

A SCIENCE-FICTION THRILLER

ABLATION CASCADE



JB Strand

Ablation Cascade

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 **jb strand**

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Ablation

The loss of a part through annihilation.

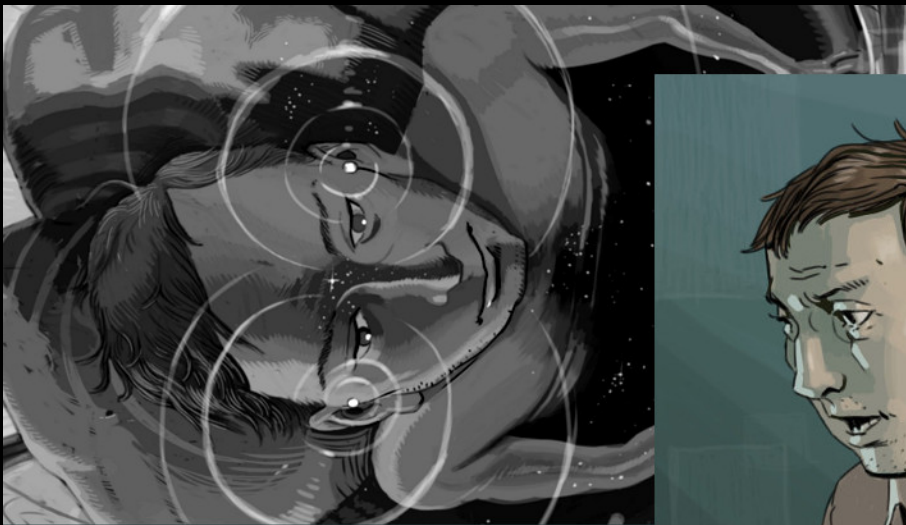
Cascade

Stages overlapping, rushing upon each other.

Characters



Nina



Tech





Lou



Paxton



Fisk



Zaha





Demetrius

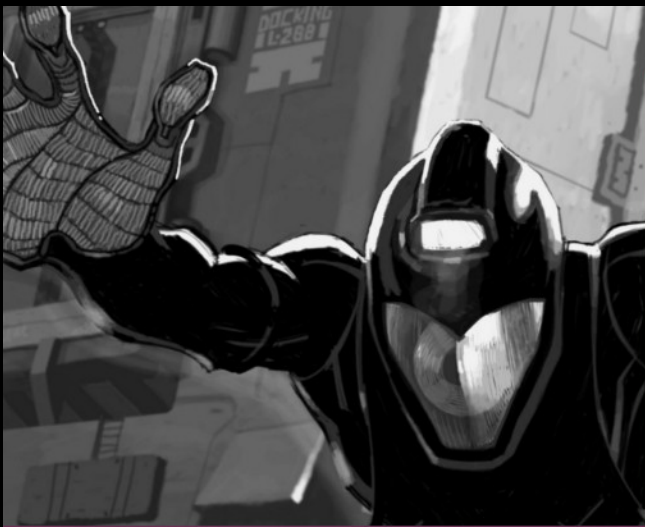


Elara





Nikolay



Kozlik

Chapters

One: Spinning madly out of control

Two: Crapping in one's loafers

Three: Stealth-hunters armed with logic

Four: All the things you'll never know

Five: A teat full of sour milk

Six: The only way out is up

Seven: A shovelful of dirt

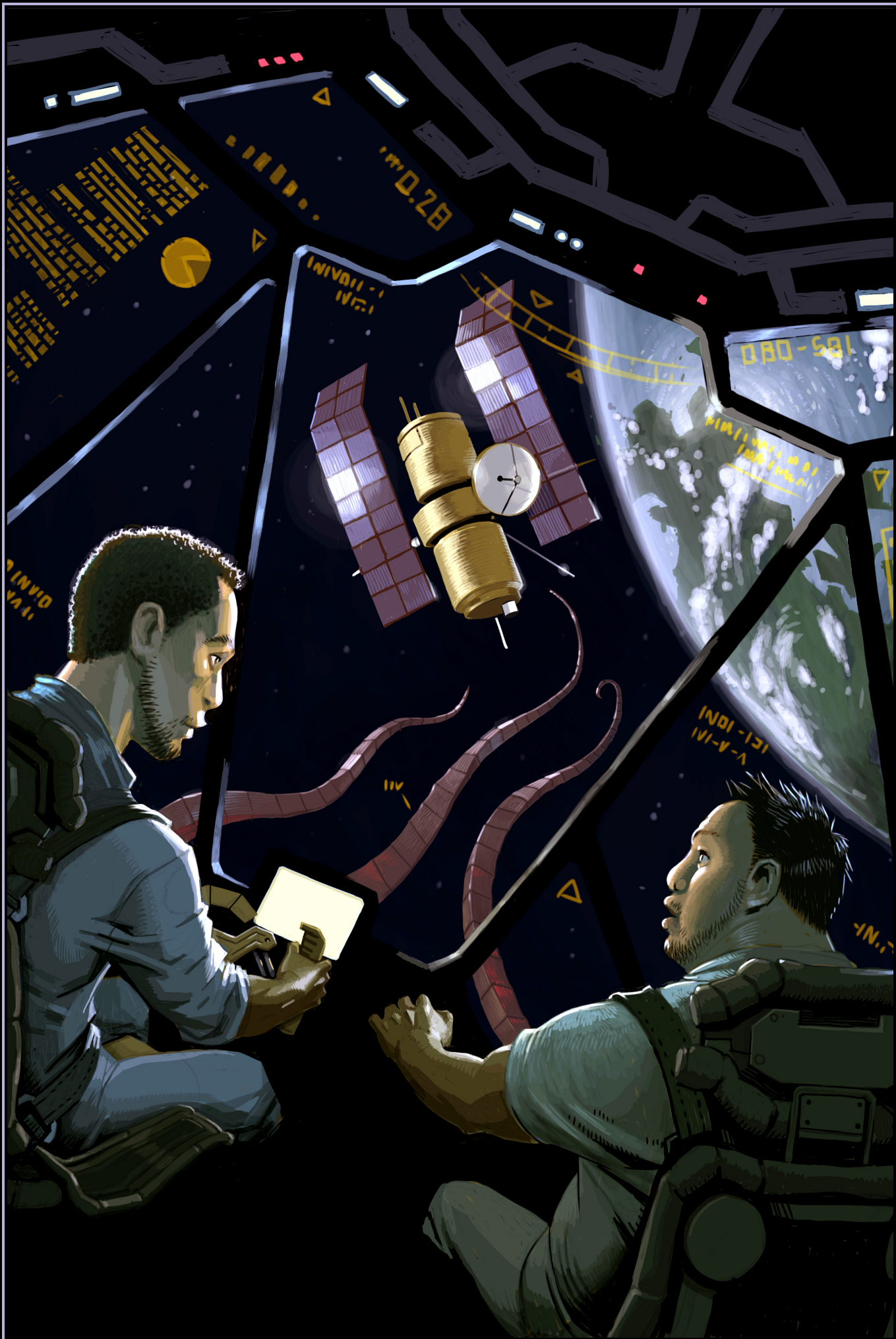
Eight: Too dead to enjoy it

Nine: What little space we allow our imaginations

Ten: Bad, everything, him

Eleven: A hazard of circumstance

Twelve: Some hidden concordance



One

Spinning madly out of control

There she was, a billion-dollar beauty wrapped in crinkly gold, spinning madly out of control. With its orbit crippled and its brain unhinged by sparks and fizzles, the Bhaskara II satellite cartwheeled over its twin solar wings against the blue enamel expanse of the Pacific Ocean.

On the flank of the approaching ship, a painted leaf was suspended in a windblown fall. The small print identified the craft's owner as "Revitekt, a subsidiary of Aquila Industries." Beneath the logo, stenciling branded the short-range cargo hauler as a GS-R1355, a bland classification that might be replaced one day by a colorful nickname. But christening a ship was a pilot's prerogative, and Paxton Brown was negotiating low Earth orbit in this one for the first time.

"I didn't say I don't believe you." Paxton's voice trailed off as he aligned the vehicle to the northern pole where a ring of atmosphere banded the planet like fuzzy white stitching. For the last hour he'd been measuring throttle response and gauging the nuances of pitch and roll, relaxing the ship's rigid joints into a comforting leeway. Once the course was stabilized, the pilot's eyebrows, as thick as charcoal smudges smeared on by thumb, bounced back from their furrow of concentration.

"It's all true," Lou Kai said with a yawn, downing the dregs of his coffee from a thermal squeeze pouch. As he pitched forward to commence precheck, the nylon belts that crossed at his chest buckle parted over his prodigious abdomen in the stressed arches of a snapping wishbone.

His last thought lost, Paxton stroked the sooty stirrup of his beard and hit the conversational reset. “Korakov. No kidding.”

“So, I got on this bubble suit.” Lou spread his arms and tucked his chin until it disappeared beneath cheeks that were as brown as a coconut and every bit as plump. “Twenty feet down, water hot enough to boil a lobster, and I’m pulling out control rods by hand.”

“Yet here you are today.”

“Worst, they said, it’d make me sterile.”

Paxton winced.

“Had my two kids already. Nothing like teenagers to make you say no way, no how, no never again to that. And for that kind of money. Whew.”

“Nukes don’t melt down enough,” the pilot commiserated.

If not for this early morning mishap, the two men would be getting acquainted on some easy job like scooping up booster casings. To fill their transit time, Lou had entertained his coworker with start-and-stop soliloquies of dubious accuracy like the Korakov incident, in which the nuclear reactor had been shuttered and the radioactive fuel extracted by the time he’d recovered damaged control rods from water that couldn’t poach an egg.

Looking out of the cockpit canopy, Lou sized up the Bhaskara II, from its energy-absorbing panels to the metalized shroud that wrapped its floundering body. “We can reclaim over ninety percent of that.”

“That so?” What happened back at the station was still a mystery to Paxton, who had woken up to an emergency on his second day of work.

“Plus, fee is, like, triple. Bonus, bonus, bonus.” Lou kissed his fingers and pressed them to the canopy. “Love you,” he confessed to the sun.

The orbital salvage business was ramping up just as the solar cycle crested into a banner season of malevolence. Two weeks earlier, a broiling arc of electrons and protons had peeled off a clump of sunspots and raced toward Earth. The high-energy projectiles spiraled down the planet's magnetic field lines, transmuted innocent molecules of stratosphere into coruscating sheets of red, blue, and green that rolled through the nighttime sky with the graphic fervor of boys roughhousing in their superhero jammies.

The potent energy unleashed in the brilliant aurora took down a third of Russia's electrical grid as pole-mounted transformers shrieked and sparked like tailpipes dragged across the asphalt. Wildfires flared through swaths of Central Asia parched by unrelenting drought. Smoke billowed across Kazakhstan and Mongolia before merging into the haze that choked western China. News junkies thought they were witnessing a bygone era as men in white wool hats hustled buckets through the streets of a smoldering village anonymous to the world until crisis hit.

Riddled by subatomic buckshot, the brain of the Bhaskara II sizzled in the deep chill of space. Commands hurled furiously skyward from the Indian Space Research Organization's facility in Bangalore couldn't prevent the satellite's misguided thrusters from tumbling it closer to a Sakharov satellite. ISRO hastily agreed to an urgent extraction. No one wanted to anger the Russians, who were testier than normal these days.

In 2066 the Bhaskara II had become one of more than two million objects cluttering Earth's orbit, a revolving landfill of rocket boosters, twisted wreckage, satellite corpses, ejected bags of garbage, even nuts and bolts lost during spacewalks. Although much of the trash winked out of existence in a fiery blip of atmospheric reentry, debris had accumulated faster than gravity could handle.

To rectify the situation, clever gizmos had been shot aloft to chaperone large objects down to the ionosphere where friction could grab them. These efforts intermittently made things worse by strewing fine alloy nets and laser-guided harpoons across the void. The hitch was that most of the debris was no bigger than a shoe, but in an environment where a torpedoing fleck of paint could crack a window, a sneaker cruising at twenty thousand kilometers per hour could kick up some grievous dust.

By 2053 the problem had grown into an emergency, the first step toward becoming a priority. When an undetected lump of space debris collided with a late-stage booster, it propelled a Brazilian rocket in a dozen directions, all of them down. A five-meter crater opened up outside Perth. In a video recorded on the Java Sea, a fisherman pointed to a gaping hole in his scuttled trawler's deck. The days of statistical unlikelihoods slipping into the oceans unnoticed were gone. The heavens were stockpiling fire.

Fears escalated. Liability costs shot higher. Pouncing on a growth opportunity, Revitekt's parent company Acquila secured incentives from space-faring countries to plow safe fields overhead. Capturing the Bhaskara II was the first test of their “exo-atmospheric remediation and reclamation” operation based at their newest acquisition, the Second International Space Station. Executives were keen to promote the success of their cleanup brigade, an “eco-healing venture that marshaled human ingenuity and cutting-edge technology.”

Mindful of the danger in making contact with another object in space, Paxton nosed the cargo ship closer to the tumbling Bhaskara II. The ISRO command codes broadcasted from Earth had failed to tuck the solar panels, leaving the satellite, its arms spread wide, twirling like a kid in boisterous helicopter play. As the pilot initiated a barrel roll to mirror those rotational antics,

the sun moved to the left, Earth to the right, the wayward traveler holding steady as the stars swept tidy circles with their phantom tails.

Lou hooted with relief when a retransmission of the codes from close range brought success by folding the solar wings. He didn't need his first not-a-drill spacewalk to be a torch-cut atop a hurtling cannonball. Swinging the grapples controller toward him from the console, he plunged his hands into its dexterity interface — like digging through mushy sand with rubber gloves.

The doors to the cargo bay slid open. Six mechanical appendages unfurled and trailed the ship. Guided by Lou's subtle finger movements, the reticulated tendrils stirred. Able to flatten and curl or telescope out into rigid boxes like the seahorse tails that inspired their creation, the limbs could precisely wrap themselves around a target, whether cargo to be transported or a jagged fragment to be reclaimed.

With the squishy controllers responsive in his pillowy grip, Lou paced himself with steady breaths. Precision was his talent, not speed. He had logged hundreds of hours orchestrating the robotic arms on submersibles, harvesting methane ice or securing float balloons to wreckage while slippery eels unfurled from crusty nooks. Besides better pay and a first-rate view, space just felt easier. No treasure hunters to scare away, no pirates to run from.

Lou took a bead on the twin metal trusses, the hinged shoulders of the satellite's solar arms. "Look at you dance," he sweet-talked, "thinking you got me bothered."

Sixty meters. Forty. The ship's grasping limbs edged forward, a midnight strangler sneaking up to a bus-stop stranger.

"Hang on!" Paxton yelled as they banked and rolled a 360.

Lou swept the tentacles under the fuselage as the ship squeaked past the satellite's top reflector dish with scant meters

to spare. The last time he'd felt a punch like that, he was blasting into orbit. "What was that for?"

"Thrusters fired."

Focused on snaring the slender lattices, Lou hadn't noticed the satellite begin to accelerate toward them. "You couldn't have backed up?"

"Gone cold." Paxton remained focused on the task. "We're up again." But that last thruster burst had shifted the satellite to a less propitious vector of approach. Now they faced an Earth that bounced like an orotund ball in their fields of vision. Paxton knew the dangers of spatial disorientation in flight. Disengaging one's instincts to rely on instruments alone took practice. "You OK with this?"

"Uh, sure." Lou's tone cast a vote of wavering confidence that reverberated until four of the coiling limbs hit their marks. Tactile feedback combined with camera analysis lit up the cockpit canopy with a golden outline of the Bhaskara II, the side-by-side virtual readouts assessing the object's mass, velocity, and fracture points.

Unable to block out the clouds swirling to hypnotic effect, oblivious to the on-screen warnings, Lou reeled back hard on a feeble joint, snapping off a reflector dish that wobbled toward them like a saucer from an ancient B movie. Regaining his senses, he retracted the grapples as the ship plunged beneath the hazard.

Thunk! reverberated from the cargo hold.

"There's a dent to break her in." Paxton verified the vessel's systems. "Long-range radio is out. Everything else checks out fine."

"Nina's gonna kill me," Lou sighed, blinking distraction from his eyes.

"One more time. We'll bag this thing."

Lou tried to share the pilot's confidence as he reminded himself that space was every bit as dangerous as the ocean depths

where a ruptured hull could crush the life from you before your heart had time to skip a beat. Struggling to regain his composure, he managed to reel the object in with the polished expertise he was heartened to see he hadn't lost.

As they retrieved the skittering saucer, Lou stewed over the first impression he'd bollixed up with this new guy. Snap judgments about his size came with doubts about his ability to handle any job requiring delicacy or dependability or a spark of intelligence. "Nice job," he told the pilot, "not getting us killed." Receiving a nod but no answer, he persisted, "Where'd you learn to fly?"

"Been doing it all my life."

That didn't get Lou far. No cargo pilot could have rolled the ship like that. Paxton didn't fit the mold of commercial fly-boys, those brassy cockpit statues meant to assuage the lingering fears over vessels that practically flew themselves. Military jocks piloted hardcore, but they rarely worked the space trade until retirement. Lou doubted this guy was a head above thirty.

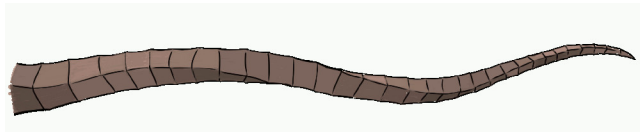
"So, you did some time?" Lou asked, surprising them both.

Paxton cocked his jaw. "Captain tell you that?"

"Hell no, but I've never worked with a guy that hadn't seen hard times. Mostly they stay shut up like it's nobody's business."

"Probably so." Self-possessed as he checked navigation, Paxton reported, "Forty minutes to docking."

"Guess I'll start taking her apart." Lou turned up the heat and oxygen in the cargo hold. Unfastening his chest harness he began to float, pushing right off the seat, left off the hull, bobbing up and down, jostling side to side, an oversized beach ball passing aloft from hand to unseen hand.



Floating through a chaos of metal conduits and zip-tied cable bundles, her tightly banded ponytail waving over her collar like a tangle of sea-black kelp, Nina Vargas oriented herself using the ribbons of red, yellow, and blue light that called out cardinal directions inside a cylinder of dyspeptic green. With inquisitive purpose, the mechanical technician executed zero-G pirouettes in a hollow backbone that stretched the station's length. "What am I looking for, again?" she asked into her comm unit, a softly glowing strip of film that descended from her ear to her cheek.

"Put your eyes on." At the back of the salvage room, which had turned the station's Beta module into a warehouse for reclaiming waste, Tech hurled cannibalized circuit boards into a receptacle marked DISPOSE that sat adjacent to a battalion of shelving units bolted to the floor.

"I hate those ugly things."

"Stylish now?" Tech inquired. "You're in the wrong place."

"They give me headaches," Nina said of the ocular projectors embedded in flip-down lenses that flooded her retinas with data.

"You need to retrain your vision. On my first job, I learned how to stop talking with my hands. I was fired, sure, but the lesson took."

"I'm not the problem," Nina insisted. "Those things are always telling me what I'm looking at even when I'm just looking around."

Tech waited for it.

"So what am I looking for?"

"Junction 27-105," he replied into his comm strip.

Nina advanced through the station's central nervous system frustrated by a layout that made no sense. Junction 27-100 was perpendicular to 34-98 and across from 12-32. Next in line came 27-112. The whereabouts of box 27-105 were a mystery. "This place is not human friendly." Others had reached the same conclusion. At spots along the backbone, notes scrawled in Spanish,

English, and Russian offered real-world cheat sheets for getting jobs done.

“Schematically it's beautiful.”

“Then get your schematics to give me some help.”

So went the story of Tech's working life, gigs as the nameless support guy, a faceless blip on the emergency radar of harried cubicle wonks. *Get the tech to fix it. Aren't you the tech?* Soon enough he told everyone to call him that, keeping his real name a secret between him and Human Resources.

He pushed up his sleeve and caressed the pallid sheet that wrapped his forearm. With light-pulsing spasms, the elastomer casing unfurled and dropped to his hand. The pliant substance had initially been used for rave adornments, form-fitting torso sheets and self-securing armbands that flashed like cuttlefish. By the time its graphene circuitry had evolved to tackle heavy data, the squishy material had been fabricated into glow-in-the-dark sex robots that exhibited astonishing powers of expansion and contraction. Only thirty thousand units of the model had moved before the line went bust, deep-sixed by a wary consumer *ick* response.

The device solidified into a translucent rectangle with chromatic piping that wrapped its edges. A few taps and a luminous matrix rendered a three-dimensional diagram of the station's backbone, looking like a whale's spinal X-ray, all bony plates and ganglial wiring. Nina's comm unit appeared as a flash on the outline, pinpointing her spot within the beast.

“Four meters on your left,” Tech assured her before remembering that a weightless lack of up or down made a hash of directions like *left* and *right*. “Just do somersaults until you run into it.”

Fixing this on-again, off-again warning glitch in the carbon dioxide monitors was their final repair to the damage done by the coronal mass ejection that had lit up Earth's skies a week

before. Powerful enough to melt down systems shuttered into safe mode, the scorcher had been equally hazardous to the crew, who'd idled in a shielded room as the stellar cloudburst sizzled by.

Tech had nearly succumbed to the crazies in a room that had grown so hot he pictured his nose hair catching fire. In the first thirty minutes, he counted twenty-one retinal flashes from sub-atomic particles energetic enough to burrow through his skull. Did anyone else grasp how dangerous that was? He couldn't believe that the captain, snoring with his arms folded, was still alive given how long he'd worked out here. As Nina cracked her knuckles by flaring her fingers like a cat angling to scratch an ottoman, Tech's ire zoomed in on Lou, a wheezing bellows even in quiet time. "Dude," the big Hawaiian had protested, "I have to breathe."

"Remind me why I'm doing this at all," Nina asked with a practiced edge to her voice. "This is more systems than mechanical."

"Because our employer demands that we be pretty or productive, and I've got a lock on pretty."

"Somebody busted that lock with a hammer."

Finding Tech handsome would be the acid test for any mother's love. He was lanky and hollow chested, partially deaf and prone to eczema. Bronze scalloping beneath his eyes provided the deepest tint to his nougat sack of skin. At the crux of his collarbones, scraggly hair sprouted like a medallion, his consolation prize for genetic attendance at the game of masculinity.

"A little bit early to be redlining mood," he told her.

"We're five days behind schedule."

"The faster you work, the harder they flog you. It's called incentive. Works for rats, too."

"Do it fast, do it right. That's how I learned it."

"A little rule-breakiness would do you good."

"You say that now. Wait till reviews."

“Relax, what did MSS do to grunts who screwed up?”

“Toss them in the stockade.”

“Look around. See a way out?”

Tech refurled his tablet onto his arm and released the wheel locks of a trolley. Clamped down on top of this rolling workbench sat a shield-sized cylinder wrapped with rounds of copper wire, the corpse of a ventilation fan hollowed out by the removal of its rotor. With a tunnel-vision gaze out the round, open ends of the housing, he spied the observation window that stretched floor to ceiling.

Earthrise.

Three months into this job, Tech could still be startled by the home world scooping into view with its panorama of clouds, or ocean, or a sunny day in Central America before it rolled up and away. But the planet's faithful comings and goings were mere apparitions from the crew's vantage point four hundred kilometers up on a station that revolved like a paddle wheel pushing nothing.

Three modules — Alpha, Beta, Gamma — were held together by three rings — south, center, north — making the station look like a barrel stripped down to a trio of staves bound at their midpoints and ends by sturdy hoops. The backbone shot down the center, the axle upon which everything turned. Standing upright, one's head pointed toward it, and the closer one got to it, the lighter one grew.

Each module's outer wall was a floor from the human perspective because the station's rotational force shoved everything away from its center, simple momentum subbing for gravity, their *ersatz Earthnicity* as Tech had dubbed it. Getting the hang of a place where floating gave way to falling resulted in the occasional sprained ankle, but in time the crew, whether pushed or pulled, learned how to stay on their feet.

Tech rolled the trolley toward a ceiling hatch that was a meter across and as white and smooth as the pop-top of an aspirin bottle. The overhead hatch opened onto one of the many spoke tubes that radiated up toward the central backbone from each of the three modules, providing conduits for air, water, power, and data. After positioning the trolley and locking its wheels, he calculated the distance between it and the spoke tube cover. As if to coax a taxiing aircraft, he leveled one arm with the giant fan casing secured to the top of the cart and pointed the other arm up toward the ceiling lid.

“Found it,” Nina announced. At the elusive junction, an overloaded capacitor had marked a circuit board with a fly-speck of soot. “Zapped.”

“Yank it,” Tech instructed her.

“And replace it with what?”

“Nada. When things work, they work. When they don't, backups kick in. In-between's where things get screwy.”

“Don't play jokes with my air.”

“Print up a new circuit if there's a problem”

“Those things never last.”

“Order a replacement. Next supply ship's in twenty-two weeks.”

Nina hesitated. “You're totally sure?”

“What's not to be sure about a station built by the lowest bidders from thirteen different countries using hardware that was obsolete before we were born?”

“That doesn't sound sure.” Stuffing the fried circuit board into her pocket, Nina tucked and spun a frictionless U-turn, looking down the backbone at a vortex of baffling connections. She'd learned more about the station during this bout of hands-on repair than in her three-month crash course from trainers who sorely lacked training themselves.

Tech engaged the trolley controls to raise the partial motor on the whisper hum of a hydraulic scissor lift. “After this week,” he cackled, “I have a perverse knowledge of how the toilets flush.”

“Who has to fix them when they break?” Midway down the backbone, Nina came to the spoke tube that led to the salvage room. “Coming down.”

“Rules say go through the dock, you know. Tubes are emergency only.”

“Takes too long,” she broadcasted, adding, “and if I don’t hurry up, who’s going to finish *your* work?” When she kicked a junction box, one of the connector rivets broke, leaving the cover hanging limp. “Shit,” she muttered.

“Problem, hammer-toes?” Tech asked cheerily.

“Everything here gets busted up so easy.” Anemic lights winked on as Nina pivoted into the gloom of the spoke tube. Descending quickly, she ignored the upside-down instruction:

CAUTION: Climb Down Feet First

The closer she got to Beta module, the faster she dropped. A second sign admonished:

SLOW: Exit in 5 Meters

At the bottom of the tube, a platform stood above the hatch. The ladder that telescoped to the floor for safe debarkation sat collapsed in sliding sections. The final placard exhorted:

WARNING: Make Full Stop
Open Hatch Carefully
Extend Ladder to Floor

Poised like a trapdoor spider detecting the featherweight temblors of its unwary prey, Nina prepped to hit her mark. She tripped a lever and popped the hinged hatch open, no slowing, no

stopping. Flying toward the floor, she grabbed the handle inside the hatch cover a split-second before splattering on the ground. Hands locked to the lid, she tucked and spun a half circle to point her boots toward the floor. Shucking off momentum, her legs piked forward then back.

Chonk! Nina had become a trapeze artist frozen on the swing post-grab. She craned her head to glimpse her feet glued to the motor housing. Tech had fired up the juice, turning the scrap motor into an electromagnet hungry for the ferrous wafers in her boots. “You’ll need more than that to keep my foot out of your ass,” she advised him.

“I’ve been waiting for this all week.”

“Just to waste my time?”

“Flying through tubes. We don’t do that here. Didn’t those lessons take?”

“Rules? That’s the game now?”

“And nobody wears mag-boots here.”

“I do. Spacewalk suits have mag-boots, you know.”

“Outside. Inside. Big difference.”

“You’re telling me? You’ve never been out.”

Inside, the station’s spin eliminated the need for electromagnetic boots, which approximated weight by attracting the wearer toward metal strips embedded in the floor. Nina had discovered the cumbersome footwear in empty quarters, abandoned by a salvage worker returning from the Moon. With the batteries intact, the boots gave her a perfect stabilizing heft when her every step landed a razor edge shy of a sideways teeter.

“Flying around lead-footed, you might break something important.”

“Let me down.” Each word thumped harder as she glimpsed through the observation window the cargo ship coming back. As it banked, she could make out the damaged fuselage. “Damn it, Tech!”

Tech relented and powered down the prank, releasing his coworker from the grip of fundamental force.

Nina touched down and righted herself, hustling out of the room in a silent reminder that her temper was a line in the sand seemingly drawn at random. She'd refined that trick as a soldier for Multinational Security Services, a prosperous jumble of contractors that had merged into the leading technology and manpower supplier to militaries around the world. Combat duty had taught Nina to let the stupid jokes pass when her squad needed to blow off steam. But every now and then it helped to thrash a clueless guy for some transgression. Act brittle and you're a target always getting hit. Go soft and you're a sucker who'll never win.

The cargo ship berthed at the end of the station that tilted closer toward Earth, thus known as the south dock. At the opposite end of the station's backbone, the north dock sat unoccupied. After the elevator had descended from the operating dock and opened onto the south ring vestibule of Beta module, Lou and Paxton emerged with a rolling cargo carrier that held a squat gold barrel, the brains of the Bhaskara II.

With Paxton pushing, Lou ambled backwards, pulling the cart down the corridor until he felt two small fists pound the ample flesh between his shoulder blades. "Ow. Why'd you hit me?"

"That's how you catch?" Nina upbraided him. "You break my ship on your first day out?"

"It's not yours," Lou offered in his defense.

"My fault," Paxton admitted. "Still getting used to things."

As Lou's faint bar code of a mustache hitched up in a smile, Nina informed the pilot, "That new guy smell wears off in a week." She entered the elevator as the two men resumed trundling their freight toward the salvage room, shouting after them, "I have enough to do without going outside to fix your mess."

Beta elevator's slow ascent gave passengers time to adjust to the dwindling of their gravity nanny. Signs prompted riders to secure all loads and brace for change because the docks that sat at either ends of the backbone were gravity-free zones.

When the elevator's back doors opened onto the loading zone of the south dock, Nina ignored the prescribed path with its bulk conveyor trams and scalloped toe-holds. She shot aloft and cruised twenty meters up the incline of the cone-shaped structure that funneled to the airlock, gateway to the cargo ship.

Snagging one of the handrails that circled the airlock hatch like hour markers on an old rotary clock, she looked back at the three paths that sloped toward the module access points. Beta elevator offered the only approved method for reaching the station proper. Sealed behind hatches that warned "Emergency Access Only," the passages down to Alpha and Gamma were long, skinny ladders. The budget for installing two more elevators in their steads hadn't materialized during the station's first incarnation as a research lab. Revitekt had promised a retrofit once they'd staffed up. She'd believe that when she saw it.

The spacesuit valet modules nestled behind the catwalks that stretched along the curving walls where the dock and airlock met. Eight white suits with blue panel insets stood in the alcoves, propped up to their waists. With their top halves folded down, they looked like the plastic soldiers her five-year-old twin liked to melt in the sun with a magnifying glass until he found it more amusing to sneak up behind her and burn a spot on her arm. She'd taught him a lesson by hurling a rock that split his lip. That'd been the first time she'd won a fight with any of her brothers.

For this quick recon she'd kept her work clothes on, not bothering to don the form-fitting undersuit that regulations dictated she wear, the one that had drawn so many hoots from males

during training. She stowed her mag-boots and chinned herself up on the stabilizer bar — like at the gym but much easier without her normal weight — dropping her legs into the trunks of the spacewalk attire. She'd barely made the cut for filling out the smallest size. No way Revitekt would order a diminutive build just for her, not at her pay grade.

With her arms held down and angled out, the articulating limbs of the automated valet folded the suit's top half up around her neck and secured it with multi-layer zippers that resembled the gnashing snouts of crocodiles. She hated how the gloves encased her hands. Boxing was one thing, work required dexterity. The hardest part of working outside was the frustration at how slow it all went, so very slow.

Anxiety spiked when the helmet slid down over her head and the oxygen tank clamped onto her back. Green lights on the visor assured her that she was good to go, but for a foolproof test, she gulped down air. Her career path had predisposed her to expect that every gadget perched on the crumbling edge of busted. When her life depended on it, she double-checked and then checked again.

Outfitted and released, she spun the meshing sawteeth of the iris aperture open to reveal an airlock revolving like the heavy, slow drum of a clothes dryer. At the far end of the cylinder, the cargo ship sat moored to its docking dish, its open belly hatch exhibiting the undisgorged remains of the Bhaskara II: propulsion unit, antennae arrays, and the last panels of the solar wings.

Her suit's mag-boots clicking along the gangway, Nina came across the cargo straps that careless Lou had left uncoiled and dangling, swaying in the breeze she'd ruffled up. Back when the station was a haven for research, supplies arrived in containers that propelled themselves using optical sensors and nitrogen jets. Space junk wasn't so accommodating. The improvised tackle

emitted a muffled zip when she hit the retraction spring. She'd installed the sliding nylon straps so that tethered debris could float into the dock with gentle hands-on guidance, like the “neurally tactile” limbs of the cargo ship, only way cheaper. Boy was she glad that safety inspectors didn't work a beat this far up.

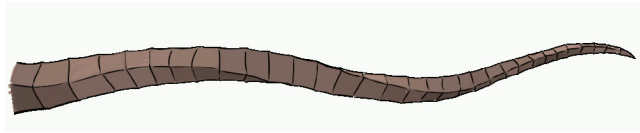
She opened the transparent lid to the store-all that held her repair kit. Strapping the square satchel to her waist, she entered the spacewalk port, a cramped anteroom to infinity that sat to the side of the airlock. When she punched in a code that slid the port's inner hatch shut, the airlock spun closed and locked in a precaution against depressurization. After depleting the air from the spacewalk port, she opened its outer door to the vast beyond. Leaning out carefully as if craning over the ledge of a skyscraper's observation deck, she secured the safety umbilical.

Nina had trained for spacewalks in a pool with massive steel sides and a floor that never moved. Venturing out where every direction felt like down took a leap of faith, less of a leap into the unknown than a faith that the laws of nature would hold firm. The moment she stepped out, her knees weakened with a phantom rush, as if an elevator had dropped a knock too fast. After her mag-boots clicked on to the station's outer hull, she made her way with heavy steps toward the docking dish that snugged up to the cargo ship's underside.

Like the airlock, the docking dish remained fixed relative to the frame of space, making it safer for transports to land and preventing their off-kilter mass from tugging the station lopsided as it spun on its axis. Nina was thankful that the docking clamps hadn't been damaged. If the ship couldn't berth, she'd be forced to take a solo free-float. She wasn't ready for that, not yet. That new pilot needed a lesson or two about flying, but at least he knew how to park.

Facing the lazily spinning cargo ship that stretched taller than her head, Nina propelled herself up and onto its hull with jets of nitrogen shot from the bottom of her tank. Once on top of the craft, she scrutinized the ding where the radio was embedded. Not too bad. She could print a makeshift antenna after she'd straightened that crumpled metal, but she needed more tools.

A flash caught her eye. With magnification from her helmet camera, she could make out a squinty blemish hovering above Earth. Odd, she thought. Objects in lower orbit moved faster. This one wasn't going anywhere. It was stuck, dallying atop the planetary orb with the brazen indolence of a fly gorging on a birthday cake.



Kowtowing before the circuit-stuffed innards of the Bhaskara II, Tech spread out wire cutters, screwdrivers, turbowrenches, socket sets, a micro-torch, a spotlight, and a power tool he called the “crackomatron.” Donning plastic goggles, he peeled off his comm strip and corkscrewed in his earbuds. His tablet fluttered with kaleidoscopic color as it streamed audible notes to the buds while beaming sub-bass vibrations directly to his bonestims.

Tuned to the resonant frequencies of the ol' *cabeza*, the bonestims were mallets able to gong his cranium with auditory tremors too husky and jolting to squeeze through his ear canals. The receivers were plump beads of titanium and green enamel that sat on his zygomatic ridges in front of his ears, rooted to semi-organic filaments that had been grafted subdermally onto his cheekbones.

Tech's most time-consuming preparation before lift-off was winnowing down his music collection to a mere eight thousand songs, a subset small enough to copy across to the tablet's elasto-

flash storage. As he squatted down to crack the outer casing of the Bhaskara II, he fired up some slash-punk urban hymns from Scroter-Feeball featuring Havelock and Greene, just the thing to goose his energy and stick his brain on hold for a mindless task.

A knee smacked his ribs.

Back from her recon, Nina captured his attention the only way possible when he was spellbound. During their first week aboard the station, she thought he was buckling with a seizure when he'd only been air-drumming. She pulled the squishy receptor from his ear and held it up to her own, parsing sense from a freak-dish mess.

*World won't end in ice.
Ain't gonna die by fire.
Heard it when you said it first,
Preaching false desire.*

“Your music sucks. Stop using my tools.”

“They're not yours,” he waved toward a boxed-and-ready cache at the room's far end, “lots of tools.” As Nina walked away he called out, “It's your turn to do this, you know.” Without a dedicated salvage technician on board, the two of them had traded off disassembly jobs, breaking down and cataloging the wreckage that had been shipped in from the Moon.

“Got more important things to do,” she shot back, her voice fading behind a distant shelving row.

When Paxton and Lou carted in dismantled panels from a wing of the Bhaskara II, Tech inquired, “That all of it?”

“Are you kidding?” Lou yawned. “I'll bring the rest down later.”

“You're going back to bed, aren't you?”

“My shift's not supposed to start for three more hours,” Lou protested, “and Nina's going out again. You know how the airlock does that thing when she goes out.”

"I can get the rest," Paxton offered. "Where'd you want this?"

"Over there," Tech waved vaguely.

There was a lot of *there* over there. "Do you have a system?"

"Yeah. Things go where I say."

"OK." Paxton pushed the cart toward some empty shelves.

Tech snagged Lou's sleeve. "What'd you find out?"

"Nothing."

"Come on, Lou."

"Search on him if you're so desperate."

"You know our channel's monitored. Think how that'd look."

"Like you're too scared to talk to him."

"Me?" Tech tried his best to sound indignant. "He spent the day with Pritchett and all night on the treadmill."

"The gym door doesn't open for you?"

"My six hours of cardio a week. That's what HQ wants. That's what HQ gets."

"He's OK," Lou concluded as he walked away. "Give him a chance."

"Tries too hard."

Tech interrogated Nina as she emerged from the storage wilderness, arms cradling tools. Peering through the shelving, she caught flashes of Paxton stacking panels three rows back.

"He's military. I know a soldier."

"Short hair?" Tech shrugged. "No sense of humor?"

"He called Beta *Bravo*. Yeah, and I couldn't scare him."

"You scare people?"

"Have I been going soft on you?"

"So why's he here? Got kicked out?"

"Like I keep track of six million active duty?" Her own humor in short supply, Nina backtracked to grab the sheet metal crimper she'd forgotten.

Back on his cane, Captain Garren Pritchett clomped into the room with a rhythmic one-two-hop. His morning off was reserved

for kick-stretching blue elastic bands and squeezing lime green squishy balls between his knees to loosen his stiffening hip. But a day off when you live where you work was a rare exception outside of a technicality like getting sick, no small feat in an airtight tub floating through a vacuum.

He'd spent the morning in a testy conference call that began with a routine debriefing before giving way to complaints about schedule, as if the station could repair itself. Corporate requested better performance before assigning more resources. Pritchett demanded more resources before taking on new work, reciting his necessities for the umpteenth time: a second ship, wide-field laser cannons to nudge tiny objects down to lower orbits, Parsons Chutes to snag debris in their billowy nets.

Gadgets be damned, he'd negotiate away every bleeding-edge tool for more crew, more crew, more crew. Staffing was half what he'd been promised, and this was the greenest bunch he'd ever seen. Lou knew salvage but was fresh to space. Neither Nina nor Tech had worked in extended isolation. They were starting to act like family, and that was never good. Paxton added know-how and practice, but that hire, along with the other one he'd haggled when corporate was wooing him, had put Pritchett on probation for more fast-track approvals.

When Revitekt acquired the station, they had envisioned a more automated workplace than they could deliver. Everything had been left unfinished or rigged half-assed. The fully automated, next-gen cargo ship was floundering in prototype. Commodity robots that worked like a charm on Earth had trouble adjusting to the station's unique conditions. The Class B cargo hauler brought in from the Moon couldn't adapt to zero-G, revving its treads with a lack of restraint as soon as right-side-up went missing. Corporate took it back to Earth for accelerometer work, never committing to a return date.

Pritchett's bosses told him that astronauts — only they used that word anymore — brought a lousy return on investment. Training took a year as novices mastered spacewalks and overcame blackouts during full-throttle burns. Problem-solving and executive reasoning in crisis mode had to be assessed. Medical evaluations and genetic profiling were expensive, not to mention the laborious psych exams that ticked through rosters of maladies ranging from separation anxiety to budding schizophrenia.

For those who made the cut, the company curated well-being 24/7. Digital effigies of benign authority probed for latent abnormalities during mandatory contentment sessions. Sleep, exercise, and quality of downtime were logged. Cognitive pharmaceuticals got dispensed by long-distance diagnoses. Still, the scrub rate for recruits hovered at fifty percent. Unreliability carried costs, Pritchett's superiors reminded him often. Humans, they concluded, held value only in the odd niches where fickle adaptability could be shrewdly deployed.

So rolled the new regime, bringing a quiet end to long-timers who'd survived the frontier a good part of forty years. Pritchett had no secret to pass along for sticking to a day-to-day routine where days were the ruse of full-spectrum lights. Over the years he'd witnessed attempts at escaping destructive allures that fell just shy of addiction, an old drug habit or the wee heavy crutch of alcohol. He'd seen withdrawal from easy-access pornography and flights from broken relationships where angry spouses extracted sordid revenge online.

For these victims of their own excesses, escaping home felt like a clarifying me-time. But detachment from the here-and-now had a knack for undercutting one's self-estimation. Whenever that happened to one of his crew, all Pritchett could mandate was a furlough on the next ride home, knowing that the leave-taker

would never return after reuniting with his estranged vices in all the shock of a surprise sidewalk run-in.

Long-haulers like his last crew were men who forged a productive virtue out of a sullen disregard for the company of others, never expecting a profound shift in their surroundings to spur a similar transformation in themselves. Whatever damage they harbored, they kept it under wraps, aware that space hadn't winked into existence billions of years ago just to give someone with a problem a second chance.

Time would tell how this new group shook out. Lou had grown acclimated to loneliness during long months at sea. Once the station had staffed up to squadron size, Nina would conform to the self-policing that coalesced around clear-cut rank. Pritchett would bet money that she could last. There'd always be a need for mechanics in space. How Tech got through training was a mystery though, and his habit of countermanding orders by means of obstreperous logic alone was starting to fray Pritchett's nerves.

Replugged into his throbbing beat after Nina had blindsided him, Tech had cracked the satellite's barrel to find a luminescent puddle three shades brighter than sickroom phlegm. With a tool made from a plastic tube attached to a rubber ball, the systems technician sucked up a quarter-liter of the liquid and sealed it inside a shatterproof bottle. Flourishing his wrist like a maestro in a somber adagio, he watched the remainder of the gooey fluid slide up and down the suctioning cylinder as he researched the satellite's construction on his tablet. Puffing out a whiff, he detected no scent.

His ears pounding with music, held in thrall by the rising, falling guck, Tech didn't hear the approaching footfalls. When he felt a hand on his shoulder, he shielded his ribs, spun and rose, dispatching tools into the satellite's belly with a clatter as he automatically squeezed his baster utensil. The stream of goop landed

splat on the captain's face, running up from his cheek to the corner of his eye.

Her tools in hand, Nina howled, "You're supposed to do that *after* he spansks you!"

Pritchett blotted his face. On the swampy, stained handkerchief, he smelled a note of caramel tarnished by a smoky metallic funk. "What the hell is this?"

"I thought it was plastic," Tech sheepishly removed his earbuds before lowering his voice, "but it's some kind of semi-conducting colloid."

"What's it for?"

"Protecting circuits against radiation. That's what they say, not much else. Experimental or something. Looks like the experiment failed."

Pritchett daubed the handkerchief at the corner of his eye.

"It's harmless," Tech said, approximating an apology.

"Why aren't you on comm?"

"I was listening to music."

"You can do that through the comms."

"But-" Tech twisted to-and-fro, hunching his shoulders, pointing vaguely. The comm link was pokey. Music on the corporate channel was lame. He could never explain.

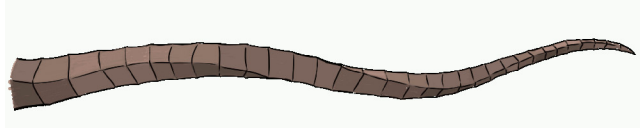
Pritchett stopped Tech in the midst of his burgeoning excuse. "Then you can hear me when I tell you not to break down the guidance processor. Lock it up until the next supply ship can take it back to Earth."

"Why lock it up? There's no one here but us."

"ISRO is paranoid about liability, like all of them."

"OK." Tech reached in and grabbed the unit, a stainless container corroded along its edges. "Something took a bite out of this thing."

Pritchett one-two-hopped away, rubbing his eye. Over his shoulder, loud enough so Nina could hear it too, he reminded them, “Comms stay on when you pull a shift.”



Only because it caught her eye through the window did Nina see the white speck whizzing toward them. Only its exhaust, fanning out hot and doubling in size each second, was visible in the darkness. Only in the last eye-blink as it arched up toward Gamma did it portend its hostile intent.

The boom was followed by shuddering waves that ran loops around the station's structural rings. The shelves in the salvage room rocked and creaked, jostling containers to the floor. Tech had been tipping a box up onto a high shelf when the rocket hit, pelting him with a metal rain of screws and fasteners.

Napping in his berth, Lou was fitfully dreaming as a concussive shock bounced him upward, inserting space between his bulk and the divot in his squishy foam mattress.

Floating in the ship's cargo bay, Paxton was figuring out the manual release for the auto-clamps that secured the remainder of the Bhaskara II when the perilous onslaught jolted the station. He cocked his jaw and touched the curving metal of the fuselage, calibrating the source of impact.

Bending over the tiny sink in the bathroom of his quarters, Pritchett was trying to splash away the yellow crust that festered in his eye. Confronting in the mirror a reflection that begged his memory for forgiveness, he pulled down an eyelid to hang-dog effect and let it squidge back to place.

When the explosion knocked him from his feet, he landed on the sweet spot of soreness for his damaged hip. Struggling up and peering out with digital binoculars, he found the ship that dogged

them. At extreme magnification it was featureless, a negative space that blotted out the light bouncing off the planet. He didn't need to use the size-estimation function. There was only one thing it could be.

On the wall, a virtual picture frame, a gift from his wife Clarice, dissolved into an image of her in the garden, her granite hair shearing across her face, flecked with vermiculite. "I'll come back whether you want me to or not."

Captain Garren Pritchett pulled a pistol from a drawer and stuffed it into his waistband beneath the shirt. The safety of his crew came first. He wasn't going to let this become the Moon all over again.