Shattered Sun

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Prologue

When I was sent to stay in Astera-232 for the first time, I got a glimpse of space and its vast empty nothingness. Nothingness, because none of it was reachable to humanity, and thus, space was completely useless to us. Everything is just too far apart, and we didn't have the technology to explore all of its features yet. I was sitting in the observation deck of the ship, looking out into the ocean of star systems, galaxies, and nebulae. While we didn't have the technology to travel to them, we did have the technology to observe them in their full beauty from far far away; field magnifiers enabled us to discern if there was indeed life in the Earth-like exoplanets, and back then it let me look at the deep gray craters of Pyrum, the eruption-like coronal mass ejections of HST-156e5, and the curved light coming from behind Gigantua, a supermassive black hole.

But something else had caught my eye; something that I've only heard of, and had never seen before. An enormous disk of gas and space dust spinning around a fixed point at unimaginable speeds; it looked like a spiraling flame, burning with the color and fluidity of an aurora borealis. A jet of ionized matter shooting out from the center of it, so bright and blue that it looked like an intergalactic laser; but I could see each wave, each pulse and cloud of space stuff being launched at near light-speed into deep space. And at its center, the absolute dark; the blackest thing in the universe, so dense and inescapable, that even light is indefinitely jailed inside of it.

This was a quasar. The brightest thing in the universe, being powered by the darkest thing in the universe; a metaphorical yin-yang, and the greatest paradox I have ever set my gaze upon. This was the most beautiful thing I've ever seen.

Quasars gave me a new hope for humanity, a new hope in the science of celestial phenomena; a new hope that we would finally escape the gravity well of our own Sun, and transcend the shackles of our Solar System prison. I'm sick of us, sick of the fact that we have to deface our own planet just to survive. All this technology to make our lives better, but at what cost? Earth has been suffering, and humanity has been too. The irony is not lost on me; that to make so much effort to better our lives, has only sent it deeper into hell.

The unpickable lock of energy lies in the quasar. I'm certain of it. If we somehow managed to harness its power, we would have 100 duodecillion joules of energy per second, at the very tip of our fingertips. We would rule the galaxy with Earth at its center, just like how the supermassive black hole in the center

of quasars remain in complete gravitational control of entire galaxies. We would have enough energy to sustain the conquest of humanity until the last breath of the universe. Earth would finally be spared from our destruction.

Today, the key to this unpickable lock has been forged. By my blood, sweat, and tears, I have made the magnificent quasar come into life.

Chapter 1

Luminescence

The Earth is a polluted and disgusting mess. It's been scarred by centuries of misuse and abuse at the hands of humanity. All of its natural resources have been exhausted; rivers trashed, lakes dried up, forests shaven clean and mountains bored completely through. But there are still some places of relative paradise here in the desolate Terran wasteland; I, for one, live in a particularly peaceful prairie in the middle of what had once been the Chinese border together with my husband. While the lithosphere on Earth has been thoroughly ruined, the sky still remains clear, unscorched and uncaring of the events of the past millenia. Looking up, I am still bombarded by the blue tint stretching from horizon to horizon, I can still pretend like I could eat the clouds above that look like tasty white cotton candy, and I can still feel the rays of the Sun absorb on my cheeks as I wake up in my window-side bed in the morning. It's a wonder how the sky could live on as the beautiful thing that it was centuries ago; my great-grandparents, their children, and their children's children all remember the sky in the same way, because the sky looked the same to all of us.

Nothing compares to the beauty of the Earth; not the luminous white flowers that sprout out of the pitch black soil in Eclipta, nor the saturated mesa-like color bands of the mountains in Geraea. I've been to every single planet that humanity has colonized ever since we perfected faster-than-light galactic travel, and even though their features have remained unaffected by the destructive gaze of humans, I wouldn't look at them the same way as I look at the Earth; my home.

This patch of land that my family has been living in was gifted to us by the Galactic Council, the administration that governs over each and every planet that humanity has spread to. I was the proponent of the jets of ionized matter from far away quasars as a source of energy, the technology that we now call 'relative capture'. Relative capture has removed the barrier of limited energy in research and technology, which has allowed us to funnel gigantic amounts of power into our systems without wasting a single gram of a planet's natural resources. Without relative capture, humanity would not be colonizing and naming thousands of planets after plant genera; without relative capture, hu-

manity would not be able to terraform uninhabitable planets, or be able to transmutate common materials into the rare elements that are only found in the dust clouds of supernovae.

I had retired from astrophysics 5 years ago because my job had been fully done at this point; relative capture has been reaching its practical limits, and there is pretty much nothing that can be done to optimize it further. The energy of a relativistic jet from a quasar billions of light-years away would have redshifted by a lot before it reaches the Earth, and nothing can be done about that, unless nearer quasars just somehow spawn into existence. The only thing that relative capture actually does is redirect the jet into a collector; it cannot amplify the jet or create energy from something that isn't already there.

I miss the life of a researcher, and I wish that there was more to do; but frankly, I enjoy resting in the countryside with my husband even more.

"The night sky is so gorgeous today." I said as I lie down in the recently-cut grass, looking up at the black-blue sky. I give a short glance to my husband Seraph, wondering if he's also admiring it.

"Indeed it is." he replies. "It's also gorgeous how it's been years and you still make it a thing to always point it out."

"Indeed I do. Well, the thing is that it always is beautiful."

"Yes. But I'm reminded more of how fucked we are when I look at it."

"Why is that?"

"We've been trying to darken the sky ever since the Industrial Revolution. We've made all the effort to deface it just because, yet the only thing that happened is that it became gray for like, a century. That's barely a blip in the whole scheme of things."

"If this is what you think about every single time that we've lied down here, then you'd be even more fucked than 'we' are." I retort, jokingly.

"But it's true, isn't it?"

"I'd rather the sky didn't become gray for a century. If we'd continued down that path, it would've been like that until the end of time instead."

"That's also true. Thank god, I guess."

"I guess?" I exclaim in feigned disgust.

"I'll get some more nachos." he said, giving me a sly smirk and gets up out of reach of my arms. "You ate them all and left me nothing, you monster."

"You know I love nachos. And karma. Do get me some more though."

The widespread usage of relative capture as the primary source of energy on most planets have made the night even prettier; in my opinion, at least. Bright yellow streaks litter the sky; those streaks are of the relativistic jets of different quasars being redirected into the planets governed by the Galactic Council. It's impossible to see, but those streaks are curved with the radii of thousands of light years, angled incredibly precisely, in order not to miss the collectors and wreak guaranteed havoc on what unprotected matter lies beneath. While yes, the energy would have dissipated from travelling in empty space for what used to be an unimaginable distance, the ionized matter would still be carrying joules of energy in the range of decillions. For context, humanity, even now with our massive energy usage, have only used 521 yottajoules of energy in total since

the dawn of time. Total relative capture would provide way more than that in a single second, and what it could generate in this singular second would last humanity even beyond the final heat death of the universe.

Of course, no one needs this much energy, so relative capture is designed to redirect only a small part of the jet, so that only a percentage of the energy is harnessed. But in theory, it would be possible to achieve total relative capture with the machines that we use today. But imagine, imagine if the relativistic jet somehow misses the target collector and absorbs into the ground; what damage would be done to the exposed planet below? I pray that this scenario would never play out in real life, the way that it plays out in my head every time I notice the magnificent yellow lines in the sky.

"Sorry for the wait. I melted some cheese too. Leave some for me, okay? I made this cheese for me, not you. I'm merely letting you share."

He notices something on the corner of his eye, something that he'd never seen before. He froze just above my field of vision; I look at where his eyes were pointing at, and a spectacular sight cuts all of my focus on the view of the Milky Way galaxy around it.

A yellow beam of light.

This beam of light isn't anything that I've seen before; I could tell that this was from very far away, and yet, it puts all the lights in the night sky to shame. The around it are completely drowned out by its intense glow, and it looks like its swallowing more stars as the beam travels space. I forget about everything for a second, as I admire the incredible sight.

"That is the most awesome thing that I've ever seen in my life." he says.

I remain frozen in place on the ground, wondering what this beam of light may have been. Then it hits me. I stand up and rush inside the house to get my personal field magnifiers, and I look at the enlarged beam in order to see its details. My worst suspicions were confirmed. The pulsing and the speed of the beam were unmistakable, and its color was textbook; this was a relativistic jet. But this was different; this jet was setting the area around it on fire with how potent it is. This was orders of magnitude more powerful than the jets that we use in relative capture, and the disaster that would happen if this hits a planet would be unimaginable. My face grows red.

"Helia, are you okay?"

I don't reply. My hearing has blurred from my anxiety, and his voice starts to sound like a garble to me. I start to panic, thinking about what exactly had gone wrong in this moment. This is the same as the unbearable scenario that had been replaying in my head over and over again, and to say the least, this is not good. The destruction of a planet or even just the lasering of a city is unimaginable, and the consequences would be extreme, for our civilation as a whole. How could al my failsafes fail? All my safety nets cut? How did I fuck up this badly? My mind started spiraling, like how the cloud of gas and dust spirals around a quasar. Right now, I am a particle in that cloud, and I am getting dizzier and dizzier by the second.

And then the phone rang.