needing to resolve. These sort of adventures emphasize the DIY nature of extrasolar settlements, with isolation being a major theme.

Campaigns centered around colonies have a different aspect from other gatecrashing ops in that retreating or running away from a threat are rarely options. Most settlers will seek to defend their homes and the hard work they have put into them. If the colonists are employed (or perhaps even indentures of) a hypercorp or other sponsor, that entity may consider the colony to be a major investment that must be defended. Indentures face the additional challenge of not being fully in control of their own future.

Problem Solvers

An easier way of incorporating gatecrashing in campaigns is to treat the characters as problem solvers who are called in for gatecrashing operations as circumstances demand. This is the default mode for Firewall characters and campaigns, particularly sentinels who have day jobs in the gatecrashing industry. This setup enables characters to be brought in on a pre-existing situation, handed the background details, and given various opportunities for finding a solution to the problem at hand. For Firewall characters, this may also involve infiltrating a hypercorp or other operation so as to provide a cover identity they can use to send themselves through the gate, depending on the situation. This setup also works for non-Firewall characters, whether they be mercs called in for alien bug hunts, security consultants hired for special private investigations, preservationist saboteurs looking to find a way to prevent an alien world from being despoiled, or corporate fix-it types brought in to suppress a brewing autonomist uprising.

Gate Access

The most significant challenge facing many gatecrashers, especially first-timers, is how to gain access to a gate. With the exception of the anarchist-operated Fissure Gate, gate time is prohibitively expensive.

Buying Gate Time

Private parties wishing to buy gate access must have ample resources. Gatekeeper and Pathfinder have set the standards for rates, and they are not cheap. The going rate for access is 100,000 credits plus 50,000 per minute of gate time (only open wormhole time is billed—they do not count time spent establishing a connection … usually). If the operation involves opening a wormhole to a previously unvisited address, an additional 500,000 fee is applied for first-in exploration and precautionary procedures. These rates are fluid and subject to gamemaster approval.

TerraGenesis offers a slightly more competitive rate; reduce costs by 10%. Go-nin, on the other

hand, charges at least 10% above the rest, sometimes more. These fees do not account for any equipment or other logistics aspects the mission might require. They do cover basic decontamination procedures for returning gatecrashers, though medical care or extra quarantine procedures (such as is automatically required for anyone bringing extraterrestrial life back) will cost extra.

There are ways to reduce these costs. For missions hoping to locate and claim exploitable resources, xenoarcheological relics, new life, or other valuable finds, the party can give the gate-owning entity a cut of the find in exchange for reduced rates. The larger the cut, the bigger the deduction. Exact arrangements are left up to the gamemaster and the negotiating skills of the party in question. Groups that are buying large chunks of gate time are often granted discounts as well. Gatekeeper is known to give grants, incentives, and discounts to research groups and missions that will expand transhumanity's knowledge base.

GATE FEES

One-time Gate Operation Fee	100,000
First-in Fee	500,000+
Gate Operation	50,000/minute
TerraGenesis/Vulcanoid	–10%
Go-nin Group/Discord	+10%

SPONSORSHIP

For those with grand ideas but small budgets, it is sometimes possible to find a sponsor for your mission. This might be a venture capitalist willing to risk large amounts for an even larger return on investment, a scientific foundation or university eager to back a line of research, a political bloc hoping to gain a strategic advantage over their rivals, a media hypercorp that smells a hit documentary, or an eccentric hyperelite character willing to fund the project as long as they can come along for the ride and try out a new and exciting life experience. Finding such a sponsor might be an adventure in itself, or it can come about through a lot of legwork and strategic use of rep and social networks.

The drawback to sponsors is that they often have their own agendas, which may be at odds with that of the characters. When a conflict of interests occurs, the sponsor may very well expect the characters to prioritize the sponsor's goals. This can be an excellent source of tension for gamemasters to exploit.

If the rumors are to be believed, some immensely wealthy and influential figures have backed the gate entities enough to acquire permanent gate access for their own private projects, often prioritized ahead of others.

HIRED CRASHERS

Prospective gatecrashers also have the option of seeking employment with one of the gate corps: Gatekeeper, Pathfinder, TerraGenesis, or Go-nin. Each of these employs professional gatecrashers for their own private missions. Usually they will seek to hire those with previous gatecrashing experience, though anyone with expertise in a relevant field (such as astrobiology, planetology, geology, etc.) can likely find work. Security contractors are also high in demand. The various hypercorps and partners that pay for their own missions are often looking to hire as well; the online job boards around the various gate sites are quite active, with one's reputation among other gatecrashers being the key to scoring new work.

COLONIAL VOLUNTEERS

Mars needs wome—err, Pathfinder needs transhumans of every stripe (*cough* except mercurials *cough*) to enlist in their Pathfinder Colonization Initiative, spreading the Planetary Consortium's idea of civilization to the stars. If Pathfinder isn't what you're looking for, numerous other hypercorps and political entities are looking to seed new settlements. Colonial recruits are carefully screened for their psychological well-being, adaptability to living in remote and sometimes hostile corners of the galaxy, and ability to listen to orders and follow the rules. Those with skill sets that are particularly useful to a colony's well-being, whether that be habitat maintenance, administration, engineering, psychology, or something else, are more likely to be accepted. The drawback to colony life is that these are usually set, long-term missions. Colonists are typically laden with contractual obligations to the colony's founder, essentially making their gatecrashing adventure a one-way trip.

Many colonists are actually indentures; they may not even have volunteered for such work. There is very little policing or recrimination for those who essentially deploy indentures as slaves in their colonies, where they are far removed from prying eyes and civil liberties advocates.

LOTTERY WINNERS

Those who are desperate or down on their luck can try their hand at one of the gate lotteries, as described under *The Lotteries*, p. 26, no matter their background or experience. Lottery winners have the highest casualty and death rates, of course, so the ride isn't always as free as it might seem. Lottery gatecrashers also sign away their rights to any finds they make, though they may be lucky enough to claim a reward (p. 28).

Though Gatekeeper's lottery is the most prominent, the other gate corps occasionally run their own. The Love and Rage anarchists also sponsor a lottery specifically for inner system hopefuls, including a separate lottery that is exclusive for indentures; the winners are bought and given their freedom.

Autonomist Gates

The Fissure Gate is open to anyone to use, assuming you can get there, you're not acting for profit and agree to share your finds, and your @-rep isn't so bad as to get you censured. Signing up for a slot of gate time is a Level 5 favor, assuming the gate time consumed is not too lengthy and you're covering your own logistics. Anything beyond that might count as extra favors. Unsurprisingly, there is a waiting list unless you have a particular good argument for prioritizing your mission and the rep to back up your claim.

The Pandora Gate is also a decent option for autonomist gatecrashers due to the Titanian influence over Gatekeeper. Use of @-rep or Titanian kroners can pave the way towards gate access even for gatecrashers that are otherwise broke and destitute. The slight bias given towards Titanians is regarded by some as institutionalized.

Gatehoppers and Remote Gates

For dedicated gatecrashers, the best option is to get a hold of their own blue box (p. 157) and get to a remote gate outside of the solar system. From there, they can potentially stage their own gatecrashing missions or go on a gatehopping adventure. Some gatehoppers go so far as to sign up for extrasolar missions or colony projects as a way to get outside of the solar system cheaply, where they can then pull together the resources to create a blue box using open source blueprints and a nanofabber and then secretly access the local gate (often violating colony laws or the mission's guidelines) to embark on their journey. Extrasolar locales such as Portal (p. 122) offer the best options for DIY gatecrashers or gatehoppers, with shorter waiting times, multiple gates to choose from, and a supportive gatecrasher community.

Firewall and Gatecrashing

Firewall quite often has need of gatecrashers, usually to follow up on potential x-risk leads. The organization has connections to hundreds of gatecrashers who operate as sentinels, though these individuals are not always in the position to help as needed. Just as often, Firewall must recruit sentinels new to gatecrashing and exploit various methods of inserting them into an operation.

If necessary, Firewall is not above sponsoring its own gatecrashing ops, though it prefers to avoid the expense of doing so. When possible, it will take advantage of the Fissure Gate for these missions; Firewall and the Love and Rage Collective have a working relationship, with the anarchists often aware and in the loop regarding sentinel missions. The collective has also been known to call Firewall in for specific operations or to pass along info they think the sentinels and proxies can use.

OPTIONAL RULE: GATECRASHER REP

For campaigns with a heavy gatecrashing element, a new social network can be introduced: *ExploreNet*, or *x-rep*. This network functions just like the others; if the gamemaster allows it, x-rep is purchasable at character creation like other rep scores. X-rep is the network used by gatecrashers, gatehoppers, gate corps, and anyone else invested in the gates and extrasolar exploration. ■

More often that not, however, Firewall deals with extrasolar threats by finding ways to insert people into ongoing missions. This usually means passing off their agents as hypercorp personnel or hired freelance contractors. More than one extrasolar Firewall op has failed because the sentinels' cover was somehow compromised before they even managed to step through a gate.

Access Restrictions

It is important to keep in mind that gate access often comes with restrictions. Any use of a hypercorp-controlled gate, for example, comes with the stipulation that the hypercorp retains ownership and control over the remote gate. Certain equipment may also be restricted from passing through the gates without extra controls or fees. Blue box gate control units are not allowed through on first-in missions and are sometimes barred from others as well.

One notable restriction is that almost no gate-controlling entity will allow anyone to directly control the gates within the solar system themselves, with the exception of personnel who have been thoroughly trained and approved. Even the Love and Rage anarchists do not allow others to access the controls without checking them out first and making sure they know what they are doing.

Insurance and Backups

Only the reckless, nihilistic, desperately poor, or suicidal go gatecrashing without making a backup first (or without alpha forking, as some prefer), especially on first-in missions. This is considered a matter of course for most gate endeavors and all of the gate facilities within the solar system have backup facilities on site. Most sponsors and employers will provide this as a service to their gatecrashers, but not everyone prefers to leave their backups at the mercy of their bosses.

Recovery Bonds

For those that prefer not to lose their extrasolar experiences should they die, recovery bonds are an (expensive) option. By placing up a reward for their recovered cortical stack, the recovery bond provides an incentive for risk-taking gatecrashers to try and retrieve it. Recovery bonds may be posted for any amount, though of course the higher the bond the more likely someone is willing to risk going after it. To really be worthwhile, most recovery bonds start at 100,000 (enough to cover 1 minute of gate time going in and another coming back) and go up. Some established recovery bond outfits have established relationships with gate-owning corps that enable them to score deals on gate access time for recovery ops.

Rewards

Lottery winners and explorers working for sponsors can hope to score rewards for certain finds, as noted under Mission Bonuses/Rewards (p. 31). On top of this, explorers who strike it big or perform beyond the call of duty may reap the rewards of reputation bonuses. Some suggestions are noted on the Mission Rep Rewards table (below).

First-In Procedures and Gatecrashing Guidelines

Due to the inherent risks involved, first-in procedures are heavily emphasized and repeatedly drilled in the gatecrashing community, much like firearm safety is among responsible gun owners and armed professionals. Even gatehoppers go through a minimum probe and analyze routine before stepping through a gate. These procedures are one of the first things newbies are taught, so anyone who has received any sort of gatecrashing training will be familiar with the routine. The main procedures of gatecrashing can be broken down into a few simple rules:

- Create only a small wormhole on a first link—you never know what might come through.
- Always probe the environment on the other side.
- Always send a tethered recon bot through first.
- Don't bring blue boxes on first-in missions or where encountering sapient life is a possibility. Transhumanity doesn't want to accidentally give another species the means to control the gates.
- Don't bring anything that could give away the location of the solar system in the galaxy to an alien species.
- Map everything. Mapping missiles are your friend.
- Record everything.
- Never take your vacsuit off until you are sure the environment is safe—breathable, non-toxic, etc.
- Don't touch anything unless you're sure it won't kill you.
- If you encounter sapient life, keep contact minimal, be polite and non-threatening, back out quickly and call in first-contact specialists.
- Don't forget to mark and register your claim.
- Never miss your gate check-in time.
- Always decontaminate when you come back.

MISSION REP REWARDS

ACTION	AVERAGE REWARDS*
Minor Find (Resources, Non-Sapient Life, Terraformable Exoplanet)	+2 x-rep
Major Find (Alien Artifacts, Earth-Like Exoplanet, Gate Nexus, Megastructure)	+5 x-rep
Discover a Scientific Anomaly	+2 r-rep
Answer/Resolve a Scientific Anomaly	+8 x-rep
First Contact with a Sapient Alien Species	+10 x-rep
Saving a Gatecrasher's Life	+2 x-rep
Collecting on a Recovery Bond	+4 x-rep

* If you are not using x-rep, apply x-rep bonuses to the rep corresponding to the sponsoring faction.

GATECRASHING TECH

This section details new morphs, new gear, and new bots/vehicles that gatecrashers will find handy.

NEW MORPHS

This selection of morphs includes a variety of models that see regular use in gatecrashing operations. At the gamemaster's discretion, these may be allowed during character creation.

AQUANAUT (BIOMORPH)

Aquanauts are environmentally adapted for underwater activities. They have seen a revival on exoplanets with habitable seas and oceans. Their heart rate slows while underwater, their skin includes a layer of blubber that retains heat, they store oxygen in their muscle tissue, and they do not suffer negative health effects from pressure changes. Additionally, their eyes have nictitating membranes and their corneas adjust to counter underwater refraction. Their hands and feet are webbed and they possess a transgenic swim bladder for controlling buoyancy. They can safely descend to about 200 meters depth (roughly 6 atmospheres of pressure) without suffering narcotic effects or other diving problems.

Implants: Basic Biomods, Basic Mesh Inserts, Cortical Stack, Enhanced Respiration, Gills, Sonar, Swim Bladder, Temperature Tolerance (Improved Cold) (p. 166, *Sunward*), Toxin Filters
Aptitude Maximum: 30
Durability: 40
Wound Threshold: 8
Advantages: +5 COO, +10 SOM, +5 to one other aptitude of the player's choice, +10 Swimming skill
CP Cost: 50
Credit Cost: Expensive

CRASHER (BIOMORPH)

An enhanced version of ruster morphs, crashers are rugged and durable designs capable of weathering a range of harsh environments. They are the ideal biomorph for gatecrashing assignments and are popular among first-in teams. Though pricey compared to other biomorph options, many gatecrashers traveling to less habitable and dangerous environments have found the investment worth it.

Implants: Basic Biomods, Basic Mesh Inserts, Bioweave Armor (Light), Circadian Regulation, Clean Metabolism, Cortical Stack, Direction Sense, Eidetic Memory, Enhanced Respiration, Enhanced Vision, Grip Pads, Hibernation, Medichines, Oxygen Reserve, Toxin Filters, Vacuum Sealing
Aptitude Maximum: 30
Durability: 40
Wound Threshold: 8
Advantages: Bioweave Armor (Light) (2/3), +5 COG, +10 SOM, +5 to three other aptitudes of the player's choice
CP Cost: 70
Credit Cost: Expensive (Minimum 40,000+)

DIGGER (POD BIOMORPH)

Diggers are worker pods customized for archeological work. They are used for surface surveys, excavation, and general physical labor by xenoarcheological teams. Their hands are modified digging claws, adapted from the genetics of hole-digging creatures like moles and aardvarks, though still flexible and useful for grasping and fine manipulation.

Implants: Access Jacks, Basic Biomods, Basic Mesh Inserts, Cortical Stack, Cyberbrain, Digging Claws, Enhanced Vision, Mnemonic Augmentation, Puppet Sock, Wrist-Mounted Tools
Aptitude Maximum: 30
Durability: 35
Wound Threshold: 7
Advantages: +10 SOM, +5 to one aptitude of the player's choice
Disadvantages: Social Stigma (Pod)
CP Cost: 30
Credit Cost: Expensive

DVERGR (BIOMORPH)

Dvergar (plural of dvergr) are biomorphs designed for comfortable operation in high-gravity environments. They feature a reinforced skeletal structure and sturdier muscle masses. They are easily identified by their slightly squat, thick-necked, tough appearances.

Implants: Basic Biomods, Basic Mesh Inserts, Cortical Stack, High-G Adaptation
Aptitude Maximum: 35 (40 SOM)
Durability: 45 (includes implant bonuses)
Wound Threshold: 9
Advantages: +15 SOM (includes implant bonuses), +5 to one other aptitude of the player's choice
CP Cost: 50
Credit Cost: Expensive

KITE (SYNTHMORPH)

This small shape-shifting synthetic shell is capable of flight no matter the atmospheric environment—or lack thereof. Its default mode is turbofan-driven rotorcraft; its light weight allows it to fly and hover even in thin atmospheres and heavy gravities. In streamlined ionic mode, it can travel at high speeds and maneuver in hurricane-force winds. In vacuum, it can drive itself with thrust-vector nozzles. Sometimes called "multifliers," kites are popular among gatecrashers and gatehoppers due to their adaptability and usefulness for aerial recon and surveys.

Enhancements: Access Jacks, Anti-Glare, Basic Mesh Inserts, Chemical Sniffer, Cortical Stack, Cyberbrain, Direction Sense, Enhanced Hearing, Enhanced Vision, Lidar, Mnemonic Augmentation, Radar, Shape Adjusting, T-Ray Emitter
Mobility System (Movement Rate): Ionic (12/40), Thrust Vector (8/40), Walker (2/8), Winged (8/32)
Aptitude Maximum: 25
Durability: 20
Wound Threshold: 4

Advantages: Flight, +5 to one aptitude of the player's choice, Armor (2/2), counts as a small target in combat (–10 to hit; p. 193, *EP*)
CP Cost: 30
Credit Cost: High

Ripwing (Pod Biomorph)

Developed by the genehackers of Fortean, ripwings are neogenetic avians, incorporating genetics from a range of flying creatures, some of them prehistoric pterosaur genes acquired from Sky Ark researchers, along with some original genetic traits. These transgenic amalgamations are larger and sturdier than standard neo-avian morphs. They are popular among both neo-avian mercurials who want a more robust form and gatecrashers looking for a quick and stealthy flyer for recon missions. The ripwing morph makes more extensive use of the *chiroptera* genestocks used to give the first avian uplifts functional hands. Instead of feathers, ripwings feature tough leathery skin or even scales. The morphs are usually a uniform matte black in color, though they are able to change color at will due to their chameleon skin enhancements.

Implants: Access Jacks, Basic Biomods, Basic Mesh Inserts, Chameleon Skin, Cortical Stack, Cyberbrain, Enhanced Vision, Mnemonic Augmentation, Prehensile Feet, Puppet Sock, Wings
Aptitude Maximum: 30
Durability: 35
Wound Threshold: 7
Advantages: Beak/Claw Attack (1d10 DV, use Unarmed Combat skill), Flight, +5 COO, +5 INT, +5 REF
Disadvantages: Social Stigma (Neogenetic), Social Stigma (Pod)
CP Cost: 40
Credit Cost: Expensive (minimum 30,000)

Scurrier (Pod Biomorph)

Scurriers are pods developed from the non-sapient extraterrestrials known as sciurids (p. 172). In appearance, scurrier pods are similar to raccoon-sized flying squirrels with a lash-like manipulator rather than a fluffy tail, though still regarded as highly cute. They make excellent climbers and are capable of gliding due to the membrane between their limbs. Scurriers are gaining popularity for their usefulness in exploring tunnels and small areas as well as high areas reached by climbing. They have also been used for maintenance and tech works tasks due to their nimbleness and manual dexterity.

Implants: Access Jacks, Basic Biomods, Basic Mesh Inserts, Cortical Stack, Cyberbrain, Gliding Membrane (p. 166, *Sunward*), Mnemonic Augmentation, Prehensile Tail, Puppet Sock
Aptitude Maximum: 25
Durability: 30
Wound Threshold: 6
Advantages: +5 SAV, +10 COO, 6 Limbs, Limber (Level 1) Trait, +10 Climbing skill, +10 Freerunning skill, counts as a small target in combat (–10 to hit; p. 193, *EP*)
Disadvantages: Alien Biochemistry, Social Stigma (Alien), Social Stigma (Pod)
CP Cost: 40
Credit Cost: Expensive

Spare (Synthmorph)

Spare morphs are small, cheap, lightweight, synthetic shells designed to be used as a replacement should someone's original morph be killed or destroyed. A cortical stack (retrieved from the character's previous morph; see p. 268, *EP*) can be easily plugged into the spare morph, effectively resleeving them (they must make Integration, Alienation, and Continuity Tests as normal; see pp. 270-272, *EP*). Once plugged in, it takes only 3 Action Turns for the cortical stack's data to be read and checked for integrity and the ego to run inside the spare's cyberbrain.

Spares are designed for portability. Packed as a flat disc 15 centimeters in diameter and with a mass of 2 kilograms, when activated they pop into a spherical shape with 6 slender and retractable 20-centimeter limbs (3 arms and 3 legs). They are a common piece of equipment for gatecrashing teams.

Enhancements: Access Jacks, Basic Mesh Inserts, Cyberbrain, Extra Limbs (3 Arms/3 Legs), Grip Pads, Mnemonic Augmentation, Puppet Sock
Mobility System (Movement Rate): Walker (2/8)
Aptitude Maximum: 20
Durability: 15
Wound Threshold: 3
Advantages: Armor (2/2), counts as a small target in combat (–10 to hit; p. 193, *EP*)
Disadvantages: Social Stigma (Clanking Masses)
CP Cost: 5
Credit Cost: Moderate

Whiplash (Pod Biomorph)

Designed by autonomist xenobotanists as an experiment in developing a cyberbrain/planimal interface, whiplash pods are bioengineered from planimal stock found on Sunrise (see *Exotic Life*, p. 130), with other transgenic features (see *Whiplash*, p. 173). Whiplash pods are gaining some traction among gatecrashers due to their ability to blend in to arboreal environments. The primary modification made to the whiplash stock was to turn the entire organism upside down and orient the digestive portion of the organism horizontally, so that the whiplash's trilobed orifice faces forward. The whiplash's grasping roots were also converted into even more motile "walking tentacles" borrowed from other Sunrise planimals. Other adjustments include the addition of a pair of grasping limbs, each with four universally opposable digits; artificial sensing mods (providing transhuman-standard sensing ability); and a general toughening of the internal structure for rigidity and

support. The barrel-like body remains very similar to the original planimal stock and, reorientation notwithstanding, the digestive system remains mostly unchanged. The ability to extend and retract the whiplash's feeding tendril was heavily enhanced, so now the tendril acts more like a two-meter-long chameleon-like tongue than a hanging food-trap.

Implants: Access Jacks, Basic Biomods, Basic Mesh Inserts, Chameleon Skin, Cortical Stack, Cyberbrain, Mnemonic Augmentation, Puppet Sock

Aptitude Maximum: 30

Durability: 40

Wound Threshold: 8

Advantages: Tendril Attack (use Unarmed Combat skill, 1d10 + (SOM ÷ 10) DV, +10 to disarming called shot attacks), +5 COO, +10 SOM, +5 to two other aptitudes of the player's choice

Disadvantages: Alien Biochemistry, Social Stigma (Alien), Social Stigma (Pod)

CP Cost: 50

Credit Cost: Expensive (rare; minimum 50,000+)

Xu Fu (Synthmorph)

Named after a historical Chinese explorer, many gatecrashers consider xu fus the ideal exoplanet exploration synthmorph. Its main body sits atop 6 legs (up to 2 meters long, though retractable) that end in multidirectional smart wheels for quick travel, capable of rolling in any direction and over rough terrain. For exceptionally difficult terrain, the wheels can be retracted and the xu fu can maneuver as a walker. In addition to two standard arms, it features a third 2-meter long sensor-equipped limb for reaching far distances, overseeing obstacles, etc. Xu fus have an impressive sensor package and are ideal for surface-based scouting as well as investigating tunnels, collecting samples, and so on.

Enhancements: 360° Vision, Access Jacks, Basic Mesh Inserts, Cortical Stack, Cyberbrain, Direction Sense, Echolocation, Electrical Sense, Enhanced Hearing, Enhanced Vision, Extra Limbs (3 Arms/6 Legs), Grip Pads, Lidar, Mnemonic Augmentation, Pneumatic Limbs, Radar, Puppet Sock, Radiation Sense, Telescoping Limbs (Legs, 1 Arm), T-Ray Emitter

Mobility System (Movement Rate): Walker (4/20), Wheeled (4/32)

Aptitude Maximum: 30

Durability: 40

Wound Threshold: 8

Advantages: +5 COO, + 5 SOM, Armor (8/8)

CP Cost: 60

Credit Cost: Expensive (minimum 50,000+)

New Bioware

These physical augmentations follow all of the standard rules for implants as given in the *Eclipse Phase* core rulebook. Digging claws and swim bladders are also available in cybernetic form for synthmorphs.

Digging Claws

Adapted from the genetics of hole-digging creatures like moles and aardvarks, digging claws are lengthier, sturdier hands with hardy claws for loosening ground, cutting through hard surfaces, and shoveling dirt aside. Despite these changes, digging claws are still capable of grasping and fine manipulation like regular human hands. They can also be wielded offensively with Unarmed Combat skill, inflicting 1d10 + 2 + (SOM ÷ 10) DV with an AP of –1. **[Low]**

Enhanced Respiration (Specific)

The Enhanced Respiration bioware on p. 305 of the *Eclipse Phase* core rulebook is partly what allows rusters to breathe the atmosphere of Mars. There are many exoplanets with atmospheres that are not breathable by normal transhumans, but that are close enough that they would be with a bit of modification (see *What Worlds Are Breathable?*, p. 170). On some of these planets, rusters with standard enhanced respiration could breathe the air, but on others a different version of this biomod, specific to the atmosphere in question, may be called for. **[Low]**

High-G Adaptation

This augmentation is specifically designed to allow a morph to operate in environments where gravity is significantly greater than Earth's. The morph's heart and circulatory system are strengthened and its skeleton altered in composition and proportion to be harder, slightly thicker, and considerably more durable. The morph's muscle density is also increased and tendons and ligaments bolstered for improved efficiency in higher gravity. Apply a +5 Durability and +5 SOM bonus. In addition, the character suffers no negative modifiers from gravities up to 2 g, and reduces all penalties for higher gravities by 1 g. **[Moderate]**

Swim Bladder

This transgenic organ is a series of gas-filled sacs that allow the character to control their buoyancy underwater. This bladder is also linked to the inner ear, enabling the character to accurately gauge water pressure/depth and also improving their hearing underwater (+10 to hearing based Perception underwater). **[Low]**

SCURRIER POD BIOMORPH ■ p. 151

DVERGR BIOMORPH ■ p. 150

NEW NANOWARE

This implanted nanosystem follows all of the standard rules for nanoware as given in the *Eclipse Phase* core rulebook.

PERSONAL POWER PLANT

For gatecrashers worried about being trapped on an exoplanet with no source of food, this nanoware system provides a solution. The nanobots in this system are powered by the isotope gadolinium-148. They transfer this nuclear energy to the body so that it is absorbed in a safe and consistent manner. This effectively fuels the body without the need to eat. With a half life of 78 years, the character can go for a century and possibly longer without regularly eating. A tiny bit of food consumption is still necessary to replace cells, though a small food stash could literally be stretched out for years. Likewise, vitamin and protein supplements would be necessary for long-term health, but as an alternative to starving to death, the personal power plant cannot be beat. **[Expensive]**

SPECIAL TRAIT

The following morph trait counts as neither Positive nor Negative. It neither costs CP nor provides a CP bonus. It only applies to pods created from alien genetic stock. It may not be applied to non-alien morphs.

ALIEN BIOCHEMISTRY

It is an impressive feat that creatures that evolved on separate worlds with different biochemistries are now being transformed into pods by transhuman geneticists. In fact, the biochemistries of these creatures are far less understood than that of transhumans. What this means is that drugs, chemicals, bioware augmentations, and cybernetic implants may have unpredictable effects on the pod. Drug treatments beneficial to transhumans may not function at all, for example, while something that transhumans regularly eat or handle may in fact be toxic to the pod and trigger an anaphylactic response. The gamemaster decides when this factor will play a role, based on the pod biochemistry's similarity to that of transhumans and numerous other factors. Certain augmentations may simply not be available, having not yet been invented for the alien physiology in question.

While efforts have been made to provide these pods with their equivalent of basic biomods, the full protections offered by those enhancements may simply not be available. This means that the pod may or may not be vulnerable to such things as disease, aging, lack of sleep, long-term exposure to microgravity, shock from injuries, allergies, or other biological problems that transhumanity has attempted to eradicate. Likewise, the pod might not be able to heal quickly or regenerate limbs. It is also possible that the pod may be burdened with unusual biological problems inherent to its species, such as bizarre gastrointestinal issues, hacking up hairballs, respiratory distress, or an alien version of leukemia. Gamemasters are encouraged to be inventive.

Morphs with alien biochemistry count as exotic and inflict –30 modifiers to Alienation and Integrity Tests (p. 272, *EP*). This trait is only available to pods created from alien life.

Communications Gear

Maintaining contact is often crucial to a gatecrashing team's survival.

Mission Recorder

A mission recorder is a simple mini-sized spime designed to record live lifelog, XP-cast, or other sensor feeds from gatecrashing teams. Standard protocol is to leave mission recorders at an easy-to-find location on or next to a Pandora gate, so that search-and-rescue teams can find and analyze the recordings. Mission recorders are often hooked up to radio boosters, laser links or other tools for increasing their reception range for gatecrashing teams that stray far afield. **[Trivial]**

Motes

Motes are lightweight, micro-sized computers that come in packages of 500 (or more). They are designed to be spread around an area, whether manually, by airburst mote "grenade," or scattered by aerial drone. Individual motes have grip pads that enable them to stick to almost any surface with which they come into contact. Once they blanket an area, the motes link together, establishing an ad hoc mesh network. Though each individual mote only has a range of 50 to 500 meters, en masse they can provide coverage over a significant region (see also *Sky Motes*, p. 163). Mote meshes are often the first networks a colony will have, with main outposts saturated and motes spread along main trails and thoroughfares. Motes can also be equipped with sensors; cameras are a common choice. **[Low for packages/grenades of 500; Moderate for sensor-equipped models]**

Neutrino Retreat

This highly specialized piece of equipment is designed specifically for gatecrashers who use emergency farcasters (p. 306, *EP*). This device includes a powerful radio transceiver and a specialized neutrino receiver, both of which are quantum entangled with one or more emergency farcasters. This device uses its radio transceiver to make daily backups of the owner's ego and is also capable of receiving the pulsed ego broadcast made when an emergency farcaster sends out its single destructive neutrino broadcast. This device can remain in radio contact with an emergency farcaster at a range of 500 km and can receive the neutrino pulse from emergency farcasters up to 100 AU away. Most gatecrashers place this device within a few yards of the gate so rescue teams can easily find and access it. This device is also popular with criminals and freelance covert operatives who wish to have a carefully hidden safe haven for their egos.

Neutrino retreats cannot broadcast neutrino communications and so are considerably smaller and less expensive than standard neutrino transceivers. Each neutrino retreat is able to communicate with up to 10 different emergency farcasters and can store up to 10 egos. This device is a medium-sized cube one meter on a side, weighting 400 kilograms. It contains its own nuclear battery, capable of running the device for up to 10 years. **[High]**

Radio Beacon

This portable, medium-sized radio transmitter has an open range of 250 kilometers. It can be programmed with any message(s) the user desires and set to repeat, alternate, or broadcast according to schedule. It can also be set to only broadcast after it receives a preprogrammed signal. Radio beacons are used as claim markers for resource or archeological finds, as planted messages to follow-up teams or rescuers, and for automatically warning people away from dangerous or secured areas. **[Low]**

Satnet-in-a-Can

One of the first steps to establishing an outpost on any exoplanet is to install a a basic satellite network. A satnet-in-a-can is a large metallic hydrogen-fueled missile that carries 32 small satellites. Each of the 32 satellites is a 1-kilogram sphere only 10 centimeters in diameter. The missile itself is 40 centimeters in diameter, 2 meters long, and 300 kilograms in weight. This rocket can be used on any world with a gravity of 1.8 g or less. It includes a smart material launch tube that extends struts and supports to automatically aim the missile in the correct trajectory. To use it, all the owner needs to do is set it up in a roughly vertical position, turn it on, and stand back. The missile will then automatically aim and launch. Once it reaches the proper altitude, it will deploy the satellites into intermediate circular orbit. Between 1 and 2 days later, the satellites will be in position and the satnet will come fully online.

The satellites provide GPS data to anyone on the planet's surface as well as continuous low-resolution observation of the entire surface using the ultraviolet, visual, and infrared spectrums. These satellites provide a top resolution of only 100 meters on 1 g

planets; around lower-gravity planets the satellites are closer to the ground and get better resolution, around higher-gravity exoplanets their altitude is higher and so they can only see larger details.

This satnet can provide a rough map of the planet in just under a day. It can also provide continuous real-time imagery of the entire surface, allowing anyone linked to the network to instantly learn of volcanic eruptions, large earthquakes, spaceship launches, meteor strikes, the detonation of any atomic weapons or similar large bombs, or any other large-scale events. The network's software can both analyze weather patterns and do limited weather prediction for any location on the planet's surface (Academics: Meteorology skill of 60).

These satellites also provide a network of communications relays so that anyone with a radio booster can communicate with anyone else with a radio booster, anywhere on the planet. This effectively facilitates a global mesh for anyone with a radio booster. The satnet transmissions are also boosted, so anyone with basic mesh inserts or an ecto can receive its broadcasts.

Though this is a large and pricey piece of gear, the advantages it provides are great enough to justify the cost and difficulty of transport. **[High]**

Everyday Technology

These common items see widespread use among transhuman society but are especially valued by gatecrashers.

Batteries

As described on p. 299, *EP,* power source technology in *Eclipse Phase* is far advanced from modern day. While these batteries are powerful and long-lived, and power is readily available in the inner system, gatecrashers occasionally test the limits of these capabilities, have technical problems, or even run across alien relics that they hope to power. For this reason, batteries are often brought along as a precautionary measure on short trips and are required gear on longer missions.

Standard Batteries: Standard batteries are micro-sized, high-density, ultra-capacity, room-temperature superconductors good for hundreds of hours of operation. They are adapted to receive power from wireless energy transmitters or they can be replenished rapidly by attaching them to a recharger. **[Trivial]**

Nuclear Batteries: These batteries actually generate their own power from radio-isotope decay, storing it up for use. They come in many sizes, from nano to small. Depending on their size and the needs of the device, these batteries can produce power for anywhere from 3 years to over a century (higher output batteries use isotopes with shorter half-lives and vice versa).

Gatecrashers rely upon a multitude of powered devices and recharging them on an alien world can be difficult. Since solar power may not exist on all worlds gatecrashers visit, many carry along a nuclear battery, using it to recharge their standard batteries and devices.

The standard portable nuclear battery is designed to put out 1 kilowatt of power continuously for up to three years. This device can recharge low powered devices within a few minutes and larger higher powered devices within several hours.

Nuclear batteries are used in both railguns and energy weapons to recharge the standard batteries that power these weapons.

These nuclear batteries can regenerate their charge at a rate of 20 shots per hour. Changing a battery is a Simple Action. **[Low]**

Grip Tape

This sticky nanotape can be applied to almost any surface, allowing items to be stuck in place with the adhesive power of grip pads. Pulling in a parallel direction is very difficult, but items are easily released by pulling up (perpendicular) to the surface instead. **[Trivial]**

Solar Recharger

Designed using thin-film solar cells over a layer of smart materials, this lightweight unit comes in a small-sized portable that unfolds into a 1.5-square-meter panel. Like the nuclear recharger, it produces 1 kilowatt of power and can recharge low powered devices rapidly and larger higher powered devices within several hours. However, it requires sunlight or the equivalent to function. **[Trivial]**

Wireless Energy Transmitter

When attached to a power source like a nuclear battery, nuclear recharger, or solar recharger, the small-sized wireless energy transmitter will transfer power to devices within 20 meters via near field resonant inductive coupling. Though this technology is widespread in transhuman habitats, removing the need for power cords when a nearby power source is readily available, it is a useful device for gatecrashers to keep their gear charged without needing to worry about plugging in. **[Trivial]**

Exploration Gear

Most of these items end up in the arsenal of every gatecrashing team.

"Blue Box" Portable Gate Control Unit

Named for the distinct cobalt blue color they were originally manufactured in, blue boxes are portable gate control units (see *The Gate Interface*, p. 142). These are specifically designed for interfacing with extrasolar gates and are the most common gate interface found on extrasolar colonies. They are rarely allowed on first-in missions or any missions where signs of sapient life have been detected, in order to keep these devices out of the hands of aliens. Because these devices only allow a pared-down version of the full gate interface, they are more challenging to use than complete stationary models; apply a –10 modifier to all gate operation actions conducted via blue box.

Like standard interfaces, blue boxes come as open source or proprietary models.

Blue boxes must be physically attached to a gate in order to control it. This process is time-consuming and difficult; it requires a Hardware: Electronics Test as a Task Action with a –10 modifier and a timeframe of 1 hour. **[Expensive]**

GATE PROBE

Gate probes are portable medium-sized self-deploying sensor packages. When a small wormhole is opened to a new location, a gate probe stationed in front of the wormhole can be instructed to stick a micro-sized sensor probe through the opening and take readings of the other side. This probe provides a live audiovisual feed, uses a radiation sensor to detect the local radiation level, and uses a chem sniffer and thermometer to measure the atmospheric pressure, temperature, and composition. This probe emits no active signals and is shielded from electromagnetic signals in a protective Faraday cage mesh. Taking a simple measurement requires only 1 Action Turn, though probes are usually stationed for a minute or longer to get more accurate and detailed readings. Gate probes can withstand pressures from 0 to 250 atmospheres and temperatures from –250 C to 600 C. They have Perception 40 and Academics: Chemistry 60. **[Moderate]**

MAPPING MISSILE

A mapping missile is a small metallic-hydrogen rocket capable of attaining low orbit on any world with a gravity of less than 1.8 g. It is designed to launch a single small satellite into a relatively low polar orbit that is equipped with a variety of sensors, including visual and infrared cameras, radar, spectrographs, as well as simple mass sensors. Within 25–40 hours (depending on the size of the world) this satellite beams back a map of the planet, including data on mass concentrations, all artificial lights (or significant forest fires) on the night side, and any large structures. The resolution of this map is fairly low and does not reveal any details that are less than approximately 100 meters across (though better resolution is possible on worlds with less than 1 g gravity, and worse is likely on planets with more than 1 g). However, cities, mountains, islands, and anything else that is huge can all be clearly seen. The satellite also provides data on the rotation rate of the planet as well as its gravity and atmospheric composition. It includes a radio booster so that anyone with basic mesh inserts or an ecto can receive the mapping broadcasts.

Mapping missiles are medium-sized gear, approximately 1 meter long, 15 centimeters in diameter, and a mass of 10 kilograms. The satellite payload is a smooth 12-centimeter sphere before it deploys its antennas and lenses. The missile comes packed inside a smart material launch tube that extends struts and supports to automatically aim the missile in the correct trajectory. This tube is mounted on an electric cart with smart material wheels. To use this device, all the owner need do is send it through the gate and let it launch. The missile automatically moves from the gate to a good launching position, aims, and launches. The only time the owner will need to move it is if the gate opens underground or in some other location where the missile's sensors cannot see the sky. The satellite also includes a tiny payload of disassembler nanobots that can be activated by its user, to destroy the satellite without leaving debris in orbit. Mapping missiles have Perception 40 and Academics: Chemistry 60. **[Moderate]**

PORTABLE SOLARCHIVE

One common frustration among transhuman gatecrashers is being cut off from the mesh and the vast knowledge base of transhumanity. To compensate for this, they bring along portable SolArchives. These are small data storage units that hold impressive data archives on a particular subject of interest. Each library unit focus on a different subject (one specific Knowledge skill at 60). The user can query the library for information or use it to make a Research Test related to that subject as if they were searching the mesh. Portable SolArchives automatically update their data whenever they are in contact with the mesh. These units are also popular among brinkers and others who spend long periods isolated from major outposts of transhumanity. **[Low]**

SCOUT MISSILE

Scout missiles are sensor-equipped standard missiles that come pre-packaged in a disposable launcher tube. Scout missiles are designed to map out the region in a 5-kilometer radius from the launch point in just 20 minutes. They carry visual and infrared cameras, radar, and lidar. Their primary function is to map terrain, locate structures, and identify other features of interest. Scouts are valued by gatecrashers for their ability to map a small area quickly.

Scout missiles are incredibly easy to use; simply point up and launch, and the missile does the rest. The missile transmits a feed of its sensor

SMART ANIMALS

CREATURE	COG	COO	INT	REF	SAV	SOM	WIL	INIT	SPD	DUR	WT	DR	LUC	TT	IR	SKILLS
Smart Camel	5	5	10	10	5	20	15	40	1	40	8	60	30	6	60	Fray 20, Freerunning 30, Perception 30, Scrounging 20
Smart Horse	5	10	15	15	5	20	10	60	1	45	9	68	20	4	40	Fray 30, Freerunning 40, Perception 30, Scrounging 20
Smart Wolf	5	15	15	15	5	15	10	60	1	25	5	38	20	4	40	Fray 30, Freerunning 40, Infiltration 30, Intimidation 30, Investigation 30, Perception 30, Scrounging 40, Unarmed Combat 50

data, position, and telemetry in real-time, and will transmit a full recording of its findings once its run is completed. Scout missiles may be programmed to search in a specific direction rather than a radius around the launch point, increasing their effective range in the chosen direction out to 10 kilometers. The missiles may also be instructed to search for specific features or signs (such as tracks or a missing explorer); treat the missiles as if they have a Perception of 40. Scout missiles usually travel at a height of 100 meters and can provide high-resolution images of ground-based objects (down to the centimeter scale). **[Moderate]**

Smart Animals

Though sometimes frowned upon due to the unknown impact they may have on an extrasolar ecosystem, many gatecrashers like to bring smart animals along on their expeditions, especially companion pets for colony sites and long outpost stays. A few smart animals are used by initial exploration teams, not only for help carrying gear, but as emergency food sources should things go poorly.

Smart Camel

Used as a riding and pack animal, smart camels are both less smelly and less obstinate than their unmodified forebears. **[Moderate]**

Smart Horse

Almost extinct after the Fall, horses were replenished from genetic stock. They are favored for riding and hauling gear and respond well to verbal commands. **[Moderate]**

Smart Wolf

Smart wolves are sometimes favored over smart dogs as guardian animals and companions, partly because they tend to be more vicious and are superior trackers. **[Moderate]**

Survival Gear

This gear is often used to complement the survival gear described on p. 332, *EP,* and p. 167, *Sunward.*

Bio-Defense Unit

Though it is unlikely that gatecrashers will catch an alien disease, they are more likely to suffer (sometimes severe) allergic reactions to alien compounds or encounter alien life or environments that are poisonous, acidic, or otherwise harmful. In order to create a safe zone for an encampment in an alien environment, gatecrashers may deploy a bio-defense unit (BDU). This device consists of an advanced nanotech hive that deploys a nanobot swarm over a small area, specifically designed to destroy and break down all life or other complex organic molecules that are alien or toxic/dangerous to transhumans. The nanobots produced by this unit have no effect on any Earth-derived life or on any safe compounds they produce. However, all known alien life possesses biochemistries that are highly distinctive and so a BDU can easily destroy all non-Earth life without risking any harm to gatecrashers or any pets, test animals, or biological compounds they bring with them from the solar system. The operator can also add specific alien life forms and compounds to the list of targets that the BDU will specifically not attack.

The BDU is a small 15-centimeter hemisphere that contains the hive and a swarm of nanobots. When activated, the swarm deploys over an area 20 meters in diameter (or less if the operator desires). Users can combine multiple BDUs to clear larger areas. Within the designated area, the nanobots destroy and break down all alien life and remove every trace of alien biological activity, leaving behind only sterile soil, bare rock, and pure water. In addition to removing potential toxins, the BDU also clears an area of even the sturdiest alien plants that might interfere with setting up camp. Alien life that wanders into the protected area automatically suffers 1d10 ÷ 2 DV per Action Turn. If the creature has armor this will be eaten away first. This damage continues as long as the creature remains within the protected area. This process is sufficiently painful that almost all alien life swiftly flees the protected area. Outside of the safe zone, the nanobots deactivate and break down. **[High]**

Bio-Defense Swarm: A swarm of bio-defense nanobots may be purchased separately in simple canisters from which they can be programmed and released to cover a 10-meter radius area. Without the hive, this nanoswarm will deplete to ineffectiveness after 2 weeks. **[Moderate]**

Crasher Suit

Recently developed by Omnicor, this is a high-end version of a standard vacsuit customized for a gatecrasher's needs. It has all of the features of a standard smart fabric vacsuit (p. 333, *EP*) except that it provides 10/10 armor and is equipped with wrist-mounted tools (p. 309, *EP*) and a Life-Support Pack (p. 159). The suit's gauntlets and boots are also hardened and provide an extra +1d10 DV on melee attacks. **[Expensive]**

Defense Beacons

Gatecrashers usually have no idea what sort of hostile entities they may face on a new world. When making camp or investigating an area, defense beacons keep gatecrashers from being surprised by dangerous wildlife, rival parties of gatecrashers, or ancient automated defense systems. This set of defense beacons consists of a medium-sized portable pack containing four rods, each half a meter in length and 3 centimeters in diameter. These rods telescope out to 3 meters in height and are designed to be hammered into or attached to any surface.

Each rod contains a series of infrared, radar, and ultrasonic sensors as well as powerful miniature

speakers, a stunner, and a microwave agonizer capable of firing in both normal and "roast" mode (p. 339, *EP*). To use this device, the operator places the four rods upright in a square or rectangle around the camp or other area that they wish to protect. Each rod can be as far as 30 meters from the two nearest rods. Additional defense beacon packs may be deployed to cover a larger perimeter. The operator then designates those individuals and devices that are allowed to freely cross the barrier created by these rods and also determines the minimum size of intruders that will be defended against and the level of defense. Once in place, defense beacons warn everyone inside the camp, using either speakers or radio, of any intruders either coming within 30 meters or attempting to cross the invisible fence created by the four rods. Also, defense beacons can be programmed to use the stunners or microwave agonizers against any intruders (they have Beam Weapons skill 40). Meanwhile, the inhabitants of the camp can walk in or out of the protected area without harm or annoyance. **[Moderate]**

Emergency Rations

Sometimes all technology fails. Even the best makers and life support systems can break down or be disabled by hostile actions. Since alien plants and animals are almost universally inedible, some gatecrashers carry along a supply of compressed emergency rations. The most common form of emergency food is a mini-sized package of 9 small bars that supply complete calories and nutrition for a total of 3 full days. Most people consider food created by even the cheapest maker to be gourmet cuisine when compared to these rations. **[Trivial]**

Faraday Suit

Originally designed for exploring habitats that had been attacked or largely destroyed by the TITANs, this device has also been adapted for use on high-risk gatecrashing missions where the gatecrashers suspect that they will encounter TITAN-created relics or aliens devices that might produce a variety of dangerous inputs. This suit covers the entire body in a climate-controlled garment with an outer surface that reflects all microwaves and radio waves (meaning they are +10 to detect with radar). The suit is lined with a superconductive charged wire mesh, effectively cocooning the user in a bubble from which they can neither send nor receive radio signals. This cuts the wearer off from the mesh and other data sources, but also protects them from hacking attacks and mesh – or radio-based basilisk hacks.

In addition, the suit's helmet is opaque on the exterior and soundproofed, preventing the viewer from seeing out in the normal and near-visual spectrums or hearing noises around them. The helmet is mounted with an external camera (visual and infrared) and microphone, however, that feed input inside the helmet (though still outside the Faraday mesh). The helmet's built-in speaker and screen are designed to deliberately degrade information they display/emit, however, to impede potential hostile sensory inputs (+30 to tests to resist basilisk hacks). As a result, while wearing this suit, all sounds are somewhat distorted and vision is fuzzy and indistinct. While these limitations can be problematic, they also render the wearer immune (or at least resistant) to all known forms of incapacitating or mentally affecting inputs.

All Faraday suits include radio links so that other team members can communicate with the wearer. However, these radios cannot be connected to the wearer's basic implants. Instead, the wearer must use the deliberately low-grade microphone and speakers in the helmet to communicate with others. An actual old-fashioned keyboard mounted on the suit's arm enables text messages in case audio signals are too degraded or full radio considered too dangerous. These measures minimize the chance that if one member of a team is affected by incapacitating inputs, they will be able to spread the memetic infection to the rest of the team.

The helmets of Faraday suits are designed to retract into a barely noticeable collar. They can go from this state to a fully activated helmet within 1 Action Turn. Except in obviously dangerous situations, most users wear the helmets open, thus permitting them to use basic implants and ectos normally. Many users instruct their muse to automatically activate the helmet if they detect any potentially dangerous inputs to protect the wearer. **[Moderate]**

BEAM WEAPON RANGES

WEAPON	SHORT RANGE	MEDIUM RANGE (–10)	LONG RANGE (–20)	EXTREME RANGE (–30)
Plasma Cutter	0–5	6–15	16–18	19–20

BEAM WEAPONS

BEAM WEAPONS	ARMOR PENETRATION (AP)	DAMAGE VALUE (DV)	AVERAGE DV	FIRING MODES	AMMO
Plasma Cutter	–8	2d10 + 8	19	SA	20

THE GATECRASHER GEAR PACKAGE

While the Survival Belt (p. 159) incorporates the essential items of personal gear that any gatecrasher needs, the gatecrasher package provides all the core gear a team is likely need in one handy bundle for a Cost of [Expensive]:

Bio-Defense Unit (p. 157)
Defense Beacons (p. 157)
Mapping Missile (p. 156)
Mission Recorder (p. 154)
Mobile Base (p. 164)
Mote Grenade (p. 154)
Radio Beacon (p. 154)
Robomule (p. 162)
Satnet-in-a-Can (p. 154)
Scout Missile (p. 156)
Shelter Dome (p. 333, *EP*; includes emergency distress beacon) ■

Faraday Armor Mod: A Faraday suit can be built into any model of vacsuit or body-covering armor. **[Low]**

FILTER STRAW

Designed to function without power or the need for any active nanotechnology, filter straws contain a set of specially designed self-cleaning microfilters that allow the user to safely drink any liquid that contains even a small amount of water. Filtration straws filter out mud, salt, and all dissolved chemicals or suspended particles. They are the size of large drinking straws and are flexible. **[Trivial]**

HEALING POD

Healing vats are too expensive and bulky for most gatecrashers to carry with them. However, both medichines and nanobandages heal wounds at a much slower rate. Also, neither of these two types of medical technology can deal with the most severely wounded morphs. Instead, both place such morphs in medical stasis. Since gatecrashers can rarely afford to either wait several days to heal or to carry around a comrade in medical stasis, a disposable healing pod was developed. This small-sized device contains a wide variety of advanced medical repair and life support nanotechnology.

To use this device, the patient must either be in a functional vacsuit or the healing pod must be connected to a Life-Support Pack (p. 159) and the patient placed into a morph-sized sack that is included with the device. When the healing pod is activated, the unit's compressed nanobots swarm out, envelop the patient, and thoroughly infiltrate their body. These nanobots heal the patient with the same speed and effectiveness as a healing vat (p. 326, *EP*).

A version of the healing pod exists that is designed to repair synthmorphs. It does not require a working vacsuit or an LSP and comes with a limited supply of the raw materials needed for synthmorph repair. A single healing pod can heal either biomorphs or synthmorphs, not both.

Healing pods can be re-used, but their nanotech is only able to heal a total of 10 wounds. Once a healing pod has healed that many wounds, the medical nanobots have been used up and a new healing pod must be acquired. **[Moderate]**

LIFE-SUPPORT PACK

Ordinary vacsuits are only designed for relatively short term use, but gatecrashers might stay on uninhabitable worlds for many weeks. A life-support pack (LSP) is a thick belt that contains a small nuclear battery as well as advanced filters and a specialized maker that allow it to supply the wearer with pure air for up to 30 days. If the wearer periodically adds water or ice or spends time in an atmosphere containing oxygen, even if this oxygen is part of carbon dioxide or some other gas, then the LSP automatically replenishes its oxygen supply and can continue to provide air for the wearer for the next two years. The LSP's nuclear battery is also designed to interface with the vacsuit it is attached to, allowing it to power that suit for a similar length of time. LSPs can be worn with either light or standard vacsuits, but are most useful when used with standard vacsuits, since they also provide the wearer with food and water. **[Medium]**

PLASMA CUTTER

Plasma cutters are useful cutting and excavation tools that also work as short-range weapons. They are devices that are halfway in use and power between a plasma torch and a plasma rifle and are designed to cut rock, refractory alloys, and similar substances. They have a maximum range of 15 meters and can be fired continuously to cut away large segments of even the thickest rock wall very rapidly. Plasma cutters consist of a hand-held unit the size of a small, thick rifle that is connected to a small backpack unit by a flexible cable. **[High]**

SURVIVAL BELT

This widely used item is a collection of tools that are useful or essential to gatecrashers, all in a comfortable and durable belt with more than a dozen pockets. The standard survival belt contains the following:

- Basic Tool Kit (p. 326, *EP*)
- Breadcrumb Positioning System (p. 332, *EP*)
- Electronic Rope (10 meters) (p. 332, *EP*)
- Emergency Rations (p. 158)
- Filter Straws (3) (p. 159)
- Flashlight (p. 333, *EP*)

- Flex Cutter (p. 334, *EP*)
- 2 Nanobandages (p. 333, *EP*)
- Solar Recharger (p. 155)
- Radio Booster (p. 314, *EP*)
- Recon Hopper (p. 161) or Recon Flyer (p. 161)
- Repair Spray (p. 333, *EP*)
- Utilitool (p. 326, *EP*)
- Viewers (p. 326, *EP*)

The only essential gear not included is a vacsuit. **[Moderate]**

Xenoarcheology Gear

These items are useful when digging up the ruins of dead civilizations.

Adaptive Interface

One of the most hoped-for finds on any gatecrashing expedition is any piece of functional alien electronics—especially any alien data storage medium still containing data. In the rare circumstances that such a relic is found, the adaptive interface is the tool designed to enable transhumans to understand, activate, and potentially interact with it.

This medium-sized device includes a series of smart-material connectors that allow this unit to be connected to almost any conceivable piece of technology. It is also equipped with sensors and a small nanoswarm that can analyze the device's structure and otherwise try to discern its inner workings. Once connected, the adaptive interface sends minute amounts of power into the alien device, monitors all outputs, and systematically attempts to identify and map the circuitry and logic patterns in the device as well as the safe amount and type of current used to power it. The interface's AI compares the scans and any detected data structures to databases of known and speculated designs (Academics: Computer Science 80, Academics: Electrical Engineering 80, Academics: Xenodata 60, Infosec 40, Interfacing 40, Programming 40).

An adaptive interface can be set up to analyze on its own (use the AI's skills) or a character can take advantage of it to conduct their own study (with the AI providing teamwork). Attempts to figure out how to activate or use an alien device, read data on a relic, figure out an item's purpose, etc. are Task Actions with a suggested timeframe of at least 1 hour and quite possibly longer. The alien nature of most devices applies a –30 modifier to such tests. The gamemaster should adjust this timeframe and apply additional modifiers as appropriate to the device.

While engaged in probing an alien device, the adaptive interface enters into an offline mode, severing all wireless connections; this is safety feature to prevent the interface from spreading an infection to other devices.

The primary limit on this unit is that it is not designed to work with biological technology or with nanotechnology considerably in advance of those available to transhumanity. As a result, this unit cannot be used on bluetrees, myst trees, or any similar non-standard devices. **[High]**

Faraday Container

This is a specimen container (p. 330, *EP*) that is encased in a superconductive charged wire mesh, blocking all radio signals, electrical charges, and electromagnetic radiation from getting in or out. It is commonly used to isolate unknown alien devices. **[Low]**

Scourers

Scourers are a type of nanoswarm/microswarm (p. 328, *EP*) and follow all of the normal rules for such. Scourers are used for xenoarcheological digs. They are programmed to analyze the dirt, regolith, ice, or other ground covering in a particular area and then to systematically remove it, layer by layer. Anything that is found that does not match this matter has its location tagged, then the swarm uses ultrasound to clear the item and clean it. Uncovered items are imaged, tagged again, and their data uploaded to a three-dimensional map of the dig site and all objects found. **[Moderate]**

Robots

These follow all of the rules given for robots in the core rulebook (p. 343, *EP*).

Explorenaut

These bots are specifically designed for the second phase of exploring a new extrasolar location, right after the initial Gate Probe (p. 156) has been deployed. Explorenauts are dog-sized wheeled bots that remain tethered (both for safety and to maintain a communications link) back through the gate. They are equipped with audiovisual and infrared cameras, radar, lidar, t-ray emitters, chem sniffers, and radio receivers. If the area seems clear (no signs of sapient life or threats), its primary task is to move around and map and scan the immediate gate environment, using thrust-vector jets to get a few meters up for a better look around. It will also scan for radio signals, analyze the soil, regolith, or whatever constitutes ground, test for biological samples, and use a telescope to try and identify pulsars or other recognizable features that might help determine its galactic location. Beyond initial first-in proceedings, explorenauts are considered useful for general exploration duties, and so are often brought along by gatecrashing teams. The robot AI has Academics: Astronomy 60, Academics: Chemistry 60, and Perception 40. **[Moderate]**

Manipulator Cuff

Manipulator cuffs are common tools among xenoarcheologists. This robot is primarily designed to be worn as a forearm cuff on the outside of a vacsuit. It carries a utilitool and a mobile lab, and so is useful for a variety of technical, repair, and research tasks. It can be controlled by a combination of arm movements or

standard wireless mesh signals. It can also protrude a telescoping manipulator with a 2-meter reach, allowing the cuff or the wearer to lift, move, and work with objects from a small distance. This extension is shape-adjusting and can bend, flex, and squeeze through openings only 2 millimeters wide.

The primary body of the robot can also detach from the forearm cuff and move on its own power, maneuvering on a pair of flexible treads. Using haptic signals, the remote mobile feels like an extension of the user's hand and can be manipulated with hand movements (or via standard mesh commands or jamming). **[Moderate]**

Recon Flyer

Micro-sized recon flyers are equipped with hydrogen-filled balloons for lift while small turbofans provide propulsion. They are packaged with their gas bags deflated, but when activated fill up and take off quickly. Like other recon bots they are equipped with image recognition software and are useful for locating lost or hidden items. They are typically deployed as an airborne microswarm. **[Trivial (single bot)/Moderate (swarm of 50)]**

Recon Hopper

These mini-sized bots are used to scout surface terrain, particularly in environments without atmospheres where recon flyers are no use. Their light weight and hopping movement enable them to cover even rough terrain quickly, especially in low-gravity environments. They are also small enough to walk into small holes or explore crevasses or ice fractures. They are typically deployed in swarms to cover a large area thoroughly. Like other recon bots they are equipped with image recognition software and are useful for locating lost or hidden items. **[Low (single bot)/Moderate (swarm of 20)]**

ROBOTS

ROBOT	MOVEMENT RATE	MAX VELOCITY	ARMOR	DURABILITY	WOUND THRESHOLD	MOBILITY SYSTEM
Explorernaut	4/20	60	8/8	35	7	Thrust Vector/Wheeled
Enhancements: Access Jacks, Chem Sniffer, Electrical Sense, Enhanced Hearing, Enhanced Vision, Headlights, Image Recognition Software, Lidar, Mobile Lab, Radar, Radiation Sense, Specimen Container, Telescope, T-Ray Emitter, Utilitool						
Manipulator Cuff	2/8	8	—	5	1	Tracked
Enhancements: Access Jacks, Electrical Sense, Enhanced Vision, Fractal Digits, Grip Pads, Mobile Lab, Nanoscopic Vision, Shape Adjusting, Telescoping Limb, Utilitool						
Recon Flyer	4/20	20	—	5	1	Microlight
Enhancements: 360-Degree Vision, Access Jacks, Chem Sniffer, Enhanced Hearing, Enhanced Vision, Image Recognition Software, Radiation Sense						
Recon Hopper	4/20	20	—	10	2	Walker/Hopper
Enhancements: +10 Freerunning, Access Jacks, Electrical Sense, Enhanced Hearing, Enhanced Vision, Grip Pads, Headlights, Image Recognition Software, Radiation Sense						
Recon Snake	4/8	12	2/2	25	5	Snake
Enhancements: +5 COO, Access Jacks, Chameleon Skin, Eelware, Enhanced Hearing, Enhanced Vision, Headlights, Image Recognition Software, Magnetic System, Shape Adjusting, Sonar						
Retriever	4/20	30	14/12	60	12	Walker
Enhancements: 360-Degree Vision, Access Jacks, Diamond Axe, Disassembly Tools, Eelware, Enhanced Smell, Enhanced Hearing, Enhanced Vision, Headlights, Healing Vat, Image Recognition Software, Lidar, Light Combat Armor, Maker, Nanobandages (2), Repair Spray (2), Shelter Dome, 4 Weapon Mounts (Swivel with Agonizer, Shredder, Sprayer with NotWater and Slip, and Stunner)						
Robomule	4/20	35	4/4	40	8	Walker
Enhancements: Access Jacks, Extra Limbs (6), Headlights, Maker						
Sentry Bot	4/16	35	14/12	75	15	Tracked
Enhancements: +5 REF, 360-Degree Vision, Access Jacks, Anti-Glare, Eelware, Enhanced Hearing, Enhanced Vision, Headlights, Image Recognition Software, Lidar, Light Combat Armor, Neurachem, T-Ray Emitter, 4 Weapon Mounts (2 Fixed with Agonizer and Seeker Rifle, 2 Swivel with Laser Pulser and Shredder)						
Sky Mote	4/20	20	—	5	1	Microlight
Enhancements: 360-Degree Vision, Access Jacks, Enhanced Vision, Laser Link						
Thumper	4/20	20	4/4	30	6	Tracked
Enhancements: Access Jacks, Enhanced Hearing, Geophone Sensors, Headlights, Radar, Weight						
Zephyr	8/40	200	4/4	40	8	Winged
Enhancements: Access Jacks, Enhanced Vision, Image Recognition Software, Laser Link, Lidar, Radar, T-Ray Emitter						

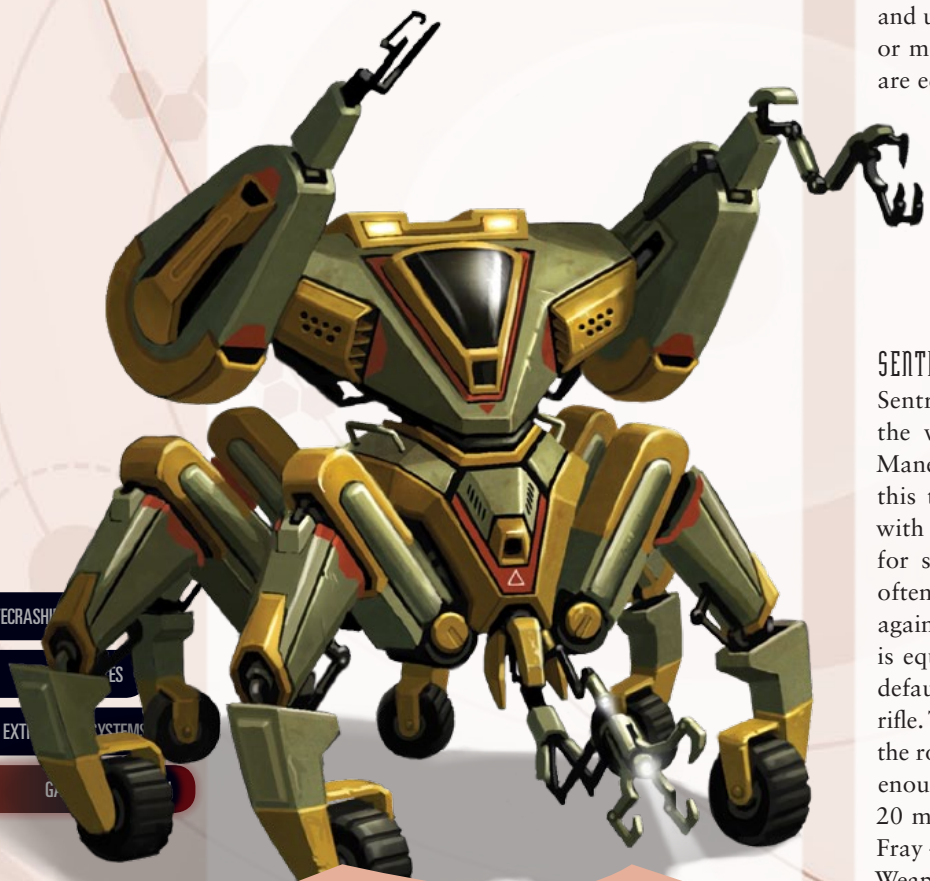
RECON SNAKE

This meter-long synthetic snake is ideal for exploring cracks, holes, and similar tight spots. It can narrow its shape to squeeze through thin openings. It can also climb rough surfaces, trees, and poles by wrapping parts of its body around the object in order to reach higher points or spy from the treetops. Like other recon bots, recon snakes are equipped with image recognition software. **[Moderate]**

RETRIEVER

Retrievers are small car-sized search-and-rescue robots. Sent in when gatecrashers have failed to check in at their gate on time, retrievers specialize in tracking down survivors, helping injured or broken-down transhumans, and rescuing them from danger. Retrievers are quintapedal walkers, with each sturdy leg doubling as an excavation shovel if necessary or as an inclined treadmill to pull injured persons into a built-in healing vat. Retrievers also feature a pair of manipulative arms which can be used to grasp objects, remove debris, or pull injured people to safety. Retrievers also carry fire-fighting gear and a small array of medical equipment for dealing with multiple injuries. They can also carry smaller bots such as recon hoppers or snakes, should the situation require smaller units for scouting out survivors.

If necessary, retrievers are equipped with weaponry to defend gatecrashers from hostile life or other threats. They are programmed to use themselves as shields in order to protect transhumans from further harm. Standard retriever AIs have Academics: Engineering 40, Beam Weapons 40, Fray 40, Investigation 40, Medicine: Paramedic 40, Navigation 40, Perception 40, and Spray Weapons 40. **[Expensive]**



XU FU SYNTHMORPH ■ p. 152

ROBOMULE

Many experienced gatecrashers agree that this is one of the single most useful devices they could take along. Robomules are simple drones that are designed to carry up to 250 kg of cargo over almost any terrain. Roughly human-sized, but horizontal and equipped with 6 legs, robomules are powered by nuclear batteries that allow them to operate for 3 years. Its legs are made from advanced smart materials that change form depending upon the terrain. As a result, it can move as easily over thick mud or dry sand as it can along a well paved road. The legs can also transform into flippers that allow the robomule to swim. When swimming or moving over thick mud, robomules can also deploy reusable flotation bladders that allow it to float even when stationary. The upper surface of the robomule is made of smart materials that can produce straps and webbing to hold almost any cargo. It can even create a large sealed pod that can hold up to 2 cubic meters of cargo and protect it from the external environment, including vacuum.

A robomule can move at a speed of 35 km/hour on solid unbroken terrain, 25 km/hour over rough and uneven terrain, and 15 km/hour when swimming or moving over thick mud or dry sand. Robomules are equipped with a radio booster and a maker that can provide sufficient food and pure water to supply up to four transhuman biomorphs indefinitely, as long as sufficient raw materials are available. More than one badly injured gatecrasher has climbed on top of their robomule and instructed it to hold onto them and move at top speed back to the gate. **[Low]**

SENTRY BOT

Sentry bots come in many makes and models; the version described here is typical of its kind. Maneuvering on four multi-directional smart treads, this transhuman-sized bot is armored and loaded with weaponry. Used throughout the solar system for security and defensive purposes, gatecrashers often bring sentry bots along as a line of defense against hostile life or other threats. This line of bots is equipped with four weapon mounts, carrying by default a laser pulser, agonizer, shredder, and seeker rifle. The beam weapons are continuously powered by the robot's nuclear battery, while the ammo bins have enough capacity for 1,000 shredder flechettes and 20 minimissiles. Sentry AIs have Beam Weapons 40, Fray 40, Perception 40, Seeker weapons 40, and Spray Weapons 40. **[Expensive]**

Sky Motes

Sky motes are mini-sized aerostats designed to keep position over an area and act as a relay point for a mote mesh (see *Motes*, p. 154). They are typically deployed over areas where high terrain, bodies of water, or other environmental factors impede a mote network's coverage or to link two distant mote networks together. Sky motes are also equipped with laser links for line-of-sight communication or in case of radio interference. **[Trivial (single bot)/Moderate (swarm of 50)]**

Thumper

Thumpers are mobile tools used for geological and archeological surveying. Thumpers carry dense weights and a payload of hundreds of micro-sized geophone wireless seismic sensors. When a position is chosen, the thumper distributes the geophones around the area (either manually or with an airburst "grenade" over an area up to 200 meters in diameter). The robot then repeatedly drops its heavy weight into the ground so that the geophones can measure the seismic waves. The collected data can be analyzed by characters or processed by the robot AI's Academics: Geology 60 and Profession: Seismic Surveys 60. If the thumper or its operators have access to satellite scans of the survey operation, apply a +30 to their test. **[Moderate]**

Zephyr

Zephyrs are medium-sized, long-range, high-altitude winged flyers, capable of reconnoitering over long distances quickly. They are essentially small planes and may be launched by throwing them into the air. **[Low]**

Vehicles

These follow all of the rules given for vehicles in the core rulebook (p. 343, *EP*).

Back Wing

The back wing is a wearable powered glider. Designed to be the smallest and most portable airplane possible, this device allows gatecrashers to fly with ease and without the necessity of spending time assembling a vehicle or having to carry a portable plane in a large and awkward container. The backwing is packaged as backpack-like garment made of smart fabric. When activated (usually via mesh command), it forms into a rigid wing with a span of 8 meters in 1 Action Turn.

The back wing also includes a small metallic-hydrogen rocket as part of the pack that can produce 8 minutes of thrust. At 1 g, 6 Action Turns of thrust will lift the wearer 100 meters above the ground. The remaining thrust can be used in combination with the wing to keep the wearer airborne for as long as 8-10 hours, using brief bursts of rocket power whenever the vehicle goes below a certain altitude. The only disadvantage of this device is that it has a mass of 25 kilograms. **[Moderate]**

Crasher Truck

This vehicle is designed as a less expensive version of the GEV (p. 348, *EP*). It possesses all of the capabilities and equipment found on the GEV, except that it lacks the metallic-hydrogen rocket and thus is incapable of movement in space. However, its smart matter mobility system allows it to move over land with either wheels or legs and both on and under the water. It is designed to operate as long as its nuclear battery functions.

For gatecrashers who cannot afford a GEV, a crasher truck is the safest and most well equipped option. A crasher truck's life support system functions for three months without any external inputs and, like the GEV, this vehicle's life support system functions indefinitely if the characters have access to any source of hydrogen and oxygen (including either ice or thin poisonous atmospheres).**[High]**

Go Cycle

This craft is a more robust version of a common cycle that is designed for extended use on uneven terrain and in inhospitable environments. The tires are made of advanced smart materials that can adapt to conditions including open water, swamps, mountainous terrain, and sandy deserts. Go cycles are designed so that even on the worst terrain they can maintain speeds of at least 40 kph. In addition, this vehicle is

VEHICLES

VEHICLE	PASSENGER CAPACITY	HANDLING	MOVEMENT RATE	MAX VELOCITY	ARMOR	DURABILITY	WOUND THRESHOLD
Back Wing	1	—	8/40	250	—	30	6
Crasher Truck	6	–10	8/40	200	16/16	200	40
Go Cycle	2	+20	8/40	140	14/12	60	12
Inflatable Boat	5	+10	4/16	40	8/5	30	6
Large Jet	21	+20	—	800-1,200	30/20	200	40
Mobile Base	2	–10	4/20	15–35	30/20	150	30
Mobility Frame	1	+10	8/32	32	—	25	5
Powersuit	1	—	8/32	32	10/10	45	9

powered by a nuclear battery that can power both the vehicle and its life support system for at least 2 years. The driver and passenger are enclosed in an airtight streamlined pod. The vehicle has a single large wide wheel in front of this pod and another immediately behind the pod.

Go cycles are equipped with a headlight, viewer, radar, and radio booster. The go cycle's maker can supply the passenger and driver with air, food, and water indefinitely, as long as the users add a few liters of additional water or some other source of hydrogen and oxygen every month. Go cycles are built to comfortably hold a driver, a single passenger, and 60 kilograms of cargo. The smart material rear seat can accommodate up to two passengers, though both will be slightly cramped. **[Moderate]**

Inflatable Boat

One of the truths of gatecrashing is that it's literally impossible to know what sort of problems or obstacles gatecrashers may encounter. While water travel is not usually necessary on most worlds, sometimes gatecrashers can only get to their destination by boat. An easily portable boat is an invaluable resource for gatecrashers. This vehicle is made from flexible but highly durable fullerenes. When inflated (which takes 1 minute), it is 4 meters long, 2 meters wide, and half a meter deep. It floats easily and can hold 750 kg of passengers and cargo. These boats are propelled by either a powerful electric motor that can power the boat for 4 hours or by smart material oars that fold up with the boat. Complete with motor and batteries, the boat weighs only 18 kg. When folded up (which takes 5 minutes), the boat fits into a medium-sized portable cube, half a meter to a side. **[Moderate]**

Large Jet

This jet is powered by liquid hydrogen and is the size of a small 20th-century commercial airliner. It is designed for maximum fuel efficiency and can also take off and land on any relatively smooth solid surface. Its adaptive outer covering also allows it to land and take off from water. It has a cruising speed of 1,100 kph and a range of 40,000 km, allowing it to make a single 20,000 km round trip before it must refuel. It has a passenger capacity of 150. **[Expensive, min. 50,000]**

Mobile Base

A shelter dome (p. 333, *EP*) fits in a backpack and is perfectly suitable for short-term expeditions. If gatecrashers wish to establish a long-term base at some location, however, they will want something considerably larger as well as more comfortable and more durable. The mobile base is a relatively small and boxy vehicle with eight large smart material tires that are designed to work on almost any terrain. This vehicle is 4 meters long, 2 meters wide and high, holds a driver and one passenger in the air-sealed cabin, and can move between 15 and 35 km/hour (depending upon the terrain). It is powered by nuclear batteries that can power either the vehicle or the operational base for three full years.

When this vehicle arrives at its destination, it automatically unfolds and unpacks so that it becomes a large and comfortable semi-permanent base capable of housing up to 12 transhumans. This base is 25 meters on a side and includes a mobile lab, sleeping facilities, and everything else the residents will need, including several large and high quality makers. If empty of all personnel and their gear, this base can be packed back into its mobile form within two hours. Unpacking it takes the same time. The base is fully pressurized and includes an air lock. It can be covered with rock or earth to provide radiation shielding. **[Expensive]**

Mobility Frame

To many gatecrashers, the most reliable form of movement is walking. This device is a lightweight partial exoskeleton consisting of a comfortably designed framework of narrow bars and tiny motors that straps onto the wearer's waist, legs, and feet. It allows the wearer to run and walk both faster and with less effort. Characters wearing a mobility frame can walk or run for twice as long as normal without suffering any additional fatigue. Wearing a mobility frame also allows the wearer to add +4 meters per turn walking and +12 meters per turn running. Mobility frames include balance-enhancing software that adds +20 to any roll to avoid tripping, falling, or losing balance. This device is powered by a small nuclear battery that allow it to operate continuously for three years. The device weighs 11 kg. **[Low]**

Powersuits

The powersuit is a sealed exoskeleton, ideal for exploring worlds with hostile atmospheres. Like other skeletons, the powersuit boosts the wearer's strength, movement, and jumping abilities. It provides a +10 bonus to strength-based tests, doubles jumping distance, and inflicts +3 DV on unarmed attacks. The life support maker can provide food and water indefinitely and air for 48 hours (indefinitely if the wearer adds ice, water, or operates in an atmosphere from which oxygen can be extracted). Powersuits are equipped with a radio booster and specs. **[High]**

Alien Relics

Though functional alien technology is exceptionally rare, a few items have been discovered that are even available to gatecrashers or lucky explorers who come across their own.

Dream Shells

These Iktomi-made devices look vaguely like scallop shells 8 cm across. Their purpose is unknown. Some researchers believing them to be alien sleep

or dreaming aids, while others claim that they are some form of data storage and transmission medium. Gatecrashers and xenoarcheologists on both Droplet and Sunrise have found several caches of these devices among the Iktomi ruins (though none yet on Echo V). Over 1,000 dream shells have been discovered to date, and more are expected to be found. Most of these have been claimed by researchers of various stripes, as well as museums, with a few remaining in gatecrashers' hands or making their way into the galleries of wealthy private collectors. Most recently, Gatekeeper released 300 dream shells for general sale, with the provision that anyone who discovers their function or gains useful data from or about them will report this data to Gatekeeper in return for a reward commensurate with the value of the information gained.

Dream shells emit no known forms of electromagnetic radiation and contain nothing resembling standard electronics. Their dense crystalline-lattice structure clearly indicates artificial design and purpose, but provides no clues towards their use. They are known, however, to have a reproducible effect on dreams. Any biomorph that sleeps within 2 meters of a dream shell experiences strange and vivid dreams. Many of these dreams contain unusual characters and exotics bits of scenery, but so far no one has managed to make sense of this information. It is clear that dream shells do not simply produce dreams of alien locations or events and so the nature of their function remains elusive. Rumors that some asyncs have reported detecting or interacting with dream shells using their sleights seem to be just that: rumors. **[Expensive]**

FIXOR

Fixors were originally discovered in a container found in the buried ruins of an alien truck on Portal (see *Alien Visitation*, p. 123). Over two thousand of these pale orange ovoids were discovered carefully packed inside. Each is approximately 22 centimeters long and 3 centimeters in diameter. One end of each ovoid is flexible and slightly darker in color than the rest. When the user pinches this end, the ovoid remains fixed in place until this ovoid is pinched again, at which point the ovoid can be moved normally. No one understands how fixors operate. However, once the fixor is activated, it remains fixed in place relative to the local gravitational field. Even if placed in mid air, the fixor remains perfectly stationary. Each fixor can support up to 2,300 kg without moving a fraction of a millimeter. Users can pull or push them, stand on them, or use the fixor to support heavy weights. A fixor will continue to remain stationary indefinitely or until it is deactivated.

The only known limitation on this device is if the user attempts to have a single fixor support more than 2,300 kg. At this point, the fixor instantly deactivates. Approximately 80% of fixors that are deactivated in this fashion can be activated again and function normally. The remainder never function again. Both active and apparently broken fixors have been carefully examined and even disassembled. So far, no one has been able to determine how fixors work or what powers them. Fixors operate according to completely unknown principles and seem to violate several physical laws, however they appear to be both safe and reliable.

The anarchists who originally discovered and researched the fixors were more than willing to share these objects with other interested (non-commercial) researchers. Once the ovoids were deemed harmless, they released a substantial number to the general public, passing them out to anyone who presented a good case for their interest or intended use, or simply to those who were curious and had high rep. A few fixors are regularly shared among the inhabitants of Locus, some have featured in high-profile art exhibits, a set pins the Titanian flag in mid-air high over the capitol, and some were rewarded to the winners of a contest for new mercurial musical styles. Many habitats have banned these fixors or other alien technology, fearing the unknown aspects of the devices or possible side effects should they be damaged. A few have found their way into hypercorp hands and the black markets of the inner system. **[Expensive]**

SCOUR RINGS

An unknown number of scour rings were discovered on the sub-arctic beach of an unnamed exoplanet devoid of other interesting features. It appeared that they were scattered from the air at least a hundred thousand years ago, and had embedded themselves in the hard crystalline sands. The gatecrashers who found them turned them into Pathfinder for the reward. Soon thereafter, the rings were stolen from Pathfinder's labs by an unknown party. Several have since shown up, available on the black market.

Each ring is 35 centimeters in diameter and 4.5 centimeters in width, leaving a central "hole" 26 centimeters in diameter. They are about 1 centimeter thick, with a lozenge-shaped cross-sectional profile. The external edges are as sharp as a conventional combat knife. When shaken hard, a scour ring will activate and a colorless, slightly refractive energy field will project across the inner space of the ring, looking much like a luminescent soap bubble. Anything passed through this energy field is instantly disassembled into its constituent atoms, giving off eerie blue Cherenkov radiation in the process. Once an object of at least 1 kilogram has passed through the scour ring and been disassembled, the energy field deactivates and the ring becomes inert until shaken again.

If a character or creature passes a limb or other body part through an activated ring, the gamemaster determines the damage inflicted as appropriate to the situation. As a rule of thumb, inflict 2d10 + 5 DV (armor has no effect) and an automatic wound. Anything passed through the ring is destroyed. **[Expensive]**

GATECRASHING DANGERS

When designing dangers and threats for gatecrashing missions, the most important thing to keep in mind is that literally anything could be waiting for the gatecrashers on the other side of a newly opened gate. Gatecrashers who have prepared carefully, probed the remote site, and act with care and caution may minimize many risks. The gamemaster, however, has a number of ways to keep things exciting.

STELLAR PHENOMENA

Some of the most unusual and most dangerous threats to gatecrashers are astronomical in scope. A star may be reaching the red giant stage of its life cycle, swelling in size and swallowing its orbiting planets. The sun may be going nova or supernova or simply experiencing large flares and coronal mass ejections. The star system may be colliding with another, throwing planets out of their orbits and flinging them into deep space, away from the warmth of their sun. The gatecrashers may be visiting an exomoon that strays through a gas giant's sterilizing radiation belts, an exoplanet where meteor impacts are exceptionally common, or where its irregular orbit takes it scorchingly close to its parent star. The remote gate location may be falling into a black hole, soon to cross its event horizon and be forever lost.

In some of these cases, there may be hints and evidence of the dangers to come, giving the characters a chance to pick up on the threat and take action in time. Signs of heavy recent cratering could be an indication of asteroid impacts. Close observation of a star may spot the tell-tale signs of an imminent solar flare. Though some of these dangers only repeat on astronomical time scales, and so are unlikely to pose a threat to gatecrashers who just happen to be around for a few days, coincidences do occur. Perhaps previous missions have noted the signs, and the characters just happen to be lucky enough to be on site when the time comes.

The one limitation of stellar phenomena is that they tend to be either harmless or swiftly deadly. A nearby pulsar aimed away from a planet provides an impressive light show; one aimed at the planet instantly destroys all life on the planet, including the characters and their equipment. There are, however, a few less instantly lethal options. A flare produced by a variable star might produce sufficient radiation to kill a biomorph after a few days of radiation poisoning, leaving synthmorphs mostly unharmed, or the dosage might be survivable with medical treatment if the gatecrashers only spend a few hours in it. Also, even levels of stellar radiation that aren't dangerous to gatecrashers in sturdy morphs or vacsuits may still disrupt all radio communications at a range of more than 100 meters. As a result, gatecrashers who don't stay together will be out of contact with one another unless they have linked QE comms. This also means that the gatecrashers will be out of contact with any base or settlement on that world. In a game where easy communication is assumed to be present at all times, a severe solar flare or similar phenomena can greatly increase tension and make the characters feel considerably more isolated and at risk. Anything that blocks long distance radio communications also cuts the characters off from any form of satellite navigation or possibly even radio beacons that lead them back to the gate.

NATURAL DANGERS

Dangerous wildlife is always a problem. It can consist of everything from vast swarms of highly aggressive insect-like creatures to large animals that are either defending their territory or attempting to devour the characters. Even wildlife that ignores the characters can be a danger. Two elephant or dinosaur-sized animals that are fighting or mating very near the characters can be a serious threat, as can a cloud of swarming insects large and thick enough to block vision and clog machinery. Also, while any biomorph with basic biomods is immune to ordinary allergic reactions, some particularly alien biochemistries can act as potent toxins. A bite or sting can be deadly unless the morph is specifically resistant to a wide variety of poisons.

Weather is another issue, particularly if no one has set up a satellite network. Hurricanes and tornadoes are serious threats, especially if the characters have no warning of them, and can reach epic proportions in some environments. Even more ordinary weather conditions like windstorms or blizzards can easily harm or incapacitate characters. If everything is covered in several inches of ice, mobility becomes far more difficult, and machinery that isn't specially sealed may not operate or will at best operate erratically. Sandstorms are even worse. Most gatecrasher gear is sealed against such problems, but sand can still get literally everywhere.

Gear rarely fails in *Eclipse Phase,* and gatecrashers will not be expecting it to. If an environment is sufficiently problematic, however, then vehicles and other objects with moving parts may need to be unstuck. If a character attempts to service or open up a device in the midst of a storm, then salt, sand, ice, or whatever is likely to get inside and damage delicate parts. Storms can also obscure vision, remove tracks, and jam radio signals, depriving characters of their technological guides and making them lost.

Flash floods are even more dangerous. If the characters are not on high ground, they or their equipment can easily be washed away. While characters in vacuum suits won't drown, they can be battered and bruised from being washed several kilometers in a flood, and all of their gear that wasn't on their person may be scattered over several square miles or headed out to sea. Floods can severely injure careless and unprepared characters and seriously inconvenience even the most experienced and prepared team of gatecrashers.

A SMALL GUIDE TO MEGASTRUCTURES

Alien civilizations with advanced technology may have the means to engage in megascale engineering projects—artificial objects over 1,000 kilometers in length. Any one of these would be a fantastic find for transhumanity, given the likelihood of discovering extraterrestrials and their technology. The boon to science from researching the methods used to create such a megastructure would be immeasurable. Many of these structures require components to be built from materials unknown to transhuman science, in order to maintain integrity under massive stresses. They might also require the complete cannibalization of a planet or even an entire star system for raw material. Here is a quick list of just a few of the theoretical structures that might exist:

Dyson Sphere: A Dyson sphere is a shell built around a star, enclosing it within. The primary purpose for such an object would be to capture the entire energy output of the star within. The interior of the shell might also be designed for habitability (and in rarer cases, the shell's exterior, though this would likely require another source of warmth and light). Though less massive than the star, this structure would have a surface area equivalent to thousands of planets. The sphere could be rotated for gravity, though this creates complications with stress forces and any atmosphere bunching up around the equator.

Dyson Variants: Rather than dealing with the engineering difficulties of a solid sphere, a star's energy output could instead be captured by a swarm of solar-collecting satellites or other structures maintaining a dense sphere-like formation. This option is the easiest to build, and could be built up over time, starting with a ring of swarm objects around the star. A similar option, known as a Dyson bubble, would use stationary (rather than orbiting) satellites that utilize solar sails to maintain their position against the star's gravity. Another variant, the Dyson net, would string solar power-collecting cables around the star.

Ringworld: Similar to a Dyson sphere, a ringworld (also sometimes referred to as a "halo") would be a solid loop constructed around a star and spun for gravity. The side facing the star would be habitable, with high walls holding in an atmosphere. Though not as massive as a Dyson sphere, the ringworld would still have enough surface area to mimic hundreds if not thousands of planets.

Topopolis: Similar to a ringworld, a topopolis is a tube built around a star and spun for gravity, much like an O'Neill cylinder stretched around a sun. A topopolis could even be braided around a star several times, creating a knot-like formation, or "cosmic spaghetti."

Orbital: A smaller version of a ringworld, an orbital (also sometimes called an "O ring") is not built around a star. Instead the entire loop orbits the star, while spun for gravity. The thin end of the orbital would face the star, so that as the orbital spun, one half of it would be exposed to daylight.

Stellar Engine: A stellar engine quite simply uses a star's energy, captured via massive light sails or mirrors, to create thrust, moving the entire star in one direction (and bringing along any planetary system it has with it).

Matrioshka Brain: Another Dyson sphere variant, a Matrioshka brain would consist of several layered Dyson spheres, nestled one inside another. The brain would be powered by the energy exchange between the star and space. The primary purposes of such a structure would be to power massive computational systems.

Jupiter Brain: A Jupiter brain is simply a Matrioshka brain built on a smaller, planetary scale. Jupiter brains are designed to be compact in order to optimize signal propagation,and would likely be built out of computronium. ■

Extreme and unexpected weather conditions also provide a vivid contrast to the carefully controlled and well-monitored cities and habitats that the gatecrashers come from. Even on worlds like Mars, which actually has weather, in the solar system weather is never unpredictable and getting lost is a rarity. A battering by heavy weather or unexpected environmental conditions is an excellent way to provide the characters with the sort of challenge that they are almost never going to face back in the solar system. Perhaps for the first time, the characters must deal with not having access to much of the technology that they are used to depending upon.

UNNATURAL THREATS

One of the biggest attractions to gatecrashing is the chance to encounter aliens or alien artifacts, and both of these can provide dangers far greater and often far stranger than any natural threat. Actual living aliens are exceedingly rare. Gatecrashers are far more likely to uncover the remains of an alien civilization or perhaps traces of alien gatecrashers than they are actual living aliens. The galaxy is vast, however, and there are many gates, so it may just be a matter of time before a group of gatecrashers stumbles upon a thriving alien civilization.

For well-equipped gatecrashers, pre-industrial aliens are generally no more dangerous than native wildlife. Aliens who have even early

industrial technology, however, like machine guns, can be a significant threat. Aliens whose technology approaches or exceeds that of transhumanity pose an x-risk. An encounter with hostile aliens could result in a single battle, or it could be the first exchange of an interstellar war. Aliens who are sufficiently advanced could easily be as dangerous as the TITANs.

Alien artifacts are no safer. While unlikely, a vanished alien civilization could have left automatic weapons trained upon the Pandora gate or traps for future gatecrashers. Even if such direct threats do not exist, if an advanced civilization was destroyed by a war, perhaps some exceptionally durable automated war machine has remained at least partly functional and will take a shot at the characters. Even non-functional weapons that have decayed over the last few thousand years can pose a risk if they contain unstable chemicals or radioactive elements with moderately long half-lives.

Alternatively, gatecrashers may be faced with technology that is almost incomprehensible and that seems to defy known physical laws. Just as late 21st-century nanotechnology would seem like the most exotic sort of magic to inhabitants of the 19th century, the technology of aliens who were far more advanced than transhumanity can be exceedingly confusing to gatecrashers. Highly advanced devices capable of controlling inertia, creating and using massive amounts of zero-point energy, or creating or reshaping gravity waves can produce effects that seem strange and impossible. Such devices can also be exceptionally dangerous because gatecrashers will have no idea of the abilities and limitations of these artifacts. Some aliens may have once used psi-based technologies and left behind devices that can seemingly perform miracles using powerful psi-epsilon abilities or rewrite the characters' minds and emotions with psi-gamma powers.

In addition, alien ruins are often significantly old and lack structural integrity, providing the risk of collapsing roofs, floors that give out suddenly, and similar treasure-hunting dangers. Also, while some alien technology may still work, great age or damage caused by whatever destroyed the alien species can damage many artifacts, causing them to become unreliable. Combined with the inherent difficulty to use and or even understand a device of alien manufacture, such artifacts are exceptionally treacherous. Ordinary items like automatic doors could threaten to cut gatecrashers in half, turning on a light could cause a major electrical short, and exotic technologies could swiftly reshape a room in a wide variety of uncomfortable or even dangerous ways.

When considering alien ruins, it's worth thinking how long they might last. A human city built in the early 21st century city would be largely gone less than 300 years after it was abandoned. The pyramids of Egypt, however, were far more solidly built and in a preservative environment and are still in good shape after 4,500 years. After 10,000 years—approximately when the Iktomi disappeared—only the sturdiest structures and objects would remain. After 50,000 years, the ruins of an alien city that had a technology comparable to the late 20th century would likely consist of building foundations that are only detectable with sophisticated sensors and a few highly

SPARE SYNTHMORPH ■ p. 151

fragmentary artifacts. A post-Fall Hamilton cylinder or some other habitat or settlement that is heavily based on or constructed by nanotechnology may be able to remain intact, and perhaps even largely functional for tens of thousands or perhaps even hundreds of thousands of years. Similarly, an advanced civilization that constructed buildings out of molecularly perfect diamond or other equally advanced materials could create structures that might last for more than one million years.

A mixture of all of the above is also possible. Gatecrashers could visit a partially ruined alien city where some alien nanotechnology is still active and other nanotechnology has failed. Here, more than half of the structures lie in ruins and only a few technological devices still operate. Of these devices, some now operate in an erratic and dangerous manner and the remainder are practically incomprehensible. Also, the ruins may be home to savage wild animals who moved in long after the original inhabitants departed or died out.

OLD ENEMIES

The mystery of the fate of the TITANs is one of the major questions in *Eclipse Phase*. No one knows where they have gone, if they will come back, or if transhumanity is likely to stumble upon them in the course of gate exploration. Already gatecrashers have stumbled across evidence in numerous extrasolar locales that the TITANs have preceded them, have found remnants of their technology left behind, and even discovered abandoned TITAN experiments such as Brak Kodel (p. 82).

There are many possibilities for using the TITANs in a gatecrashing campaign. Explorers may come across an active TITAN project, perhaps another experiment on transhumanity or construction of a megastructure (see *A Small Guide to Megastructures*, p. 167). They may find TITANs that have been damaged or left behind because they did not evolve in pace with the rest. Or they may simply encounter the lethal machinery left behind by these seed AIs, either lying in ambush or roaming free. Gatecrashers may even meet more survivors who were abducted, in one form or another, from Earth.

Where the TITANs go, of course, so also goes the exsurgent virus. The survivors left behind by the TITANs may no longer be recognizably transhuman, and may even be confused for sapient aliens at first. It may be arguable that these exsurgent xenomorphs are in fact alien, no matter what they originally were. They may be recreating their own alien civilization or practicing a twisted mockery of transhuman society.

An even stranger and more chilling possibility would be finding an alien culture that lay in the TITANs path, where the seed AIs assaulted, infected, and transformed these aliens into exsurgents, as they attempted to do with transhumanity. They may have succeeded, leaving behind either a world of reborn monsters, one that is not immediately obvious as infected due to their alien nature. Perhaps the TITANs simply left behind a slaughterhouse filled with corpses and signs of mass-uploading abduction. The characters may have an opportunity to explore a recently-inhabited world that has been stripped of intelligent life, gathering a wealth of alien knowledge, but where they must also face a desolate world that is now filled with both alien and TITAN-made traps, possibly including advanced nanotechnology or various forms of incapacitating inputs. Perhaps some of the original species still survives, hidden away in isolated enclaves. Though they might welcome transhumanity's help, the first contact is just as likely to go horribly wrong, as one side or the other assumes the worst and treats the other as an active TITAN-allied enemy or exsurgent. After so much fighting, these survivors may also be eager to find the beings responsible for the horrors the TITANs inflicted on them.

The TITANs are not the only seed AIs to have fallen into the exsurgent virus trap. Other alien machine intelligences may exist among the stars, similarly infected and just as hostile to transhumanity. Perhaps they still eke out an existence among the ruins of their creators' civilization—or they have taken to the gates and moved outward to unknown purposes, much like the TITANs have.

MAROONED

One potentially interesting possibility is having the gatecrashers cut off from the solar system for a few weeks or perhaps even a few months. If they have a QE comm, the characters could receive a message from the gate owners saying that there was a problem with the gate and it may take days, weeks, or even months to sort out—assuming they can at all. If the characters can survive for that length of time on their current world, they are unlikely to risk using the local gate to visit previously uncontacted worlds.

Instead, the gatecrashers have a chance to see what they can do on their own with whatever tools and equipment they brought along with them. Depending upon both the characters and their precise circumstances, when the gate reopens they might be living in comfortably advanced dwellings they constructed using their tools and their nanofabbers or they might be barely surviving with damaged equipment as they hide from hostile weather and/or dangerous native wildlife. Forcing the characters to be on their own for as long as a month can provide a wealth of opportunities to face various natural dangers and either triumph over them or to fail and be forced to regroup and try again.

While this type of situation should not be overused, it can cause the characters to learn secrets of the world they are visiting that they might have otherwise either overlooked or turned over to experts to examine. On a normal gatecrashing mission, a piece of working alien technology is often a potentially dangerous artifact that is valuable because returning to the solar system with it can provide the gatecrashers with a

nice bonus. For gatecrashers who are marooned on a world for a month or two, however, this same device might provide them with a potential solution to one or more serious problems.

Random Jaunts

In certain adverse conditions, remaining on a world until the gate reopens may not be practical. Occasionally, gates in the solar system refuse to reopen to a previously used destination. While most such problems last no more than a few days, if the problem persists it could potentially last many years. In such a situation, the gatecrashers may need to use the gate on their current world to travel to a new destination, assuming they have a gate control unit. If this gate doesn't allow the characters to travel to any known destinations, then their best bet for getting home soon is to open gateways to random destinations until they find one where the gate also connects to the solar system or a known extrasolar world with a colony or research base.

These desperate and random journeys provide gamemasters with an opportunity to introduce all manner of exotic and exceptionally dangerous environments, from an asteroid in a close orbit around a black hole to the blasted core of a world destroyed by a supernova and which now orbits a radiation-spewing pulsar. In some cases, these worlds may be sufficiently hostile that the gatecrashers may remain on them only long enough to open a new gate to some less dangerous destination. However, even a world that the characters only remain on for a few hours can provide a significant amount of danger and excitement, as the characters must deal with problems ranging from deadly weather to hordes of hungry animals or out-of-control alien nanotechnology.

Gate Abnormalities

The gates do not always function as planned, so a random jaunt as described above may come about as a gate suddenly switching its wormhole to a new destination as someone steps through. There have been numerous cases of people simply disappearing when walking through a gate, sometimes to reappear under extremely unusual circumstances. This can be a useful way to split up a group if that is the desired effect or may serve as a plot device to take a character on a solo side mission, perhaps to run a one-off game on a week when the rest of your players can't make it. Alternately it can be a way to force characters who are in a tight spot (danger on their side of the gate) to make a choice: face either the danger or risk the unknown environment of a new location.

Stranger experiences have also occurred during gate use, from strange psi effects to new people appearing to some characters having a spooky time dilation experience as they step through the wormhole, so that the passage seems to have taken hours and perhaps taken them somewhere *else* in the meantime. These circumstances are an interesting way to drop hints, throw out new plot hooks, and otherwise throw an unexpected loop into an adventure. Complicating the matter is that no one knows what—or who—causes these effects. The phenomena may arise from TITAN tampering or may be the fault of a previously unknown alien species who possess far more control over the gate system than transhumanity realizes.

Environmental Hazards

Gatecrashers may encounter almost every conceivable environment in the course of their activities. Every planet is different, and most of them are hostile to transhuman life. Even terrestrial planets within their star's habitable zone with a breathable atmosphere and comfortable temperature may still present environmental challenges. Some of the potential dangers gatecrashers may encounter, including extreme temperatures, extreme atmospheric pressures, magnetic fields, radiation, toxic and unbreathable atmospheres, deep waters, and vacuum, are covered under *Hostile Environments*, pp. 200–202, *EP*. Issues posed by differing gravities are also covered on pp. 198–199, *EP*. Further environmental dangers, such as solar flares, dust storms, or the dangers present on Mercury, Venus, and Mars are detailed on pp. 160–162, *Sunward*.

Alien Atmospheres

The composition of atmospheres and what makes them breathable and safe to unmodified transhumans is a tricky affair. Even atmospheres similar to Earth's can provide difficulties to gatecrashers depending on the gas composition and pressure.

Oxygen

Oxygen is, of course, the main requirement for transhumans to be able to breathe. Earth's atmosphere is

What Worlds Are Breathable?

The following exoplanets detailed in this book have atmospheres that are breathable by transhumans without modification:

Bluewood, Carnivale, Droplet, Echo IV, Olaf, Sky Ark, Solemn, Sunrise

These exoplanets have atmospheres that are breathable by rusters or similar enhanced-respiration morphs:

Giza, Krypton, Luca, Mishipizheu, Moravec, Synergy, Tanaka ■

21% oxygen, but what matters is not the percentage but the partial pressure (the percentage composition in relation to the atmospheric pressure). For unmodified transhumans, a safe breathing range at 1 atmosphere is 15% to 30% oxygen. If the atmospheric pressure was lower, a higher concentration of oxygen would be required (so an exoplanet with pressure of 0.5 atmospheres would need to have an atmosphere with 30–60% oxygen to be breathable). Likewise, in higher pressure atmospheres, a smaller concentration of oxygen is required (an exoplanet with 1.5 atmospheres of pressure would need be only 7–15% oxygen to be breathable).

Transhumans can still breathe and survive at lower partial pressures of oxygen for limited periods (down to 6% at 1 atmosphere), though they will start to suffer respiratory distress and impairment of coordination, perception, and judgment (–10 to –30 to COO, INT, and COG) over time. Below 6% (at 1 atmosphere), they will suffer asphyxiation.

Transhumans can also safely breathe higher concentrations of oxygen for limited periods, though breathing over 30% at 1 atmosphere will lead to oxygen toxicity. If done for too long (more than 3 hours), this will lead to vision problems and disorientation (–10 to –30 to all tests) and eventually to seizure and physical damage (gamemaster discretion).

Another consideration for oxygen is that the concentration affects fire hazards. Fires spread very rapidly and quickly in high-oxygen environments, but they smolder in lower-oxygen atmospheres. At the gamemaster's discretion, fire and explosions may inflict higher damage in high oxygen environments.

The good thing about oxygen in an atmosphere is that it is usually indicative of life. Oxygen is typically introduced into atmospheres as a result of plant life absorbing carbon dioxide and excreting oxygen and carbon monoxide. The higher the oxygen level, the more widespread plant life is likely to be and the greater the chance for animal life. Very high oxygen levels are also associated with megafauna (large critters).

Other Gases

While many gases are breathable by transhumans without issue, others raise serious complications. Note that different atmospheric mixes may affect the timber of a transhuman's voice (much like inhaling the contents of a helium balloon).

Ammonia: This compound of nitrogen and hydrogen is only found in cold (its boiling point is –33 C at 1 atmosphere) or high-pressure atmospheres (where its boiling point is higher). Ammonia has a pungent, easily detectable odor and is toxic in large concentrations, inflicting damage to transhuman lungs (treat as a *Toxic Atmosphere,* p. 201, *EP*).

Argon, Helium, and Neon: Colorless (except for neon, which is orange) and odorless, these gases are non-toxic and harmless. At high pressures, the combination of helium and oxygen can lead to high-pressure nervous syndrome, though the presence of sufficient hydrogen or nitrogen will counteract this. Helium and neon, as lighter gases, are rare in terrestrial atmospheres.

Carbon Dioxide: At 2% concentration in 1 atmosphere, carbon dioxide acts as a mild narcotic. At more than 5% concentration, it becomes toxic to transhumans (unless they have the enhanced respiration biomod, like rusters), triggering headaches, dizziness, confusion, tremors, and impeding hearing. At 8% it leads to unconsciousness and eventually death. Nevertheless, carbon dioxide plays a critical role in the carbon cycle for life. Carbon dioxide also plays a role in the autonomic breathing reflex of humans; if it is not present in a large enough concentration, it makes it difficult to sleep without waking up gasping for breath. Carbon dioxide is a greenhouse gas and is important in raising a planet's temperature and making it more hospitable to life.

Carbon Monoxide: This colorless and odorless gas is toxic to transhumans in large quantities (large being only 0.08% at 1 atmosphere). It will inflict headaches, dizziness, fatigue, nausea, vomiting, seizures and lead to unconsciousness and death. Treat as a *Toxic Atmosphere,* p. 201, *EP.*

Hydrogen Sulfide: Though rare, this compound is sometimes introduced into an atmosphere in volcanic gases. It is extremely toxic and flammable (treat as a *Toxic Atmosphere,* p. 201, *EP*), and has been noted as the culprit in several extinction events. As a heavier gas, it sometimes accumulates in tunnels, caves, and other deep places. Though colorless, it is recognizable by its rotten egg smell.

Methane: Odorless and colorless, methane is non-toxic and breathable but is highly flammable and may pose a fire hazard in high concentrations. Methane reacts violently with oxidizers and halogens; if mixed, an explosion may result. Methane is uncommon in the atmospheres of inner system or older planets, as it is easily carried away by solar wind. Though also introduced into atmospheres by volcanoes, it is sometimes a sign of life, produced anaerobically by microbes. It is a greenhouse gas, important for planetary heating.

Nitrogen: Nitrogen is also colorless, odorless, and harmless, and thus safe to breathe. It is also a requirement in the nitrogen cycle, so almost all worlds with biological life have nitrogen in large quantities.

High-Pressure Atmospheres

Almost all gases that can be breathed, except for neon and helium, become narcotic to transhumans at high pressures. Between 2 and 4 atmospheres of pressure, this results in mild physical impairment, mild impairment of judgment, and mild euphoria after exposure of at least several hours; apply a –10 modifier to all actions and –5 to COG. At higher pressures the effects become more severe and include hallucinations, memory loss, impaired judgment, anxiety, dizziness, personality changes, fixation, overconfidence, and eventually unconsciousness and death.

XENOFAUNA

The following creatures are a sample of what gatecrashers may find on various known worlds.

CLOWN SPRITE

The easiest way to describe the clown sprites of Echo IV is that they are like small, colorful, hermaphroditic flying monkeys, but that's not really doing them justice. In truth clown sprites have traits that make them more like an avian-primate mix. Clown sprites live in a symbiotic relationship with Echolalian land anemones. The omnivorous sprites feed on insectoid invertebrates and other small creatures that are pests and damaging to the anemones and also help keep the polyps' mouths clean and safe from parasites. In return, the anemones gain nutrients from the sprites' fecal matter. Small groupings of 4-12 sprites live with each anemone and rely on them for protection from larger predators. The sprites are immune to the polyps' venom, unlike the numerous creatures they lure in to the anemones' grasp. Clown sprites have many features that transhumans consider cute, but they are mischievous, prone to pranks and stealing, and may lead unwary explorers to the hungry and deadly anemone tentacles.

COG	COO	INT	REF	SAV	SOM	WIL	MOX
5	15	15	20	15	5	5	—

INIT	SPD	LUC	TT	IR	DUR	WT	DR
70	1	10	2	20	20	4	30

Movement Rate: 4/20 (Flight 8/48)

Skills: Climbing 50, Flight 50, Fray 40, Infiltration 60, Perception 40, Scrounging 60, Unarmed Combat 20

Notes: Bite (1d10 ÷ 2 DV), Chameleon Skin, Enhanced Hearing, Enhanced Smell, Grip Pads, Prehensile Tail, counts as a small target in combat (–10 to hit; p. 193, *EP*)

LAND ANEMONE

Land anemones are carnivorous polyps that live in the cloud forest of Echo IV. Only semi-motile, these creatures lay stationary for long periods, camouflaging themselves, luring in prey with attractive scents, and ambushing any creature (other than clown sprites) that come within reach of their numerous poisonous tentacles. Land anemones can range up to 2 meters in size, with their tentacles reaching out 2 meters more. They are capable of consuming transhumans.

COG	COO	INT	REF	SAV	SOM	WIL	MOX
1	15	15	20	1	15	10	—

INIT	SPD	LUC	TT	IR	DUR	WT	DR
70	1	10	2	20	30	6	75

Movement Rate: 2/4

Skills: Climbing 30, Fray 30, Perception 30, Unarmed Combat 60

Notes: Tentacle Attack (1d10 DV, +30 modifier to grappling), Chameleon Skin, Enhanced Hearing, Enhanced Smell, Toxin (treat as BTX2, p. 323, *EP*)

SCIURID

The sciurid is a large, six-legged flying squirrel-like mammal native to Haplopelma. It has a natural intelligence and inquisitive nature and is not overtly hostile to those encountering it. Common behavior for sciurids is for males to remain in the nest and to protect their young while females gather food, which often consists of fruits, large nuts, and smaller mammals. Sciurids live in a loose clan society with six to eight breeding pairs, plus young, residing within the same nesting area. Sciurids are as intelligent as lesser hominids such as baboons and chimpanzees and have exhibited intelligent behavior such as altruism, laughter, language mimicry, tool use, and targeted hunting. Sciurids have also been adapted for use as pods (see *Scurrier (Pod Biomorph)*, p. 151).

COG	COO	INT	REF	SAV	SOM	WIL	MOX
5	15	15	15	10	10	5	—

INIT	SPD	LUC	TT	IR	DUR	WT	DR
60	1	10	2	20	25	5	38

Movement Rate: 4/20

Skills: Climbing 50, Fray 35, Freerunning 55, Perception 40, Scrounging 40, Unarmed Combat 20

Notes: 6 Limbs, Gliding Membrane (p. 166, *Sunward*), Limber (Level 1) trait, Prehensile Tail, Unarmed Strike (DV 1d10 + 1), counts as a small target in combat (–10 to hit; p. 193, *EP*)

SWITCHWING

The Switchwing is an aerial predator native to Synergy. It is a six-legged flying arthropod not unlike a dragonfly, but is much larger in size. A fully grown and molted adult is about a meter long with a wingspan of just over 1.5 meters. The switchwing is so named for its double sets of wings, one of which is used for general mobility, and the other which is used when actively hunting. The switchwing also features two forward reaching legs, each ending in a four-clawed pincer. Hunting behavior in switchwings is analogous to Earth falcons; they are known for their incredibly fast diving attacks and ruthless mid-air evisceration of their prey.

COG	COO	INT	REF	SAV	SOM	WIL	MOX
1	15	15	20	5	10	5	—

INIT	SPD	LUC	TT	IR	DUR	WT	DR
70	1	10	2	20	35	4	75

Movement Rate: 8/40

Skills: Fray 40, Flight 60, Perception 50, Unarmed Combat 50

Notes: Mandibles (DV 1d10 + 1), Hunting Pincers (DV 1d10 + 4)

WHIPLASH

The whiplash is the largest carnivorous plant creature yet discovered. See the full description, *Solarchive Search: Sunrise Whiplash*, p. 41.

COG	COO	INT	REF	SAV	SOM	WIL	MOX
1	15	10	20	5	20	5	—

INIT	SPD	LUC	TT	IR	DUR	WT	DR
60	1	10	2	20	35	7	53

Movement Rate: 4/16

Skills: Fray 20, Climbing 50, Perception 40, Unarmed Combat 40

Notes: Chameleon Skin

ZOMBIE CRAB

The zombie crab is a massive, crab-like arthropod native to Droplet. Very similar in form to a novacrab but with an additional set of legs with grasping pincers, the zombie crab is so named for its nocturnal behavior and unique method of gathering food. It leaves the oceans only to precipitate the harvesting of prey and is near-silent when moving on sand or rocks. It is not particularly intelligent, retaining an animal instinct of preservation and survival. When it attacks prey, it deliberately cripples its target and leaves it alive, infecting the wounded with a toxoplasma-related protozoan. This protozoan rapidly reproduces and spreads throughout the body of the wounded and immuno-compromised prey.

The prey, crippled and unable to fight off the toxoplasmotic infection, undergoes a series of behavioral shifts as the protozoa begin to affect the prey's brain chemistry. The prey immediately seeks out others of its species, thus inadvertently spreading the protozoan to others. Over a period of about a week, the protozoa infection drives up the infected's body temperature and hobbles their higher brain functions, causing them to seek out a cooling mechanism. Due to its proximity, the ocean in which the zombie crab resides is usually the first choice. If a zombie crab selects the right target, a single attack can bring a huge number of stupefied prey stumbling into the surf, ultimately drowning below the waves and providing a smörgåsbord of food for the zombie crab and other shore-dwelling carnivores.

COG	COO	INT	REF	SAV	SOM	WIL	MOX
1	10	5	10	5	20	5	—

INIT	SPD	LUC	TT	IR	DUR	WT	DR
30	1	10	2	20	50	10	75

Movement Rate: 4/20

Skills: Climbing 30, Fray 30, Freerunning 40, Intimidation 50, Perception 35, Unarmed Combat 50

Notes: Carapace Armor (12/12), Claw Attacks (DV 2d10 + 4), Protozoan Infection (treat as degen, p. 324, *EP*; an aptitude cannot be reduced below 5 by the infection.)

WHIPLASH POD BIOMORPH ■ p. 151

EXTRASOLAR NAMING CONVENTIONS

Extrasolar nomenclature is a mess. Pre-Fall astronomers had it easy. They stuck to mythology for as long as they could: Greek, Roman, Chinese, Quechua—anything catchy and evocative. It worked well enough to provide names for every major feature in the solar system. When other stars and their planetary bodies were mixed in, however, not to mention asteroids, the number of known celestial objects crept into the millions. Astronomers switched to a mix of numbering systems, astronomers' names, and whimsy. In the post-Fall era, people routinely visit asteroids and Kuiper Belt objects named after dead celebrities and antique pop culture references. Modern scientists log stars and exoplanets in several interoperable databases with long, boring serial numbers. Transhuman culture, however, demands that planets at least—especially those occupied by transhumanity—are named with certain poetry and gravitas. Early gatecrashers got in the habit of naming exoplanets and even remote gates, though sometimes these names were … unsuitable. When astronomers later attempted to reclassify these exoplanets, and when gate-controlling entities sought to impose their own naming standards, they met resistance from the very people who had actually been there first to explore them.

To banish names like *Spank Me* and *Dave* from the extrasolar lexicon, and to attempt to standardize names, catalogs, and formats, the argonauts and Gatekeeper joined forces along with other parties to create a small, AI-run body called the Nomenclature for Interstellar Xeno-objects. The NIX AIs attempt to hold new discoveries to categorical standards and to act as the authority for approving names. They generally do not approve names with comedic, sexual, offensive, or trivial connotations in any commonly spoken transhuman language, nor do they approve duplicates or names that are blatant advertisements. It's also acceptable to name a planet after a discoverer's full name, but not just "Dave." People can continue to use unapproved names, and in fact some entities simply refuse to acknowledge the NIX's authority (Go-nin openly auctions off naming rights on worlds they discover, and some anarchists and brinkers could care less what the NIX thinks about what they call their home), but the NIX sends advisories and suggested alternatives to all interested parties. Media, governments, and corporations typically write in a find-replace whenever the rejected name comes up, so silly names not only fail to gain traction, but go unheard by everyone but the individuals who keep using them. The NIX sometimes fails to suppress the "wrong" name, and it comes into popular use anyway. In these cases it usually accepts the name after three years of dominant usage. ■

KNOWN EXOPLANETS

This section provides gamemaster-only information for the exoplanets described in *Extrasolar Systems*, p. 74–139.

ARCADIA

The Cloudtop habitat under construction in the upper atmosphere of Arcadia is being built "off the books" as much as possible. The group of gerontocrats building the structure are careful to keep their activities shrouded. Though Pathfinder is by necessity aware of their activity, the hypercorp has been paid well to keep the matter confidential. Even the workers putting the aerostat and moon base together are secured, as they will never be allowed to return through the gate.

The Beni Qasim Directorate is a secretive alliance of immortal oligarchs with shared interests. In this case, their interests are varied. Cloudtop is intended in part to be a private retreat, a data vault for their accumulated data and secrets, a museum for their works, and a fortress to which they can retreat should the solar system ever be threatened. The aerostat is constructed in such a way that it can descend into the cloudy lower depths of Arcadia's atmosphere if necessary, making it incredibly difficult to spot from orbit and potentially hiding it from any looming threats.

THE CRYPT

One part of the aerostat that remains an even more highly-guarded secret is the Crypt. Simply put, the Directorate has plans to "retire" a number of elder gerontocrats, placing their egos in permanent storage. Many of these are oligarchs who have lost the will to live, or at least the ambition that drives their kind so ruthlessly. A few are powerful or influential family members who were proving to be an unfortunate obstacle to other interests. Some are gamma forks of the undying rich who suffered from debilitating neurological diseases such as Alzheimer's before the technology was developed to cure them, but not before their lives could be indefinitely extended. Others suffered from neurovirii released during the Fall, or their egos were somehow damaged while

being transported offworld. All of these minds and partial minds are still of value—or at least hold nostalgic worth—to living members of the Directorate, and so they will be kept archived in dead storage, or perhaps confined to live endlessly on in time-slowed simulspace realities of their choosing.

Plot Hooks

- The Directorate has discovered an information leak that threatens their project before its completion. Is this the work of a rival oligarch? Or has one of the gerontocrats slated for the Crypt become aware of their pending enforced retirement?
- A member of the Directorate holds in their collection a set of prized relics from Earth: a set of canopic jars recovered from the Egyptian pyramids. A wealthy and influential art collector has decided to acquire these possessions, which the Beni Qasim member has safeguarded on Cloudtop.

Babylon

The star system holding the scarred moon of Babylon is home to two mysteries: the unusual impacts on Babylon's surface and the spacecraft hiding within the star's corona. Both the Martian and Pandora Gates lead here, meaning that several entities are now competing to decipher (and exploit) these mysteries first.

Gatekeeper's current ambitious plan is to recruit a group of Solarians to make contact with the coronal ship. Given the recent revelation that the object is potentially organic or even alive, the project heads hope that a group of coronal-dwelling life may have a better chance of establishing communication with the alien relic. While Gatekeeper is taking the lead on researching the object orbiting the star, it is always possible that a more ambitious hypercorp may come along and attempt to reach it first. If the ship should take refuge in the star's chromosphere, however, it will be beyond the capabilities of transhumanity to reach it.

Meanwhile, the hypercorp Sirius Surveys is making headway into the investigation of the markings on the moon's surface. The scientists analyzing the data have two competing theories in mind. The first is that Babylon is home to a recurring conflict, a battle that may have been ongoing for centuries, periodically going dormant before erupting into a frenzy of hostilities again. This theory postulates that the coronal craft is actually a guardian, carefully keeping an eye for some danger that lurks on the moon, most likely concealed somewhere beneath its surface. In this scenario, whenever the threat periodically arises, perhaps threatening to leave and escape the moon, the ship within the star emerges to blast it back down. If this is true, then the moon is most likely a prison for some lingering technological threat.

The competing, and even stranger, theory is that the spacecraft orbiting the star is in fact alive and is part of some sort of space-dwelling and star-traveling species. The idea here is that Babylon is in fact some sort of alien spawning ground. The craft within the corona is currently gestating, and when it is ready it will leave the star, give birth to its young in space, and then crash lifeless to a rest on Babylon, as many of its ancestors have.

Neither of these theories has enough evidence yet to be validated. There are, of course, others who are concerned that the whole affair is some sort of test or trap, possibly even left by the TITANs, and that transhumanity is far better off leaving both alone.

Plot Hooks

- An attempt by Solarians to make contact with the ship ends in disaster, with one surya seemingly captured by the alien craft. The characters are brought in, sleeved in suryas, and asked to make a second attempt.
- A scientist, eager to secure his corporate funding, seeks to sabotage the efforts of rivals studying Babylon's bizarre history. The characters may be hired to undermine the rival or brought in to figure out who is responsible for the sabotage.

Bluewood

Bluewood's ecology is exceptional as an ecosystem that has been entirely modified with specific design goals—possibly even created from scratch. There is no sign of whatever species is responsible for this intelligent design nor any indication of its intended purposes. The bluetrees and their support ecosystem may have been an experiment in creating harmonious life, an attempt to create a biosphere for residence by alien life, or simply some life form's art project. Whatever the history, all life forms on Bluewood are engineered to support the existence of the bluetrees.

One element of Bluewood that should be emphasized in any scenario is the sheer beauty and weirdness of the bluetrees. The massive forest, their unusual color, and their tendency to encapsulate transhuman settlements within their winding branches should lend the setting an air of mystique and awe. Despite behind a harmonious ecosystem, however, seemingly engineered for peaceful co-existence, the bluetrees should present an aura of quiet menace and potential intelligence. Though they may in fact be harmless, transhumans shouldn't get too comfortable with their presence—the larger unknown and implied threat should always be a factor.

The back story of Bluewood is intentionally left open-ended for gamemasters to deploy as they wish. Gamemasters who wish to delve into Bluewood's mysteries more have several potential angles to pursue. The bluetrees may in fact be connected by some sort of biological information network—perhaps something based on technology so advanced it is not distinguishable as such. They may simply be monitoring and learning about transhumanity as a defense mechanism,

THE BRAK KODEL "NATIVES"

The survivors have divided themselves into a primitive caste system based upon a religion overseen by the Servants, who rule over the Ungifted, a mentally unbalanced worker caste kept in line by superstition and fear. On the outskirts are the Feral, hostile outsiders who seem to have been primed to adopt a wild lifestyle in the valleys, preying on both the Servants and the Ungifted. Unknown to the Pathfinder teams, the Servants are gifted asyncs—a fact they plan to keep hidden.

THE SERVANTS

COG	COO	INT	REF	SAV	SOM	WIL	MOX
10	25	15	20	10	25	10	1

INIT	SPD	LUC	TT	IR	DUR	WT	DR
70	1	20	4	40	35	7	53

Movement Rate: 4/16
Skills: Clubs 50, Fray 40, Perception 50 (60), Psi Assault 50, Unarmed Combat 60
Traits: Psi (Level 2)
Attacks: Club (DV 1d10 + 5, AP 0), Unarmed (DV 1d10 + 3, AP 0)
Suggested Sleights: Ambience Sense, Grok, Mindlink, Onslaught, Psychic Stab, Static

THE UNGIFTED

COG	COO	INT	REF	SAV	SOM	WIL	MOX
10	10	10	15	5	15	10	0

INIT	SPD	LUC	TT	IR	DUR	WT	DR
10	10	10	15	5	15	10	0

Movement Rate: 4/16
Skills: Clubs 50, Fray 40, Perception 40, Unarmed Combat 60
Traits: Mental Disorder (Choose Two)
Attacks: Club (DV 1d10 + 2, AP 0), Unarmed (DV 1d10, AP 0)

THE FERAL

COG	COO	INT	REF	SAV	SOM	WIL	MOX
15	25	15	20	10	35	10	1

INIT	SPD	LUC	TT	IR	DUR	WT	DR
90	1	20	4	40	35(45)	7(9)	53(68)

Movement Rate: 4/16
Skills: Clubs 50, Fray 55, Perception 60, Unarmed Combat 60
Notes: Bioweave Armor (Heavy)(3/4), Chameleon Skin, Grip Pads, Prehensile Feet
Attacks: Club (DV 1d10 + 5, AP 0), Unarmed (Claws) (DV 1d10 + 6, AP –1) ■

seeking out anything that may indicate a threat to the bluetrees' existence. The bluetree network may be sentient but not sapient, perhaps even the devolved remnants of a once-intelligent species, or it could be that the entire forest is a combined sapient organism. Taking things further, there may in fact be a hidden mystery within the forest's depths—a relic from the forest's designers perhaps, still manipulating life to meet new evolutionary developments or unforeseen events, such as the arrival of transhumanity. The forests might even hide secrets that are completely unrelated, perhaps the ruins of an alien spacecraft, another Pandora gate, or a foreign alien species that hides out here, using the bluetrees as cover, hoping to avert the gaze of the ETI or similar large dangers. Naturally, such an intelligence may not appreciate transhumanity's arrival.

PLOT HOOKS

- Bluewood's residents are surprised by the sudden appearance of TITAN machines through the Bluewood Gate, which immediately move to attack nearby settlements, harming bluetrees in the process. The transhuman resistance receives unexpected support when the Bluewood forest itself reacts to the TITAN threat.
- An isolated research outpost in the forest goes quiet and the characters are sent to investigate. They find that the bluetrees surrounding the outpost have enveloped it even more thoroughly and aggressively than elsewhere. When they finally penetrate inside, they find a transhuman, alive but in a seeming coma, their body threaded with strange microfilaments extruded by bluetree roots. They must figure out whether this heralds some new stage of bluetree aggression or whether the researchers themselves are somehow to blame.

BRAK KODEL

Brak Kodel is a situation on the edge of eruption. The cast-offs of some monstrous experiment wander the geo-engineered sealed valleys of an otherwise desolate exoplanet. The Pathfinder teams dealing with the situation are unsure how to handle it, oscillating between destroying the site and killing everyone, abandoning it never to return, or extending a humanitarian hand to help the survivors. The drivers in their approach so far have been the apparent absence of any immediate threat and the potential boon from researching remnant TITAN tech, including the valleys' unique ecosystems and the peculiar neogenetic morphs in which the survivors are sleeved. The three teams—security ops, sociocultural relations, and basic science research—are to some extent in opposition to each other. Each feels it is the main reason for the mission and is desperate to prove themselves in relation to the others.

As suspected, Brak Kodel is only one of many such experiments left behind by the TITANs. There are in fact dozens (if not more) of similar habitats left behind in the TITANs wake, each populated by victims forcibly uploaded during the Fall, now resleeved in new forms. The purpose of these experiments is unknown, and it is questionable whether the TITANs were even seeking to learn something from them, or whether this is a symptom of their madness or simply some seed AI's idea of art or live action role-playing. The real experiment may not be the survivors at all, but rather how transhumanity deals with them. Or the entire situation may be a trap, relying on the good will of transhumanity to infiltrate a group of exsurgents back into their population.

Gamemasters that wish to incorporate other experimental models are encouraged to develop twisted and uncomfortable scenarios. For example:

- The survivors may have had their memories erased, so that they are placed into a situation where adults with no preconceived notions of social organization must figure out a way to arrange their new society. What new organizational models do they invent? How much are they influenced by ingrained genetic tendencies? What if their egos were modified to encourage specific traits?
- One group of survivors is given absolute control over another group and encouraged to exert their authority. How far will they abuse this authority, given the lack of repercussions? What happens when the tables are suddenly and inexplicably overturned?
- A group of survivors is granted a luxurious habitat with no effort at all required on their part—except that once a week they must pick one of their number and kill and eat them. A replacement survivor is added every week. How do they decide? What happens when previously murdered and eaten people are returned, memories intact?

Each experiment is likely to raise a number of questions and mysteries. Were all of the survivors uploaded from the same location? Do they share any traits in common? Do they all speak the same language? How have they been modified?

Despite the appearance of abandonment, it is highly possible that the TITAN experiments are still being monitored—if not by the TITANs themselves, then by machines they left behind. They may even be interacting with and modifying the research projects. Gatecrashers and other careless visitors may find themselves joining these experiments against their will.

Plot Hooks

- When more Pathfinder personnel go missing, the characters are brought in to investigate. They are surprised to find two of the missing people later turn up as Ferals.
- A group of gatecrashing characters discovers an experiment similar to Brak Kodel, where a group of survivors is eking out an existence by living off herds of domesticated animals. Investigating further, they discover that the "humans" are in fact exsurgents, whereas the real survivors have been sleeved in the herd animals used for food.

Carnivale

Carnivale is what happens when you let immortal hedonists loose on a planet with psychoactive flora and tell them to make sure everyone has a good time. Run as a joint venture by the Love and Rage Collective and a band of scum called the Monsters, Carnivale acts as the ultimate outer-system R&R destination.

Carnivale is an Earth-like terrestrial world with a small amount of native flora, though no large or complex fauna. Much of the plant life is indeed toxic to transhuman biochemistries, but it usually will just make you quite sick and not actually kill you—and will probably make you high. Most of the scum and visitors can be found in the primary settlement, also simply called Carnivale, an open air city built on a bluff overlooking a large bay, just 10 kilometers from the gate. Here you can find just about anything to meet your desires, no matter how taboo, twisted, or even abhorrent—the weirder the better, in fact. Use your imagination when describing the setting—we know you're all secretly sick puppies inside, so let that diseased mutt run free.

Almost anything is allowed on Carnivale, with the caveat that the ego must consent to the act. If someone considers it pleasurable, it's most likely being done, most likely to excess. Outside of the main colony can be found a number of small communities and reservations with specific requirements for access. In order to enter these zones, one must give consent to possibly being raped, tortured, murdered and eaten, or something similar. These zones are where the extreme kinks that might otherwise be considered oppressive or nonconsensual may be acted upon. One enclave is run by a scum hacker with ties to the ID crew, with whom he has a deal to field test new narcoalgorithms on anyone willing to risk frying their cyberbrain.

The presence of sophisticated resleeving facilities means that most participants are up for nearly

RECREATIONAL DRUGS

DRUG	TYPE	APPLICATION	ONSET TIME	DURATION	ADDICTION MODIFIER	ADDICTION TYPE
Carnivale Grass	Chem	Inh, O	5 minutes	12 hours	—	Mental

anything—up to and including dying. In fact, the medical and biotech facilities here are quite advanced and have drawn a number of experimental biohackers. The options available are quite often a step away from standard models, but if you're eager to give an experimental biomorph with a new set of plumbing a spin, Carnivale is the place to go.

The Monsters that run and enjoy Carnivale view anarchism and hedonism as a lifestyle imperative. They do not tolerate intolerance, bioconservativism, or other retro prejudices. While there are no police or authority figures, they will act as a tribe to counter and expel anyone who breaks the consent rule or is otherwise a major drag. @-rep is of critical importance here, and anyone who walks through the gate with a low score is likely to be avoided, unable to find partners, or openly scorned. An army of AI-operated bots handle the colony's upkeep and maintenance, including relocating the drunk, high, or incapacitated to resting areas, cleaning up the bodily fluids and other messes, and collecting the corpses and cortical stacks for resleeving.

If trouble erupts, the scum are more than capable of defending their community. The nanofabricators used to repair and sustain their colony are also used to produce all manner of other goods including contraband weapons and modifications. In fact, some of the Monsters have a side project of using the Carnivale Gate to establish links to colonies on other remote exoplanets to whom they can deal black market items that the gate-minders of Pathfinder, Gatekeeper, etc. would normally disallow. They are, in effect, establishing an organized extrasolar smuggling ring.

Carnivale is also a favored spot for anarchists with a price on their head to hide out for a while and have a good time until the heat dies down. There are certainly less pleasant places to hide out while on the lam.

Game Masters can use Carnivale as a unique location where the whims and desires of transhumanity take on an alien cast as strange and potentially foreign as anything the Factors can show us. Carnivale represents the primal urges of transhumanity unleashed and with no fetters and the experience is like nothing in our universe.

Carnivale Grass (Recreational Drug)

Really more akin to an alien mold, the "grass" that covers most of Carnivale's central continent has psychoactive properties. If too much of the pollen is breathed, or the grass ingested or smoked, the recipient is infused with feelings of happiness and well-being, pain is diffused, and hallucinations are common. In game terms, the user can ignore the effects of 1 wound, gains a +10 bonus on tests to resist stress and fear, and may suffer –10 to –30 Perception Test modifiers when experiencing hallucinations.

Plot Hooks

- When a noted Titanian diplomat and secret Firewall supporter with high @-rep on vacation in Carnivale is accused of violating the consent clause, a charge he denies, the characters are caught in the muddy affair of determining a community consensus on who to believe and what to do about it. Is he being framed, or is he really just an asshole?
- When a basilisk hack recording is caught in the hands of a disgruntled indenture on a remote mining op, with plans to use it on the hypercorp's leadership, both the hypercorp and Firewall are curious to trace the source. They discover that scum smugglers were secretly accessing the mining exoplanet's gate, offering black market goods to the mining crews.

Corse

Corse is the farthest known remote gate from Earth, placed on a gas giant's moon on the rim of the Milky Way galaxy. This makes it an exceptional find, first and foremost for astronomical observations of the galaxy and universe, and secondly for measuring the dynamics of wormhole travel. Plans were already underway for establishing an astronomical observatory and large science station on Corse when evidence of potential danger reared its head.

As indicated, the large dust cloud near Corse's solar system does indeed hide a massive computational artifact. Likely constructed from computronium, an exotic material designed to optimize computational performance, this object has been placed on the rim of the galaxy due to its isolation, cool thermodynamic environment, and distance from galactic threats such as supernovas, black holes, or gamma ray bursts. This megastructure may belong to the ETI described on p. 361, *EP,* or it may belong to a rival machine intelligence—perhaps one long dead.

Of more immediate concern to transhumanity, however, is the evidence that someone else has used the gate quite recently, assembled a spacecraft here, and launched it to investigate the dust cloud mystery. Given that the dust cloud is over a light year distant, travel to and from it is measured in years, at least using the technological means available to transhumanity. What seems to have happened, however, is that this ship decided to drastically alter its trajectory before reaching the dust cloud, taking a long elliptical course around the far edge of the system so that it is now heading back. Only recently, it has begun decelerating. It is estimated that it will reach Corse again in just over a year, though this is of course open to gamemaster interpretation.

Gatekeeper, the sponsor of the Corse mission, is taking no chances. The predominant concern is that the ship is indeed of TITAN origins and that the transhuman presence in the system has been detected and is now in danger. Gatekeeper hopes to study what they can in the remaining time before the ship

arrives, then evacuate and watch closely from the safety of the gate. They are prepared to bomb the remote gate site and permanently lock out the Corse system as necessary.

It is up to the gamemaster to decide if the ship is really TITAN, and why it is turning back. It is equally plausible that a TITAN expedition may have detected something in the dust cloud as it traveled closer that spurred it to turn away and flee. It may even be pursued by still-unseen parties launched from the dust cloud. On the other hand, it is also possible that the ship is not TITAN, but another gatecrashing and space-faring species just like transhumanity. Why they launched toward the dust cloud and why they now seek to return is a mystery, as is the lack of any support infrastructure or settlements left behind on Corse—possibly indicating they were cut off from returning home.

Plot Hooks

- A group of singularity seekers find out about the Corse situation and organizes a daring plan to infiltrate the Gatekeeper operation and temporarily seize control—long enough to assemble and launch their own ship towards the dust cloud, which they believe may be a TITAN base or home to a larger machine civilization. The characters, sent to investigate a suspected infiltrator, find themselves in the midst of things.
- A month before the spacecraft's arrival, Pathfinder intends to wind down its operations, leaving a wide margin of safety. Unfortunately, just before that time, the gate locks up, preventing those remaining on Corse from leaving. With only weeks to go, the characters, trapped on Corse, must come up with a plan.

Droplet

Droplet is home to relics from three previous alien civilizations, only one of which originated here. The Toadstool does indeed pre-date the Amphibs, though what its purpose is remains a mystery. It could be a long-abandoned research outpost, a grounded alien spacecraft, an archive home to samples of life from dozens of worlds and technology from numerous civilizations, or something else entirely. Any asyncs with a Level 2 Psi trait will feel a mental presence from the vicinity of the Toadstool whenever they are within 50 kilometers of it. If they spend significant time in the area, they may begin to detect what feels like subtle attempts at communication, originally manifesting as bizarre and alien dreams.

Firewall is intrigued and worried by the fact that Droplet contains remnants from three dead alien civilizations. Not only do they want to know what happened to the Amphibs and Iktomi, they want to know if the Toadstool has anything to do with either's disappearance. There is a concern that breeching the Toadstool could be the last thing transhumanity ever does, unleashing some deadly force within.

AQUANAUT BIOMORPH ■ p. 150

Researcher Conflicts

Droplet has drawn an intense amount of xenoarcheologist interest, leading to a hefty bit of competition between groups. Professional jealousy, factional divisiveness, and poor sportsmanship have resulted in a situation where most of these groups actively compete over the best sites and withhold information from each other, despite the best efforts of the argonauts to create a collaborative working environment. Several autonomist projects voiced grievances against a hypercorp concern named Gate Research, which allegedly seized shared dig sites for its own and initiated other claim-jumping type actions. The hypercorp, in return, has accused an anarchist xenology group of sabotaging its operations. In another incident, a University of Mars encampment suffered a mysterious failure of its defensive perimeter, resulting in two large native life forms attacking personnel within the base. The failure was later ascertained to be caused by remote tampering.

Plot Hooks

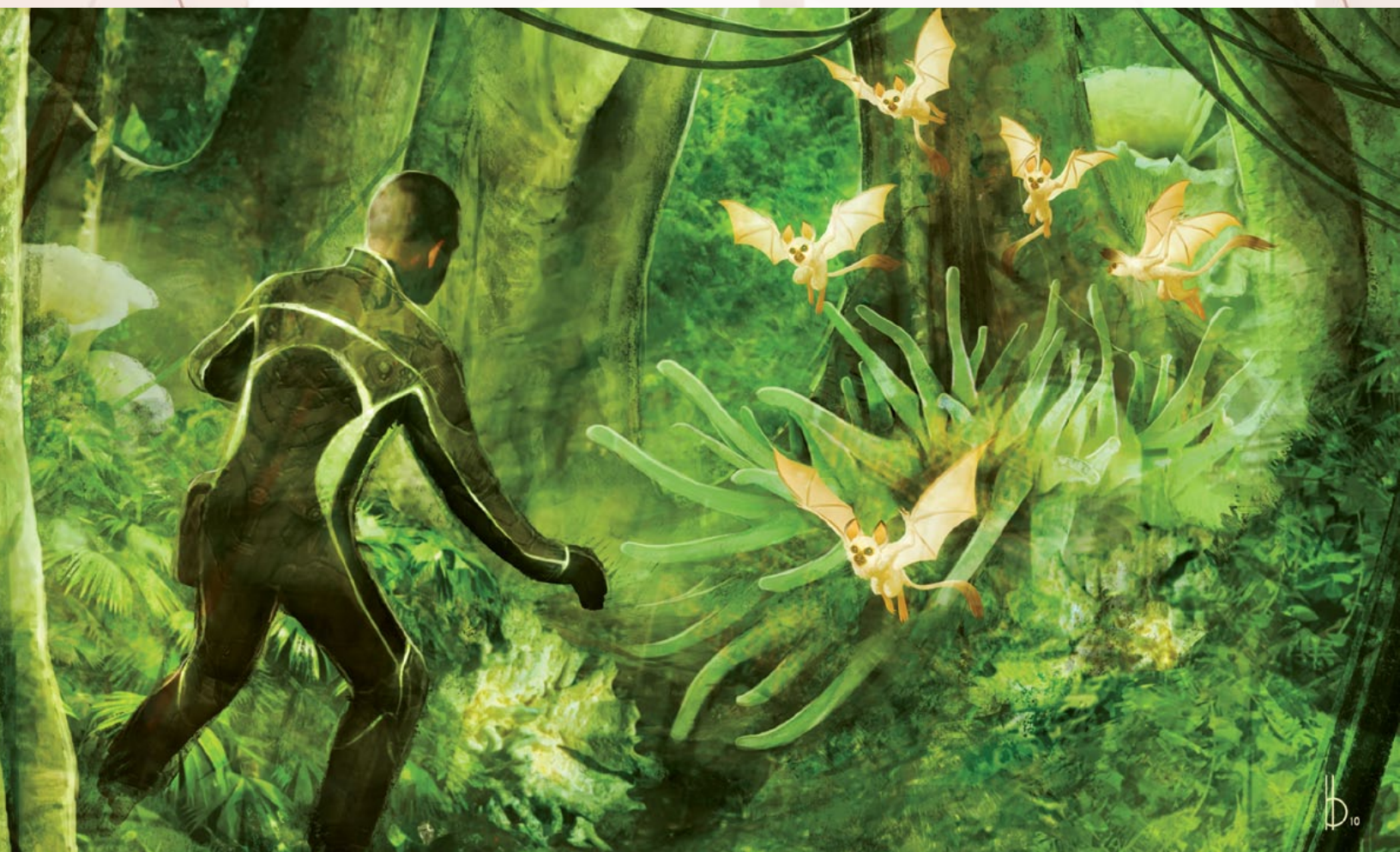
- A member of Firewall's conservative faction, stationed on Droplet, finds out that a research team with which the characters are working may have found a way to access the Toadstool's interior. Acting independently from Firewall's wishes, this rogue agent attempts to sabotage the operation, concerned that the characters will activate some major potential threat.
- The characters join the submarine mission to investigate the deep sea ruins, braving Droplet's massive and hostile oceanic predators. The ruins turn out to be an Amphib survival bunker, with clues to the species' mysterious disappearance. The characters accidentally trigger its long-dormant self-defense systems, however, giving them only a short period before it self-destructs.

Echo

Echo V is intriguing not just for its Iktomi ruins, but because it seems very likely that something went horribly wrong here, not just wiping out the Iktomi presence but turning the planet into a lifeless wasteland. No one knows whether this is something the Iktomi brought on themselves or whether they were destroyed by some hostile entity.

The main emphasis of transhuman activity on Echo V is in digging up Iktomi sites, speculating on their physiology, technology, and culture, and attempting to piece together meaning from their pictographs and architectural music. Many hope to uncover information on the reasons for the Iktomi disappearance, while others hope to find something indicating where the still undiscovered Iktomi homeworld is (or was).

Echo IV, on the other hand, is a world of abundant life—some of it quite large and vicious. This exoplanet is most interesting from a xenobiological research perspective, but it is also popular for those who want to risk the dangerous wilds of an alien planet. Stats are provided for the Echolalian clown sprites and land anemones, but gamemasters are encouraged to invent other diverse creatures as fits their campaigns.



Plot Hooks

- The characters are sent to investigate a scene of violence at an archeological dig. One of the researchers, a secret async, has become obsessed with something they believe they will find buried under the earth—all based on information the async "dreamed" after listening to Iktomi wind music recordings.
- The characters are hired to capture a particular specimen for xenobiological study, only this creature is cunning and difficult to trap. The chase leads them deep into the Echolalian forests, where they encounter a structure indicating that the Iktomi—or someone else—have indeed been here before.

Fortean

Fortean is the type of place where you're not sure if you should be amazed or terrified when you arrive. It's probably one of the few places in transhuman space where standard bipedal human-form morphs and shells are a rarity and looked upon as something strange. The place is crawling with uplifts of all types as well as the panoply of unusual bodies the scientists here have created for themselves.

The moon itself is uninhabitable to standard biomorphs. What little atmosphere it has is poisonous, it's cold, and the gas giant it orbits bombards it with unpleasant radiation. This hasn't stopped the industrious mad scientists from making the most of their rocky iceball, excavating a substantial habitat from six large caverns. Each cavern runs its own ecosystem and is divided between a lab area and a nature preserve. There are plans to soon dig out a seventh cavern that would be four times larger than the current largest and would accommodate much larger animals such as extinct megafauna and larger mythical beasts, including a larger water area for more aquatic species.

The most salient feature of Fortean Station is, of course, its wildlife. All manner of odd neogenetic and chimeric creations wander the preserves, many of them modeled on legendary beasts. Some of these have been replicated more accurately—or more effectively—than others. One wandering Fortean Station's parks might encounter a tribe of sasquatch and yeti, catch a ride on a unicorn, or be buzzed by flying monkeys. Many of these creatures are pods with cybernetic brains, run by AIs programmed to emulate the beast's behavior, kept to the best-guess approximation of their "natural" level of sapience, but others are full clones. Not all of the experiments are successful; there are a number of genetic mishaps and abominations, though these are usually kept out of sight, until they are no longer useful for research, when they are then euthanized.

The genetic templates for Fortean creations are open source, though only the refined ones have been released to the public. A number of Fortean creations have filtered out to other habitats, where they are now starting to make an appearance. Those who seek exotic pets, unique guard animals, or simply unusual creations are already taking notice.

Cryptid Morphs

Many of the Fortean creations are suitable as morphs for transhuman egos, though they are unusual and likely to stand out in many settings, particularly the inner system. For sleeving purposes, these count as exotic morphs (p. 272, *EP*) and may cause integration problems. Gamemasters are encouraged to create their own.

Dr. Dalton

Dr. Dalton is not nearly the poor persecuted innocent she claims to be. She is not above playing up the threats from bioconservatives in order to wrap her research in more secrecy. She holds a deep fascination with some of the darker aspects of mythological beasties, above and beyond the biology and genetics, so she's not above creating actual monsters. Her singularity seeker ideology means she also has no qualms about bypassing transhuman restraints or supporting exhuman allies. While driven by her own ideas and research, her loyalties can easily be bought off by any number of other factions who might be interested in her work.

Recently Dalton has been experimenting on integrating nanotech elements into biomorphs to allow them to change their basic shape. Her goal is to create nanofabricated skeletal structures, tailored organs that can take shifting and shocks, and epidermises that are highly changeable. Her results have been unpleasant so far, but there appears to be progress.

REPAIR BOTS

ROBOT	MOVEMENT RATE	MAX VELOCITY	ARMOR	DURABILITY	WOUND THRESHOLD	MOBILITY SYSTEM
Network Repair Bot	4/12	8	12/12	75	13	Walker
Enhancements:	360-Degree Vision, Enhanced Vision, Electrical Sense, Extra Limbs (7), Fabber, Fractal Digits, Grip Pads, Headlights, Lidar, Magnetic System, Nanoscopic Vision, Particle Beam Bolter, Radar, Railgun Automatic Rifle, Utilitool					
Skills:	Beam Weapons 40, Hardware: Network Systems 40, Kinetic Weapons 40, Perception 40					

GIZA

Giza's blackbox devices illustrate one of the major x-risks Firewall has already faced and dealt with—though perhaps not in the best way, given the debates currently raging among the proxies. Though the Firewall team sent through to destroy the artifacts seems to have fulfilled their suicide mission, no one will know for sure until the gate is re-opened—if it ever is.

Despite several weeks of intense study, no one knows what a blackbox really is or how it actually works. On the surface, it seems to enable users to engage in real-time communication with members of other extraterrestrial species, like some form of alien chat roulette. While not all of the connections are comprehensible or worthwhile, the possibility exists to establish a connection and share information with alien entities. The implications are enormous and staggering—as are the risks.

There are many options for how the blackboxes might truly function. It could be another TITAN trick, or the efforts by some other hostile entity to gather intelligence and measure transhumanity's capabilities. It could be a test of some sort for identifying civilizations that have mastered gate travel. Perhaps it is some entity's science project or elaborate hobby. The aliens that users are communicating with could be entirely artificial constructs. Or they could be copies of egos, scanned from those that previously accessed the devices, meaning that each contact is indeed long dead, rather than a live being. Maybe, however, the blackboxes really do work as advertised, presenting a simple chat for civilizations that have never met to use and abuse while getting to know each other.

The blackboxes do indeed present the risk of acquiring dangerous knowledge. Imagine a blackbox-using culture that seeks to deliberately feed dangerous technologies to rival civilizations, designed to provoke doomsday. Its AI compilers turn toasters into TITANs. It sends poetry memetically engineered to make the victims kill themselves. It provides planet-cracking WMD templates to anyone that asks, superempowering individuals to wipe out their own species.

Even if the technology is not deliberately harmful—or sabotaged or infected with the exsurgent virus—it may present a threat simply by its impact. Powerful science in the hands of a small group could give them the ability to dominate and oppress their peers—the fear Firewall had in allowing Go-nin to control the artifacts. Even if shared and widespread, a new technology could drastically disorient the social order, ripping a civilization apart by dragging its progress rapidly outside the transhuman frame of reference. The blackboxes provide the possibility of jumping blindly into disaster.

With proper use, of course, they could be a boon, bringing a new technological renaissance to transhumanity. The question is, who controls this process? Who ensures safety and security? How is abuse prevented? This is a microcosm of the very issues transhumanity itself has been dealing with given accelerated technological growth and the singularity. The questions are hard and there are no easy answers, as Firewall is once again learning the hard way.

Even if Giza's blackboxes are destroyed, the possibility remains that others may be found on other exoplanets. Firewall is already debating such situations and drafting protocols for handling them should they arise.

USING THE BLACK BOXES

Blackbox artifacts take a period of time to analyze and adjust to the wireless communication protocols of new species, so a new blackbox trove will not immediately ping anyone approaching with invitations to use the chat service. If anyone makes physical contact with the devices, though, they will exude silvery tendrils capable of penetrating even the hardest exteriors to interface with the electronics, nervous system, or the analog of such within. These tendrils are quick, quiet, and non-invasive, so a person may not even realize they are being penetrated (Perception Test at – 10) until the blackbox interface kicks in. It is easy to break free from the tendrils, though this breaks them in the process (at which point they seem to "melt" within the target). Undergoing this experience inflicts (1d10 ÷ 2) + 2 SV.

Any character that engages the blackbox interface and chats with aliens will find the experience odd and unusual at best, terrifying and nightmarish at worst. They may be lucky and contact an entity that communicates somewhat cogently via simple text, though such discussions are usually confusing, suffering from poor translation, and are usually difficult to comprehend. If they are unlucky, they may find themselves in an experiential interaction that assaults their sanity. It is up to the gamemaster to determine how stressful such contacts are, but as a rule of thumb 1d10 SV may apply.

Gamemasters should remember that the black boxes censor identifying information, as well as other data that might be too compromising.

PLOT HOOKS

- Firewall locates one of the original Extropians who found and accessed the Giza black boxes. The characters are sent to capture them before Go-nin or someone else gets to them first, but the sentinels aren't prepared for what the target has done with the data acquired from the black boxes …
- A gatecrashing character discovers a lone black box on an isolated exoplanet. They make contact with an alien willing to share some interesting science, but only if the character is willing to do something for the alien first …

Just In Case

The problem with being part of a conspiracy to protect transhumanity is that most others aren't likely to have heard of you. This means that sympathetic groups or people with similar interests may end up reproducing your efforts because they aren't aware you exist. Just In Case falls into this category. A number of non-Consortium inner system groups have gotten together and shared resources to build a safe haven for transhumanity, just in case the solar system should need to be abandoned. Even more interesting is that they seem to be pushing research into transhumanity's capabilities to travel among the stars without using the Pandora gates.

Some elements of this project may have ulterior motives of course. The fact that no Consortium interests are involved speaks volumes—most of those involved also seem to distrust the Consortium's rise to dominance in the inner system, and/or their efforts to lead the way to creating a galactic civilization, and may be hedging their bets should things turn sour. This, of course, should make things interesting should the Consortium get wind of the project—especially if they view it as a threat.

One of the major questions posed to Firewall by this project is: were they left out deliberately? Are the forces behind Just In Case aware of Firewall but distrustful of their involvement?

Plot Hooks

- A group of Firewall agents is sent to infiltrate Just In Case, assess it for potential, and look for an opening by which Firewall might make itself known and become involved. What they find out, however, is that at least one of the project's main players does distrust Firewall—and for a very good reason. The sentinels' own loyalty may be placed on the line.
- While working for one of Just In Case's secret sponsors, the characters are sent to chase down a Consortium agent who has obtained information on the project before they can reveal it to their masters.

Krypton

Krypton does hold secrets—but not the sort that Firewall thinks. Daxam is actually guilty of nothing more than standard hypercorp mismanagement—unless you happen to consider the use of indentures equivalent to slavery.

What Firewall is misconstruing as some secret hypercorp project is in fact a Barsoomian revolt in the making. The resort makes extensive use of indentured servants and infomorphs, many of whom are disgruntled at their poor contract terms, their limited freedoms, and the fact that they are forced to wait on the wealthy hand, foot, and tentacle. Behind the scenes, a significant percentage of Project Lead Davos Khan's office and personal staff are Barsoomian infiltrators who spent years working their way into a high-level corporate environment. Using their contacts with the Barsoomian Movement back on Mars, this cell has orchestrated a plan to transfer a number of additional indentures to Krypton and laid the groundwork to stage a rebellion and seize control of the colony. Khan, an incompetent executive normally in the practice of making his staff do all the work while he takes all of the credit, is completely oblivious to the extent that his operation has been compromised. Many others in the project have noticed glaring errors and discrepancies, but the Barsoomian plotters have skillfully played this off as a prestige battle between the commercial hotel side of the project and the research staff.

In addition to rounding up extra indentures whom they plan to liberate, the conspirators have also put other aspects of their plan into place. They have acquired blueprints for weapons and other contraband and secretly hacked several of the project's nanofabricators to produce them. A major portion of the resort's expansion project actually hides a small armory, a resleeving center, and a bunker from which they plan to coordinate their revolt. They plan to launch their uprising at the height of tourist season, where they will have ample opportunity to seize dozens if not hundreds of high-ranking inner system officials, business people, and media stars, whom they can use as collateral should Pathfinder or others attempt to counter-strike.

The one glitch in their plan is that the conspirators still have not acquired an expert trained in using the gate interface controls. Though they expect to be shut off by Pathfinder, they do hope to use the Krypton Gate to establish links to sympathetic autonomist exoplanet colonies. If necessary, they can capture Daxam's gate operators and attempt to force them to cooperate, but they would rather find someone they can trust and bring in on the conspiracy.

Plot Hooks

- A group of Firewall agents is sent in to pick up the trail of the missing team. Unfortunately a Daxam official looking into the unusual discrepancies notices something about the sentinels' records. If the agents aren't careful, they may find themselves blamed as spies, or may end up unwittingly revealing the plot to the hypercorp.
- A character trained as a gate operator is invited to Krypton and then approached by the conspirators for their help. Whether they agree to support the revolt or not, the character finds themselves on Krypton when the rebellion begins.

Lassiter

Some elements within Firewall have come to the conclusion that, in the long term, their stance of proactively combating x-risks and dangers arising from transhumanity's own technological developments is not sustainable. Eventually, in order to defeat what is a technologically superior enemy, advanced technologies that can be used safely must be developed.

Lassiter represents an attempt by one group of Firewall operatives, working with a Promethean (p. 381, *EP*), to try and push the limits of technology in a safe and controlled environment. They realize that they are likely, at some point, to draw unwanted attention to their experiments from other transhuman factions, the TITANs/exsurgents, or other cliques within Firewall. Yet they also know that the work they are doing, mostly centered around trying to upgrade the Promethean Astraeus, could be vital for keeping them ahead of their rivals and give them a boost in fighting extinction threats.

Plot Hooks

- The Firewall agents engaged in supporting the Lassiter project believe that they may have an infiltrator in their midst. The characters must root out the traitor—unless they are the traitors, that is.
- A gatecrashing team exploring a remote extrasolar location believes they may have run across a TITAN project, including a computronium artifact, before they were chased off by killer machines and the location was put on the restricted access list. Astraeus wants a Firewall team to go back and try to acquire a sample of the TITAN's computronium for research.

Luca

Luca's major draw is the extinct Lucan civilization and its interesting native life. The colonies and terraforming effort make it likely that Luca will grow into a major extrasolar center, despite the risk of asteroid strikes. The near-sapient intelligence of the octs has drawn a number of interested researchers, as does the viable genetic samples of Lucans. The debate raging over the ethics of resurrecting an alien species may be moot if someone simply goes ahead and does it—which seems likely sooner or later.

Plot Hooks

- A preservationist group opposed to the Lucan resurrection project undertakes a plan to steal or destroy the genetic samples. The characters may be called in to aid them or stop them—placing them in a position where they must decide where they stand.
- Firewall agents on the trail of someone secretly infected with the exsurgent virus track them to Luca. The exsurgent eludes their capture, escaping into the Lucan wilderness. When the characters track them down, they find the exsurgent hiding among a colony of octs. They are about to discover firsthand what happens when the exsurgent virus infects a colony of near-sapient alien bugs.

Mishipizheu

Mishipizheu is a doomed world; or at least the life on that planet is destined for trouble when their star reaches its next phase. This event may not be for a thousand years, or it may start tomorrow. The race will be on to catalog and perhaps save the planet's indigenous oceanic fauna, assuming the XenoPharma hypercorp that has purchased exclusive rights to exploit the exoplanet's life forms deigns to do so, or changes its position on allowing others in. This is a cause that will likely stir up pressure from preservationists and open-science advocates like the argonauts.

Currently Mishipizheu is only reachable via egocasting. XenoPharma has three planetside research stations. Two of these are floating habitats (one of which holds the egocasting and resleeving facilities), while the third is a deep sea floating station descended directly underneath one of the others, 2 kilometers down.

Nanabozho

This moon is indeed unusual. As theorized, it is an artificial object—though exactly what is hidden beneath its rocky surface is unknown. Efforts to probe too deeply into its secrets are likely to produce defensive reactions, perhaps prompting Go-nin to abandon these outposts and restrict this gate setting for good.

Plot Hooks

- XenoPharma mysteriously loses contact with their deep sea station, and the characters are part of the investigative crew. Is it sabotage? An unfortunate accident? Or an encounter with something alien hidden in the water world's deeps?
- Firewall uncovers information about a project that intends to breach Nanabozho's crust and seek out the secrets of its interior. Fearing a potential x-risk, the sentinels are sent in to infiltrate, evaluate, and stop it if necessary.

Moravec

Moravec's original claim to fame is its triple punch of tolerable environment for colonization, abundant marine life for biological research, and interesting dead civilization ruins for xenoarcheologists. In conjunction with numerous partners, from hypercorp concerns to autonomist initiatives, Gatekeeper has overseen the growth of several small colonies here, including two undersea ones focused on marine studies. Likewise, several archeological digs are busy unearthing and studying what they can of Moravecian life and culture. The real action, however, lies with the digital archeology of the Moravecian network.

The Moravecian Disappearance

Rather than expanding outwards into their own star system, as transhumanity did, the Moravecians turned inward, uploading themselves en masse and pursuing a future as a digital civilization. Whether they did this out of necessity after ruining their own planet, out of a predisposition towards virtuality, or for some other reason remains unclear. The physical aspect of their existence came to a sudden halt, but they lived on, absorbed in billions of virtual worlds.

The Moravecians built their digital home to last. The network components are constructed from hardy carbon nanotube-based material, using principles of molecular

computing. Individual nodes are secured in areas safe from geological activity, while nano-repair systems and hives of repair bots keep the system in operational order, as needed. Barring an unlikely cataclysmic end to their planet, the network will live on for millenia.

Why the network is now apparently abandoned is an open question. Are the Moravecians hiding deep within? Did the digital lifestyle not prove to be the path to immortality they expected? Did they melt away due to self-absorption, despair, or ennui? Did they kill themselves off or perish in some nightmarish digital catastrophe? Did they undergo their own accelerated-intelligence singularity, evolving into something else? Or did something wipe them out—perhaps an encounter with the exsurgent virus, now mostly cleansed from their systems? There are many possibilities for gamemasters to explore.

Repair Bots

These sturdy repair drones were left behind, part of the network's automated repair and defense systems. They will normally ignore others, but they will attack anything that poses an active threat to the network, disengaging once that threat is removed.

The Mystery Interface

If it weren't for the mysterious interface unit left behind at a Moravecian network site, transhumanity would still be puzzling out the network's architecture and protocols. Exactly who made this device—and why—is unknown. It could be a research project by an unknown hypercorp, exhuman, or other transhuman entity. Perhaps the Prometheans decided to give transhumanity a hand. Or maybe the TITANs sneaked it there, hoping to lure transhumans onto the network, where some trap awaits. Maybe the Moravecians themselves, secreted away inside the network, devised it and left it as an invitation.

Currently the device is in the possession of Gatekeeper Security, though others would certainly be interested in getting their hands on it—or a copy of it.

Accessing the Network

Any player character who accesses the network is in for a wild ride. Though standard mesh and simulspace rules apply, the differences in hardware, software, and comprehension are certain to apply multiple heavy modifiers (–30) to individual actions. The gamemaster is encouraged to interpret the rules as they like; some things may simply fail to work, or may operate in entirely different ways than expected. The virtual worlds—when comprehensible—should be unlike anything the character has experienced before. They will be overwhelmed by bizarre sensory inputs and the sheer oddness and trippy nature of the affair. This does, however, allow the gamemaster to present a unique virtual environment from an alien mindset's point of view. The results should be fascinating and horrifying, all at once.

Any character accessing the network will suffer stress from the experience. At a minimum, this should be 1d10 + 2 SV per subjective hour, though the gamemaster should of course amend this as appropriate to the scenario.

Plot Hooks

- A group of thrill-seeking infomorph mercurials decide that the Moravecian network is their next big frontier. They hire the characters to make a copy of the interface device, install it on a separate network node, and upload the infomorphs onto the alien computer system. Once inside, however, things may not go as they planned …
- One of the Gatekeeper researcher forks living on the network goes "native" and disappears—but not before hinting that she had found out what had happened to the Moravecians. The characters (or forks of the characters, that is) are sent in to track her through alien virtual worlds and find out what she knows.

Nirvana

On the surface, Nirvana claims to be a weird amalgamation of research outpost, Buddhist pilgrimage, and isolated prison (virtual storage for imprisoned egos, that is). Dig a bit deeper, and it's possible to discover that Nirvana acts as a prison for the sorts of people the Consortium would rather just lose or never admit to having in the first place. There's a level beyond that, however: Project Ozma is the entity calling the shots at Nirvana and they're using it to conduct experiments with the exsurgent virus on the imprisoned egos. What makes it even more intriguing is that they chose this location because the pulsar seems to impact the exsurgent's psi abilities.

Nirvana is a highly secure facility and not even remotely easy to infiltrate. One potential avenue of insertion might be through the Buddhist temple that a hyperelite sponsor has insisted be built here. Ozma and the Consortium are hardly stupid, however, and undoubtedly have measures in place for this type of infiltration. A second possibility is the fact that Oversight has also developed an interest in this operation, and so far they do not like what they see. Oversight is not so stupid as to openly butt heads with Ozma, but they may be willing to pursue measures with adequate deniability. This presents an opportunity for Oversight and Firewall agents to actually work together on a joint project—an unprecedented situation that can lead to interesting dynamics between the two opposing groups in the future.

Plot Hooks

- Firewall decides to send out careful feelers to certain Oversight personnel, testing the waters and inquiring towards a potential joint operation to infiltrate Nirvana. The landscape for establishing this relationship is treacherous and deadly, littered with opportunities for double-crosses.

- A close friend, lover, or ally of one of the characters is framed for a horrendous crime. By the time the characters track down the truth, the person's backups have been erased and they have been sentenced to a virtual prison: Nirvana.

Nótt

The unforgiving icescape of Nótt is home to two secrets. There is indeed a mysterious predator stalking the researchers and workers—but it is not of xeno-origin as believed. The predator is none other than an exhuman—the third colonist to go "missing" in fact. This particular exhuman infiltrated Pathfinder's research operations, using their prodigious scientific skills to gain a position under a fake identity. They took the opportunity to establish a private base here, for their own study and research. Like Pathfinder, they are researching the condensate, while also engaging in their own experimentations to exceed the boundaries of transhuman limitations. Victims are occasionally required for their own experiments, and so workers are occasionally ambushed and kidnapped. Unknown to Pathfinder, the exhuman has direct access to their station's secure mesh networks and even has a method of accessing the habitat itself if necessary. Thus the no-longer-human predator is always a step ahead of any attempts to locate or capture them.

The second mystery involves the apparent discovery of Bose-Einstein condensate in deposits within the exoplanet's icy surface. According to known science, it should be impossible for these to occur naturally (they are normally only produced in small amounts in labs at almost 0 Kelvin temperatures). Researchers are currently investigating if the condensate was somehow distributed over the exoplanet's surface after an asteroid (or other) impact. If a large amount is found in abundance, it could mean a significant breakthrough in using such condensates for multiple purposes—a find similar in scope to finding a natural source of antimatter. Pathfinder is, of course, quite eager to investigate this further and exploit the resource to its full potential. This may mean that resolving the mysterious disappearances becomes a top priority—Pathfinder is not going to want its operation to be at risk.

As one of the coldest locations known to transhumanity, Nótt is not the easiest environment for such affairs. The unbreathable atmosphere, extreme cold, dangerous icy terrain with hidden fissures, and active cryovolcanoes and geothermal activity make it an extremely hostile environment.

Plot Hooks

- Firewall tasks the characters with tracking a dangerous exhuman who has gone underground. As it turns out, this exhuman is an ally of the exhuman predator on Nótt and seeks to deliver specialized equipment via personnel in Pathfinder that have been bribed or manipulated. If the characters follow the trail to its conclusion, they may face the predator themselves.
- The characters are brought in to safeguard a researcher and condensate samples back to Mars. Various parties are quite interested in getting a look at Pathfinder's discoveries and will go to extreme measures to do so.

Olaf

Olaf may simply be the most amazing and mysterious structure transhumanity has yet discovered. It is a Dyson sphere, a hollow artificial shell, built entirely around a star, one of a pair of stars in a binary system. The Dyson sphere, the red dwarf star within, and the other orange dwarf star all orbit around their common center of mass. The encapsulated star within the sphere provides both the gravity and approximately half of the warmth needed to make this world habitable. The remainder of the warmth and the light to live on the exterior surface of the sphere is provided by the second (non-enclosed) star in the system.

Olaf is essentially a habitable world with a massive surface area. It is quite literally a world like no other. It is also almost completely unexplored. Less than 1% of the surface area has been given a detailed orbital survey, less than 1% of the surveyed area has ever been visited by automated drones, and only a small percentage of that has been visited by gatecrashers.

Though Olaf seems uninhabited, the structure is so large that there may be alien life hidden away elsewhere on the surface—or within. It is entirely possible that the interior of the shell is also inhabited, lit from within by the enclosed star. The interior of the structure may also contain other mysteries—perhaps even more levels with entire worlds spread out upon them. Some of the interior levels may be filled with exotic atmospheres or icy water. The thickness of the structure is a question unto itself. It is likely that access points to the shell's interior exist somewhere on the exterior surface, but these are well-hidden from prying eyes.

The vast distances on Olaf present a serious problem to exploration, especially since the escape velocity is 133 km/sec. Getting even small satellites into orbit requires large multi-stage rockets with powerful metallic hydrogen engines. Due to the sphere's vast size and the huge orbital distances involved, the resolution of satellite cameras tends to be around 2 kilometers (rather than 100 meters), meaning that only the largest and most obvious features can be seen from orbit. Likewise, piloted rocket travel is simply too difficult to be practical. As a result, the only form of long-distance transport available is jet aircraft. Jets capable of traveling 20,000 km from the Pandora gate, with enough fuel to return (or 40,000 km one-way), have already been carried through. Plans are underway to build larger fusion-powered jets. These aircraft will have an effectively unlimited range, but will have top speeds of only 1,000 km/hour.

Initial research indicates that the flora and fauna seeded across the structure's supercontinents comes

RIPWING POD BIOMORPH ■ p. 151

from a variety of alien worlds. Should gatecrashers manage to traverse the vast distances to reach these, each continent would be akin to exploring another planet. The regions where these ecologies mingle could be very interesting indeed. None of the ecosystems visited so far are known from contact with other worlds.

The remains of various settlements on Olaf are many, but separated by immense distances. As evidenced by the ruins found near the Olaf gate itself, some of these may have been visited by or even home to multiple alien civilizations in the past, each passing on before the next. It is unknown if any of these settlements belonged to the sphere's original designers, or if the megastructure has simply become a wayward home for various gate-traversing intelligent species over time. Most of the ruins found are nothing more than exceptionally worn foundations and a few fragments of ceramics, metals, and other hardy materials. There is some evidence to indicate that these settlements were abandoned, though what might be causing their residents to flee the sphere remains unknown.

PLOT HOOKS

- A long-range recon drone finds the smoking remains of one of the Gunderson team's missing vehicles. An expedition is launched, via jet aircraft, to find out what happened to these renegade scientists and bring them back.
- The orbital defenses begin attacking locations on the surface, possibly in response to the actions of another research team. The player characters must locate the source of the disturbance before the orbital defenses wipe out their expedition.

PENROSE

Penrose Station represents one of the most unique environments transhumanity has so far discovered in the galaxy. It sits on the edge of black hole and could hypothetically produce immense amounts of energy if the Penrose effect is harnessed. The station itself is a device for the manipulation of black holes and as such has immense scientific and strategic value. It also represents a truly alien piece of functioning technology, though it remains mostly unexplored. At the very least, it seems likely that there is still active machinery producing energy, atmosphere, and defenses. The main question is: is there some active intelligence orchestrating this activity? And is it alien or TITAN? If they are no longer around—what happened to them?

The exact nature of the disappearances in Penrose and the secrets of who constructed it are left up to the gamemaster. Penrose may be a tool of the ETI described in the core rulebook or a similar advanced civilization. It may have been constructed by something older, but is now in the hands of a younger entity that discovered it via the gate as transhumanity did. Perhaps the defenses are designed to keep

something that lurks in the bowels of the station from reaching the gate and getting out.

Likewise, the allegiance of the three infiltrators and their fate is a plot hook the gamemaster may use or discard as needed. Though they most likely met a similar fate as the other teams, they may have penetrated further and learned more, or they may even still survive, holed up in a situation where they need rescue … though they may not reciprocate the favor to the saviors.

Plot Hooks

- The characters are hired to escort the latest expedition through and protect them for a set period of time. They are also given the means to potentially destroy the station. They are then faced with the decision: do they destroy it or leave it despite the potential presence of a serious threat?
- The characters are sent in on a potential suicide mission to track down the three infiltrators and either destroy them or find out who they were working for. Unknown to the party, a member of their team is a secret fourth infiltrator who seeks to aid or save their conspirators.

Portal

Portal is an ideal alternate setting for gate exploration campaigns. For groups like Firewall, gate exploration via sites like Portal is a better option, since there is a layer of defense between any threats that might be found and transhumanity's home solar system. Portal is well-situated with numerous gates to choose from and a supportive gatecrashing community, especially for autonomists and characters with high @-rep. The ability to reserve gates for long wormhole windows is very useful for exploring worlds with serious dangers or threats, as it allows remote real-time oversight of gatecrashing teams and quick response to emergencies.

Portal is also intriguing for its signs of alien visitation. The myst trees, also found on several other exoplanets, are an ongoing mystery. The leading theory is that they are some sort of data storage left behind by previous gate-traveling visitors, perhaps a sort of waypost or guidance system. Others think the nanofog composing the trees has other specific uses, though the specifics remain unknown. Portal is also the site where the unusual fixor artifacts (see *Fixor*, p. 166) were first found, drawing numerous xenoarcheologists who hope to find more caches of relics or perhaps even the presumed alien base to which the truck carrying the fixors was headed.

Plot Hooks

- A lone survivor from a gatehopper crew comes stumbling back through one of the portal gates, barely alive, but with a message that the rest of the gatehoppers are in mortal danger. The residents of Portal, including the player characters, must organize a quick rescue mission—which means rapidly following the gatehoppers' trail through a chain of exoplanet gate links.
- A standard first-link and first-in operation goes horribly wrong when the first-in team encounters TITAN machines shortly after going through. To make matters worse, the wormhole link is suddenly and inexplicably jammed open, preventing the Portal gate techs from closing the connection. The characters must step through and help delay the threat before the machines come through and attack Portal.

Rorty

Rorty is one of several exoplanets that groups of exhumans evacuated to when Go-nin's ultimate mercenary allies retook the Discord Gate from them. Rorty is a cold, lifeless world with a thin hydrogen atmosphere, unsuitable for non-synthetic life. The planet is rich in natural resources, however, and the exhuman encampment here is quite busy collecting those resources and putting them to good use.

This particular group of exhumans is interested in developing collective mind-states for extrahuman intelligence and capabilities. Toward this end they have developed a high-end military morph designed to be operated by a mass mind, called a dreadnought. The Rorty dreadnoughts are preoccupied with building up a raiding force that they plan to unleash on various transhuman colonies. They have been methodically exploring via the Rorty Gate, looking for other systems with transhuman settlements—or even a way back to the solar system. So far, they have engaged in three raids. One was beaten back, but the other two succeeded. Of the latter, one colony was wiped out and the ruins left as a message. The other was seized and held, its gate reprogrammed to block incoming connections; the colony's Gatekeeper founders think a gate glitch is preventing access and that the colony is simply unaccessible, they have no idea it is now overrun with exhumans.

Exhuman Dreadnoughts (Synthmorph)

Dreadnoughts are essentially six-legged insectoid tanks, heavily armed and armored. Unlike more traditional battle systems, where different egos might be tasked with operating different systems and coordinating in a networked manner, the egos operating a dreadnought are integrated into a single mental unit. This process is incredibly stressful to their groups psyche. Each ego is also subject to heavy pyschosurgical modification beforehand. While individual egos can still manifest and take control of subsystems, these egos are often fractured by the experience and still partially merged with the others.

Due to their experimental cyberbrain control systems, non-exhumans are incapable of operating these morphs; merely being sleeved inside such a system will inflict 1d10 SV. Only specially adapted egos, merged into a mass mind, can operate these morphs efficiently.

The information given below is a guideline for the dreadnoughts seen thus far, though the colony on Rorty undoubtedly is working on new refinements. Gamemasters are encouraged to add any new toy or modifications they feel are appropriate, and to keep the players guessing.

Enhancements: 360° Vision, Access Jacks, Anti-Glare, Basic Mesh Inserts, Combat Armor (Heavy), Cortical Stack (Experimental Multi-ego System), Cyberbrain (Experimental Multi-ego System), Cyberclaws, Deadswitch, Extra Limbs (6), Magnetic System, Mnemonic Augmentation, Pneumatic Limbs, Radar, Reactive Armor Coating, Reflex Booster, Structural Enhancement, T-Ray Emitter, Weapon Mount (4, articulated)
Mobility Systems: Walker 3/15, Vectored Thrust 2/10
Aptitude Maximum: 30
Durability: 75
Wound Threshold: 15
Advantages: Armor 16/16 (+5/+5)
Disadvantages: Requires Multiple Specially-Adapted Egos

Plot Hooks

- Firewall wants to know what the exhumans that attacked the Mockingbird colony are up to. The characters are sent to Rorty via the Mockingbird Gate to spy on the exhumans and possibly eliminate the menace.
- One of the exhuman dreadnoughts on Rorty becomes severely mentally unstable, prompting the others to forcibly exile it on a remote exoplanet … where a group of gatecrasher characters exploring the planet stumble across it.

Sky Ark

Sky Ark is a jewel in TerraGenesis's exoplanet catalog. As advertised, they are undertaking a massive effort to populate the planet with life from Earth—in particular, with the millions of species that died out during the Fall. While this project appeals to those nostalgic about Earth, it is also smart because it creates a preserve outside of the solar system, should anything (else) catastrophic occur there. Even the Planetary Consortium, normally opposed to Earth nostalgia, has not opposed this project, as it redirects that nostalgia towards an interest in exoplanet colonization and expansion.

This project will take many years to complete, especially as genetic samples or information on many animals were lost and must be recreated. This has created a demand for genetic samples; various people and groups throughout the solar system may still hold such possessions tightly. This has spurred thieves and scavengers to find and/or liberate these samples in order to sell to TerraGenesis and their partners. The most interesting side of the project is the initiative to resurrect long-extinct creatures from Earth's past. Though most of these recreations are far more transgenic or neogenetic creations, rather than clones, the results so far have been intriguing.

As a result, tourism on Sky Ark is booming. The idle rich, people looking for new adventures, and gatecrashers with mission cred to blow come here in droves. Most enjoy the comforts of resort settlements with day trips to see the wildlife, but quite a few opt to rough it and go on extended hiking or camping trips (within areas designated for safety). The prehistoric and other dangerous creatures are kept in isolated areas, and as noted they are equipped with docility implants for interacting with tourists in visitor zones.

Though the Sky Ark project has popular support, some coalitions of astrobiologists and preservationists still oppose the plan, citing the irreparable damage inflicted on Sky Ark's developing and still young native bio-organisms. Though these groups lack the clout to impede the project, some radical preservationists have begun a campaign of sabotage and terrorism, hoping to detour tourism and make the project economically unfeasible.

Plot Hooks

- Someone has begun poaching wild game on Sky Ark, killing off valuable genetic creations. The characters are hired to track down the responsible party. Is it someone fulfilling their wish to be a great hunter, a hypercorp agent sabotaging the work of rivals, preservations seeking to raise the costs, or a religious cult seeking the aphrodisiac powers they believe inherent in the parts of certain creatures?
- A black marketeer, working as a deniable front for TerraGenesis or one of their partners, hires the characters to break into the private habitat of an elite oligarch, who happens to possess the only known genetic sample of polar bears still in existence in his private vault.

Solemn

Solemn presents a challenge to exploration. The effects of local spores and bacteria on plastics and metals is devastating, especially over the long term. Though this can be countered in the short term with sealed gear and regular upkeep and maintenance, the only long-term way to maintain gear is with defensive and self-repair nanosystems, such as medichines for synthmorphs (p. 308, *EP*), cleaner/fixer nanoswarms (p. 329, *EP*), and repair spray (p. 333, *EP*). Synthmorphs, bots, vehicles, and gear made of plastic or metals will suffer 1d10 ÷ 2 DV per hour. Biomorphs with surface implants are also vulnerable, though once the DV adds up to a wound equivalent, effectively disabling that implant, no more damage for that implant should be applied. At the gamemaster's discretion, this slow corrosion of one's morph and/or implants may inflict stress on the character (1d10 SV).

Researchers have not yet discovered why life on Solemn has evolved this way. Some believe that the life here was intentionally engineered this way, perhaps as a form of biological warfare against a pre-existing alien civilization here. This possibility has

attracted some xenoarcheologists to Solemn, though they have so far discovered nothing.

Solemn is currently populated by a tribe of neo-primitivists drawn here by the planet's hostility towards technology. Shortly after arriving, this group made an unwise decision to attempt to seize control of the remote gate, attacking the contingent of predominantly neo-avian autonomist scientists here. The assault was repelled, and an uneasy truce was struck. The neo-primitivists now keep their distance, but the researchers remain unconvinced that they will not attack again. Meanwhile, the Love and Rage collective has barred any further bioconservatives from emigrating here until they are convinced the exoplanet will remain accessible to all.

Plot Hooks

- A group of first-in gatecrashers exploring another planet encounters spores and bacteria similar to that found on Solemn. Unfortunately, this particular exoplanet has a more hostile environment, and the characters are in danger of losing the gear that is keeping them alive. They must use their wits to survive long enough for the gate connection to re-open.
- The characters are part of a group of researchers who visit Solemn. Unknown to them, one member of their party is a bioconservative terrorist sympathetic to the neo-primitivist cause here. This saboteur plans to wipe out the researchers so that the neo-prims can seize the gate and cut off the exoplanet for good.

Sunrise

Sunrise provides a number of unusual features for gamemasters looking for a new environment to stage a scenario in: its tidally-locked nature, the storms and weather produced by air flow between its light and dark sides, planimal creatures of various stripes (see the *Whiplash*, p. 175 and *Whiplash (Pod Biomorph)*, p. 154), the Iktomi windharps, the multiple gates, and the other alien remnants. Combined, these features make it an excellent core location for a long-term gatecrashing campaign. Like Portal, a group of gatecrashers could use this as their home base, spending time between gate ops exploring Sunrise's strange ecosystems and other mysteries. A wide range of adventures are possible here, from xenoarcheological dig surprises to biogenetic research intrigues.

Plot Hooks

- A group of xenoarcheologists employing the characters discovers a buried set of alien ruins near Sunrise's hot pole. Breaking in, the characters discover a sealed tomb-like environment filled with alien curiosities. Unknown to the characters, however, their entrance has triggered a long-dormant energy system, long ago damaged, which will go critical and destroy the site just a short time after they arrive. Even if the characters survive, they may find their vehicles damaged and themselves trapped in the hostile desert environment.
- Researchers at the Gamma Gate find a stretch of symbols they believe may correspond to a gate address—possibly even leading to the home world of the aliens that created the structures so long ago. The characters are part of the gatecrashing team sent to investigate … only to find that the symbols were most likely a warning, not an invitation.

Synergy

The Synergists are very similar to the neo-synergists detailed on pp. 34 and 173 of *Sunward*. The primary difference is that the neo-synergist hypermesh link implant is a more experimental model. In terms of game rules, they operate the same with the exception that Synergists do not receive a +5 COG bonus. Individual Synergists are even more likely to be subject to psychological distress should they be removed from the hypermesh for too long.

Due to the nature of their group mind, forking and merging is much easier for Synergists. For purposes of merging, treat every day apart as only one hour on the Merging Table (p. 275, *EP*).

Plot Hooks

- While on a visit to a scientific conference in the solar system, a Synergist is kidnapped and removed from the group of Synergists with whom he was traveling. The characters must rescue him before he loses his mind. Alternately, the characters may have been the ones hired to abduct and deal with him by a third party interested in the hypermesh's working.
- Someone is quite interested in what occurred with one of the Synergists during the Fall, before they joined the group mind. One of the characters is hired to join the group mind in order to access that person's memories; will they return, or stay part of the group mind?

Tanaka

Tanaka's life is interesting for a reason that transhuman scientists have not yet understood. All life on this world currently consists of five separate mega-organisms, each occupying approximately one fifth of the moon. In its base state, each mega-organism (referred to as megas hereon) is similar to an extremely complex fungus. However, these fungi have intellects that are at least equal to the smartest transhumans who have ever existed. They are not only sapient (in a quite alien way) but also possess psi-equivalent abilities.

The Mega Lifecycle

All life on this world is normally part of a single super-intelligent fungal mega-organism. Every 254 years, this life form divides into between 8 and 14 separate megas who compete among themselves for the next 27 years. At the end of this time, the survivors recombine and the most powerful have a significant impact upon the global mega's personality, goals, and directives. The global mega split into 12 smaller megas 24 years ago. Over the past two and half decades, these megas have struggled against each other for ecological and evolutionary dominance. Many of these megas have been assimilated by their peers, leaving only five. A state of equilibrium exists between the five remaining megas, with none of them able to gain an advantage over their siblings. Each occupies roughly one-fifth of the moon's surface area. In three years, the remaining megas will cease their struggle and combine their dominant traits, forming into an even more intelligent super-organism.

Mega Morphology

Though the appearance and character of the five regions of Tanaka differ according to the habits and traits of the mega that controls it, there are also many similarities between all of these regions. The majority of this world is covered in life, the only difference is that all life within a single mega is genetically identical and is part of a vast and highly complex organism. The various portions of each mega are divided into mobiles and sessiles. The mobiles are the various creatures that gatecrashers have encountered. The sessiles are stationary, some of which produce and accumulate food for the mobiles. All of these mobiles and sessiles are connected into one single intelligent organism using the mega's powerful psi-gamma faculties.

The majority of each mega consists of a vast carpet of sessiles, or perhaps one huge sessile, that covers more than 80% of the landscape of the region that the mega inhabits. This carpet is typically between a few centimeters and 10 meters thick and ranges in appearance and texture from living ooze to solid surfaces. These surfaces appear in many forms, from a field of feathery fronds to complexly curved formations vaguely resembling woody bark, chitin, or even flesh. The surface of these mega carpets take on a bewildering variety of shapes, many of which are prehensile appendages.

Near the border of a mega, these shapes are at least somewhat armored and exceedingly robust. Mobiles located near the border with another mega are typically fast moving, well armed, and equipped to eat portions of the other mega. Away from the borders, the range of possibilities for both mobiles and sessiles is immense. There are many areas, some covering dozens of square kilometers, where the mobiles interact with the sessiles to perform a variety of complex tasks. These tasks include everything from subsurface mining to incomprehensible activities like sculpting rocks or portions of the carpet into complex shapes and then either arranging them in patterns or passing these sculpted shapes back and forth among mobiles and the sessile's appendages.

It is unlikely that transhumans will easily grasp that everything within a single mega is all one organism. The life on Tanaka acts much like on other planets, with plants growing and animals eating them, but what you actually have is the sessiles creating nutrients that they feed to the mobiles, which are all as closely connected to one another as the cells in our bodies.

Mega Conflicts

At this stage in the world's life cycle, the five remaining megas are exceedingly competitive. Mega mobiles attack and eat mobiles and sessiles from other megas, and the five entities compete on a vast, environmental scale.

The megas also assume that any non-async transhumans or other life forms are either a potential threat posed by one of the other megas or a possible food source. However, the megas can and will recognize asyncs and will not attack them, as long as the asyncs did not interfere with their activities. Why the megas do not assault asyncs is an open question. It is possible that the megas recognize the asyncs as intelligent, non-mega beings. It may indicate that the megas have had interactions with other (alien) asyncs in the past.

Most asyncs will simply be ignored and left alone. It is possible, however, that a mega may attempt to contact an async of sufficient potency (Level 2 Psi trait). Mega minds are not even closely similar to transhuman minds, however, and this experience is likely to be mind-shattering to the poor async. Initial attempts are likely to result in severe stress (gamemaster's discretion, but 2d10 SV is suggested). The more practice a mega has with contacting transhuman minds, however, the more adept it will become.

The mental stress inflicted on an async through mental contact with will decrease over time. Once the hurdle is overcome, the mega may attempt to recruit the async for assistance against its mega rivals. Mega mind communication will not be based on language or other recognizable forms of communication; it is far more likely to manifest as vague impressions, inexplicable urges, bizarre dream states, or stranger things. Mentally linking with a fungal mass organism, even a super-intelligent one, should not be easy. It is possible that the async may be able to convey its own communications to the mega, though this should require something akin to a SAV + WIL Test, most likely with negative modifiers. A crafty async could, however, convince a mega to leave their non-async companions alone.

As psi-active mega-organisms, the megas may have other psi sleights at their disposal, at the gamemaster's discretion. Where negotiation or prodding fails, direct mind control or other mental assaults may serve a mega's purpose.

PLOT HOOKS

- A group of sentinel characters are sent to track down Ananda Petroda and find out what she knows. Only problem is, she's off on a gatecrashing mission—and this one seems to be going even worse for her.
- A trail of mad asyncs leads Firewall to conclude that someone else has discovered the fact that something unusual is going on with asyncs and Tanaka and that some other faction has also become aware of this fact. A group of sentinels with at least one async is recruited to investigate the mystery.

TIRION

The Singer Institute for Biological Anomalies (SIBA) represents a different kind of horror in the *Eclipse Phase* universe. Not the kind represented by exsurgents (though that potential exists) or the type brought about by exposure to an alien world, but rather the horror that exists when one group is thought of as being less than human and exposed to the casual neglect and indifference on the part of wider society that lets them be taken advantage of and discarded.

The neglect of the Planetary Consortium and other inner system factions to the rights of the uplifted has created this sort of atmosphere. While many inner system denizens bear no particular ill will towards the uplifted, neither are they particularly concerned with protecting their rights or even as recognizing them as transhuman. In line with this attitude, the failed results of uplift attempts are not seen as babies born with birth defects, as they might be in the outer system, but rather as failed experiments that can be sold to any interested parties for whatever uses they desire. When that interested party is Rael Duvalier, a man who blames uplifts and their allies for his loss of station at Somatek, the purposes he has for these uplifts and smart animals is horrific indeed.

The research being conducted at SIBA is concentrated along two main branches. The first is focused on making more tractable uplifts and smart animals or specimens that have automated externally-triggered neural shut-offs. This process involves heavy modification of the subjects' brains. While much of it can be conducted on a dead specimen, SIBA doesn't shy away from working on the brains of still-living specimens.

The second line of research, and the one more likely to catch Firewall's attention, is an attempt to tinker with Watts-MacLeod in a way that it can be transmitted across generations and breed true for certain traits. While the prospect of psi-active animals may be troubling to most people, the potential for something to go horribly wrong in tinkering with a dormant exsurgent strain is even more alarming.

If this were a facility anywhere else in the solar system, it likely would have been targeted by mercurial direct action groups by now. Its location on Tirion, however, means that it is off-limits for all but the most dedicated and connected groups.

PLOT HOOKS

- A grieving uplift community asks the characters to find out what happened to some of their young who were unable to be fully uplifted. The trail leads to the Animal Farm and the characters must find out if the young can be saved and if it is worth doing so.

KITE SYNTHMORPH ■ p. 150

- Several Lost get wind that members of the Futura project are now working at the SIBA and have allied with a group of mercurials to try to grab them from the facility. They hire the characters to provide support for the mission.
- Reports surface of new smart animals displaying async powers in private security usage. One batch of the animals goes feral, however, exhibiting signs of exsurgent infection. The characters must put down the outbreak and trace it back to the source.

VOHAUL

Vohaul is not the sort of place most characters are likely to even think of visiting. It is a hellish Venusian world, the garbage dump of transhumanity. Pathfinder has hauled an eclectic assortment of toxic, radioactive, and inconvenient items and substances here to be buried or deposited into lava flow.

There is a small, mostly automated station at the terminus of the Vohaul gate and a small complement of Q-morphs operated by AIs or indentures that process incoming shipments. The station will often contain a backlog of trash the on-site drones have yet to dispose of. While the extreme pressure and temperatures of Vohaul serve to destroy most of the trash pushed through the portal and onto the planet's surface, some detritus can survive.

THE VOHAULIANS

The Vohaulians are a silicon-based life form in the early stages of civilization development. They are intelligent but are little more advanced beyond their equivalent stone age. They are organized in packs of fifteen to fifty individuals and have the bare-bones beginnings of language. They exist primarily in the liquid sulfur-compound pools on the surface, but are able to jet out for short periods of time, taking flight or propelling themselves across the more solid expanses of Vohaul.

Pathfinder is not yet aware of the Vohaulian's existence since they are somewhat reclusive and Pathfinder has already written off Vohaul as a dump. What they do if or when they do discover the Vohaulians may very well set the tone for how transhumanity is viewed by other galactic species they come into contact with.

PLOT HOOKS

- The characters are tasked with retrieving a failed prototype that is slated to be thrown through the gate to Vohaul. They are not in time on Mars and must go through the gate to the other side before it is permanently destroyed. While they are there, they encounter the Vohaulians.
- Eager to dispose of a TITAN relic accidentally brought through to Mars from another gate, Pathfinder deposits the relic on Vohaul. Firewall gets wind of the situation, and already aware of the Vohaulians' existence (though not their intelligence), decides to send a group there to eliminate the TITAN threat.

Wormwood

There are three facets to Wormwood that have not yet been discovered or verified. First, there are indeed multiple unconnected sections of beehive tunnels/chambers. The only way to access these other sections will be to somehow tunnel through to them; a potentially dangerous prospect. Second, no path to the surface has been found because there isn't one—all surface access was long ago sealed off. Explorers may discover this by completely mapping the tunnel system and/or by finding sealed areas. Attempts to break through to the surface are likely to be trapped and/or more difficult than expected. Third, very slight evidence remains that the Factors have visited this place before. The exact nature of this evidence is up to the gamemaster; it may be a sampling of Factor dust never sanitized, or a Factor device accidentally left behind in a hidden spot. This revelation will undoubtedly raise questions, but the Factors will of course evade the issue.

Gamemasters are of course free to generate their own ideas for Wormwood's mysteries. It may indeed be long abandoned, no longer needed by a species that moved on to better things or fled the region of space due to a deadly gamma ray burst that has since passed. The builders may have fallen victim to their own exsurgent-infected singularity event (or some other x-risk), as transhumanity nearly did. The other separate sections of the beehive may contain relics from this species—or even still-active defensive systems. The beehive may also contain evidence of visitation from other alien life that have passed through at various points in the past.

Plot Hooks

- The missing gatecrasher didn't find the surface, but he did discover access to some of the machinery that maintains the beehive's atmosphere and temperature—and he is now trapped there. Getting him out without becoming trapped as well in the process will not be easy.
- An explorer discovers the evidence of Factor visitation, but keeps it to himself. He then uses it to attempt to blackmail the aliens. When he goes missing, the characters are called in to investigate.

Creating Extrasolar Worlds

Gamemasters who wish to create their own extrasolar locations are encouraged to keep the following suggestions in mind.

Setting and Story

The most important factor in devising an extrasolar environment is that it fits the story you are trying to tell with your scenario or campaign. If your current story arc is primarily about exploring the class-based tensions between biomorphs and the clanking masses, then setting a scenario on an exceptionally hostile world where biomorphs are unlikely to tread probably won't fit your needs. On the other hand, it may force privileged characters to experience the toil and drudgery that indentures forced into working synthetic shells in exceptionally hostile conditions face on a daily basis. It all depends on the primary themes you wish to push.

Alien worlds and interesting space settings allow you to place the characters in situations they've probably never faced before. How often do transhumans who thrive in space habitats, who have lifetimes of data at their instant mental call, and who lack little in their lives deal with circumstances where they are forced to scavenge for food on an alien moon, avoid being eaten by ravenous xeno-predators, or escape a sudden dangerous storm of a magnitude they have never experienced before? How do they handle a dangerous encounter in spooky alien ruins or survive on their own in an exoplanet's ocean when they are cut off from their gate home? Gatecrashing to other places presents opportunities for devising all manner of interesting and intriguing environmental challenges.

Sometimes extraterrestrial settings are great simply for the color they provide. A standard bug hunt mission becomes a bit more interesting when chasing actual alien critters through the mysterious lava tubes of an exomoon. A puzzle-solving mystery takes on a different flavor when the clues all relate to the extinction of an alien civilization and the relics they left behind. Even run-of-the-mill faction conflicts are different when they occur on an isolated exoplanet, far from allies and the omnipresent eyes of the mesh.

They key rule is: don't let the environment get in the way of a story. If the main plot is getting sidelined because the characters are preoccupied with surviving in a desperate extrasolar environment, then tone the setting down. Extrasolar places make great backdrops because they are a change of pace, they convey a sense of wonder and discovery, and because they present a sense of the unknown, tinged with danger. They should not dominate unless you want them too.

Sometimes, of course, the environment is the story. Unraveling the threat posed by an alien world's hostile environment before it kills the characters makes for a good mystery.

Choosing a Setting

The first step in devising an extrasolar setting is to choose one of the exoplanet types described on pp. 37-40. Each of these presents specific opportunities and challenges.

Gas Giants

Gas giants are challenging to incorporate as settings, given the difficulties transhumans have in surviving their thick, choking atmospheres, insane winds, high gravity, and terrible radiation. They may serve as the backdrop for an aerostat setting (see *Arcadia*, p. 74 for example) or a dangerous dive into their upper atmosphere for resource mining or other purposes.

Gas giants, however, often have dozens or even hundreds of moons. Those moons too close to the

giant are likely to be bombarded with relentless radiation, making them challenging for anything but short term or suicide missions. Those outside of the deadly radiation belts make more promising settings. While most are airless chunks of ice or rock, some may have atmospheres and may even be terrestrial in nature. These moons may also serve as a base for further exploration or travel to the gas giant's atmosphere, other moons, or nearby space.

Terrestrial Planets

Terrestrial planets offer the most possibilities for extrasolar adventures. Though only a small percentage are Earth-like, those that aren't are usually still habitable with the proper gear and preparation. Terrestrial planets can run the gamut of environmental extremes, from scorched rocks like Mercury to frozen, icy worlds and everything in between. Terrestrial planets are also the most familiar to transhumans, however, and so may be harder to present as especially exotic or intriguing. On the other hand, they also present the best option for worlds containing extrasolar life.

Ocean Planets

Ocean planets are defined and limited by their watery depths. For undersea or water-based scenarios, they are ideal, but their lack of land masses and tendency to have thick, unbreathable atmospheres restrict other options.

Asteroids and Dwarf Planets

By numbers alone, the vast majority of extrasolar objects tend to be asteroids, dwarf planets, and similar small rocky/icy moons. These sites all share the same features: they are airless, cold, lifeless, and are microgravity or low gravity. Landscape-wise, they do not display as much diversity as terrestrial worlds. On the other hand, their environments usually do not present any serious hazards that transhumans are not prepared to handle. For biomorphs, of course, appropriate shelter will always be a concern.

Other Locales

The Pandora gates also lead to many less common and more exotic locales: deep space, pulsar planets, rogue planets, brown dwarf cryoplanets, black holes, nebula gas clouds, and other stellar phenomena. Though statistically rare, these are more interesting by virtue of their uniqueness and so make for more intriguing scenario settings. They can play a significant role in science-based campaigns, of course, as researchers seek to unlock some astronomical mystery or other anomaly. Gamemasters should be careful not to deploy them too frequently, however, else they will lose their appeal.

Characteristic Considerations

Once you've settled on the type of exoplanet (or other location), the next step is to define its features.

Gravity

Once you've picked a setting, ballparking an appropriate gravity for it should be an easy affair—just look up an equivalent astronomical body. Gravity effectively falls into four categories: microgravity (zero or close enough; asteroids and small moons go here), low gravity (Luna, Mars, and similar large moons and small planets), Earth-equivalent (including Venus), and high gravity (everything bigger). Rules for applying these are given on pp. 198-199, *EP*.

CRASHER TRUCK/GEV ■ p. 163

Atmosphere

The primary question to answer here is: can unmodified (or modified) transhumans breathe the atmosphere? With the exception of rare, Earth-like terrestrial worlds, the answer will usually be no. Breathability is of course a major factor, at least where biomorphs are concerned. In non-breathable atmospheres, maintenance and care of one's air supply, whether that be a breather (p. 167, *Sunward*) or full-on vacsuit, will be an ongoing concern given the obvious hazard vector. Sealed, pressurized, air-filled habitats and shelters take a more prominent role in such settings, as they allow biomorphs to interact and function more easily.

Exoplanets with breathable atmospheres are often home to alien life. This is because the life cycles of microbes and plant life consume carbon dioxide and release oxygen into the air, creating the conditions for larger and more complex life forms to evolve.

Once air quality is settled, the question of whether the atmosphere is dangerous in other ways must be answered. An atmosphere's composition and pressure can bring a number of factors into play, as discussed under *Environmental Hazards*, p. 170.

A location's atmosphere should of course fit the setting realistically. You don't need a doctorate in astrophysics or chemistry to figure this out; most of it can be handled with common sense and some quick internet research. Don't be afraid to fudge the details for sake of story, but try to avoid crossing the line of plausability.

Weather

Hand-in-hand with atmosphere comes another major environmental factor: weather. Airless worlds have no weather aside from the meager solar wind. Planets with atmospheres, however, will also have weather systems. This brings an arsenal of tools to the gamemaster's table: wind, storms, temperature variation, rain/snow, cyclones, tornados, hurricanes, drought, floods, and more.

Temperature

Temperature is largely determined by two factors: proximity to a star and atmospheric greenhouse effect conditions. The closer you are to a star, the hotter it gets, though the star's output is also a factor here. Brighter, hotter stars (white and blue) are usually larger; dimmer, colder stars (orange and red) are usually smaller. There are exceptions, as older, dying stars get large and dim.

If a planet has no atmosphere, its temperature will almost entirely be determined by proximity to its sun. Close companions will be scorched (much like Mercury), whereas outer planets will be frigid and cold.

Planets with atmospheres will have higher temperatures if they have high quantities of greenhouse gases, such as carbon dioxide and methane. These gases trap sunlight and heat from bleeding off into space, enabling the planet to warm up. In large quantities, this can lead to Venus-like conditions, a pressure cooker environment that is inhospitable to transhumans.

Of course, many other factors will impact an exoplanet's surface temperature. Earth-like and larger planets will be warmed by their own internal geothermal activity. This can also be the case with smaller planets and moons in orbit around larger bodies and affected by tidal stresses. A planet's current orbital position and its seasons may also be a factor, as well as local weather conditions. Quite often this is simply a distinction between deep freezing and cold (at least in relation to the temperature range that transhumans find comfortable); even warmed-up planetary bodies are likely still too frigid for unmodified biomorphs.

Day Cycles

As a general rule, the closer a planet or moon is to the object it orbits, the slower its spin is likely to be, and thus the longer its day will run. The rotation of objects with far-out orbits is usually less impeded by gravitational pull, and so these bodies tend towards shorter and more varied day cycles.

Orbiting bodies that are close to their parent may be tidally-locked, meaning that one hemisphere always faces whatever they circle. This is especially true for small exomoons, as their own spin is eventually counteracted by the gravitational pull of the planet that captured them. It is also common among planets that orbit quite close to their stars. For exoplanets, a tidal lock means that one side never sees the light of its star and remains in perpetual darkness. For exomoons, one side will always face its parent planet, but it will still experience day and night as it orbits (because it will still be spinning in relation to the sun).

Star Type

For purposes of gatecrashing scenarios, most stars will be main sequence, meaning they will be "dwarf" stars, most commonly dim red (M) (these alone make up ~75% of stars in the galaxy) or orange (K), though brighter yellow (G), white (F), and blue (O) are possible as well. This is especially true for terrestrial worlds harboring life. Other non-main sequence stars are less likely to form planets or are more likely to undergo evolutionary changes such as going nova or supernova.

Though less common, binary, trinary, or even quaternary star systems are possible. In these cases, exoplanets are likely to only orbit one of these stars (their primary). Planets in these systems are more likely to have orbits that are perturbed and so are less likely to develop life.

The Habitable Zone

Life-bearing terrestrial worlds have one prerequisite: they must fall into the star system's habitable zone. This is the orbital region where a planet's temperature and evolution are conducive to having water, a key

solvent and ingredient for life. Planets that are too close or too far from the star will be outside this zone and far less likely to develop life—or at least life as we expect it. The habitable zone is different depending on the star type: for dimmer stars, the habitable zone is closer to the star; for brighter stars, it is further out.

Diversity of Environments

One important thing to remember is that planets are not the same uniform environment across their surface; they will feature regions that cross the spectrum of their environmental range. Just look at Earth as an example, from the Saraha to Antarctica, from the Amazon to the Great Lakes, from Kilimanjaro to the Mariana Trench. Forests, deserts, plains, swamps, steppes, and other terrestrial biomes are just the beginning of the menu. Exoplanet regions may include exotic options like crystal fields, cryovolcanic flows, humungous chasms, methane lakes, or island plateaus protruding above a sea of corrosive clouds. Conditions may vary drastically after crossing relatively short distances. Even the thick, crushing surface of a Venus-like world may range from boulder-strewn badlands to volcanic lava flows to intricate cavern networks. Likewise, run-of-the-mill barren asteroids will feature diverse areas such as craggy peaks, deep tunnels, glassy craters, or lakes of dust.

This doesn't even take into account the variety of transhuman settlements that could be erected, from beehive warrens and air-filled domes to cramped tin can shelters and zero-grav cluster modules. The various space habitats detailed on p. 280, *EP,* provide a starting point for potential settlement options.

Life or No Life

The question of whether your new exoplanet holds life is a major one. Worlds that possess even microbial life are incredibly more valuable and of interest for scientific purposes. They also raise a host of ethical and safety concerns. If these issues are relevant to your story idea, this may fit in nicely.

Microbial Xenolife

The main issue for worlds with microbial life is whether these alien bacteria, viruses, and other microbes pose a threat to transhuman biology. Characters traveling to such worlds must be careful to sterilize themselves before and after, to avoid both picking up unwanted pathogens and polluting the extrarrestrial ecosystem with their own microbes.

Xenoflora

Xenoflora poses a similar quandary to gatecrashers. While on one hand such plant life may be providing crucial oxygen to an atmosphere, making it breathable, they may also be spreading pollens or other pathogens that can trigger an allergic or toxic reaction in biomorphs. Carnivorous xenoflora is also a possibility. On the other hand, xenoflora is the major visual indication that a planet is life-supporting, and the diverse forms, colors, and functions alien flora can take on will help define the feel for an exoplanet setting. Xenoflora will also be diverse and will differ according to the ecosystems and environmental conditions of different bioregions. The flora flourishing in an alien swamp is likely to be quite different from the flora spread across the same exoplanet's mountainous regions.

Xenofauna

If your exoplanet has evolved larger, more complex life, you have even more options for dressing your setting and presenting threats and dangers to gatecrashers. The primary thing to keep in mind when devising alien critters is to consider their evolutionary development. Judging by Earth's own life, some traits and physical features seem common and have even emerged from multiple, separate evolutionary paths: eyes, wings, manipulation digits, etc. Traits like these are likely to be found in variant forms among different alien species. Their bodies will also need to be capable of things like reproduction, eating (or drawing energy from their environment in other ways), sensing their environment, and disposing of waste. They will have some sort of brain or nervous system to process information and make decisions. They will likely be motile and have at least one method of self-propulsion, such as limbs for walking, wings for flying, or jets for expelling water. They will be part of a food chain and the ecosystem of their local habitat. Their other physical traits are likely to have evolved to cope with specific environmental conditions and because they were more efficient than their competitors. They should be products and components of their environments. Their own lives, and their species' population, will be subject to environmental factors like food availability, climate change, predators, disease, and competing species.

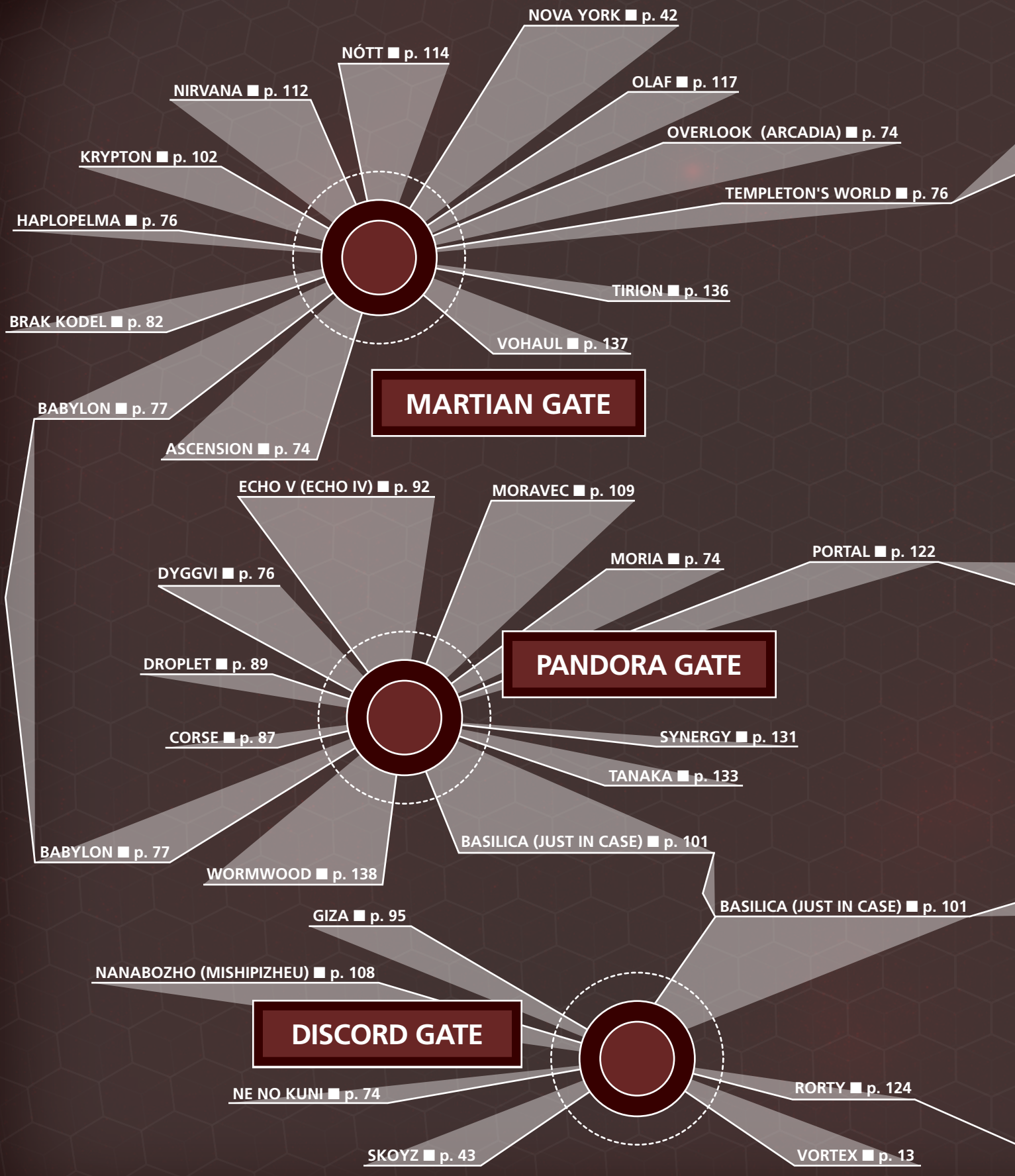
Try to avoid sci-fi tropes and focus on making your alien critters fit their environments and making them alien. Part of the challenge of interacting with xenolife is figuring out what makes it tick, how it works and why it does what it does.

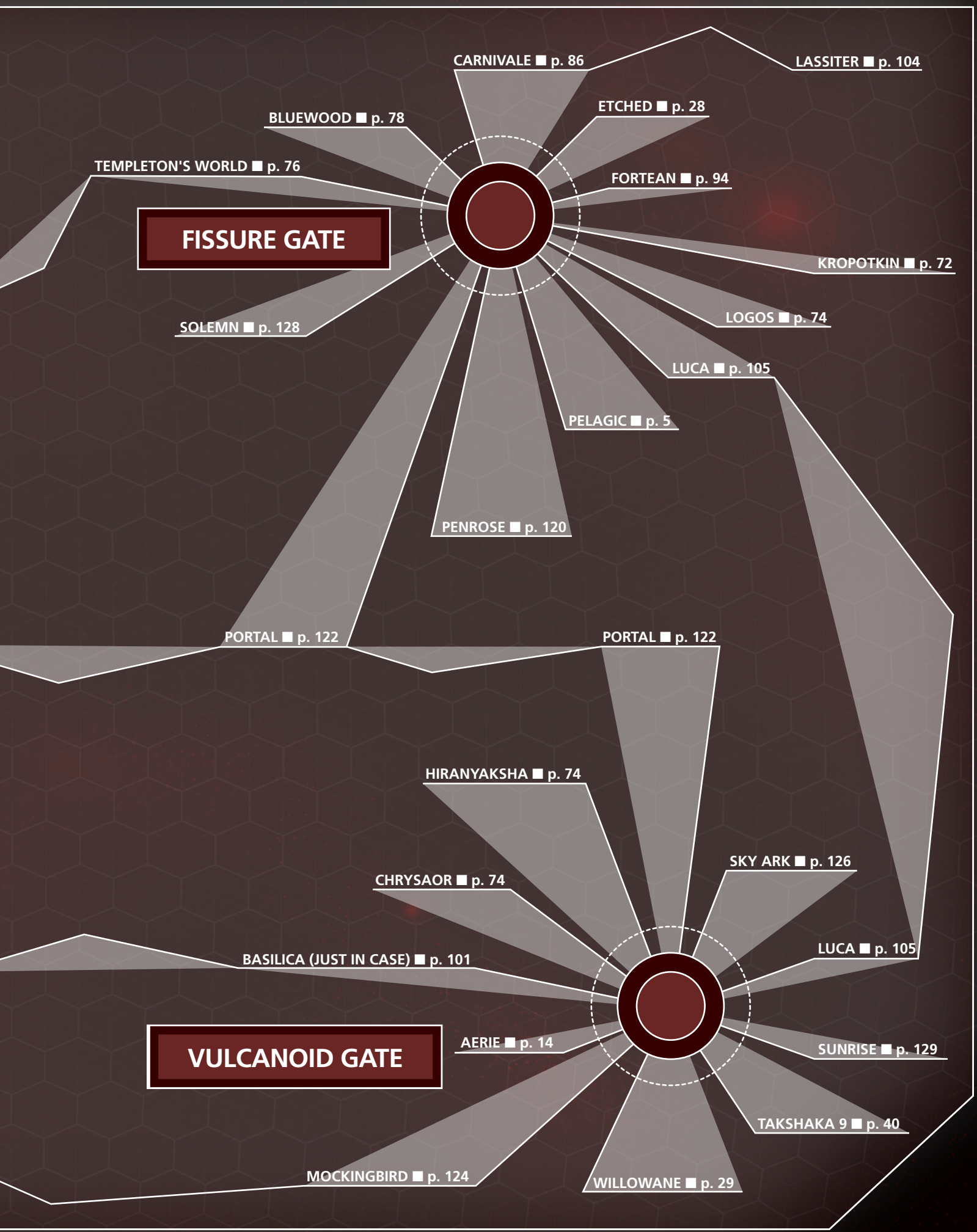
Unusual Life

If you want to push the envelope, you can introduce life forms that have developed outside the normally expected ranges. This could be life based on silicon, arsenic, or nitrogen-phosphorous rather than carbon, and could use a solvent other than water, such as ammonia or hydrogen fluoride. Understanding how such a creature would function, look, and evolve is a more complicated affair and will likely require some research on your part. On the other hand, such life could exist in extreme conditions and similar places where transhumans are unlikely to expect it and so presents an opportunity for mystery and scientific discovery.

WORMHOLE LINK MAP

This map illustrates the known links connecting each of the Pandora gates described in this book.
This is only a small sampling of the thousands of gates known to exist. Not to scale.




FISSURE GATE
CARNIVALE ■ p. 86
LASSITER ■ p. 104
ETCHED ■ p. 28
BLUEWOOD ■ p. 78
TEMPLETON'S WORLD ■ p. 76
FORTEAN ■ p. 94
KROPOTKIN ■ p. 72
LOGOS ■ p. 74
SOLEMN ■ p. 128
LUCA ■ p. 105
PELAGIC ■ p. 5
PENROSE ■ p. 120
PORTAL ■ p. 122
PORTAL ■ p. 122
HIRANYAKSHA ■ p. 74
SKY ARK ■ p. 126
CHRYSAOR ■ p. 74
LUCA ■ p. 105
BASILICA (JUST IN CASE) ■ p. 101
VULCANOID GATE
AERIE ■ p. 14
SUNRISE ■ p. 129
TAKSHAKA 9 ■ p. 40
MOCKINGBIRD ■ p. 124
WILLOWANE ■ p. 29