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Energy Lords

Origins

Author of **ENTANGLED PLANET**

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Energy Lords

Origins (Short Stories)

by
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To Rob:

thanks for the gobbledygook

To Dr. Shanahan:

thanks for your enthusiasm about protons

*Energy Lords don't care about what time it is.
They care about time flux.*

Origins Prologue

*"In the tides of times, one goes amiss touting the surface of things.
Beware what lies beneath, biding its time." – Systems Engineers Guidebook*

Planets in the past ... "Orange rats"

Tak took another bite. The solar wok-fried meat was tasty.

The rats really weren't all orange. Of course, they really weren't rats either. At least not like Old Earth ones. But the name stuck through generations of husbandry. The original stock had meant survival for the colonists. Without them this planet would have remained another failed attempt, an austere place with sequestered flora and some insects.

He gazed up at the binary suns. Closed his eyes. Old voices told the tale ...

Colonization of a new planet used a recipe. Locate a viable planet, land a survey team. If certified, add the planet as a destination for the Sovereign, who put it up for corporate bidding. Once awarded, the highliner found a mix of pilgrims willing to pay for the way to the "promised" land. Everyone wins.

Tak's ancestors has been lucky. At least at first. None of the known risks transpired. Transport tech worked okay. Landing was uneventful. The camps went up on schedule. But it was later that everyone realized the recipe had failed long before arrival.

The survey missions had devolved to "customer service" for the transport guilds. There were limited budgets and incentives to log and fill quotas. In this case the survey team had landed during a "sweet" cycle for the planet. And even then only rated 3 stars on its listing. And somethings require long term studies to surface. Some externalities might be missed.

So, contrary to expectations, the first colonists found a landscape of scrub and no surface water. Supplies were stretched to over a year. Some water had been discovered in caves. There were layers of fungus. And lots of insects, some like beetles, with colorful markings. Food engineering worked the fungus into plant-based products. And entomophagy offered hope for a balanced diet.

But people got sick. Some faster than others. Biologists got busy. The food chain became clearer. Insects fed on the fungus. Some even appeared to "farm" the stuff. And only old remains were discovered of larger predators. Somehow the food chain had pancaked.

As people started to die, chemists further analyzed the fungus, and biologists sequenced the genomes of the flora and insects. They found a toxin in everything, even traces in the dust. The insects had an immunity. The toxin was stored in their bodies.

The colonists used lab rats to find a solution. Many died. But eventually the remaining scientists identified the key gene mutations that provided immunity. And the gene-spliced rats turned orange. Well, not actually all orange.

Human trials started. Things looked good for awhile, but not everyone adapted. In many cases another side effect of the "cure" came to dominate, namely, neurological seizures and psychosis. Sort of a classic zombie apocalypse.

The orange rats survived. His ancestors survived. Low tech survived.

Tak's reverie faded. Not much to do out here on his walkabout anyway. He enjoyed these celebrations although others in his village did not. For some no memories would be better than the bad memories of a failed planetfall. The zones of weathered tech and the moving specks of light at night from defunct orbiting machines were enough reminders of that fall from grace, that broken vision of wagon trains to other worlds.

He looked at his reflection in the wide shiny blade of a machete. Long dark hair fell on his orange back with dark Rorschach-like markings. "Cool," he thought. "Just like the beetles – don't eat me."

Tak stored his gear. He hefted his pack and bow over his shoulder, and started hiking back toward the village.

Worlds that were ... "Sterile flies"

The AI simulation was showing an interesting result. The sim allowed Jax to study effects over generations.

"Perhaps the 'fruit flies' experiment will corroborate the forecast. Do 'rat' trials make sense? Will the tipping point occur in my lifetime?"

Trade or supply ships were rare this far out. Sometimes decades. By then the stock might be gone. The colony might be gone.

There were no guarantees when resettling an abandoned planet. But for many there simply was no choice. Like on Old Earth, for have-nots crowded into industrial zones from which most had fled. They were left with aging infrastructure, uncertain water & air. Typically in the shadow of chemical factories. A palette of shades of gray.

Screening by the survey ships certified some things before the Sovereign put the planet up for auction. The colony's tech permitted testing for obvious toxins like lead. But abandoned planets were "as is" offerings for those fleeing conflict worlds. For highliners their passage was just a way to extract revenue deadheading between lucrative routes. And the Priory was a reliable supplier of pilgrims.

So, the original settlers had survey maps marking wastelands and highlighting hazardous areas. With signs that read: DANGER ZONE. AT YOUR OWN RISK.

But, as the old saying goes, there's no reward without risk.

Jax pondered, "Try raising a new generation without hope, without aspirations for something better."

And the Priory had its own aspirations.

Some threats had been engineered out of existence. Genetically. Pesky insects neutered, literally. Even some modest carnivores (vestiges of a once grand food chain on a garden planet). What was left was considered manageable, tamed to benefit the settlers.

"And ignorance allowed the Council to ignore other consequences," Jax quipped.

The refugees had survived into another generation. And another. On this scrapheap of a planet.

The planet's orbit around the class K star, rotation, inclination, rad levels, and gravity differed significantly from Old Earth's and most settlers' home worlds. Changes materialized with each generation. More than just altered circadian rhythms. Life went faster, narrowing the lifespans of their pets (heritage lines of Old Earth's cats and dogs) and themselves.

Jax worked within the limits set by the Priory. But the Priory had a problem. The kids. Traditions were changing. Birth ceremonies, coming of age celebrations, and other rites of passage. Even something as basic as names.

Jax personally struggled with these changes. The sex of a baby remained unknown until birth. And names had become more and more gender neutral. Puberty came earlier. Gender tropes withered. Yet, family units thrived, and that satisfied the Priory. To its credit, they didn't see any conspiracy in all this, and tolerated the sexual "superposition" of family members – the gender uncertainty akin to Old Earth's story of Schrödinger's cat as both "dead & alive" until observed.

Tech was another matter. Some survived over the generations. Like the AI. The Priory ruled out others. So, the biosciences declined and bioengineering tech became defunct.

What Jax was seeing in the sim's and experiments, however, posed a threat to everyone. If the sex ratio kept trending lower ...

Recently, emboldened by events, Jax hacked the Priory's archive. Their Codex included information on genetic engineering, cloning, etc. – all forbidden topics which might hold hope for survival.

But the Codex offered scant insight on sociology and gender roles. Jax's teen students were examples. Coeducational sleepovers in the wastelands were popular. Unchaperoned (well, aside from a security monitor). Thought to bolster sexual experimentation and bonding, the Priory should have been worried there was none. Bonding, yes (with lots of storytelling from archives). But no sex.

So, while Jax suspected a genetic mutation or endocrine disruptor – perhaps from a global trace toxin, any "solution" faced both tech and cultural hurdles. The mystic symmetry of the Codex had to break somehow. Otherwise, their planet would be unpopulated once more.

Jax sighed, "I want to do what's right, but what is the path forward?"

Dusk. Time to leave the Institute facility. Time for the pod.

Jax looked into the distance at forbidden towers, flint-like spears on the horizon.

Chapter 1

The Proton Problem

"Damn those systems engineers!"

Part 1 Balancing act

There was an "itch." Not the type you can scratch, somewhere on your nose, scalp, or other skin. This was in his brain, or something like that. Not yet fully awake, Tau still realized that it wasn't from MAICII, since that would have included an audio tone. But the feeling was new enough so that a minute or two passed before he bolted up on his bed.

"Damn, those systems engineers." It had to be about something that those legendary a-holes had designed. Always seemed so, anyway. Every time in his adolescence when there'd been this itch a malfunctioning local site with their imprint was later in the news -- and only because there'd been a major public safety response and casualties.

The temperature screen cut off as he rose from the bed. Room ambience transitioned to day mode. The Quantum Foam mattress slid away into the multi-function furniture block. He pulled on his work jumpsuit and approached the 3D Food Maker Deluxe, one of the few luxuries in his CQ. "4 deuces, standard sides," he started to say. But no, there wasn't time for that. "Cancel that, just Energy O's with bananas." That'd take a few minutes. Time enough for a visit to the bath nook.

"Hey, MAICII, remind me to tune the food maker this week," he thought.

"Okay" came the mental affirmation. He liked his food goo crunchier.

Thinking about a plan for an off-hours visit to his job site, Tau exited his CQ, took a lift column to the concourse platform, and ambled toward the main Big C dome. No need to rush and draw attention. Some of the moons were visible above the horizon.

Surprisingly, the employee portal at Big C Amusements stayed silent as he passed inside.

"MAICII, anything to worry about?"

"Negative Tau, SOP."

Well, that was good, no one around either. Just the bots. The itch was stronger now.

"MAICII, schematic."

His vision was overlaid with a detailed map of the infrastructure. No active alarms, eh. Okay, he thought, let's start with the effects engine, the core of all the razzle-dazzle. Maybe something was out of alignment. Nano drift. A confinement breach was another matter -- usually activating a shutdown.

"Highlight p+Drive components."

He continued to walk forward, toward the equipment that he'd studied during training.

"Show bay access."

Damn, I'll need to crawl, he thought. No wonder other operators didn't like to check this stuff.

But that was the likely source, as he opened a panel and crawled inside. The access tunnel ran for 20 meters and then opened to an alcove, barely tall enough to stand in. Machinery sounds increased even with noise-canceling walls. Fan noise, pump noise. The itch had become painful.

"MAICII, pain dose." The pain receded.

So, something wasn't right, likely nearby.

"MAICII, luminosity status."

A status overlay, color-coded became visible. Nothing obvious.

"p+Drive spectrum." Coarse structure readouts looked okay.

"Fine structure." Nominal again. "Hyperfine." Pause.

"This'll take a sec, Tau."

"Standing by."

The visualization adjusted to an intense spectral graph with standard markers.

"Zoom upper range." Was there something amiss?

"MAICII, am I seeing what I think?"

"Yes, Tau, there's an anomalous pressure broadening. Possibly a misalignment."

"Damn, that's what I was worried might be happening. Who's the operator currently?"

"That's Dek'r, Tau."

Crap, he thought. He knew Dek'r. They trained together. Sometimes visited the Zone together. But Dek'r tended to become distracted on the job, lulled by the routine. He'd hacked Big C's screen block and sometimes watched VR porn after loading a ride cycle. Maybe there'd been an automated flag on the equipment. Overlooked, ignored as a glitch -- it didn't matter.

"It is what it is," he mumbled. He needed to compartmentalize the situation. What to do. Shutting down any ride platform was a big deal. He'd been disciplined for crying wolf in the past. And he'd learned to do a good job but not too good.

"MAICII, access p+Tr tuning controls."

"Sorry, Tau, I cannot do that. You are not authorized currently. You'll need to wait to your next shift."

He knew there was no point in trying a hack. He'd tried that during training. Quantum cryptography. Access also required physical access, full biometrics, although the equipment was buried in a labyrinth under the customer level. He'd need to come back.

"This is bad, really bad," he thought. "Somebody's bucket list is going to get really messed up."

He made his way back out of the equipment tunnel and was about to exit the park. There stood his supervisor.

"Tau, you're off shift. Please explain."

"Well, sir ..." He had to be careful. Rudy was okay as a middle manager, but he could be a real jerk. Tau maintained excellent customer "likes" over the years, but Rudy's demerits were like

beta-decay, a weak influence on his annual reviews but with a long half-life of meanness. Enough to stall advancement.

"I couldn't sleep and decided to check the odd job board." That was somewhat lame, but sort of made sense. He used to work just for food. Then for perks (like the Food Maker). He'd like to advance, get a real salary that allowed him to travel. Odd jobs might help.

"The interesting ones required your approval; so, I was going to come back later."

"No need, Tau. What were you interested in doing?"

Tau sighed mentally. Rudy had bought the line.

"Er, updating the Black Hole ride looked interesting. I heard that a few customers had complained about the thrill profile being too predictable and the haptic integration a tad slow. I've been curious about programing the stochastic engine."

"Tau, that sounds just fine. I've told MAICII to approve that assignment. You want to start now?"

"Yes, sir."

"Okay, visit the sim lab to explore that platform. The techs there will let me know if you come up with any promising tweaks."

Tau watched Rudy walk away, then tried to relax. This might work, he thought. After getting checked in at the sim lab, there was really no oversight. After all, what harm could someone do with a sim? His plan was taking shape.

He really didn't have access to the key components until his shift started. The shit would hit the fan probably soon, near the end of

Dek'r's shift. Hopefully no one would die, just mess with their bucket list experience. Something lawyers could clean up. There'd be confusion, even panic.

He'd clock in and wait. If he was wrong, it'd be a normal shift; otherwise, he'd work his way to the p+Drive bay and not be missed in all the fuss.

He could tune the p+Tr and return to his post. If he was stopped at any point, he could explain that he had a hunch about the problem after the alarm. If he didn't encounter anyone during the fix and exit, management might figure the problem self-corrected (as that was not too unusual). No one could know about his itch, however.

Part 2 Wars in the stars

Dek'r was having a good shift. He'd sent another group of bucket listers off on an adventure of a lifetime (all waiver'd up). That's how Big C marketed the ride anyway. What a classic. Wars in the Stars. Long in history, the original ride hearkened back to the era when Big C acquired Disney Corp. His early training had covered historical highlights of the industry and Big C's business. But Dek'r was sort of a history buff, so he connected with legacies and homages. There were details in the ride that probably few appreciated.

Now he could relax for awhile. The ride started as a group experience. The riders selected an avatar and geared up. A space transport slipstreamed them to a space station with only minor adventures. That stage allowed everyone to get familiar with their avatar's abilities and then do some socializing at the station's bar. Then there were options. Some might stay there for awhile and enjoy the station's diversions. Others might push on to the next stage without much layover.

The ride's second stage assigned individual spacecraft to the riders. Various models from the more comfortable to speeders. You could go solo or team up with other riders. A more intense ride. Moderate risk.

The last stage, however, always pared the rider's experience to a solo or duo adventure. The risk profile was higher. There were options for heroic roles in a noble cause or classic battle royale.

Regardless of options, the ride was time dilated. He didn't understand the physics. That was old tech by the Systems Engineers and Equationeers. What passed for days or weeks to the riders was only hours for Dek'r. That allowed him to enjoy his fav VR, slipping out only when MAICII intervened with a priority

while monitoring everything. Like when a rider bailed early. Or he wanted to personally monitor something.

Typically he'd have most of the shift for personal diversion and only need to revert to hospitality mode near the end.

But that was not to be.

Part 3 Snafu

Dek'r was yanked out of VR. "Huh! MAICII what's up?"

"Customers are popping out of the ride. You'll start seeing them on the platform in a sec. Some may be injured -- exit protocol was not graceful. I don't detect any fatalities, but it's too early to tell. Equipment temperature profiles are rising. Alarms are likely. Recommend group abort."

"Okay, get everyone back. Alert Rudy and the hospitality and med droids."

So far SOP. Dek'r had drilled for this situation. But he felt the stress. Something really weird was going on. The platform appeared intact. Was there an unusual smell, however?

The platform became busy. Riders milled about. Dazed. Some were yelling for help. Droids scurried around. The sound of alarms. Public safety monitors. Emergency transports. Rudy arrived.

Part 4 Tolerances

Tau had been approaching the platform just before Dek'r jerked alert. The itch in his brain spiked as well. No need to go any further, eh. Time to execute his plan. While Dek'r remained distracted, he clocked in at the secondary operator's console and moved away.

"MAICII, show me the quickest way to the p+Drive bay without being seen."

"Tau, I'll do my best. There's still a 25% probability of an encounter. Pain dose?"

"Negative on dose. I need to monitor that effect. But advise me of any physical deterioration."

Tau noticed the projected route and moved forward, trusting MAICII to monitor the proximity of people and droids. Once he got closer to the destination, his previous visit helped. There had been only one scare as some droids got in his way but he just stepped aside. He crawled into the p+Drive bay.

"MAICII, access p+Tr tuning controls."

"Granted."

"MAICII, luminosity status."

"I've anticipated your request, Tau, and compared current status with yesterday's. As you can see, the hyperfine structure has anomalous pressure broadening in a wider range and oscillation."

"Recommendation?"

"The controls permit some tuning if readings do not exceed wider tolerances."

"Okay, pair with the p+Tr's AI and see if it will accept an adjustment."

"Sync'd. p+Tr adjustment accepted."

Tau waited. Had there been an unusual smell that he had missed in his haste? He was more certain about the noises in the bay. The pitch was changing. More importantly, his pain was diminishing.

"MAICII, wipe any cookies." That wasn't foolproof but would minimize any record of his presence. Buy some time at least.

Tau emerged from the equipment tunnel and made his way to the ride platform, where confusion persisted. Only a few riders remained and were being attended to. They were really angry. Park safety officers were starting to pack up. But many mobile screens were out, signaling the start of an investigation.

Tau noticed Rudy in a heated discussion and waited for a lull.

"Rudy, anything I can do to help?"

"No, Tau, the platform's been put in safe mode. No more rides. Data's being collected, active memory dumped to help analysis of this event. Not sure if there'll be a shutdown for service or just a restart later. I'll keep you posted. For now, you can return to your CQ."

Part 5 Life change

Back at his CQ Tau got out a beer. Not the occasion he'd anticipated enjoying the occasional perk. But what the heck. He pondered what had happened. Sure, there'd be an investigation. There'd be questions, especially if his presence in the p+Drive bay was flagged.

His life might change. But more importantly he needed to understand this itch thing.

"MAICII, private my-eyes-only note. Include my bio signs for the last two days. Mark key changes. Include reminder to study time dilation tech in rides."

"Confirmed."