

BEYOND THE RING



ADVENTURE AND EXPLORATION
THROUGH THE RING GATES FOR **THE EXPANSE**



DISTANT WORLDS AWAIT

The discovery of the protomolecule changed everything but it was only with the opening of the Ring that humanity began to understand the power and scope of the alien technology. A massive construct out near the orbit of Uranus, the Ring is a portal into a strange non-space known as “the slow zone.” Centered on an ancient alien station, it connects to more than a thousand other portals leading to a thousand different star systems, each with one or more worlds shaped by the ancient aliens who created the protomolecule. Now the aliens are long gone, and the unlocking of the ring gates has opened vast frontiers for human settlement and exploration.

Beyond the Ring advances the timeline of *The Expanse* RPG to the fourth novel in the series, *Cibola Burn*, and details the slow zone, Medina Station, travel through the ring gates, and some of the many systems found beyond them, along with tools for Game Masters to design their own systems for characters to explore.



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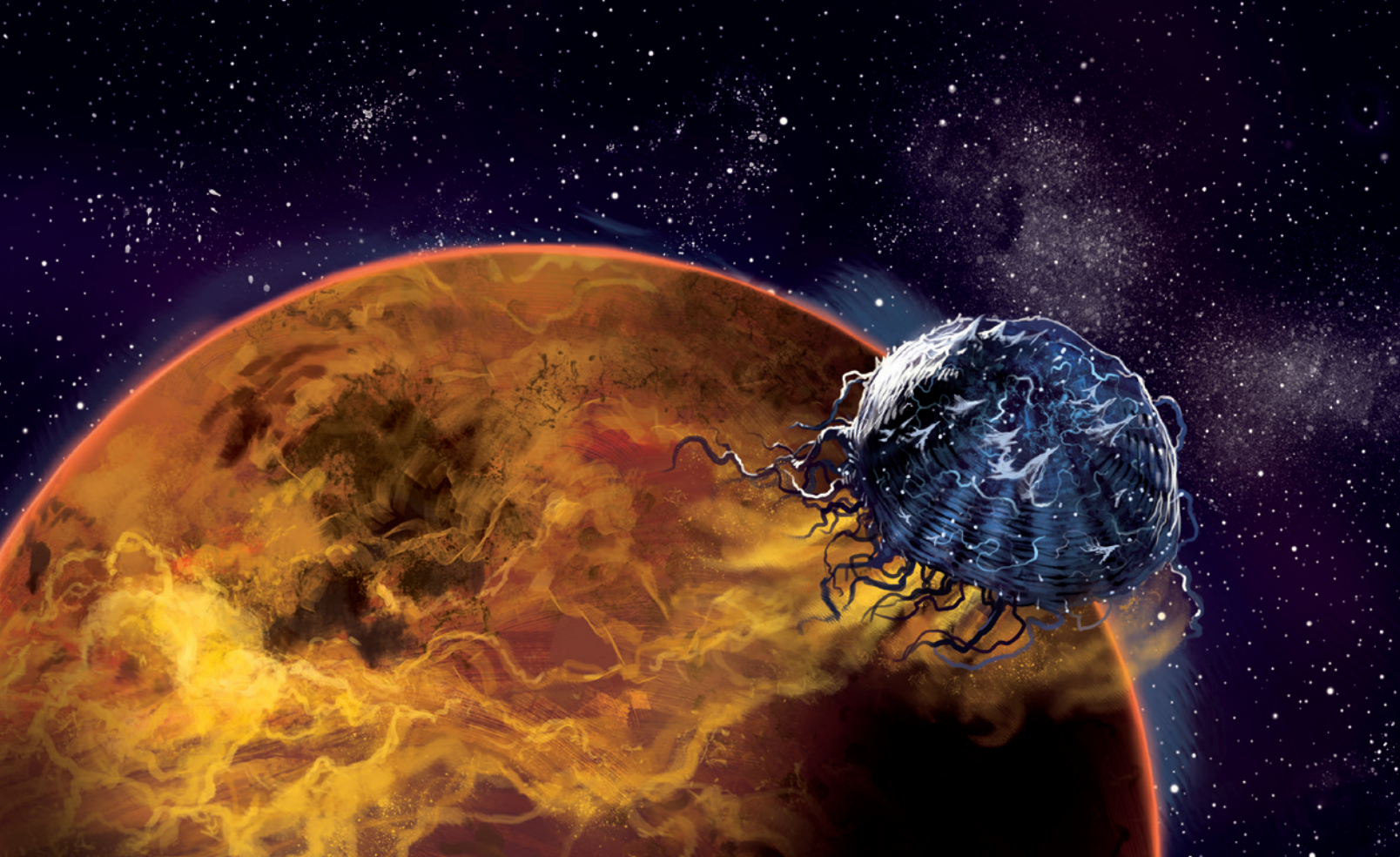
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INTRODUCTION

Beyond the Ring explores the ring network, including the slow zone, Medina Station, and a sampling of the 1,373 worlds accessible through the network. You'll also find in-depth rules for creating your own worlds and designing and managing colonies. The setting is presumed to be roughly the time period from *Cibola Burn* through *Babylon's Ashes* and perhaps a bit beyond.

"Conspiracy theories come up whenever people feel like the universe is too random."

— *Cibola Burn*

HOW TO USE THIS BOOK

The first three chapters of this book provide a wealth of history and setting information for *The Expanse* universe. With this book, players can choose their own fate by setting course for new worlds to explore or to trade with, and GMs have details on dozens of worlds at their fingertips. A number of these systems are canon—taken directly from the novels, but even more, are completely new and so not known by players who might be familiar with the books. As always, the new rules and systems presented here are intended to give you more options, not to hem you in. Both the GM and the players should consider everything in this book to be optional. Work together to decide what you want to use, and don't worry about the rest.

WHAT'S IN THIS BOOK

Beyond the Ring is broken into five chapters that explore the slow zone and numerous planets beyond the ring network. Additionally, the book also provides rules that allow players to create and manage their own colony's details and for creating their own systems. Characters can now investigate dozens of worlds, from the well-known Illus (New Terra), to ring worlds, to mysterious dead systems with hidden secrets.

"Apocalyptic explosions, dead reactors, terrorists, mass murder, death-slugs, and now a blindness plague. This is a terrible planet. We should not have come here."

— *Cibola Burn*

CHAPTER 1: AFTER VENUS

CHAPTER 1: AFTER VENUS explores the fallout after Eros crashes into Venus as well as providing details on the slow zone, the Ring Station (or the Hub), and the gates themselves. You'll also find a number of campaign and story hooks for stories that take place within the slow zone or are connected to the Hub. Many of these go beyond *Expanse* canon, offering ideas for taking your stories in new directions.

CHAPTER 2: MEDINA STATION

CHAPTER 2: MEDINA STATION offers an in-depth look at Medina Station, which has become the gateway to the 1,373 worlds. Here you'll find details on the lives and culture of the people who live on Medina Station as well as their homes, places of work, and the bars, clubs, and restaurants where they go to blow off steam. You'll also learn about the politics and philosophies of the station's residents, as well as discovering story hooks for creating adventures on Medina Station.

CHAPTER 3: WORLDS BEYOND

CHAPTER 3: WORLDS BEYOND presents over three dozen worlds, both old and new. You'll find systems featured in *The Expanse* novels, such as Laconia, Freehold, and Auberón. Then there are new systems: Shaula (where the habitable planet is transfixd by a massive artificial construct), ALEC-11 (a Dyson sphere built around a red dwarf star), and Horeb (where the colony has become a strange cult). Each new system has a complete scientific dossier, including star type, atmosphere composition, atmosphere details, and more. Each also has a full description, including details on the biome, settlers, and any alien artifacts that are present. These new worlds also have a story hook to provide GMs with ideas for including them in a campaign.

CHAPTER 4: COLONIES

CHAPTER 4: COLONIES provides a complete rule set for creating and managing colonies. This can be used by GMs who want to come up with new colonies and by players who are keen on establishing their own colony. You'll find rules for generating colonies, managing colonies, and even Stunts relating to maintaining a colony.

CHAPTER 5: SYSTEM & WORLD CREATION

CHAPTER 5: SYSTEM & WORLD CREATION gives you the means to create your own worlds and systems. You can use the charts and tables provided to generate systems randomly or use them as guidelines to create your own. This chapter includes everything you'll need to make complete system profiles as well as details about a world, including flora, fauna, and alien artifacts. There are even stats for various animal analogs to help you create new and exotic creatures.



CHAPTER 1: AFTER VENUS

For nearly a year, Venus warped and changed as the remains of Eros Station—and the protomolecule experiment it contained—set about completing its inscrutable programming. While anyone with the resources to remain nearby could observe the changes, no one could make much sense of any of it. Observers could only speculate as to what would come of this growing and changing alien technology. During its incubation, it transformed the surface planet in incredible ways.

A UN military science vessel, the *Arboghost*, was dispatched to Venus to observe the transformation and send data back to the UN. Eight months into its mission there was a powerful energy pulse of unknown origin that interfered with all observing telescopes in the non-visible spectrum. The *Arboghost* was disassembled into its structural components down to the level of screws and bolts, and the crew of 572 personnel were lost to the vacuum of space. Whether the protomolecule cannibalized it for parts or to understand how it worked remains a topic of debate. Still, no matter how many eyes and minds tried to understand, no one could make heads or tails of the protomolecule's actions.

It raised more alarm than anything else, then, when the structure or organism formed by the protomolecule departed, leaving the husk of Venus behind. Past the orbit of Uranus, it settled to finish its business, constructing what humanity called the Ring before falling inert. The Ring itself instantly became the topic of speculation, study, and concern.

Envoys from Earth, Mars, and the Belt, nominally working together, approached the Ring as one to study it and hopefully divine its purpose. The Ring itself appeared to be dormant and with no discernible purpose until a young Belter named Manéo “Néo” Yung-Espinoza used his self-built racing ship to slingshot through the Ring in an attempt to impress his crush back on Ceres. His passing through the gate activated it, sending him through to the slow zone. His ship instantaneously drastically reduced speed, leading to his immediate and rather gory death.

After Néo's passing, sensor data and probes sent by the investigating ships showed that anything passing through the Ring instantly decelerated in the same way Eros Station was able to improbably “dodge” the *Nauvoo* before landing on Venus. Unfortunately, anything inside the probes was unaffected, meaning a ship that passed through at high speeds would kill all of the crew due to the instant deceleration.

“How are you doing?” Holden asked. “You seem more coherent than usual.”

Miller gave a short Belter shrug. “How do you mean?”

“Usually when we talk, it's like only half the signal's getting through.”

The old detective's eyebrows rose in surprise.

“You've seen me before?”

“On and off for the last year or so.”

“Well, that's pretty disturbing,” Miller said.

— *Abbadon's Gate*

The nucleus of this space is a spherical station (known as the Ring Station, or the hub), attracting all objects passing through the Ring, and appearing to control the ring network, the slow zone, the gravity within it, and possibly even the protomolecule itself. Once through the Ring, and after Holden's interaction with the Ring Station, it was discovered that the Sol Ring was one of many—part of a vast sphere of identical rings in a space one million kilometers across.

THE SOL RING

Show a human a closed door, and no matter how many open doors she finds, she'll be haunted by what might be behind it.

— *Abbadon's Gate*

The people of the Sol system watched in morbid curiosity as a squid-like vessel rose from Venus and departed on a journey toward the edge of the solar system. Its designs finished, it left behind no more answers than it gave during its construction, just a vastly changed and depleted planet. From the destruction of Venus rose the Ring. The end result of the protomolecule's long incubation on Venus, the Sol Ring (or just "the Ring") stands near the edge of the known solar system. The monolithic structure defies expectation and explanation, assembled by and from the vessel that departed Venus. Exponentially larger than any man-made object, even the retrofitted *Behemoth* (eventually Medina Station), humanity can only guess its original

purpose. If the Ring knows anything, it isn't sharing, and that doesn't seem likely to change any time soon.

THE RING STRUCTURE

From the "outside," or Sol side, the Ring appears as just that: an enormous circle of not-quite void space. At 1,000 km across, it can fit any imaginable human structure. The "slow zone" effect was lifted after the initial fleet powered down their engines on the advice of Holden and the Investigator, and it has shown no sign of returning. No attempts to fire missiles through the Ring have harmed it, and so far, no one has attempted to harm the structure itself. The materials used to build it aren't any alloys known to humanity, and if the other rings are any indication, it can withstand billions of years of radiation and weathering in space without any noticeable effects on its form or function.

The Ring itself is an unassuming thing, with little more than a blue glow around the interior edge to mark it as an obstacle. Despite expectations, the wormhole itself has no fantastical elements or embellishments, underwhelming at best for the marvelous feat it performs. Like visual effects, if it puts off any sound, it's indiscernible in the vacuum of space. No one is entirely sure how the artificial wormhole maintains itself, but it doesn't appear to need any external input to keep running. The most popular theory says it's possibly feeding off the background radiation in space to provide its energy, much like the unformed protomolecule uses radiation (albeit in higher concentrations) to fuel its work. Like the other rings in the network, it stands silent and stalwart, waiting to fulfill its purpose without offering much explanation of what that might be. Made as it

QUARANTINE

While the original purpose of the rings may have been to provide a convenient transport hub between the far-flung corners of the galaxy, when the builders faced extinction, they repurposed the hub. Unable to fight off whatever infection or invading force was targeting them, they used the ring network to quarantine affected systems. Through the Ring Station itself (and James Holden as a conduit), we learned about some great, unknown force wiping the builders out, bit by bit. First, in a slash-and-burn effort to halt the destruction, the gate builders destroyed infected systems, leaving them barren and dead. When this failed to stop the spread, the lockdown went into effect, and every gate slammed shut. The extreme defensive behavior of the hub is the product of the lockdown, a last-ditch effort to stop or at least slow down whatever malevolent force wiped out the builders. While the artifacts remain on various worlds in varying degrees of functionality, nothing else of their society does—least of all, answers. Whatever it was struck quickly and decisively, and the builders' lack of effective defense suggests even they had little to no understanding of what they were up against. If they did have any research or theories, they're inaccessible; if they do exist, the odds of translating them are functionally zero. Whether or not the unknown predators are still out there looking to strike down overreaching empires in space remains a mystery.

Since the quarantine was lifted, there doesn't appear to be any resurgence of the malevolent force, or at the very least it doesn't register humanity's efforts as a threat. Perhaps it's a kind of virus or parasite that doesn't see us as a viable source of energy or enough of a threat to its own existence to merit its attention; maybe in the intervening billions of years between its last conquest and the completion of the Sol Ring, they too died out. The looming, existential threat lingers as long as we don't have answers, but with so many other pressing issues involved in exploring beyond borders beyond our wildest imagination, it's easy to brush aside. The excitement and rush of the new will always outweigh the fear of the unknown. For everyone out at the Sol Ring, the calculated risk is worth it for the priceless reward.

was from some alien blueprint, unmaking such a thing seems impossible, though replicating it for a clearer purpose might be slightly more plausible with enough study. With so many new worlds and systems available, and ring builder artifacts cropping up among them, understanding *enough* feels within humanity's grasp. Scientists have already begun theorizing the building of new gates, and there are hopes that maybe one day humanity could learn to reprogram existing ones to move away from long-dead, unviable systems to more promising alternatives. After all, does it really matter if you understand *how* something works as long as it does the job?

DEFENSE AND REGULATION

As part of her plan for vengeance against the crew of the *Rocinante*, the surviving daughter of Jules-Pierre Mao fabricated a speech by what appeared to be James Holden in which he declared the Ring to be the property of the OPA and the OPA alone. Any actions against the claim, so his fabricated speech went, would be met with extreme prejudice. As it played across all channels, tensions between the three governments rose in response to the video, resulting in a brief but terrifying escalation of force. In turn, this resulted in the first *successful* crewed trip through the Ring—the *Rocinante*, fleeing aggressive maneuvers after being targeted for staking such a decisive and threatening claim—and her crew, followed by forces from both the Martian Congressional Republic and United Nations navies. When the situation finally de-escalated and resolved, the focus turned to the other gates that were part of the network, but the question still remained: who, if anyone, did the Ring really belong to?

Now, on the Sol side of the Ring, humanity's various space-reaching governments monitor entry into the ring network. The UNN and MCRN both maintain watches just outside, neither willing to give up the task solely to the other. Regulations not unlike those for any station or settlement are in place for passing through. Beyond the wormhole lies the hub and the once-again repurposed Medina Station. The *Behemoth*, transformed from a warship to a more colonial purpose, orbits the Ring Station as humanity's last outpost before reaching beyond the Sol system into the unknown beyond.

Converted as it was by the OPA, Fred Johnson oversees the station and its remodeling, and by coincidence of location, has near-total control of the slow zone. Eventually bolstering the OPA's defenses with remote-activated rail guns mounted on the hub, the OPA cemented its power. Able to target any point in the slow zone, they can choose to prevent docking at Medina or inhibit transportation between any of the gates, if they so choose. As many of the currently settled systems aren't under OPA control, this does create a certain amount of friction between the rival governing forces, but at the same time, it grants more legitimacy to the OPA as a governing body itself.

While it is currently inactive, finding a way into the Ring Station and powering it back up would provide untold possi-



bilities for defending not only the Sol system, but all those beyond the remaining gates, Medina Station, and the slow zone itself. Having a way to control and enforce a speed limit—perhaps even selectively so—is powerful enough, but the ability to open, close, and possibly even redirect gates would be another powerful weapon in the arsenal of whoever controls the hub. While no one has attempted to get inside to try, it most certainly hasn't escaped the attention of leaders of all three forces. No doubt, the first attempt would bring the other two down on them, so it remains untested until someone is willing to endure the strike.

TRAFFIC

Moving through the Sol Ring is a carefully-protected practice. Blockaded briefly by the UNN and MCRN, ships can now pass through the Sol Ring a bit more freely, especially with the rise of Medina Station. Spreading out to colonize the different worlds presented to them, humanity relies on Medina for resupply and even to retreat to if an expedition goes poorly. Supply runs from Sol regularly arrive to aid Medina Station while they complete their second retrofitting into a self-sustaining colony within the slow zone, set to act as a similar bastion of protection and aid to the ring colonies once it's up and running. The UNN and MCRN forces outside the Ring monitor those coming and going through the Sol Ring, but with the OPA forces stationed inside, they don't have a solid record of what rings ships pass through once they're in the nexus of the network. As only a fraction have been explored and cataloged, escaping into an unmonitored ring system is possible by greasing the right palms. However, between stocking for such an excursion and keeping the appropriate parties quiet, it would prove an expensive means of laying low.

Still, with Medina Station established on the other side of the Ring, it means bureaucracy has followed. Anyone docking at Medina Station leaves a record of their stay, and the OPA monitors the comings and goings between all the rings in the network, if only to ensure there isn't any fighting that might disturb the giant collection of wormholes humanity still doesn't entirely understand. Whether the OPA is willing to share this knowledge may change depending on the social and political climate, but that doesn't mean it doesn't exist. With access to the right records (or alliances with those who do), finding out flight plans and docking patterns of ships isn't hard. Similarly, given the choke points of the hub and the Sol Ring, blockades and embargoes are easy to enforce between the new systems and the old. Whether the UNN or MCRN preventing ships from passing through the Sol Ring, the OPA seizing any ships or supplies that do make it through, or a combined effort of multiple fronts working to ice each other out, the potential for a cataclysmic event teeters just on the edge. Now that humanity's first extra-Solar expedition to Illus (or New Terra) is seen as a "success" story (albeit a dubious one), others are chomping at the bit to try their hand at reigning in the new frontiers.

MASS EXODUS

While Earth could certainly spare some of her inhabitants without batting an eye, not many other places in the system can lose even a fraction of their population without severe strain. Someone must maintain every bit of space humanity has claimed from the vacuum and wrestled into a habitable environment; ask any Belter what happens when there aren't enough eyes and hands making sure everything is in working order. Additionally, the Mars terraforming project is in jeopardy. Many of the greatest scientists on Mars have turned their eyes to the worlds beyond the ring, and with so many Martians leaving to seek worlds with an atmosphere, the project may be in its death throes. While the urge to explore or return to life under a sky instead of in cramped tunnels is a powerful one, the numbers don't lie. Anything other than carefully-controlled emigration would cripple any settlement off Earth.

At the same time, restricting such efforts is bound to cause friction. Locking down ports and seizing ships leads only to riots and uprisings; regulating travel creates more work for government systems, putting more strain on those already doing their best to maintain order. Hiring out teams might create a new facet of the economy, but with that is the guarantee of black market systems cropping up, doing nothing to solve the problem of maintaining enough population to continue day-to-day operations. The blockade at the Ring might be able to mitigate some of the problem, refusing access through the Ring, but even that comes with its risks. The populace has already seen the success of the *Barba Picolla*, which successfully broke through and found a world to call their own. Holding the line with firepower would surely serve to whip the people into a rabid, frothing frenzy; bad enough if their government was the one to slag a ship breaking through, and only worse if it was a rival. At the same time, threats only work if there's something backing them up. While shooting down someone else's people would be an act of war, failing to reign in their own would do little more than expose the ruling bodies as weak.

THE SLOW ZONE

The single most effective defense measure witnessed to date, the slow zone is the nickname for the space between the 1,373 gates of the ring network. Ignoring physics entirely, for a time all objects passing into the network were instantly decelerated to the same rate of travel, regardless of mass, speed, or resulting collateral damage. Unfortunately, as humanity learned too late, this effect only works on the exterior of objects, which resulted in numerous casualties as ships entered the Ring unaware of the “speed limit.” Science still has no meaningful answer as to what would be capable of flaunting such universal constants as “inertia” and such trivial notions as “Newton’s Laws.”

“What have we got?” Ashford said.
“Short form.”
“It’s fucking weird, sir,” Chan said.

—Abbadon’s Gate

THE SPACE BETWEEN

Less an edifice than the space between them, the slow zone is the only path to the various gates that make up the ring network. Roughly one million kilometers in diameter, the massive area is bounded by the various gates positioned around it. While it is not particularly busy yet, any ships looking to pass through still need to coordinate flight plans, make the appropriate checks with the powers that be, and contend with their defense systems should they choose to deviate from their stated intentions. Still trapped at the center, orbiting the hub, is the “garbage ring” of debris fired into the Ring before any ships passed through. Made of items previously captured by the speed limit, the ring of debris is one of the few features in the slow zone to stand out. The other notable feature of the slow zone is the hub itself (also called the control station or the Ring Station), a dull blue sphere sitting placidly and unremarkably in its center.

Possibly the most interesting part of the slow zone are the gates that hem it in. The 1,373 rings that surround the slow zone now sit open, awaiting explorers to venture to the other side. While their placement seems relatively even, the sheer scale of the formation makes it impossible to truly say if some might be missing in irregular gaps...or if a large number of gates might be missing in regular patterns. Whether there were originally more rings connected to the network, or if there are others that were delayed much like the one sent to the Sol system, no one truly knows, but the space between the gates is a mystery. A starless void, it’s impossible to tell if the network is located within the Milky Way or separate from it entirely, or what lies beyond the bounds of the structures. The space is yet unexplored, as vast stretches of nothing aren’t particularly useful to a species still reliant on large quantities of *somethings* to sustain them.

SPEED LIMIT

Originally a hard limit of 600m/s, the speed limit of the slow zone not only forcibly decelerated anything moving too fast for its liking, but drew them inward to the control station in the center of the space. Once caught in the grip of the slow zone, nothing will free a trapped object again. Thrusters and ship drives are powerless against the lockdown, and even attempts to break out using the recoil of weapon fire have no effect on the slow, inexorable pull toward the center of the zone.

Outside of any damage done by objects within the ships, the Station and the slow zone don’t appear to have any weapons or means (or at the very least, desire) to harm anything passing through. While the hub arrests objects and draws them inward, it hasn’t destroyed anything caught in its web, nor does it disable communications or laser arrays. Primarily a defense mechanism, the speed limit within the slow zone appears to be a delaying tactic or a cautionary warning to anything entering ring space.

After Holden’s interaction with the hub, the speed limit was returned to normal, allowing ships entering the space to operate normally. While currently an “all-or-nothing” system, it’s possible that with enough study and practice, the limit could be adjusted on a conditional basis, allowing objects like ships to move unimpeded and capturing smaller objects like torpedoes or Gauss rounds intended to do harm to other ships in the space. Whether or not the station can differentiate objects and apply conditional rules is unclear, as so far no attempts to teach or train it to recognize objects has been made.

MACHINE LEARNING

For all the incredible advancements the proto-molecule displays, its learning processes are remarkably rudimentary, its “thinking” simplistic and binary. It regards anything it contacts as either a threat to be eliminated with extreme prejudice or a non-threat that is ultimately ignored. Trying to “teach” it anything new is far more likely to expand its understanding of what is threatening than what is peaceful, as previous interactions have shown. This may be a product of its programming, meant to protect its civilization from the widespread destruction it witnessed, but its volatility has proved fatal more often than not, nonetheless. When the hub is active, it has the ability to dynamically react to threats and adjust the permissible speed of the slow zone in the space of a breath, which can cause havoc in manned ships as the external deceleration displaces those inside.



MEDINA STATION

First the *Nauvoo*, then the *Behemoth*, and finally now Medina Station, the generation ship orbits the hub just outside the “garbage ring” of items previously caught by the slow zone’s speed limit. The massive structure is still in the process of being converted into a space station after its stint as a warship, and for now—pending a number of lawsuits from the group that commissioned it in the first place—belongs to Fred Johnson and the OPA. While it doesn’t exactly claim the slow zone for the OPA, it is currently the only human “settlement” in the slow zone (and, eventually, defending it). Meant to comfortably sustain human life on a centuries-long journey into unknown space, the interior of the station is open and spacious, capable of housing any number of creature comforts and amenities. For more on the interior of Medina Station and its construction, see **Chapter Two**.

Its position just outside the control station makes it one of the first human settlements with long-term exposure to alien technology. While there have been no adverse effects so far—no inexplicable mutations or disconcerting medical developments, that is—those on the station for prolonged periods of time report strange happenings, almost like hauntings. Rumors persist of ghostly figures, glowing bright blue, wandering the corridors and closures of Medina, silent or else muttering nonsense; disembodied voices whisper, wail, or drone on at irregular intervals. The crews of ships docking or stopping off at Medina Station don’t appear to witness such occurrences (or at least, they don’t talk about it), but the crew stationed on Medina all have stories about hearing or seeing something just a bit strange. Usually whispered in bars after a strong drink or three have had time to hit, shared as a way to unwind after a long shift restructuring or adapting resources, or used as stories to scare or haze new additions to the permanent team on the station, the stories have made their way all around the crew. Officially, they’re written off, debunked as hallucinations brought on by the stress of the task at hand, long work hours and lack of rest, or the effects of illicit substances, but those who have seen and heard them know. The existence or source of the apparitions remains open for debate, and whether it’s a coincidence of human anatomy combing with alien technology, an unintended side effect of their interaction, or actually some manner of ghost, they don’t seem to be going away.

If the UN and MCRN ships stationed near the Sol Ring experience the same “hauntings”, they haven’t reported them, but their proximity to the Ring and whatever might remain of the souls sacrificed to create it means it’s just as likely. Of course, hardened military personnel are less likely to be spooked by odd occurrences most likely brought on by too much time off-planet, the constant stress and tension of regulating such a massive (and messily tangled) new discovery, and anticipation of conflict and escalation.

THE HUB

Sitting stationary in the center of the ring network, the hub (also known as the Ring Station, or control station) is a dull blue sphere of unknown origin and assembly. While it previously showed signs of interaction, including creating an opening to admit individuals or small teams to its interior, it currently sits inert, registering only as a hunk of mysterious mass to any sensors aimed at it. Shuttered when the ring network opened, its purpose is unclear, and its behavior analyzed in retrospect: by all appearances, it controlled the slow zone and perhaps even guided the protomolecule as it worked. Now shut down with the help of the Investigator, it seems a slumbering giant, the conductor of a galaxy-spanning orchestra with his baton lowered after a symphony. While no one is entirely sure what to expect from the station going forward, it hasn't stopped humanity's efforts and drive to explore all the new systems now within their reach.

STRUCTURE

The hub seems much like the nucleus of a massive atom. A nondescript sphere of a mysterious metallic material, it would hardly command attention if it wasn't the only feature in the landscape. Even so, with the hundreds of rings open and begging to be explored, the marble in the middle of them all isn't the most fascinating thing to most of humanity. Like a crow after the shiniest thing it can find, the collective curiosity of mankind leans far more toward what they *can* interact with over what they can't, and the rings themselves are much more interesting than the troublesome station. Inactive, it sits a dull blue ball that refuses all attempts to interact with or penetrate it. Gauss rounds, welding torches, and explosives have all failed to breach the inert control station, which seems content to keep its secrets to itself.

When active, the metallic surface of the hub glows bright blue. Though the surface appears unbroken, it's malleable enough when powered to create apertures and permit explorers through. These openings can appear anywhere over the surface of the station, rather than it having a fixed entry point. Once admitting the entrants, the sphere smooths over again into an uninterrupted surface. It should be noted that to date, the sphere has only allowed the entrance of one person: James Holden in the company of the Investigator.

The interior of the station, for those who manage to make it inside, is a spiraling maze unlike any human creation. The atmosphere within the station is inhospitable to humans, the air consisting of benzene and neon, but there is a strange sort of gravity. Just under 1g, it isn't quite like a planet's gravity well, the thrust of a ship, or the spin gravity of a station; like everything involved with the protomolecule, it's a sensation all its own, just different enough to be noticeable and profoundly uncomfortable. The walls, made up of spiraling, nautilus-like patterns and ropy black vines, veer off on angles that are just slightly wrong—a sense only heightened by the gently sloping floor and ceiling. The way the corridors twist, join, and split off again give the sense of the station being larger than is actually is, but as no attempts have been made to map the space, there's no confirmation that this is true. With the protomolecule's disregard for most of the constants humanity is used to, it's just as likely that the interior of the sphere is an Escher-like construction of doors and corners turning off and configuring in ways that defy logic, the anomalies conveniently blocked off from view of each other by the oddly organic walls. The spaces within the station alternate almost at random between antiseptic and structural, and organically alien. What appear to be dead ends are likely to be closed doors as not; much like the surface of the station itself, there are no visible seams or hinges that would indicate an opening. Instead, the walls iris open where previously they had been solid and impassable, revealing the passage beyond. With no visible sensors nearby, proximity seems to be their trigger to open or close.

The station houses varied flora—moss-like carpeting on the floors, patches of what seem like a cilia-seaweed hybrid, drappings of previously unknown ivy analogs—which grow just fine without sunlight or oxygen. The hub's rare fauna analogs, mostly small, firefly-like insects, fare similarly without apparent sustenance. Accompanying the mysterious life forms are metallic blue sculptures which dominate the landscape. Whether singular or in groups, the figures are insect-like and functional. They stand over two meters tall, inert unless defending or repairing the station. The only other structures of note in the station are crystal-like columns supporting the spacious rooms spread sporadically throughout the structure. Streaked through with glowing white scars, they radiate light and the promise or threat of immense power barely contained. Adding to their dread aura is a subsonic thrum beating in time to their gentle, flaring glow, a sensation less heard than felt like the thump of a massive subwoofer.

The power culminates in what logic says would be the center of the station. Rather than the glass pillars, the octagonal room in the depths of the station holds a single, massive column of the same mysterious metal the exterior of the dome is made of. The sense of immense power spreads from here, threatening and yet unassuming. Only the power radiating from the "control panel" of the station indicates that it's anything more than a support beam; its meter-long faces are blank, but no less foreboding for it.

"All this?" Miller waved his hands at the dark walls. "It's dumb. Utilitarian. No creativity or complex analysis. ...No one wants the station coming up with its own bad ideas."

—Abbadon's Gate

INHABITANTS

While the ring builders left no discernible trace of themselves behind, the technology they used to engineer their empire persists to this day. Littered throughout the station are insect-like creatures, masses of articulated legs with vaguely thoracic bodies. Questionably not living, and possibly even inorganic, these armored, chitinous monstrosities seem almost like clockwork beings—at least, whatever “clockwork” would become in the hands of an unimaginably advanced civilization. Eerily still when “deactivated,” they await the proper stimulus to trigger a reaction, preserving the station’s resources when their skills aren’t needed.

Dotting the labyrinthine interior of the station like so many unsettling sculptures, they seem deceptively docile for something so alien. Motionless until activated by a perceived threat, they appear to remain in a homeostatic holding pattern until disturbed. With the typical brutal efficiency of the gate builder’s creations, the insectile contraptions are capable of extreme violence and lethal action, stopping at nothing to protect the remains of the network around them. They also appear nearly indestructible, able to withstand the full assault from Martian power armor and keep moving. The nigh-unstoppable suits provide little protection against their attacks, and the creatures are responsible for the death of at least one Martian marine.

While the mechanisms are part of the vast and viciously capable defense system, they serve more than a singular, violent purpose. Like the protomolecule itself, the most dangerous mechanisms on the hub can not only destroy whatever they encounter but repurpose it for whatever else they require. Reducing any offending matter to a paste or pulp, they’re capable of restructuring it into material suitable to repair any damage to the station. When working on repairs, they will use any available substance and work diligently and efficiently to achieve their goal. Nothing short of “aggressive” behavior will pull them from their task, and even that distraction is only temporary. Once they have neutralized the perceived threat, they will return to completing their initial task, as well as repairing any damage sustained in the conflict. When all damage is repaired and all threats neutralized, they “power down” where they stand, waiting to react to the next threat to the station or its integrity. Though they have never been observed leaving the station, it’s possible the rings of the network are likewise maintained by these creatures; they are, after all, pristine after billions of years of exposure to the ravages of space.

Whether defending the station or rebuilding it, the insectoids show no consciousness or even true awareness of what’s going on around them. They act more as extensions of whatever consciousness drove the protomolecule, tools of a greater intelligence with little sapience of their own. Their lack of communication points to this conclusion more than anything else, especially as they forgo any attempts of restraint or de-escalation in favor of lethal force. While no one has made any attempt yet to reprogram the

constructs or adjust their parameters, it stands to reason that if the station itself can be manipulated, with enough study or practice, the machines could be given new directives more in line with humanity’s needs.

THE INVESTIGATOR

While originally an apparition of the station, the Miller ghost is a more direct tool of the protomolecule. Having been “rebooted” numerous times, he is significantly more advanced than its other attempts, capable of coherent communication and even some critical thinking.

The protomolecule, despite all its lengthy and costly preparations, could only do so much on its own. Even with the Ring assembled, it needed an outside influence to adjust any of its behaviors. Unable to communicate without a proxy, it created a facsimile of Detective Miller, using his memories to reach out to James Holden and call him to the Ring. Most of humanity’s understanding of the Ring and its creators comes from this construct, later dubbed the Investigator, who relayed it to Holden. With Holden’s help, the Investigator deactivated the aggressive defense protocols defending the central station, opening all of the rings in the process. While the Investigator was able to reliably appear to Holden no matter how far he was from the Ring, it’s due to the small protomolecule node planted on the *Rocinante* keeping him in range of the mass’ collective conscious. With the node now destroyed, whatever programming the protomolecule used to build the Miller construct now resides in Ilus, forever acting as a sentinel for the force that wiped out the builders and hoping to reconnect with the dead society.

GHOSTS OF EROS

The Ring, and everything related to it, only manifested after the sacrifice of thousands of lives. While nothing recognizable remains of the unwilling people used as fodder for the protomolecule, somewhere in its memory, they remain. Their bodies, warped beyond recognition, are a part of the Ring itself; their minds join the others that came before, becoming one the computer systems integrated into the whole. While the Ring understands none of them, they power the Ring; they allow it, and the system that guides it, to continue reaching out.

While the Sol Ring is static and the alien station inert, this might not always be the case. As it remains ever in service to the (apparently) extinct builders, it is likely the hub reaches out to potential allies, using the likeness of someone they knew. It’s not a stretch to say almost anyone could have had connections to a victim of the Eros Experiment, or that the protomolecule would want eyes in as many systems as possible.

Whether fully realized apparitions, fading flickers of old friends, or just the occasional flash of a spacefaring will o’wisp, the manifestations don’t appear to groups. They appear to individuals in moments of solitude, or—more rarely—among groups when only one is conscious to witness the phenomenon. Most frequently the visions don’t entirely



make sense, if they communicate at all; they may not even be aware they have an audience and are unlikely to react to those around them. Formed half from protomolecule designs and half from what resides in the witness' heads, the apparitions tend to be inscrutable, sometimes trying to address someone directly while being unable to hear or see them, sometimes going about an inane task that might have once been part of their daily routine.

While their message (if any) might seem foreboding or alarming, they tend to be gibberish, or otherwise seemingly meaningless phrases. The frequency and clarity of their visits are sporadic and unpredictable, but one thing is clear to those haunted by them: the closer they are to the Ring, the more insistent the apparitions. Escalating in proportion with proximity, they can expand from ghost sightings to physical interactions, from lone figures appearing to whole groups, or even from isolated intrusions, to whole rooms transforming as part of their manifestation.

No matter how it appears or their relative distance to the Ring, the visions leave no physical evidence behind, the only proof resting in the witness' memory. Those who experience such an intrusion only once call it a hallucination, the emotional aftermath of such a horrific event on so grand a scale. To those whom it becomes a recurring, waking nightmare, the theory holds less water. They know what they saw will come again, with the same nonsense message, the same inscrutable behavior. Some make an effort never to be alone, to avoid such intrusions, while others embrace them, trying to find deeper meaning in what they're shown. With the rush to colonize the worlds beyond the hub, there's no shortage of places to explore for those who want answers.

THREATS TO THE HUB

The hub is, above all, part of a defense network to protect the builder civilization. It makes no difference to the Ring Station that the civilization is long dead, all their efforts to isolate themselves from the forces wiping them out a failure. Programmed to protect what they built, it will do so until it fails. Given that it's been sitting for billions of years and still functions, for all human purposes, it will likely stand sentinel until the end of time. If there is a force it was specifically warned against, there is no evidence of it; it regards certain criteria as a threat more than certain objects. Anything fast-moving is forcibly slowed, and large energy sources like the Epstein drives powering the ships of the UNN, MCRN, and OPA are regarded with extreme caution. It's unlikely the radiation coming off them is regarded as threatening, as the protomolecule's unfinished form fed off it to expedite its processes, but the massive energy sources themselves with the potential to act as explosives are enough to threaten the wary station.

While the defenses are offline for the moment, and the gates open as a result, there are bound to be more safety measures that haven't been tested or detected by the station. As colonies crop up in the various systems and interaction between the

remains of the builder civilization are exposed to more and more human behavior, the protocols are likely to only grow stricter should they be turned back on. Already, in the Illus system, a reactor malfunction caused the defenses there to shut down nuclear fission and render ship drives completely useless; by the luck of the Ring Station being deactivated, the protocol didn't spread out to the slow zone. With its hivemind-like ability to communicate instantaneously across even the vastness of space, it stands to reason that any hubs connected to the network might have updated their threat protocols accordingly.

While unexpected instances like the one on Illus might hamper efforts to colonize new systems, reactivating the Ring Station and adjusting its parameters to more suitable levels also provides the opportunity to govern throughout all their systems at once. Though humanity doesn't completely understand the technology yet, the ability to turn harmful reactions off and allow desired outcomes across hundreds of systems could be a useful one. The moral and ethical debates of rewriting the laws of the galaxy in such a way will surely rage for ages, but for the practical folk who are likely to be able to take advantage of such advances, the answer is surely more cut and dry. If you have the tools to make sure you can reach your goals, why not use them? What harm could they really do?

ADAPTING THE UNKNOWN

While the tug of new worlds draws colonizers, adventurers, and scientists, one of the greatest mysteries of the builders already lies within humanity's reach. The Ring Station, the most active of the alien artifacts outside the rings themselves, is a mystery ripe for exploring—and exploiting. While currently sitting inert and unresponsive, the flurry of activity across the rings, and even within the slow zone, have more than enough potential to wake the slumbering beast once more. The following entries are possibilities for creating new mysteries as well as providing campaign ideas and story hooks in the slow zone that center around the hub. Be warned, most of this section goes beyond the canon of *The Expanse* novels. These ideas are presented for GMs who might want to further explore the nature of the ring builders, themselves, or to present new enigmas if the players have read all of the novels.

Sure, humans had invaded an extra-dimensional space with wormholes to points scattered across the galaxy, but they'd remembered to bring ferns.

—*Abbadon's Gate*

IT REACHES OUT

...it reaches out, it reaches out, it reaches out. 113 times a second, it reaches out...and if it was sharing its network instead of just overwhelming your comms array, you'd be a lot happier about the situation. Instead, it's monopolizing every bit of bandwidth you have, flooding every channel and co-opting it for its own purposes. You can't quite tell what it's looking for with all its reaching, but it's found the connections you have back to Sol, and it's been nosing through them. It's all gibberish so far, and trying to lock it out so you can take back control doesn't work for more than a moment or two. Nothing else can get in or out while it's hijacking your network; no news from Sol, no requests for help, no security warnings. It's almost a miracle your ship can still give you diagnostics on its other systems. No amount of resets of power cycles can get rid of the problem. Your only hope at this point is to try and reach back, and it seems like your best bet lies somewhere in the Ring Station. If you can find what's sending the signal out, maybe you can stop it from using your ship to send out its message, or at the very least get it to agree on using a dedicated channel.

OBSTACLES AND OPPORTUNITIES

On the plus side, the fact that the station has co-opted your communications network means you have access to every-

thing it's transmitting. You can't make anything of the data as it is, but between decryption and translation software, you're reasonably sure you can figure it out. With enough time and computing power, you might be able to learn a lot about the builder civilization.

The fact that the station is in your communications means it probably has access to all your other systems as well. It can learn anything it wants to know about your ship and anything else it has in its memory banks. If you thought the thing had any kind of will of its own, you'd be terrified, but so far there are no signs of it making decisions.

The signal jamming all your channels isn't trying to just throw information out to the ether—it's looking for a specific recipient. It's tuning everything it can get its hands on to a specific frequency, or trying to, anyway. It's nothing you recognize and not something you ever thought you could broadcast on. Is it already re-working your ship like it has repurposed so much else before?

CALIBAN'S RETURN

While not the most intelligent of independent systems, the protomolecule network has already shown that, with its interconnected consciousness, the whole can learn from its disparate parts and react in more places than one should threats arise. Central to the network, the hub is the logical



choice to store all of that collected information. A well-spring of information surpassing any other before, it parses all manner of threats, defense strategies, and beneficial adaptations it's discovered, including those introduced to it, rather than ones it came across on its own. Though the company is now dissolved, there's no taking back what the scientists of Protogen learned when they were studying samples of the alien substance—or what it learned from them while they were running their experiments.

So, when a scouting party sent to the hub to see if there was a way to get inside actually managed it, curiosity ruled the day. When their comm channels went silent, it was a cause for concern and alarm, but not panic. When humanoid figures exited the Ring Station again, it was a relief.

The relief, however, was short-lived, when telescopes focused on the group revealed not the team that entered, but a group of black figures with burning blue eyes, studying the space and the ships around them as if they'd never seen them before.

OBSTACLES AND OPPORTUNITIES

This is one iteration of the protomolecule we know something about. True, most of what we know says they're unstoppable killing machines. However, their remaining humanity has given them some weaknesses, but whether or not those apply to this batch remains to be seen. If the past is any indication, once they expend energy, they go

dormant until they're able to "recharge" by radiation exposure. Denying them that might keep everyone safe, but is it even possible with the station so nearby? And what would have to happen to exert them in the first place?

The background radiation emitted in the ring space might be enough to sate the protomolecule soldiers, keeping them docile unless presented with a target. The rest of the network's defense system operates in such a way; they could just be guardians it created to act as sentinels. They haven't begun any aggressive strike, keeping to themselves on the station. Could they just be there to watch?

Some of the soldiers have been focusing on certain ships, following the orbit of Medina to keep its docks in sight. Others still move in the natural motions of long-practiced routines and seem to have retained their memories from life. Could it be that, with the station guiding the procedure, the soldiers still retain their own personalities and memories?

LATE TO THE PARTY

The Sol Ring formed after all the rest; that much is apparent. Whether it was intended as an escape route or general highway for the builders is uncertain, but they certainly weren't around to make sure it was set up along with all the others.

Now, it seems it wasn't the only one long delayed in its journey. In the vast space between some of the existing

rings, something new is flickering into existence. If it wasn't disturbing enough that what looks like a new ring gate is appearing among the ones left by the builders, the *flickering* seems less like something intentional and more like something has gone wrong. What could have the power to corrupt the protomolecule's programming? Could it simply be a mechanical failure? Is it even safe to pass through the stuttering wormhole, leaving aside what destructive forces could be on the other side? Are there other delayed gates suffering from this kind of malfunction, or is just the product of sub-par or insufficient building materials?

Whatever's going on, you—and everyone else out here near the ring network—need answers, and *fast*. If more of the malfunctioning gates show up, odds are someone's going to try and get through them. After all, it was explorers with more guts than sense that first went through the Sol Ring *and* the ones beyond that—it's only a matter of time before someone decides to find out what's going on firsthand.

OBSTACLES AND OPPORTUNITIES

This is a pretty unprecedented opportunity to observe the protomolecule at work. While Protogen was doing research into what it was intended for and how its processes function, most of that information vanished when the company was dissolved in the wake of Project Caliban. With the new ring struggling to establish itself, the protomolecule continues to try new configurations and connections to steady the reaction and the wormhole within. Watching it adapt in real time is enlightening, especially when compared to the comparative secrecy Venus' sulfuric cloudscape provided.

The new ring is part of the rest of the network, which means it could pose a significant security risk. The massive vulnerability presented by a malfunctioning piece is too dangerous to ignore. If the project was deliberately sabotaged, anything else it's connected to is at risk. Best case scenario, it stays isolated; worst, whatever wiped out the builders is looking to finish the job, and just found a new target once its old one is done for good.

If something *is* on the other side of this gate, they seem to have done a lot to make sure they don't have any visitors. They might be content with continuing to sabotage the ring trying to establish itself, but if they can't, who knows what lengths they'll go to to keep anyone from passing through it.

PREEMPTIVE ACTION

When the gates opened and the station closed itself off, they assumed it would leave them alone to explore. It had powered down, released the ships trapped in the slow zone, and admitted no more explorers. It sat, a dull blue marble, offering no help or trouble as humanity busied itself exploring the rings.

Of course, no one could see what was going on inside, or imagine what it was up to on its own. With all the conflict

and uncertainty around the ring network, no one stopped to think the hub even had the foresight to plan something, much less act preemptively against the (mostly) peaceful people swarming the space. It caught everyone off-guard when creatures began *leaving* the station; first little glowing fireflies, blue like the station itself had been when it had been active. They didn't last long, winking out just beyond the garbage ring, but aimed every time for Medina Station. Even those were ignored, just an anomaly of the station, harmless and even quaint to watch on the monitors. It was what came next that finally raised the alarm; giant metallic creatures, insectile and impossibly fast, and able to navigate space in the same uncanny way the protomolecule itself could. They too, went straight for the station, limbs probing and bodies shifting to suit whatever purpose they needed.

OBSTACLES AND OPPORTUNITIES

Whether it's simply curious or launching some kind of attack, the methods of the station, and most things left behind by the builders, aren't gentle in their probing. Everyone is on high alert as these things approach, arming the station, defending what's been built, fortifying what can be fortified. No matter where they try to come from, they won't catch anyone off-guard.

While approaching, the creatures shift and warp themselves to almost *friendly* shapes. No sharp edges, no large claws, mostly smooth curves and spindly, articulated legs. Could it be they just want to catalog the station and observe what's inside? Is there a chance they may be able to *help*?

While the creatures seem to be able to reconfigure themselves at will, their size appears constant. While there are airlocks that can handle something so large, it's doubtful the creatures are going to politely ask what the best way in would be. If they start probing for weaknesses or settle for making their own doors, are there enough supplies inside to make sure everyone will be safe? What do "acceptable losses" look like for something on this scale? And with light delay, is there enough time to even ask for help?

FORCED REBOOT CYCLE

It seemed like an either/or situation. Gates closed, station powered up; gates open, station powered down. Whatever vast machine kept them running, it could only do one at a time, either due to energy reserves, defense protocols, or some other esoteric logic. It was safe to continue using the rings, to set up a colony within the network, to count it as a new stepping stone in humanity's journey to claim the stars.

Except that doesn't seem to entirely be the case anymore. The station in the center of the ring network is starting to glow again, brightening and dimming again in a reliable pattern. It still isn't glowing with the same intensity as it first had, but it's getting there. With the Station coming back

online, rumors are flying: is the slow zone going to reset to its previous parameters? Are there other defenses that might work against the ships in the slow zone?

Is there someone who can go back in and see what's going on?

While no one's volunteered as of yet, it's that last question that's being given the most thought. The agreement—unspoken first, officially ratified by all parties later—to avoid violence in order to keep things going as smoothly as possible, seems to have been the right one. So far, nothing horrible has happened; the station is just online. What does that mean for what it controls?

OBSTACLES AND OPPORTUNITIES

Despite the station reactivating, it still isn't accepting visitors. That complicates things in a number of ways, not the least of which being uncertainty over both the status of the Gate Network and the slow zone. Is it just a matter of time before they're reset to what they were before, and should everyone start preparing for deceleration?

The gates have begun giving off a glow in time with the station, pulsing softly. They're still functioning normally, and the light appears to be completely cosmetic and incidental. It's raised some questions about the nature of the wormholes themselves: Is it a mechanical light they're emitting, and if so, why does it look so much like the bioluminescence of the creatures within the station?

The station is coming back up after a long stint as a purely defensive system. It's a blank template this time, and is reacting to the environment around it to find a baseline to go off of. So far, so good; cautious exploration isn't a bad place to start, but how easy would it be to program, and who's going to be the one to do it?

ENTROPY

First, the Epstein Drive had given humanity the stars. Then, the ring network gave humanity the galaxy. Even better, the worlds it revealed have already been carefully curated, each new system containing a planet enough like Earth to sustain human life. Nothing identical of course, and nothing that wouldn't take some adapting to, but a far better start than anything else they'd ever had.

But nothing lasts forever, not even the most well-built and well-maintained machines. While the rings might be the former, they certainly don't have anyone to see to the latter. While the Sol Ring, just constructed and ready for use, seems to be standing up to all the traffic just fine, the pre-existing rings don't seem to be faring so well with the sudden influx of ships passing through. The energy readings coming off of the rings have been flickering, and while it hasn't been enough to interrupt their usage yet, the fact that the functionality seems to be decaying is a

cause for alarm. None of the fledgling communities built beyond them are established enough to survive being cut off; without supply drops and equipment, hundreds will surely die slow, painful deaths in environments only mostly suited to their survival. If things get any worse, they're doomed. The worst part is, trying to evacuate might only make the rings' degradation happen faster.

OBSTACLES AND OPPORTUNITIES

The worst has come to pass: Gates are shutting down. Fortunately, there seems to be a system in place to redirect the remaining energy; it's the rings to dead systems or yet-unexplored worlds that have started closing off, leaving the rest open for at least a little while longer. There's an invisible timer over all the rest now; no one can say for sure when things are going to go down all over. What can be done, and how are the new communities going to fare? Can the station redirect power to the few that are important instead of trying to maintain the whole network?

In the wake of the wormholes acting up, the station has flared back to life in a bright, ominous red. The general message is loud and clear: Something is wrong. If there's more nuance, maybe the builders would know, but it's lost on anyone looking on now. If there's a kind of diagnostic showing up, though, it seems like the problem isn't permanent. There's hope in that thought, but at the same time, the prospect of journeying into the station to try and sort it out is daunting. What kind of defense measures wait inside when things are so precarious?

ADAPTIVE EVOLUTION

Adaptability is the hallmark of the protomolecule technology and the builder artifacts. They can take nearly anything and rebuild or repurpose it to suit any need, even if the process is horrifying and the end results sometimes inscrutable. Their peculiar sentience without sapience causes all kinds of ethical and moral dilemmas, but the end results are always impressive.

However, when left to its own devices, protomolecule technology can still achieve incredible things without substantial sacrifice or philosophical distress. That appears to be the case now, as massive energy spikes emanate from the command station. At first, nothing outwardly changes as it starts to go through its energy cycle, but when it opens small ports to vent gas, it prompts a team to go investigate.

The station, it seems, is still learning from those nearby. The atmosphere within it has shifted from neon and benzene to a familiar primary mix of oxygen and nitrogen. The organic matter inside seems little affected by the change, with the plant and animal life still growing and going about their business, but new growths among them seem familiar—if not in biological makeup and function, at least in

appearance. Whether it's entirely aware of the changes or part of its adaptive programming is just adjusting to those it senses nearby, something in the station seems to be extending an invitation.

OBSTACLES AND OPPORTUNITIES

The station, while still mysterious, is easily the most habitable place this side of the Sol Ring. Even the dirt compounds previously fostering the bizarre foliage of the station have started looking more familiar, adapting to match that being brought in to Medina to start their farming systems. The massive, insectile machines are hard at work inside reworking the station's interior, breaking down the old and building up the new. Even the impenetrable labyrinth of hidden doors and volatile atmospheres is under construction, mimicking the interior structures of ships. The dizzying, pseudo-organic appearance is slowly giving way to the more measured, mechanical model of the nearby ships. Is this an invitation to explore and utilize the technology at hand?

The station's attempts at flora analogs aren't that bad. It's the fauna analogs where things go very, very wrong. While the station doesn't have feelings to be hurt that nothing seems to come out right, it's still taking a toll on the people who witness the half-functional, semi-organic creatures

struggle to function. The "failures" tend to be jettisoned into space, joining the garbage ring. Luckily, it's all been small ventures so far, in line with the butterfly and lightning-bug like insects it seems most familiar with, but no one's looking forward to it attempting something larger. Maybe inside, there's a way to make it stop.

INTEGRATING ADDITIONAL ASSETS

As tensions rose between Earth, Mars, and the OPA, Fred Johnson decided to solidify the OPA's position in the slow zone and improve the defenses around Medina Station. The remote-controlled railguns installed around the exterior of the control station seemed like a perfect solution. Nothing too volatile, easy to arm, and unlikely to cause too much collateral damage should the need arise to fire them, it was a neat solution to the rising problem of defending the rings and the ships traveling through them in the event of a conflict. It was all going swimmingly—the preparations, installation, and harmless test firing went off without a hitch.

What no one expected was the station deciding that if the railguns were arranged around its surface, they were part of *its* ecosystem and defense network. No one but the weapons team and highest leadership of the OPA faction stationed at Medina are aware that the crew has been locked out of their controls; it's both top-secret and top priority to get the guns back under OPA control. So far they haven't targeted anything or fired, but the station and its defenses have been wildly unpredictable before, and that's unlikely to change because it would be convenient for the humans nearby.

OBSTACLES AND OPPORTUNITIES

The respectable branch of the OPA—the ones in control of Medina Station—fear that a more radical cell has been developing under their noses. They worry the railguns aren't under alien control at all, but a splinter group is using the convenient excuse as a smokescreen while they work on completing a plan to strike against the Inner Planet ships coming through the ring. The only thing running higher than the tension is the suspicion as things escalate, turning previously harmonious (or at least, civil) working relationships into one massive powder keg. If there *is* a radical cell, can it be rooted out? And is it possible without an all-out witch hunt on less-liked employees on the station?

The OPA's attempts to keep the situation under wraps have failed. First, it was muttering through the ranks, then among the crews of docked ships, until finally some wannabe James Holden 2.0 released it on all public channels. Word is everywhere—the railgun are no longer under OPA control. Rumors are flying concerning military coups, mutinies within the OPA, and hostile alien takeovers. What can be done to settle things before full-scale riots break out?



REDUCE, REUSE, REPURPOSE

It didn't happen all at once—in fact, it happened so slowly that it wasn't until it was half gone that anyone noticed. The garbage ring circling the control station was shrinking—vanishing bit by bit until only a few pieces remained. Eventually, it would be easy enough to assume, it would all vanish. The real mystery is just... Where to?

That, at least, isn't too hard to deduce; even with all their impressive and nearly magical properties, the artifacts of the builder civilizations can't just make things disappear. What they are incredible at is repurposing all types of matter, breaking it down to its base elements or possibly even its base atomic structure. The decaying orbit of the last remaining pieces proves the theory pretty well; they're being pulled into the hub. Mercifully, Medina Station and other manned vessels seem immune to the effects, but it still raises an even more chilling question: What does the station need with more raw materials? Could it be that the station is just cleaning up the space within the slow zone, making sure the garbage ring doesn't get large enough to inhibit travel? Or is it something more sinister working within the station?

OBSTACLES AND OPPORTUNITIES

The first items have re-emerged from the hub—and, ignoring all ships entirely, have begun passing through the different rings in the network. They aren't the massive machines inside the station, but smaller, butterfly-like drones roughly the size of the average human. Is the Station trying to check up on the worlds it connects? Is this another method it has of reaching out? Or are they somehow testing the ring network for faulty connections or items in need of repair?

With all the garbage gone, all seems quiet again. The hub isn't otherwise reacting; no ships have been caught again in the inexorable pull to the station. Things are as normal as they can be in the center of a sphere of wormholes. It seems too convenient that it would just simply swallow the refuse orbiting the station—it's far too advanced to just be a cosmic trash compactor. Is it reinforcing its defenses? Building more of the insectile machines? Or just learning everything it can from the remains?

Once the entire ring is swallowed, the station spits something else back out. These discarded pieces make up another, similarly sized garbage ring, although one much more varied than the one humans made. Plant matter, mechanical pieces, hunks of rock and glass—whether the station has a limited capacity or perhaps thinks it's completing a transaction, no one can tell, but the items now

up for grabs have fascinating properties, as far as scientists are concerned.

NEW MANAGEMENT

Of all the marvels the builders left behind, the hub is the closest, and yet the most frustratingly inaccessible. It promises all manner of information and even control over the other artifacts spread across the galaxy, and yet it stands inert and impenetrable in the center of everything. What the various governments slicing up the galaxy wouldn't pay to have control of the thing, mine it for all its incredible potential and put it to use protecting their investments and using it to secure more.

Imagine, then, the panic now that it seems someone has managed to do just that. Accusations are flying as the OPA, UN, and MCR each try to pin down who's cracked it. No one's owning up to anything, but the station is still powering up despite claims all around that no one knows what's going on. No one's being targeted by anything, leaving the stalemate in its nebulous, tense state, but everyone knows it's only a matter of time before the powers that have claimed the station put it to use. What will the aftermath of its first actions be, and is it possible to keep the peace when one team is so vastly overpowered compared to the rest?

OBSTACLES AND OPPORTUNITIES

No one wants an all-out war at the far end of the solar system, and that's the only thing keeping the situation from going nuclear. The heads of state are still accusing each other of seizing the station, while the talking heads whip each civilian group into a frothing frenzy. Can calmer heads prevail until everything is untangled, or will all be for naught?

One of the governing forces finally comes forward to state their control over the hub. How do the other forces react? How will it affect your crew if the OPA finally solidifies its hold on the slow zone and has absolute power over all the gates? Or if the MCR declares the gates and all the worlds beyond an expansion of its terraforming project? What about Earth, with a campaign to reach far and wide, promising fame and fortune to those willing to ship out to the great unknown?

What if it isn't any of the three governments that have seized power directly, but the eschewed remains of Protogen and Mao-Kwikowski Mercantile looking to seize the power they so miss? They have the best understanding of how the protomolecule works, and therefore at least a little bit of insight into the hub and its functions. Can everyone else work together well enough to de-escalate the situation, or will it have to be dealt with by any means necessary?



2: MEDINA STATION

Medina Station sits at the crossroads of the ring gates, the last stop in civilization for travelers from the Sol system to the worlds beyond. It occupies a unique place in not just human space but also human history. Never before has a single outpost been positioned at the edge of such a vast and vital frontier, much less inside an entirely alien space. Although it has settled into the role of humanity's last waystation for colonists and explorers before they go venturing out into the worlds beyond the Ring, Medina Station's path to its current role is as strange and twisting a tale as anything humanity has sent to the stars.

A LOT OF PAST IN ITS PAST

The station began life as the *LDSS Nauvoo*, the first and only true generation ship humanity ever created, and though a Lunar firm took the commission, the actual construction was done by Belter crews at the legendary Tycho Station. Commissioned by the Mormon Church, it was designed to support thousands of Mormons as they made the centuries-long journey across interstellar space to a new home world in the Tau Ceti system. Given the immense time and distance involved in the voyage as well as the unique hazards of interstellar travel, building a ship capable of making the journey was arguably the most ambitious feat of ship design in history, not to mention one of the most expensive construction projects ever undertaken.

It comes as little surprise, then, that the church was beyond furious when Fred Johnson used the OPA presence at Tycho to commandeer the *Nauvoo* during the Eros incident. He attempted to use it as a massive projectile to knock the rogue asteroid off course before it could crash into Earth. After interference from the protomolecule unexpectedly allowed Eros to dodge the ship, Fred Johnson claimed the vessel as legitimate salvage and refused to return the *Nauvoo* to Mormon ownership. The church immediately filed litigation demanding

Alex shrugged. "It's interestin', the evolution of that ship and its names. Started out as the *Nauvoo*. A place of refuge, right? Big city in space. Became the *Behemoth*, the biggest baddest warship in the system. Now it's Medina Station. A gathering place. Same ship, three different names."

"Same ship," Holden said, feeling a little surly as he instructed the *Rocinante* to begin the docking approach.

"Name's matter, boss," Amos said after a moment, a strange look on his big face. "Names change everything."

—Cibola Burn

the return of their ship. The case has been grinding through a complicated legal process ever since, though speaking realistically, only the most naively optimistic Mormons actually see any chance that the ship will ever return to the church's ownership. Still, the ongoing litigation does provide the occasional headache, especially when personnel known to be connected to Medina find themselves visiting places like Earth or Luna where the church has more sway.

When the Sol system gate launched from Venus, the *Nauvoo* was swiftly retooled from a generation ship into the OPA's own capital class warship and recommissioned as the *Behemoth*. It joined the race to the gate as the OPA's imposing flagship, although in truth, its hasty modification from a generation ship to a glorified ballistic missile to a warship took its toll, with many of the ship's systems only barely functioning. Even the weapons systems suffered serious failures when fired, making the presence of the *Behemoth* a rather significant bluff on Johnson's part. However, the gamble ultimately paid off as it sent the unmistakable message that the OPA demanded equal representation with Earth and Mars as these new events unfolded. It also put the *Behemoth* in position to capitalize on the exploration of the ring space.

After the initial struggle inside the slow zone wound down and the full extent of the gate network became evident, the *Behemoth* was left in an ideal location, and one the OPA was quick to capitalize on. While other governments had vessels in the slow zone, the *Behemoth* was unique in that it was designed to be truly self-sustaining. Combined with its size and newfound weapon capabilities, the *Behemoth* could serve as a waystation for ships traveling to and from the new systems, as well as facilitate communication between them and act as a hub for research on the Ring and the slow zone. That fact that this also meant the OPA could claim the choke point of gate travel was not lost on anyone, but there was little else Earth or Mars could do about it, especially after the bruising events leading up to the discovery of the ring network. And so, while other vessels eventually pulled back, the *Behemoth* stayed behind to retool and rebrand itself once again.

Now calling itself Medina Station (often shortened to simply Medina), the ship has been converted back into a long-term living facility, this time with an eye toward supporting a permanent crew while also catering to the ships traveling to and from the new colony worlds beyond the gates. The massive central drum section was spun up once more to provide sufficient rotational gravity to plant crops in the huge acreage areas of the deck, as was the original intent for the *Nauvoo*'s long voyage. While there's still a ways to go before the drum is as green and lush as originally envisioned, it's definitely coming along and already generates enough food to sustain not just the permanent crew but also the steady influx of visitors. Fred Johnson remains the effective owner of Medina, despite the best legal efforts of the Mormons, and regularly receives updates, makes high-level personnel selections, and otherwise sets the station's agenda from his office at Tycho Station.

Although the fact that an OPA vessel "commands" the slow zone doesn't sit well with many Earthers and Martians, the comparatively small size of the region beyond the Ring makes constructing a similar station redundant at best and hazardous to gate traffic at worst. So far, the station has proved a useful resource for the colonization effort and hasn't taken any provocative measures like charging tolls or restricting access for political reasons. For the time being, no one is making any aggressive moves regarding Medina or control of the slow zone. Or at least, no overt aggressive moves. Whether this will hold going forward, no one can say, but for now, Medina is last stop before the true unknown.

A CITY AIMED AT FOREVER

The frontier Medina stands on the border of is the biggest imaginable.

While its origins as a true generational ship make it unique among the vessels that humanity has constructed, Medina Station's layout still follows certain predictable patterns: command center, living areas, maintenance networks, etc. The differences come largely in terms of scale, as the station was designed to be a comfortable home for thousands of people over a span of centuries of travel and thus is far more spacious than most vessels or even orbital stations. It was also designed with many Earth-like features for the comfort of its colonists, and while some of these have been altered or stripped out over the lifespan of the station, enough remain to give Medina a truly individual character.

It's also worth noting that as the result of not one but two massive overhauls since it first launched, some areas of the ship do not conform to the registered schematics. From the time of the *Behemoth* to the present, a lot of the station's modifications were necessarily made on the fly, without logging said changes into the official record. Complicating things further is the fact that sometimes further changes were made on top of earlier alterations, or that crew members who knew where things were located never wrote it down before they left or were killed in action. Given the size of the station and the extent of these changes, it means there's an awful lot that isn't formally recorded anywhere.

Positioning Medina Station as the logical location for a fledgling League of Planets-type government, he at least had the good sense not to say it out loud.

—Cibola Burn

All of this means that while navigating the bigger, well-used areas of the Medina isn't too difficult, when you start getting into the guts of the station, it's easy to get lost. This is also a problem when you're trying to track down an electrical error or recycler issue, and none of the conduits you need to examine are located where they're supposed to be. Add in the fact that much of the station remains under construction and it's a real mess the further in you go. While the crew has been "mapping" the station trying to create a final, official set of schematics, it's a slow, painstaking process because even when a large feature like a corridor or storage hold is where it's supposed to be, it doesn't mean subsurface elements like ducting or wiring are there too. It means plenty of crawling into cramped, cold places, pulling plates and checking systems, then tediously updating the relevant schematics. Suffice it to say that pulling "explorer duty" is not usually a sign of favor from the command crew.

COMMAND

Located at the bow of the ship—or the "top floors" when under thrust, as the Mormons preferred to view it—the command decks of Medina Station are designed to be permanently on the float and do not benefit from the spin gravity of the massive drum section. The original idea behind it was a failsafe measure of sorts—if a catastrophic event occurred while the ship was underway and the drum lost spin, the command levels would not suffer gravity loss injuries or require personnel to "reorient" while operating their stations. This would hopefully minimize casualties and ensure swift response time during such a crisis.

From the command levels, the crew can oversee critical ship operations such as communications and environmental systems, as well as control engine activity and collect sensor data. Although Medina's current role as a permanent waystation and the strange physics of the slow zone preclude a need for navigation, the ship's helm controls are located here as well. In a break from traditional ship design, almost all critical engineering functions are routed through command. It is certainly possible to make changes (or cause problems) in other areas of the ship, and physically working on the engines and other components requires leaving the command section to get your hands dirty. However, the computer controls for these systems are all localized on these levels rather than being divided into different sectors as they are in most vessels.

Access to the command levels is possible through a long, curving ramp from the drum section, which allows personnel to acclimate between changes in gravity. An exterior-mounted lift runs the length of the ship, almost two kilometers in total, and it can also access the command decks. It was designed primarily to allow rapid transit between command decks and the ship's engines and docking facilities without the need to pass through the drum section. Due to the high potential security threat it poses, the lift requires top-level access from authorized command personnel and is kept closely monitored by security. Repair crews are sometimes granted use of it to more easily perform their duties, and with the proper overrides, the lift can be cycled like an airlock and opened to vacuum, allowing station personnel to exit anywhere along the length of the ship.

Although some of the larger elements have been removed in favor of utilitarian measures or as the result of damage during Medina's turbulent history, the command levels are still notable for their elaborate decorative features, which date back to the original Mormon design brief. Pastoral scenes and sunburst motifs are everywhere, along with stylized religious iconography in keeping with the church's belief structure. The captain's command area is particularly elaborate, designed to both impress visitors as well as to remind the captain of their sacred mission among the stars. It might seem curious for the Medina to retain such ornamental flourishes, but while the crew may roll their eyes or make some jokes, no one has yet suggested removing these elements entirely. Whether this is a form of superstition or simply a function of always having more urgent items on the priority list, the gaudy decorations remain.

Since taking position in ring space, Medina Station has seen its defenses upgraded considerably as well. The hastily patched and potentially faulty weapons of its shakedown voyage as the *Behemoth* have been stabilized or replaced, and now the station boasts more than enough weaponry to deter not just pirates but anything up to a full-sized assault force from the Sol system. Several rail guns and torpedo launchers provide the main punch, while an extensive network of PDCs can swat down incoming strikes or poke holes in any ship that manages to survive the long-range defenses. To date, there hasn't been any call to fire up the defenses aside from chasing off the occasional opportunistic pirate or gatecrasher, but the systems are routinely checked, ranged, and simulation fired regardless. The gates may be a frontier of possibilities, after all, but no one who lives on Medina is naïve enough to think that frontier is safe—not from either side.

Even given all of these critical elements, command level security is somewhat less rigorous than one might expect—guards are posted at the main access points, and a combination of biometrics and physical authorization credentials are required for access, but there are none of the more extreme measures that can be found on warships or high-end corporate facilities. Given the station's pivotal location, the need for tighter, more advanced security has been raised frequently in internal discussions, but for the time being, standard security practices prevail.

THE DRUM

The heart of Medina is the drum, a huge cylinder that uses spin gravity to maintain a steady one-sixth g, which is itself a concession to the station's Belter allegiance and population—the drum was designed to exert nearly a full g when the vessel was underway. A massive beam of artificial daylight shines down the middle of the cylinder, generated by a large diode array up by the command level, providing illumination designed to simulate an early summer afternoon in the American Midwest. The drum's rotation also provides a faint but steady breeze that further complements the illusion of a perpetual perfect day, at least as the Mormons conceived of one back on Earth. The “sunbeam” also helps prevent disorientation from looking up and seeing across the drum to other people and places apparently hanging upside-down, which was deemed too disconcerting by the original clients.

THE FARM FIELDS

The drum's most obvious salient feature is also one of its most important—the farm fields. Large swaths of the surface area are given over to crop production in accordance with the original Mormon design, helping Medina sustain itself as well as allowing the crew to produce not just the sorts of basic foodstuffs most stations do—rice, mushrooms, soybeans—but also some modified crops like corn and wheat that are comparatively exotic in deep space. The green space also assists the station's air and water recycling systems, though it's not strictly necessary for it, as the space was barren during the *Behemoth* days when the drum wasn't spun up. It's worth noting that when it comes to the fields, there has been grumbling regarding what some crew see as essentially wasted space and a drain on the station's water supply. This view is especially common among the more hardline Belters, who see the whole “summer afternoon in the country” simulation as an insufferably self-indulgent Earther affectation. So far the value of the crops outweighs the complaints, but carping about “the acres” remains a favorite pastime among the residents.

SECURITY HQ

Medina's security force is also headquartered in the drum, the better to be close to the population it protects (and monitors). The security offices are utilitarian and make use of converted farm space for holding prisoners—evidently the Mormons did not anticipate much need for jail facilities on their generational voyage—but are still sturdy enough to perform their duties effectively. Security also can lock down individual cabins or even the entire hab network, effectively placing targeted individuals on house arrest. On a day-to-day level, foot patrols are common throughout the drum section and the docking area, and the offices also maintain the surveillance nerve center for Medina. Most of the security forces are veteran OPA members, seasoned from years spent in some of the roughest parts of the Belt, making them not only tough customers in a fight but also wise to most of the common tricks employed by smugglers and other traffickers.

MEDICAL FACILITIES

The drum also houses Medina's medical clinic and infirmary, not far from security headquarters. It has been expanded a bit from the original design, taking over a few nearby rooms beyond its original purview, but is still fairly small for such a large station. The equipment is solid if not top of the line, and the staff is a well-trained mix of actual medical professionals and some former OPA field medics who had a lot of “on the job training.” There's a surgical center, pharmacy, intensive care unit, small quarantine area, and beds for a



few dozen patients with space to lay out a similar number on the floors if something truly terrible happens. Medications are kept under tight control and inventoried not just by staff but by random security spot checks. The small, nondenominational chapel is also located nearby, and boasts small but regular services representing a wide variety of faiths and practices.

THE SOUK

For visitors and off-duty residents, however, the main attraction of the drum is the souk, a bustling marketplace where most of the station spends their off-duty time. The social spaces and common areas of the original design have been extensively reconfigured, repainted, and redecorated from the original Mormon vision of a modest community center, resulting in a vibrant neighborhood of dozens of small businesses catering to all manner of needs and tastes. While Medina certainly can't boast the variety or depth of enticements found in the larger cities and outposts of the Sol system, it's more than enough to keep the crew going, as well as provide some welcome comforts of home to those traveling to and from the ring systems. With that in mind, it's not surprising that bars, coffee shops, restaurants, tea houses, gambling parlors, night clubs, hookah lounges, and other social businesses tend to do best, as maintaining a healthy selection of choices for socialization is imperative for long-term facilities. The harsh realities of colonization and the eerie nature of the Ring itself tend to inspire a certain need for strong substances, and friendly company doesn't hurt either.

LIVING SPACE

Between the souk and the docks are habitation areas for both visitors and permanent residents—these cabins are designed for everything from singles to polycules and extended family units. Many are relatively spacious, especially compared to the standard holes on Ceres and Ganymede. Although paid accommodations are now available in the souk, it's still just a handful of spots, and typically these are used by visitors who want more in the way of luxury. For everyone else, security simply assigns housing to visitors as needed, rotating available spaces as ships come and go. This can be a deceptively dangerous task, given the potentially explosive mix of backgrounds, loyalties, and affiliations passing through Medina, so security does their best to house crews far away from each other if it looks like they might mix poorly. Crews deemed in need of close monitoring are quietly housed “on the green,” meaning the hab areas closest to the farm fields—this has the benefit of placating them with a good location near the souk while also placing them closest to security headquarters. Conversely, housing a crew “in the black” in the more spartan units all the way down by the docks and far from the souk is a not terribly subtle signal that the station wants a particular ship turned around and gone as quickly as possible.

MAINTENANCE FACILITIES

Although the essential systems are controlled up in the command levels, the drum also features a network of maintenance shafts, access tunnels, secondary control panels, diagnostic nodes, storage compartments, and other necessary infrastructure to assess and maintain the station's operational capabilities. Access to these areas is restricted to authorized personnel, though in practice, the sheer size of the drum and the station's multiple refits means that many of these areas are little-traveled or even unknown to the current crew. A savvy operator who manages to gain access to them can get up to all manner of mischief away from security's watchful eyes. Of course, such uncharted spaces have their own risks too, from fluctuating power to sudden environment loss.

THE DOCKS

Medina's docks are what really make the station a viable enterprise in its current form and provided a crucial resource no one else on the scene during the slow zone incident could offer. The facilities are large enough to easily handle the current level of Ring traffic; the docking area can accommodate eight medium-sized vessels without difficulty, or up to four *Donnnager*-class capital ships. It can also offer bays for dozens of shuttles and similar smaller vessels, though relatively few rock hoppers and other light craft come through anymore—after the thrill of the initial land rush wore off and the sheer lethality of colonization came into focus, only the most desperate or deluded individuals are willing to fire themselves through the gates with little more than personal shelters and the clothes on their backs.

Some visitors have wondered why a generation ship would have such extensive and heavy-duty docking facilities. While it's true the original design brief included docking facilities for the massive landing craft the colonists would eventually need to deploy when they reached their destination, the facilities are actually more advanced than originally intended because they were still in active use by the construction crews at the time the *Nauvoo* was originally commandeered. The need to accommodate a variety of ships and vessel sizes while the ship was under construction meant that the docks were

configured for high levels of variety and constant activity. Eventually, this capability would have been pared back and the facilities adapted to just the giant colony landers and perhaps an atmospheric shuttle or two, but the opportunity never came, and besides, it's now a valued feature of Medina's design.

There are also extensive repair facilities in the docking area, another extension of the station's unfinished original design—while the *Nauvoo* was under construction, it was simply easier to build repair and fabrication facilities on the vessel itself, rather than having to trundle back and forth to Tycho proper every time something broke. Having serious onboard repair tech was useful during its time as the *Behemoth*, and when it finally came time to adopt the Medina role, the facilities were overhauled again with an eye toward colony and trade traffic. While they can't quite build a ship from scratch, the Medina crews can do most anything else a ship might need and have an impressive turnaround time. Quality costs, of course, as does speed, but they're also willing to take trade if necessary, especially when it comes to exotic goods, interesting materials, and other discoveries from the new systems.

Although there is not such a high volume of traffic that whole ships or large cargoes can easily get lost, the docks are still the best area on Medina to get away with some underhanded business. Patrols are relatively light and provided criminal activities don't endanger the station or its personnel, security generally turns a blind eye to what happens in the ship berths, including a discreet amount of smuggling as well as settling personal scores. The key word is discreet—as the only waystation between Sol and the ring systems, Medina can't afford to become known as a home to outright thieves, killers, and pirates. So, anyone who threatens to sour the station's rep quickly might find themselves on the wrong side of an airlock cycle.



BEAT OF ITS OWN DRUM

A few thousand people living together on a station surrounded by alien space and gateways to more than thirteen hundred solar systems is a recipe for what can generously be called a unique living experience. This becomes especially true when you factor in regular reports from various colony worlds on the strangeness being discovered most every day. Given all that, it's not surprising that even though Medina has only been up and running in its current form for a relatively short time, it is already well on the way to developing its own cultural identity.

WORK

First and foremost, as a frontier station, Medina is a working outpost in the most literal sense of the word—everybody here has a job to do, and sometimes two or three. Like many Belter operations, the primary workforce responsible for keeping the station running and managing its operations is split into three overlapping shifts, so there are always personnel on duty. Furthermore, no one is on duty so long that they become exhausted or sloppy (at least in theory). There is no official station uniform as such, despite occasional attempts to enforce a

ROLL CALL

While some names have been provided in order to have ready answers to commonly asked questions about who's in charge of different parts of the station, many other roles are deliberately left empty so that the GM can feel free to invent individuals who suit the needs of their stories. For what it's worth, the GM should also feel free to swap out "canonical" individuals if they prefer replacing them with other characters; in the end, it's your story to tell, and if that means replacing Captain Samuels with a different commander, go for it!

COMMANDING OFFICER/
CAPTAINCHRISTINE SAMUELS,
BELTER

HEAD OF SECURITY

JAY CHINN,
BELTER

CHIEF ENGINEER

SALVATORE "SALLY" FINN,
BELTER

HEALTH SERVICES

DR. BENNIE CORTLAND-
MAPU, BELTER

dress code; the closest thing to it are the coded identifier tags all station staff wear when on duty. These tags track the movement of individuals around the station as well as allow access to restricted areas based on job clearance, and while not quite state-of-the-art, they are still encrypted strongly enough to deter all but the most dedicated attempts to clone or crack them. Combined with biometric scanners on essential access points, it's safe to say that most of the time, nobody is where they shouldn't be.

Although the permanent residents are not entirely OPA or even Belters anymore, Belter culture still predominates, meaning the operations workforce structure still follows most of their standards. During a crisis, crew chiefs can be expected to be followed without question, and they may even overrule higher-ranking personnel if they possess more relevant expertise. To put it another way, even a junior engineer can give orders and expect them to be followed by those above them if they're the ones on the scene and actively handling an emergency. Pragmatism is bred bone-deep in the Belt, and that especially applies to any threats to station integrity—no one is going to argue chain of command while atmosphere is venting. Anyone who tries might find themselves on the wrong side of an airlock after the crisis passes.

When it comes to getting things done on the job, decisions are as likely to be the result of a loud, lively, invective- and profanity-filled roundtable discussion, as they are the crisp unilateral command imperatives familiar to space-going Earthers and especially Martians. Though, it's worth noting that once the chief in charge has decided, the opinions get stowed and the work goes forward. Speaking your mind is fine when it's called for, but it's poor form to keep whining about not getting your way if the chief chooses another direction.

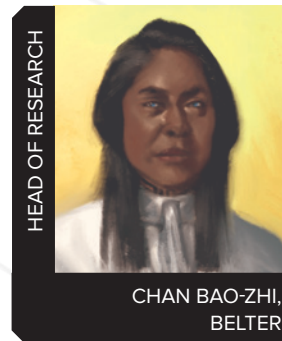
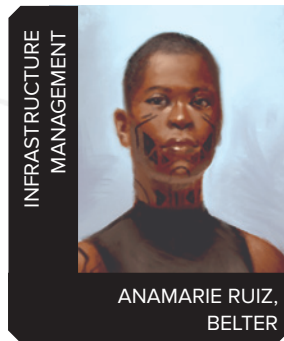
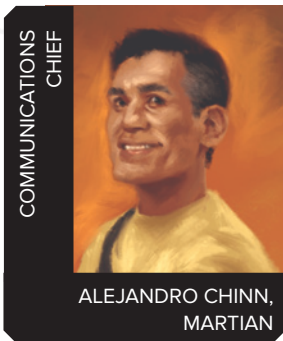
However, authority ends with a shift, at least in theory—no one is better than anyone else when they're off duty, and no work assignment is better or higher class than another. After all, without janitorial and maintenance crews a station quickly fills with junk or roasts in its own waste heat. If there is a hierarchy onboard Medina, it's primarily merit-based, with people who excel at their jobs at the top of the pile and whingers and layabouts down at the bottom. Those looking to climb that ladder should remember that as far as the command crew is concerned, there are two types of people—those who do what they say they'll do, and everyone else.

DOWNTIME

As Medina has grown into its role as the waystation between Sol and the ring systems, so too has the demand grown for ways for the crews passing through to spend their time (and their scrip). Add in the needs for a permanent population of several thousand and you get a thriving leisure scene on Medina, though admittedly, being in a bubble of strange reality at the crossroads of human existence does make for some idiosyncratic elements in station life.

SOCIALIZING

Anywhere humanity lives is also going to have a dating scene, and Medina is no different. Belter culture is strongly in evidence here as well, with various forms of ethical non-monogamy and relationship anarchy all common practice among the residents. It's not uncommon for station residents to form extended and highly fluid polycules with a number of different partners and types of connections to said partners, and navigating such networks is part of getting to know people on Medina. This isn't to say old-fashioned monogamous relationships are nonexistent, just that given the relatively small population it's not uncommon to see substantially more fluidity in how people connect. For those interested in purely short-term physical connections, if the pub scene doesn't work out, there is Sideways, a small but impeccably clean and licensed brothel. The staff there maintain a close relationship with security, so breaking their house rules is a good way to earn a rapid trip off the station, possibly without a ship around you.



When it comes to socializing, whether looking for love or spending time with friends, the cornerstone of Medina life is its “pub” scene—despite the station’s size and relative age, the souk supports a surprising number of small bars and restaurants. That’s where most of both residents and visitors can be found in their off-hours. Each business that survives does so by finding a particular niche and catering to it: there’s the automated conveyor counter of Belter comfort food found at the aptly named Kibble; the intimate coziness and ambitiously pan-stellar cuisine of the couple-friendly Afterward; the hard music crowd slamming into each other at Armstrong’s Last Step; the boisterous music, karaoke, and freely flowing booze at Shan’s Neon Boyfriend, where anyone willing to sit through proprietor Shan’s lengthy, vivid, and hilariously improbable explanation of the name earns a free drink; or any of a dozen other local spots. Although some hang in for the long term, others are short-term by design, opening for a few weeks, then closing for a time to re-open with a new theme or cuisine. Variety is good for the mind as well as the stomach, after all.

For that matter, Medina cuisine is an interesting blend. Given the station’s OPA roots, it’s no surprise that Belter staples like rice, beans, mushrooms, and micro-greens form the bulk of the population’s regular diet. And given the unusual addition of Mormon touches such as the farm fields, a modest fish hatchery, a small herd of goats, and the station’s highly profitable trading status, a wider variety of fresh food is found on Medina than one might expect from such a remote outpost. As is often the case with station cuisine, spices, sauces, and specialized preparations are key to variety and innovation when working with a small set of base ingredients, and as Medina has grown into its role as a crossroads of humanity the chefs onboard have risen to the challenge. The competition to have the best and most original plates is largely friendly but still very real, and the locals have a voracious appetite for new culinary ideas in every sense of the term.

Currently, there is also a station fad for fried crisps, typically imitation cheese or starch-based, with restaurants offering different dips and dustings for variety. (The goats onboard provide a small but steady supply of real cheese, and securing some is another source of fierce competition between station chefs.) No matter where you eat on Medina, however, there’s likely to be a large bowl of something fried not too far away, and great debates rage among the patrons as to who “gets it right” and whose should be dumped straight into the recycler.

VICES

Although other recreational substances than alcohol can be found on Medina, it should be noted that station security has an extremely low tolerance for station personnel using pixie dust, hard drugs, and other chemical enhancements. Downtime is downtime and nobody much cares how you work off your stress then, but if a high carries over into your work time and/or causes problems for your team, security will definitely stomp on you and your habit. Hard. It’s not uncommon for offenders to be locked into their habs to sweat through withdrawal before being assigned extra punishment duties, if not sent packing from the station entirely. This goes double for anyone found making or distributing such substances to their fellow residents; at least one such troublemaker bypassed jail straight into an airlock early in the station’s life, and rumors persist of several more since. Visitors are accorded a little more leeway, once again so long as nobody puts the station at risk, but even so security responds to reports of hard substance use and sales with zealous efficiency.

Those whose vices are more mathematical than chemical can find a few ready diversions—quite a few of the bars have installed automated gambling kiosks, featuring everything from poker to pachinko, as well as some betting interfaces for various sporting leagues. There is also one small casino in the souk; it looks more like a series of converted conference rooms than a pleasure den, likely because it is exactly that. The Wayfarer is a modest casino featuring live games and semi-regular tournaments. It is run by a pleasantly inscrutable, middle-aged, well-dressed and well-traveled Earther who simply goes by Dice (“I think old names stop at the Ring” is all he’ll say about his name). Dice maintains a small but capable security team of his own, and the games on offer are scrupulously honest, if of course, always skewed in the house’s favor. Rumor

has it he also bankrolls some of the larger private games that are run by station personnel, possibly even holds their capital for them, but such speculation is unconfirmed; he simply smiles and changes the subject if it's brought up.

ATHLETICS

Although the station's athletic facilities were fairly minimal and utilitarian at first, they have been altered and expanded as Medina grows away from the Mormon design. There are still standard gym facilities accessible to both residents and visitors, and golgo remains as popular as ever among the Belters onboard. A traditional handball court was also installed near the souk, and for reasons no one seems able to remember, a portion of the farm fields was even converted to a football pitch. This has turned out to be a surprisingly unifying sport, however, for the unlikely reason that nobody onboard is especially good at it—Earthers and Martians know the game but struggle with the gravity, while Belters are fine with the physics but have no affinity for the game. Playing required fabricating a ball specially adapted for lower gravity and players follow a set of constantly changing, homebrew, and rather tongue-in-cheek “OPA rules” that attempt to account for playing football under different physics. The end result is charitably described as energetic chaos, and the games are universally regarded as hilarious spectacles, so much so a small intramural league has formed. Games are well-attended for their comedic value if not their athletic excellence, and outrageous team names, drinking, side bets, obscene fight songs, exaggerated team loyalty displays, and colorful language are considered a must for players and fans alike.

By contrast, the gliders are a recurring headache for station security, though even repeated crackdowns have proven unable to put a stop to the practice. Thrillseekers who take advantage of the low gravity and perpetual updraft present in the drum, gliders use launch points up by the command level and compete to see who can soar the furthest, the longest, or pull off the craziest stunts. Despite numerous injuries, some of them severe, and significant penalties for getting caught, gliders can still be spotted soaring through the drum on a regular basis. Due to the heat on them from security, gliders are an insular group, taking pride in not only finding new launch points but also devising ways to escape capture by security when they land.

THE ART SCENE

Not to be forgotten, the artistic community on Medina has been finding its voice as well. Though the station receives regular updates of the latest pop culture from the Sol system, and its bars and lounges host live performances of all kinds from music to comedy to poetry, the early stirrings of its own distinct artistic culture have definitely begun as well. One new trend is so-called *blisst* music, which uses heavily modified and remixed samples of different “cosmic noise” recorded in various gate systems as a bed for long, looping, ethereal soundscapes that can go on for a dozen minutes or more at a time; recordings of new wildlife or other phenomena from worlds beyond the gates are prized elements to mix in as well. *Blisst* is designed to

accompany certain specific moods or situations, with the goal of serving as the ultimate background music, making it popular for parties, dates, and other social occasions. While the idea of using stellar sounds to create music is nothing new, in this case, the sheer strangeness of the sounds and the literally alien noises being discovered have added a fresh twist to the idea, particularly in the hands of a skilled *blisst* DJ.

Another emerging form of artistic expression is tabbing, which was born early in Medina's current mission as the result of a shipping error of all things. A huge cargo lot of small, micro-adhesive message tabs arrived, quite by mistake, and by the time the error was discovered, the hauler was long gone. With a vast surplus of message tabs in a variety of colors, and the ability of said tabs to stick and stay almost anywhere without floating off, the station soon became dotted with little artistic displays. People left not just notes but also poems, doodles, and other small personal messages for each other, sometimes stringing multiple tabs together to create longer messages or more elaborate artwork. Removing a tab requires just a bit of downward force, relative to local gravity, making them temporary and easy to clean, as well as ensuring they aren't a hazard for the station's air and filtration systems.

Although many station personnel still use tabs more or less as they were originally intended, some especially ambitious tabbers have latched onto the art form and run away with it. Some have gone so far

THE SOUL OF MEDINA STATION

Belter identity is at the core of Medina's character and history, and the OPA directs its politics and policies (such as they are), but there's no denying that by necessity, the station has become more cosmopolitan over time. Not only have more Inners joined the permanent population, but they've brought their culture with them, from music to games to cuisine. Balancing adjusting to a changing population and mission against the bone-deep aversion to losing what the original Belter crew fought for hasn't always been easy, either. While a significant number of non-Belters now live on Medina, some own shops in the souk, and a few even serve as section chiefs, the Belter residents fight hard not to compromise their culture even as they welcome others. All of this means that the Medina identity can often be expressed along the lines of “sure we're Belters, but everyone's welcome to come here and do their thing, but by the way *we're fucking Belters*.” It may not sound like it makes sense, until you reach Medina and walk the souk for a while. There is a definite, genuine effort to make everyone welcome—but the residents aren't about to let anyone forget their roots either.

as to create “interrupted novels” of serial fiction in microburst and elaborate mosaics and mandalas using dozens or hundreds of different color tabs, often further detailing such creations with individual words or drawings on each piece. Planning and carrying out large designs can be the work of days or weeks, and tabbing “krewes” of like-minded artists have started surfacing with their own signatures and themes. While the maintenance staff grumble about cleaning these displays from public areas, there’s no question most of the residents and visitors enjoy the strange, accessible, and unpredictable artwork.

Within its own scene, tabbing has developed a few unofficial rules. First, it’s considered poor form to be seen putting up your tabs by your intended audience, whether that’s one person or the rest of the station; the goal is to have an installation appear almost like magic. Second, never take down someone else’s tab, or worse yet, tab over it with your own; this is seen as incredibly rude and belligerent. Third, never repeat a tab, except to “sign” a piece with a signature design; re-using your own work or copying someone else’s is grounds for shame and mockery. Fourth, the fleeting nature of the art is also considered a part of its appeal; recording one is fine, or taking it down and keeping it, but actually preserving a tab on the wall is seen as missing the point.

POLITICS

Given the station’s complicated and colorful past, it’s quite impressive how little politics factor into day-to-day life onboard. To be clear: Medina Station effectively belongs to Fred Johnson, and outside of an urgent crisis requiring immediate action, all high-level strategic and political decisions go through him. For the most part, however, both the residents of Medina and its transient population take the attitude of “we won’t make it an issue if you won’t” and let things slide. Although as might be expected, there is also little tolerance for anything resembling serious anti-OPA sentiment or prejudicial comments about Belters. Officially, the station’s OPA affiliation has taken a backseat to a general neutrality, chiefly because that’s better for business (and it makes it less likely another faction will try to take it away for its own use).

Of course, a neutral policy comes with its own problems. As with most anything related to the OPA, especially Fred Johnson’s more moderate form, various internal factions disagree about how the station is being run. Some hardliners insist that the station should throttle the colonies and related ring traffic as a way of wringing concessions from the Inners, while others see a missed opportunity to use Medina as a formal embassy of sorts and load up visitors with pro-Belt propaganda and materials, the better to transform the outlook of the emerging colony systems. For their part, the station crew runs the gamut when it comes to personal opinions, but for now, they are willing, if not excited, to maintain the current studied neutrality.

Both the United Nations and the Martian government view Medina’s neutrality with no little wariness. More cynical or paranoid members of these institutions are convinced that eventually the OPA will abandon its stated position at an opportunistic moment and thus precipitate a serious crisis in both Sol and the ring systems. At present, however, there is little evidence to support such a point of view, and so these theories have been pushed to the margins—but not forgotten. In the meantime, no one wants to be the first to break the current neutral stalemate inside the ring space, lest the others work against them and cut them off from the systems beyond.

Another side effect of the station’s location are the governance experiments going on in some of the new systems. These have allowed people to take political theories and turn them into fact in ways that haven’t been possible on a large scale in the Sol system for centuries. As the last stop before most colonists head off to start their new utopias, not to mention the only place they can come to resupply and catch up with the larger universe, Medina is also a place where they can share their ideas and plans, and so the station residents have been exposed to all manner of novel political designs. These ideas naturally fall into a spectrum ranging anywhere from “reasonably practical” to “idealistic but unlikely” to “yeah, I think you’ve had enough to drink for now,” but so long as no one gets too dogmatic the discussions are always welcome.

Politics is a common topic of discussion on the station—not surprising given its OPA roots and that organization’s tendency to endlessly debate both theory and practice. Indeed, visitors are sometimes surprised at the vehemence of these discussions, given the station’s carefully maintained neutrality, but the residents don’t see anything unusual about it; from their perspective, bottling up strongly held opinions is not a particularly great idea in a sealed environment. How you express those opinions is also crucial—a heated debate and maybe the occasional harmless tussle is fine, but serious injury or station damage is right out of line. So long as one remembers not to savage the OPA or Belters too seriously (members of those groups notably excepted), freewheeling discussions are most certainly the order of the day.

PHILOSOPHY

Although there’s no formal philosophical underpinning to Medina Station, that doesn’t mean a certain outlook isn’t developing as people settle into this strange space. Most residents of the station don’t necessarily see themselves as fundamen-



tally different from the crew of any other station. However, living inside a strange artificial pocket of space and working as the last stop in civilization before journeying into a vast new cosmic frontier is just not an experience anyone has ever had. And it is changing the way the inhabitants of Medina view themselves, in ways large and small.

One big element is the strangeness of the ring space itself. While most residents barely think of it, the fundamental weirdness of the space outside Medina never really leaves them either. Sure, on one level, it's like space anywhere—vast, cold, and not a great place for getting some fresh air—but there's still no escaping the fact that whatever this place is, it was *constructed*. Just trying to get your head around the level of knowledge and technology required to do something like that can be difficult, even in the wake of Eros and Venus and the launch of the Sol Ring itself. Humanity has barely begun to grasp the true implications of making contact with an alien culture, even “just” the remains of a long-dead one, and so living in a place created by them makes for a disquieting experience at times. There's a thread of black humor among the residents that centers on the idea of the space collapsing without warning or even devouring the station like some great beast. Naturally, visitors rarely seem to find the humor in such jokes, which of course, just makes them even funnier to the crew.

There is one unspoken rule on Medina that garrulous visitors soon pick up on—no one talks about the bizarre un-space beyond and between the gates. Period. The researchers who

study this phenomenon have learned that the residents have a borderline superstitious taboo about discussing it, and keep their hypotheses and findings to themselves. Not that there really have been any findings to speak of so far. Which is, of course, disturbing in its own right.

By contrast, the systems beyond the gates are a popular source of station conversation, rumor, speculation, and humor. Even the most cynical can't help but have a sense of wonder about the vast new stretches of space opening up to humanity. That optimism and sense of discovery has become a part of Medina culture as well. Despite having a front row seat to the hard lives of the colonists and the harsh consequences of their efforts, the lure of the frontier and the possibilities beyond the gates lend a certain infectious enthusiasm for discovery to those living on Medina. No matter how deliberately detached or carefully unconcerned a crew member may be, they still perk up when the latest probe data comes in, or a news packet uploads from a colony satellite.

While they're just as capable of robbing or killing each other as any other humans, all other things being equal Belters have a strong “us versus the vacuum” mindset that predisposes them to help others in need of essentials. However, the station also can't function if it gives away goods to every desperate colonist or runaway that passes through, and so the Belter inclination to help others keep the vacuum at bay is balanced against the need to keep the station afloat. So far, there haven't been too many decisions that have given anyone sleepless nights, but as the colonies grow—and some fail—it's only a matter of time before they stack up.

JUST PASSING THROUGH

What's it like to stop by Medina Station for a visit? Here's a walkthrough of what visitors can expect.

Ships arriving at Medina go through a process mostly familiar to anyone who's experienced space travel, but with a few local twists. First, a ship must secure permission to dock, which involves the station first matching drive signatures, running a ship's transponder, and even visually scanning to weed out pirates and troublemakers. Attempting to approach the station without permission rapidly escalates into a potentially lethal situation, so it's best to wait for the all-clear and then dock where they tell you. Ships believed to be potentially contaminated, such as by radiation or a biological agent,

may be asked to remain outside the docking area. Supplies are delivered by shuttle in such cases, in containers passed across hard vacuum to avoid possible contamination. If personnel need to leave a stricken ship, the shuttle acts as a mobile examination and decontamination center. Even then, the crew may still have to wear full environment suits onboard Medina until they are cleared as possible vectors. Quarantine is taken very seriously, and violating such rules laid down by station security is a quick way to be tossed out an airlock or even get your ship destroyed. There haven't been serious outbreaks yet, and security intends to keep it that way.

Once the ship is secured, security greets new arrivals, scans identifiers, collects docking fees, and reads off the station rules and regulations—all fairly standard stuff. Assuming nobody comes back flagged as undesirable in the eyes of station security, everyone is issued an identifier chit and assigned basic hab housing, with their chit also acting as their room key. (Hab housing for visitors is “free” inasmuch as it is factored into the station's docking fees.) Next, cargoes must be declared, and security conducts inspections to verify these declarations. In reality, they're mostly just checking to make sure there are no station threats onboard or heinous crimes like human trafficking underway. A smuggler with essentially non-offensive cargo usually has little trouble finessing their way through an inspection with a discreet bribe or by invoking some mutual friendly connections.

Assuming background checks and cargo inspections work out, visitors are free to spend their time more or less as they please. So long as they don't interfere with station operations, they can sit in their quarters, do ship refits and repairs, hang out in the souk, visit the clinic, pray at the chapel, or whatever else they like. Identifiers are not actively tracked as a rule, though security can ping them to locate someone if necessary; attempts to access restricted areas will also ping security with a warning that a visitor is heading out of bounds. It's possible to circumvent these safeguards, but this results in some hard questions if security tries to locate someone and finds the function has been disabled. Unless security specifies otherwise, visitors are limited to the following areas: the docks, including the cargo areas but not ship berths other than their own; their hab assignment; and most of the drum section (save restricted areas such as pharmacy storage and the brig).

Departures are pretty standard by space travel standards, requiring a return of station identifier chits—a small fine is assessed for lost chits, which are immediately deactivated by security. An outgoing cargo inspection is performed, though this is notably more perfunctory than the incoming inspection. If a ship is later suspected of kidnapping, human trafficking, or serious theft of station property, that information is broadcast to stations throughout Sol system. The criminals are then stuck without many options for refueling and restocking supplies. So far, the threat of a station blacklist has been enough to deter major crimes. Assuming everything checks out, the ship is cleared to depart and may proceed to its next destination.

There is one final tradition for departing crews, however. As a ship approaches its destination gate, Medina hails them to ask if they have any “last requests” in a friendly if rather macabre nod to the ships that have disappeared while in transit through the gates. In keeping with the playful tone, most of the time, these requests are obscene, outrageous, profane, hilarious, or some combination of all of the above, but it should be noted that if a ship doesn't emerge on the other side of a gate, Medina personnel actually do their best to honor these last wishes when they can, in spirit if not in practice.

For example, when *The Grey Lady* vanished during a gate transit, Medina honored their last request to be immortalized on the station by inviting some tabbing krewes to create a huge mural of the ship's crew. When the tabs were taken down, the ship's name and crew roster was etched into the floor of their berth's airlock. It may not seem like much, but it matters to the residents of Medina. Somebody should always notice when you don't come home, after all, even if—perhaps especially if—home is so far away.

BEG, BARTER, OR STEAL

Most forms of currency are honored on Medina, though the exchange rates are based on OPA valuations more than standard market estimates and thus can swing wildly based the political climate. While the station doesn't deliberately screw people on this—most of the time—it's also true there's a certain level of “take it or leave it” you can get away with when you're the only civilization for millions of kilometers in any direction. Medina Station also circulates its own scrip, mostly for residents and long-term visitors, which is keyed to a person's identifier chit. In true Belter fashion, barter is also considered acceptable for almost any transaction as well, especially if you're providing something the regular resupply ships and cultural uploads don't (or won't). It's not unusual to see someone haggling for a meal or a drink with a handful of goods or a hard-to-find entertainment file, maybe even a promise of labor or a favor later on. Bystanders are often roped in to judge the fairness of such exchanges and act as witnesses to promises.

Visitors are quick to note that most prices on Medina are surprisingly reasonable, at least compared to the outrageous gouging one might normally expect from a station with a prime location and no competition remotely nearby. This is simple business sense from the crew's point of view, however. The worse you treat people, the angrier they get, and the more likely it is that Earth or Mars or maybe just some ultra-rich oligarch is going to want to take the station for themselves. Not to mention that letting colonists starve to death because they couldn't afford some engine parts or bags of grain wouldn't do Medina or the OPA in general any favors, either.

Make no mistake, though—Medina is no charity. While the station crew may stretch some to help out folks who are in dire need of the bare essentials, that's about as far as their goodwill goes most of the time, especially for non-Belters. Those who try to impose on this generosity quickly find it ends in a very sharp point.



THE MEDINA SERIES

Setting a series primarily on or around Medina Station offers an interesting perspective on the *Expanse* universe. On the one hand, the station literally sits on the doorstep of thirteen hundred new solar systems, many teeming with planets full of marvels and alien life to discover. On the other, the station is a big bottle full of a lot of the same things humans bring with them everywhere: politics, rival allegiances, personal grudges, grand dreams, bitter fantasies, and all the other things that make us human. It's this mix of the familiar and the unknown that makes Medina such a compelling location for a series, but it also requires understanding some of the unique advantages and drawbacks inherent in this particular setting.

SHOULD I STAY OR SHOULD I GO

As with any series, it's important to make sure that everyone in the group is onboard for telling stories about Medina Station. If a couple of players want to portray grizzled but still idealistic OPA types looking for a second chance on the frontier, another one wants to be deeply involved in Earth political intrigue, and another just wants to be a Martian marine and blow stuff up, the series is going to be in major trouble right from the start.

However, that's not to say that concepts can't be adapted to suit this particular setting. The OPA characters mentioned previously fit right in, of course, but with some tinkering, the other concepts can work just as well. Perhaps the would-be politician is intent on setting up a de facto Earth embassy on the station, or at least wants to try to be the voice of

their home planet. (They could even be a UN spy, playing a very dangerous game by trying to infiltrate Medina's command structure.) The Martian marine could be ex-military rather than active duty and now serving as station security, or perhaps trying to put together a private security company that offers to protect colonists while they set up on dangerous new worlds. The key is to make sure that everyone feels they get to play a character that interests them, while also making sure they have a place in Station life.

History was a cycle. Everything that had happened before, all the way back through the generations, would happen again. Sometimes the wheel turned quickly, sometimes it was slow.

—*Persepolis Rising*

After getting everyone to agree to a Medina series, perhaps the next biggest question to settle is whether or not the characters can expect to leave the station or if they're going to be staying in one place. This isn't to say that you can't shake things up later to keep things fresh and interesting, but a series about the crew of a freelance medical ship that uses Medina as a home port but routinely travels out to different colonies to treat patients in crisis is naturally going to be quite different than a series where the characters are all permanent station residents who work for the maintenance crew.

Simply put, the option to (easily) leave also fundamentally changes the way players think about problems. So it's worth discussing right up front—if you've planned to a tight political series about intrigue on Medina. Still, if the players jump ship and head to a far-off colony, that's going to throw a wrench in everyone's plans. So it's best to get a baseline of what everyone is interested in and expecting and then work from there.

BOTTLED UP

Another serious consideration is that Medina is still a relatively small, controlled environment for all its size, which tends to change the way that stakes are set during a story. Although it's certainly not tiny or cramped, it is still orders of magnitude smaller than major Belt outposts like Ceres and hardly a percentage point compared to places like Luna. That means that everything in Medina is connected and observed in ways that larger environments simply won't sustain. Like life in the fabled small towns of Earth some centuries back, everybody knows everybody, and that means your business is everybody else's too. While that may not be literally true, it's close enough to change how events run their course during a story.

For example, consider a commonly occurring plot point in many series: murder. Indeed, violence in general is often a preferred method of problem solving when players are confronted by difficult situations—the temptation to reach for the gun rather than try to talk through a tense showdown can be hard to overcome. But in a place like Medina Station, there's simply no easy way to get away with such extreme levels of violence. There just aren't enough people around that someone can easily go missing without attracting a lot of attention—permanent residents are quickly flagged when they don't show up for work shifts. At the same time, visitors are logged as part of the intake and housing allocation process and then out-processed when their ships depart to make room for newcomers. It's not impossible to pull it off, considering humanity's endless creativity when it comes to eliminating each other, but it's considerably harder than it might be in most other games where the characters live in larger settlements and/or have the freedom to pick up and leave when things get too hot.

This sort of scaled-down pressure doesn't just apply to violence, either. One reason that Belters traditionally take leisure time so seriously is because they know better than most how dangerous it is to pack a bunch of humans in a box with few ways to avoid each other and no easy way to leave. And you can't pull off a big heist or rip off your customers on a station of several thousand people and hope nobody will notice. So rather than the grand gestures common to a lot of series, stories set on Medina will naturally tend to move in smaller circles and more subtle confrontations, but that doesn't mean the stakes are any less serious for it.

ARCS AND TIDES

When the characters stay in one place, trouble naturally tends to come to them rather than the other way around. The regular ship traffic that comes through Medina provides a natural mechanism to introduce an endless variety of problems and intriguing situations for players to encounter. One week a ship may bring a strange illness from one of the colony worlds, while the next sees a massive feud boil over as rival crews dock alongside each other, and the next chapter is all about a volatile political power play among some of the station's command personnel that divides the loyalties of the crew. Indeed, encountering such a versatile mix of problems in a relatively confined environment is absolutely one of the strengths of such a series—when you can't run, can't hide, and can't simply shoot your way out of trouble, it forces you to be clever and creative in tackling your problems.

However, there is also a risk of such a story becoming too episodic if it seems like each chapter is another outrageous problem with little to no connection to the previous installments. If the players start joking about how it would be safer to just blast every ship to pieces before they can dock, for example, it's a good sign that things are starting to feel too predictable. The best way to nip this sort of problem in the bud is to think of stories in terms of tides and arcs.

Tides are the more episodic incidents, so named because they come and go regularly as ships do at the station. Something mysterious or dangerous happens, the characters investigate, a resolution is reached, and that's more or less the end of it. The key is that these issues don't always need to be center stage—sometimes they can happen as subplots or side stories (low tide), rather than always being the “big problem” that dominates a particular chapter (high tide). An alien infection that is more of a medical curiosity than a life-threatening outbreak, for example, might serve as the backdrop for a session

that mostly focuses on relationships between station leaders. This still creates the crucial feeling of regular traffic that makes this sort of setting fun and unique, while not requiring every ship arrival be a harbinger of some dread peril.

Arcs are another way of combatting the episodic feel that can undermine some of the tension of a Medina setting. Stories that take multiple chapters to complete, or sometimes even a whole series, arcs are what tie things together and give a larger meaning to what might otherwise seem like unimportant or unrelated incidents. The characters might help settle a leadership dispute on an outgoing colony ship, for example, then several chapters later receive refugees from said colony after it suffers a catastrophic setback, and finally take part in a rescue operation to save the leader they helped choose and a group of colonists left behind. Encountering the same people on several occasions helps players get invested in the stakes of the story, and tying them all into an arc elevates it from random events to a compelling narrative.

The GM can announce an arc up front—“this series is all about the rise and fall of a captain from Medina Station”—or let the players figure it out as they go. Some players enjoy knowing the basic shape of the story in advance, as it lets them lean in to what’s going to happen and really engage, while others prefer mystery and surprise. There is no one correct way to do it, just what works for your particular group, so don’t be afraid to experiment and see what everyone prefers.

SCENES FROM THE SOUK

What follows is a collection of glimpses into life on Medina Station—people, ships, locations, events—that can be used to add some ready-made detail into a story. Perhaps it’s something the characters see on their way to do something else, or an incident they overhear others talking about. These are little slices of life that help the station feel like a real, lived-in place. Some are more serious, the sort of mysteries and disasters that fill many standard game sessions, while others are smaller in scope but no less dramatic for it. Others are ... harder to define. Regardless, all of them feature hooks that could be used to form the basis for stories in their own right.

COMING IN HOT

A research ship traveling from Mars to the newly discovered Luca system suffers a catastrophic failure after transferring into the ring space; the ship is now heading straight at Medina. Most of the crew is still alive, though some are badly hurt, and the damage is too severe for them to repair in any case. Too small to support a lifeboat, the ship is now little more than a fast-moving coffin. Medina must shoot it down; that’s not a question. However, there’s also an incredibly small window for a dangerous, high burn rescue attempt to get the surviving scientists off the ship before Medina destroys it. It’s desperately dangerous and will require great skill and more than a little luck, but the alternative is letting the scientists die along with their vessel.

OBSTACLES AND OPPORTUNITIES

A friend or loved one is among the endangered scientists; the rescue effort is actually a rival’s attempt to get rid of the characters by “volunteering” them; the ship contains some vital and/or highly valuable cargo for the station that the colonists were planning to trade to Medina in exchange for some necessary equipment of their own.

THE FIRST MEDINA INTERSTELLAR CHAMPIONSHIPS

After a heated post-season marked by upset victories, amazing plays, and more than a few disqualifications for excessive drinking and one very memorable pair for lewd behavior, the “Belter rules” intramural football league has

reached its championship game, and the whole station is buzzing over who will take home the coveted Golden Foot trophy (actually an old shoe bronzed in the machine shop and mounted on some spray painted hull plating, but who cares). Betting has reached a fever pitch, with the underdog Sultry Emus hoping to steal the championship out from under the surprisingly competent Terrible Goats. Everyone who’s anyone on Medina is going to be there for the final match, making it a great place to cut loose, socialize, and maybe even network a little bit—assuming you aren’t rooting for rival teams, that is.

OBSTACLES AND OPPORTUNITIES

A character in debt has a big bet riding on the game, with a win promising to clear their markers but a loss threatening broken limbs in their future. The group attempts to stop others from fixing the match (or fix it themselves); while everyone is drunk and distracted by the game, a major crime or crisis occurs, forcing some unlikely junior crew or even station visitors (the characters) to step up.

CHINN UP

Head of Security Jay Chinn and her husband, Communications Chief Alejandro, have long been one of those couples on Medina that people envy. Being invited to one of their dinner parties is a coveted honor on the station. While these meals are by no means professional events, they’re definitely great places to meet some of the station’s movers and shakers. The trouble is, since the last party, the

couple haven't been acting like themselves. Jay has been cracking down on vices to which she normally turns a blind eye, while Alejandro has let a backlog of entertainment and culture uploads stack up. They still seem as happy as ever when they are together, but rumor has it something happened at the last party that's thrown them both off their game. Helping sort out whatever's going on could save the station some headaches, and maybe even score the characters some prized dinner invitations, but could also entangle them in complex personal problems between some of the most powerful people on the station.

OBSTACLES AND OPPORTUNITIES

The characters are asked to assist Alejandro with a tricky repair and/or Jay with backup on a tough patrol, and wind up doing some impromptu couples' counseling under fire as things get complicated; rumors are flying that politics are driving a wedge between them, and agitating Belters versus Inners tensions; a power struggle among the command crew develops as people take sides over the couple's dispute.

RATS IN THE HOLD

Something strange is going on around Medina Station—there have been several local system disturbances, such as power fluctuations or water pressure issues, not to mention a rash of petty thefts of little bits of food, clothing, and the like. Security footage comes up mostly empty, except for a few shots of a furtive, heavily disguised person they can't identify. Eventually logs reveal that it seems like someone—or possibly more than one person in similar attire—has managed to sneak onto the station and is living somewhere in its uncharted network of maintenance tunnels and access ducts, emerging when their supplies run low before vanishing again. Who are they, and how did they get onboard? What's more, what do they want?

OBSTACLES AND OPPORTUNITIES

The characters are one of several combined engineering/security teams tasked with finding the stowaway(s) and learning their intentions, requiring a deep delve into the station's unmapped areas; the characters spot one of the thefts in progress and give chase, trying to catch the perpetrator before they slip away into the infrastructure; the characters discover the stowaway has a righteous vendetta against someone onboard, and must decide whether to let them get justice or turn them in before anyone gets hurt.

ONE SMALL STEP FOR BANDS, ONE GIANT HEADACHE FOR SECURITY

Jimmy, a genial green-haired giant of an Earther and the respected owner/manager of Armstrong's Last Step, has announced his club will host Medina Station's first-ever Battle of the Bands. The winning band will receive a huge "mystery crate" full of valuable goodies, which currently sits on display under guard in the club; Armstrong refuses to say what's in it, which of course has sent speculation running wild. Music groups are getting together all across Medina, ranging from the deliberately terrible to the legitimately impressive, while security braces for the already rowdy club to have its most out of control night ever.

OBSTACLES AND OPPORTUNITIES

Jimmy hires the characters to discreetly locate and return the prize crate, which has been stolen from his club's storage locker just hours before the big event. The characters form a band to compete for the prize themselves; a near riot breaks out after an upset victory, and the characters are caught in the middle of the souk getting trashed.

FOLLOW YOUR BLISST

One of the characters starts receiving *blisst* tracks from an anonymous admirer, who seems to desire their friendship—and possibly more—but is apparently too shy to approach them directly. The tracks are beautifully done and suit the character's taste to an excellent though not scary degree. The files are also stripped of easily traceable code, so whoever has them on their mind is not just talented with music but also programming. Is it really an innocent attraction? Or is there something deeper and possibly more sinister going on here?

OBSTACLES AND OPPORTUNITIES

The tracks are from an old friend or contact and actually contain important research data, encoded and disguised as music to evade detection by operatives of a ruthless corporation; it really is just a romantic overture and there's definite chemistry, but the suitor brings problematic baggage for the character's typical lifestyle (criminal past, conflicting political backgrounds, mismatched careers, etc.); the tracks are from someone the character is definitely not attracted to, but who is in a position to make their life difficult if the situation is not handled carefully.



3: WORLDS BEYOND

With new worlds on the horizon, humanity wasted no time in spreading out from the Sol system into the worlds beyond the rings. Full of new life forms, alien biomes, and untapped resources, it's no wonder we wanted to explore each and every one, discovering their secrets and learning about the alien life thriving beyond our borders. While a small number of worlds have been contacted or colonized, the vast majority are still mysteries waiting to be explored.

Whether active, inert, or dead, each system has something to offer to colonists brave (or stupid) enough to try and tame them. While nothing is without risk, the rewards discovered so far have far outweighed the trouble. With over a thousand new worlds ripe for the taking, this chapter presents ones both known and unknown as a jumping off point for ventures with any crew.

Since the gates opened, humanity has done its best to spread into every available system. Some have been easier to settle than others, and some convoys have been better equipped to do the settling, but no matter the circumstances, humanity is resilient. Bouncing back from a crisis or finding the solution to an unsolvable problem may not be the default setting, but the backups and redundancies in its collective genetic instincts all point to the singular goal of staying alive. On any rock, no matter how hostile, humanity will find a way. Some of the more established colonies have managed to start shipping out natural resources to fund their own continued survival.

The universe is always stranger than you think. Sometimes it was full of wonders. Sometimes it was full of horrors.

— *Tiamat's Wrath*

FEATURED WORLDS

These are worlds that have been mentioned or even described in *The Expanse* novels. Since they are featured in the novels, we've devoted less space to them, preferring to focus on new worlds for GMs and players to explore. Still, here you'll find a short description of many of the worlds beyond the rings that have been featured in the series.

ARCADIA

The closest to its sun, and surrounded by three other planets in orbit, Arcadia is a sunbaked world that, even at night, is well lit due to the copious amount of reflected moonlight. The gravity, resting at 1.5 g, is something to adjust to even for

Earthers. So while anyone is welcome, it's a near insurmountable struggle for Martians or Belters to visit. With abbreviated 16-hour days, the Earthers have adjusted to the stronger gravity by enjoying the shorter days with longer rests at night.

Arcadia is among the planets most physically similar to Earth, with eight continents dotted across a vast ocean surface. Its three closely-clustered moons give it a more volatile tide, and the concentration of salt in the oceans is higher than that on Earth; but between weather patterns and diversity of biomes, it has a familiar feel to Earthers. The sheer quantity of new species and phenomena to catalog and investigate have fascinated and delighted the scientists amongst the colonists, and the array of alloys and raw materials have set the engineers to work as well.

Predominantly settled by Earthers looking for adventure, Arcadia welcomes all who wish to join society there. While nominally governed by the United Nations, the settlement leaders are in the process of petitioning for a more unified government now that the binary of Earth and Mars seems insufficient. Having cherry-picked what they deem the fairest laws from both constitutions, the settlers call themselves the Humanity Coalition and have been attempting to spread their grassroots movement to other ships looking to settle the new systems. Without many politicians willing to entertain a single new system over any of the others (not the least for fear of validating it), their movement has yet to gain any real traction.

The heavier gravity on Arcadia makes for some interesting adaptations in its wildlife. Not much of the plant matter is soft, growing instead with stiff, reinforced stalks or short, sprawling vines and leaves in wide areas to nourish the root systems below the surface. However, the high concentration of oxygen in the atmosphere allows for larger creatures to develop, and chitinous, armored animals have been observed on land, with other variations at sea. Despite their insectile appearance, at least some of them have also displayed mammalian properties, to the delight of the researchers cataloging the new species.

Though only observed on rare occasions, there have been sightings of alien drones flying or scuttling around the planet. Unlike most of the other builder creations, these actively avoid contact with other creatures, retreating when anything gets too close. Radar readings have determined that they are sending out information, though it seems unlikely anyone is receiving it.



AUBERON

Auberon's sheer size has caused it to collect a dizzying array of satellites, each highly reflective. While the days are 14 hours long, with the number of moons in its orbit, the planet stays fairly bright at all times. At about .75 g, it's a comfortable gravity for the Martian settlers and not too much of a struggle for the Belters.

Marshy wetlands cover the surface of Auberon, coloring most of the planet in a rusty orange hue. Where the ground is solid, stiff reeds and coarse grass dominate the landscape, interrupted only by strange pods that give off clouds of white pollen when disturbed. The water near the pods is fresh, as opposed to the brackish swamps that dominate the landscape. Small pockets of forest dot the spaces between pod clusters, the trees soft and spongy but the ground beneath them solid. While lower than that on Earth, gravity is still strong enough to suck unsuspecting explorers into movement-stopping mudflats, making travel in unknown regions treacherous.

Settled by a mix of Martians and Belters, the settlements built so far have been loosely moored and anchored cities floating on the swamp's surface. While the outer bark of the trees is soft, the center of their trunks is similar to bamboo, buoyant and strong enough to create rafts and foundations for homes and communal buildings. The two groups of settlers have so far existed in an uneasy truce, with tensions slowly dissipating as time goes on; the Belters, however, refuse to say the planet is strictly under Martian jurisdiction.

At 1 meter tall and almost as wide around, the pods seem almost like inverted dandelions, their seeds protected by their outer layer until they're released. Initial testing has found that the exteriors of the pods are nutritious and edible, if not the tastiest things. At the very least, the settlers have a ready supply of food and have come up with some inventive recipes to make fibrous stuff more palatable. The largest risk in harvesting the food comes in the form of the megafauna that also feed on the pods. While herbivores, the moose-like creatures are highly aggressive and territorial, with nearly bulletproof hides and horn-like growths long and sharp enough to kill.



While there isn't any visible builder technology on Auberon, the mossy carpet on the swamp's solid ground grows in patterns identical to those displayed by the protomolecule. A deep humming can be heard in certain areas, seeming to come from far below the surface.

CASTILA

The fifth from the sun among 12 other planets, Castila's low gravity, and long rotation make it comfortable for both the Earthers and Belters who have settled it. With three satellites of its own, there's usually at least one visible in the sky through breaks in the clouds, and the 36-hour day is less harsh of an adjustment to those who have grown accustomed to shifts on ships.

From orbit, the surface of Castila is often hidden from view by thick fields of clouds, with at least two small perpetual storms drifting within them. The four continents that cover most of the surface are home to dense forests, covering most of the

surface area of the land, fading only to thin, rocky coasts held in place by centuries-old root systems. As the four land masses hold unique, discrete ecosystems, the prevailing theory remains that the builders had a heavy hand in terraforming and curating the separate sections, but despite the extensive work that's shaped the planet, there are no obvious remains of alien technology. The weather is perpetually warm and humid on the surface, with frequent rainfall between the roaming storms.

The settlers on Castila found a number of carefully grown and pruned structures and paths woven through the trees, not unlike a full-sized bonsai. While they're overgrown and have rotted out in some places, the structures remain largely useable and require little work to become habitable. Depending on the properties of the trees on each island, the structures within range from massive, solid-walled rooms and hollows to spindly, open-aired nests and cabanas. A mix of Belters looking to settle down a well and Earthers looking to explore beyond their own planet, the government of Castila remains a loose democracy.

The trees growing on Castila vary between its four continents. One hosts shorter specimens with long, ropy branches that twist together as they grow; another has sturdy, robust trunks and branches that have been carefully guided and pruned into structural shapes; the third is home to fast-growing shoots reinforced with snarled knots at regular intervals; and the last holds massive, hollow trunks with smaller groves sheltered inside. Short, scrubby undergrowth covers the ground of each of the continents, and some specimens are found on more than one island.

The wildlife on the continents consists mostly of small creatures resembling reptiles, which hunt the insect analogs that likewise inhabit the spaces. Fortunately, none of them appear to be of the stinging variety, though at least one—a flying wasp-like thing—has a venomous bite. The snake and lizard analog predators have no real interest in the settlers, who are far too large for the cat-sized ambush predators to feed on.

CORAZON SAGRADO

One massive satellite orbits Corazon Sagrado. It would be almost a planet itself if it wasn't trapped by gravity. Centered in the lineup, with three planets closer to the star and three further out, Corazon Sagrado's .5 g is comfortable enough for Belters, and its 28-hour days are comfortable for any settlers or visitors.

Corazon Sagrado hosts two major land masses surrounded by a shallow sea. While the landmasses are stable and don't shift much, the tectonic activity in the ocean is much more pronounced, especially as the majority of the shallow bed is made of brittle mineral deposits. The sea itself doesn't so much have currents or tides as boiling points and the ripples that spread from them, creating brilliant pockets of color where the densities of the mineral-rich water differ and deposits develop. Despite the heat bubbling up from the water, the general temperature range of the planet is cool, with frequent snows and flurries instead of rain.

Something of a haven for Belters, Corazon Sagrado is hovering on the potential to be the go-to place for citizens of the Belt looking to avoid taking sides or being persecuted by Earthers and Martians. Its low gravity, while the pull of a well instead of thrust, makes it an easier feat to endure and adapt to, and the natural hot springs that cover a good portion of the planet help relieve the ache of muscles and bones used



to being on the float. Despite the luxuries the planet presents, the Belters settling here have had difficulty forming a proper government, instead existing in a loose anarchy.

Microbes, plankton, and water-dwelling species dominate Corazon Sagrado, with occasional amphibians making their way to land. Aside from the colonists, there aren't any other entirely terrestrial animals, making it one of the safest settlements around. The creatures that do inhabit the planet are all cold-blooded, using the heat of the sea vents to regulate their temperatures. The abundant mineral deposits in the water, along with high densities of single-cell organisms and small shellfish analogs, means it requires a lengthy purification process to be safe to drink. After a rash of illness not unlike food poisoning swept the first wave of settlers, they've been particularly stringent on those measures.

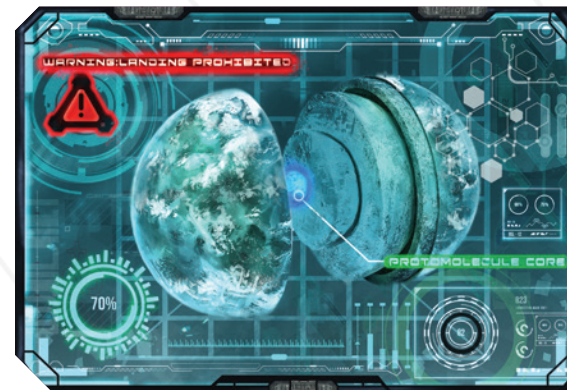
If there are builder artifacts on the planet (and scans do seem to indicate there are), they're likely deep below the surface, embedded under the crust of the surface to manipulate the ocean floor. A plan is in place to explore the possibility once the colony is stable enough to devote effort to possibly drilling or searching for trenches.

EUDOXIA

Entirely alone in its system (save for its star), Eudoxia's alarming properties are the subject of all manner of scientific studies. No one has yet dared to set foot on its surface, instead mooring themselves within its rings to study the planet from a distance.

When sensor data first came back from Eudoxia, they were flagged as errors. Except the same error kept coming back, from ship after ship, and from fleets that had no prior contact with each other. While outwardly appearing as placid and habitable as any other planet in the ring network, the planet's core is made entirely out of the protomolecule.

Whether this is the source of the substance and the builders mined it from here or they extracted the planet's core and replaced it with the protomolecule remains a mystery. The simple fact that a protomolecule planet exists is enough to strike fear into the hearts of most and pique the curiosity of the most courageous scientists. No one has set foot on the planet itself yet, for fear of another incident like Eros, but the vertical ring around the planet provides the perfect place to orbit and study the things below. As envoys of researchers are the primary members of the system, no one's considered yet who the planet belongs to; its exploration wasn't chartered by any companies, making it anybody's game. After the Project Caliban incident, even the most callous scientists aren't willing to cause another outbreak just so one government can shut out brilliant minds for living in the wrong part of the solar system. The governing bodies, for their part, are watching to see what arises before trying to lay any claims.



FIRDAWS

Unique among the settled systems, Firdaws is actually comprised of two dwarf planets orbiting each other as they orbit the system's star. Possibly the remnants of an experiment of the builders, they seem impossibly close to each other and yet maintaining a set distance. The individual planets don't have their own spin, but instead rotate together as if the axis rested between them. While this leaves swaths of each planet in perpetual darkness, even the areas left in the dark host plenty of biodiversity. After extensive study to ensure their orbits weren't decaying and they weren't moving any closer to each other, the most skilled engineers among the colonists began designing shuttle ports; the ultimate goal being to use the alloys created by the builder society to create a bridge between the two planets.

Only one other planet orbits along with Firdaws, sweeping out wide and passing behind the ring gate that leads to it. The Firdaws pair lacks any satellites, but its low gravity makes it comfortable for the refugees landing on it. The empty space around it—no moons or asteroid belts, and only the singular other planet anywhere nearby—seems suspect.

A large number of Ganymede refugees have made their homes on Firdaws, drawn by the peculiar properties of the system and the tantalizing physics problems presented by the orbits of the planets within the system. Planetary anomalies aside, the flora and fauna living in the permanent dark spots on the planets have drawn the



curiosity of any number of researchers who formerly occupied the station, and a highly science-focused society has sprung up on the edges of the dark zones.

There are two major biomes on the Firdaws pair: those that get light, and those that don't. For the lack of transport from one planet to another, the populations on each are remarkably similar; all initial testing (currently limited to plant samples) shows that species from one planet are capable of reproducing with those from the other, creating viable offspring. While they've diverged at some point on the evolutionary tree, it clearly isn't as far back as would be expected.

Against all odds, the permanent dark spots—vastly smaller than the areas that receive light—are far more diverse in all manner of life. Scientists are already eagerly setting up observations and studies, fascinated by such a tightly compacted ecosystem. Curiously, it doesn't seem the inhabitants are blind, but attempts to retrieve samples have been fraught, as they decay quickly when exposed to light.

FREEHOLD

First in orbit around their system's star, the planet of Freehold hugs its sun and enjoys the protection of three outer planets. The small system is nonetheless ripe for the picking as any of the others in the ring network, and the planet already finds itself hosting a small colony of 300 settlers. Slightly smaller than Mars, Freehold hosts three satellites and orbits relatively slowly for its size. The 17-hour days, split more or less evenly between day and night, aren't too far off the regular rhythm for those who grew up on Earth.

Populated entirely by Earthers, Freehold stands on its own and aims to keep it that way. The population, calling itself The

Assembly of Sovereign Citizens, is strongly opposed to centralized houses of power and far-reaching authorities, believing in individual responsibility and personal autonomy above all else. Thus, while there may not be a conventional government on the colony, the beliefs of the settlers are enforced by a militia armed with weapons brought on the colony ships with their other supplies. Participation in the militia is compulsory, and the settlers will defend their land and their ways with atavistic zeal. There is only one settlement on the planet at the moment, though as generations pass and the population grows, the probability of groups splitting off and striking out only expands.

The arid atmosphere of the settlement means Freehold's population relies mostly on hydroponics to produce any kind of vegetation, but their food supplies are supplemented by livestock brought along with the inhabitants. Goats provide meat, milk, and wool, and chickens offer similar benefits with their eggs, meat, and feathers. While the agriculture the settlement has managed is sufficient to support the livestock, it hasn't yet reached the scale where it can support the citizens on its own.

Though they've discovered large stores of lithium and uranium on the planet, the colonists don't currently have the means to mine or refine them. If and when mining and refining operations are established, the resources available mean Freehold's main export is likely to be helium. With their staunch opposition to the standing powers that be, their terms and agreements for trading are an unknown quantity.

FUSANG

Lacking satellites or rings, it's difficult to spot Fusang without looking for a heat signature. The second from orbit in its system, the planet is relatively small but not very dense. At a comfortable .5 g, even the Belters who have settled on the planet are at ease.

The dark surface of Fusang is almost invisible against the blackness of space. If not for the bright streaks of red crisscrossing the planet, even trying to capture it on camera wouldn't yield much more than a slightly different shade of black in the void. The most volatile of the colonized planets, Fusang is home to a number of active volcanoes and caustic seas, constantly reshaping its coastlines and islands. Though the surface seems rocky from a distance, it does have large fields and abundant flora, most of which has either very dark or completely black coloration. The lack of ash and other precipitates from the eruptions indicates that the local plant analogs are purifiers, trapping the particulate in incredible concentrations and keeping it from clouding the air.



Settled in a carefully chosen point away from any active volcanoes and inland enough to avoid the effects of rapid erosion, the Earther/Belter colony on Fusang is carefully fortified against the elements. Scouting for a second settlement location is slow going, but the builder artifacts left behind are resilient against even the heat of molten rock, and plans are forming to use them to pave or otherwise insulate against the lava flows.

Between the volcanic activity and rapid growth and decay cycles of the plant life, the soil on Fusang is some of the richest and most nutritious ever observed, although it is incapable of supporting plant life from Earth. Theorized to be an experiment on flora, the planet doesn't appear to support any living animals. Instead, disturbingly, it seems some of the plants have developed rudimentary motor skills, allowing them to shift away from lava flows and avoid being destroyed. Like the soil they grow in, the plants tend toward intense extremes, harboring high concentrations of salt, acid, sugars, or toxins.

Between the surface structures acting as heat sinks and the regularity with which the volcanoes erupt, it's apparent there is some technology still at work maintaining the ecosystem. After struggling to establish themselves, the colonists on Fusang have adjusted to the pattern of eruptions and determined which areas are devoid of activity. In active areas, they've begun recording plant migration to determine if there's any rhyme or reason to how and why the eruptions are timed.

ILUS/NEW TERRA

The first of the new systems to be colonized, Ilus (or New Terra, depending on who you ask) had a rocky start. While the Earth corporation Royal Charter Energy had a contract for scientific observation and exploration of the planet, a group of refugees from Ganymede were the first to actually make it to the planet's surface. With their relief supplies, they set up the rudimentary colony they dubbed First Landing, to the displeasure of the incoming corporate team from Earth. Only after a catastrophic failure of the remaining alien technology on the planet did the disparate groups come to a loose agreement to ensure the survival of everyone on the surface; huddled in the alien ruins as the entire world outside raged against them.

While nothing resembling human life exists on Ilus, flora and fauna are plentiful. The vegetation is mostly benign—maybe not edible, but not immediately poisonous. The wildlife has proved more dangerous: while benign creatures akin to butterflies and lizards exist, so do microbes all too happy to flourish in the saline-rich environment of human eyes and slugs with a neurotoxin potent enough to kill within minutes of skin contact. As humans do, those settled on the planet have found ways to combat the worst of things and find comfort in the safe and familiar. As of now, the settlements are going strong, exporting the refined lithium from mining operations and researching programmable antibiotics.

A planet comprised of a single massive continent and an even larger ocean, Ilus itself—and much of what stands on its surface—might best be described as “monolithic.” Most of its features are massive and singular, from the landmass and ocean to the alien ruin not far from the First Landing settlement. The planet itself shows the terraforming influence of the previous inhabitants, between the improbably pure veins of ore, amplified and altered light spectrum reaching the surface, and the inexplicably contained atmosphere.

Mild sandstorms are common on the planet, though less so after power reactors left by the builders exploded in the ocean, causing a massive tsunami and the subsequent fallout drastically changed the weather patterns. In addition to struggling with malfunctioning equipment, the settlers had to contend with the planet's thirteen artificial satellites, left behind by the alien civilization, that act as part of the planet's defense system. While one of the artificial moons has been significantly damaged, the rest are untouched and unexplored. Thankfully, the defense system has been powered down, and there has been no sign of activity since.



LACONIA

Along with Laconia, eight other planets orbit the star in the center of the system. Laconia itself is the second planet from the sun, and the only habitable planet in the system. While most of the planets are rocky, there is a single gas giant, itself orbited by over eighty moons. The regions and biomes are similar to Earth's, with forests, seas, and grassland-like areas all near the settlement.

First established as a research center, the colony in the Laconia system has expanded and dug into a more permanent position than its original settlers anticipated. After the initial team set up, they were joined by a larger and more

aggressive force. Rogue elements of the Martian Congressional Navy, working with radical fringe factions of the OPA, fled through the Laconia gate, masking their ships and disappearing little by little into the system while the rush of colonists could mask their actions. The governance of the colony is thus strictly military, though many of the colonists who aren't part of the Martian military aren't necessarily pleased by the strictness and intensity that comes with a society run like a military base.



Laconia itself hosts one of the largest concentrations of protomolecule technology yet discovered. The ruins and remains there are active and functional, sparing the planet the destruction that came to Illus after the catastrophic failure of the technology there. While most of it is little more than a tantalizing mystery, the researchers who originally landed have been making some headway in working with them. The machines are an automated system of some kind, meant to assemble or disassemble massive structures. Whether or not it has anything to do with the incredible terraforming activities that went into most of the habitable planets accessible through the rings remains up for debate.

An orbital construction platform, dubbed Laconian Shipyards, is the only thing orbiting Laconia. The station comprises several structures where ships are “grown” between the spars and limbs of the orbital arrays. The people on the surface describe the station as looking like stick moons, glowing orange from the sun at night and lines of white on a field of blue during the day. The ships constructed here are said to be grown rather than built, and it has turned out several ships technologically far ahead of anything the UN or MCRN have in their navies.

Despite the discoveries on the planet, the colony hasn't reached out to share any of its resources. Reaching the Laconia system has likewise been difficult for anyone who isn't part of the group of shadow ships that vanished through the ring shortly after the research team traveled to Laconia.

LONGDUNE

The second planet from its system's star, Longdune is a placid planet without any satellites. Its gravity, a standard 1 g, is comfortable for the Earthers who have settled on it, and the 26-hour days are likewise familiar. It's well-protected from any stray asteroids or debris, with one smaller planet in a tighter orbit and two much larger ones further out.

From a distance, Longdune appears to be an entirely liquid planet. No discernible landmasses can be seen from space. However, upon descent into the atmosphere, it becomes more apparent that instead of hosting massive continents, the planet is one long island chain, the surface dotted with comparatively tiny landmasses. Initial data presented a number somewhere in the 400-500 range, though so far only ten have settlements. Large enough to host a decent-sized neighborhood each and close enough that only small bridges or ferries are required to move

between them, the settlement still considers itself a single community rather than a collection of disparate tribes.



The settlers on Longdune are almost entirely from Earth and have adapted well to the sandy shores that give the planet its name. The number of islands and the density of their clusters, combined with the lack of satellites around the planet, means the water is generally placid and doesn't pose much threat to structures. While a step up from temporary shelters, the permanent structures built so far aren't as robustly reinforced as those on stations or planets Sol-side. Though they don't have a formal political representative, being Earthers, they fall under the purview of the United Nations.

Without strong tides, much of Longdune is stationary and calm. Stiff stalks of tall grass grow within the dunes that dominate the coasts, strong enough to use in structures and tools; reeds grow in the shallows, and buoyant kelp strands float out on the water. Creatures halfway between an eel and an octopus skate along the water, and skittish crab-scorpions scuttle about on land. While all these things feel almost normal, they only highlight the features that aren't.

On a small percentage of the islands, spires rise up from their centers, stark black against the blue-green water and yellow sand. Despite their stony, polished appearance, it seems the spires are organic. They glow in irregular patterns at night, seeming to communicate with each other somehow. Some settlers have tried to decipher the strange code, observing how they react to each other, but no one's willing to get too close just yet.

NEW EGYPT

New Egypt is the furthest planet from the sun in a system with five bodies. Its slow orbit and rapid spin make for long years and short days. With a scant nine hours of sunlight a day and only one-third of Earth's gravity, the planet is ideal for the space-faring settlers who have claimed it. Surrounded by a wide set of rings as its only satellites, the view of the planet is breathtaking even from its surface.

To call New Egypt's surface a desert is an understatement. As part of their experiments, it seems the builder society removed all traces of water from the planet, leaving whatever organisms lived there to adapt to life without it. While this has led to some strange adaptations for the life forms on the planet, it also poses an issue for the human settlement there. Fortunately, the nearby asteroid belt provides abundant ice for mining to sustain the colony. With plenty of plateaus and rocky outcrops to shelter near, even the sandstorms that kick up with some frequency don't pose too much of a threat.

Colonized by Earthers and Martians, New Egypt is one of the few planets to join in the Humanity Coalition, aiming to unite the various governments of humanity under a single banner. Despite the lack of water on the planet, they've managed to build a small community. Between Martian adaptations for terraforming their own planet and Earth's familiarity with surviving in arid habitats, the community is surprisingly robust. After a slow start establishing the ice mining operations, things have taken off, and the reintroduction of water to the habitat has sparked some fascinating reactions and impressive farming results.

No one's exactly sure what allows the creatures on the surface of New Egypt to survive; the working theory is that they evolved from creatures like tardigrades and only got stranger from there. Massive burrowing worms, wide-eared rodents, and small owlish birds are all common sights on the flats, where they scavenge on the rough scrub that grows in the soil. Even the plants are scavengers, as their root systems are built exclusively in the remains of worms that died below the surface. On the plateaus and mountains, insectile creatures scurry about and dig complex lairs. Despite their behavior and organic appearance, study has shown they're micro-machines, with all theories pointing to protomolecule origin. Areas where they're most highly concentrated support this theory. Disturbances by the colony have caused the collapse of some smaller structures, revealing that they're artifacts caked in layers and layers of sand and dust.



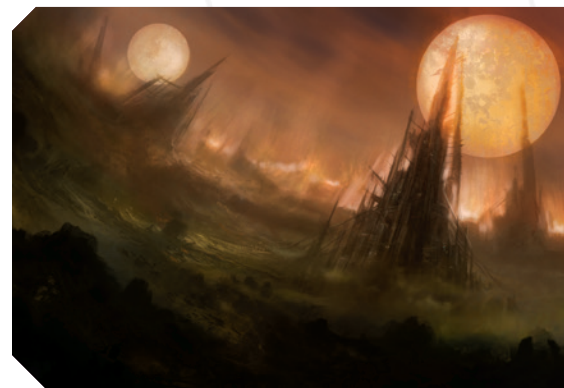
NEW MARS

Like its namesake, New Mars, a dusty planet, is possibly an ideal planet for the MCR to have claimed as its own. The gravity sits just above .3 g, and its two moons (nicknamed Apollo and Artemis for the moment) are a familiar sight in the sky. Comforting in its own way, the fourth and final planet in its system is a well-suited home for Martians.

If Mars is known as the red planet, New Mars is its pale yellow cousin. The planet is a rocky desert. Its dominant features are a large canyon on one side of the planet and a mountain range on the other. A dwarf planet, New Mars is predominantly dry, dotted in small lakes and oases. The winds in its atmosphere carve patterns in the shifting sand covering its surface, and while there is a near-perpetual breeze, more dangerous sandstorms are rare. Artifacts that seem to function as drilling rigs dot the surface at irregular intervals, and initial readings show reservoirs of a viscous liquid beneath them.

Familiar with a dry and inhospitable landscape, the fleet of Martian citizens who colonized the planet adapted well to the conditions. Having an atmosphere puts it a step ahead of their old home, and the first shipment of terraforming resources have recently arrived and been put to use. Building off one of the larger oases, the colony has already built a healthy settlement. With typical Martian drive, they aim to double the lush and verdant area by the time the next shipment arrives.

Life on New Mars is localized to the oases that dot the planet's surface, and each biota is radically different from the next. Like animals trapped in a tide pool, they have little to no way of interacting with the other groups, and even the plants don't seem to have a way to cross-pollinate between sites. The Martian settlers haven't had any issues traveling from one to another, and all the better, because each features a drill rig left by the builders.



Among the materials the extraction rigs are set to tap are ferrofluids, pools of mercury, and liquid nitrogen. Despite the vastly different requirements for handling the various resources, the rigs all appear identical, without any kind of customization to adapt them to their resources. Much like on other planets under the protomolecule's influence, the reserves are unusually pure, requiring almost no refinement. A task force has already set about learning what they can about the mining rigs to set resource extraction in motion.

PARIS

Paris, the only planet in its system, is an unnatural thing surrounded by unnatural moons. Six of them, spaced evenly around the planet, orbit in unison and glow with a faint blue light at all times. The gentle .5 G gravity is suitable for the Martians who've claimed it, and the MCRN is very interested in the constructs on and around the planet.

Paris is one of the most extensively altered bodies humans have settled. Another planet comprising a single continent surrounded by ocean, its landmass appears to have been entirely paved in an unknown alloy. Inscrutable structures made

of the same material rise from the ground in regimented rows, eerie in their regularity and uniformity. Further inland, the structures grow larger and are set further apart. Few of the larger, imposing buildings have openings, but the smaller ones near the coast—dubbed “The Barracks”—have an entrance as often as not. The lack of workable ground or any manner of plant and animal life makes Paris a difficult place to set up agricultural facilities or cattle farms, and techniques usually reserved for life in stations or ships have been adapted to the surface. Despite the inaccessibility of the larger structures, they emit a low throbbing hum; whatever machinery exists inside still seems operational. Fortunately, one of the structures the colonists have managed to gain entry to is a functioning machine shop, capable of crafting nearly anything imaginable from the mysterious alloy covering the island.

A team of Martian veterans initially settled the planet and later brought the other colonists. Informally an MCRN base, Paris's high concentration of Martians and proximity to the Sol Ring have made it a regular stopping point for Martian ships entering

and leaving ring space. Unlike the Laconia system, they recognize the dominance Medina Station has over the former slow zone and have not isolated themselves from anyone looking to come in or leave. However, everything is carefully documented in true Martian fashion and all traffic carefully recorded, with all cargo and passengers accounted for when docking and leaving.

PERSEPHONE

Ten planets orbit the central star of the Persephone system. Nine of them, massive gas giants, orbit wide around their sun, each between the sizes of Saturn and Jupiter. Persephone, the only terrestrial planet in the system, is flanked by asteroid fields, one between it and the sun and the other between it and its neighboring planet. While the gas giants have tens

of moons each, Persephone has two large moons and seven smaller satellites in its orbit. The nine moons contribute greatly to the condition of the planet's surface; a single massive ocean dotted all over with island chains. The largest continent that can be seen from the surface is still tiny compared to the land masses on Earth, with a surface area roughly equal to Japan. Probes and imaging of the planet instead reveal massive underwater cave systems, connecting the larger landmasses. The smaller islands, dotted over the surface, let in light and fresh air as well as venting excess heat. The rocky surfaces are porous and work as natural water filters when it rains. The surface of the planet is usually calm, despite the unpredictable tides dictated by the numerous moons. Rain is frequent, but hurricanes and severe storms are rare.

The surface ocean is saltwater, but within the cave systems run rivers and pools of brackish and fresh water. Bioluminescent moss provides illumination in darker areas and after sunset, and the pale “fish” of varying sizes and species glow with the same

blue-white light. Trees resembling mangroves grow near the water, especially where the sun reaches, but the dark doesn't stunt much of their growth. How much of the plant's adaptations are the result of previous terraforming efforts is unknown.



While there's no evidence of abandoned alien machinery, the tunnels are all uniform in size and shape, laid out with almost mathematical precision.

Like their predecessors on Illus, Persephone's settlements consist of a loose confederacy of Belters and scientists displaced by the Ganymede incident. Currently, scientists are researching the flora, working on splicing the moss into the trees to create air recyclers that double as light sources. Colonists are already harvesting and farming the moss for export, particularly among Belters who prefer life in a ship to that on a station or planet.

DEAD SYSTEMS

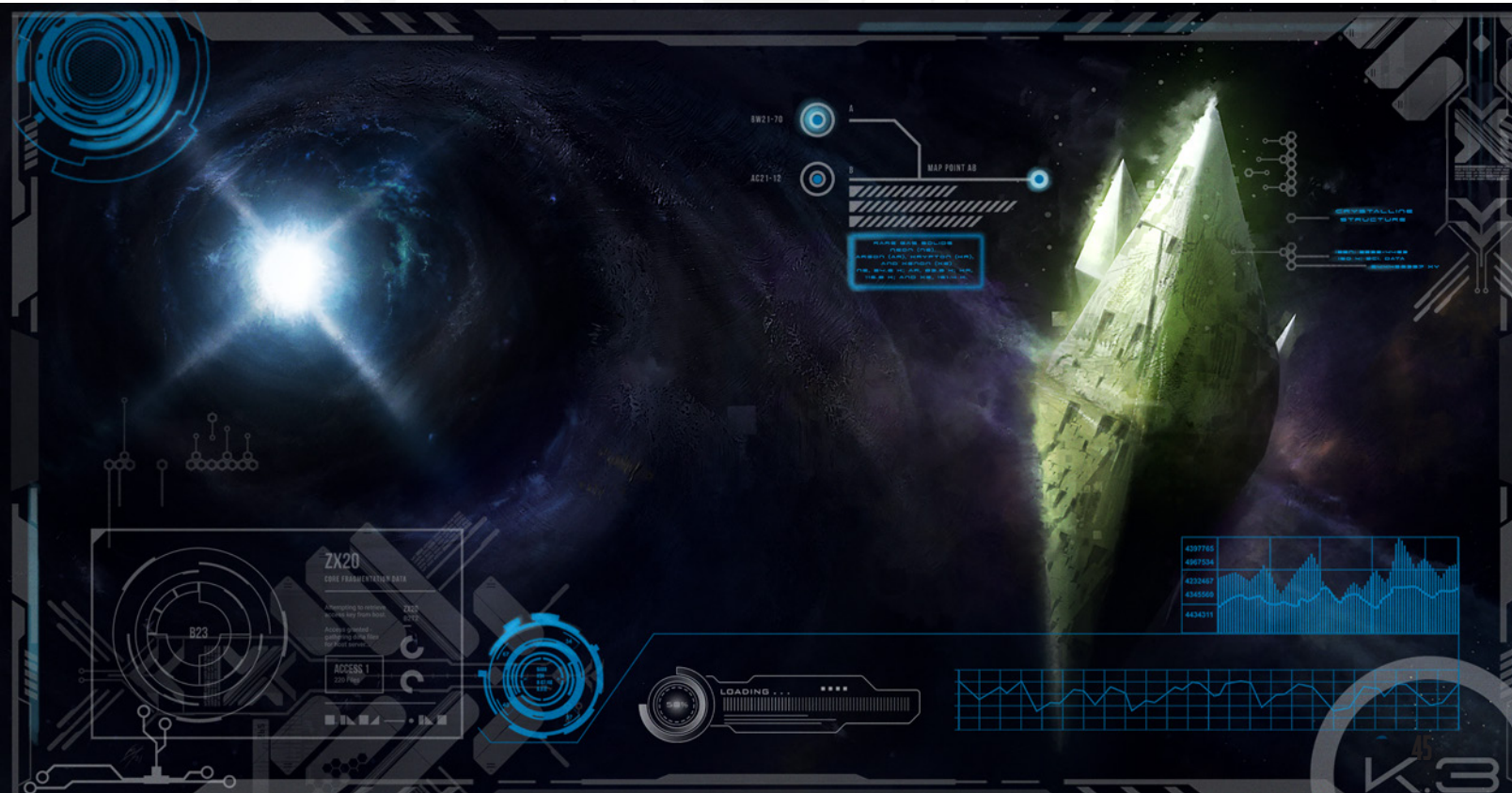
Though all the systems connected by the ring network may have held an Earth-like planet once upon a time, a number have already suffered cataclysmic events that rendered all the planets within them uninhabitable. Whether as a result of evolution lagging behind environmental changes and never quite catching up in the learning curve, attacks on the builder society, or just the odds of an extinction-level event coming due, for one reason or another, the systems beyond some gates aren't suitable to sustain human life—at least, not without impressive terraforming efforts. If the current state of Mars, conflict between governments, and relative trickle of inhabitants into any one world is any indication, the systems are staying dead for now.

ADRO

Among the more innocuous dead systems, Adro is a quiet, empty mystery. Its sun, a white dwarf star, sits silent and alone in a system entirely devoid of planets. Aside from the Adro ring, it hosts only a single other object: a solid diamond the size of Jupiter, spherical and transparent with a faint green cast. What could leave the system so empty is horrific to even imagine, and whether the diamond satellite is a byproduct of the destruction or the only thing left in its wake is up for debate. While there's some interest in studying the diamond to determine if it has any remarkable (or even simply out-of-the-ordinary) properties, no one's mounted a mission to explore it just yet.

That star wasn't natural, it was created. And it was created from a system that looked like Sol. It was manufactured and it was pointed at the ring gate. They aimed it like tying a shotgun trigger to a doorknob. Our bomb ship did something to activate it. Maybe it got something to come look at us, and that's what set it off. I don't know. But it was built to be a booby trap."

— *Tiamat's Wrath*



In more practical conversations, word has begun to flit about concerning drilling into the diamond, using the material to create high-precision instruments, and thus improving mining technology on the new ore-rich planets within other systems. As ever in the dead systems, the issue is one of sustaining the operation while it's carried out. With necessity as the mother of invention, engineers and scientists have begun developing drone systems to remotely explore and mine the "planet," though nothing has yet been tested.

CHARON

One of the most bizarre and hostile dead systems, only preliminary information has thus far come out of Charon. Based on what little information the first ships sent back, the only thing on the other side of the gate is a black hole.

Whatever incredible advances allowed the builder civilization to treat gravity as optional can even withstand the immense power of a collapsed star; the gate and the wormhole reaction within aren't affected by it at all, and despite their relative closeness to the event, they don't allow the gravity warping effects through. With enough study, it's possible to determine when over the billion-year timeline the sun went supernova and collapsed, but wasting valuable resources to determine this isn't at the top of too many to-do lists. It might be the pet project of someone living on Medina, or a puzzle to tease out for someone docking there for a time. It isn't the kind of ring anyone is particularly possessive of, leaving it open to speculation and study by anyone looking to pass the time.

— *Persepolis Rising*

While it's far more probable that the star collapsed long after the builder society did, there's nothing to say they didn't have a use for a black hole. The strongest evidence against it is the lack of technology aside from the gate itself, but even that is suspicious; if the gate is any indication, any technology in the hole is there because they wanted it there. It's not like humanity has anything like it to go in and check; for all anyone knows, it's a perpetual motion machine powering everything the protomolecule does. The only way to know for sure would be to find a way in...and the only way to manage that is to find some protomolecule-adapted ships capable of withstanding the power of a black hole. Not even an Epstein drive can overcome the event horizon associated with such a massively dense body; with aid from builder technology, the power to do so might be within humanity's grasp, but for now it's still beyond their understanding.

NARAKA

Of all the dead systems, Naraka is the worst for wear. Assumed at first not to be a planetary system at all, the space beyond its ring appeared to hold nothing more than an asteroid field. Only after surveillance showed a number of independent fields in relatively stable orbits, each field bizarrely consistent in composition did the pieces come together. Rather than an empty asteroid field, whatever planets were here had all been reduced to so much rubble and frozen core.

There are five distinct ex-planets in a loose approximation of their original orbits, whatever those were once upon a time. Between the destruction and velocity of the broken pieces, it's difficult to say what might have been, aside from the evidence that the system was made up entirely of terrestrial planets. Whatever blew them to pieces, it seems some of the protomolecule's inertia-dampening properties kept them from blowing across the system. While some smaller moons and satellites survived the initial destruction, they're scarred by the impacts and shockwaves of the event. While anything that remains might have resources worth mining, the time and effort are better spent elsewhere with the abundance of more habitable worlds. The system's sun is still stable, despite the destruction all around it; while the Naraka ring doesn't offer much, it's at least safe to enter.

While the Naraka system doesn't offer much in the way of function or habitation, it does make a beautiful hideout. Anyone on the run or needing to lay low has their pick of asteroids and planetoids to hug while they go dark. Food is impossible to come by, but any ship moving through a gate is likely to have a long-term supply. The smaller pieces of matter nearby are suitable ejection mass for smaller ships looking to move without burn, or to act as a heat sink for someone looking to hide or disperse a signature. If all else fails, it's something to drop for cover when making a break for it.

Though any organic matter has long since ceased living, either due to vacuum or radiation exposure, some fragments of protomolecule technology remain on the float. The vast majority are little, more than shrapnel, the remains of builder technology, be it transport, mining, refining, or terraforming efforts. Nothing functional has survived, but enough cobbled-together pieces might pack a punch if properly assembled or integrated into existing technology.

There was something reassuring in the stability of human behavior. Alien civilizations and galactic empire, war and resistance: They were there. But also drinking and karaoke. Sex and babies.

— *Tiamat's Wrath*

NEW WORLDS

This section features new worlds from beyond the ring gates for use in your adventures and campaigns. Each system is present in significant detail, including a system and planet profile, a description of the planet, details on its biosphere, any alien artifacts that are present, information on any settlements or colonies, and finally, a story hook or two.

ABZU

Abzu is a terrestrial planet almost entirely covered in water, with only a few small island chains and volcanic peaks above its surface. It's one of the discoveries of the newly explored systems that poses the key question humanity tends to ask upon discovering something new: How can we best exploit this? While water is a tremendously valuable resource, all of Abzu's water is down at the bottom of a gravity well, and nearly all of its land is under the water. For the time being, at least, the answer regarding Abzu is up in the air or, more technically, beneath the surface.

THE SYSTEM

Abzu's system orbits an F9 yellow-white main-sequence star, brighter and hotter than Sol. The system has eight main bodies: two rocky inner planets closer to the star, another rocky planet beyond Abzu, an asteroid belt, and three gas giants in the outer orbits. The system's ring orbits opposite the outermost gas giant, about 51 AU from the star. The rings of the gas giants are fairly rich in water-ice, which is also of interest to the Krystal Kleer corporation and its parent company, the primary leaseholder of the system.

Abzu itself is located in the midst of the system's life zone, orbited by two moons, named Kur and Ma. Kur is the larger of the two, although both are somewhat smaller than Luna. The interaction of the two moons creates complex and powerful tides on the planet. Both moons show no evidence of life or of alien artifacts, at least on the surface, and have been largely ignored, save for their potential in setting up an orbital transfer station for Abzu.

BIOSPHERE

Abzu's ozone layer and magnetosphere are somewhat weaker than Earth's. As a result, more of its sun's radiation reaches the surface. This seems to have kept life on the planet largely confined to the seas, where the water provides an additional barrier against the intense ultraviolet rays. Visitors to the surface have to take extra care with tinted eye protection along with sunscreen, skin coverage, and anti-UV precautions to avoid severe sunburn. This is complicated by the fact that average surface temperatures on the planet are about eight degrees Celsius warmer than Earth, making the equatorial regions almost unbearably hot. Fortunately, Abzu's few, scattered islands are located in its more temperate zones, featuring only lichen-like plants and algae in tidal pools.

Beneath the water's surface, however, Abzu appears to have a considerable amount of life. Huge numbers of water-breathing fish analogs feed on photosynthetic single and multi-cellular organisms, while they themselves are eaten by larger, predatory aquatic life, some of it quite massive. As on Earth, biomes in Abzu's oceans appear distributed by depth (and amount of light penetration) as

well as geographically, based on the range of temperatures and currents. Life in the more lightless depths compensates with multiple eyes, chemoreceptors, and sensitivity to vibration, along with a few examples of bioluminescence. So far, there is no evidence of truly amphibious air-breathing life on the planet.

The islands of Abzu themselves are also an example of the planet's biosphere, as they all appear to be large reef-structures formed by local coral analogs: tiny life-forms that accumulate mineral exoskeletons, built up in their millions over the generations to form large, rocky outcroppings in the shallowest areas of the planet's temperate zones where the life-forms thrive. These reef-islands, much like on Earth, are habitats to a tremendous array of aquatic life.

ALIEN ARTIFACTS

Initial surveys of Abzu did not reveal any evidence of builder artifacts or structures, but more detailed surface readings suggest there are some sites beneath the surface of the planet's oceans that could be ancient ruins or the remains of larger structures. Such sites are buried beneath heavy layers of silt and require closer examination to determine if they are even worth excavating. The local research team is using drone robots to take closer readings.

Xenobiologists were the first to discover evidence of builder involvement on Abzu beyond the presence of the ring gate: There are a number of biomechanical creatures swimming in its waters, including what have been dubbed "nurse-squids,"

ABZU

STAR TYPE	Class-V Type F9
SATELLITES	2 (Kur and Ma)
ORBIT	285,000,000 km (1.9 AU)
DIAMETER	11,050 km
GRAVITY	0.84 g
LENGTH OF DAY	21 hours, 17 minutes, Earth Standard Time
LENGTH OF YEAR	912.06 Earth Standard Days
ATMOSPHERIC PRESSURE	101.35 kPa
ATMOSPHERIC COMPOSITION	77% nitrogen, 22% oxygen, less than 1% carbon dioxide, water vapor, and trace gases
TEMPERATURE	-80°C (min), 23°C (average), 65°C (max)
GOVERNMENT	Corporate
CAPITAL	Camp Abzu Alpha
POPULATION	A research team of about 100



multi-limbed biomechanical creatures vaguely similar to Earthly squids (and disturbingly similar to much, much smaller versions of what arose from Venus). They appear to “herd” and help to cultivate various species on the planet for unknown reasons.

SETTLEMENTS

Abzu and its system are under a UN exploration charter to the parent corporation of Krystal Kleer, a water-mining company, which took interest in the presence of a water planet in one of the newly charted systems. The planet was named after the ice-hauler *Abzu's Bounty*, which was lost to pirates in the Sol System, itself named for an ancient Babylonian deity of the primordial seas. Unfortunately, Krystal Kleer's charter makes about as much sense as assigning the study of rodents to a corporation that produces cartoons about mice, since the company's expertise is focused on deep-space and orbital ice-mining and water extraction, not aquaculture or oceanography.

Krystal Kleer has nevertheless established scientific research outposts on two of Abzu's larger chains of reef-islands, designated Camp Abzu Alpha and Camp Abzu Beta. The residents have taken to calling them “Caw” and “Cab”—for CAA and CAB—or simply “A” and “B.” Each outpost is made up of a crew of fifty, two dozen scientists and technical personnel, accompanied by support crew, security, and command personnel. They work with the survey ship *Abdelghany*, parked in orbit around Abzu, which maintains a minimal crew of 24 on board, and rotates with some of the ground crew using shuttles. The researchers on Abzu are happy as proverbial clams, with lifetimes of study and data-collection ahead of them, but the rest of the crew on the planet tends toward boredom, and Captain Ruth Dorn, in charge of the mission, has to deal with disciplinary matters along with trying to follow corporate directives while encouraging lines of research that could lead to something useful (which is to say “profitable for the company”).

With the Alpha and Beta camps established, the next priority of the team's engineers and technicians is the construction of submersible vehicles from parts shipped down by the *Abdelghany* with an eye toward the eventual construction of an aquatic base for further exploration and study. They currently make limited use of small surface watercraft around the reefs.

STORY HOOK: IN THE DEPTHS

Priorities shift on Abzu when initial submersible missions from Camp Abzu Beta discover evidence of a substantial builder ruin beneath layers of silt and sand in the relatively shallow depths off their reef site. In fact, evidence points toward the reef as having grown on and over builder ruins on the planet, with the possibility that other reefs have done the same. Orders come down to immediately begin exploring the ruins, and the researchers repurpose their available equipment to do so. However, the first exploration team goes missing after finding an entrance to the ruins, followed by unusual behavior on the part of the nurse-squids, which begin keeping the rest of the crew away from the ruins, resulting in one attack when they ignored the creatures to try and stage a search-and-rescue operation.

AKRAGAS

The Akragas system, taking its name from the ancient Greek settlement, was first surveyed by Belter opportunists who landed during the first rush into the ring systems. Only interested in asteroids with easily accessible minerals, they distributed their planetary survey data freely, as a small act of rebellion against the UN.

The planet is dominated by skyscraping pylons and what initially seemed to be heavy forestation but has since turned out to be something far more interesting. In fact, the “forests” are outgrowths of something more akin to colossal fungus or coral—a single living global organism. This organism might be the largest life-form ever discovered.

THE SYSTEM

The system has seven planets, including Akragas. The two innermost planets share the same orbit, maintaining their position from each other on opposite sides of the sun. This orbital oddity was enough to warrant a UN investigation, but so far, no evidence of manual intervention by the ring builders has been found.

Akragas itself is the sixth planet from the sun, orbiting on the periphery of the system, with seven high albedo moons of its own. The complex orbital mechanics mean that the long nights are punctuated with different periods of brightness and complete darkness depending on which moons are currently in the sky, and shadows shift and move in different directions.

AKRAGAS

STAR TYPE	G7V
SATELLITES	7
ORBIT	194,500,000 km (1.3 AU)
DIAMETER	9,884 km
GRAVITY	0.7 g
LENGTH OF DAY	38 hours, 12 minutes, Earth Standard Time
LENGTH OF YEAR	589 Earth Standard Days
ATMOSPHERIC PRESSURE	98 kPa
ATMOSPHERIC COMPOSITION	77.3% nitrogen, 22.3% oxygen, 0.3% krypton, 0.1% trace gases
TEMPERATURE	−4°C (min), 12°C (average), 18°C (max)
GOVERNMENT	None: independent homesteaders
CAPITAL	No capital city; settled region known as Oikos
POPULATION	500-600

BIOSPHERE

Akragas has a somewhat overcast, dismal feel. Between the constant iron-gray clouds and the long reaches of a world-spanning “forest” of a fungus analog, some settlers call it the Shadowlands. The forest itself is a global phenomenon and is not a plant but a single living organism. The settlers call the fungus analog Dasos (a Greek word for forest), and it is present on the entire surface of the planet. The fungus extends into the rivers, seas, and oceans and is even present below the ground of the frozen polar regions. Dasos has an earthy, musty, cloying smell that most people find unpleasant. The growths reach heights of 100 meters or more. Vertiginous branches extend high into the sky, casting shadows far and wide.

Amidst the fungal forest are creatures that were initially nicknamed moonspiders. However, on closer inspection, they look more like a cross between crabs and starfish that are about a half meter in diameter. Early observations indicated a symbiotic relationship between the forest and these spiders. They consume sections of the forest and spin luminous webs laced with inert protomolecule material. Interactions with the spiders have been minimal, and the settlers have kept their distance for the most part. If they feel threatened, the spiders typically spray their webbing at an assailant and then retreat into the forest, leaping high or even burrowing into the ground. The spiders themselves are all identical in size, suggesting they have been constructed, perhaps specifically to service Dasos for some unknown end.

Dissecting spiders reveals a confusing mixture of alien biology and advanced technology. The settlers have carried out numerous experiments with the moonspiders and have discovered that the fluids used to create webbing have potent healing properties when applied to human wounds. These experiments are still at an early stage, and long-term side effects have not been ruled out. Some of the current settlers have suffered traumatic injuries traversing the forests and have been healed using these moonspider fluids. Hunting the spiders for further research has proven difficult for the settlers both philosophically and practically. The spiders themselves can emit focused magnetic fields that confuse the settlers’ technology, making them difficult to track.

ALIEN ARTIFACTS

The main manifestation of alien technology discovered so far are the eerie pale creations spun by the moonspiders deep in the heart of the forests. These range from simple web-like constructs to breathtaking pylons reaching kilometers into the

sky. These pylons are surrounded by lightning storms near their summits and may be the cause of the constant cloud coverage on the planet. The pylons are columns with a diameter of around ten meters but appear solid despite their vast heights.

Even greater, more complex, and enticing constructs lie within the unexplored depths of the forest. These include a central hub which acts as a hive for the moonspiders. Each moonspider must return there regularly for rest. The hub is roughly dome-shaped and stretches across for forty kilometers. It is tightly integrated into the forest's structure and goes deep "underground" inside the living forest.

SETTLEMENTS

The first settlers were led by a Martian scholar named George Alexander. Fiercely intelligent and a compelling demagogue, he has created a local culture driven by the sheer force of his magnetic personality. He is a professor of history and politics with very specific theories around the development of social groups, particularly regarding the role of governing bodies. He believes that self-governing, cooperative, yet independent family units lead to a better society. Considering his role to be pivotal in this new stage of history, he has named the planet after Akragas of ancient Greece; arguably the most successful colony within the greater Greek Empire.

The current settlements occupy arid plains near the edges of the global forest. The plains themselves are scrubland of dirt with occasional jutting spikes analogous to trees. It was recently discovered that these are offshoots of the forest, still connected via a complex root system.

The planet is populated by approximately one hundred settlements of family units of 4-6 people. The settlements are typically about ten kilometers from each other and located within approximately a 250-square kilometer area. Alexander has named the region Oikos after the Greek word meaning a unit of society. The settlers are philosophically independent people who have lost faith in the sheer functionality of large governing bodies and large populaces. They rely primarily on the forest for building materials.

Most of the settlers are academics, and many are scientists who have been studying the forest. The researchers partake in regular, scheduled assemblies every ten days using a large cabin built from wood analog taken from the forest. These meetings are used to communicate together, share information, and also check up on each other's wellbeing. Once it was posited that the forest was in fact a living entity that may even have sentience, they have begun debating the morality of harvesting it, creating a rift within the community. Some believe that harvesting material from the forest is actually tearing into the living body of a unique and ancient life form. Others think they may be doing nothing more harmful than trimming its nails or hair and not causing any actual harm, possibly creating circumstances for new growth. The scientists are now focusing on understanding more about the true nature of the forest to help end this debate.

STORY HOOK: INTO THE WOODS

An assembly notes the absence of a family whose settlement is on the edge of the forest. A search party discovers their homestead has disappeared, replaced with new growth of forest. One notable point is that the head of the settlers had been healed from serious injuries using moonspider fluids. Pylon activity is at an all-time high, and cloud coverage is almost global. At the same time the spiders appear to have disappeared, possibly retreating into the depths of the forest. George Alexander puts out a request through Medina Station for independent agents to assist in searching for the missing settlers, or perhaps the crew are already here delivering supplies and he asks them for help. They must venture into the heart of the forest and perhaps learn the true nature of this world-spanning creature.

STORY HOOK: HOSTILE ENGAGEMENT

Independent ships of unknown origin have landed about 5 km from one of the settlements near the edge of the forest. When representatives from the settlement approached the ships they were fired upon. Land vehicles have been witnessed entering the forest and returning carrying webbing, dead moonspiders, and other materials. The moonspiders have become agitated as a result and several colonists have gone missing. The PCs are hired to investigate the mystery ships and hopefully put a stop to their poaching.



ALEC-11

Imagine the surprise on the faces of the first MCRN crew to exit the ring at ALEC-11 when they found not a planetary system but an enormous structure constructed around a red dwarf star. Long thought impossible or confined only to thought experiments, ALEC-11 is a megastructure unlike any other in the known universe: a Dyson sphere. While not as large as a sphere encompassing a mainline star, ALEC-11 is a feat of engineering it will take centuries to understand. It completely surrounds the host star (known only as ALEC). The ring orbits inside the sphere and appears to be the only way in and out.

ALEC-11, named for its discovering captain's daughter and her birth month, spins enough to provide gravity at and near its equator. While the "northern" and "southern" poles of the sphere have no real gravity to speak of, they host ring builder reactors and machinery that have kept ALEC-11 active for countless eons. Because of its immense surface area (approximately 2,810,000,000,000,000 km, about 5.5 million times the total surface area of Earth), the MCRN has only just begun to map and understand ALEC-11's features.

THE SYSTEM

Little is known about the ALEC-11 system apart from what lies inside the sphere. No one has yet found a way through the interior to the space beyond, so ALEC-11's location is a mystery. As far as the MCRN is concerned, the entire system consists of the interior of the sphere and its surface area. The ring orbits ALEC approximately 0.05 AU from the star, and it is the only feature apart from ALEC (and the interior of the sphere itself) visible in the sky from the surface.

ALEC is a very cool red dwarf star, at the far low end of the spectrum where fusion is even possible. It emits a reddish magenta light; Martian personnel who have visited Earth have described the daylight as similar to a red-orange Terran sunset.

A small fleet of MCRN research vessels are engaged to map ALEC-11's vast surface. So far, they have managed about 1% of 1% of it: the area directly around Fort Ponderosa. A handful of vessels have sent survey teams to the poles to attempt landings and determine what the machinery there does and its overall condition. They discovered a network of advanced atmospheric systems and heat sinks that appear to keep the conditions in the sphere regulated. The machinery all seems to be in working order, or there were enough redundancies built in that nothing has catastrophically failed—yet.

BIOSPHERE

ALEC-11 has a remarkably Earth-like atmosphere; a slightly higher oxygen level makes breathing the air on ALEC-11 somewhat tranquilizing at first, but humans have readily adapted. Its gravity is more than twice that of Earth's at the equator. Martian settlers train extensively for duty on ALEC-11, and Fort Ponderosa is offset along the inhabited band so that its gravity is closer to Mars'. The farther one gets from the equator, the less gravity there is—a result of the sphere's spinning motion. Researchers suspect this is why the so-called inhabited band ends when the gravity reaches 0.3g as it would become too easy to achieve escape velocity beyond that (the result being that a person or animal could simply jump into the sun.)

The inhabited band is covered with soil, plants, and animals of all kinds, forming a connected ecosystem. So far, researchers have only studied what exists around Fort Ponderosa, although their findings are fascinating: The plants and animals inside the sphere appear to come from several different and distinct evolutionary paths. Currently, the researchers believe that the ALEC-11 ecosystem is constructed and populated by species from many different planets.

The entire sphere has weather and cloud systems as well, although these appear to be regulated by the machinery at the poles. No one has yet experienced a hurricane or other devastating atmospheric event.

ALEC-11

STAR TYPE	L0 (Red Dwarf)
SATELLITES	0
ORBIT	14,960,000 km (0.1 AU) from the sun
DIAMETER	29,920,000 km (estimated minimum)
GRAVITY	2.1g (equator); 0.8g (Fort Ponderosa); 0.002g (poles)
LENGTH OF DAY	N/A
LENGTH OF YEAR	Unknown
ATMOSPHERIC PRESSURE	155.43 kPa
ATMOSPHERIC COMPOSITION	74% nitrogen, 25% oxygen, 1% argon, ~0.01% trace gases
TEMPERATURE	30°C (min), 33°C (average), 36°C (max)
GOVERNMENT	MCRN Protectorate; military law
CAPITAL	Fort Ponderosa
POPULATION	4500

ALIEN ARTIFACTS

The machinery that exists beyond ALEC-11's inhabitable band is all connected to the sphere itself and appears to serve several functions. Heat sinks help regulate the surface temperature of the sphere, keeping heat from building up by dissipating it through the sphere's outer shell. Air recyclers on a massive scale keep the atmosphere flowing and moisturized and help regulate the weather by stimulating cross-streams of air to prevent massive winds and storms from the Coriolis effect.

MCRN surveyors and researchers are still at a loss to explain the still-operational machinery within the sphere. Theories as to its use include powering an exterior defensive grid, maintaining attitude control, and even controlling access to patches of land within the inhabitable band—effectively giving animals their own safe habitats where they won't be bothered (or eaten) by other animals.

SETTLEMENTS

Fort Ponderosa is the major settlement on ALEC-11. The fort is a hastily constructed amalgam of buildings, fabricators, and equipment; it is effectively a frontier town and research station combined into a single community. Of its 4500 inhabitants, half are scientists and researchers; the rest are MCRN.

The site for Fort Ponderosa was chosen because it's easily defensible, has plenty of room for landing even larger-sized ships, and is still close to some of the flora and fauna the research teams wished to study. It sits atop a (relatively) large rise on an open plain, a bulge in ALEC-11's topography nearly 1.3 km tall. Although there has been no sign of hostile activity, the fort is walled as a precaution, and research teams have become relaxed in their attitude to taking rovers out on extended trips.

The fort itself maintains the highest level of military discipline among the MCRN soldiers, sailors, and marines stationed there. The research scientists, on the other hand, are far more relaxed. A few have managed to open make-shift bars and entertainment centers. It's hardly Ceres, but anyone assigned to ALEC-11 can still find a good time in Fort Ponderosa.

There are several smaller camps around Fort Ponderosa, none of them permanent. Research teams occupy them for several days or even weeks at a time, and none of them house more than fifty people.

STORY HOOK: FOO FIGHTERS

Patrols from one of the smaller outposts have reported fast moving lights (roughly shuttle-sized) in the skies. They have not been able to make an ID and the sources of the lights do not show on radar. The PCs are recruited to investigate the mysterious flying objects and determine if they are something native to ALEC-II (possibly repair drones or some kind of life form) or if they are from off world (perhaps using stealth technology). If they are native, the researchers would like to acquire one to determine their purpose and if they are dangerous.

STORY HOOK: DAMAGE CONTROL

How do we fix this? One of the survey teams at the sphere's north pole discovered kilometers of wrecked machinery: heat sinks and atmospheric regulators damaged beyond repair. Worse, the damage looks recent—within the last few weeks. Is someone trying to sabotage the sphere? If so, how could they have caused this much damage so quickly? Do they have a weapon that could be turned against the colonists? Perhaps most importantly, what's their motivation for doing so?



AVALON

The planet of Avalon is a genuine paradise. The temperature is warm and pleasant, the land masses feature sandy beaches and lush forests, and the wildlife so far shows no signs of aggression toward human settlers. The lack of natural resources makes it unappealing for mining, but the Nonpareil Living Corporation saw an opportunity: a luxury planet for the super-wealthy. The corporation has invested in extravagant housing and resort amenities, luring the richest humans from Earth, Luna, and Mars to Avalon's beautiful shores. Further, the company needs many employees to tend to the residents of Avalon and is constantly recruiting with promises of living in paradise.

THE SYSTEM

Ten planets orbit the sun, but Avalon, the fourth closest, is the only habitable one. However, the largest of its three moons, known as Arthur, is also habitable, thanks to extensive terraforming by the ring builders. The moon appears to be part of a planetary defense system, but while the terraforming is still holding up after all this time, the weapons are not. An asteroid belt separates the sixth and seventh planets. Initial scans have not shown any other automated defense systems besides what's inside the moon. While the star is not a binary system, there is another star close enough to appear in the sky as large as a moon. This star demonstrates odd behavior, varying in brightness over the course of several years. One of the Nonpareil Living Corporation's engineer's claims that the star's variations are artificially induced and that it is part of a message from the ring builders.

BIOSPHERE

The climate on Avalon ranges from temperate to sunny, with frequent light rains. Its moon is much cooler with less atmosphere to trap heat, though not too cold for humans to walk around unprotected. Avalon has a variety of wildlife, including small monkey-like creatures that are quite friendly to the settlers, especially if they offer food. While Earth food can make the creatures sick, the Nonpareil Living Corporation sells packets of food to feed to them instead that are derived

from local plants and animals. There are also creatures that are lanky like deer, but reptilian in appearance, with purple scaly skin. The Nonpareil Living Corporation established a racetrack where people race these creatures, known as lopers. Large fish analogs swim in the oceans and often leap out of the water in a beautiful display.

The habitable moon, Arthur, has some plant life, but its wildlife is limited to some small wasp-like insects that are hard to spot but sting when disturbed. The venom causes a nasty reaction in humans, so residents of Arthur are quickly testing out various repellents. Burrowed holes in the ground a few inches in width indicate there might be some other kind of life form, but no one has seen them yet.

ALIEN ARTIFACTS

The alien artifacts on Avalon are fairly limited compared to some other planets, and are mostly structures that may have simply been homes. One enormous structure has many unusual but elegant looking shaped pieces of glass and stone. They vary in size from one to five meters tall, and interwoven strips of varying materials split off and come back together, seemingly defying gravity. Settlers on the planet speculate that it was an art museum, and the Nonpareil Living Corporation certainly bills it that way now. One underground facility contains nothing but rooms of large metal sheets covered in strange dot patterns, and it is believed to be a library or other information storage center. There are several docks built for spaceships that line up with the moon Arthur's orbit, where shuttles can then bring passengers to the surface.

Arthur has much more involved alien technology, with an obvious array of weapons and a great deal of electronic equipment that was most likely a commu-

nications station. Several loading docks take advantage of the best positions relative to the planet, making it easy to send shuttles back and forth, enabling work that is polluting, unsightly, or which otherwise conflicts with the image of the resort planet to take place on Arthur instead of Avalon itself.

AVALON

STAR TYPE	G3 (main sequence)
SATELLITES	3
ORBIT	224,396,806 km (1.5 AU) from the sun
DIAMETER	13,500 km
GRAVITY	1.1 g
LENGTH OF DAY	27 hours, 35 minutes, Earth Standard Time
LENGTH OF YEAR	399 Earth Standard days
ATMOSPHERIC PRESSURE	98 kPa
ATMOSPHERIC COMPOSITION	63% nitrogen, 27% oxygen, 10% hydrogen
TEMPERATURE	-24.1°C (min), 15.9°C (average), 45°C (max)
GOVERNMENT	Nonpareil Living Corporation
CAPITAL	Shangri-La
POPULATION	2,700



SETTLEMENTS

The luxury planet concept has been successful, and quite a few wealthy individuals have moved to Avalon, traveling there over several months on luxury spaceships. The Nonpareil Living Corporation maintains a start-of-the-art communications hub to ensure that residents can continue conducting business as usual (with a significant time delay, of course). However, residents generally have trusted associates handling business at home. The networks do allow for input on vital business decisions. The corporation keeps spacecraft going back and forth between Avalon and Earth and Mars to allow its residents to depart whenever they wish or send and receive packages as fast as possible.

The resorts offer every amenity imaginable to their fabulously wealthy clientele. Pristine beaches, gourmet meals, and live entertainment are a few of the features of living on Avalon. The race-track allows residents to bet on their favorite loper to win. Sailboats and yachts dot the oceans with clients of a nautical bent. An enormous game preserve has many animals imported from Earth and other planets accessible through the ring gates for residents to hunt. Rumor has it the Nonpareil Living Corporation has an obscene standing offer for anyone who can procure a dinosaur from Jotunheim for the preserve. There are guided tours of scenic locations all over the planet, and many residents have their own high-end spacecraft to take to the skies themselves.

The residents have access to all the best care as well. The Nonpareil Living Corporation hires many skilled medical personnel to make sure their clients stay in the best of health. Personal trainers nearly outnumber actual residents, and personal chefs ensure everyone is eating delicious and healthy food.

STORY HOOK: PROTEST

The corporation has many employees at the resorts, seeing to the residents' every need. However, many of the employees are stationed offsite on another facility on Arthur. The resentment is growing among the beta site employees, stuck with unpleasant jobs while living on a moon instead of living on the paradise planet they thought they'd been promised. Unfortunately, their contracts specified that they could be assigned to either site. The employees stuck on Arthur sometimes try to leave on the return vessels back to the solar system, but their contracts specify a ten-year term of employment, not counting travel to and from the system. While a good lawyer could probably fight the contract as unenforceable in any courts in the solar system, the employees have limited ability to fight it while trapped on a faraway moon with no transportation arriving that doesn't belong to the Nonpareil Living Corporation. A small group of the employees have decided that the only way to leave is to commandeer a spaceship by force. They are secretly meeting at one of the alien structures, trying to figure out how to get it working again. They hope to use the planetary defense system to hold a spaceship hostage and use it to get back home. However, one ringleader thinks they could use it to take over Avalon itself, claiming its luxurious living for themselves. The wealthy living on the planet have no idea how close they are to their idyllic lives descending into complete chaos.

BABYLON GARDENS

Babylon Gardens is one of the largest examples of ring builder megastructures, a confounding mix of planet and space station. The system shares its name with its only major feature: a titanic ring, like Medina station written on a cosmic scale, wider than the Earth and encircling the system’s star. With almost 10 trillion square kilometers of surface habitat, this construction project consumed any pre-existing planets the system may have once had, likely requiring the importation of unfathomable amounts of resources—perhaps whole worlds—from neighboring systems.

THE SYSTEM

The Babylon Gardens system is an unremarkable main sequence star system, save for its existing planets, satellites, and asteroids being cannibalized to form the ringworld. A thin accretion disk of gases and trace ice remains in far orbit between the gate and the ringworld, providing potential reaction mass, but beyond the auroras that sometimes ripple through this mass following solar flares, little exists between the entry to the system and its only destination of note.

The ringworld itself is wider than Earth’s diameter and encircles the star at a distance slightly smaller than Earth’s orbit. The space-facing surface of the ring is irregular, marked with organic-looking struts, spars, and supports that baffle radio waves and create an incidental stealth effect—had the structure not blotted out a considerable band of the sun itself, initial surveys may have recorded the system as entirely empty. Meanwhile, the sun-facing surface is designed for habitation and retains a breathable atmosphere of nitrogen, oxygen, and hydrocarbons held in place through a combination of gravity and electromagnetic bottle. Continents, oceans, seas, islands, and titanic, landmass-sized buildings line the living inner surface of Babylon Gardens, but a lack of tectonic activity keeps the seas shallow and most geological formations limited in height despite the low gravity.

Babylon Gardens constantly copes with enormous tidal and centrifugal pressures, which are managed by a series of 82 “shepherd” moons. Like the ringworld itself, each moon is an artificial construct, with erratic courses taking them both inside and outside the megastructure’s circumference. In addition to maintaining the ringworld’s structure and easing orbital stress, the moons also seem to generate a constant flow of waterways on Babylon Gardens via tidal action. Despite the moons’ ministrations, the ring itself has cracked in places thanks to 2 billion years of neglect. It remains whole, but dry stretches of the surface show where entire seas have drained into the substructure, while small pockets of territory have frozen over from exposure. Regional failures of its artificial electromagnetic field have also blasted portions of the surface with direct solar radiation or hard vacuum. Safety systems keep these catastrophes isolated to a few million square kilometers of territory, but they still affect weather patterns for thousands of kilometers beyond what is safely contained.

tority, but they still affect weather patterns for thousands of kilometers beyond what is safely contained.

BABYLON GARDENS

STAR TYPE	G2 yellow main sequence
SATELLITES	83
ORBIT	122,087,000 km (0.8 AU) from the sun
DIAMETER	13,127 km
GRAVITY	0.75 g
LENGTH OF DAY	Constant
LENGTH OF YEAR	80.9 years
ATMOSPHERIC PRESSURE	98 kPa
ATMOSPHERIC COMPOSITION	73% nitrogen, 25% oxygen, 1% neon, 1% hydrocarbons
TEMPERATURE	15°C (min), 30°C (average), 42°C (max)
GOVERNMENT	None
CAPITAL	None
POPULATION	None

BIOSPHERE

Babylon Gardens’ atmosphere is a thick soup of oxygen and complex molecules—including a variety of organics—that can only be artificial and deliberate. The mix is breathable to humans in the short term, though buildup of volatile molecules can cause lung irritation and asthma-like symptoms after several hours without a filter. The resulting primordial soup environment has created at least six distinct biochemical models that live in close proximity and in some cases, even form symbiotic relationships. Boron-, germanium-, and titanium-based life flourishes in overlapping pockets. A carbon-based ecosystem that relies on arsenic rather than phosphorous for more complex energetic compounds flourishes in the arid former sea beds. In many cases, these different biological clades have evolved to use elements toxic to their competitors, or to exploit neighbors’ waste products. In many cases, hyperspecialization is the only route to survival, leading to extreme evolutionary pressure. The result is a diverse ecosystem of riotous colors and much higher density than a comparable Earth environment.

Most of Babylon Gardens’ dry land and shallow seas are covered in life. Most plant analogs specialize in light wavelengths, so the grasslands and forests are clouds of vivid blue, red, or violet leaves and tubercles. The trees of the ringworld benefit from the light gravity and grow to towering heights—often supporting populations of other plants and parasites in their topmost branches.

Animal analog life is likewise diverse; in many cases animals have developed plant- or fungus-like traits allowing them to exploit extremely narrow niches. The lemur-like fodder monkey's lifecycle involves a long trek to the forest floor where it eats the fatty seeds of the monkey blossom before ascending a tower-like mega-tree. It digests the husks, but a specialized digestive organ deposits the hard, inner seed in the flesh of the monkey's back, where the blossom takes root and shares nutrients with the ape analog during its long hibernation cycle.

One of the most widespread of the Babylon garden natives are the arc albatross. Combining traits common to both animals and fungus, these strange flyers are capable of short periods of land-based mobility—generally landing to take on carrion or water before climbing to high altitudes—then use a combination of gliding wings and float bladders to remain aloft for months at a time in a dormant state as they absorb solar energy and digest. Beginning life as a spore, they spend twenty months in an anemone-like pupal stage, clinging to the sides of trees or mountains. The albatross ride the jet streams that flow like rivers in the upper atmosphere and are one of the driving forces that spread seeds, pollen, and microbes to new biomes and trigger new spurts of evolutionary activity—or pandemics.

Much of the marine life on Babylon Gardens produces electricity as a waste product—a result of piezoelectrical structures within their muscles—which supplies nourishment to plankton-like microbes that operate on yet another distinct biochemistry. These microbes far predate most other forms of life on the artificial world and are likely a biomechanical element of the ringworld's original industry that survived the ring builder apocalypse.



ALIEN ARTIFACTS

While the ringworld's extensive surface area can provide living space for a population numbering in the hundreds of trillions, initial surveys suggest the megastructure was built to capture an order of magnitude more solar energy and solar wind than planet-based stations could. Babylon Gardens exists to process trace materials and energy into a variety of complex molecules used as the basic components of advanced ring builder technology.

The lack of seasons on the circular ring means less erosion to tear architecture down. The ruins of vast urban landscapes still stand alongside enormous factory complexes. Most of the functional nano-scale assembly lines that performed the work of assembling made-to-order molecules have degraded, but enough technology remains to provide generations of new insights for human civilization—provided it can be located and recovered.

SETTLEMENTS

The archeological and technological significance of the ringworld inspired the United Nations to list Babylon Gardens as a so-called "heritage system," forbidding colonization efforts until after a thorough scientific inquiry. This combined with a general superstitious dread of ring builder artifacts has kept the Gardens isolated to the realm of Belter fairy tales and spooky stories traded among freighter crews. Two colony ships—the *Mindy* and the *Prem Katha*—entered the system during the initial rush to claim worlds, but neither established a thriving colony or have been heard from since passing through the gate.

STORY HOOK: A CALL FOR HELP

The UN hires the crew's ship to make a delivery to a research team on Babylon Gardens. During the delivery, the crew pick up a distress signal coming from another part of the ringworld from the *Prem Katha*. The signal is weak, but the crew are able to pinpoint it. However, when they arrive, they discover an empty camp. What happened to the crew of the *Prem Katha*? Were they all killed off by local flora or fauna? Did they run afoul of builder technology? Or maybe it's an ambush?

BANDERA

Bandera is a mysterious, geologically-active world of dusty mesas, strange slow-moving cactus analogs, and dangerous, bioluminescent reptile-like creatures, with ancient machinery just below the surface. The world is considered to be Martian territory, but the settlers are growing increasingly independent, building their culture around their ancient Texan/Mexican ancestry. Even the name Bandera (“flag”) was chosen as an act of defiance representing an independent nation-state.

THE SYSTEM

The Bandera system contains just three planets, with a conspicuously large ring of debris spread around the sun between the first and second planets. Analysis indicates that the system originally had two additional planets, which collided at some point, leaving a field of debris orbiting the sun. The field sits in the orbital plane of the system and is much denser than Sol’s asteroid belt. Although the risk of an asteroid strike is still remote, ships approaching Bandera Prime often detour out of the elliptic to avoid any possible collision.

Bandera Prime has ten moons, orbiting at the same distance around the planet and spaced out equally. All are of equal size and apparent composition except for one, affectionately known as Niñito (“little boy”) by the settlers. At some point in the distant past Niñito was hit by a large chunk of rock from the debris ring, making it noticeably smaller and misshapen compared to its siblings.

BIOSPHERE

Bandera Prima (often called simply Bandera) is almost entirely covered in reddish, dusty deserts. Between the canyons, plateaus, and mesas, the similarity to the Southwestern United States has been enough to warrant the nickname “Newer Mexico.” The planet is geologically active, with regular small earthquakes occurring daily.

What initially looked to be saguaro cacti have turned out to be long-lived, slow-moving creatures in a state similar to hibernation. They inch across the deserts and house many varieties of small flying creatures. Over time these cactus analogs petrify to leave eerie statues across the landscape.

Flashflies are five-centimeter-long flying creatures similar to beetles; often gathering in swarms of hundreds. They have long proboscises which they use to probe into the ground. They are capable of using these to draw blood from humans,

although they cannot metabolize human blood. They are not attracted to the scent of humans but have occasionally mistakenly attacked humans when they’ve been covered in wet dirt. Flashflies nest inside the petrified cacti, slowly burrowing into them.

Blinkworms are 3-meter-long, blind, snake-like creatures with a spiraling stripe of bioluminescent ridges along their length. Typically nocturnal hunters, they burrow beneath the ground during the day and feed on insect analogs such as flashflies. They make a strange whirring sound as they travel across the ground and when they are just beneath the surface.

Rockbulbs are sandy-colored creatures similar to toads. They are lethargic creatures, and when sitting, can be easily mistaken for rocks. They are covered in venomous spines and wait for creatures to touch them before injecting them with a paralyzing toxin. Once the creature has been paralyzed, the rockbulb slowly devours them exhibiting tremendously strong jaws.

Most of the indigenous animals are forms of lizard analogs. The largest creature discovered so far is a 9-meter-long crocodilian, carnivorous, apex predator, nicknamed a “neon gator” or “discodile.” In addition to razor-sharp claws and teeth, the creatures have thickly-armored skins and secrete caustic fluids. None of the creatures are edible to humans, and in fact, most are lethally poisonous.

Nearly all animals exhibit some form of bioluminescent properties. This means that the nights on the planet are a spectacular display of glowing rainbow hues from blinkworms, flashflies, and rockbulbs. The sounds of the night are mostly the whirring of the blinkworms and the occasional screeches of the rockbulbs.

BANDERA

STAR TYPE	G2V
SATELLITES	10
ORBIT	120,000,000 km (0.8 AU) from the sun
DIAMETER	14,830 km
GRAVITY	1.09 g
LENGTH OF DAY	22 hours, 11 minutes, Earth Standard Time
LENGTH OF YEAR	57 Earth Standard days
ATMOSPHERIC PRESSURE	87 kPa
ATMOSPHERIC COMPOSITION	76.2% nitrogen, 16.3% oxygen, 7.5% carbon dioxide
TEMPERATURE	−12°C (min), 28°C (average), 36°C (max)
GOVERNMENT	MCR
CAPITAL	El Hogar
POPULATION	2,500

ALIEN ARTIFACTS

Cracks in the land from geological activity reveal evidence of some alien technology beneath the planet's crust. From the small areas revealed so far, the purpose of this technology is indecipherable. Fractured craters on the surface of the planet have exposed a number of huge metallic disks each about a kilometer across. Each disk is covered in its own unique pattern of symbols. These have proven impossible to decipher. The purpose of the disks has not been discovered yet, but they have proven to be extremely resilient. Even the most powerful explosives and mining tools have struggled to do anything more than cosmetic damage to them.

The moons exhibit some form of luminescent qualities similar to the native animal species. The moons emit flashes of light from time to time in what appears to be some kind of sequence. The fact that Niñito is both damaged and in the "wrong" orbital position appears to have disrupted the sequence. This moon does not flash, so it could be a "missing link" in the chain.

Along with the symbol-covered disks, mining operations on Bandera Prime reveal additional evidence of inert builder machinery, typically bringing up fragments of an unknown material alongside the ore. If the machinery within the planet were to activate, then perhaps all these fragments may activate, and their true purpose would be revealed.

SETTLEMENTS

The settlers on this planet are from the Martian Congressional Republic, with a high percentage of the leadership being ex-military. The Mariner Valley's Texan ancestry is particularly reflected in the culture of the new world through the prevalence of the "Mariner Valley drawl," the settlers' proud, independent nature, and the Spanish place-names they've bestowed. They have been particularly efficient in establishing a strong capital settlement here named El Hogar ("home"). This has been the main base of operations on the planet since the settlers first landed. Extensive copper, nickel, and cobalt mining has been the main draw to the planet as it is rich in these mineral resources. El Hogar itself is next to a large open-cast mine, and the other settlements around the world are invariably situated near mines. Extraction, smelting, and refining facilities are also common for processing the mined ores. This heavy mining has notably increased geological activity on the planet.

The ease of establishing this colony has started to foment radical ideas around the viability of terraforming Mars and whether Bandera should become an independent colony separate from the Martian Congressional Republic. With this in mind, various propositions have been put forward to some of the larger private corporations (including Tycho Manufacturing and Engineering Concern, and Pope Industries) about going into an independent partnership. Mars has responded unequivocally to this reasserting its sovereign claim to the planet and promising extreme retribution for any disloyalty.

The state of unease with Mars has led to an aggressive distrust of any outsiders (including later colonists) for fear of "homeland spies." Nevertheless, as the mining has expanded and negotiations continue with independent organizations, more and more non-Martians have a legitimate reason to be on the planet living within this tense environment.



STORY HOOK: THE AWAKENING

Bandera is offering particularly lucrative contracts to independent ships and crews who can act as facilitators for trade negotiations. This involves everything from bringing in business contacts to transporting samples off-world for review. Then a large earthquake strikes directly beneath El Hogar, causing chaos and damaging the crew's ship (or shuttle). All of the disks on the planet begin to rotate slowly. Petrified cacti now begin to move again, glowing dimly with an inner light. The bioluminescence of the fauna appears to synchronize across the entire world into a modulated sequence. At the same time, the moons of the planet also begin displaying the same colorings synchronized with the animal life. Even Niñito has begun flashing. Is this a message? A warning?

THE BOREADS

One of the curiosities of the known systems, the Boreads—Calais and Zetes—are a pair of “twin” terrestrial planets that occupy the same orbit around their star in the system, something that is highly unlikely to be a naturally-occurring phenomenon. The notion that the placement of the planets was engineered is strengthened by the amount of builder artifacts found on both worlds, many of which appear surprisingly intact, given their age.

THE SYSTEM

The Boreads system is an unusual one in that a pair of terrestrial planets occupy the second orbit in the system, just under 1 AU from the star. The “twins,” Calais and Zetes, are in an apparently stable orbit on opposite sides of the star from each other. Given the number of builder artifacts and ruins on both planets, it seems unlikely their paired condition is natural, although it could have been, prior to the formation of the system’s ring gate.

The rest of the Boreads system is fairly unremarkable. There is a small, rocky planet orbiting at 0.47 AU, and another, about the size of the twins, out at 1.27 AU, just beyond the star’s life zone. A rocky ice-ball with a methane atmosphere sits in the fourth orbit, followed by an asteroid belt, two gas giants, and another small, rocky ice planetoid orbiting at the edge of the system, at just over 26 AU. The Boread gate orbits opposite this outermost planet. The innermost gas giant has a ring system and a large number of small moons, while the outer gas giant has a pair of large moons and a half-dozen smaller ones.

BIOSPHERE

Although they have different topographies, Calais and Zetes are otherwise remarkably similar: nearly identical in overall size, mass, axial tilt, and rotational period. Early surveys of the two worlds described their terrain as “tired and shallow”—low-lying mountains, broad plains, and relatively shallow oceans covering about half of the surface. The plains are cut by numerous rivers, some of which regularly flood and jump their beds, changing course and creating low-lying wetlands. Compared to the terrain, the weather on both twins is quite active, with strong winds blowing across the plains and pushing masses of clouds. Thunderstorms on both Zetes and Calais are frequent and spectacular.

The thing that most points to connection between the twin planets is how life appears to have followed a parallel course of development on both. Initial studies show that life forms on Calais are genetically identical to those of Zetes, sufficiently that they could crossbreed, and there appears to be a similar distribution of species. The plains of both planets are thickly covered by local plants similar to grasses, reeds, bamboos, and other monocots analogous to palm trees. The underbrush of these plants hosts a wide variety of animal life, from small “grass runner” lizard analogs to millipede-like insect analogs that grow up to a half meter in length. There are some large, placid plant-eaters able to move above the lower plant life, as well as some swift-moving predators like the nocturnal night-hissers and packs of grass-rats. The planets’ wetlands and river deltas feature numerous insect analogs and amphibious life-forms as well.

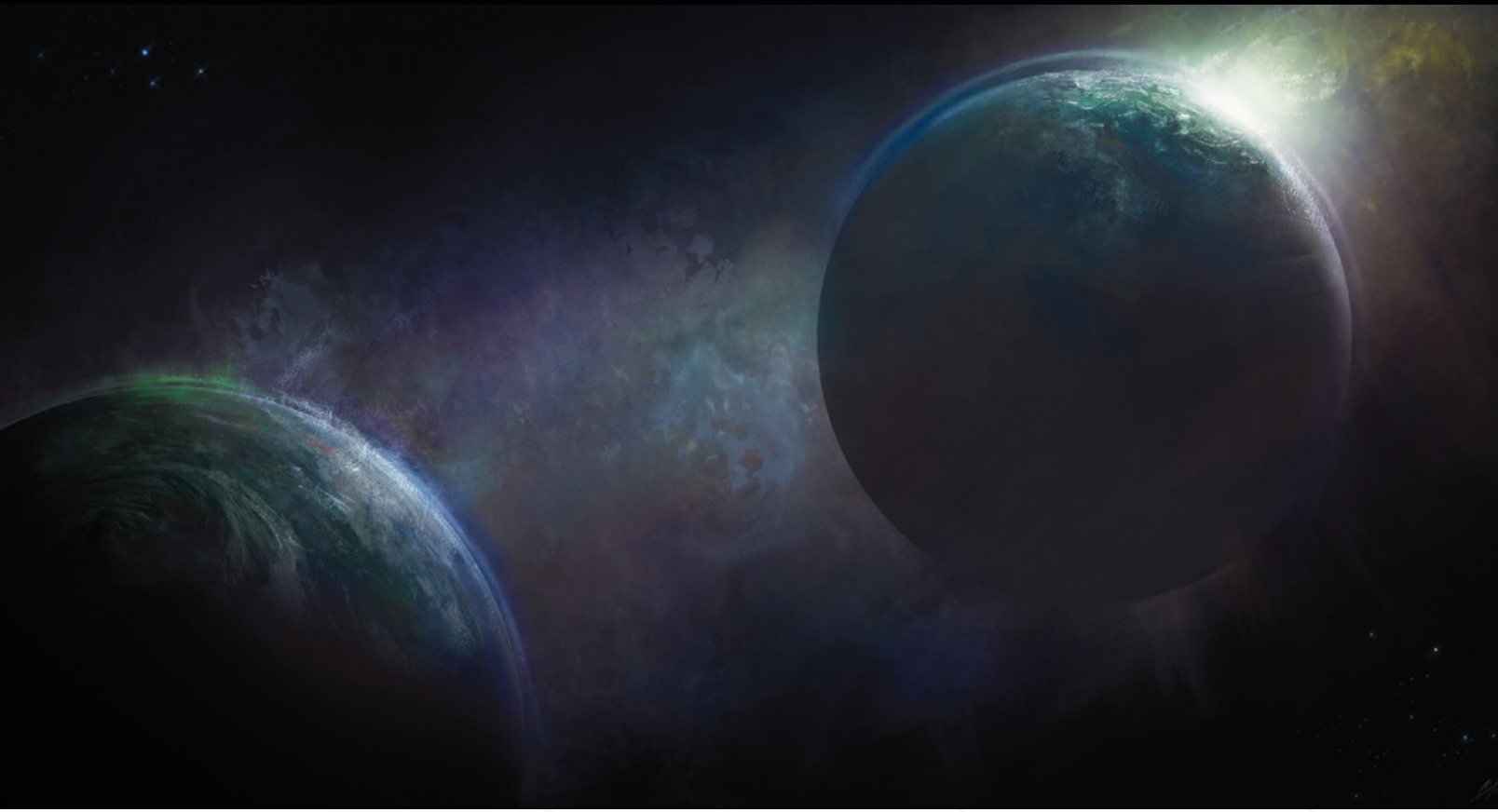
THE BOREADS

STAR TYPE	Class-V Type-G5
SATELLITES	None
ORBIT	130,500,000 km (0.87 AU) from the star
DIAMETER	11,500 km
GRAVITY	0.9 g
LENGTH OF DAY	22 hours, 14 minutes, Earth Standard Time
LENGTH OF YEAR	305.7 Earth Standard days
ATMOSPHERIC PRESSURE	101.372 kPa
ATMOSPHERIC COMPOSITION	77% nitrogen, 22% oxygen, 1% trace gases
TEMPERATURE	−91°C (min), 13°C (average), 55°C (max)
GOVERNMENT	Colonial governor
CAPITAL	New Gatineau (Calais), New Ottawa (Zetes)
POPULATION	10,000 (approximately) on each planet

ALIEN ARTIFACTS

Both Calais and Zetes are dotted with numerous ancient builder sites, all well over a billion years old, but some of them are surprisingly intact. The tall tower-like structures still weather the planets’ storms and winds, although many of them have fallen or breached, causing the winds to howl and moan through them strangely. The lower structures are often covered in layers of soil and growing plants, creating the appearance of low hills or hummocks until they are scanned or unearthed. These structures, made from an advanced carbon-silicate material, appear largely intact. Their great domes, perhaps connected to even deeper structures, contain who knows what. The structures are impenetrable to conventional scanning equipment.

Efforts to study what might lie within the intact structures pointed out another oddity of the Boreads. Scientists on Calais picked up faint energy emissions from



one of the structures and excitedly examined what appeared to be some sort of scan coming from inside it. Scientists on Zetes detected the same phenomenon. After some time, they initially believed their own scans were being reflected or redirected by the structure, but this failed to explain how some emissions came from previously un-scanned structures. It wasn't until a married couple of scientists working separately on the two planets compared schedules and discovered the emissions "echoed" scans occurring on the other planet. Further study and experimentation showed this was correct. The "echoes" were exactly fourteen and a half minutes apart, the light-speed transmission delay between the planets, despite the inability of a direct-line transmission to pass through the system's star.

SETTLEMENTS

The twin planets have both been cleared for settlement, which has begun in earnest. New Gatineau is the first settlement on Calais while New Ottawa is its counterpart on Zetes. Both settlements are located in the temperate zones of their respective planets, close to river deltas where they empty into the oceans. The broad flood plains offer easy access to fresh water, substantial space, and opportunities to study the local biomes. Construction of homesteads and the infrastructure to support them is almost continuous on both worlds. There is a large amount of aeroponics and aquaculture to grow produce and some fish stocks from Earth while the local environment is under study for compatibility.

A substantial percentage of the locals on both Calais and Zetes are still research scientists, technicians, and engineers studying the planets and their system. The discovery of the link between the builder ruins on the two planets has increased the number of xenoarcheologists in the Boreads system, hopeful that the connection indicates still-functioning builder technology and a chance to better understand it. They are under instructions to proceed with caution, given prior experiences, but they are proceeding. One goal is to find a minimally invasive means of entering the intact ancient structures to examine them more closely.

STORY HOOK: THE ARGO BRIDGE

The Boreads are indeed linked through the builder structures on the planets, although more than is currently understood. There is an ancient transportation network on each planet: a series of underground tunnels with some type of high-speed capsules, capable of moving things rapidly to different areas. Additionally, there is a spatial bridge, similar to a smaller-scale ring gate, that links the two networks, such that it is possible to move from Calais to Zetes and back through it. Effectively, the two planetary transportation networks form one larger network. Study of the ruins has "woken up" the transportation systems, which are in the process of attempting to restore their full functionality, but many of their maintenance systems are damaged or degraded. Scientists investigating the network might disappear or run into trouble with maintenance drones that mistake them for intruders or simply "wildlife" infesting the system.

DELVE

Delve is a small artificial moon with an impossible atmosphere. It is marked by shafts descending to an inner cavern. Passageways lead further into the depths but can move and shift while being explored. The tunnels lead deeper and deeper into the core of the moon, but its innermost secrets remain undiscovered. Both the MCR and the UN have an interest in the moon and whatever might be below, but are so far peacefully co-existing on the planet.

THE SYSTEM

The system has only three planets, all gas giants, but several hundred moons. Delve is one such moon orbiting the planet nearest the sun, smaller than Luna, but with higher gravity and an atmosphere that is high on oxygen but still breathable by humans. Delve's gravity and magnetic field are too low to prevent gas from being stripped away into space, and by every existing mathematical model, it shouldn't be able to maintain an atmosphere. Nonetheless, the air is comfortably breathable by humans, and the moon moves through space with a thin trail of gas streaming out behind it.

BIOSPHERE

The surface of Delve is covered in hot and humid jungle with the pervasive reek of rotting vegetation. Unusually, the jungle spreads across the entire surface of the moon, including the poles. From orbit, there is no obvious way to see the planet's axis without careful observation of its rotation.

Most of the native wildlife consists of insect-like creatures that crawl on the vegetation or fly in short hops between the tightly packed trees and bushes. The insect analogs grow up to five centimeters in length, making rasping and clicking sounds that are a constant source of noise in the jungle. They do not bite or otherwise harm humans, although anyone standing still for any length of time will find insects landing to absorb the sweat from their skin.

There are no large animals in the jungle; the biggest is a small, brightly-colored, bird-like creature with four iridescent feathered wings, nicknamed dartwings by the research team. These prey on the insects, swooping from above and spearing them with sharp beaks much longer than the rest of the bird's body.

At regular intervals over the surface of the planet, the jungle gives way to enormous rough-sided shafts, a kilometer across. The cliff edges reveal only a few tens of meters of soil before they cut into natural rock, plunging straight down and out of sight into the darkness. A constant updraft of hot damp air comes up, and for several kilometers around the holes, the jungle is even thicker and filled with the sounds of insects.

Descending into the depths, the holes begin to narrow, until after ten kilometers the shafts have narrowed to just fifty meters. The walls open up to a cavern that stretches around the planet, a thousand meters high in places and supported by enormous natural stone pillars. With the low gravity, it's possible to use suitable aircraft to descend to the cavern, although the updrafts can make for a bumpy ride. From the cavern, any other shaft can be reached and an entire transit of the moon made underground.

The cavern is inhabited by things related to the dartwings on the surface, but white with translucent, skeletal-looking wings. They feed on beetle-like creatures that feed in turn on moss- and lichen-like plants that grow where the shafts from the surface meet the cavern. Unlike their counterparts on the surface, the subterranean dartwings will aggressively attack anything that moves in the light of torches or lamps, swooping down and attacking with their beaks. Although their attacks are painful, they are too small and light to cause serious injury.

ALIEN ARTIFACTS

The floor of the great cavern is a sandy colored natural rock, interspersed at irregular intervals with ten-meter wide circles of a gold-colored metal alloy of unknown composition. This merges seamlessly into the cavern floor and is covered in grids of small holes from which the warm air flows, the source of the updraft that issues from the sinkholes and provides Delve with its atmosphere. Probes inserted into the holes show they descend down into the core to the limit

DELVE

STAR TYPE	G2V
SATELLITES	0
ORBIT	124,000,000 km (0.83 AU) from the sun
DIAMETER	1,300 km
GRAVITY	0.55 g
LENGTH OF DAY	16 hours, 4 minutes, Earth Standard Time
LENGTH OF YEAR	280 Earth Standard Days
ATMOSPHERIC PRESSURE	55.6 kPa
ATMOSPHERIC COMPOSITION	55.3% nitrogen, 31% oxygen, 12.7% helium
TEMPERATURE	28°C (min), 32°C (average), 34°C (max)
GOVERNMENT	Disputed (MCR/UN)
CAPITAL	None
POPULATION	40

of the probes' reach. Although the air current from a single hole is not strong, attempting to block one reveals that the pressure behind it is immense.

At intervals of approximately fifty kilometers, the same metal rises a meter above the rocky cavern floor in wide hexagonal platforms, which, instead of air vents, are etched with thin lines. When these were exposed to bright sources of light by the floodlights of the first explorers to the cavern, they discovered that sections of the metal could move along these lines and retract to reveal ramps descending further into the moon.

The ramps lead down into empty chambers, made of the same metal. The rooms are lit by vertical strips in the wall that give off light, concentrated in the UV range, but still providing enough brightness for humans to see unaided. In each chamber, open doorways reveal corridors with walls marked with the same thin glowing strips.

When the survey team found these tunnels, initial exploration was done via remote-controlled drones and showed that the corridors only ran for fifty meters before stopping. When human explorers first descended into corridors that drones had already mapped, they found that the passageways had widened and continued past where the drones had been forced to stop.

The tunnels continue for several kilometers into the ground, sloping steadily downward. At irregular intervals, adjoining shafts drop 20 meters or more into further chambers, with yet more corridors leading off and further into the moon.

The team has not observed any movement of the walls and doors under Delve, but have found that drones keep finding dead ends where humans can continue. They believe that machines are not able to trigger doors while humans or other biological life can.

During this manual exploration of the underground system, one team retraced their steps and returned to the cavern level to find their backup team and equipment missing. They discovered that they had returned to a different part of the cavern hundreds of kilometers distant from where they had first descended, despite only having walked a few kilometers.

SETTLEMENTS

The first visitors to Delve were a research team from the MCR who performed the original survey and who claimed Delve as Martian territory. Since then, additional researchers have arrived, supported by a small contingent of MCRN.

They have cleared an area of the jungle and set up a small collection of prefab domes near one of the sinkholes. There is no intention to make a long-term colony here, so the mission relies on supplies from the MCRN ship that brought them and remains in orbit. The base also has a patch of land for two small VTOL craft that the research team has been using to explore the sinkholes.

The science team's assignment is to investigate the planet-moon to recover any technology that could be potentially useful in the terraforming of Mars. Since the incident that transported the exploration team, they have been wary of exploring tunnels further, but as automated drones cannot progress deeper, they have been trying to manually map the tunnel system.

The strangeness of Delve, and the potential value of anything found there, has also led the UN to make a similar claim on the moon, although struggling with the sheer volume of new systems, the UN has yet to send any military representative of their own. However, a second expedition has now arrived at Delve, led by Ras Cortez, the youngest child of a wealthy



STORY HOOK: MISSING MARINES

The players have been hired by Ras's family, ostensibly to transport him and to provide general labor. Unknown to Ras, his family has made it clear that the crew are to prevent Ras from getting into trouble, either with his explorations of Delve, or possibly more likely, with the existing MCRN expedition. Shortly before the crew and Ras arrived, a team of researchers accompanied by two MCRN marines went down into the tunnels on a routine mapping exercise, but they haven't returned and are now several days overdue. The MCRN wants to restrict access to the tunnels until the fate of the lost exploration team is determined, but Ras is eager to press on despite their objections.

Earth family and a self-styled explorer. Lured by leaked reports from the research team, he has managed to use his family's influence to get himself listed as a UN Advisor, with the understanding that he keeps the UN informed of anything that he, or the MCR expedition, discover. Ras himself is determined to uncover what secrets lie in Delve's interior and prove himself the equal of his more successful siblings.

The Martian expedition is not happy to see him, as they now consider themselves in a race against the UN and believe Ras's unscientific approach to exploration will disrupt their careful mapping of the tunnels below, potentially placing their entire mission in jeopardy. Both expeditions are under strict instructions to avoid confrontation if at all possible, so they've been trying to avoid each other as much as possible.

EDDINGTON

Eddington, named for the first scientist to propose nuclear fusion as the source for a star's energy output, is a scientific anomaly, and its existence has left researchers largely baffled since its initial discovery. The planet, roughly the size of Mars, appears to be made of a dense crystal substance resembling translucent diamond. It appears to be unbreakable—even impossible to scratch with the toughest instruments. Apart from dust and chunks of rock, presumably from impacts, Eddington is unmarred by any kind of geological or surface feature of any kind.

Below the surface is another story, however. With assistance from the MCR, Olympia University placed a small station called Rutherford in high orbit above Eddington. While details are still spotty, they have uncovered a network of still-active ring builder machines and reactors below Eddington's surface. While the researchers can only speculate on their purpose, the working theory of Eddington's existence is extremely troubling.

THE SYSTEM

Eddington orbits at a relatively far 5.1 AU from its host star; the system contains two other planets, both rocky super-Earths within the star's Goldilocks zone (1.2 AU and 1.9 AU, respectively). The surfaces of these other planets are littered with ring builder ruins, all of which appear to be highly-advanced facilities upon initial survey. Because Eddington is such an anomaly, the lion's share of the research in the system has been focused there. A couple of landing parties have made initial inventories of large ring builder facilities on the other two planets (unofficially named Kalam and Bose).

Their initial findings indicate both planets may have housed advanced research or production facilities. The scientists studying Eddington on Rutherford station have built a working theory that this system acted as a ring builder research and development or "skunk works" facility where prototype and dangerous materials were constructed. It's unclear what the ring builders might have been creating here, but considering the other examples of ring builder technology, it would be truly and significantly advanced.

The Eddington system is also notable for what it lacks: a Kuiper belt. Most systems have a debris field where the leftovers from the planetary accretion disk float around. Not so the Eddington system. Where a Kuiper belt should be, there are no objects larger than a breadbox.

BIOSPHERE

Eddington has no biosphere. The entire planet appears to be made of a dense crystalline structure that appears to be a carbon isotope of unknown origin; the closest comparison MCR scientists have been able to make is that it's "like a giant diamond." It is more than massive enough to achieve hydrostatic equilibrium, but it appears to have been constructed rather than naturally formed.

Eddington lacks an atmosphere except for an extremely thin layer of gases picked up by its gravity; as such, its surface temperatures tend to extremes, helped in no small part by its high albedo. Researchers from Rutherford have successfully landed probes on Eddington, but as of yet, they've been unable to identify its exact composition. The probes have detected a massive—and active—

EDDINGTON

STAR TYPE	F4 (Mainline Yellow-White Dwarf)
SATELLITES	1: Rutherford Station (artificial)
ORBIT	762950172.3 km (5.1 AU) from the sun
DIAMETER	6694.3 km
GRAVITY	16.05 g (supermassive)
LENGTH OF DAY	15 hours, 24 minutes, Earth Standard Time
LENGTH OF YEAR	12.1 Earth Standard years
ATMOSPHERIC PRESSURE	110 kPa
ATMOSPHERIC COMPOSITION	94% hydrogen, 4.1% helium, 1.8% argon, 0.1% trace gases
TEMPERATURE	-315°C (min), 211°C (average), -108°C (max)
GOVERNMENT	Eddington: None Rutherford Station: MCR (Olympia University)
CAPITAL	Eddington: None In-System: Rutherford Station
POPULATION	Eddington: None. Rutherford Station: 200



network of ring builder machines approximately 20 meters beneath the planet's surface. These machines appear to span the entire globe.

ALIEN ARTIFACTS

It turns out Eddington itself is an enormous alien artifact. When the scientists on Rutherford managed to peer beneath the surface, it did not take them long to hypothesize the purpose of the networked reactors and machinery: the entire planet is a weapon. Should the reactors power up, the dense crystalline structure of the planet will create a massive fusion reaction that will eventually destroy everything in a 5-light-year radius.

Eddington is a system-killer.

Since the ruins on the other planets all appear to be highly advanced facilities, even by ring builder standards, there is some speculation that Eddington was built as a fail-safe in case whatever was being researched, created, grown, or harvested got loose. These facilities can house any number of advanced technologies in various states of use or decay.

These ruins could be a scavenger's dream, but many of the built-in security systems are still in place. Anyone exploring them should take the utmost caution; the ring builders wanted to protect these facilities at all costs.

SETTLEMENTS

Rutherford Station, a small research facility operated by Olympia University and funded heavily by the MCR, orbits 500 km above Eddington. Its barely 200 inhabitants are almost entirely research scientists and support staff. Assignments rotate every six months, a schedule designed to combat the immense isolation many people feel deep in an uninhabited star system, so there's barely time for cliques and other social structures to form. Rutherford is known as a hard-luck assignment, one reserved for grad students who pissed off their advisors or tenured staff who want time to finish writing their next book.

Since Eddington's secret was recently uncovered, staff have been far more vigilant about their assignments. Their reports back to Olympia University have been met with a mixture of stony silence and simple updates to expect the next transport ship on schedule.

STORY HOOK: IT LIVES!

The crew have been hired to make a landing on Bose and investigate one of the ring builder facilities there. What they find is deeply troubling: something (a protomolecule? Another kind of weapon of mass destruction? A vastly advanced sentience trapped there?) has survived and is biding its time until it can be unleashed upon the galaxy. Somehow, the scientists or the crew inadvertently release it—and the activation of the crystal planet may be the only thing that can prevent this menace from traveling back through the gate. The problem is, there isn't enough space on the players' ship to evacuate Rutherford in time.

FAR HORIZONS

At first glance, the Far Horizons system is unusual but not bizarre: four super-Earths, all within a yellow-white dwarf star's habitable zone, all capable of supporting life. The first explorers through the ring thought it would be a standard discovery mission until the navigator pointed out some inconsistencies with the telemetry. After running a few quick programs, the navigator found some evidence that the Far Horizons system may not be in the Milky Way galaxy, but could instead be located in the Large Magellanic Cloud some 170,000 light-years from Earth. More study is required to confirm this hypothesis.

Questions of place took a back burner when the exploration vessel made a survey of Far Horizons' super-Earths. Each planet is completely spherical, with no real change in elevation or features apart from the occasional shallow lake or small stream. In fact, the planets are almost identical. Far Horizons 01, the innermost of the four planets, is guarded by a mesh of ring builder satellites that open fire on any ship that approaches. This is another puzzle, as it appears there is nothing on FH01 worth guarding.

THE SYSTEM

The Far Horizons system comprises the four Far Horizons life-bearing super-Earths (creatively designated Far Horizons 01 through 04), a single gas giant, and a Neptune-like ice giant. It has no asteroid belt (or, in fact, any inner-system trojan asteroids); it appears most of the material near the star formed the four main planets.

The gas giant is a greenish-blue and has a vast ring system that rivals Saturn's. The ice giant is cerulean blue and hosts at least seven moons, one of which has a helium-methane atmosphere.

The four rocky planets are so similar in size and composition that the initial exploration report suggested they might be artificially created, although subsequent explorations of the Far Horizons systems have demonstrated they are ancient even by ring builder standards: approximately ten billion years. Over the years it seems the planets have lost their features and any tectonic activity they may have once experienced; their lack of moons has minimized gravitational impacts on them.

Far Horizons 01, at 1.2 AU, is naturally warmer than Far Horizons 04 at 2.5 AU. The lack of surface features has created a devastating Coriolis effect on all of the Far Horizons worlds; wind speeds can climb to almost 500 km/h, wreaking havoc on anything not firmly anchored to the ground. For this reason, no permanent settlements have been established on any of the Far Horizons worlds.

BIOSPHERE

All four Far Horizons super-Earth planets have viable, if ancient biospheres. There's a rich variety of bacteria, small fungoids, and simple plants. The outer three planets also host animal life, mostly small insects and other creatures that live within the rich, loamy soil. Everything on the Far Horizons worlds has evolved to withstand the planets' terrible windstorms—the largest animal discovered to date is about the size of a thumbnail.

The first landing on Far Horizons 02 indicated the presence of extremely hazardous microbes on the surface, present in both the soil and the water. The microbes are a simple form of life, somewhere between a virus and a single-celled bacterium. They interact with the human body by shutting down liver and kidney functions, poisoning the host from within. The same microbes are present on the outer two super-Earths (and, it is assumed, the innermost planet). Humans will never be able to breathe the air or drink the water on any of the planets in the Far Horizons system.

DNA analysis of life in the Far Horizons system demonstrates that the occupants of each planet had a common ancestor, although they have been isolated from each other for so long that evolution has taken different paths on each

FAR HORIZONS 01

STAR TYPE	F8 (Main Sequence Cool Yellow-White Dwarf)
SATELLITES	4,871 (artificial)
ORBIT	179,500,000 km (1.2 AU) from the sun
DIAMETER	13,730.92 km
GRAVITY	0.9 g (estimated)
LENGTH OF DAY	26.2 hours Earth Standard Time
LENGTH OF YEAR	381 Earth Standard days
ATMOSPHERIC PRESSURE	92.11 kPa
ATMOSPHERIC COMPOSITION	74% nitrogen, 25% oxygen, 1% argon, ~0.01% trace gases
TEMPERATURE	-40°C (min), 27°C (average), 48°C (max)
GOVERNMENT	None
CAPITAL	None
POPULATION	None

KILLSATS

The Far Horizons 01 killsat swarm is designed to tear ships apart at close range. They fire projectiles that mostly closely resemble Point Defense Cannons. Their range begins at 480 km over the planet; any ship entering that range is targeted by 2d6 satellites with the Close range PDC-like weapons. Each satellite fires projectiles that do 2d6 damage with a successful hit.



world. Apart from the hazardous microbes, all of the life on the three (likely four) planets is different.

ALIEN ARTIFACTS

Far Horizons 01 is home to a network of armed satellites that open fire on any ship attempting to orbit the planet. These satellites (more than 4,800 of them) orbit at different altitudes and inclinations, providing almost 100% coverage of the planet. Since the initial explorers attempted to orbit FH01 (and barely survived the experience), ships have only observed the planet from afar.

Oddly, there appears to be nothing on the planet for the satellites to protect. Its biosphere composition is almost identical to the other inner planets, there is zero sign of any ring builder ruins, and every chemical analysis of the world shows nothing remarkable.

Admiral Curran, the leader of the current UN expedition to Far Horizons, has speculated that the killsats might not be protecting something on the planet, but are instead protecting (through deterrents) anyone from landing. She believes there may be an even worse microbe on FH01's surface and has openly speculated about weaponizing it.

SETTLEMENTS

There is no permanent settlement in the Far Horizons system. The United Nations, who laid claim to the Far Horizons ring, has opted not to establish a space station here yet. They view Far Horizons as more of a scientific curiosity than a viable colony and have sent a small research fleet to coordinate efforts within the system.

This fleet of for-hire cargo ships and research vessels is under the command of Admiral Judith Curran, a decorated veteran of the Ganymede incident who specifically requested the assignment. She earned a reputation as a no-nonsense commander with creative solutions to tactical problems and took on the exploration of Far Horizons with gusto. Her immediate key question is how to break through Far Horizons 01's defenses.

STORY HOOK: INFECTION!

Somehow a sample-return mission from Far Horizons 02 was contaminated with the deadly microbe, and now it's loose in the fleet. The infected have been quarantined, but the ship's air recyclers were not designed to cope with alien viral outbreaks, and people from other ships are starting to eye each other suspiciously. Help is weeks, if not months away. The crew must try to maintain order as discipline starts to break down amidst the outbreak, with personnel resorting to more and more extreme measures to prevent further infection. It's only a matter of time before people showing even a simple cough are forced into an airlock. Can the players stop a full-scale panic—and a full-scale pandemic?

Everyone in the armada (approximately 500 crew and the same number of scientists and support staff) views her as a kind of inspirational figure on what would otherwise be a lonely and boring assignment. The armada has unofficially dubbed itself Curran's Collective, and some of the captains have floated the idea of establishing an independent colony with Curran at its head on one of the outer three super-Earths. So far, Curran has not tolerated this talk, but it's becoming more common—and harder to ignore.

GOD VIND

This is a heavily-engineered waterworld with unique winds and floating islands with oceans filled with a variety of large fish analogs. The most curious aspect of God Vind is the presence of kilometer-wide, column-shaped areas that form as holes in the ocean. It is believed that these holes go deep into the planet, but so far, they have not been explored due to the powerful cyclones around them. The UN has established several research outposts on the ocean's surface and is bringing in deep sea research equipment in the hopes of learning what is at the bottom of the planet's ocean.

THE SYSTEM

The system has seven planets, including gas giants, and small frozen rocks orbiting so far out that the sun is just another star. The system has well over 300 smaller objects classified as dwarf planets, and the original survey team estimated there could be thousands more, invisible due to their wide, slow orbits and low albedos. God Vind (meaning Good Wind) itself has four moons and a ring system with very high albedo. It is the third planet from the sun, and the only one orbiting in the habitable zone.

BIOSPHERE

The entire planet is covered in a vast ocean constantly beset by heavy winds across the surface. As a result, the animal life on the planet typically breathes water and lives on or beneath the waves. A few other species have evolved (or been engineered with) large wing- or sail-like appendages which they use to catch the wind and float upon it until they reach calmer altitudes.

The planet's various species include giant manta-like creatures which glide up and out of the oceans, lazily riding the thermals for days at a time in great schools of fifty or more. Another creature, nicknamed a Kelpie, looks like a four-meter long leafy seadragon with exaggerated sail-like appendages. These are often seen drifting in the winds like a kite.

Large translucent jellyfish-like objects, nicknamed Medusae, growing to 50 meters across, exist as solitary individuals in the ocean, more vegetable than animal. As part of their life cycle, they generate hydrogen gas in special bladders around the outside of their skirts. Eventually, the gas drives them to the surface, and they lift away from the ocean's surface, driven completely by the breeze. As they ascend, the creature dries out, and the bladders separate, eventually landing and developing into smaller copies of the original creature.

The main role of predator to the Medusae is filled by two species that have developed a symbiotic relationship to prey on creatures many times their size. The first species can make short trips out of the ocean, reaching up to several hundred meters in height, and allowing them to attach to the mantas and seadragons. They can extend large drag-chute sacs from their bodies, destroying the larger creatures' aerodynamics and sending them crashing down to the surface of the water.

At this point, the second species attacks in large shoals of thousands of silvery worms. They can excrete acid that dissolves their prey's tough outer skin and reduces their flesh to a form that the first species can digest.

Floating on the ocean are plants like matted reeds. Small islands of these plants can reach up to 30 meters across. Similar to the animals, the local plant life also has developed sail-like leaves, which again catch the wind. The result is that these islands also follow the same air currents and streams as the animals, lifting off the surface of the water and floating lazily hundreds of meters in the air.

GOD VIND

STAR TYPE	F2
SATELLITES	4
ORBIT	188,000,000 km (1.26 AU) from the sun
DIAMETER	6,558 km
GRAVITY	0.9 g
LENGTH OF DAY	32 hours, 3 minutes, Earth Standard Time
LENGTH OF YEAR	3.2 Earth Standard years
ATMOSPHERIC PRESSURE	109 kPa
ATMOSPHERIC COMPOSITION	71.1% nitrogen, 21.3% oxygen, 7.6% carbon dioxide
TEMPERATURE	14°C (min), 18°C (average), 23°C (max)
GOVERNMENT	United Nations.
CAPITAL	The Skuldelev
POPULATION	800

ALIEN ARTIFACTS

Placed in a symmetrical pattern across the world are giant column-shaped “holes” approximately 1 km wide where there is simply no ocean. The columns appear to reach as far down as the ocean bed. They are surrounded by powerful cyclones, which buffet away anything trying to reach them. They have clearly been engineered and it is highly likely that these generate, augment or at least direct the winds around the planet.

So far, it has been impossible to approach the wind columns from the planet’s surface. The columns themselves stretch until the atmosphere thins. As a result, the most successful results to investigate the columns has been to launch probes from orbit directly down a column. These probes have reached depths of five kilometers below the surface of the ocean before simply losing contact and becoming irretrievable. Initial readings have shown massive technologies and power sources at the base of the columns. The UN is looking to construct more powerful probes to investigate further.

SETTLEMENTS

Initial scouts to the planet used a variety of drones and probes. After this, several autonomous landing platforms were sent down to the planet’s surface, where they now float. This enabled actual landing by manned vessels. At first, researchers remained on these platforms before exploring the floating islands. As of now these islands are where most people live.

A recent arrival landed a large, technologically-advanced seacraft, the *Skuldelev*, which is currently acting as a headquarters and de facto capital of the planet. Capable of supporting 300 people, it is in constant communication with the *UNN Oslo*, a *Truman*-class ship, which is currently positioned in permanent orbit around the planet. The *Skuldelev* is an impressive vessel with advanced sensors and is capable of diving to depths of 15,000 meters.

STORY HOOK: GENTLE WINDS

The cyclones around the “holes” have been slowing down and scientists believe this will soon make it possible to investigate the depths of these locations. However, they are also concerned that this may have devastating effects on the planet’s weather patterns. At the same time a signal has been detected from a fissure deep beneath the sea. Perhaps the signal has something to do with the sudden change. The PCs are recruited to investigate the mysterious signal.

DEEP-SEA SUBMERSIBLE [SKULDELEV]

Deep-sea submersibles are designed for the exploration of the deepest parts of the ocean. The *Skuldelev* has been specifically modified to function in the oceans of God Vind. It is also equipped with multiple drones that are capable of deeper dives and extending its operational range.

DEEP-SEA SUBMERSIBLE [SKULDELEV]

SIZE	HULL	CAPACITY	VELOCITY	SENSORS	INCOME TN
Medium (20 meters long)	1d6	2 (6)	42 kilometers per hour	2	22

STORY HOOK: MONSTER FROM THE DEPTHS

The UN is short-handed while disaster strikes on God Vind and reaches out for assistance from independent ships. Settlements are simply disappearing with significant loss of life. UN reports describe a colossal white sea creature rising from the depths and devouring islands whole. The pale creature appears to be infused with protomolecule and may even be an ancient machine working to an unknown purpose. Whatever the case, the answers undoubtedly lie within the machinery at the bottom of the mysterious columns of wind. The crew must assist the UN in tracking down the missing settlers and find some answers before the crisis escalates.



The UN’s presence on the planet is primarily a scientific mission run by the military. The UN is convinced that the technologies on this planet can be investigated, reverse-engineered, and used by Earth.

The ever-changing positions of the small landmasses on the surface necessitate a comprehensive network of satellites to ensure global tracking of the settlers. The *UNN Oslo* maintains this network and actively deploys further satellites, probes, and landing vessels.

HOME

Home is unique among ring-networked worlds: it’s not in a system at all. When the first ship through Home’s ring arrived, it entered orbit around a cold, lifeless rock in the middle of nowhere. Home is at least ten light-years from the nearest star, traveling at a pokey 21.5 km/s. Its trajectory means it will enter the gravity well of a yellow-dwarf (type F2) star system in approximately 2.5 million years. Until then, it will continue to drift through the vastness of interstellar space with only its two moons and any human spaceships in orbit as companions.

Home is the epitome of an inhospitable environment. Its surface is a rocky mess that prevents all but the smallest ships from landing; giant spires of rock burst through the rippling terrain at irregular intervals, and Home’s landscape is littered with boulders varying from car-sized to Manhattan-sized. The planet is smaller than Mars and a great deal less dense. Analysis of its composition indicates that its thick crust is a warren of tunnels, chambers, and rooms that spans the entire planet.

THE SYSTEM

Home isn’t in a star system. It lacks for a source of light and heat, and this has made exploring the planet a difficult challenge. Humanity’s spacecraft were specifically designed to operate in a solar system, from their methods of heat dissipation to their use of a star’s energy for power. In the distant blackness of interstellar space, where the temperature hovers just a few degrees above absolute zero, heat becomes the most important resource after air.

	HOME
STAR TYPE	N/A
SATELLITES	2
ORBIT	N/A
DIAMETER	6,119.2 km
GRAVITY	0.35 g
LENGTH OF DAY	17.3 hours, Earth Standard Time
LENGTH OF YEAR	N/A
ATMOSPHERIC PRESSURE	N/A
ATMOSPHERIC COMPOSITION	N/A
TEMPERATURE	−270.45°C
GOVERNMENT	Combined UN-MCR-OPA task force
CAPITAL	None
POPULATION	1,000 scientists, sailors, and support staff

The handful of ships exploring Home have been specifically retrofitted to meet this challenge. This tiny fleet—a combination of UN, MCRN, and OPA scientific craft—work in a tenuous but strengthening alliance as they gather as much information as possible about the rogue planet.

Home has two satellites, Adar and Banaros. Both are approximately 20 km in diameter and orbit extremely close to Home—127 km and 180 km, respectively. Adar and Banaros have a high albedo and are composed of water ice and dust. The science teams studying Home have concluded that the two moons are comets that were artificially placed in orbit around the planet. Why remains a mystery.

BIOSPHERE

Home has no biosphere to speak of. So far, scientists have been unable to find so much as a microbe on the planet’s surface. The planetwide cave system that descends more than 100 km into the crust may be a different story. No major attempt has been made to penetrate these caves, and what lies within is anyone’s guess. It’s possible that Home’s core is still molten and generating enough heat that the lower parts of the crust are warm enough to support some kind of life.

ALIEN ARTIFACTS

The only alien artifact discovered at Home is the gate itself, which orbits at 212 km over the planet. Home’s lack of atmosphere means the gate’s orbit decays so slowly that it will be millions of years before it finally crashes to the surface.

That being said, Home itself appears to be some kind of artifact, although its purpose remains unclear. Adar and Banaros were almost certainly inserted into their orbits, and there is enough frozen water on both to create a decent-sized ocean on the planet if someone figured out how to deorbit (and properly heat) them. The planet itself obviously came from somewhere, and has a clear destination, even if it continues to travel beyond the system it will eventually intercept.

STORY HOOK: WHAT LIES BENEATH

It's time to crack Home and figure out what the tunnels hold beneath the surface. The characters have been hired by the joint UN-MCR-OPA task force to be part of the 100-person landing party. The survey teams discovered a thin area of crust on relatively flat ground they feel could be drilled into so the team can explore the warrens, and commanders from all three governments greenlit the mission.

Landing and setting up a base is difficult enough, but what lies beneath Home should be the focus of the story. This is fluid depending on what kind of narrative and campaign the GM wishes to create; mold ideas below to a run-and-gun military story, an exploration and discovery story, a first contact story, or even a puzzle-solving story. Note that some of these options wander far afield from *Expanse* canon, so introduce them or not as you like:

- Home is a dead but dangerous world, where traveling through the tunnels is a perilous, pitfall-ridden experience.
- The tunnels appear empty but have been incubating a dangerous if simple life-form: a virus or bacteria that infects some members of the exploration team. It could cause them to become incredibly aggressive—or it slowly debilitates and kills them.
- The warrens lead to an ancient, underground city, long dead. Its technology level appears to be early Bronze Age.
- There's more advanced life under Home, but it's incredibly aggressive and starts hunting the exploration party. It picks off the weakest members one-by-one.
- The exploration ends up at vast containment units for the protomolecule. Certain factions within the party instantly wish to monetize (or weaponize) this discovery.

A survey ship sent to map the two moons came back with some unusual data: There are signs that ice was carved from Adar's surface at some point in the past. There are "pits" where blocks of ice were removed, leaving rectangular holes with perfect 90-degree angles behind. There is no trace of whatever may have done the excavating.

SETTLEMENTS

Home's lack of atmosphere, rocky surface, and extreme conditions have not been conducive to creating any kind of permanent settlement, and the agreed-upon alliance to explore the planet by the three major powers in the Sol system has resulted in a détente of sorts for building a station. The only real "settlements," if you can call them that, are the two-dozen research vessels that make up the combined fleet exploring Home and its moons.

Each part of the fleet is under military command from its respective government, but the three leaders (UNN Captain Aras Tryscuz, MCRN Commander Nathan Moss, and OPA



General Esther Sinclair) have become comfortable sharing power and authority. They regularly meet and swap information, and a “transparency protocol” exists where all scientific study is done under the peer review of scientists from the other two governments. Tryscuz, in particular, hopes this arrangement will act as a model for future exploration of the various worlds beyond other ring gates, and sends regular reports back to the UN in the hopes that her voice of reason will be heard.

HOMESTEAD

Homestead is a peaceful world populated by a religious community from Earth. The planet has a breathable atmosphere, moderate weather, no tectonic activity, and no animals harmful to humans. Unfortunately, the planet is home to a parasite that causes paranoia and violence to newcomers, and the current settlers are now all infected. Anybody visiting the planet is met with suspicion and hostility, and if not careful, they might become a host to the parasite themselves.

THE SYSTEM

There are eleven planets in the system, of which Homestead is the fourth from the sun. The remaining planets are either barren rock or gas except for the seventh planet, which has extensive mineral deposits and a highly corrosive atmosphere, with temperatures that plunge to -60°C. The metal content is insufficient to warrant a mining expedition in such harsh conditions, compared to simply importing required supplies.

Homestead itself has a single moon with a high albedo, which can be clearly seen during the daytime from the planet’s surface. Investigation of the moon shows this is largely due to its smooth flat dust-covered surface, which bears no signs of the scars and craters caused by historical meteor impacts that would normally be expected.

BIOSPHERE

Homestead is a dry world, with most of its water locked as ice at the poles. Much of the surface is covered in desert, where dunes of orange sand form and regularly disappear, driven by the winds that constantly sweep around the planet. These regions of the planet are largely barren, and plant life is limited to small low bushes with hard, brittle stems. These grow long fibrous strands from their branches, which capture moisture from the air, and provide enough food to support clouds of small insects with iridescent bodies that gleam and sparkle in the sunlight. Flocks of small mouse-like creatures live in small burrows at the base of the largest bushes. These cling on to the highest stems to feed on the insects and flee with a high-pitched chirping sound when anything approaches.

The desert is punctuated by high mountain ranges, rising several kilometers high in the low gravity, which catch the moisture in the air and allow rain to form lakes. At the base of the mountains, the desert gives way to soil, where the rain allows for more varied vegetation. The land rises up against the base of the mountains in steep foothills, cut by numerous small streams running down from the peaks above, ending in snow further up. The foothills are covered in short purple grass, which sprouts small blue and red flowers after rain, and when cut or broken, releases an antiseptic smell.

Clumps of low, flat plants with thick leaves grow in shady spots near the streams. Although these don’t contain any nutritional value for Earth biology, when baked, they soften and shrink, giving off a smell like pork.

The lakes and hills around the mountains contain the wildlife that the rest of the planet lacks. The largest animal resembles a half-meter-tall gorilla with short orange hair and exposed bony ridges along its back and skull. These live at the highest point of the hills, just below the snowline. They are peaceful, treating newcomers like curiosities, and have been known to venture into people’s dwellings, opening doors and boxes. They can mimic human speech in a way that sounds almost intelligible, like somebody muttering in the next room.

The most notable feature of the planet is a parasite that lives in the native vegetation and is able to survive in the human body. When ingested, the parasites invade the body via the intestine, creating microscopic cysts on the walls of major arteries. When these burst, the cells inside are carried around the body, causing changes in body chemistry.

HOMESTEAD

STAR TYPE	G2V
SATELLITES	1
ORBIT	194,500,000 km (1.3 AU) from the sun
DIAMETER	15,000 km
GRAVITY	0.8 g
LENGTH OF DAY	23 hours, 14 minutes, Earth Standard Time
LENGTH OF YEAR	22 Earth Standard months
ATMOSPHERIC PRESSURE	94 kPa
ATMOSPHERIC COMPOSITION	89.5% hydrogen, 10.2% helium, 0.3% methane
TEMPERATURE	-12°C (min), 14°C (average), 21°C (max)
GOVERNMENT	Independent
CAPITAL	Homestead
POPULATION	120

THE COMMUNION OF LIFE

The sudden appearance of the Ring and the confirmation of extraterrestrial life caused a sudden upheaval in religion. On Earth, in particular, hundreds of new cults and sects formed, driven by the possibility of escape from its overpopulation and rampant unemployment.

The Communion of Life was one of the more popular of the new organizations. First formed after the Ring gate appeared in the Sol system, it interpreted the Ring as a holy ark, come to transport the faithful to paradise. The group got an enormous boost in membership after the discovery of the ring network which they claimed validated their beliefs. Now, adherents believe that the planets beyond the rings have been given to them as new Edens, and that they have nothing to fear from the alien ecologies. By pooling donations from their followers, the group has managed to obtain a number of old ships and have dispatched their most faithful off into the new systems on pilgrimages to find the worlds they believe they are destined to populate.

Initially, changes in the skin glands cause the person to produce altered pheromones, undetectable without chemical analysis. Eventually, as the concentration of parasitic cells in the brain increases, lesions appear in the amygdala causing neurological changes. The victims' sense of smell becomes more acute, and they start to prefer the smell of the altered pheromones. At the same time, they become wary and distrustful of anybody not exhibiting the same scent. Gradually, this becomes more pronounced, leading to fear and potential violence.

In the initial stages, the condition is reversible. The parasite and the cells it produces are not adapted for human physiology, and the body's immune system would be able to fight it off if the parasite stopped being introduced to the body. Similarly, the changes to pheromone production are not harmful in themselves and will eventually revert. Once fully established, however, the neurological changes are permanent and will continue to affect the victim even once the original infection has passed.

ALIEN ARTIFACTS

There are no known artifacts in the system. Although it is possible that there are yet undiscovered artifacts beneath the planet's sand-covered surface or on one of the unexplored moons. The colonists are uninterested in exploring the rest of the planet, focusing on survival. The UN has marked the planet for further investigation, but the sheer number of new planets opened up means that a proper survey could be decades away.

SETTLEMENTS

The first settlers to land were a religious group from Earth, an organization called the Communion of Life. Inspired by the Mormon generation ship *Nauvoo* but lacking the same resources, the group bought an old ice hauler well past its retirement age. The ship and its passengers reached Homestead on the verge of a breakdown; with life support failing, they stripped the ship to the frame, sending down as much as they could via shuttle and parachute.

They constructed their settlement in the foothills of the largest mountain range and have dug caves into the hills, which are lined with scrap metal salvaged from their ship and shuttle and with bricks baked from local clay. The winds blow sand from the desert into their homes constantly, and anything left outside soon becomes coated in a thick layer of orange dust.

During the colony's first winter, the hydroponics system, built with salvage from the ship, started to fail and could no

STORY HOOK: CONVICTION

In the third and most recent wave of religious colonists was a woman who had recently joined the Community of Life against her family's wishes. She donated her entire estate to their colonization mission and was chosen to be a colonist on Homestead. Her initial communications with her family revealed the unfriendly treatment that she and the other third-wave colonists received when they first arrived. As the same changes overtook her, she began to send fewer messages. Eventually, she dropped out of contact with her family entirely. They now believe that she's been brainwashed, imprisoned, or worse, and have hired the crew to investigate and retrieve her by any means necessary.



longer provide enough food. Although aware the native food had no nutritional value, but unaware of the parasite, people began to consume the native plants to dispel hunger. As a result, the colony began to experience the effects brought on by the parasite.

Once the hydroponics system was restored, and unaware of the biological changes it was causing, the group maintained the eating of the leaves as a religious ritual to remind them of the hardships they had overcome.

Since then, two more waves of followers of the Communion of Life have arrived. The second wave integrated easily, as the changes were not started to make themselves fully felt. Encouraged by the first wave, the second wave also started to consume the native vegetation. By the time the third wave arrived, the changes were more pronounced, and the newcomers were treated with suspicion until their consumption of the indigenous food meant they too underwent the same changes. The parasite and its symptoms have now taken hold firmly across the colony, and visitors will be treated with outright hostility.

HOREB

A lush planet with a large temperate zone, Horeb draws many visitors due to an unusual feature of its biosphere: A kind of bioluminescent insect analog in its forested regions. Long-term exposure to the light and flickering patterns of these “glow-bugs” appears to induce a kind of deep trance in many people, during which they often experience profound visions and what can only be described as a kind of religious “rapture.” Already, this experience is making Horeb a place of pilgrimage for many and a source of concern for others.

HOREB

STAR TYPE	Class-V Type-K2 primary, Class-V Type-M2 adjacent companion
SATELLITES	2 small moons
ORBIT	11,700,000 km (0.78 AU) from the star
DIAMETER	12,600 km
GRAVITY	0.97 g
LENGTH OF DAY	34 hours, 21 minutes, Earth Standard Time
LENGTH OF YEAR	281.31 Earth Standard days
ATMOSPHERIC PRESSURE	101.54 kPa
ATMOSPHERIC COMPOSITION	77% nitrogen, 22% oxygen, 1% trace gases
TEMPERATURE	−90°C (min), 13°C (average), 50°C (max)
GOVERNMENT	Colonial governor
CAPITAL	New Providence
POPULATION	18,000 human inhabitants

THE SYSTEM

Horeb orbits a K-type orange star with an adjacent M-type red dwarf companion, their combined light still somewhat less than Earth’s sun. The second terrestrial planet orbits at 0.78 AU, making the most of the star’s light and heat. The innermost planet is rocky and barren, while the third planet in the system is lifeless but does have a low-pressure atmosphere of nitrogen and carbon dioxide, such that it has terraforming potential. Beyond it is a rocky ice-ball, an asteroid belt, and a pair of gas giants on the outer edges of the system. The system’s gate is relatively close, in the orbit of the first gas giant, at just over 13 AU from the stars.

Evidence suggests the system was annexed by the ring builders quite some time ago—even longer than the typical period of around 1.5 billion years, although it is difficult to pinpoint an exact estimate based on the ruins on the planet or the age of the ring gate.

BIOSPHERE

Daytime on Horeb is comparatively dim, and the various plant analogs on the planet have extremely dark, broad photosensitive surfaces meant to capture as much light as possible for photosynthesis. They include several low-lying and climbing creepers and vines and short, bendable tree analogs with large, broad leaves. Many of the plants flower and emit various perfumes to attract small, mobile life forms that aid in pollination and reproduction. An unusually wide

variety of fungi grow in the planet’s environment, and fungicide treatments are necessary to keep most spaces clear of them for any length of time. Some visitors to Horeb have severe allergies to the amount of pollen, dust, and spores in the air and need medication or air filters to deal with it.

The dim daylight and comparatively long nights have favored life-forms with highly light-sensitive vision, often edging into the infrared, or non-visual sensory abilities. This includes local “snake-hounds,” which are more like long-limbed, short-tailed Komodo dragons: wolf-sized reptiles capable of bursts of speed over short distances to chase down prey, which they bite and inject with venom to bring down. They have infrared-sensitive pits close to their comparatively weak eyes, somewhat like earthly snakes. There are also night-flying “screechers,” leathery-winged bat analogs somewhere between reptiles and birds that make use of echolocation.

ALIEN ARTIFACTS

Horeb's biosphere includes a number of biomechanical life-forms that show evidence of ring builder tinkering or technology. The most notable are the "glow-bugs," insect-like creatures that give off the distinctive blue-white phosphorescence associated with the protomolecule in blinking or flickering patterns, somewhat like earthly fireflies. Their resemblance to earthly life ends there, however.

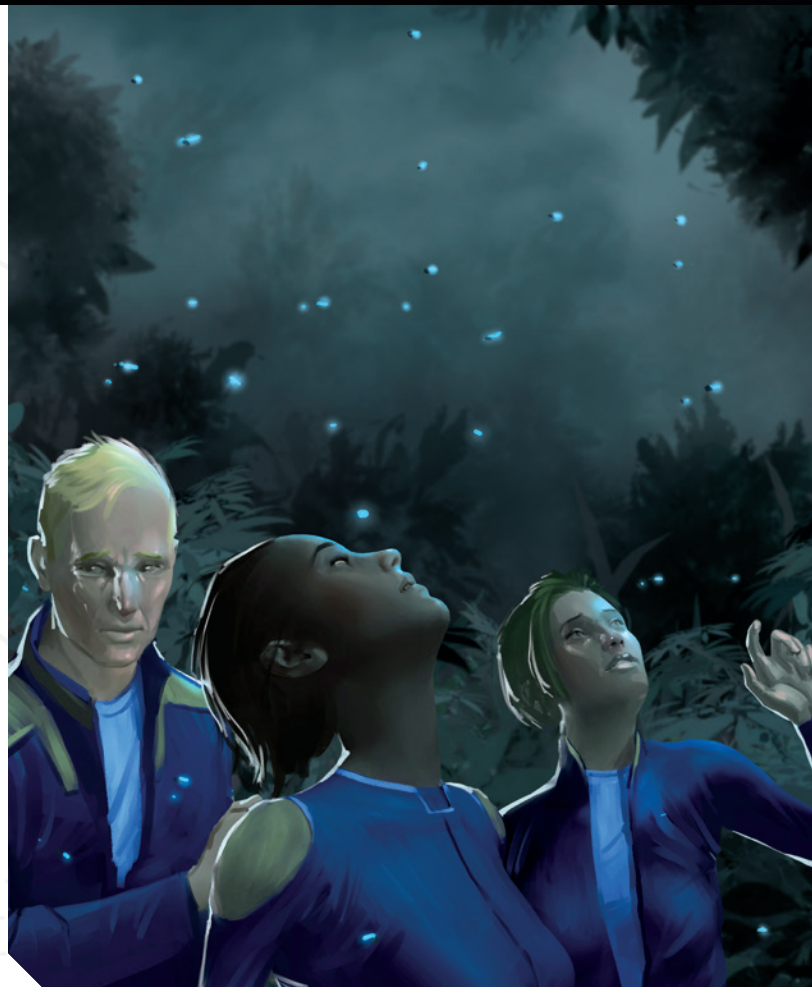
Exposure to the glow-bugs' light patterns appears to cause temporal lobe seizures in humans after a few minutes or longer. The subjects describe a complete loss of body awareness and sense of time and intense feelings of rapture, ego dissolution, and profound—sometimes terrifying or awe-inspiring—hallucinations. Some who have experienced it have described the sensations as "being able to feel all of the spaces in-between things: molecules, even atoms." It remains unclear exactly how the glow-bugs induce this state, as examining them has proven difficult, but it is believed to be a combination of the light frequency, oscillation, their aggregate numbers, and the complex swarm patterns, or "dances." Efforts to remove the glow-bugs from Horeb's environment for study have always resulted in the specimens dying almost immediately. Like most of Horeb's life-forms, the glow-bugs are highly sensitive to light and avoid areas of bright artificial illumination.

Horeb is also home to a scattering of builder ruins on the planet, most of them substantially deteriorated and many buried or hidden beneath dark canopies of vegetation. Glow-bugs tend to appear relatively close to the sites of such ruins.

SETTLEMENTS

It was originally somewhat lacking in appeal as a colony world, but the unique experience of Horeb's glow-bug visions quickly drew a wide range of curious and inquisitive people to learn more about them and to study or experience them for themselves. This has led to a rapidly-growing colony with far more than the usual share of would-be religious prophets and gurus, along with thrill-seekers, and even outright addicts. The aptly-named New Providence has struggled since its founding because of the challenges of life on Horeb, coupled with the almost constant intrusion of various "visionaries" and their experiences and agendas. Fortunately, some spiritually-minded colonists embrace notions of hard-work and community, which have kept the colony together and helped it progress, albeit slowly.

The other primary elements of the New Providence colony are scientists studying the planet and its rich biosphere and criminal elements who see opportunities in New Providence's "eclectic" culture and its unusual experiences. The scientists include a fair number of xenomycologists studying fungus analogs on the planet and xenobiologists interested in the glow-bugs and other



STORY HOOK: PROPHET MOTIVES

The simmering cauldron of religious fanaticism on Horeb may boil over at any time, and the local authorities are potentially too corrupt or compromised by "converts" within their own ranks to be entirely relied upon. This may mean that authorities need outsiders like the crew to visit Horeb and give them an objective report on what is happening within the colony. Naturally, influencers within the colony's society will perceive such outsiders as potential threats or opportunities (or both). Things get more interesting—and complex—when the visions of a particular cult on the planet sound a great deal like things reported from other interactions with builder technology: visions of a vast alien civilization and its struggle against a mysterious force tearing through it like a plague, of lights winking out across whole planets, and entire star systems burned by their exploding stars to contain the contagion. What if the "visions" induced by the glow-bugs are not random but some form of communication or data-download?

STORY HOOK: FADING LIGHTS

The number of glow-bugs has suddenly plummeted on Horeb leading to panic among some of the more fanatical cults. If things continue as they are violence is likely to break out. The PCs are hired to work with several scientists to investigate the cause of the sudden decline before things get out of hand. Is this just a natural cycle? Is the presence of people to blame? Or is it something more sinister?

biomechanical life. Corporations see tremendous potential in biological compounds from Horeb, if practical uses are found for them. Criminal elements have tried at least as hard as the scientists to “bottle” the glow-bugs. Thus far, the best they can do is to fill a small room with a swarm of them. Their effect requires close proximity, but a container or viewing them on the other side of glass doesn’t appear sufficient.

JOTUNHEIM

The three habitable worlds of the Jotunheim system vary dramatically in size and climate but have one major thread in common: Enormous animals much like Earth’s dinosaurs roam the surfaces. Judging from the remnants of alien technology left behind, the planets served as conservatories or experimental breeding facilities for the megafauna. Either way, the people who brave living on these worlds must share their space with the magnificent creatures. The planet was whimsically named for the Norse mythological home of giants.

THE SYSTEM

There are five planets orbiting the sun, but the two closest are too hot to support life. The remaining three are all habitable and all populated with enormous animals similar to Earth’s dinosaurs. Each of those three planets has one or more moons as well as moon-sized artificial satellites. The satellites have a lot of cameras and sensors and seem designed to

remotely collect data about the creatures on the planets. Further, each planet has a network of small, artificial satellites maintaining a thick ozone layer, protecting each planet and its residents from the UV emissions of the sun. In addition to the planets, a major comet passes through the system every twenty years. Each trip around the system brings it increasingly closer to the planet’s orbits, and scientists think it could possibly collide with a planet within the next 400 years.

BIOSPHERE

Jotunheim IV is the smallest of the three habitable planets, and the most temperate for human sensibilities. The creatures on this planet are feathery, and some of them fly. A few instead have hard plates protecting them like armor and have horned protrusions on their heads. The oceans also contain enormous animals, similar to giant sharks and plesiosaurs.

The flora of Jotunheim IV matches the fauna, with enormous blue-green plants that can reach several hundred meters tall. The flying dinosaur analogs often nest in the trees, surprisingly difficult to spot despite their size. The ground is covered with long grasses in some places and blue lichen in others.

ALIEN ARTIFACTS

All three habitable planets have residual technology left behind by the ring builders. Most of it is largely destroyed from so many years of giant animals running rampant over everything. What remains seems to indicate that the dinosaur-like animals on these planets may not have been entirely natural. The foundations still exist for giant pens and cages, and structures that are still partially standing contain biological equipment and detailed models of the various animals. Whether bioengineering, conservation, or just a series of giant zoos, it appears that the aliens were studying something about the megafauna. Jotunheim V even has such structures underwater, with air-filled tunnels and rooms for observation of the aquatic beasts. The planets have extensive terraforming equipment keeping the atmosphere livable for the megafauna.

SETTLEMENTS

The biggest settlements in the Jotunheim system are on Jotunheim IV, the most temperate, though each of the other planets

JOTUNHEIM IV

STAR TYPE	F8 (main sequence)
SATELLITES	6
ORBIT	359,034,889 km (2.4 AU) from the sun
DIAMETER	12,100 km
GRAVITY	1.01 g
LENGTH OF DAY	38 hours, 15 minutes, Earth Standard Time
LENGTH OF YEAR	803 Earth Standard days
ATMOSPHERIC PRESSURE	108 kPa
ATMOSPHERIC COMPOSITION	70% nitrogen, 28% oxygen, 2% carbon dioxide
TEMPERATURE	−60.3°C (min), 17.8°C (average), 62.1°C (max)
GOVERNMENT	UN
CAPITAL	Cretaceous
POPULATION	8,900

JOTUNHEIM III AND JOTUNHEIM V

Jotunheim III is the largest of the three habitable planets as well as the nearest to the sun, making it the warmest. The giant animals on this planet are reptilian in appearance, and many of them reach over 30 meters long. A few have spikes on their heads, heads, or tails. Jotunheim V is the furthest from the sun, and snow and ice cover most of its surface. The animals here are mostly fur-covered for protection from the weather, and grow up to 18 meters long. Massive sea creatures swim in this planet’s oceans, requiring thick skin and blubber for warmth in the cold water.

has a couple of outposts as people explore the alien worlds and study their fascinating fauna. The humans settling Jotunheim are deeply divided on how to live with the local animal life. Some people think that the creatures are too dangerous to cohabitate with and should be hunted or otherwise eliminated. Biological scientists are eager for the chance to study these creatures and try to work out what the aliens were doing in their studies. Last of all, some think that access to the planets could be sold to people everywhere else to see the dinosaurs, or that the dinosaurs could be carefully trapped, sold, and shipped to other planets for menageries for the wealthy to have on display.

The UN established the missions to settle the system, and their official position is that the animals should be studied and that the sale or hunting of any such creature is outlawed. However, many wealthy people have offered very large sums of money to obtain a dinosaur, and residents keep attempting to capture one and transport it on a spaceship, despite the dangers. The UN is open to scientists creating a research facility to study the creatures, so scientists on the planets are currently drawing plans to restore some of the ring builders' facilities to hold the impressive animals. Approval is a long process, since no one wants to be responsible for a failure that results in dinosaurs being able to attack the staff or civilians.

The dinosaurs themselves are very curious about the human settlers and often approach settlements to investigate, causing secure fencing to be a critical requirement for all Jotunheim structures, along with roofs over open areas to prevent flying dinosaurs from getting in. A few unlucky early settlers were killed and mangled by the giant creatures, but since humans are apparently poisonous to the native megafauna, the animals soon learned not to hunt humans for food. However, they are quick to defend themselves from aggressive humans, and many of the most intelligent species have started to recognize weapons. Current protocols require settlers to keep all firearms hidden when traveling between cities or else risk a dinosaur's pre-emptive strike.

Aside from the dinosaurs, the planets of Jotunheim have much to offer settlers. There are moderate natural resources to mine, and initial terraforming experiments to grow Earth crops in cultivated spaces have been successful. The colonies of Jotunheim are poised to become self-sufficient. The UN appointed a leader of the system, Aurelia Reed Sánchez, and each planet has elected a governor to run things locally. The UN hopes to stay hands-off for most matters pertaining to the governance of the colonies. With so many biologists eager to study the creatures of these planets, they are quickly becoming premier centers for many kinds of biological research, and some of the most prestigious institutions of Earth and Luna have established research outposts here. Some entertainment companies have also sent teams here to get footage that can't possibly be matched by special effects. More than a few actors have traveled or moved here to act in these films or serve as stunt people or body doubles for off-planet stars. This has led to the establishment of a thriving theater scene in the main Jotunheim settlements as well, with actors wanting to refine their craft between filming scenes near dinosaurs.



STORY HOOK: DINOSAUR PARK

The crew have been hired to illicitly capture one of the dinosaur-like creatures and transport it to a wealthy client's menagerie. They're equipped with the necessary gear, including cages, tranquilizers, and weapons. What could go wrong? If the crew aren't the types to take on an illegal mission, they could be granted dispensation by the UN.

STORY HOOK: TO THE RESCUE

Alternately, dangerous criminals or perhaps a mega corporation with private security is kidnapping the dinosaur-like creatures to sell for profit or use for some other nefarious purpose. The PCs are hired by a UN representative to put a stop to the illegal operation and locate and return any of the creatures that have already been taken. This might take the crew all the way to the stolen beast's destination, possibly even to the Sol system or Earth. The organization doing the stealing may even have covert permission from another branch of the UN.

KARKINOS

A churning hellscape, Karkinos had only just begun its terraforming process when the ring builder civilization faltered, and it has remained artificially fixed in this infant state for the billions of years since. Storms wrack the shallow marshes covering its surface. The planet was named for the giant crab from Greek myth, inspired by the enforcers of its perpetual bedlam: city-sized terraforming automatons that still stride the surface on crab-like legs. They constantly strip Karkinos's surface of any defining features, preparing for some long-forgotten purpose. Ironically, the only place complex ecosystems can gain a foothold is the one place the crabs can't reach: their own backs. Each terraforming engine is a calm island in a sea of chaos.

THE SYSTEM

The Karkinos system experienced far less development than many other worlds in the former ring builder empire owing to its youth, and many of its planets and asteroids remain intact and uncolonized. Three as-yet-unnamed rocky worlds and an asteroid belt circle the star within Karkinos's orbit. The largest of these shows evidence of an atmosphere and liquid water in the past, but solar winds or terraforming activity long ago stripped these away. Two gas giants and an ice giant orbit further out, sheltering the inner system from comets and space debris, and both gas giants boast at least two dozen moons with diverse resources, including ice and hydrocarbons.

Karkinos maintains an unusually dense concentration of Lagrange asteroids, including water-laden S-type and resource-dense M-type objects. Whether this is natural coincidence or an abandoned phase of the terraforming process remains up for debate, but with relatively little effort, functioning stations could be built and maintained in Karkinos's orbit.

Karkinos's star experiences solar flare activity in heavy but predictable cycles. But orbital ships caught unaware when this so-called "storm season," begins risk radiation poisoning or being disabled by the unusually powerful solar winds.

BIOSPHERE

Most of the planetary surface of Karkinos has been artificially leveled, rendering it into shallow seas, swamps, and rocky archipelagos. The brackish water is rich in dissolved minerals and supports extensive populations of single-celled organisms, as well as cnidarian-like colonies and simple worms. The constant churning and chemical modification of the rig crabs—mobile terraforming rigs with a crustacean-like appearance—imposes a limit on the complexity local life can achieve before being

reset to start over. These primordial seas contain vast deposits of hydrocarbons thanks to billions of years of dense monocellular growth and die-offs.

The shallow waters covering most of the planet also churn up a miasma of spores, methane, and benzene. This flammable soup is toxic to Earth-based life after prolonged exposure, leaving the surface inaccessible without breathing equipment. Thankfully the components are heavier than air, and so this toxic layer only extends a few meters above sea level.

Complex, multicellular life can and has evolved on Karkinos repeatedly. The rig crabs can't reach most of their own backs, and whatever automatons once kept them clean—if any ever existed—have long since failed. And so each rig crab supports a unique ecosystem on its carapace that has evolved in isolation for billions of years, as isolated and diverse as the Galapagos Islands of Earth. One supports a jungle of titanic mold and fungus analogs, a few have developed the local equivalent of coniferous forests, while others have painted the irregular landscape in brilliant lichens. Most of these isolated crab ecosystems also support small animal life as well, and many share a few common ancestors thanks to exchanging flyers and floating seeds when two of the lumbering engines draw near enough to one another.

ALIEN ARTIFACTS

More than 10,000 mobile terraforming "rig crabs" still plod across the surface of Karkinos, each one upwards of 10 kilometers across and supported by dozens of powerful, segmented legs. Likely grown using protomolecule technology from the world's original single-celled inhabitants, they seem to exist to process a plan-

KARKINOS

STAR TYPE	G3 yellow Main-sequence
SATELLITES	2
ORBIT	164,584,000 km (1.1 AU) from the sun
DIAMETER	11,821 km
GRAVITY	0.9 g
LENGTH OF DAY	32 hours, 22 minutes, Earth Standard Time
LENGTH OF YEAR	401 Earth Standard days
ATMOSPHERIC PRESSURE	106 kPa
ATMOSPHERIC COMPOSITION	64% nitrogen, 31.3% oxygen, 4% carbon dioxide, 0.5% methane, 0.2% trace gases
TEMPERATURE	-61°C (min), 17°C (average), 38°C (max)
GOVERNMENT	Independent
CAPITAL	Taixian
POPULATION	388

et's atmosphere into a healthy nitrogen-oxygen mix, release liquid water, and relocate resources in preparation for large-scale engineering work. Without instructions to proceed to the next phase, they have simply held fast to this behavior, tearing down complex life and geological formations wherever they begin to emerge.

Each rig crab is unique in form. Most are round or oblong, but a few possess long, segmented bodies more reminiscent of a centipede than crab. Their backs are generally flat or arched but are irregular enough that water from rainfall forms ponds or small lakes there. Eons of grimy buildup have left a soil-like layer up to 8 meters thick where plant analogs take root. Various entry points provide internal access to the city-sized structures, and most have been thoroughly colonized inside and out by local life, though anything living more than a few meters inside the interior corridors is progressively more simple and adapted for cave-like conditions.

How to control the rig crabs—or even if that's possible—remains unknown to human science.

SETTLEMENTS

The colony ship *Ruoshui* departed from Mars loaded with technicians and settlers who hoped to turn Karkinos into a hotbed of automaton research. The ship instead ran afoul of the system's solar flare cycle, which disabled many systems and forced the crew to dump core. With any assistance years away and battery power quickly draining, the colonists ultimately opted for an unusual landing: an Earth-like ecosystem flourishing on the back of one of the planet's enormous terraforming drones. Dubbing their new colony *Taixian*—moss—for their unusual location, the settlement has survived despite initial hostile encounters with so-called eye-spiders, territorial cat-sized arthropods lined with light-sensing orbs. One of the major factors in their survival has been the discovery of *minbao gua*, a local starchy fruit edible to humans with minimal processing. While this short-term windfall has filled bellies for the embattled colony, it also means that the local ecosystem will likely have less trouble learning to exploit the human biome than other alien worlds.

While the colonists of *Taixian* remain safe for now, they are a population of engineers, not farmers or survivalists. There is a sharp division among survivors over what their short-term goals should be. Li Chung, the original captain of the *Ruoshui*, wants to restart the ship's fusion reactor—a process that will likely require exploring the interior of the rig crab for materials—to return to orbit or at least send a distress signal back through the gate. Phan Tai Duc, the original expedition commander, instead believes they should focus on the extended viability of their colony, including studying what long-term effects eating the *minbao* might have. Phan believes the UN or MCRN will eventually send a second ship to investigate their lack of communication and wants to keep as many people alive as possible until then. The competing agendas are beginning to factionalize the colonists. Hoarding and theft are both becoming issues as proponents want to ensure success, and any disaster could easily push the arguments into sabotage or violence.



STORY HOOK: RESCUE MISSION

The crew are hired to investigate the disappearance of the *Ruoshui*. They may find themselves having to contend with the system's solar flares and could end up having to make a forced landing. Perhaps parts from both ships could be salvaged to allow one to take off again. Or they may attempt to explore the planet in the hopes of finding the necessary parts.

STORY HOOK: CRACKING THE CRABS

A corporation, or maybe even the UN or MCR, wants to learn exactly how the giant crab-like terraforming machines operate. They believe that if they could be replicated, they could be useful in terraforming other worlds—possibly even re-igniting the Mars project. The crew are hired to see if they can get inside one of the giant machines and take scans of their inner workings, or failing that, search the planet for a construction facility or origin of the colossal machines. Once inside the crew discover that smaller crab-like machines maintain their larger counterparts and they view the crew as an invading virus and attempt to eliminate them.

KHRYSSOS

The colonists who entered the gate to Khryssos thought they struck gold, or rather, struck europium, an element needed in spaceship reactors. Not only did the planet boast substantial reserves of the rare and valuable material, but the ring builders established extensive mining networks that are far from tapped. The europium is there for the taking, but there is one major issue. The terraforming equipment stopped working centuries ago, and the atmosphere reverted to its natural state: saturated with carbon monoxide. A few brave souls have made a home here anyway, as the riches contained in the planet's crust make the risk of the air worth it. The planet is named for the Greek daimon of gold, a symbol of the riches contained within.

THE SYSTEM

Khryssos is one of six planets orbiting its sun, though it's the only one that's even close to habitable. There are three planets closer to the sun that are smaller and very warm and two gas giants orbiting further out. Khryssos has two moons, one of which has visible alien architecture on the surface and is likely artificial. For now, the colonists assume that this

equipment is either as broken as the terraforming equipment or harmless, as it does not react to anything as a planetary defense system would. Further, the equipment does appear very different from the defense system satellites orbiting Illus. Many large mirrors are visible on its surface, leading some scientists to speculate that the moon houses a large telescope observatory, free from the planet's thick atmosphere. The system's sun has many more solar flares than most stars. While scientists believe the flares are harmless, they still study them carefully.

KHRYSSOS

STAR TYPE	G6 main sequence
SATELLITES	2
ORBIT	164,557,657 km (1.1 AU) from the sun
DIAMETER	14,100 km
GRAVITY	1.2 g
LENGTH OF DAY	27 hours, 12 minutes, Earth Standard Time
LENGTH OF YEAR	382 Earth Standard days
ATMOSPHERIC PRESSURE	125 kPa
ATMOSPHERIC COMPOSITION	47.4% nitrogen, 29.1% carbon monoxide, 23.1% oxygen, 0.4% trace gases
TEMPERATURE	-10.2°C (min), 27.1°C (average), 62.7°C (max)
GOVERNMENT	Independent (OP)
CAPITAL	Gloria Alpha
POPULATION	1,800

BIOSPHERE

This planet is very warm—on the verge of too hot for humans to really thrive. The atmosphere is highly toxic as it's filled with carbon monoxide. Everything has a yellowish tinge, and it's hard to see very far by eye. The human settlers have built two domed settlements in a desert landscape. There are very tall cactus-like plants that stand in small clusters. Local creatures about half a meter long are shaped like Earth's lizards, but they have soft, moist exteriors. They often climb to the top of the cacti to sun themselves. They are extremely skittish and run when humans are near, but dissection of deceased specimens shows they have not only sharp teeth, but also vestigial venom sacs, indicating that larger predators may have once roamed this world. They feed on small insect analogs prevalent on the planet. The insects tend to be most active at dawn and dusk, and they can form such thick clouds that it is impossible for humans to see farther than a couple meters away, even with digital assistance. The insects take very little notice of humans themselves but have taken to gathering on the surfaces of the domes. The sand contains many sharp silica shards, and people journeying out of the domes need to take great care or

risk their environment suits getting damaged. Several meters underground, there are tar like deposits, most likely from plant matter that lived while the planet was properly terraformed and then died.

ALIEN ARTIFACTS

This planet has substantial mining networks, thanks to plentiful europium, platinum, and silver deposits. The ring builders left the planet before completely mining out the reserves, leaving valuable metals easily accessible. The air scrubbers

EXPOSURE

It can be extremely difficult to notice exposure to the atmosphere until it is too late, since carbon monoxide has no odor and isn't immediately irritating. Characters whose air supply is contaminated by the atmosphere must start making **Constitution (Stamina)** tests after a few minutes to avoid fatigue, followed by **Constitution (Stamina)** tests to avoid 1d6 points of damage once per hour. The TN starts at 9 and increases with prolonged exposure. Characters who inhale the unfiltered atmosphere die within minutes unless they receive immediate medical attention.

in the mines still work, but they strip out oxygen rather than adding it, to avoid oxidization of the europium. However, the terraforming equipment failed long ago, causing the atmosphere to revert to its natural state, which is mostly carbon monoxide. Additional alien structures are still being explored, but the mines lead to extensive underground developments. The moon is also home to alien artifacts, and the extremely large mirrors indicate that it may be a telescope. The mirrors aren't currently aligned into a telescope configuration, but they are all on motorized mounts, indicating potential movement. Astronomers are planning an investigatory visit to the moon to see if it houses a telescope and if it can be brought online. The telescope could be part of how the ring builders located new planets to build gates to, and being able to use it could be incredibly valuable for finding more planets and systems. It could also help them work out where Khrysos is relative to the galaxy.

SETTLEMENTS

The human settlers to Khrysos primarily live on three spaceships in orbit over the planet's surface. The planet has two small domed settlements, known as Gloria Alpha and Gloria Beta, but no one lives there permanently, instead returning to orbit periodically. The domes are constantly pumped with breathable air, but the quarters are quite tight. Venturing out of the small domes requires wearing modified vac suits to be able to breathe. Engineers and mechanics are working on understanding the terraforming equipment, hoping to restore its functionality, making it much easier to set up a base and complete the mining work here. Most of the settlers come from the Outer Planets, since they're used to being largely confined. People from Earth start to feel very claustrophobic very quickly since they can only be on a spaceship, in a small and crowded dome, or in a vac suit.

The two domes are located close to each other and are connected by an underground tunnel, so that in the event of a structural failure of one dome, the population can evacuate to the other one. With that many people under one dome, however, the air recyclers would be severely overtaxed, and the spaceships would need to send a shuttle down within 48 hours or the air supply would start to run out, even with people suiting up.

There isn't a defined government on Khrysos, and the three ship captains have ended up as de facto civil leaders. Survival is hard enough on Khrysos that few people are really challenging that hierarchy, though tensions do get high about how the money should be distributed when the valuable metals are finally mined and sold. A few wealthy investors from the Outer Planets have a collective 50% share, but the people on Khrysos are still determining how the remainder should be split up. As individuals make substantial advancements in the mines, they argue that they deserve a bigger piece of the eventual pie. Matters further complicate when miners and engineers are killed by the atmosphere or the simple dangers of mining. Do their shares go on to their heirs or go to the other workers? The spaceships themselves are designed to house thousands of people indefinitely, so people who aren't working in the mines tend to live straightforward lives on board.



STORY HOOK: A CLOSER LOOK

The crew are hired to transport and assist a science team to the artificial moon in the hopes of getting the massive telescope working. The moon might have defensive systems or disturbing the equipment might awaken something on the world.

STORY HOOK: CHOKING HAZARD

The crew are hired to remove and transport some artifacts discovered in one of the underground structures on the planet. While underground there is a tremor (possibly the result of builder tech activating) and a cave-in that traps them underground. They have air for some number of hours, but it will run out before they can be rescued. They must find a way to survive by either repairing the ancient air scrubbers or finding another way out of the caverns. Inventive engineers might also be able to jury-rig their own air scrubber using some of the existing builder tech combined with their own.

LUCA

Passed over in the initial colonization rush due to its inhospitable climate and relative lack of easily exploitable resources, Luca has become the focus of a UN charter permitting an extensive research expedition by the Asher Foundation, a scientist collective based on Luna and backed by several prominent biotech companies. In an unusual move for such a low-profile system, the foundation has also contracted a sizable protection force from Black Iron, a Martian private security firm. Luca is a world seemingly similar to very early Earth in terms of the origination of life, but its development has apparently been arrested by unknown means for untold millions if not billions of years.

In particular, the planet features distinct, clearly designed zones where life is locked into various stages of development but shows no signs of evolving, as if the planet were one gigantic slideshow, with each zone used as a living example of a certain step of the process. These “cradles,” as researchers have dubbed them, are overseen by strange observation platforms that serve no obvious purpose, but are ubiquitous across the world. The planet also has a number of “dead zones”—extinct cradles where the fossil record indicates that life was previously cultivated but abruptly died off. The reasons for these apparent extinction events are a hot topic of speculation and intensive research.

THE SYSTEM

Named after the head researcher of the Asher Foundation expedition, Ellie Seyler, the Seyler system consists of four planets. In outward order from the sun, they are: al-Khwārizmī, a dwarf planet orbiting close to the sun; Luca, the target of the research expedition; al-Hasib, a gas giant; and al-Shatir, which is in effect a moon of al-Hasib and a possible target for future mineral mining. The system also features an ice cloud of considerable size, which may also be the source of some of the unusually high number of comets found in the system. None of the charted comets pose a threat to Luca, but they are marked for closer inspection as the system is explored.

LUCA

BIOSPHERE

What life exists on Luca does so in the moderated and controlled “cradles” located in different places across the planet. The most advanced life forms are still very primitive, barely multicellular. However, some of the extinct cradles show fossil evidence that more complex organisms developed in the past, or possibly on more than one occasion. Further study is required to support that hypothesis. Self-contained suits are required for any travel outside of the domes; the atmosphere is not immediately toxic, but the gas mixture is unusual and makes it hard to breathe for extended periods. Factoring in the high heat level and the occasional eruptions of volcanic gases that occur near the cradles, not to mention the desire to avoid contaminating the research environment, sealed suits are mandatory for travel outside the dome.

Luca experiences a high amount of tectonic activity, and there are regular eruptions of all sizes. In fact, the eruptions are *too* regular; it seems likely the volcanoes have somehow been modified to regulate their activity. Investigating this is a top research priority but is currently waiting on the necessary specialized volcanology equipment to be shipped in. The ensuing excursion is anticipated to be the biggest single research effort on the planet so far once the proper gear arrives.

ALIEN ARTIFACTS

There are more than 6,000 of what researchers have dubbed “observation platforms,” for lack of a better term, all across Luca. They overlook the many

locked biomes across the world, often literally, though some actually rise from the middle of the biome. Some are only 2 or 3 meters high and wide enough at the top for just a single adult to sit without falling off, while others are more than 60 meters tall and wide enough for a dozen or more observers. Each appears to be constructed of a single piece of smooth, white, slightly reflective metal of unknown origin. Thus far, efforts to take samples of the material have been unsuccessful due to its incredible resilience, and no broken structures have been located that might be salvaged for

analysis. There are no ladders or other obvious climbing points on the platforms, so reaching the top can be a tricky exercise. There are also no guardrails or fastening points on top, so researchers have taken to adding their own protective measures to minimize the associated hazards.

Although no control panels or other input devices have been located so far, the platforms definitely have some sort of stabilizing mechanism, as they remain perfectly still even during high winds or periods of heavy tectonic activity. Researchers have documented hearing mechanical sounds during such incidents, but they have not been able to verify their source. Some of the larger platforms have small, circular indentations on top, as if something was supposed to fit into them, but so far nothing has been located that fits these patterns, with no apparent interactive elements inside.

SETTLEMENTS

So far, the Foundation has seeded the planet with several small “pod stations.” These combination laboratory/temporary habitats are designed for up to four researchers to occupy for short-term assignments, but there is only one large primary dome, unimaginatively named Research Dome-1. (Apparently, there is some high-level dispute between the corporate backers about who gets to name the first “official” settlement on Luca.) The researchers and their security have nicknamed the dome Artie in the meantime. The dome is hardened with multiple redundancies to avoid contamination and is fully enclosed, including flooring—drone machinery carefully leveled and graded the area before installation to ensure a perfect fit. The site was chosen for its relative stability close to the center of one of the larger tectonic plates, though small tremors are still common. Artie is best described as highly utilitarian, with shared living spaces for the researchers, a communal mess hall, several compact but high-end laboratory facilities, a gym, a small recreation center, an infirmary, and a data upload center that is also the dome’s server farm. The Black Iron personnel have their own barracks and a small armory inside the dome, but otherwise, everyone shares space. Rigid decontamination protocols are enforced when entering and exiting the dome, requiring upwards of an hour in each direction, making all travel outside a carefully monitored and structured process.

Relations between the Asher researchers and the Black Iron security have been cordial, if a bit strained. The researchers feel like the protective detail takes up too much valuable space in the dome and resent having to plan for “bodyguards” accompanying them everywhere, while the Black Iron personnel are quietly going out of their minds with boredom, and both sides wonder why such a small, out of the way system requires such a large security presence. Naturally, speculation runs wild and possible reasons range from pirates to rival corporate interests to unknown protomolecule threats that have been covered up from the research team (or even that the expedition itself is a blind experiment along the lines of the Eros model).



STORY HOOK: MISSING

A research team has gone dark after setting out for a two-day excursion to examine an active cradle that somehow supports the sort of microbial life forms typically found by deep-sea vents back on Earth. Aside from an emergency transponder activation, no contact has been made in over twelve hours. The characters are part of the rescue effort, but when they come to the transponder’s location, they find just a few basic survival shelters set up and no sign of the scientists. However, the nearby observation platforms are exhibiting strange behavior, pulsing with flickering bursts of red and yellow light, and there are signs that the ground around the platform has been disturbed somehow. Are the lights messages? Has the research team been dragged underground by some previously unknown method, and if they have, where are they, and what is the planet trying to do to them?

NEW BIRMINGHAM

Lost in a haze of gas rings, asteroids, and intense sunlight, New Birmingham is an enigma: an ancient planet orbiting a young star. The planet itself supports a flourishing theocratic colony, but the system contains a wealth of accessible raw materials in its multiple asteroid belts that have already drawn Belter prospectors. How long the extremist Southern Baptist faction planetside can continue to exist side-by-side with freewheeling asteroid miners remains to be seen, but rising tensions have already led to violence.

THE SYSTEM

New Birmingham's star is young—perhaps a quarter of the planet's estimated age of 12 billion years—suggesting it was a rogue planet captured by the system's gravity. Called Gabriel by locals, the star is a highly active white main sequence star that produces far more light and heat than Sol, pushing its Goldilocks zone much further out. Despite being nearly 3 billion years old, the system still retains some of its original planetary accretion disk in the form of dense rings of hydrogen, helium, and gravel, as well as several distinct asteroid belts—all a result of its unusual geometry.

By far the system's strangest feature are its three gas giants: Columbia, Tallahassee, and Nashville. Nicknamed "shepherd giants," all three circle the sun inside of New Birmingham's orbit, creating phenomenally powerful gravity wells that long ago ripped all their moons to dust. These same gravity wells prevent any rocky worlds from forming in the inner system. The Southern Baptist colonists consider the system a miracle and a symbol of God's power, creating a place of such destructive wrath that can shred careless sinners, but sparing a humble world created in Earth's image.

Two ice giants—Jackson and Raleigh—orbit beyond New Birmingham, with the closest supporting Anwu station in orbit. This small station of just over 200 Belters is the only permanent settlement in the system besides the colony of Augusta, with it being the only lifeline most of the rockhoppers mining the system's asteroids can rely on.

BIOSPHERE

New Birmingham is a hot, humid world dotted with eight small continents surrounded by deep oceans. The glaring, white sun overhead bleaches or mutes colors, but it provides ample energy for native life. While nominally carbon-based, the local biochemistry is so alien that eating it causes symptoms ranging from acute poisoning to anaphylactic shock in humans. Thankfully, most of the native ecosystem is aquatic; land is the domain of microbial mats, as well as phosphorescent lichen and mollusk analogs.

The seas of New Birmingham are in the midst of an evolutionary explosion, with a huge diversity of new life forms adapting to new niches, suggesting a massive geological upheaval in the recent past. Even closely related species

present a variety of sizes—from minute to gargantuan—and traits like bony exoskeletons and barbed tentacles seem to be priming an evolutionary arms race. While most of these are largely ignored by colonists, the wing-like shells of angel snails—mechanically more similar to a nautilus—are popular trinkets among New Birmers, and the shallow-water creatures are already becoming notably rare after only a few years.

ALIEN ARTIFACTS

UN scientists have taken broad guesses that the entire star system is an artifact, a cosmic-scale smelting operation that can capture planetoids hurled by phenomenal forces and grind them into dust. The different asteroid belts of New Birmingham all have markedly different compositions, suggesting the system might also serve as a massive centrifuge, sorting extracted materials based on their density. None of New Birmingham's three moons share its chemical composition nor reflect the local elemental makeup, suggesting the moons may be ring builder stations similar to those orbiting Ilus—perhaps once serving as control centers for a system-scale mining effort.

NEW BIRMINGHAM

STAR TYPE	A4 white main sequence
SATELLITES	3
ORBIT	324,300,000 km (2.2 AU) from the sun
DIAMETER	13,552 km
GRAVITY	1.1 g
LENGTH OF DAY	33 hours, 12 minutes, Earth Standard Time
LENGTH OF YEAR	802 Earth Standard days
ATMOSPHERIC PRESSURE	108.2 kPa
ATMOSPHERIC COMPOSITION	75% nitrogen, 23% oxygen, 1% argon, 1% carbon dioxide
TEMPERATURE	−65°C (min), 19°C (average), 45°C (max)
GOVERNMENT	UN-chartered religious colony
CAPITAL	Augusta
POPULATION	2,414

SETTLEMENTS

New Birmingham's name comes from its settlers: a contingent of Southern Baptist separatists from the southern region of what was once the United States of America (now the North American Shared Interest Zone), most hailing from the same Cascade Creek megachurch in the Birmingham region. Pastor Elias Hopper claims an angel of God appeared before him as the ring gate lifted off from Venus and told him to "follow the path I have laid, to a promised land of salvation." He gathered funds from his congregation, and within the year, they had chartered a ship and supplied it with everything needed to tame a new world.

Augusta is a civic marvel as colonies go and was designed as a shining city on a hill. The congregation arrived not only with colony building resources, but with half a ton of gold leaf with which to decorate their new church. Concrete structures and paved streets already surround the park and religious campus that make up the colony's heart, and Pastor Hopper has already begun planning a university to begin construction once a sister ship arrives with a second wave of colonists. New Birmers have wasted no time "fixing" the local ecosystem, burning native plants and microbes from the soil to introduce an Earth biome.

New Birmingham's UN charter is a result of the church's extensive political contacts. Its many exceptions to UN regulation and overtly religious purpose result from the wealth and prestige poured into the attempt. The city of Augusta is a theocracy in all but name. Pastor Hopper leads as governor, and his most trusted parishioners make up the city council. Civic meetings are held within the church—the first permanent structure built. Southern Baptist scripture forms the foundation of the colony's laws, dictating very specific roles and behaviors for men and women, forbidding homosexual behavior, and—while it doesn't say so overtly—enshrining antiquated policies of racial supremacy and exclusion. For all its disturbing overtones, New Birmingham's leadership points to the peace and harmony their homogeny brings—no racism without other races, no religious strife without members of other faiths, no immorality when they all share the same morals. Those assertions only describe the official reports, however. In practice, new Birmingham's population is already beginning to stratify based on wealth, profession, and subtle variations in faith, and sexual abuse has become near epidemic if unreported. The colony that boasts itself as God's vision is quickly falling apart as its supplies grow leaner, and already Pastor Hopper is scrambling to identify a new scapegoat to blame.

The abundant mineral wealth in new Birmingham's system has already provided that needed out-group: Belters. While the Augusta colony has exclusive rights to settle the planet, they have neither the authority nor the firepower to police the system, and Medina station needs raw materials. Hundreds of Belters—a hodgepodge of ethnicities, cultures, and faiths—have arrived in the system to mine its asteroids. While few Belters can actually land on New Birmingham, they nonetheless make a convenient target for the colony's fiery rhetoric. Nearby Anwu station relies in part on New Birmingham for basic supplies—air and water, primarily—but increasing tensions have raised prices and caused occasional cut-offs. Many OPA-allied Belters see echoes of the struggle with Earth in these culture clashes and are prepared to fight back, though the delicate nature of a colony as opposed to an entire planet means any escalation in violence could spell the end of both populations.



STORY HOOK: STAR-CROSSED

The crew are on the planet after making a delivery when they are contracted by one of the colonists. The son or daughter of Pastor Hopper, they have fallen in love with one of the Belters who occasionally visits to trade goods. They beg the crew to smuggle them off-world. Depending upon whether the crew accepts, and how they go about smuggling them off world, they may uncover some of the colony's dark secrets.

OSSAN

Ossan was clearly used by the ring builders at one time in its history, but now, only its ruins and unique ecosystem provide such evidence. The flora and fauna have been shaped in the distant past as a planet-wide, biological mining operation, still partially operational. The easy access to processed minerals is causing conflict between farmers and miners, each wanting the resources for themselves. The farmers want to maintain the planet, husbanding the resources, whereas the miners are attempting to exploit the world as quickly as possible.

THE SYSTEM

Ossan was discovered and surveyed during the first wave of exploration from Medina station. The system has six planets orbiting a red dwarf star, and Ossan, the fourth planet, is the only one capable of supporting human life despite its thin atmosphere. Ossan itself has seven moons, only two of which are visible from the planet's surface unaided, the others being too small to see without imaging equipment. They are dwarfed in the sky by the third planet, a gas giant with multiple visible rings that can be clearly seen even during the day.

OSSAN

STAR TYPE	M4
SATELLITES	7
ORBIT	19,000,000 km (1.3 AU) from the sun
DIAMETER	9,400 km
GRAVITY	0.81g
LENGTH OF DAY	32 hours, 17 minutes, Earth Standard Time
LENGTH OF YEAR	1.2 Earth Standard years
ATMOSPHERIC PRESSURE	94 kPa
ATMOSPHERIC COMPOSITION	80.4% nitrogen, 17.4% oxygen, 2.2% argon
TEMPERATURE	-5°C (min), 12°C (average), 16°C (max)
GOVERNMENT	Independent
CAPITAL	Ossan
POPULATION	80 settlers, 30 corporate

BIOSPHERE

The planet has a single large continent and is covered with thick permafrost at the poles, giving way to a wide band of grassland at the equator. The sky is often covered in thick gray cloud and most days get six or more hours of rain, which turns the soil into a thick mud that clings to everything it touches. When the sky does clear, the sun's light lends everything a reddish tinge.

The crust of the planet and its soil contain large amounts of metals, making it unsuitable for growing Earth crops, which will absorb toxic heavy metals such as lead and mercury. With the right processes, the soil can be cleaned of metals and supplemented with biomass brought from Earth, enabling more crops to grow. While not completely clean, the rain is no worse than that which falls in large parts of Earth, allowing for easy irrigation of crops.

The dominant local flora resembles large bushes that clump together in thickets, where sturdy stalks push up from the soil in dense patches. Although the bushes look like separate plants, they are the visible parts of much larger plants that extend over several square kilometers and have roots that reach down hundreds of meters into the ground. The bushes produce shiny red pods, around ten centimeters long with small blunt spikes spiraling around the outside. If broken open, the inside is a uniform spongy pale red that looks black under the sun's light. The

flesh has no visible seeds and smells faintly of anise. The plants absorb the various metals from the soil via their roots and slowly move them up through capillaries, where they end up concentrated in fruit pods. The fruit is not strictly poisonous, but the pods have no nutritional value to humans, as the metals in the pod would cause long-term health issues.

The largest form of life on the planet is a large bipedal animal, two to three meters high and weighing several tons. The head is a tube that extends out from its torso, balanced with a tail at the other end. The heads have no visible eyes, but dozens of small pits ring the tubes and seem to be the only sensory organs the creatures have. The settlers are unsure precisely how these organs work but have noticed small amounts of interference on radio equipment when in the vicinity of large numbers of the animals. Their skin is light brown, thick, and hard. After death, this becomes dry and brittle in a matter of days and quickly crumbles into dust, rendering it useless.

The creatures are herd animals, with each pack numbering around a hundred individuals, including juveniles. They move from thicket to thicket to graze, with each herd traveling in the same direction around the planet, against the planet's rotation. They don't communicate vocally, and the only sound they make is the sound of their footfalls and a grinding sound when they eat, which they do by lowering their whole head down over a bush and stripping the pods without damaging the rest of the plant.

The creatures completely ignore humans but are aware of them and will move around anything or anyone in their way. Early attempts were made to use the creatures to pull carts, but although a harness can be attached, and they can even be ridden, they can't be directed, rendering them useless for labor.

The high metal content of the pods does not adversely affect the creatures, instead playing a part in their life cycle. Over their lives, the bones of the creatures are replaced with the metals that are present in their diet. Different parts of their skeleton are replaced by different metals consistently across all remains that have been found, although this does not appear to provide any advantage to the creatures. Smaller bones in the head are shot through with valuable minerals such as rhodium, platinum, and iridium, reflecting their relative scarcity on the planet. In contrast, the large, load-bearing bones in the legs are iron and aluminum.

ALIEN ARTIFACTS

Scattered around the surface of the planet, approximately every twenty kilometers, are low domes, around four meters high, and open at one side. The domes are made of a blue stone, shot through with particles that catch the light. Most are still standing, although all are beginning to crumble with age. The floor inside is made up of thin metal strips woven in a hexagonal pattern, which are slightly springy, and give when trodden on. Below, there is a space of a few meters to a floor made of the same metal as the strips above. Over time, the pits have been filled with a dark, rich soil that exudes a slightly sweet smell.

As the large creatures that roam the landscape approach the end of their natural lives, they leave their herds and head toward one of these ruins. When they eventually die, their bodies decay, leaving only their skeletons, the bones replaced with the metals that have built up over their lifetimes. Metal left in contact with the metal strips on the floor corrodes, regardless of its composition, and the skeletons decay and scatter to the winds after a few years. Due to the sheer number of the creatures, most of the ruins will have a ready supply of skeletons waiting.

The science team that performed the original planetary survey suggested that the flora and fauna were engineered to work as a biological mining operation. Depositing the bones at collection points would have been the final step before the metals were processed, although there are no apparent sites for ore processing on the planet. This could have been performed at the ruins in some way, but this is only speculation.

SETTLEMENTS

The original settlers were a self-funded group of former ranch owners from Australia in the Indian Ocean Shared Interest Zone. Increasingly severe droughts gradually made their holdings uneconomical to run, and they collectively sold their land and chartered a ship to Ossan. They built a small community of around twenty low concrete domes, and have started growing crops.

They intended to use the accumulated bones to trade for goods in the short term to help their colony grow. Lacking the equipment to process the metals locally, they have collected and transported several shiploads of metallic bones to Medina station for sale.



STORY HOOK: STAMPEDE

The native wildlife had previously given the human settlement a wide berth, but shortly after a major slaughter by the mining conglomerate, GAL Resources, a herd of the creatures ran through the settlement during the night, damaging several buildings and trampling multiple fields of newly sown crops, all in complete silence. The settlers are convinced that this is a result of the killings and are desperate to hire someone to mediate with the mining corporation and protect both their livelihood and the safety of their colony. They are aware that any court battle could drag on for years while the slaughter continues, but they believe that if they can delay the harvesting operation long enough to raise awareness of the issue back on Earth, public opinion could force GAL to stop the cull. Meanwhile, GAL is determined to press on, increasing their profits as much as possible while legal arguments drag on in another solar system.

Although the settlers were correctly registered with the UN, their charter was for farming rights only, and a large Earth mining conglomerate, GAL Resources, has purchased mineral rights. The corporation, and their lawyers, argue that this includes the right to take the metals present in the bones. GAL have sent a team of their own to Ossan, who have set up a small base a short drive from the settlers, defended with sturdy fencing and a well-monitored perimeter.

The corporation has started culling the native wildlife in bulk to maximize profits, killing entire herds of juveniles and adults. They extract bones containing the most valuable minerals, and discard the rest, leaving the carcasses to rot. The settlers initially took their objections to the UN, attempting to stop the slaughter legally. However, being so far from the court system, and without the legal resources that the mining corporation can bring to bear, their attempts are proceeding very slowly.

ROANOKE

The planet originally—and officially—named Amerigo has come to be known as “Roanoke” due to the series of disappearances and mishaps associated with it, events that have been carefully downplayed to avoid inflaming fears of the unknown in exploring beyond the ring gates. The cause of the issues is active alien technology in the system, which causes widespread technological failures and has stranded the initial visitors to Roanoke without the ability to communicate, forcing them to rely on primitive technology to survive.

THE SYSTEM

The Amerigo system appears ideally suited for colonization. Its central star is a G-type main sequence star, slightly cooler than Earth’s sun. The second planet, orbiting at just over one AU, is terrestrial, with close to Earth-standard gravity, climate, and rotational period. The innermost planet is a barren rock, while the outer six orbits of the system are occupied by three rocky planets, followed by three gas giants, with the system’s ring gate orbiting at the distance of the middle gas giant, 13.46 AU.

The terrestrial planet has three small, lifeless moons, each barely a quarter the size of Earth’s moon, but all occupying the same orbit around the planet, suggesting the moons are builder artifacts, or were placed in their current orbits by the builders. This creates a complex series of waxing and waning moonrises on the surface.

ROANOKE

BIOSPHERE

Roanoke has a large continent that spans about half of its northern hemisphere, along with three smaller continents in its southern hemisphere, one of which is near its south pole and covered in a deep ice layer. Just over 60% of the planet’s surface is covered in water, and there’s sufficient vulcanism for the formation of new islands and landmasses from occasional volcanic eruptions, but nothing severe enough to adversely affect the climate on a large scale.

The continents feature a wide range of climates and biomes, from arctic near the polar regions to tropical and desert terrain at the equator, with broad sub-tropical and temperate bands to either side, similar to Earth. Much of the surface is covered in deep old-growth forests with a variety of tree analogs, save for broad plains covered in monocots akin to Earthly grasses. The planet’s hydrological cycle creates large icepacks of fresh water in the high elevations, which melt in the change of seasons to feed streams and rivers flowing back to the seas.

Life on the planet appears advanced compared to some ring gate worlds, with large mammals living on the landmasses, including herds of large herbivores vaguely resembling giant tapirs almost the size of Earth elephants. The many predators include somewhat cat-like pouncing hunters with fur coats that change color for seasonal camouflage and “dragons,” reptilian fliers well over a meter in body length with 4-meter wingspans, that dive at their prey to strike with sharp claws and tearing teeth.

STAR TYPE	Class-V Type-G4
SATELLITES	3
ORBIT	156,000,000 km (1.04 AU) from the sun
DIAMETER	13,250 km
GRAVITY	1.02 g
LENGTH OF DAY	26 hours, 17 minutes, Earth Standard Time
LENGTH OF YEAR	462.15 Earth Standard days
ATMOSPHERIC PRESSURE	101.78 kPa
ATMOSPHERIC COMPOSITION	78% nitrogen, 21% oxygen, 1% trace gases
TEMPERATURE	−92°C (min), 12°C (average), 54°C (max)
GOVERNMENT	Democratic (unofficial)
CAPITAL	Sargasso (unofficial)
POPULATION	109 human inhabitants

ALIEN ARTIFACTS

There is relatively little evidence of builder artifacts on the planet’s surface, with most of them found in the deeply forested regions, where heavy overgrowth makes them difficult to spot. There is a distinct lack of the larger, towering structures

found on some planets. Likewise, while the arrangement of the planet's moons suggests builder intervention, there are no obvious signs of artifacts on their surfaces or visible to orbital scans, although there may be sub-surface mechanisms or the like. It is very likely, however, there are active builder artifacts on Roanoke or within its system, given the conditions on the planet.

SETTLEMENTS

Initial surveys of the Amerigo system were so promising that a small scientific research expedition was chartered to begin readying the way for settlement on the second planet. They set up basecamp near a large bay in a temperate coastal region of the largest continent, and things were running smoothly until all contact with the expedition was suddenly lost. Efforts to regain contact have all failed, and, what's more, is that three follow-up expeditions sent to find out what happened have also disappeared without a trace. This includes two unmanned probes sent to the system for a look, which only got within 500,000 kilometers of the planet before going offline. For the time being, the UN and other authorities have agreed to place the system and its ring gate off-limits while an investigation is ongoing.

What no one off of Roanoke knows is, following the breakdown and explosion of one of the expedition's generators, all artificial electrical generation on the planet (or in orbit) ceased. Devices were able to draw upon stored battery power, but efforts to generate new electricity or to recharge the storage batteries failed. In fairly short order, all electronic equipment on the planet stopped working. What was worse, the effect extended out at least to the planet's orbit (out, in fact, to the orbit of the planet's moons). This affected the survey ship in orbit, shutting down all of their systems. The remaining crew on-board suffocated before their orbit eventually decayed. The ship mostly burned in the atmosphere before what remained crashed into the surface, thousands of kilometers from the surface camp. The same happened to the probes and the smaller scout ship sent to investigate: Their electrical systems stopped working and, unable to maneuver, they burned up and crashed. Fortunately, the crashes were small enough and far enough apart to have not severely affected the planet's environment.

The hundred or so people remaining on the surface are struggling to survive as best they can, stretching available food supplies while cultivating new ones, and carefully managing their remaining resources. They've managed to jury-rig some working firearms (the firing mechanisms of most modern guns are also electric) for defense and are making use of whatever they can salvage, but they are otherwise forced to operate at close to 19th-century levels of technology. Their main focus is sustainable survival, then both investigating the cause of the electrical shut-down and possible means of communicating off-planet, assuming that telescopes and other instruments can perceive the surface. The inhabitants know that more than one orbital object has fallen to the surface, but, beyond that, they have no idea of the condition of the ring gate or, indeed, the rest of human civilization.



STORY HOOK: RESCUE

The natural story hook for Roanoke is for a crew to be charged with going and finding out what happened, if there is a way to fix it, and rescuing the people on the planet. This could be an assignment from the UN or a similar governing body—possibly assigned to freelancers in order to minimize losses—or a job the crew takes on for family or friends of the lost expedition, frustrated with the lack of official response. Of course, the first thing the crew will need to do is survive the shut-down, since it disables any ship that gets too close to the planet. An unpowered capsule with sufficient heat shielding could reach the surface using air-braking and parachutes, but then comes the question of getting back off the surface.

The crew can investigate ancient builder sites, finding the one near the expedition that triggered the shutdown. Then they must see if they can convince its limited “intelligence” to reset, or simply destroy the site, which also does the trick. However, this could lead to other unforeseen complications with the alien tech remaining on the planet.

SHAULA

Only recently charted, Shaula has already been tagged as a valuable system for mining—so valuable, in fact, that the UN authorized a rare collective charter in order to stave off all-out corporate war between several prominent mining concerns.

SHAULA	
STAR TYPE	F-V
SATELLITES	1
ORBIT	209,437,302 km (1.4 AU) from the sun
DIAMETER	14,962 km
GRAVITY	1.6 g
LENGTH OF DAY	18 hours, 14 minutes, Earth Standard Time
LENGTH OF YEAR	401 Earth Standard days
ATMOSPHERIC PRESSURE	~133 kPa
ATMOSPHERIC COMPOSITION	80% nitrogen, 19% oxygen, 1% helium, strong ozone traces
TEMPERATURE	-35°C (min), 6°C (average), 20°C (max)
GOVERNMENT	Corporate triumvirate
CAPITAL	The Azorana (TGCC), Ibere (AHI), El Dorado (ADW)
POPULATION	34,847

While the authority of the UN over some of the parties is tenuous at best, it was made clear that agreeing to the terms of the charter was in everyone’s best interests in that sharing the system meant more time profiting off it and less time fighting over it. After much backroom wrangling, three big-name signatory corporations signed on to the Shaula Mining Cooperative (SMC) charter: Adebamowo Heavy Industrial (AHI) from Earth; Amalgamated DeepWorking (ADW) from Mars; and TardiGrade Claim Collective (TGCC) from the Belt. By the terms of the Shaula Mining Cooperative (SMC) charter, each of the corporate entities is supposed to share information, talent, and necessary resources to effectively and fairly extract the system’s mineral wealth.

Unfortunately, the UN’s good intentions haven’t worked out exactly as planned. By charter, the three main corporations are supposed to vote on major undertakings such as new mining operations or installations, which it was hoped would foster cooperation, or at least ensure that no one group would dominate. In practice, sharing has been minimal and the situation has been as intensely cutthroat as one might expect from three corporations all accustomed to getting their own way. More interested in the asteroids and lunar mining ventures, TGCC frequently acts as a spoiler between the two Inner corporations who are busy warring over the best parts of Shaula itself, selling their vote to one or the other depending on what they’re offered, though they have to be careful not to play this card too often or AHI and ADW can unite to clamp down hard on their own holdings in retaliation.

Only the charter’s strict prohibition of outright violence on pain of rights revocation and replacement by a corporate rival has kept a lid on things so far, but even that has merely moved things to the realm of corporate espionage, blackmail, intrigue, sabotage, and other indirect maneuvering. Combined with the inherent

dangers of industrial mining and the added unknowns of an alien world, Shaula is on track to become a boomtown in the mold of the American West—as lucrative as it is lawless and lethal.

THE SYSTEM

The system is relatively sparse, with only one other planet besides Shaula, an icy dwarf planet currently designated P2, at the far edge of the system. Shaula has a single moon, Lesath, in close orbit. Its unusual shape and composition have led to preliminary speculation that it is at least in part composed of ejected planetary core materials after the mysterious construct known as the Spike (see **Alien Artifacts**) was put in place. There is a dense asteroid belt between Shaula and P2, though the asteroids have excellent mineral compositions for profitable mining operations and the charter members have already been forced to chase off wildcat miners a few times.

BIOSPHERE

Shaula features five large landmasses, not including its small polar caps, and three large oceans. The landmasses seem relatively placid on the surface, with predominantly rocky terrain only occasionally giving way to more temperate lands full of small shrub and grass analog vegetation. Ionized emissions from the Spike frequently give rise to huge, continent-spanning superstorms with massive electrical output and winds exceeding 300 kph, making surface living extremely difficult. Fortunately, the emissions take time to build. Thus, storms can be predicted with relative accuracy, allowing for windows of safe passage from orbit to the surface (or, more accurately, underground). Aside from the curious “breaching moles” species that digs escape tunnels to the surface to avoid light-sensitive underground predators, very little complex life exists topside, and thus far, the oceans seem to be home primarily to simple phytoplankton and some primitive feeders.

Underground, however, Shaula is positively teeming with life. Insects and lizards can be found in abundance, clustering near geothermal hotspots and feeding off various fungi and root networks or using complex tunneling strategies to prey upon each other. Vast grottos and underground rivers are home to various aquatic and amphibious species as well, many

using dazzling displays of bioluminescence to attract mates (or prey). Thus far, the most feared predators are the ‘strictors, vaguely snake analog creatures up to 15 meters long that wait in shallow pockets just below the surface of larger tunnels, hunting by vibration to lunge and drag prey down to their nests, and which seem to find humans palatable. It’s worth noting, however, that huge tunnel networks are being discovered all the time from the peaks all the way down to the deepest shafts, and while many are natural, some are clearly too regular to be anything but designed. Given the size of these tunnels, which go from human-sized to dozens of meters across, miners worry that they have yet to spot some of the more dangerous creatures deep below the surface.

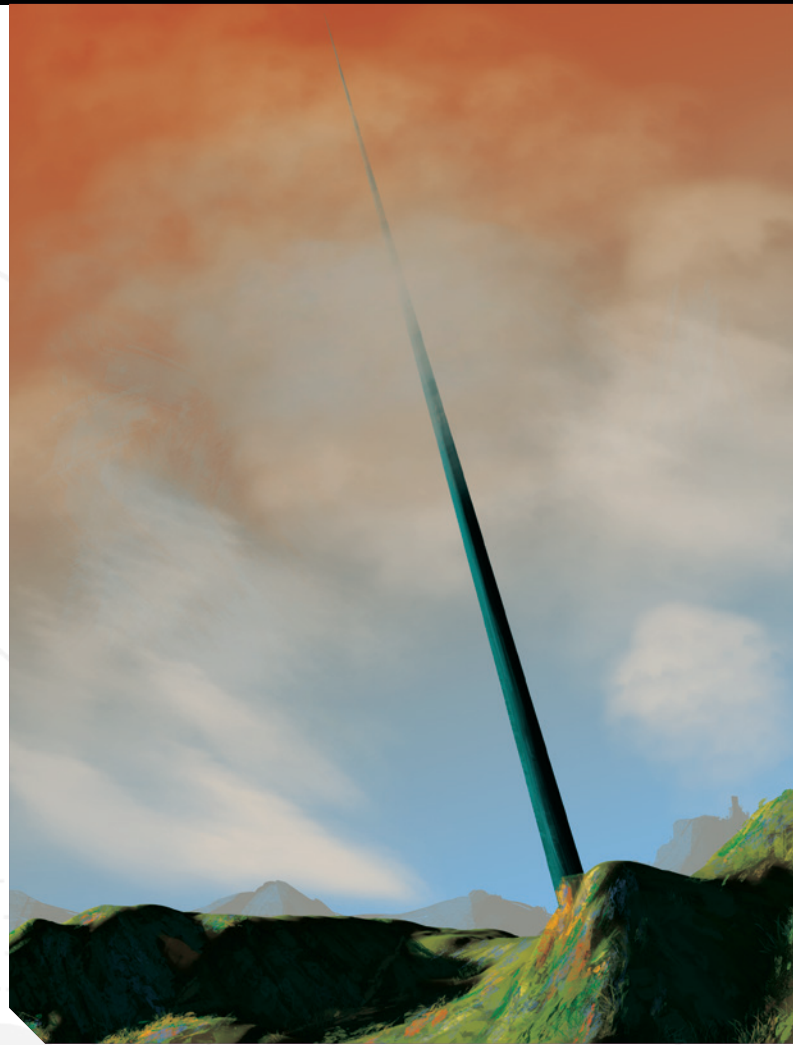
ALIEN ARTIFACTS

It’s impossible to miss Shaula’s most prominent alien artifact—the Spike, a massive artificial construct that literally transfixes the entire planet at a roughly 45-degree angle to its axis and extends to the upper limits of the stratosphere on each side. Cylindrical, 50 kilometers wide, and tapering to a point at each end, the Spike is made of a blue-black metallic substance that appears similar to the material of the Ring Station. It emits a low, constant hum that can be heard several kilometers away above ground but up to a hundred kilometers distant underground, seemingly resonating through the mineral structure of the planet itself. Listeners have also claimed to hear mechanical sounds from time to time, as though great mechanisms within the Spike were shifting, but none have been recorded to date. Intricate patterns of light routinely move across the surface of the artifact, creating a constant aurora borealis effect, and it frequently gives off intense bursts across different parts of the electromagnetic spectrum; if these emissions have a specific purpose or design, it has yet to be determined.

The Spike also appears to “shed” layers over time, as inert samples of its material can be found in layers around it and scattered on the surface. (There have been no recorded attempts to drill into or break off active parts of the Spike, though that is perhaps only a matter of time.) As to how the planet seems to otherwise behave normally with a giant spike running straight through its core, no one can say for sure—and with the charter members only grudgingly allowing a handful of small, independent research teams in order to please the UN, it’s not likely to be explained any time soon.

SETTLEMENTS

Unsurprisingly, each of the charter members maintains its own base of operations and keeps a careful watch on their neighbors. TGCC is based out of a small flotilla surrounding the *Azorana*, a converted ice hauler in orbit around Lesath. AHI is headquartered in Ibere, a subterranean complex in the Iji mountain range on the northernmost continent, while ADW operates out of El Dorado, another subterranean settlement inside a massive cliff face on the coast of the continent immediately to the east. Despite their relative distances from each other, communication and shuttle relay between the groups is constant as they “cooperate” on how to best strategize how to mine the system ... and undermine each other.



STORY HOOK: BALANCE OF POWER

The characters are contracted for a supplemental supply run to cope with the booming population and infrastructure needs of the mining operations. Depending on their talents, they might be hauling the cargo, providing security for the run, or even shuttling some important personnel. (Which corporation holds their contract can be selected based on which one the characters would be most likely to work with based on their backgrounds and attitudes.) Regardless, no sooner do the characters come into the system than they find themselves in the midst of a major pirate attack, in a position to save a vessel under heavy attack (or at least rescue its personnel). Not only must they survive the assault, but in the aftermath, the triumvirate members begin accusing each other of hiring the “pirates,” and suspicion even falls on the characters due to their timely appearance. They must navigate the perilous balance of power carefully if they want to finish the job and get out alive, and if they choose to dig into the mystery of the attacks, things will only get more perilous—but it could also change the political landscape of this booming system forever.

ZARANYX

Zaranyx seems like a paradise for humans looking to settle on a new planet. The climate is pleasant, the air is breathable, and initial experiments show that Earth plants can even grow well in the soil. There's just one catch: The tides are so strong, and the landmasses small, flat, and marshy enough, that the landscape is constantly changing over the seasons. Unlike the predictable tides of Earth, the tides of Zaranyx are so complicated that they don't follow a pattern changing from year to year. A spot that served as a settlement last year is this year several meters underwater. Survival on Zaranyx doesn't mean permanent cities, but rather embracing a nomadic lifestyle and moving with the tides. It's far from ideal, but some people are willing to try it out for a shot at a new home. The leader of the initial expedition to settle Zaranyx named the planet for her mother and grandmother.

THE SYSTEM

The system has four planets in nearly the same orbit around two stars. Further, the planet has four moons, each an appreciable fraction of its own size. The presence of so many large bodies that pass nearby is what causes the extreme tides. An asteroid belt orbits the sun just beyond the orbit of the planets, and scientists believe this was the result of two more planets that crashed into each other. Interestingly, explorers vetting the asteroids for minable materials have on several occasions found wrecked alien technology in the floating debris. One of the other planets is nearly habitable, with a breathable atmosphere, but the constant and severe hailstorms make it less appealing than Zaranyx, which is quite pleasant other than the bizarre tides. However, residents have discussed the possibility of establishing a mining outpost there, as the tides on Zaranyx make it difficult to mine for natural resources, despite there being useful natural deposits. The other two planets are rocky and bare, lacking the atmosphere to support life.

BIOSPHERE

The weather is pleasant, staying in a comfortable temperature range for humans, and while it rains often, it's pleasantly gentle and only rarely stormy. The air is breathable and has an almost sweet aroma. The waters are filled with different kinds of fish, and settlers are very carefully working out which might be edible. The biology of this world is close enough to Earth that many Terran plants can grow in the soil, so humans may be able to eat the animals as well. With the stories of some of the wildlife on other newly settled planets, people are reluctant to put that theory to the test without careful study.

Dog-sized amphibious creatures move between the seas and the marshy lands, eating plants and smaller fish analogs. There are also many bird-like species that migrate with the land. Many of them are carnivorous and swoop down to collect fish and amphibians. They can sometimes cause damage to settlers' technology if they mistake shiny metal objects for tasty prey. As Earth plants grow in the soil, people plant fast-growing crops that bear food before the tides change once again. Mold is a constant problem with so much moisture, both from the native fungal life and spores that naturally came along with human settlers.

ZARANYX

STAR TYPE	K2 (main sequence)
SATELLITES	4
ORBIT	104,718,509 km (0.7 AU) from the sun
DIAMETER	11,310 km
GRAVITY	0.86 g
LENGTH OF DAY	18 hours, 14 minutes, Earth Standard Time
LENGTH OF YEAR	302 Earth Standard days
ATMOSPHERIC PRESSURE	105 kPa
ATMOSPHERIC COMPOSITION	70.5% nitrogen, 18.9% oxygen, 10.3% hydrogen, 0.3% helium
TEMPERATURE	-20.4°C (min), 13.8°C (average), 235°C (max)
GOVERNMENT	MCR
CAPITAL	Ithaca, Homestead
POPULATION	3,200

ALIEN ARTIFACTS

As the tides rise and fall, they uncover and then flood various large alien structures present in the marshes. Human settlers are still working out what the purposes of the structures might be. The devices seem to be hydraulically powered, and the tides have kept them going for untold years. They are either trapped or simply dangerous to the uninformed; several people who got close to investigate were caught by hooked appendages that immediately pulled them into the structures, never to return. The planet's many fish seem able to swim freely next to the devices, so the effect could be size-based. Somehow, they can tell the native life apart from the humans. Once every seventeen days, all the devices emit a loud beeping noise simultaneously, but its purpose is unknown. The devices could simply be designed for underwater mining, but many colonists fear they are part of something far more sinister. For now, the settlers steer clear of the strange machinery.



SETTLEMENTS

Most of the settlers to Zaranyx came from Mars, looking for the opportunity to live on a planet where you can go outside and breathe the air, rather than spend your life trapped underground or behind glass. The nature of the tides means that none of the settlements are permanent, though people have built frames and foundations in several different places to make setting back up easier. The colonists have had to adapt to this nomadic lifestyle, changing locations every two to three months. Because of this, the local politics are constantly evolving as well. People tend to stick to smaller, often family-based groups, and may not always set up camp again with the same neighbors. Alliances change with the seasons, and keeping track of who is fighting and who is friendly is a substantial task. However, a code has developed among all the settlers of Zaranyx: *When the tides rise, there are no enemies*. Everyone works together to ensure that all colonists safely depart the last settlement and successfully make it to the new one. Bartering is common between different clans and money tends to only be used when dealing with people from off-planet. Zaranyxians claim that nowhere in the galaxy has prettier night skies, with not only the four moons, but also the other planets easily visible and shining brightly. Many residents have reverted to old-fashioned forms of entertainment, and music, storytelling, and sports are all popular. A few people have taken to falconry and training the bird analogs native to the planet, with some success, though this is certainly a dangerous hobby.

STORY HOOK: SABOTAGE

Officially, the planet is under the jurisdiction of the MCR, but the settlers don't bear much loyalty to it, focusing on day-to-day survival issues. The official capital, Ithaca, has been mostly underwater since being first established. The individual settlements have names to distinguish them, but people tend to refer to the active one, whichever it is, as Homestead. The MCR is developing plans to build a floating city that can avoid the need for the constant movement, codenamed Aeolia, for the floating island Odysseus encountered. The current residents of Zaranyx are of mixed feelings about this development. Some say that this kind of technology is necessary to ever really build a society on this planet and others say that this would ruin what the existing settlers have built and how they've learned to live with the planet's idiosyncrasies. Some of the latter group have intentionally sabotaged the developments, by messing with recording equipment taking data on the oceans and breaking the test pieces sent for in-situ testing on Zaranyx. The MCR engineers responsible for the project are growing increasingly annoyed with the impediments to what they see as necessary progress. Some are demanding an MCRN presence on Zaranyx to enforce the safety of their experiments, but officials have refused this demand, so far.

ZOISITE II

From orbit, Zoisite II resembles a sparkling jewel, with streaks of yellow, green, and blue set alight by white sparks visible from orbit. But up close, the planet is a maelstrom of poison, its enticing white sparkle originating from massive lightning strikes that ripple across the atmosphere for kilometers. Towering pillars of mineral salts are all that remain from what was once a planet-wide ocean. Ring builder ruins still stand despite the storms and acid rain, though apparently isolated to a small complex on the equator. But like most hidden jewels, Zoisite's true value lies buried far below the surface.

THE SYSTEM

The star of the Zoisite system is an orange subgiant, smaller but brighter than Sol, and old enough that astronomers believe it may have only a half billion years before its rate of fusion shifts and it grows into a red giant. The system contains five planets—scientifically classified Zoisite I-V—with some evidence of a small, sixth planet having been consumed by the star two billion years ago. More than likely, Zoisite's star was a yellow main sequence star when originally colonized by the ring builders, and some fanciful souls believe it may be one of the systems “cleansed” by the alien station in the Slow Zone in its attempt to halt whatever extinction crisis threatened their empire. The star shows no obvious signs of outside influence, but at the same time, UN scientists admit they have no idea how the ring builders could control or exterminate entire stars.

Zoisite I through IV are rocky worlds largely stripped of available resources, but only Zoisite II boasts ring maker ruins left over from the industrial process. Zoisite V is a massive gas giant, just a few trillion tons shy of qualifying as a brown dwarf, whose massive gravity well shields the inner planets from asteroid strikes. Its gravity well is likewise useful for probes and

travelers seeking a gravity assist to reach the inner system from the ring, but the erratic electromagnetic fields the planet produces—which constantly jostle its rings into a muddy haze—can cause unexpected damage to computers and even reactors.

Most planets in the Zoisite system support a handful of small, uneven moons similar to Mars's Phobos. Zoisite II, the only planet with evidence of ring builder habitation, has only a single, unnamed moon. Unlike many alien sites, no obvious evidence exists of orbital defenses on or near any of the system's moons, suggesting the facility at Zoisite II was either mothballed long before the empire's collapse or were intentionally removed or destroyed in the process.

BIOSPHERE

Most of Zoisite II's surface is stippled with salt flats and crystalline towers formed from mineral salts. Deep crevasses mark the borders of now-inert tectonic plates, plunging down a kilometer or more and often intersecting with the subsurface ring builder ruins. Only a small fraction of the planet's former liquid water remains, existing as humidity in the atmosphere, occasional acid rains, and slow-flowing rivers of briny, caustic mud.

Early surveys suggest Zoisite II once supported multicellular life in its oceans, but all that survives on its dry, caustic surface now are single-cell extremophiles feeding off the salts and volatile gases. Pockets of toxic chlorine dioxide form in shadowed canyons and crevices and support high biodiversity, but when ignited by a lightning strike or especially intense direct sunlight, these pockets can detonate, destroying the habitat but spreading spores to new niches.

Frequent lightning strikes release the compounds in the landscape, contributing to a deadly concentration of chlorine gas in the once-breathable atmo-

sphere—nearly 200 ppm—which can cause permanent eye and lung damage in as little as 30 minutes or death within an hour without environmental systems. While humans can survive brief exposure to Zoisite II's surface atmosphere, the toxic soup causes coughing and eye irritation almost immediately, and the frequent lightning storms rain down hydrochloric acid, making long-term survival on the surface a distant dream.

Below the surface, however, a strange world has adapted to survive the planet-wide changes.

Extensive industrial and residential ruins exist below the surface of Zoisite II—the remnants of the ring builder process of exporting the entire planet's ocean—and in this isolated environment, the few organisms of old Zoisite who remained when

ZOISITE II

STAR TYPE	K3 orange subgiant
SATELLITES	1 moon
ORBIT	190,700,000 km (1.3 AU) from the sun
DIAMETER	8,244 km
GRAVITY	0.6 g
LENGTH OF DAY	16 hours, 15 minutes, Earth Standard Time
LENGTH OF YEAR	402 Earth Standard days
ATMOSPHERIC PRESSURE	140 kPa
ATMOSPHERIC COMPOSITION	71.7% nitrogen, 19.8% oxygen, 4.3% argon, 2% neon, 2% carbon dioxide, 0.2% trace gases
TEMPERATURE	-5°C (min), 38°C (average), 74°C (max)
GOVERNMENT	None
CAPITAL	None
POPULATION	0

the aliens vanished from their world have continued evolving. A sophisticated ecosystem now exists in the worldwide network of apartments, workspaces, storage compartments, and transit lines, feeding itself off geothermal heat and fusion generators rather than the light of the sun.

The most ubiquitous life in the old tunnels are plant analogs with traits similar to Earth corals and anemones, which feed off ambient heat and radiation but also extend filaments to extract nutrients floating in the air. Hardy, beaked grazers pick at these dry reefs, and in turn, they are preyed upon by larger organisms. Most of the animal analogs share features more reminiscent of fungi, including breathing through gills, tissue ubiquity, and mycelium-like muscle fibers. The cramped conditions mean few of the organisms grow larger than 20 centimeters, but flight is a common adaptation, with insect analogs taking to the air on feathery wings made of hollow filaments.

ALIEN ARTIFACTS

Most of Zoisite II is an alien artifact, with underground ruins ranging from 100 to 1,500 meters below the dry sea beds. The tunnel structures crisscross most of the surface and still contain a breathable atmosphere courtesy of ancient air scrubbers—a testament to the durability of ring builder technology. While some conduits are no larger than air ducts or the maintenance space between inner and outer hulls, others are massive cathedrals grown into the stone, larger than any Martian dome. Entire lakes of freshwater still sit in storage tanks, awaiting export. At first glance, most of these structures may appear natural save for the uncanny straightness of tunnels and walls; two billion years of growth and evolution have covered most surfaces with enough life and decay to mask its origin. But everywhere throughout the ruins, technology and automatons still rest beneath the layer of soil and growth—theoretically still capable of activating and resuming their former duties.

The apparent hub of Zoisite's subterranean activity is a sprawling complex on the planet's equator, directly beneath the only surface ruins yet surveyed. Reports suggest the facility anchored a space elevator or other colossal, low-mass structure, and the surface is littered with the remains of carbon nanotube cables as thick as an Earth's arm—valuable salvage for well-prepared visitors. City-sized ruins and open spaces beneath it form a ring enclosing a massive, freshwater sea stored half a kilometer below the planet's surface—a fortune in readily available water. Over six hundred kilometers across, the hub hosts the largest range of biodiversity in Zoisite's underground ecosystem and is one of the few places that can support human-sized life. A sprawling reef-jungle surrounds the sea and has overtaken the ruins, filled with unique animals, plants, and less readily-classified life, all calling to mind the lost worlds of old Burroughs novels.



STORY HOOK: SPECIAL DELIVERY

The crew is responsible for escorting or transporting a group of scientists to Zoisite II. Unfortunately, their arrival somehow triggers the ancient automatons beneath the planet's surface. The crew must scramble to evacuate the scientists, but this is complicated by the activation of defensive “drones” that launch and prevent ships from landing or taking off. The crew must venture deep beneath the surface of Zoisite to figure out how to turn off the planet's defenses.

STORY HOOK: RISING WATERS

Scientists have made a fantastic discovery in one of Zoisite's underground chambers. However, during the initial investigation, something activated causing a minor tremor. Nothing appeared to be damaged; however, the site has begun filling with water. The crew are asked to help with making final frantic scans before everything is submerged or possibly figuring out a way to cut off the increasing water. Of course, this is complicated by the arrival of a dangerous amphibious species that does not take kindly to intruders.



4: COLONIES

Colonies can exist as purely narrative elements, with the players' adventures deciding their fate in broad terms. This is ideal for colonies the characters only visit occasionally, or when the colony serves as a backdrop for larger-than-life adventures taming the wilderness and exploring alien ruins. For stories that focus on the colony's survival, inhabitants, and hardships, the players can step into direct control, treating the colony like a character of its own using the following rules.

"And ... and what is civilization if it isn't people talking to each other over a goddamned beer?"

— *Cibola Burn*

Players can control the colony themselves, deciding what projects to pursue, what colony Focuses to develop, and how the colony reacts to threats. After the colony phase, play returns to their characters. If the players are already playing colony leaders, this change is natural. If an NPC serves as the colony leader instead, the players can still control the colony during the colony phase, acting independently of their characters and perhaps even against their characters' interests.

COLONY STATISTICS

Every colony has abilities representing its resources, knowledge, and the passion of its colonists. These abilities range from -2 to 6 (or greater) much like the range of a character's abilities. Most colonies have abilities ranging from 0 to 5, though a colony with an extraordinary resource or setback may fall above or below this range.

There are five core abilities for colonies: Economy, Force, Infrastructure, Media, and Science. In addition to these, every colony has three additional statistics: Size, Stability, and Resolve, which help determine how resistant the colony is to disasters and setbacks.

Every great nation, they said, was founded on a knife and a lie.

— *Persepolis Rising*

Finally, colonies have Focuses, just like a character. In a colony, a Focus represents specialty installations (like greenhouses), extraordinary knowledge (like local ecology), special resources (like lithium), or colonists with a specific expertise (like a doctor or security forces). Disasters that destroy buildings or violence that kills significant NPCs run the risk of eliminating one or more of a colony's Focuses. If characters capture special resources or rescue NPCs with extraordinary skills, this can also translate to new Focuses for their colony.

ECONOMY

Economy reflects a colony's ability to generate goods and resources, both for internal use and for trading with others. Economy represents buying power, clout, and stockpiles of valuables and emergency supplies, all of which are available for the colony to use to solve its problems. A freighter full of valuable ore that the colonists can't move to market is essentially worthless. A colony's economy doesn't necessarily reflect its colonists' own wealth; a colony may be prosperous but pour all its resources back into facilities, leaving individual colonists impoverished, or an otherwise poor colony may be ruled by a handful of wealthy leaders. Colonies that specialize in mineral extraction or manufacturing tend to have a higher Economy.

A colony's leaders can translate the community's wealth into personal wealth, deducting the colony's Economy rating from the Resources TN when using the colony's resources or cash to assist them with a purchase. A character's Rank within the colony (See **Membership** in **Chapter 14** of *The Expanse RPG*) caps the maximum ability score they can use to reduce a purchase TN. For example, a character with Rank 1 can reduce the difficulty by 1 so long as the colony has an Economy rating of 1 or higher. If a character with Rank 3 Membership leads a colony with Economy 2, they can only reduce the TN of a purchase by 2. The colony's limited resources cap how much of their influence they can benefit from. A character can only use this benefit when they can bring their colony's industry and supplies to their benefit, such as purchasing goods their colony produces or when escorting a large shipment of exports to market.

FORCE

Force represents a colony's ability to bring brute strength to bear to solve their problems, from a militia or armed guards to sturdy miners who can solve problems with sweat and tenacity. It is most often used to defend the colony from military threats, dangerous animals, or criminals, but it also comes into play when colonists must mobilize to respond quickly to a natural disaster. Colonies backed by Inner militaries have a higher Force, but so do roughneck refugee colonies who survive by hard work and stubbornness.

INFRASTRUCTURE

Infrastructure represents a colony's environmental systems, physical buildings, utilities, and ability to produce things like food, water, and breathable air. This ability measures the colony's ability to bounce back from hardship, how quickly it grows, and how healthy the colonists are. It also reflects a colony's ability to outlast a disaster through good planning or solid utilities. Well-designed colonies led by experienced administrators generally possess a good Infrastructure, while haphazard colonies and temporary outposts possess low scores.

MEDIA

Media reflects a colony's ability to disseminate information quickly and shape opinions. This includes media within the colony, such as providing feed access or radio broadcasts, as well as external influence through a spokesperson, documentaries, or reputation. Media also includes a colony's ability to control the spread of information and cover up facts, should the need arise. Slick corporate colonies likely have a high Media score, but so do artist colonies or those with a technologically savvy population who can build their own networks.

SCIENCE

Science reflects a colony's scientific and technological expertise and equipment. It is useful for helping the colony understand new phenomena and make use of alien technology, as well as its ability to solve problems by creating technical solutions. While other statistics may utilize advanced technology as part of their functions or Focuses, Science is used to develop new technologies or refit technology to solve problems it wasn't intended to. Research colonies have high Science scores by necessity, while a refugee or industrial colony may have lower scores.

SIZE

Many challenges become impossible or trivial not because of a colony's resources, but because of its size. A massive colony is more difficult to conquer than a tiny one, while a smaller colony is more intimate and able to scatter and reorganize quickly to respond to new dangers. This difference in capability is the colony's Size.

Size is divided into four categories: outpost, settlement, province, and territory. Outposts are disorganized colonies and homesteads of a few dozen people; they are often breakaway groups from larger colonies or temporary setups looking to conduct research or extract a resource for a year or so before moving on, though refugee or castaway settlements—such as First Landing

on Illus—may begin as outposts to represent their high population hampered by few resources and less expertise. Settlements range from several dozen to upwards of a few hundred residents and are generally permanent fixtures looking to carve out a new future. Provinces are well-established colonies with a large and diverse enough population to be easily self-supporting, not relying on manufactured goods from Sol or other colonies—the Eudoxia colony, or the Laconia colony before the arrival of Duarte’s forces, for example, are both provinces. Territories are powerful colonies numbering in the tens or even hundreds of thousands and generally spanning multiple settlements. Larger colonies exist, but beyond this scale they act as nation-states rather than scrappy colonies and no longer need to worry about the day-to-day challenges represented by Growth checks and plot actions.

RESOLVE

Resolve represents a colony’s resistance to failure, disaster, and outside influence. It may represent redundant systems or just the tenacity of the colonists in the face of adversity. Dangers that threaten a colony may be more effective if workers are careless, colonists distrust each other, or equipment isn’t maintained. Consequently, Resolve is lower for colonies with little planning, poor equipment, no redundancies, and poor morale, while an otherwise small or fragile colony may have a deceptively high Resolve reflecting especially stubborn residents or readiness drills to prepare for emergencies. Additionally, Resolve acts as armor, reducing damage to a colony’s Stability.

STABILITY

Stability measures how robust a colony is, representing how much damage or stress its buildings, equipment, and colonists can suffer before finally collapsing. A high stability represents healthy and happy colonists with enough work to keep them busy and sturdy homes and buildings to keep them safe, as well as stockpiles of important supplies.

Stability acts like a colony’s Fortune. Colonies may spend points of Stability to improve the results of checks or reduce the damage from disasters or the actions of opposing colonies. Unlike Fortune, Stability is not bound by a maximum and can rise beyond its starting level. Stability does not recover on its own, either; it must be restored via Stunts or protagonist actions. If a colony’s Stability is reduced to 0 and it can’t buy off the damage from a disaster or other incident, it is destroyed. A destroyed colony’s facilities are destroyed beyond repair and its colonists killed, captured, or scattered to the wind.

COLONY CONDITIONS

Like a character, a colony may suffer various conditions to reflect specific hardships. The colony can accept a condition to reduce the damage it takes by 1d6. A colony can only accept a maximum of two conditions to reduce the damage from any given attack, and the GM is the final arbiter of whether or not a given condition reflects the effects of a given disaster or attack.

Colonies don’t recover from conditions automatically. Instead, a condition can be removed only with the Innovation Growth Stunt or as a result of the protagonist’s adventures.

MALFUNCTIONS The colony’s facilities and technologies are universally failing in the face of strain. The colony loses the benefit of all its existing focuses.

OUTBREAK Most of the colonists are suffering a shared affliction, such as starvation or parasites. All characters in the colony (including the PCs) gain one of the following conditions: Blind, Deafened, Fatigued, or Injured.

REELING The colony is disorganized and residents are losing faith in their leadership. The colony has a –1 penalty on all checks and must spend 1 Stability to initiate any plot actions.

UNREST The colony is scattered and desperate, with many residents protesting or abandoning the colony. The colony has a –2 penalty on all checks and cannot initiate any plot actions. This replaces any of the penalties from the Reeling condition.

BUILDING A COLONY

Players should ideally build the colony that their adventures will focus on. There are three ways to do this.

OPTION 1: FREE FORM

Using this method, the players work with the GM to assign abilities to their colony to reflect their vision of its background and purpose. Colonies should have strengths and weaknesses, so abilities should not all be assigned high scores; keeping some



low creates more tension and means there will be problems the protagonists must actively resolve rather than allowing the colony to manage everything. Leaving some abilities weak also provides room for the colony to meaningfully grow. Stability should be around 25 to 45 and Resolve between 2 and 6 for most colonies. Select two focuses that make sense for the resources and specialists available to the colony.

OPTION 2: ASSIGN POINTS

Using this method, players assign 7 points between Economy, Force, Infrastructure, Media, and Science (generally divided into scores of 3, 2, 1, 1, and 0). No ability can start higher than 4. The GM can vary the number of points allowed, reducing it to represent slapdash or poor colonies or increasing it for colonies with major corporate or government support. Starting Resolve is equal to the colony's Infrastructure + 2, and Stability is $25 + 2d6$ + the colony's highest ability score. Select two focuses, one of which must be for the colony's highest ability score. A colony's default Size is settlement, but the GM can decide the campaign warrants a different starting size.

OPTION 3: RANDOM GENERATION

This option can provide interesting results for a campaign, leading to immediate engagement from protagonists as they rush to shore up what they view as their colony's shortcomings. Players should roll for their abilities the same way they would for character creation (see page 6 of *The Expanse Roleplaying Game*) and can swap any two abilities after rolling. Starting Resolve is $1d6 - 1$ and starting Stability is $25 + 2d6$ + the colony's highest ability score. Select two Focuses, one of which must be for the colony's highest ability score. Size is determined randomly by a d6 roll: 1 is outpost, 2-5 is settlement, and 6 is province.

COLONY FOCUSES

This section gives examples of colony Focuses for each of the five abilities. Each can be used as-is, but GMs and players can also use these as examples. Colony Focuses represent a mix of outstanding technology and specialist NPCs, but lacking a Focus doesn't mean a colony lacks that technology entirely. A colony without the Infrastructure (recyclers) Focus may still have access to this ubiquitous technology; they simply don't possess superior recyclers or a colonist experienced in fine-tuning the equipment to get the most out of it.

ECONOMY FOCUSES

Credit Networks: The colony maintains a web of bank accounts and investments that it can turn to for extra income.

Manufacturing: The colony includes a strong manufacturing base and produces finished goods for the local market and export.

Rare Resources: The colony has access to a rare commodity, such as lithium, a native creature, or unique alien goods.

Reputation: The colony or some of its residents have strong reputations and connections with powerful figures in Sol or another important system.

Spaceport: The colony supports steady offworld trade, providing access to a variety of goods and foreign wealth.

Scrip: The colony issues its own currency, which it can manipulate to head off local economic problems.

FORCE FOCUSES

Demolitions: The colony has a well-stocked supply of explosives or enough skill to apply what they do have with maximum effectiveness.

Industrial Mechs: Salvage and loading mechs provide plenty of muscle power in a high-maintenance package.

Military Mechs: Mechs outfitted with armor and weapons help the colony defend itself from local predators, rogue automatons, and hostile human forces.

Militia: Colonists trained with military weapons and tactics help to defend in a crisis.

Ring Builder Defenses: The colony has access to functioning defense networks or weapons left over from the aliens who built the ring network.

Security Teams: Dedicated investigators and police help maintain order.

Warships: The colony has one or more gunships—perhaps even a cruiser—which it can use to defend itself in orbit.

INFRASTRUCTURE FOCUSES

Clinic: A trained doctor or qualified medical facilities to treat injury and disease.

Fusion Power: The colony has one or more fusion reactors and the expertise to use them.

House of Worship: A generally well-built structure to cater to colonists' spiritual beliefs but which may also serve as a community center and/or shelter.

Hydroponics: Sophisticated botany techniques allow the colony to produce food and clean water without needing to terraform the local ecology.

Recyclers: Ubiquitous appliances that recycle food and garbage into usable raw materials.

Redundancy: Capability to back up systems, bring backups online, and maintain stockpiles.

Schools: Used to rear and educate colonists, usually children, but may also serve as a community center and/or shelter.

Transit Network: A well-developed system of automated carts, trains, buses, or other vehicles helps colonists and materials get around reliably.

MEDIA FOCUSES

Belter: Ability to sway or educate people from the Belt.

Blue Collar: Used to appeal to workers who work on-site in physical industries.

Earthier: Capability to sway or educate people from Earth and Luna.

Extrasolar Feeds: Used to access, learn from, or interact with the feeds from offworld.

Faith: Resources to instill beliefs or use existing beliefs to stir colonists to action or help weather troubles.

Local Network: Used to store and access data locally, make it readily available for others, or conceal local computer networks.

Martian: Used to sway or educate people from Mars.

Propaganda: Used to control a message, change or conceal the truth, or smear others.

Satellites: Capacity to relay messages around the world and observe or survey the planet from above.

White Collar: Ability to appeal to workers who work from a desk.

SCIENCE FOCUSES

Epidemiology: Used to observe and predict the spread of contagious parasites, diseases, and other threats, as well as to contain and cure them.

Dedicated Computer Networks: The colony maintains separate data facilities for science and technology, letting them crunch numbers faster and more securely.

Hacking: Computer specialists who can access secure networks.

Jury-Rigging: Out-of-the-box thinking and adapting technology to things it was never meant for.

Meta-Materials: Used to understand new or alien materials and reproduce them for industrial use.

Ring Builder Technology: The colony has access to functioning ruins or technology left over from the aliens who built the ring network, and the colony is able to control or at least use it.

Terraforming: Adapting the local atmospheric and biological conditions to better suit human life.

Xenobiology: Used to study and understand lifeforms from outside Earth's ecosystem.

EXAMPLE: SAMPLE COLONY

*Melissa is planning to run an Expanse campaign with the players' characters leading the colony effort on a new planet. She could design the colony herself or let her players roll randomly, but she feels like **Option 3: Random Generation** best captures the feel of a hardscrabble survivors brought together by a shared vision. The players can work to explain what they get after creation.*

First, they roll 3d6 five times for abilities, getting 12, 10, 16, 11, and 8. The players talk and decide to swap their rolls for Infrastructure (16) and Science (8) to make up for none of them having much in the way of scientific skills, giving them Economy 2, Force 1, Infrastructure 0, Media 1, and Science 3. They roll a 6 on 2d6 for their Stability, for a total of 34, and 1d6-1 for Resolve to get a result of 4. Pretty stubborn. Finally, they roll for size and get a 1: outpost.

The group puts their heads together and decides they were originally intended to be a UN survey mission sent to scout one of the new systems through the gates. A shipboard disaster forced them to land on the only habitable planet, and the landing was rough enough to permanently ground their ship. With this in mind, they pick two Focuses, one of which must be for Science, their highest ability. They select Infrastructure (Fusion Power) to reflect their still-operational ship's drive system and Science (Xenobiology) to represent one of the colony's NPC science crew, Irma Gutiérrez. Their colony has power to spare, but will need to lean on their science crew to help them deal with food, clean water, and sanitation for the time being.

The players decide to name their colony after their crashed ship, Agnodice, and Melissa already begins plotting what mysterious influence forced them to crash in the first place.

COLONY OPERATIONS

These same rules represent the various projects and threats (collectively called operations) that occupy a colony's attention. GMs can create rival colonies and similar organizations such as hostile ships, either specifically designing them or using random generation. Other, more abstract operations may only possess one or two of the usual abilities; a storm may only have a rating in Force while studying the mysteries of an alien ruin may have ratings in Infrastructure and Science to represent its practical value and the potential to learn from it. Many operations remain in effect until the colony or the player characters deal with them somehow, while some are immediate dangers or short-term opportunities that a colony must endure only once or has only a limited time to exploit. All operations should have at least one Ability and one Focus, as well as Size, Resolve, and Stability. While rival colonies have Stability in a similar range to player colonies, threats and projects are much shorter-term prospects, with Stability equal to 2d6 + their highest ability score.

The operations that surround a colony help color the tone of the campaign, so the GM should carefully consider what to include and what to omit. High-risk operations like a dangerous mining opportunity generally have higher abilities, while lower-risk but persistent troubles—a famine or a pirate radio station undermining colonist confidence—have lower abilities but high Stability. A challenging short-term project or threat may have a high Resolve but low Stability. Overcoming a threat or rival colony removes that as an existential threat, while projects are an opportunity for colonies to improve abilities, develop new Focuses, earn rewards for the protagonists, provide PC bonuses to certain tasks, or provide new opportunities; GMs should carefully consider what rewards a project may provide, and players might suggest what they hope to achieve. Likewise, GMs should think carefully about what rival colonies or organizations may oppose and what their motivations, tactics, and resources might include. Operations should challenge a colony, but avoid the temptation to create opponents so competent that they can easily destroy the PCs' colony.

The real horror was that once the bargain was struck, the devil didn't cheat. He gave you exactly and explicitly all that had been promised.

— *Tiamat's Wrath*

USING COLONIES

The rules for running a colony exist to provide new opportunities for adventure, provide a sense of investment in the protagonist's community, and help players feel like an important part of the dynamic and ever-growing *Expanse* universe. The colony rules interact with the rest of a campaign in two ways: growth checks and plot actions.

GROWTH CHECKS

For a colony to survive, it must endure the harsh realities of an alien world, grow to support itself, and thrive in the face of adversity. The daily labor and hardship of keeping a community safe and relatively happy fall under growth checks. A growth check is performed once every three months and is a simple test using the colony's highest ability, with a TN based on the planet's climate and local conditions. A campaign focused solely on planetside adventure and drama may benefit from more frequent growth checks—perhaps once a month—to introduce more frequent complications to the colonists' lives.

GROWTH CHECKS

COLONY CONDITIONS	GROWTH TN
Earth-like conditions	10
Mildly challenging (arid, swampy, temperature extremes)	11
Moderately challenging conditions (deserts, tundra, hostile local life)	12
Extremely challenging conditions (arctic, harsh desert)	13
Atmosphere is mildly toxic (requires filtration)	+1
Atmosphere is toxic (requires environmental systems)	+2

Successful projects can reduce the growth check TN as the colony adapts but can never lower it below 10. A colony can spend Stability on its growth check.

If a growth check is successful, the colony maintains itself with no major setbacks. If it fails, the colony loses 2d6 Stability or reduces one of its ability scores, Size, or Resolve by 1 rank—colonists die in an accident or from local conditions, critical equipment begins to break down, dissent spreads, or other calamities cost the colony important resources. The only way to prevent this loss is for protagonists to become directly involved as part of an adventure, such as a crew going the extra mile to secure a pirate ship's supplies or equipment to shore up their colony's suffering systems. Abilities cannot be reduced below -2, Resilience can't fall below 0, and Size cannot be smaller than outpost. GMs looking for inspiration to explain what misfortune befell the colony can roll on the **Colony Mishap** table or create a pre-planned disaster. Try to keep the colony's successes and setbacks relevant to the players and their characters; a disaster may make a vital part or luxury unavailable or injure an NPC they've befriended.

If doubles are rolled on the growth check and it is a success, the colony grows in some way. Players can spend the Stunt Points generated by their growth check on any of the Stunts listed in the **Colony Growth Stunts** table. GMs can add new Stunts—

COLONY MISHAPS

2D6 ROLL	MISHAP
2	Strange Phenomenon: Some strange aspect of the planet itself—its magnetic field, solar flares, ring builder technology, or native life—causes a disaster.
3-4	Outbreak: A local microorganism is infecting the colonists, their food supply, the water, or even delicate equipment.
5-6	Discontent: A sect of colonists have become discontent and have formed a criminal group, protest group, or saboteur group to undermine the community and turn events to their liking.
7-8	Breakdown: An important piece of equipment wears out or needs replacement parts the colony can't manufacture.
9-10	Outside Hostiles: Pirates, a rival colony, an aggressive visiting ship, or native life cause problems for the colony.
11	Political Upheaval: A shift or breakdown in the colony's leadership creates strife.
12	Beyond the Gate: Blowback from something outside the colony's own system—perhaps a breakdown at Medina Station or war in the Sol system—is creating supply or morale problems.

COLONY GROWTH STUNTS

SP COST	STUNT
1+	Rebuild: Add Stability at the rate of 1 per SP spent.
1	Kit: Supply one character with an important or significant piece of equipment or 1d3 minor items.
2	Discovery: The colony learns something about the planet or rival groups. Reveal two ability scores or Focuses of any local threat or of a neighboring colony's project.
2	High Morale: Gain a +2 bonus on the next plot action the colony undertakes.
2	Repairs: Remove a single colony condition.
3	Redundancies: Increase Resolve by 1.
3	Specialist: A colonist trains in a new skill, or a specialist joins the colony. Select one Growth or Plot Stunt and reduce its cost by 1 SP. If this character dies or leaves, the colony loses this benefit.
3	Trade Network: The colony attracts the attention of a trading ship, which makes new or better equipment available from time to time.
4	Added Industry: Increase an ability rated 5 or less by 1.
4	New Arrivals: Increase the colony's size from outpost to settlement.
4	New Focus: Add a Focus.
5	Local Legend: A colonist achieves local fame or a significant outsider joins the colony. Select two Growth or Plot Stunts and reduce their cost by 1 SP. If this character dies or leaves, the colony loses this benefit.
5	Colony Effort: Increase the colony's size from settlement to province.
6	Major Industry: Increase an ability rated 6 or more by 1.
6	Sustainable Growth: Increase the colony's size from province to territory.

particularly as a reward for successful projects or as major rewards for protagonist adventures. Players can opt to save their colony's SP to spend on a future growth check. Players and GMs should work together to explain what Growth Stunts represent in the colony itself. Does the colony build a new facility? Have a good harvest? Does a colonist hone their skills, or does a new specialist arrive to join the community?

PLOT ACTIONS

While growth checks represent the everyday ebb and flow of life in a community, plot actions represent deliberate efforts by the colony leadership toward specific goals. Often, plot actions are made in response to a threat or rival colony, but colonies may also be proactive, attempting to undermine rivals or build new projects to improve conditions. Successful plot actions can hurt rivals, disarm threats, and advance projects, while failed plot actions do the opposite.

To begin a plot action, the players must decide on an operation they want to engage in and what strategy they plan to use. Different operations require different abilities. Trying to lull a rival colony into complacency with propaganda is a Media test, while trying to manage a crop blight would use Infrastructure to outlast it or Science to create a cure. Targeted operations use the most appropriate ability to resist; opposing a propaganda campaign through their own counterintelligence would use Media, but responding with police crackdowns or a military attack on the PCs' colony would use Force. Many threats and projects have only a single ability score and can only use that to resist plot actions.

The colony then makes an opposed test with its target. Each side can apply an appropriate ability Focus to their roll for a +2 bonus. Whichever side succeeds deals 2d6 + the ability used damage to its opponent's Stability, with resolve acting as armor against this loss. If the winner rolls doubles, they also gain SP equal to the result of their Drama Die result to spend on the stunts listed in the **Plot Stunts** table.

PLOT FREQUENCY

GMs should decide how frequently they want colony operations to come up in their game. If the players enjoy managing their colony and leading large-scale community operations, multiple plot actions per game session may be appropriate. If not, limit plot actions to one per session to keep the focus on individual protagonist actions. It's easiest for colonies to roll for a plot action immediately after their growth check each month.

LONG-TERM OPERATIONS

Most operations will require multiple successful plot checks to complete entirely, and opposing forces may be long-lived, with plot actions representing rivalries and one-upmanship rather than a serious attempt to wipe out a colony entirely. If the players' colony engages in a long-lasting feud or complex project, GMs may opt to break it up into a series of smaller operations. Failure on these smaller operations may require direct involvement of the protagonists before progress can resume.

Rival colonies and threats also gain a plot action as frequently as the players' colony does. Rival colonies may do nothing when the opportunity arises, as they are assumed to sometimes focus on their own projects and threats. Threats will affect the players' colony at every opportunity unless the GM decides otherwise.

SIZE AND OPERATIONS

Building a water refinery is trivial for a large, established city with thousands of trained environmental engineers, but it



can be an overwhelming struggle for a desperate community of Belters who arrived with little more than the bulkheads on their ship. A colony's Size can greatly influence how challenging tasks can be.

For every difference in Size (outpost to settlement, settlement to province, province to territory) between a colony and its operation or rival colony, the larger organization adds a +2 bonus to its opposed plot action test, as it is harder for small colonies to affect major threats. However, all Plot Stunts increase in cost by +2 SP per difference in size, as a larger force doesn't have the fine-level control and flexibility to easily exploit opportunities.

If a smaller colony gets the better of a large operation, it stands to learn and gain far more from the experience. For every difference in scope between a smaller colony and an operation, the successful colony receives a bonus to their next growth check: for every step difference in Size, the smaller colony gains a +2 bonus to the test itself and 2 free SP to spend on Stunts even if they didn't roll doubles. This makes operations against very difficult projects, large rivals, and powerful threats into high-risk, high reward scenarios.

OTHER ACTIONS

Players might want their colony to pursue other goals beyond the sorts of rivalries, survival, and projects listed here. Establishing an artist colony means the colonists will want to establish distinct styles and techniques, while a colony experimenting with new family or social structures would need to study how these changes impact society. GMs can always stat up this niche ideas as projects for a colony to pursue via plot actions, but they may also be reserved as pure story elements that the GM and players can roleplay. GMs can simply narrate difficulties or dangers that arise and allow protagonists to address them directly rather than relying on a dice roll.

GMs should also bear in mind that some tasks are impossible. Players who want projects like "recreate Earth" or "build a new ring gate" are limited by the technology available to humans, though you might be able to offer smaller-scale versions of these same goals, such as "build a dome" or "engine improvements."

PLOT STUNTS

SP COST	EFFECT
1+	Stockpile: Add extra Stability equal to the number of SP spent.
1	Create an Opening: Gain a +2 bonus on your next plot action against this same operation.
2	Analysts: You uncover valuable insight or intelligence about the target operation. Select one ability. The target suffers a -1 penalty to tests with that ability until they roll doubles on a growth check.
2	Countermeasures: Pick a focus. The operation cannot use that Focus in their next plot action.
2	Preparations: You reinforce this against this danger's usual avenues of attack. This threat or rival receives a -2 penalty to their next plot action against your colony.
3	Exploit an Opportunity: Add +1d6 Stability loss to an operation.
3	Precise Efforts: Ignore the operation's Resolve when determining their Stability loss.
3	Uncover Assets: You gain some valuables as part of your plot action, stealing supplies from another colony or returning from the mines with a strange artifact.
4	Domino Effect: Use the results from your plot action to immediately target a second operation. The two operations affected should be linked in some way. Each operation rolls and resists separately.
4	Policy Shift: Pick a Focus. Your target operation permanently loses that Focus.
4	Second Team: Immediately roll a second plot action against the same operation. This must use a different ability than the current plot action.
5	Double Shifts: Immediately roll a second plot action against the same operation. This test uses the same ability as the current plot action.
5	Make the Most: Add +2d6 Stability loss to an operation.
5	Unexpected Insights: You learn from your struggles. Your colony gains a new Focus, determined by the GM. This Focus must be for the same ability the target operation used to roll its plot check.
6	Power Shift: Reduce one of the target operation's abilities by 1, and raise the same ability for your colony by 1.
6	Turn the Tables: The target operation loses one Focus, while your colony gains a new Focus determined by the GM (the same, if possible). This may be an important NPC defecting from a rival colony or learning to harness the deadly lightning strikes from seasonal storms.

COLONY DESTRUCTION

A colony that loses all its Stability, or whose abilities are all reduced to 0 or less, collapses. Its colonists aren't necessarily all dead, but its facilities and resources have been wiped out; any survivors have fled to other colonies or have chosen to try to survive alone. Protagonists may undergo a desperate adventure to pull off a last-moment rescue. If this final attempt to save the colony succeeds, the colony immediately gains 2d6 Stability and 1 rank in two abilities of the players' choice.

If the operation is a rival colony, another colony can attempt to absorb it before it fails entirely. If a colony reaches 1 or 2 Stability and has at least 2 of its abilities reduced to 0 or less, another colony can announce they are absorbing its remaining resources and survivors. This is handled narratively. The larger colony gains 1d6 Stability and 1 rank in up to three abilities the smaller colony still held above 0.

The following examples show the protagonists leading their colony after their unfortunate crash on an alien world. Over a series of adventures, the players have learned there is a dangerous parasite on the planet, as well as some sort of defunct spaceport nearby they hope to exploit.

EXAMPLE: GROWTH CHECK

After their first month, the GM Melissa asks her players to roll a growth check for their protagonist-run colony of Agnodice. The environment isn't especially hostile, so she sets the TN at 10. The colony's Science of 3 is their highest ability, so they roll and get a 4, 3, and another 4 on the Drama Die, for a total of 14. This succeeds and the players rolled doubles, giving them 4 SP to spend on Growth Stunts. While they'd like to learn more about the alien parasites they keep finding on colonists, the group finally agrees they need to bolster their low Infrastructure score. They use the Added Industry Stunt to increase Infrastructure by +1, deciding that their science crew has figured out an easy way to process the planet's sandy soil into concrete.

EXAMPLE: PLOT ACTIONS

The players want to keep building up their colony, so they opt to begin a project: Construction. They want to use their Science again for this check, but the GM decides construction requires too much heavy lifting and they'll need to pick either Force or Infrastructure. The players decide on Infrastructure and add a +2 bonus from the Fusion Power Focus, reasoning that using power tools should make the construction effort much easier.

The players make a plot action check, rolling a 1, 5, and a 5 on the Drama Die, for a total of 14. The GM rolls for the Construction effort's Infrastructure of 2, adding a bonus for its own Focus, and gets a 2, 2, and a 5 on the Drama Die, for a total of 13. The players just barely win. The GM rolled doubles, but doesn't generate any Stunt Points because she didn't win the opposed test. The players roll 2d6 and add their Infrastructure to determine their progress: 10, minus the project's Resolve of 2, means they reduce the Construction's Stability to 4.

Agnodice also rolled doubles, so they generate 5 SP to spend on Plot Action Stunts. After reviewing the list of stunts, they decide on Policy Shift for 4 SP and spend their 1 remaining SP on Stockpile; now the Construction project loses the Sandy Soil Focus and they won't have to worry about that same focus on future construction projects. One more month of work should complete their first permanent building in their new home.



EXAMPLE: BEING THE TARGET OF PLOT ACTIONS

While the protagonists explore the planet and their colonists busy themselves studying the environment and building shelter, the dangers of this new world aren't dormant. The GM decides that the alien parasites that troubled the protagonists in one adventure are going to be a threat that endangers the whole colony. Looking at the sample operations, the GM decides these aren't exactly a Blight or a Local Predator, so she makes her own threat. She decides the parasites have Force (they're physically dangerous) and Media (the colonists are reluctant to admit if they've been infected, and suspect each other) abilities and rolls randomly for them, getting 7 and 12, a 1 for Resolve, an 11 for Stability, and a 3 for Size. This translates to Force 0, Media 2, Resolve 0, 13 Stability, and a Size of Settlement. The creatures aren't physically imposing, but they spread easily and are already widespread. Melissa decides to give them the Focuses Force (Locking Jaws) and Media (Create Paranoia).

The GM decides the parasites are spreading to the colonists using their Media ability. The players want to resist with Science (Xenobiology), which the GM decides is reasonable. The GM rolls for the parasites, getting a 1, a 3, and a 6 on the Drama Die. She adds their Media 2 and their Focus, plus a +2 bonus because the parasite threat is one size larger than the colony, giving her a final result of 16. The players roll to resist, getting a 5, 6, and a 2 on the Drama Die, giving them a total of 13! The colonists fight off the parasite infection and begin to study the strange creatures, inflicting 2d6+5 damage to the threat's Stability. Because the Agnodice colonists won out against a larger force, on their next Growth check, they'll gain a +2 bonus and automatically generate 2 SP thanks to the wealth of research the strange creatures are revealing.

SAMPLE OPERATIONS

The following Operations represent the various opponents and goals new colonies must contend with in the *Expanse* universe. They can be used as templates to create more dangers and opportunities.

If the colony manages to negate one of an operation's Focuses with a stunt or other means, future appearances of the same operation lose that same Focus.



COLONIES

In the rush to colonize worlds beyond the rings, multiple groups may attempt to claim the same planet.

BREAKAWAY COLONY

ECONOMY	0 (Bartering)	
FORCE	2 (Guerilla Fighting)	
INFRASTRUCTURE	1	
MEDIA	3 (Propaganda)	
SCIENCE	2 (Jury-Rigging)	
SIZE	RESOLVE	STABILITY
Settlement	5	30

This scrappy colony broke away from a larger effort after developing severe ideological difference. They may be sympathetic survivors or dangerous radicals.

RESEARCH EXPEDITION

ECONOMY	3 (Corporate Ties)	
FORCE	1 (Security Teams)	
INFRASTRUCTURE	3 (Orbital Shuttle)	
MEDIA	2	
SCIENCE	5 (Xenobiology)	
SIZE	RESOLVE	STABILITY
Settlement	2	40

With considerable backing from corporations hoping to exploit the resources of these new worlds, the scientific research expedition is theoretically a temporary mission

well-outfitted to survive up to five years before returning to Sol.

PIRATE STRONGHOLD

ECONOMY	1 (Stolen Goods)
FORCE	3
INFRASTRUCTURE	0 (Camouflage)
MEDIA	2
SCIENCE	1

SIZE	RESOLVE	STABILITY
Outpost	5	25

A secret outpost for maintaining a ragtag fleet, a pirate outpost might be little more than makeshift landing pads and a dozen or so cargo containers refitted into housing and storage. Despite its lack of sophistication, its fiercely loyal occupants can become a thorn in the side of far larger forces.

UN RESETTLEMENT EFFORT

ECONOMY	2 (Manufacturing, Spaceport)	
FORCE	3 (Industrial Mechs)	
INFRASTRUCTURE	6 (Recyclers)	
MEDIA	3 (Sol Feeds)	
SCIENCE	2 (Meta-Materials)	
SIZE	RESOLVE	STABILITY
Province	3	45

The UN has poured considerable resources into supporting certain colonies to re-home refugees from Earth, creating cities and farms that might look familiar to other terrains.

PROJECTS

Projects offer things for a colony to engage with when not under threat. Each possesses only a single ability, with one or more Focuses that make working conditions more difficult. Reducing a project's Stability to 0 completes it, and each entry lists a potential reward for completion. The GM makes the final determination of what reward the colony gains.

CONSTRUCTION

FORCE	2 (Sandy Foundation)	
SIZE	STABILITY	RESOLVE
Settlement	12	2

POTENTIAL REWARDS: +1 Infrastructure, +1 Resolve, gain the Technology (Dedicated Computer Networks) or Infrastructure (House of Worship or School) Focus, build a ship for the protagonists

Investing the time and materials to build a permanent, large-scale structure that benefits the entire colony, such as a school, civic center, or environment dome.

MINING EFFORTS

INFRASTRUCTURE 3 (Backbreaking Labor, Poor Ventilation)

SIZE	RESOLVE	STABILITY
Outpost	10	5

POTENTIAL REWARDS: +1 Economy, gain the Economy (Rare Resources) or Technology (Meta-Materials) Focus, find a fuel source, create an emergency shelter

SCIENTIFIC BREAKTHROUGH

SCIENCE 4 (Alien Chemistry, Network Lag)

SIZE	RESOLVE	STABILITY
Province	12	2

POTENTIAL REWARDS: +1 Media or Technology, +2d6 Stability, gain the Infrastructure (Clinic or Fusion Power) Focus, gain a Technology Focus, unlock a secret of ring builder ruins, find a weakness in an enemy's defenses

THREATS

Like projects, threats only have one or two abilities and Focuses that make them more dangerous.

BLIGHT

INFRASTRUCTURE	2 (Highly Infectious)	
MEDIA	1 (Create Panic)	
SIZE	RESOLVE	STABILITY
Settlement	2	10

A crop blight or plague threatens the entire colony and causes panic. A blight only lasts 1d6 months before it burns itself out or locals develop enough immunity to mitigate it.

LOCAL PREDATORS

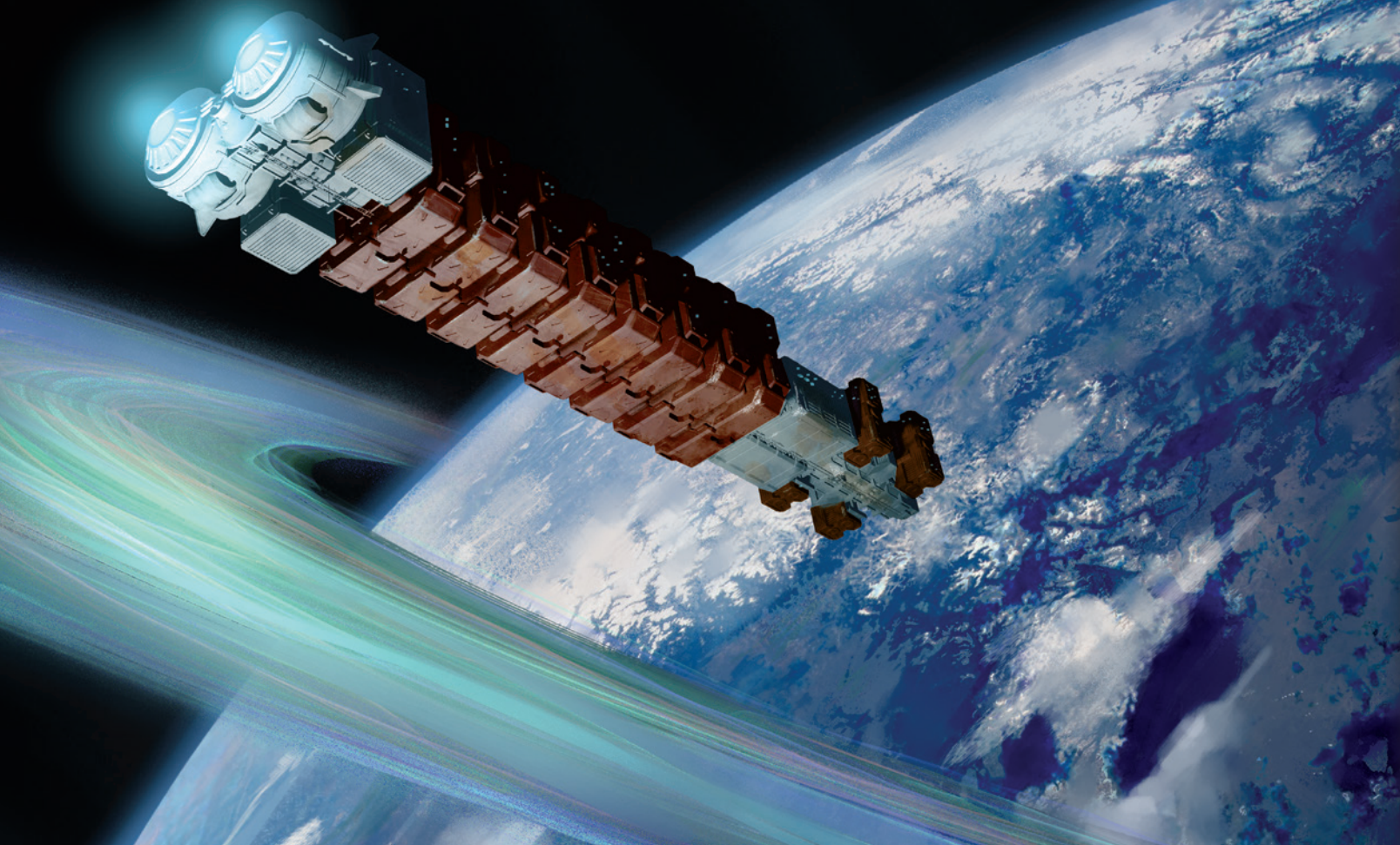
FORCE	5 (Unusual Behavior)	
INFRASTRUCTURE	2 (Hidden Nest)	
SIZE	RESOLVE	STABILITY
Outpost	4	12

Animals or parasites native to the planet become a problem for the colony, either attacking colonists or else destroying crops or buildings or simply being highly toxic and omnipresent. During plot actions, roll a 1d6; on a roll of 3-6, the predators don't threaten the colony this phase.

MAJOR STORM

FORCE	6 (High Winds)	
SIZE	RESOLVE	STABILITY
Province	6	14

A powerful weather pattern can cause damage to even well-prepared colonies and wash smaller ones away without a trace. A major storm only effects a colony for a single phase.



5: SYSTEM & WORLD CREATION

With more than a thousand systems open for humanity to explore through the ring gates, Game Masters have a *lot* of options to play with in an *Expanse* campaign. While the sample systems in this book offer inspirations and starting points, sooner or later, Game Masters are going to want to design their own systems for the crew to visit and explore. This chapter offers tools and guidelines for doing that, allowing you to generate a new system fairly quickly, while offering some springboards for your imagination to come up with adventure hooks and interesting things about the system.

“If you start feeling wonderful and powerful and like you’ve seen the face of God, you’re having a euphoric attack...”

— *Cibola Burn*

Note that while the guidelines in this chapter are based on what is generally known about astronomy, they are *highly* simplified when determining the structure of a solar system and strongly reflect the biases of the ring builders (see **The Builders’ Bias**, following). *Expanse* Game Masters are encouraged to add their own details and modifications, or to build systems to include certain specific unusual astronomic phenomena, if they want. As with all random generation tables, the ones in this chapter are intended to provide inspiration and guidance, not hard-and-fast requirements.

THE BUILDERS’ BIAS

Although the galaxy contains a vast variety of stars and planetary systems, the focus of this book, and this chapter, is on the more than 1,300 systems connected by the ring gates. The builders of those gates had particular parameters when it came to systems and planets. In particular, it seems clear that the protomolecule hijacked early organic and inorganic material on planets in certain star systems to create the rings in those systems, connected to the rest of the network, much as it did on Eros in the Sol system.

Earth was presumably a target for the builders in its early existence because it fit their parameters, so most of the ring network systems include terrestrial planets similar to Earth, and the conditions necessary to have them in the first place. Of course, a tremendous amount about the builders remains a mystery to humanity, and even the general bias toward star systems with terrestrial planets is only that, a likelihood within the gate network. Many systems do not have terrestrial planets (or don’t have them any longer) or hold even stranger artifacts from the time of the fall of the builders’ civilization uncounted eons ago.

MORGAN-KEENAN CLASSIFICATION

The Morgan-Keenan (or MK) System of stellar classification was created by William Wilson Morgan, Philip C. Keenan, and Edith Kellman from Yerkes Observatory. It classifies stars based on their spectral readings, which help to determine their overall temperature, density, and therefore mass and size. The MK system describes a star by its *luminosity* and its *spectral type*.

LUMINOSITY

The width of certain absorption lines in a star's spectrum help to determine the density of its atmosphere, and therefore its surface gravity, mass, and size. The classes are listed on the **Luminosity** table.

SPECTRAL TYPES

The spectral type of a star is based on its effective surface temperature, which is assigned a color typical for stars of that spectral type. This was originally part of the Harvard classification system, later incorporated into the MK System. The spectral sequence uses the letters O, B, A, F, G, K, M, a sequence from the hottest (O-type) to the coolest (M-type), often recalled with the sentence "Oh Be A Fine Girl (Guy), Kiss Me." Each letter class is further subdivided with a numeral from 0 for the hottest in that type to 9 for the coolest. So A8 and A9 are followed by F0 and F1, and so forth. Earth's sun is a G2 class-V main sequence star, by way of comparison. The spectral types are listed on the **Spectral Types** table.

ADDITIONAL NOTATION

The MK System has additional prefixes (technically D is a luminosity prefix for dwarf stars, simplified as a class here), modifiers for especially bright or dim stars of a certain luminosity (such as luminous supergiants or even "hypergiants") and suffix letters for a wide range of spectral peculiarities. All of these details are beyond the scope of the system presented in this chapter and not particularly useful for *Expanse* game play, so they've been excluded.

LUMINOSITY

CLASS	SIZE
I	supergiant
II	bright giant
III	giant
IV	subgiant
V	main sequence
D	dwarf

SPECTRAL TYPES

TYPE	TEMPERATURE	COLOR
O	30,000+ Kelvin	blue
B	10,000 – 30,000 Kelvin	blue-white
A	7,500 – 10,000 Kelvin	white
F	6,000 – 7,500 Kelvin	yellow-white
G	5,200 – 6,000 Kelvin	yellow
K	3,700 – 5,200 Kelvin	orange
M	2,400 – 3,700 Kelvin	red

SYSTEMS

We begin with the creation of the star system beyond the ring gate: its component stars, the orbital zones around them, and what occupies those orbits.

STEP 1: NUMBER OF STARS

Roll 3d6 on the **Number of Stars** table to determine how many stars there are in the system: just one primary, or a primary star and one or two companion stars.

STEP 2: PRIMARY STAR

Determine the characteristics of the system's primary star under the Morgan-Keenan (MK) system of stellar classification (see sidebar).

LUMINOSITY CLASS

Roll on the **Luminosity Class** table to determine the star's luminosity class. Although there are a number of other luminosity classes, the builders' bias (explained previously) means most of the stars encountered beyond the ring gates will be Class III, V, or D. The GM can choose a different luminosity class for the system's star(s), if desired.

SPECTRAL TYPE

Roll on the **Primary Spectral Type** table to determine the primary star's spectral type.

NUMBER OF STARS

3D6 ROLL	NUMBER OF STARS
3–12	One
13–16	Two (primary and one companion)
17–18	Three (primary and two companions)

LUMINOSITY CLASS

3D6 ROLL	LUMINOSITY CLASS
3–4	Class-III Giant
5–15	Class-V Main Sequence
16–18	Class-D Dwarf

PRIMARY SPECTRAL TYPE

ROLL*	SPECTRAL TYPE
3–4	A (white)
5–6	F (yellow-white)
7–8	G (yellow)
9–10	K (orange)
11+	M (red)

*Class-III: roll 3d6+3; Class-V: roll 1d6+5;
Class-D: no spectral type.

“People used to think gold was worth fightin’ over, and that shit gets made by every supernova, which means pretty much every planet around a G2 star will have some. Stars burn through lithium as fast as they make it. All the available ore got made at the big bang, and we’re not doin’ another one of those. Now that’s scarcity, friend.”

— Cibola Burn

COMPANION LUMINOSITY CLASS

1D6	COMPANION LUMINOSITY CLASS IS...
1–2	the same as the primary
3–5	one class lower than the primary
6	Class-D

COMPANION SPECTRAL TYPE

1D6	COMPANION SPECTRAL TYPE IS...
1–3	the same as the primary
4	one spectral type later
5	two spectral types later
6	three spectral types later

- For a Class-III star, roll 3d6+3.
- For a Class-V main sequence star, roll 1d6+5.
- Class-D white dwarf stars have no additional spectral type.
- An M-type (red) Class-V star is sometimes known as a “red dwarf,” a relatively small and dim star. Note that O- and B-type blue and blue-white stars aren’t listed on the table, due to their relative rarity and the builders’ bias. The GM should place them deliberately, if an O- or B-type star is desired for the system.

STEP 3: COMPANION STARS

If there are no companion stars in the system, skip this step. For a binary or trinary system, roll to determine the characteristics of each of the companion stars.

LUMINOSITY CLASS

Roll on the **Companion Luminosity Class** table to determine the companion star’s luminosity class. Dwarf star primaries always have dwarf star companions.

SPECTRAL TYPE

If the companion star is of the same luminosity class as the primary, roll on the **Companion Spectral Type** table to determine the companion’s spectral type.

STEP 4: ORBITS

Once the traits of the system’s stars are determined, you can then figure out how many bodies orbit in the system and where.

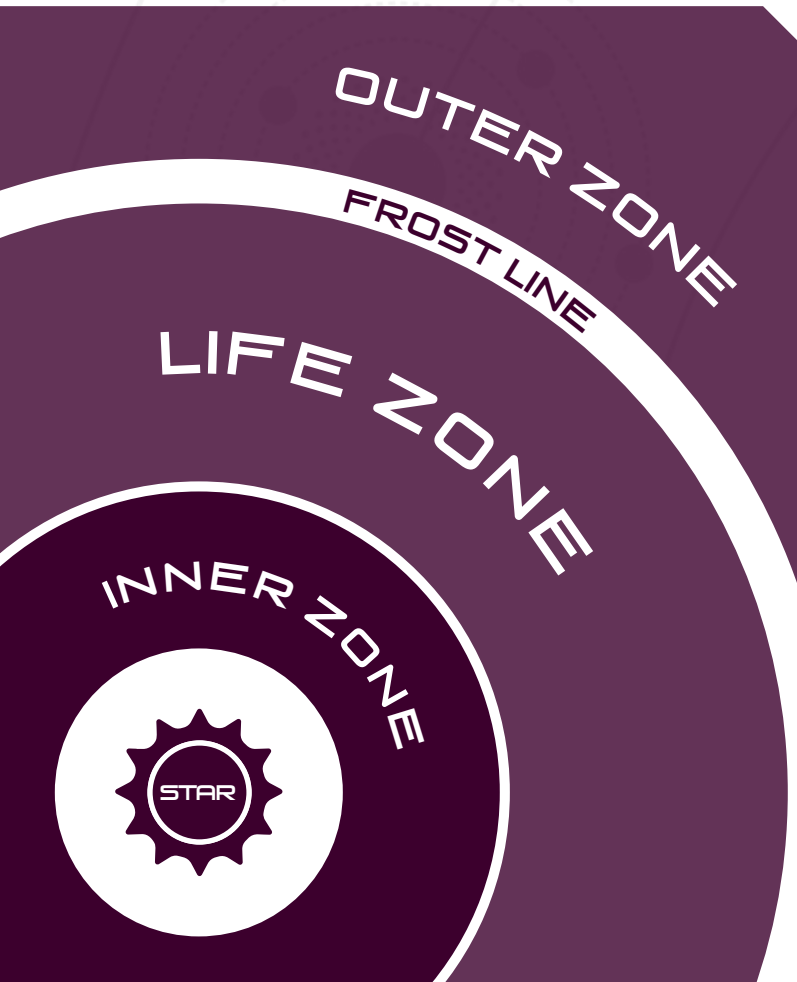
ORBITAL ZONES

A system has four *orbital zones*:

- The *inner zone* runs from the closest orbital distance from the star out to the start of the life zone.
- The *life zone* (also sometimes known as the “Goldilocks zone” for being “just right” for life to form) is where the distance from the star is right for liquid water to exist on a planet’s surface and for it to retain its atmosphere.
- The *frost line* (also known as the ice line or snow line) is the distance where water ice was able to form and remain frozen during the formation of the system.
- Lastly, the *outer zone* runs from the frost line out to the system’s furthest orbital distance.

See the **Orbital Zones** table for these boundaries, based on the star’s spectral type.

Distances are listed in astronomical units (AU) where “1” is the distance from Earth to Sol (150 million kilometers).



ORBITAL ZONES

TYPE	CLOSEST DISTANCE	LIFE ZONE	FROST LINE	FURTHEST DISTANCE
A0	0.54	7.0–9.6	37	110
A5	0.38	3.6–4.9	19	76
F0	0.32	2.4–3.3	13	64
F5	0.26	1.6–2.2	8.5	52
G0	0.22	1.2–1.6	6.1	44
G5	0.19	0.84–1.2	4.4	38
K0	0.16	0.62–0.84	3.2	32
K5	0.12	0.37–0.50	1.9	25
M0	0.10	0.24–0.33	1.3	20
M5	0.042	0.10–0.14	0.52	10

If the system is a Class-III giant, shift the orbital zones up one line. If the system is two or more stars shift the orbital zones of the primary up two lines, three for a trinary system. So an F0 primary with a companion star becomes an A0, effectively. If the companion is a dwarf star, shift the zones of the primary up just one line. If a shift goes off the top of the table above A0, increase all of the values by 20% per shift.

Note that this shifting only applies for binary and trinary systems where the primary and companions orbit closely, within less than 0.2 AU of each other. This appears to be part of the builders' bias (previously) because more widely orbiting companion stars tend to interfere with the formation of planets, particularly those capable of supporting the kind of life the builders exploited. If the GM wants a more widely orbiting binary or trinary system beyond a gate, it is left for them to create.

ORBITS

Planetary bodies orbit out at logarithmic distances from the system's primary star according to the Titius-Bode Law of orbital mechanics. Roll 1d6+1 and divide the total by 2 (retaining fractions), then multiply by the closest orbital distance from the **Orbital Zones** table. This is the system's *base orbital distance*, the orbit of its innermost planetary body.

Take the base orbital distance and add 0.4 AU to find the next orbit, then do the same and add 0.8 AU, then 1.6 AU, 3.2 AU, 6.4 AU, 12.8 AU, and so forth, doubling the amount added each time. Stop once an orbital distance exceeds the system's **Furthest Distance** on the **Orbital Zones** table. Those are all of the potential orbits of bodies in the system.

STEP 5: ORBITAL OCCUPANTS

Once the available orbits in the system are known, determine what occupies them. Roll 3d6 for each orbit and consult the **Orbital Placement** table. For each successive roll, add a cumulative +1 to the roll's total.

GAS GIANTS

A gas giant is increasingly more likely to be found in the outer orbits of the system, although it is possible for a "hot jupiter" gas giant to exist close to the system's star. Gas giants can be small systems unto themselves with their various moons.

ASTEROID BELTS

An asteroid belt is made up of rocky debris ranging in size from pebbles to the equivalent of small moons, typically the remains of a primordial planet torn apart by gravitational forces. If you roll this result twice in a row, make the second result a gas giant instead.

ROCKY PLANETS

If a rocky planet is past the system's frost line, it is a rocky ice ball. If it is closer, it is more likely a dry, rocky planet, unless it is located in the life zone. Then it may have an atmosphere and perhaps even be terrestrial.

ORBITAL PLACEMENT

3D6 ROLL	PLACEMENT
3–15	Rocky Planet
16–17	Asteroid Belt
18+	Gas Giant

TERRESTRIAL PLANETS

TERRESTRIAL PLANET PLACEMENT

PLANET	TN
First	6
Second	16
Third	17
Fourth	18

Working out from the star, roll 3d6 for each rocky planet within the system's life zone, including any large moons of gas giants (following) within the zone. On a 6 or higher, that planet is terrestrial (Earth-like).

After the first terrestrial planet is generated, the target number increases to 16, then 17, 18, finally becoming impossible after the system's fourth terrestrial planet, with any remaining unchecked planets in the life zone remaining incapable of supporting life. These target numbers are shown on the **Terrestrial Planet Placement** table.

It is possible for a system to have no terrestrial planets, in which case it may be that it did have them at one point, but conditions changed. It's highly unusual for there to be sufficient candidate planets in the life zone for a system to have four terrestrial planets, but it's possible, especially if there is a gas giant with sufficient moons in the zone.

THE RING

The system's ring gate will usually be located in its outer zone, either in an existing orbit, or in a stable orbit of its own. Randomly select one of the orbits in the outer zone, or place the gate just inside the system's farthest orbital distance.

STEP 6: MOONS

Determine the number of moons orbiting each planetary body in the system.

GAS GIANTS

A gas giant has 2d6 moons (planetoids similar to Earth's moon or the larger Jovian moons) and 4d6 moonlets (similar to Deimos and Phobos orbiting Mars, or the smaller Jovian moons). For gas giants within the life zone of the system, treat moons as rocky planets when determining the system's terrestrial planets (previously). Roll an additional d6: On a 5, the gas giant has a faint ring system, on a 6, the gas giant has a large and easily visible ring system, similar to Saturn.

ROCKY PLANETS

A rocky planet has 1d6–4 moons. If there are no moons, then a rocky planet has 1d6–2 moonlets. If both rolls result in 0 or less, the planet has no natural satellites.

TERRESTRIAL PLANETS

A terrestrial planet has 1d6–2 moons. If there are no moons, then a terrestrial planet has 1d6–1 moonlets. If both rolls result in 0 or less, the planet has no natural satellites.

TERRESTRIAL PLANETS

Because of the builders' use of nascent life as a building block of their technology (see the **Builder's Bias**, previously) most of the systems linked by the ring network contain one or more terrestrial planets, capable of supporting life within parameters similar to Earth, which was also an ancient target of the protomolecule. See the write-up of Earth in **Chapter 8** of *The Expanse* RPG for a listing of some of those parameters. Of course, as human explorers are rapidly learning, "capable of supporting life" and "comfortable to live on" are two different things. The terrestrial planets orbiting these distant stars are still *alien* worlds, with qualities ranging from odd and inconvenient to potentially deadly.

ORBITAL PERIOD

For a quick-and-easy method of determining a planet's orbital period, assume 1 AU = 1 standard year and use the terrestrial planet's orbital distance as a multiplier to determine its orbital period. For example, a planet orbiting at 0.78 AU would have a period of 0.78 years, or $(365.25 \times 0.78) = 284.89$ standard days. This greatly simplifies matters involving the star's mass and the like and is "close enough" for game purposes.



A detailed calculation of a planet's orbital period involves factoring-in its orbital radius and the star's mass, and the orbital mechanics in this chapter don't account for things like orbital eccentricity (how elliptical an orbit is versus circular), axial tilt, or orbits angled from the plane of the elliptic, in which all of the bodies in the system do not necessarily orbit in the same flat "plane" around the star. Game Masters interested in this and other astronomical details can research and add them to created systems in their own *Expanse* games as desired.

ROTATIONAL PERIOD

Roll 2d6, then roll that many dice (2 to 12) and add them together to get the planet's rotational period—how long it takes to rotate on its axis—in Earth standard hours, a value somewhere between 2 and 76. If desired, roll an additional 1d6 dice and tack that many standard minutes on to the total. Actual rotational period is greatly affected by tidal forces and the planet's mass and diameter, but this result is sufficient for gaming purposes. Any oddities in the result can be potential hooks, perhaps suggesting builder interference.

GRAVITY

Roll 1d6–1d6, giving a result from –5 to +5. Multiply the result by .05 to get the variance in the planet's gravity from 1 g, a result from 0.75 g to 1.25 g, all within the range of normal gravity as defined in *The Expanse* RPG. Planetary gravities outside of this range should be assigned by the GM to suit a particular intention or occur as **System Oddities** (following).

PLANETARY DIAMETER

If desired, the GM can also multiply the planet's gravity by a base of 13,000 km to determine the planet's approximate diameter. There's substantial variability in this, depending on how close the planet's density is to that of Earth, but again it's

"The usual state of nature is recovering from the last disaster," she said. It was a truism of ecological biologists, and she said it the way a religious person might pray. To make sense of what she saw. To comfort herself. To give the world some sense of purpose or meaning. Species rose in an environment, and that environment changed. It was the nature of the universe, as true here as it had been on Earth.

— *Cibola Burn*

sufficient for game purposes. So an initial roll of +1 means a planet with a surface gravity of 1.05 and a diameter of 13,650 km, for example. Feel free to roll a few dice and add that many total kilometers to the planetary diameter to give it a more “organic” feel.

ATMOSPHERE

Planetary atmospheres form from vulcanism and the release of gases from within the planet during its formation, along with gases released during the bombardment of comets and other debris in the early stages of the planet’s life. By definition, terrestrial planets have atmospheres composed largely of nitrogen with a sufficient amount of free oxygen to make them breathable. This requires at least a modicum of oxygen-generating life-forms on the planet to maintain, given oxygen’s tendency to chemically bond with other elements (see **Ecosphere**, following).

ATMOSPHERIC COMPOSITION	
3D6 ROLL	COMPOSITION
3	Chlorine
4	Sulfur
5–7	High Carbon Dioxide
8–10	Low Oxygen
11–12	High Oxygen
13–18	Pollutants

Roll 3d6: On a roll of 6 or higher, that planet’s atmosphere is perfectly safe and breathable by humans, and any atmospheric contaminants are, at best, minor oddities or inconveniences (see the **System Oddities** section). On a roll of 5 or less, the planet’s atmospheric composition is outside of the usual limits in some way. Roll again on the **Atmospheric Composition** table for details or choose one option.

CHLORINE

Chlorine contamination in a terrestrial atmosphere is unusual, and probably the result of the planet’s ecosphere or some oddity continuously releasing the gas into the environment. Even significant trace amounts of chlorine (or fluorine) gas in the air renders it toxic and corrosive to earthly life, a hazard ranging from minor to murderous, depending on how intense the concentration is (see **Hazards** in **Chapter 5** of *The Expanse* RPG). Roll 1d6 to determine how many dice of damage the hazard causes. Since the toxic gas is heavier than air, the hazard is most intense in the planet’s low-lying elevations, and higher elevations may be free of it.



SULFUR

Sulfur contamination could be due to vulcanism or the planet's ecosphere. In sufficient concentrations, it is also a toxic hazard with damage dice of 1d6–2. A result less than 1 means the contamination is in small enough amounts to cause only an unpleasant rotten-egg odor and some mild acidic rain. This contamination also tends to be in the lowest elevations.

HIGH CARBON DIOXIDE

High Carbon Dioxide atmospheres cause breathing problems like shortness of breath and hyperventilation. The environment imposes a +1d6 increase in Constitution test target numbers (other than Tolerance). At the GM's discretion, locals may be able to acclimate themselves to a modifier of +2 or less over time.

LOW-OXYGEN

Low-Oxygen atmospheres are similar to being on Earth at a high altitude. The planet imposes a +1d6 increase in the target numbers of Constitution tests (other than Tolerance). At the GM's discretion, locals can acclimate to a low-oxygen modifier of +2 or less over time so that it no longer affects them. Wearing a condensing respirator or portable oxygen tank also eliminates the test penalty for a low-oxygen atmosphere.

HIGH OXYGEN

High Oxygen atmospheres can be irritating to the lungs and exposed skin, requiring a reducing respirator to prevent serious long-term effects. Roll 1d6: On a 1–3, the elevated levels of oxygen require only minor preventative treatment to avoid long-term issues. On a 4–6, the planet's oxygen levels are high enough to require a respirator mask, or characters suffer an increase in target numbers equal to (the roll result – 3, from +1 to +3) after unprotected exposure to the air.

POLLUTANTS

Pollutants include all kinds of unusual trace elements that may exist in an atmosphere, including dust and particulates, pollen and other allergens, microscopic life, and even radioactive contamination. Roll 1d6–3: The pollutant is a hazard with that many damage dice. A result less than 1 means the pollutant is a minor irritant, at best, although some people may have more severe reactions. Use the **Illness, Toxins & Radiation** guidelines from **Chapter 13** of *The Expanse* RPG to handle exposure.

HYDROSPHERE

Roll 2d6–2 and multiply the result by 10 to get the percentage of the planet's surface covered by water. A result of 0 means the planet has no liquid surface water, while a result of 10 means the entire surface of the planet is covered by water, save perhaps for a few small island chains or the like. The GM should feel free to vary this result as best suits the placement and concept of the planet. Water near the planet's poles will tend to freeze and remain that way, based on the local environment.

Large bodies of water (oceans and seas, essentially) may be contaminated with salts and other dissolved minerals. In contrast, smaller bodies of water formed by the hydrological cycle (springs, lakes, and the rivers leading from them to the seas) may be “fresh” water with fewer suspended or dissolved materials. However, that can be heavily affected by the local water table and basins, as well as the planet's ecosphere.

ECOSPHERE

Because the protomolecule “hijacks” local biological matter, life on terrestrial planets connected by the ring gates has a “reset” period, meaning it had to begin evolving again from whenever the initial protomolecule arrival repurposed native life on the planet, typically somewhere around 1.5 billion years ago. This is in comparison to life having existed on Earth since around 3.5 billion years ago, placing evolution on other terrestrial planets well “behind” Earth.

Therefore, life-forms on terrestrial ring gate planets tend to be more primitive, although that's by no means a hard rule. Life evolves along a number of different paths, solving similar “design problems” in different ways based on the local ecosphere. Additionally, some life on other terrestrial planets is modified or made up of biomechanical elements originally created by the protomolecule and left to evolve on their own for up to a billion years or more.

Officially, in *The Expanse* series, the only known sapient life-forms in the universe are humans, the builders, and whatever species destroyed them. None of the planets in the ring systems have sapient life, likely due to the “restart” in the evolution of life there imposed by the protomolecule. The Fermi paradox asks “If there is sapient alien life, where are they all?” At least in Earth’s neighborhood of the galaxy the answer is “Wiped out by the protomolecule before they could even get started.”

ANALOGS

Humans are pattern-recognizing creatures, naturally using analogies to describe and define things. In short, if it looks (even vaguely) like a duck, chances are humans are going to call it a duck, even if it is no more related to a duck than it is to an eggplant. Xenobiologists are also likely to classify new life forms by their ecological niche, often likening them to something similar on Earth. The two things taken together tend to lead to a classification of newly encountered life-forms

based on: 1) What they do (in terms of their ecological niche) and, 2) What they resemble. Thus you get tree-analogs, insect-analogs, bird-analogs, fish-analogs, and so forth, along with specifics like Auberon rat-doves (which are neither rats nor doves) or Laconian sunbirds (which, while having some slight similarities to terrestrial birds like ducks and swans, are neither).

In *Expanse* game terms, analogs are useful in terms of creating templates for certain life-forms to fit the parameters of potential threats from **Chapter 13** of the core rulebook.

FLIER ANALOG

ABILITIES (FOCUSES)

ACCURACY 1 (BEAK OR BITE), **COMMUNICATION** -2, **CONSTITUTION** -1, **DEXTERITY** 4 (FLYING), **FIGHTING** 1 (CLAWS), **INTELLIGENCE** -2, **PERCEPTION** 2 (SEEING), **STRENGTH** -3, **WILLPOWER** 1

SPEED	FORTUNE	DEFENSE	AR + TOU
4 (FLY 18)	5	14	0
WEAPON	ATTACK ROLL	DAMAGE	
BEAK OR BITE	+3	1D6-3	
CLAWS	+3	1D6-3	
SPECIAL FEATURES			

FAVORED STUNTS: Skirmish

THREAT: MINOR

GRAZER ANALOG

ABILITIES (FOCUSES)

ACCURACY 0 (KICK), **COMMUNICATION** -3, **CONSTITUTION** 5, **DEXTERITY** 0, **FIGHTING** 0, **INTELLIGENCE** -3, **PERCEPTION** 1 (HEARING OR SCENT), **STRENGTH** 5, **WILLPOWER** 1

SPEED	FORTUNE	DEFENSE	AR + TOU
15	15	10	5
WEAPON	ATTACK ROLL	DAMAGE	
KICK	+2	1D6+5	
SPECIAL FEATURES			

FAVORED STUNTS: Knock Prone, Skirmish

THREAT: MINOR

HUNTER ANALOG

ABILITIES (FOCUSES)

ACCURACY 3 (BITE OR CLAWS), **COMMUNICATION** -2, **CONSTITUTION** 3, **DEXTERITY** 2, **FIGHTING** 1, **INTELLIGENCE** -1, **PERCEPTION** 1 (TRACKING), **STRENGTH** 3, **WILLPOWER** 2

SPEED	FORTUNE	DEFENSE	AR + TOU
13	20	12	3
WEAPON	ATTACK ROLL	DAMAGE	
BITE/CLAWS	+5	1D6+3	
SPECIAL FEATURES			

FAVORED STUNTS: Knock Prone, Set-up

THREAT: MODERATE

FLIER ANALOG

Flier analogs are bird-like winged creatures, which are often not actual birds. Those smaller than a Terran raven have reduced Constitution and Strength, while those larger than a hawk or similar have increased scores in those abilities. Tiny flier analogs may make up a swarm (see **Swarm Analog**).

GRAZER ANALOG

This template fits large quadruped grazers similar to cattle, horses, and the like, although grazer analogs can vary widely. They may have four limbs, or possibly more. Some may stand or run upright on their rear limbs rather than all of them. Many are true herbivores, but others are filter feeders, scavengers, or omnivores. Some have horns, antlers, or other natural weapons. Grazers tend to be herd animals gathering in groups, but they may be found in mated pairs (with or without young) or even singularly. Grazers of sufficient size and strength might potentially be domesticated and even trained as riding animals.

HUNTER ANALOG

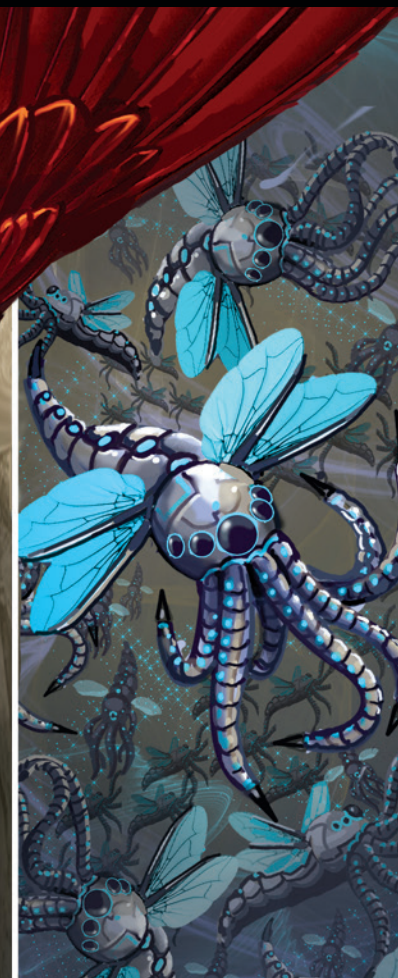
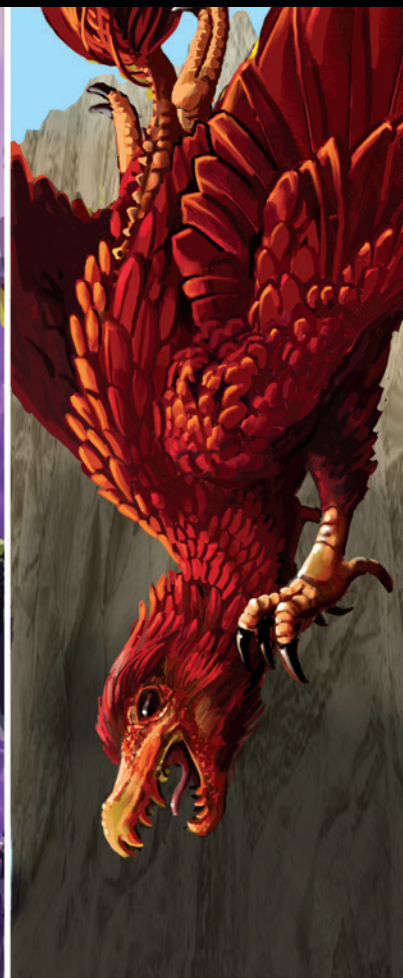
This analog is a medium-sized predator similar to large canines such as wolves, or medium-sized felines like mountain lions. For larger hunters, apply one or more adversary improvements (from **Chapter 13** of *The Expanse* RPG) particularly to Constitution, Dexterity, and Strength.

SWARM ANALOG

A swarm analog is a large mass of tiny creatures, individually not much of a threat but collectively as dangerous as a swarm of insects or the like.

SPECIAL FEATURES

Game Masters can add any of the following special features to the analog templates to create different types of life-forms and threats.



AQUATIC The creature breathes water and has a swimming Speed equal to (or instead of) its normal land Speed.

ARMORED The creature is unusually tough. Increase its Armor Rating by 1d6 (or more).

BIOMECHANICAL The creature is essentially a machine, but a highly advanced one based on alien technology. It is immune to biological hazards and can suffer twice the usual number of injuries and wounds before being taken out. Biomechanical creatures often (but not always) have additional special features or adversary improvements.

FAST Increase the creature's Speed by 1d6 (or more).

SPECIAL SENSE The creature has one or more unusual senses improving its Perception, such as the ability to see in very low light, or in the infrared or ultraviolet spectra, or extremely sensitive hearing or smell, for a few examples. This may include Perception ability Focuses.

SPECIAL STUNT The creature can perform a particular stunt or stunts at a reduced SP cost, usually 1 less than usual, but chosen by the GM.

SWARM ANALOG

ABILITIES (FOCUSES)

ACCURACY 2 (BITE OR STING), **COMMUNICATION** -4, **CONSTITUTION** 0, **DEXTERITY** 3, **FIGHTING** 0, **INTELLIGENCE** -4, **PERCEPTION** 1, **STRENGTH** -4, **WILLPOWER** 0

SPEED	FORTUNE	DEFENSE	AR + TOU
2 (FLY 16)	5	13	0

WEAPON	ATTACK ROLL	DAMAGE
BITE/STING	+4	1d6

SPECIAL FEATURES

FAVORED STUNTS: Skirmish

SWARM ATTACK: A swarm covers an entire area, ranging from a diameter of 2 meters to 10 meters or even more. A swarm can attack any creatures within its area on its turn as a major action. Roll a separate attack check for each creature the swarm attacks.

SWARM DEFENSE: Swarms are diffuse and hard to attack directly. It suffers 1 point of damage from any direct attack; a Vicious Blow stunt does 2 points, and a Lethal Blow does 3 points. The Injure and Wound stunts have no effect on a swarm, nor do any Grappling stunts. Only an area attack does its full damage to a swarm. A swarm that is taken out disperses and is no longer a threat.

THREAT: MINOR

TOXIC The creature's attack or touch introduces a toxin, a hazard requiring a Constitution (Tolerance) test to overcome and inflicting 1d6 dice worth of damage, from 1d6 to 6d6. Roll once to determine how deadly the creature's toxin is.



ARTIFACTS

The builders built to last, and evidence of their civilization still exists scattered across the galaxy more than a billion years later. Still, those artifacts have suffered from the passage of time and many mechanisms no longer function, or have malfunctioned, and their programming and design are by and for a civilization that no longer exists. Their technology remains so advanced that humanity may take centuries or longer to understand it—assuming they don't simply destroy themselves with it first.

In some systems, the remains of the builders are so limited as to only be noticeable to xenoarcheologists and xenobiologists studying local life. In other systems, there are significant artifacts left behind, some of which are still operational, making them both tremendously valuable *and* potentially dangerous. Roll 3d6 and consult the **Artifacts Present** table to determine the amount of builder artifacts on the planet.

ARTIFACTS PRESENT

3D6 ROLL	AMOUNT OF ARTIFACTS
3–4	None
5–7	Light
8–14	Moderate
15–17	Extensive
18	Heavy

ARTIFACT TYPE

3D6 ROLL	ARTIFACT TYPE
3–5	Installation
6–9	Machine
10–15	Structure
16–18	System

- **None** may mean there are literally no artifacts left on the planet, or that their presence is so limited it is difficult to notice them, at first. The only remaining evidence of the builders might be found in some of the planet's life-forms or its ecosystem.
- **Light** artifacts are primarily curiosities such as the ruins of structures, many of them buried or overgrown, or scattered remnants of builder technology that no longer function, making them primarily of interest to xenoarcheologists.
- **Moderate** artifacts indicate some functioning ancient technology on the planet, although it may be dormant until something causes it to reactivate. It may include relatively small artifacts, like biomechanical swarms or hunters (see **Ecosphere**, previously) or larger ones, like earth-moving machines, reactor systems, transport systems, or largely intact ruins.

ARTIFACTS AND THE CHURN

Builder artifacts are tailor-made to work in conjunction with the Churn, described in **Chapter 12** of *The Expanse* RPG. The technology found among the ruins of the alien civilization has laid dormant for over a billion years and, while some of it is still functional, much of it has badly degraded. What's more, the civilization and circumstances it was built for are long gone, and the technology has limited ability to adapt to, much less understand, its new circumstances. Combine all of that with the ability of builder technology to tinker with the essential rules of physics, and you have a formula for disaster on an epic scale.

Most often, artifacts at least *seem* to respond to what is happening, even if they do so with mechanical single-mindedness and a lack of any sense of consequence. The control station in the slow zone, for example, maintained an initial “speed limit” and then lowered the limit based on the perception that a launched grenade was a potential threat. Technology on or near Illus IV responded to a reactor explosion by halting all nuclear fusion on or near the planet. Other builder artifacts might respond similarly to other situations: altering gravity, inertia, electrical resistance, or nuclear reactions (to name a few) as a “safety mechanism” intended to *prevent* disaster that instead causes it.

- **Extensive** artifacts are difficult to miss and may include whole installations or functional sites, perhaps even orbital platforms or other artifacts on (or replacing) moons or other orbital bodies within the system. Many of these may still be functional, if dormant.
- **Heavy** artifacts are unmistakable in their presence—entire vast, ruined cityscapes of alien structures. A majority of the planet's surface may even be covered by them, or entire orbital bodies in the system could be builder artifacts or constructs!

For any particular artifact, the GM can roll on the **Artifact Type** table to determine generally what it is.

INSTALLATIONS

Installations are (relatively) intact sites intended to perform a function, ranging from ore-processing to construction or data-storage. The key things with installations are that they are fixed locations and have a function, which they may still be capable of doing.

MACHINES

Machines are mobile artifacts programmed to carry out certain functions, essentially various kinds of robots, ranging from dog-like repair drones to giant beetle-like earth-movers or mantis-like guardian machines. Some can be created with the analog templates in this chapter with the biomechanical and other special features. Others are far larger and beyond the scale of human-sized characters.

STRUCTURES

Structures are typically the ruins of buildings, ranging from tall towers to long, snaking halls or even underground complexes.

SYSTEMS

Systems are artifacts that service or support the rest, from the ring gates themselves to planetary transportation networks, repair and maintenance systems, and protective or defensive systems.

ODDITIES

The following are some interesting or unusual things about star systems or their planets that characters might encounter. You can use these to create more interesting things about the systems your *Expanse* characters visit. Game Masters should feel free to create additional oddities or to modify any of these as desired. A system can have 1d6–3 oddities, or as few or as many as the GM wishes.

Some System Oddities may appear contradictory to known astronomical information. Feel free to leave the anomaly an unexplained mystery that scientists are investigating. With the builders and their network, it remains unknown just how much they engineered certain aspects of different systems and why, much less how they accomplished such things or how they're sustained. While you don't have to lean too heavily on “the builders did it,” it does provide a useful explanation for anything that may crop up in the course of your games.

ODDITIES

1D6	ODDITY TYPE
1–2	System Oddity
3–4	Planetary Oddity
5–6	Environmental Oddity

SYSTEM ODDITIES

1D6	SYSTEM ODDITY
1	One of the system orbits containing a rocky planet is occupied by 1d6–2 rocky planets total (minimum of 2) equally-spaced in their orbit. Test for each planet as terrestrial separately, but with a +1 bonus to all tests.
2	One of the orbits in the system is occupied by a builder artifact. Choose the orbit randomly. If the orbit is the same as a terrestrial planet, then the artifact orbits that planet as a satellite instead.
3	A gas giant in the system closest to the primary star emits sufficient heat and has a powerful enough magnetosphere that one of its large moons is a terrestrial planet, albeit an usual one which may receive very little light.
4	A periodic occurrence in the system causes an extinction-level event on one of its terrestrial planets. This might be intersection with a debris field or cometary belt, solar flare activity, a gamma ray or X-ray burst from a stellar companion, or the like. The period between events is $(1d6 \times 1d6 \times 1d6) \times 1,000$ years, but the chances the next one is soon depend on the Churn.
5	The primary star has a black hole companion, orbiting the primary and slowly drawing off its mass. This replaces one of the system's existing companions, if it has any.
6	The system is dead. If terrestrial planets were indicated, they are lifeless and possibly no longer capable of supporting life. If the system had no terrestrial planets, it now has <i>no</i> planets at all, just the ring gate orbiting a distant, empty star system, possibly with one or more debris belts.

PLANETARY ODDITIES

1D6	PLANETARY ODDITY
1	The planet's gravitational variance, as determined under Gravity , previously, is doubled, making its gravity somewhere between 0.5 g and 1.5 g. This may mean the planet is unusually small or large, or has an unusual density.
2	The planet has a ring system, visible from the planet's surface. Such systems are rare on terrestrial planets due to atmospheric drag and orbital decay. The ring might have formed naturally or could have been artificially created and sustained. Roll 1d6: On a 6, the ring system is <i>clearly</i> artificial.
3	The planet has unusually rich deposits of certain minerals, including (but not limited to) gold, diamonds, uranium, sulfur, or lithium. These deposits may be naturally-occurring, engineered, or remnants of builder creations.
4	The planet's rotation is reversed relative to that of Earth (and most planets in the Sol system) such that sunrise occurs toward planetary west.
5	The planet has an unusually slow rotational period; multiply the period determined previously under Rotational Period by 2d6.
6	The planet's rotational period closely matches its orbital period, making it so one side always faces its star and the other side always faces away. Very different ecospheres and environments may have evolved on the planet's two sides.

ENVIRONMENTAL ODDITIES

1D6	ENVIRONMENTAL ODDITY
1	The planet has a minimal axial tilt, resulting in extremely stable climates relative to their latitude, and very little change of "season" on the surface.
2	Atmospheric elements lend the air an unusual smell, which ranges from oddly pleasant (like Laconia's "minty" scent after it rains) to not so much (such as Auberón's vague sewer-smell).
3	A combination of the planet's strong magnetosphere and strong solar winds produces spectacular auroras visible on the surface at night. Roll 1d6: On a 5, the auroras are strong enough to disrupt radio communications during active periods. On a 6, the planet's magnetosphere causes regular electromagnetic interference (a 1d6 increase to related test target numbers).
4	There is an exceptional number of underground cave and tunnel networks on the planet, due to volcanic activity, karst topography, builder intervention, or some combination thereof.
5	The planet is unusually well-adapted to "hosting" Earth flora and fauna and having it co-exist alongside its own. This may mean there are also environmental hazards able to affect Earth life in various ways.
6	The planet's environment contains a hazard with 1d6 damage dice, from minor (1d6) to murderous (6d6). This can be anything from a toxic life-form to natural surface radiation or anything else the GM cares to imagine. The hazard only shows up in particular places or times, possibly occurring according to the Churn in a story.

THE EXPANSE COLONY RECORD SHEET

COLONY NAME		
STAR SYSTEM		
PLANET NAME		
ALLEGIENCE		
ECONOMY		RATING
FORCE		RATING
INFRASTRUCTURE		RATING
MEDIA		RATING
SCIENCE		RATING
SIZE	RESOLVE	STABILITY
CONDITIONS		
SPECIAL FEATURES AND NOTES		
PEOPLE & ORGANIZATIONS		

THE EXPANSE COLONY RECORD SHEET

COLONY NAME		
STAR SYSTEM		
PLANET NAME		
ALLEGIENCE		
ECONOMY		RATING
FORCE		RATING
INFRASTRUCTURE		RATING
MEDIA		RATING
SCIENCE		RATING
SIZE	RESOLVE	STABILITY
CONDITIONS		
SPECIAL FEATURES AND NOTES		
PEOPLE & ORGANIZATIONS		

THE EXPANSE STAR SYSTEM RECORD SHEET

SYSTEM NAME		# OF STARS	
-------------	--	------------	--

STELLAR CHARACTERISTICS

PRIMARY STAR		COMPANION STAR I		COMPANION STAR II	
STAR NAME		STAR NAME		STAR NAME	
LUMINOSITY		CLASS		LUMINOSITY	
		CLASS		CLASS	

ORBITAL DISTANCES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	RING

ORBITAL OCCUPANTS

ORBIT #	PLANET TYPE	PLANET NAME	MOONS	MOONIES
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

SYSTEM NOTES

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THE EXPANSE PLANETARY RECORD SHEET

PLANET NAME			
STAR SYSTEM			
PLANET TYPE			
ORBITAL DISTANCE	ORBITAL PERIOD	ROTATIONAL PERIOD	GRAVITY/DIAMETER
MOONS & MOONLITS			
ATMOSPHERE & CLIMATE			
HYDROSPHERE			
ECOSPHERE			
SPECIAL FEATURES AND NOTES			

THE EXPANSE PLANETARY RECORD SHEET

PLANET NAME			
STAR SYSTEM			
PLANET TYPE			
ORBITAL DISTANCE	ORBITAL PERIOD	ROTATIONAL PERIOD	GRAVITY/DIAMETER
MOONS & MOONLITS			
ATMOSPHERE & CLIMATE			
HYDROSPHERE			
ECOSPHERE			
SPECIAL FEATURES AND NOTES			

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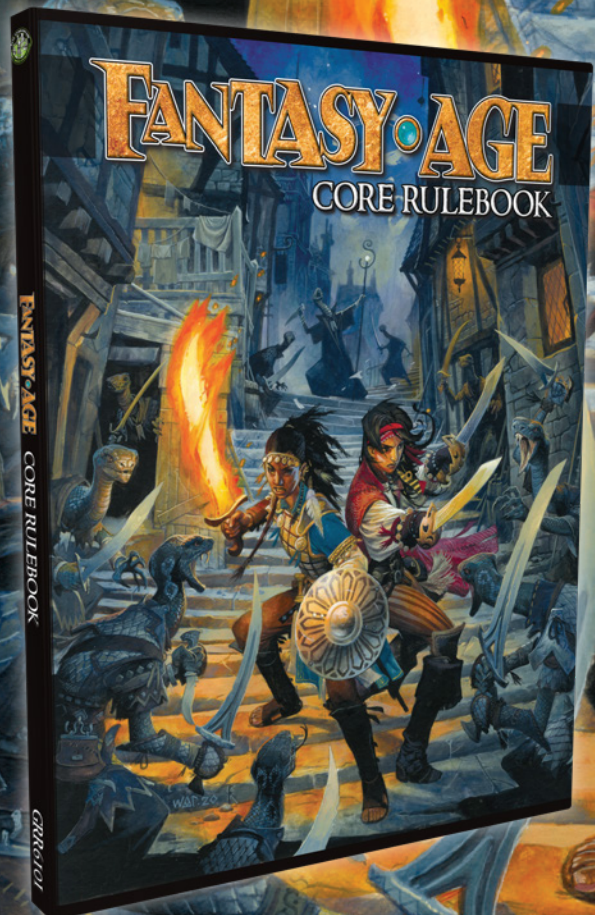


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