

## GALACTIC NORTH

Persistence can be a virtue, but perhaps -- as in the breakneck, relentlessly paced, gorgeously coloured story that follows, which sweeps us along on a cosmic chase across thousands of light-years of space and millions of years of time -- it can sometimes be taken a bit too far...

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### LUYTEN 726-8 COMETARY HALO -- AD 2303

The two of them crouched in a tunnel of filthy ice, bulky in spacesuits. Fifty metres down the tunnel the servitor straddled the bore on skeletal legs, transmitting a thermal image onto their visors. Irravel jumped whenever the noise shifted into something human, cradling her gun nervously.

"Damn this thing," she said. "Hardly get my finger round the trigger."

"It can't read your blood, Captain." Markarian, next to her, managed not to sound as if he was stating the obvious. "You have to set the override to female."

Of course. Belatedly, remembering the training session on Fand where they'd been shown how to use the weapons -- months of subjective time ago; years of worldtime -- Irravel told the gun to reshape itself. The memory-plastic casing squirmed in her gloves to something more manageable. It still felt wrong.

"How are we doing?"

"Last teams in position. That's all the tunnels covered. They'll have to fight their way in."

"I think that might well be on the agenda."

"Maybe so." Markarian sighted along his weapon like a sniper. "But they'll get a surprise when they reach the cargo."

True: the ship had sealed the sleeper chambers the instant the pirates had arrived near the comet. Counter-intrusion weaponry would seriously inconvenience anyone trying to break in, unless they had the right authorization. And there, Irravel knew, was the problem; the thing she would rather not have had to deal with.

"Markarian," Irravel said. "If we're taken prisoner, there's a chance they'll try and make us give up the codes."

"Don't think that hasn't crossed my mind already." Markarian rechecked some aspect of his gun. "I won't let you down, Irravel."

"It's not a question of letting me down," she said, carefully.

"It's whether or not we betray the cargo."

"I know." For a moment they studied each other's faces through their visors, acknowledging what had once been more than professional friendship; the shared knowledge that they would kill each other rather than place the cargo in harm's way.

Their ship was the ramliner *Hirondelle*. She was damaged; lashed to the comet for repair. Improbably sleek for a creature of vacuum, her four-kilometer-long conic hull tapered to a needle-sharp prow and sprouted trumpet-shaped engines from two swept-back spars at the rear. It had been Irravel's first captaincy: a routine 17-year hop from Fand, in the Lacaille 9352 system, to Yellowstone, around Epsilon Eridani -- with 20,000 reefersleep colonists. What had gone wrong should only have happened once in a thousand trips: a speck of interstellar dust had slipped through the ship's screen of anti-collision lasers and punched a cavernous hole in the ablative ice-shield,

vaporizing a quarter of its mass. With a massively reduced likelihood of surviving another collision, the ship had automatically steered toward the nearest system capable of supplying repair materials.

Luyten 726-8 had been no one's idea of a welcoming destination. No human colonies had flourished there. All that remained were droves of scavenging machines sent out by various superpowers. The ship had locked into a scavenger's homing signal, eventually coming within visual range of the inert comet which the machine had made its home, and which ought to have been chequered with resupply materials. But when Irravel had been revived from reefersleep, what she'd found in place of the expected goods were only acres of barren comet.

"Dear God," she'd said. "Do we deserve this?"

Yet, after a few days, despair became steely resolve. The ship couldn't safely travel anywhere else, so they would have to process the supplies themselves, doing the work of the malfunctioning surveyor. It would mean stripping the ship just to make the machines to mine and shape the cometary ice -- years of work by any estimate. That hardly mattered. The detour had already added years to the mission.

Irravel ordered the rest of her crew -- all 90 of them -- to be warmed, and then delegated tasks, mostly programming. Servitors were not particularly intelligent outside of their designated functions. She considered activating the other machines she carried as cargo -- the greenfly terraformers -- but that cut against all her instincts. Greenfly machines were Von Neumann breeders, unlike the sterile servitors. They were a hundred times cleverer. She would only consider using them if the cargo was placed in immediate danger.

"If you won't unleash the greenflies," Markarian said, "at least think about waking the Conjoiners. There may only be four of them, but we could use their expertise."

"I don't trust them. I never liked the idea of carrying them in the first place. They unsettle me."

"I don't like them either, but I'm willing to bury my prejudices if it means fixing the ship faster."

"Well, that's where we differ. I'm not, so don't raise the subject again."

"Yes," Markarian said, and only when its omission was insolently clear did he bother adding: "Captain."

Eventually the Conjoiners ceased to be an issue, when the work was clearly under way and proceeding normally. Most of the crew were able to return to reefersleep. Irravel and Markarian stayed awake a little longer, and even after they'd gone under, they woke every seven months to review the status of the works. It began to look as if they would succeed without assistance.

Until the day they were woken out of schedule, and a dark, grapple-shaped ship was almost upon the comet. Not an interstellar ship, it must have come from somewhere nearby -- probably within the same halo of comets around Luyten 726-8. Its silence was not encouraging.

"I think they're pirates," Irravel said. "I've heard of one or two other ships going missing near here, and it was always put down to accident."

"Why did they wait so long?"

"They had no choice. There are billions of comets out here, but they're never less than light-hours apart. That's a long way if you only have in-system engines. They must have a base somewhere else to keep watch, maybe light-weeks from here, like a spider with a very wide web."

"What do we do now?"

Irravel gritted her teeth. "Do what anything does when it gets stuck in the middle of a web. Fight back."

But the *Hirondelle's* minimal defences only scratched against the enemy ship. Oblivious, it fired penetrators and winched closer. Dozens of crab-shaped machines swarmed out and dropped below the comet's horizon, impacting with seismic thuds. After a few minutes, sensors in the furthest tunnels registered intruders. Only a handful of crew had been woken. They broke guns out of the armoury -- small arms designed for pacification in the unlikely event of a shipboard riot -- and then established defensive positions in all the cometary tunnels.

Nervously now, Irravel and Markarian advanced round the tunnel's bend, cleated shoes whispering through ice barely more substantial than smoke. They had to keep their suit exhausts from touching the walls if they didn't want to get blown back by superheated steam. Irravel jumped again at the pattern of photons on her visor and then forced calm, telling herself it was another mirage.

Except this time it stayed.

Markarian opened fire, squeezing rounds past the servitor. It lurched aside, a gaping hole in its carapace. Black crabs came round the bend, encrusted with sensors and guns. The first reached the ruined servitor and dismembered it with ease. If only there'd been time to activate and program the greenfly machines -- they'd have ripped through the pirates like a host of furies, treating them as terraformable matter.

And maybe us too, Irravel thought.

Something flashed through the clouds of steam; an electromagnetic pulse that turned Irravel's suit sluggish, as if every joint had corroded. The whine of the circulator died to silence, leaving only her frenzied breathing. Something pressed against her backpack. She turned slowly around, wary of falling against the walls. There were crabs everywhere. The chamber in which they'd been cornered was littered with the bodies of the other crew members; pink trail of blood on ice reaching from other tunnels. They'd been killed and dragged here.

Two words jumped to mind: kill yourself. But first she had to kill Markarian, in case he lacked the nerve himself. She couldn't see his face through his visor. That was good. Painfully, she pointed the gun towards him and squeezed the trigger. But instead of firing, the gun shivered in her hands, stowing itself into a quarter of its operational volume. "Thank you for using this weapon system," it said cheerfully.

Irravel let it drift to the ground.

A new voice rasped in her helmet. "If you're thinking of surrendering, now might not be a bad time."

"Bastard," Irravel said, softly.

"Really the best you can manage?" The language was Canasian -- what Irravel and Markarian had spoken on Fand -- but heavily accented, as if the native tongue was Norte or Russish, or spoken with an impediment. "Bastard's quite a compliment compared to some of things my clients come up with."

"Give me time; I'll work on it."

"Positive attitude -- that's good." The lid of a crab hinged up, revealing the prone form of a man in a mesh of motion-sensors. He crawled from the mesh and stepped onto the ice, wearing a spacesuit formed from segmented metal plates. Totems had been welded to the armour, around holographic starscapes infested with serpentine monsters and scantily-clad maidens.

"Who are you?"

"Captain Run Seven." He stepped closer, examining her suit nameplate. "But you can call me Seven, Irravel Veda."

"I hope you burn in hell, Seven."

Seven smiled -- she could see the curve of his grin through his visor; the oddly upturned nostrils of his nose above it. "I'm sensing some negativity here, Irravel. I think we need to put that behind us, don't you?"

Irravel looked at her murdered adjutants. "Maybe if you tell me which one was the traitor."

"Traitor?"

"You seemed to have no difficulty finding us."

"Actually, you found us." It was a woman's voice this time. "We use lures -- tampering with commercial beacons, like the scavenger's." She emerged from one of the other attack machines,

wearing a suit similar to Seven's, except that it displayed the testosterone-saturated male analogues of his space-maidens; all rippling torsos and chromed codpieces.

"Wreckers," Irravel breathed.

"Yeah. Ships home in on the beacons, then find they ain't going anywhere in a hurry. We move in from the halo."

"Disclose all our confidential practices while you're at it, Mirsky," Seven said.

She glared at him through her visor. "Veda would have figured it out."

"We'll never know now, will we?"

"What does it matter?" she said. "Gonna kill them anyway, aren't you?"

Seven flashed an arc of teeth filed to points and waved a hand towards the female pirate. "Allow me to introduce Mirsky, our loose-tongued but efficient information retrieval specialist. She's going to take you on a little trip down memory lane; see if we can't remember those access codes."

"What codes?"

"It'll come back to you," Seven said.

They were taken through the tunnels, past half-assembled mining machines, onto the surface and then into the pirate ship. The ship was huge: most of it living space. Cramped corridors snaked through hydroponics galleries of spring wheat and dwarf papaya, strung with xenon lights. The ship hummed constantly with carbon dioxide scrubbers, the fetid air making Irravel sneeze. There were children everywhere, frowning at the captives. The pirates obviously had no reefersleep technology: they stayed warm the whole time, and some of the children Irravel saw had probably been born after the *Hirondelle* had arrived here.

They arrived at a pair of interrogation rooms where they were separated. Irravel's room held a couch converted from an old command seat, still carrying warning decals. A console stood in one corner. Painted torture scenes fought for wallspace with racks of surgical equipment; drills, blades and ratcheted contraptions speckled with rust.

Irravel breathed deeply. Hyperventilation could have an anaesthetic effect. Her conditioning would in any case create a state of detachment: the pain would be no less intense, but she would feel it at one remove.

She hoped.

The pirates fiddled with her suit, confused by the modern design, until they stripped her down to her shipboard uniform. Mirsky leant over her. She was small-boned and dark skinned, dirty hair rising in a topknot, eyes mismatched shades of azure. Something clung to the side of her head above the left ear; a silver box with winking status lights. She fixed a crown to Irravel's head, then made adjustments on the console.

"Decided yet?" Captain Run Seven said, sauntering into the room. He was unlatching his helmet.

"What?"

"Which of our portfolio of interrogation packages you're going to opt for."

She was looking at his face now. It wasn't really human. Seven had man's bulk and shape, but there was at least as much of the pig in his face. His nose was a snout, his ears two tapered flaps framing a hairless pink skull. Pale eyes evinced animal cunning.

"What the hell are you?"

"Excellent question," Seven said, clicking a finger in her direction. His bare hand was dark skinned and feminine. "To be honest, I don't really know. A genetics experiment, perhaps? Was I the seventh failure, or the first success?"

"Are you sure you want an honest answer on that?"

He ignored her. "All I know is that I've been here -- in the halo around Luyten 726-8 -- for as long as I can remember."

"Someone sent you here?"

"In a tiny automated spacecraft; perhaps an old lifepod. The ship's governing personality raised me as well as it could; attempted to make of me a well-rounded individual." Seven trailed off

momentarily. "Eventually I was found by a passing ship. I staged what might be termed a hostile takeover bid. From then on I've had an organization largely recruited from my client base."

"You're insane. It might have worked once, but it won't work with us."

"Why should you be any different?"

"Neural conditioning. I treat the cargo as my offspring – all 20,000 of them. I can't betray them in any way."

Seven smiled his piggy smile. "Funny; the last client thought that too."

Sometime later Irravel woke alone in a reefersleep casket. She remembered only dislocated episodes of interrogation. There was the memory of a kind of sacrifice, and, later, of the worst terror she could imagine -- so intense that she could not bring its cause to mind. Underpinning everything was the certainty that she had not given up the codes.

So why was she still alive?

Everything was quiet and cold. Once she was able to move, she found a suit and wandered the *Hirondelle* until she reached a porthole. They were still lashed to the comet. The other craft was gone; presumably en route back to the base in the halo where the pirates must have had a larger ship.

She looked for Markarian, but there was no sign of him.

Then she checked the 20-sleeper chambers; the thousand-berth dormitories. The chamber doors were all open. Most of the sleepers were still there. They'd been butchered, carved open for implants, minds pulped by destructive memory-trawling devices. The horror was too great for any recognizable emotional response. The conditioning made each death feel like a stolen part of her.

Yet something kept her on the edge of sanity: the discovery that 200 sleepers were missing. There was no sign that they'd been butchered like the others, which left the possibility that they'd been abducted by the pig. It was madness; it would not begin to compensate for the loss of the others -- but her psychology allowed no other line of thought.

She could find them again.

Her plan was disarmingly simple. It crystallized in her mind with the clarity of a divine vision. It would be done.

She would repair the ship. She would hunt down Seven. She would recover the sleepers from him. And enact whatever retribution she deemed fit.

She found the chamber where the four Conjoiners had slept, well away from the main dormitories, in part of the ship where the pirates were not likely to have wandered. She was hoping she could revive them and seek their assistance. There seemed no way they could make things worse for her. But her hopes faded when she saw the scorch marks of weapon blasts around the bulkhead; the door forced.

She stepped inside anyway.

They'd been a sect on Mars, originally; a clique of cyberneticists with a particular fondness for self-experimentation. In 2190 their final experiment had involved distributed processing -- allowing their enhanced minds to merge into one massively parallel neural net. The resultant event -- a permanent, irrevocable escalation to a new mode of consciousness -- was known as the Transenlightenment.

There'd been a war, of course.

Demarchists had long seen both sides. They used neural augmentation themselves, policed so that they never approached the Conjoiner threshold. They'd brokered the peace, defusing the suspicion around the Conjoiners. Conjoiners had fuelled Demarchist expansion from Europa with their technologies, fused in the white-heat of Transenlightenment. Four of them were along as observers because the *Hirondelle* used their ramscoop drives.

Irravel still didn't trust them.

And maybe it didn't matter. The reefersleep units -- fluted caskets like streamlined coffins -- were riddled with blast holes. Grimacing against the smell, Irravel examined the remains inside. They'd been cut open, but the pirates seemed to have abandoned the job halfway through, not finding the kinds of implants they were expecting. And maybe not even recognizing that they were dealing with anything other than normal humans, Irravel thought -- especially if the pirates who'd done this hadn't been among Seven's more experienced crew members; just trigger-happy thugs.

She examined the final casket; the one furthest from the door. It was damaged, but not so badly as the others. The display cartouches were still alive, a patina of frost still adhering to the casket's lid. The Conjoiner inside looked intact: the pirates had never reached him. She read his nameplate: Remontoire.

"Yeah, he's a live one," said a voice behind Irravel. "Now back off real slow."

Heart racing, Irravel did as she was told. Slowly, she turned around, facing the woman whose voice she recognized.

"Mirsky?" she said.

"Yeah, it's your lucky day." Mirsky was wearing her suit, but without the helmet, making her head seem shrunken in the moat of her neck-ring. She had a gun on Irravel, but the way she pointed it was half-hearted, as if this was a stage in their relationship she wanted to get over as quickly as possible.

"What the hell are you doing here?"

"Same as you, Veda. Trying to figure out how much shit we're in; how hard it'll be to get this ship moving again. Guess we had the same idea about the Conjoiners. Seven went berserk when he heard they'd been killed, but I figured it was worth checking how thorough the job had been."

"Stop; slow down. Start at the beginning. Why aren't you with Seven?"

Mirsky pushed past her and consulted the reefersleep indicators. "Seven and me had a falling out. Fill in the rest yourself." With quick jabs of her free hand she called up different display modes, frowning at each. "Shit, this ain't gonna be easy. If we wake the guy without his three friends, he's gonna be psychotic; no use to us at all."

"What kind of falling out?"

"Seven reckoned I was holding back too much in the interrogation; not putting you through enough hell." She scratched at the silver box on the side of her head. "Maybe we can wake him, then fake the cybernetic presence of his friends -- what do you think?"

"Why am I still alive, if Seven broke into the sleeper chambers? Why are you still alive?"

"Seven's a sadist. Abandonment's more his style than a quick and clean execution. As for you, the pig cut a deal with your second-in-command."

The implication of that sunk in. "Markarian gave him the codes?"

"It wasn't you, Veda."

Strange relief flooded Irravel. She could never be absolved of the crime of losing the cargo, but at least her degree of complicity had lessened.

"But that was only half the deal," Mirsky continued. "The rest was Seven promising not to kill you if Markarian agreed to join the *Hideyoshi*, our main ship." She told Irravel that there'd been a transmitter rigged to her reefersleep unit, so that Markarian would know she was still alive.

"Seven must have known he was taking a risk leaving both of us alive."

"A pretty small one. The ship's in pieces and Seven will assume neither of us has the brains to patch it back together." Mirsky slipped the gun into a holster. "But Seven assumed the Conjoiners were dead. Big mistake. Once we figure a way to wake Remontoire safely, he can help us fix the ship; make it faster too."

"You've got this all worked out, haven't you?"

"More or less. Something tells me you aren't absolutely ready to start trusting me, though."

"Sorry, Mirsky, but you don't make the world's most convincing turncoat."

She reached up with her free hand, gripping the box on the side of her head. "Know what this is? A loyalty-shunt. Makes simian stem cells; pumps them into the internal carotid artery, just above the cavernous sinus. They jump the blood-brain barrier and build a whole bunch of transient structures tied to primate dominance hierarchies; alpha-male shit. That's how Seven had us under his command -- he was King Monkey. But I've turned it off now."

"That's supposed to reassure me?"

"No, but maybe this will."

Mirsky tugged at the box, ripping it away from the side of her head in curds of blood.

#### LUYTEN 726-8 COMETARY HALO -- AD 2309

Irravel felt the *Hirondelle* turn like a compass needle. The ramscoops gasped at interstellar gas, sucking lone atoms of cosmic hydrogen from cubic metres of vacuum. The engines spat twin beams of thrust, pressing Irravel into her seat with two gees of acceleration. Hardly moving now, still in the local frame of the cometary halo, but in only six months she would be nudging lightspeed.

Her seat floated on a boom in the middle of the dodecahedral bridge. "Map," Irravel said, and was suddenly drowning in stars; an immense 30-light-year-wide projection of human settled space, centred on the First System.

"There's the bastard," Mirsky said, pointing from her own hovering seat, her voice only slightly strained under the gee-load. "Map; give us projection of the *Hideyoshi's* vector, and plot our intercept."

The pirate ship's icon was still very close to Luyten 726-8; less than a tenth of a light-year out. They had not seen Seven until now. The thrust from his ship was so tightly focused that it had taken until now for the widening beams of the exhaust to sweep over *Hirondelle's* sensors. But now they knew where he was headed. A dashed line indicated the likely course, arrowing right through the map's heart and out towards the system Lalande 21185. Now came the intercept vector, a near-tangent which sliced Seven's course beyond Sol.

"When does it happen?" Irravel said.

"Depends on how much attention Seven's paying to what's coming up behind him, for a start, and what kind of evasive stunts he can pull."

"Most of my simulations predict an intercept between 2325 and 2330," Remontoire said.

Irravel savoured the dates. Even for someone trained to fly a starship between systems, they sounded uncomfortably like the future.

"Are you sure it's him -- not just some other ship that happened to be waiting in the halo?"

"Trust me," Mirsky said. "I can smell the swine from here."

"She's right," Remontoire said. "The destination makes perfect sense. Seven was prohibited from staying here much longer, once the number of missing ships became too large to be explained away as accidents. Now he must seek a well-settled system to profit from what he has stolen."

The Conjoiner looked completely normal at first glance -- a bald man wearing a ship's uniform, his expression placid -- but then one noticed the unnatural bulge of his skull, covered only in a fuzz of baby hair. Most of his glial cells had been supplanted by machines which served the same structural functions but which also performed specialized cybernetic duties, like interfacing with other commune partners or external machinery. Even the organic neurones in his brain were now webbed together by artificial connections which allowed transmission speeds of kilometres per second; factors of ten faster than in normal brains. Only the problem of dispersing waste heat denied the Conjoiners even faster modes of thought.

It was seven years since they'd woken him. Remontoire had not dealt well with the murder of his three compatriots, but Irravel and Mirsky had managed to keep him sane by feeding input into the glial machines, crudely simulating rapport with other commune members. "It provides the kind of

comfort to me that a ghost limb offers an amputee," Remontoire had said. "An illusion of wholeness -- but no substitute for the real thing."

"What more can we do?" Irravel said.

"Return me to another commune with all speed."

Irravel had agreed, provided Remontoire helped with the ship.

He hadn't let her down. Under his supervision, half the ship's mass had been sacrificed, permitting twice the acceleration. They had dug a vault in the comet, lined it with support systems, and entombed what remained of the cargo. The sleepers were nominally dead -- there was no real expectation of reviving them again, even if medicine improved in the future -- but Irravel had nonetheless set servitors to tend the dead for however long it took, and programmed the beacon to lure another ship, this time to pick up the dead. All that had taken years, of course -- but it had also taken Seven as much time to cross the halo to his base; time again to show himself.

"Be so much easier if you didn't want the others back," Mirsky said. "Then we could just slam past the pig at relativistic speed and hit him with seven kinds of shit." She was very proud of the weapons she'd built into the ship, copied from pirate designs with Remontoire's help.

"I want the sleepers back," Irravel said.

"And Markarian?"

"He's mine," she said, after due consideration. "You get the pig."

#### NEAR LALANDE 21185 -- AD 2328

Relativity squeezed stars until they bled colour. Half a kilometre ahead, the side of Seven's ship raced toward Irravel like a tsunami.

The *Hideyoshi* was the same shape as the *Hirondelle*; honed less by human whim than the edicts of physics. But the *Hideyoshi* was heavier, with a wider cross-section, incapable of matching the *Hirondelle's* acceleration or of pushing so close to C. It had taken years, but they'd caught up with Seven, and now the attack was in progress.

Irravel, Mirsky and Remontoire wore thruster-pack-equipped suits, of the type used for inspections outside the ship, with added armour and weapons. Painted for effect, they looked like mechanized Samurai. Another 47 suits were slaved to theirs, acting as decoys. They'd crossed 50,000 kilometres of space between the ships.

"You're sure Seven doesn't have any defence?" Irravel had asked, not long after waking from reefersleep.

"Only the in-system ship had any firepower," Mirsky said. She looked older now; new lines engraved under her eyes. "That's because no one's ever been insane enough to contemplate storming another ship in interstellar space."

"Until now."

But it wasn't so stupid, and Mirsky knew it. Matching velocities with another ship was only a question of being faster; squeezing fractionally closer to lightspeed. It might take time, but sooner or later the distance would be closed. And it had taken time, none of which Mirsky had spent in reefersleep. Partly it was because she lacked the right implants -- ripped out in infancy when she was captured by Seven. Partly it was a distaste for the very idea of being frozen, instilled by years of pirate upbringing. But also because she wanted time to refine her weapons. They had fired a salvo against the enemy before crossing space in the suits, softening up any weapons buried in his ice and opening holes into the *Hideyoshi's* interior.

Now Irravel's vision blurred, her suit slowing itself before slamming into the ice.

Whiteness swallowed her.

For a moment she couldn't remember what she was doing here. Then awareness came and she slithered back up the tunnel excavated on her fall, until she reached the surface of the *Hideyoshi's* ice-shield.

"Veda -- you intact?"

Her armour's shoulder-mounted comm laser found a line-of-sight to Mirsky. Mirsky was 20 or 30 metres away, around the ship's lazy circumference, balancing on a ledge of ice. Walls of it stretched above and below like a rockface, lit by the glare from the engines. Decoys were arriving by the second.

"I'm alive," Irravel said. "Where's the entry point?"

"Couple of hundred metres upship."

"Damn. I wanted to come in closer. Remontoire's out of line-of-sight. How much fuel do you have left?"

"Scarcely enough to take the chill off a penguin's dick."

Mirsky raised her arms above her head and fired lines into the ice, rocketing out from her sleeves. Belly sliding against the shield, she retracted the lines and hauled herself upship.

Irravel followed. They'd burned all their fuel crossing between the two ships, but that was part of the plan. If they didn't have a chance to raid Seven's reserves, they'd just kick themselves into space and let the *Hirondelle* home in on them.

"You think Seven saw us cross over?"

"Definitely. And you can bet he's doing something about it, too."

"Don't do anything that might endanger the cargo, Mirsky -- no matter how tempting Seven makes it."

"Would you sacrifice half the sleepers to get the other half back?"

"That's not remotely an option."

Above their heads crevasses opened like eyes. Pirate crabs erupted out, black as night against the ice. Irravel opened fire on the machines. This time, with better weapons and real armour, she began to inflict damage. Behind the crabs, pirates emerged, bulbous in customized armour. Lasers scuffed the ice; bright through gouts of steam. Irravel saw Remontoire now: he was unharmed, and doing his best to shoot the pirates into space.

Above, one of Irravel's shots dislodged a pirate.

The *Hideyoshi's* acceleration dropped him towards her. When the impact came she hardly felt it, her suit's guylines staying firm. The pirate folded around her like a broken toy, then bounced back against the ship, pinned there by her suit. He was too close to shoot unless Irravel wanted to blow herself into space. Distorted behind glass, his face shaped a word. She got in closer until their visors were touching. Through the glass she saw the asymmetric bulge of a loyalty-shunt.

The face was Markarian's. At first it seemed like absurd coincidence. Then it occurred to her that Seven might have sent his newest recruit out to show his mettle. Maybe Seven wouldn't be far behind. Confronting adversaries was part of the alpha-male inheritance.

"Irravel," Markarian said, voice laced with static. "I'm glad you're alive."

"Don't flatter yourself you're the reason I'm here, Markarian. I came for the cargo. You're just next on the list."

"What are you going to do -- kill me?"

"Do you think you deserve any better than that?" Irravel adjusted her position. "Or are you going to try and justify betraying the cargo?"

He pulled his aged features into a smile. "We made a deal, Irravel; the same way you made a deal about greenfly. But you don't remember that, do you?"

"Maybe I sold the greenfly machines to the pig," she said. "If I did that, it was a calculated move to buy the safety of the cargo. You, on the other hand, cut a deal with Seven to save your neck."

The other pirates were holding fire, nervously marking them. "I did it to save yours, actually. Does that make any sense?" There was wonder in his eyes now. "Did you ever see Mirsky's hand? That was never her own. The pirates swap limbs as badges of rank. They're very good at connective surgery."

"You're not making much sense, Markarian."

Dislodged ice rained on them. Irravel looked around in time to see another pirate emerging from a crevasse. She recognized the suit artwork: it was Seven. He wore things, strung around his utility belt in transparent bags like obscene fruit. She stared at them for a few seconds before their nature clicked into horrific focus: frozen human heads.

Irravel stifled a reaction to vomit.

"Yes," Run Seven said. "Ten of your compatriots, recently unburdened of their bodies. But don't worry -- they're not harmed in any fundamental sense. Their brains are intact -- provided you don't warm them with an ill-aimed shot."

"I've got a clear line of fire," Mirsky said. "Just say the word and the bastard's an instant anatomy lesson."

"Wait," Irravel said. "Don't shoot."

"Sound business sense, Captain Veda. I see you appreciate the value of these heads."

"What's he talking about?" Mirsky said.

"Their neural patterns can be retrieved." It was Remontoire speaking now. "We Conjoiners have had the ability to copy minds onto machine substrates for some time now, though we haven't advertised it. But that doesn't matter -- there have been experiments on Yellowstone which approach our early successes. And these heads aren't even thinking: only topologies need to be mapped, not electrochemical processes."

The pig took one of the heads from his belt and held it to eye-level, for inspection. "The Conjoiner's right. They're not really dead. And they can be yours if you wish to do business."

"What do you want for them?"

"Markarian, for a start. All that Demarchy expertise makes for a very efficient second-in-command."

Irravel glanced down at her prisoner. "You can't buy loyalty with a box and a few neural connections."

"No? In what way do our loyalty-shunts differ from the psychosurgery which your world inflicted on you, Irravel, yoking your motherhood instinct to 20,000 sleepers you don't even know by name?"

"We have a deal or not?"

"Only if you throw in the Conjoiner as well."

Irravel looked at Remontoire; some snake part of her mind weighing options with reptilian detachment.

"No!" he said. "You promised!"

"Shut up," Seven said. "Or when you do get to rejoin your friends, it'll be in instalments."

"I'm sorry," Irravel said. "I can't lose even ten of the cargo."

Seven tossed the first head down to her. "Now let Markarian go and we'll see about the rest."

Irravel looked down at him. "It's not over between you and me."

Then she released him, and he scrambled back up the ice towards Seven.

"Excellent. Here's another head. Now the Conjoiner."

Irravel issued a subvocal command; watched Remontoire stiffen. "His suit's paralysed. Take him."

Two pirates worked down to him, checked him over and nodded towards Seven. Between them they hauled him back up the ice, vanishing into a crevasse and back up into the *Hideyoshi*.

"The other eight heads," Irravel said.

"I'm going to throw them away from the ship. You'll be able to locate them easily enough. While I'm doing that, I'm going to retreat, and you're going to leave."

"We could end this now," Mirsky said.

"I need those heads."

"They really fucked with your psychology big-time, didn't they?" She raised her weapon and began shooting Seven and the other pirates. Irravel watched her carve up the remaining heads; splintering frozen bone into the vacuum.

"No!"

"Sorry," Mirsky said. "Had to do it, Veda."

Seven clutched at his chest, fingers mashing the pulp of the heads, still tethered to his belt. She'd punctured his suit. As he tried to stem the damburst, his face was carved with the intolerable knowledge that his reign had just ended.

But something had hit Irravel too.

SYLVESTE INSTITUTE, YELLOWSTONE ORBIT,  
EPSILON ERIDANI -- AD 2415

"Where am I?" Irravel asked. "How am I thinking this?"

The woman's voice was the colour of mahogany. "Somewhere safe. You died on the ice, but we got you back in time."

"For what?"

Mirsky sighed, as though this was something she would rather not have had to explain this soon.

"To scan you, just like we did with the frozen heads. Copy you into the ship."

Maybe she should have felt horror, or indignation, or even relief that some part of her had been spared.

Instead, she just felt impatience.

"What now?"

"We're working on it," Mirsky said.

TRANS-ALDEBARAN SPACE -- AD 2673

"We saved her body after she died," Mirsky said, wheezing slightly. She found it hard to move around under what to Irravel was the ship's normal two and a half gees of thrust. "After the battle we brought her back on board."

Irravel thought of her mother dying on the other ship, the one they were chasing. For years they had deliberately not narrowed the distance, holding back but not allowing the Hideyoshi to slip from view.

Until now, it hadn't even occurred to Irravel to ask why.

She looked through the casket's window, trying to match her own features against what she saw in the woman's face, trying to project her own 15 years into Mother Irravel's adulthood.

"Why did you keep her so cold?"

"We had to extract what we could from her brain," Mirsky said. "Memories and neural patterns. We trawled them and stored them in the ship."

"What good was that?"

"We knew they'd come in useful again."

She'd been cloned from Mother Irravel. They were not identical -- no Mixmaster expertise could duplicate the precise biochemical environment of Mother Irravel's womb, or the shaping experiences of early infancy, and their personalities had been sculpted centuries apart, in totally different worlds. But they were still close copies. They even shared memories: scripted into Irravel's mind by medicines, so that she barely noticed each addition to her own experiences.

"Why did you do this?" she asked.

"Because Irravel began something," Mirsky said. "Something I promised I'd help her finish."

STORMWATCH STATION, AETHRA, HYADES  
TRADE ENVELOPE -- AD 2931

"Why are you interested in our weapons?" the Nestbuilder asked. "We are not aware of any wars within the *chordate phylum* at this epoch."

"It's a personal matter," Irravel said.

The Nestbuilder hovered a metre above the trade floor, suspended in a column of microgravity. They were oxygen-breathing arthropods who'd once ascended to spacefaring capability. No longer intelligent, yet supported by their self-renewing machinery, they migrated from system to system, constructing elaborate, space-filling structures from solid diamond. Other Nestbuilder swarms would arrive and occasionally occupy the new nests. There seemed no purpose to this activity, but for tens of thousands of years they had been host to a smaller, cleverer species known as the Slugs. Small communities of Slugs -- anything up to a dozen -- lived in warm, damp niches in a Nestbuilder's intricately folded shell. They had long since learned how to control the host's behaviour and exploit its subservient technology.

Irravel studied a Slug now, crawling out from under a lip of shell material.

The thing was a multicellular invertebrate not much larger than her fist; a bag of soft blue protoplasm, sprouting appendages only when they were needed. A slightly bipolar shadow near one end might have been its central nervous system, but there hardly seemed enough of it to trap sentience. There were no obvious sense or communicational organs, but a pulsing filament of blue slime reached back into the Nestbuilder's fold. When the Slug spoke, it did so through the Nestbuilder; a rattle of chitin from the host's mouthparts which approximated human language. A hovering jewel connected to the station's lexical database did the rest, rendering the voice calmly feminine.

"A personal matter? A vendetta? Then it's true." The mouthparts clicked together in what humans presumed was the symbiotic creature's laughter response. "You *are* who we suspected."

"She did tell you her name was Irravel, guy," Mirsky said, sipping black coffee with delicate movements of the exoskeletal frame she always wore in high gravity.

"Among you *chordates*, the name is not so unusual now," the Slug reminded them. "But you do fit the description, Irravel."

They were near one of the station's vast picture windows, overlooking Aethra's mighty, roiling cloud decks, 50 kilometres below. It was getting dark now and the storm players were preparing to start a show. Irravel saw two of their seeders descending into the clouds; robot craft tethered by a nearly invisible filament. The seeders would position the filament so that it bridged cloud layers with different static potentials; they'd then detach and return to Stormwatch, while the filament held itself in position by rippling along its length. For hundreds of kilometres around, other filaments would have been placed in carefully selected positions. They were electrically isolating now, but at the stormplayer's discretion, each filament would flick over into a conductive state: a massive, choreographed lightning flash.

"I never set out to become a legend," Irravel said. "Or a myth, for that matter."

"Yes. There are so many stories about you, Veda, that it might be simpler to assume you never existed."

"What makes you think otherwise?"

"The fact that a *chordate* who could have been Markarian also passed this way, only a year or so ago." The Nestbuilder's shell pigmentation flickered, briefly revealing a picture of Markarian's ship.

"So you sold weapons to him?"

"That would be telling, wouldn't it?" The mouthparts clattered again. "You would have to answer a question of ours first."

Outside, the opening flashes of the night's performance gilded the horizon; like the first stirrings of a symphony. Aethra's rings echoed the flashes, pale ghosts momentarily cleaving the sky.

"What is it you want to know?"

"We Slugs are among the few intelligent, starfaring cultures in this part of the Galaxy. During the War against Intelligence we avoided the Inhibitors by hiding ourselves among the mindless Nestbuilders."

Irravel nodded. Slugs were one of the few alien species known to humanity who would even acknowledge the existence of the feared Inhibitors. Like humanity, they'd fought and beaten the revenants -- at least for now.

"It is the weaponry you seek which enabled us to triumph -- but even then only at colossal cost to our phylum. Now we are watchful for new threats."

"I don't see where this is leading."

"We have heard rumours. Since you have come from the direction of those rumours -- the local stellar neighbourhood around your phylum's birth star -- we imagined you might have information of value."

Irravel exchanged a sideways glance with Mirsky. The old woman's wizened, age-spotted skull looked as fragile as paper, but she remained an unrivalled tactician. They knew each other so well now that Mirsky could impart advice with the subtlest of movements; expression barely troubling the lined mask of her face.

"What kind of information were you seeking?"

"Information about something that frightens us." The Nestbuilder's pigmentation flickered again, forming an image of -- something. It was a splinter of grey-brown against speckled blackness -- perhaps the Nestbuilder's attempt at visualizing a planetoid. And then something erupted across the surface of the world, racing from end to end like a film of verdigris. Where it had passed, fissures opened up, deepening until they were black fractures, as if the world were a calving iceberg. And then it blew apart, shattering into a thousand green-tinged fragments.

"What was that?" Irravel said.

"We were rather hoping you could tell us." The Nestbuilder's pigmentation refreshed again, and this time what they were seeing was clearly a star, veiled in a toroidal belt of golden dust.

"Machines have dismantled every rocky object in the system where these images were captured; Ross 128, which lies within eleven light-years of your birth star. They have engendered a swarm of trillions of rocks on independent orbits. Each rock is sheathed in a pressurized bubble membrane, within which an artificial plant-based ecosystem has been created. The same machines have fashioned other sources of raw material into mirrors, larger than worlds themselves, which trap sunlight above and below the ecliptic and focus it onto the swarm."

"And why does this frighten you?"

The Nestbuilder leant closer in its column of microgravity. "Because we saw it being resisted. As if these machines had never been intended to wreak such transformations. As if your phylum had created something it could not control."

"And -- these attempts at resistance?"

"Failed."

"But if one system was accidentally transformed, it doesn't mean..." Irravel trailed off. "You're worried about them crossing interstellar space, to other systems. Even if that happened -- couldn't you resist the spread? This can only be human technology -- nothing that would pose any threat to yourselves."

"Perhaps it was once human technology, with programmed limitations to prevent it replicating uncontrollably. But those shackles have been broken. Worse, the machines have hybridized, gaining resilience and adaptability with each encounter with something external. First the Melding Plague, infection with which may have been a deliberate ploy to by-pass the replication limits."

Irravel nodded. The Melding Plague had swept human space 400 years earlier, terminating the Demarchist *Belle Epoque*. Like the Black Death of the previous millennium, it evoked terror generations after it had passed.

"Later," the Nestbuilder continued, "it may have encountered and assimilated Inhibitor technology, or worse. Now it will be very hard to stop, even with the weapons at our disposal."

"An image of one of the machines flickered onto the Nestbuilder's shell, like a peculiar tattoo. Irravel shivered. The Slug was right: waves of hybridization had transformed the initial architecture into something queasily alien. But enough of the original plan remained for there to be no doubt in her mind. She was looking at an evolved greenfly; one of the self-replicating breeders she had given Captain Run Seven. How it had broken loose was anyone's guess. She speculated that Seven's crew had sold the technology on to a third party, decades or centuries after gaining it from her. Perhaps that third party had reclusively experimented in the Ross 128 system, until the day when greenfly tore out of their control.

"I don't know why you think I can help," she said.

"Perhaps we were mistaken, then, to credit a 500-year-old rumour which said that you had been the original source of these machines."

She had insulted it by daring to bluff. The Slugs were easily insulted. They read human beings far better than humans read Slugs.

"Like you say," she answered. "You can't believe everything."

The Slug made the Nestbuilder fold its armoured, spindly limbs across its mouthparts, a gesture of displeased huffiness.

"You *chordates*," it said. "You're all the same."

#### INTERSTELLAR SPACE -- AD 3354

Mirsky was dead. She had died of old age.

Irravel placed her body in an armoured coffin and ejected her into space when the *Hirondelle's* speed was only a hair's breadth under light. "Do it for me, Irravel," Mirsky had told her, towards the end. "Keep my body aboard until we're almost touching light, and then fire me ahead of the ship."

"Is that what you want?"

"It's an old pirate tradition. Burial at C." She forced a smile which must have sapped what little energy she had left. "That's a joke, Irravel, but it only makes sense in a language neither of us have heard for a while."

Irravel pretended that she understood. "Mirsky? There's something I have to tell you. Do you remember the Nestbuilder?"

"That was centuries ago, Veda."

"I know. I just keep worrying that maybe it was right."

"About what?"

"Those machines. About how I started it all. They say it's spread now; to other systems. It doesn't look like anyone knows how to stop it."

"And you think all that was your fault?"

"It's crossed my mind."

Mirsky convulsed, or shrugged -- Irravel wasn't sure. "Even if it was your fault, Veda, you did it with the best of intentions. So you fucked up slightly. We all make mistakes."

"Destroying whole solar systems is just a fuck-up?"

"Hey, accidents happen."

"You always did have a sense of humour, Mirsky."

"Yeah; guess I did." She managed a smile. "One of us needed one, Veda."

Thinking of that, Irravel watched the coffin fall ahead, dwindling until it was only a tiny mote of steel-grey, and then nothing.

SUBARU COMMONWEALTH -- PLEIADES  
CLUSTER -- AD 4161

The starbridge had long ago attained sentience.

Dense with machinery, it sung an endless hymn to its own immensity, throbbing like the lowest string on a guitar. Vacuum-breathing acolytes had voluntarily rewired their minds to view the bridge as an actual deity, translating the humming into their sensoria and passing decades in contemplative ecstasy.

Clasped in a cushioning field, an elevator ferried Irravel down the bridge from the orbital hub to the surface in a few minutes, accompanied by an entourage of children from the ship, many of whom bore in youth the hurting imprint of Mirsky's genes. The bridge rose like the stem of a goblet from a ground terminal which was itself a scalloped shell of hyperdiamond, filled with tiered perfume gardens and cascading pools, anchored to the largest island in an equatorial archipelago. The senior children walked Irravel down to a beach of silver sand on the terminal's edge, where jewelled crabs moved like toys. She bid the children farewell, then waited, warm breezes fingering the hem of her sari.

Minutes later, the children's elevator flashed heavenward.

Irravel looked out at the ocean, thinking of the Pattern Jugglers. Here, as on dozens of other oceanic worlds, there was a colony of the alien intelligences. Transformed to aquatic bodyplans themselves, the Subaruuns had established close rapport with the aliens. In the morning, she would be taken out to meet the Jugglers, drowned, dissolved on the cellular level, every atom in her body swapped for one in the ocean, remade into something not quite human.

She was terrified.

Islanders came toward the shore, skimming water on penanted trimarans, attended by oceanforms, sleek gloss-grey hybrids of porpoise and ray, whistlespeech downshifted into the human spectrum. The Subaruuns' epidermal scales shimmered like imbricated armour: biological photocells drinking scorching blue Pleiadean sunlight. Sentient veils hung in the sky, rippling gently like aurorae, shading the archipelago from the fiercest wavelengths. As the actinic eye of Taygeta sank towards the horizon, the veils moved with it like living clouds. Flocks of phantasmagoric birds migrated with the veils.

The purple-skinned elder's scales flashed green and opal as he approached Irravel along the coral jetty, a stick in one webbed hand, supported by two aides, a third shading his aged crown with a delicately water-coloured parasol. The aides were all descended from late-model Conjoiners; they had the translucent cranial crest through which bloodflow had once been channelled to cool their supercharged minds. Seeing them gave Irravel a dual-edged pang of nostalgia and guilt. She had not seen Conjoiners for nearly a thousand years, ever since they had fragmented into a dozen factions and vanished from human affairs. Neither had she entirely forgotten her betrayal of Remontoire.

*But that had been so long ago.*

A Communicant made up the party, gowned in brocade, hazed by a blur of entoptic projections. Communicants were small and elfin, with a phenomenal talent for natural languages, augmented by Juggler transforms. Irravel sensed that this one was old and revered, despite the fact that Communicant genes did not express for great longevity.

The elder halted before her.

The head of his walking stick was a tiny lemur skull inside an egg-sized space helmet. He spoke something clearly ceremonial, but Irravel understood none of the sounds he made. She groped for something to say, recalling the oldest language in her memory, and therefore the one most likely to be recognized in any far-flung human culture.

"Thank you for letting us stop here," she said.

The Communicant hobbled forward, already shaping words experimentally with his wide, protruding lips. For a moment his sounds were like an infant's first attempts at vocalization. But then they resolved into something Irravel understood.

"Am I -- um -- making the slightest sense to you?"

"Yes," Irravel said. "Yes, thank you."

"Canasian," the Communicant diagnosed. "Twenty-third, twenty-fourth centuries, Lacaille 9352 dialect, Fand subdialect?"

Irravel nodded.

"Your kind are very rare now," he said, studying her as if she was some kind of exotic butterfly. "But not unwelcome." His features cracked into an elfin smile.

"What about Markarian?" Irravel said. "I know his ship passed through this system less than 50 years ago -- I still have a fix on it as it moves out of the cluster."

"Other lighthuggers do come, yes. Not many -- one or two a century."

"And what happened when the last one came through?"

"The usual tribute was given."

"Tribute?"

"Something ceremonial." The Communicant's smile was wider than ever. "To the glory of Irravel. With many actors, beautiful words, love, death, laughter, tears."

She understood, slowly, dumbfoundedly.

"You're putting on a play?"

The elder must have understood something of that. Nodding proudly, he extended a hand across the darkening bay, oceanforms cutting the water like scythes. A distant raft carried lanterns and the glimmerings of richly painted backdrops. Boats converged from across the bay. A dirigible loomed over the archipelago's edge, pregnant with gondolas.

"We want you to play Irravel," the Communicant said, beckoning her forward. "This is our greatest honour."

When they reached the raft, the Communicant taught Irravel her lines and the actions she would be required to make. It was all simple enough -- even the fact that she had to deliver her parts in Subarun. By the end of evening she was fluent in their language. There was nothing she couldn't learn in an instant these days, by sheer force of will. But it was not enough. To catch Markarian, she would have to break out of the narrow labyrinth of human thought entirely. That was why she had come to Jugglers.

That night they performed the play, while boats congregated around them, topheavy with lolling islanders. The sun sank and the sky glared with a thousand blue gems studding blue velvet. Night in the heart of the Pleiades was the most beautiful thing Irravel had dared imagine. But in the direction of Sol, when she amplified her vision, there was a green thumbprint on the sky. Every century, the green wave was larger, as neighbouring solar systems were infected and transformed by the rogue terraforming machines. Given time, it would even reach the Pleiades.

Irravel got drunk on islander wine and learnt the tributes' history.

The plots varied immensely, but the protagonists always resembled Markarian and Irravel; mythic figures entwined by destiny, remembered across 2,000 years. Sometimes one or the other was the clear villain, but as often as not they were both heroic, misunderstanding each other's motives in true tragic fashion. Sometimes they ended with both parties dying. They rarely ended happily. But there was always some kind of redemption when the pursuit was done.

In the interlude, she felt she had to tell the Communicant the truth, so that he could tell the elder.

"Listen, there's something you need to know." Irravel didn't wait for his answer. "I'm really her; really the person I'm playing."

For a long time he didn't seem to understand, before shaking his head slowly and sadly.

"No; I thought you'd be different. You seemed different. But many say that."

She shrugged. There seemed little point arguing, and anything she said now could always be ascribed to wine. In the morning, the remark had been quietly forgotten. She was taken out to sea and drowned.

## GALACTIC NORTH -- AD 9730

"Markarian? Answer me."

She watched the *Hideyoshi's* magnified image, looming just out of weapons range. Like the *Hirondelle*, it had changed almost beyond recognition. The hull glistened within a skein of armouring force. The engines, no longer physically coupled to the rest of the ship, flew alongside like dolphins. They were anchored in fields which only became visible when some tiny stress afflicted them.

For centuries of worldtime she had made no attempt to communicate with him. But now her mind had changed. The green wave had continued for millennia, an iridescent cataract spreading across the eye of the Galaxy. It had assimilated the blue suns of the Subaran Commonwealth in mere centuries -- although by then Irravel and Markarian were a thousand light-years closer to the core, beginning to turn away from the plane of the Galaxy, and the death screams of those gentle islanders never reached them. Nothing stopped it, and once the green wave had swallowed them, systems fell silent. The Juggler transformation allowed Irravel to grasp the enormity of it; allowed her to stare unflinchingly into the horror of a million poisoned stars and apprehend each individually.

She knew more of what it was, now.

It was impossible for stars to shine green, any more than an ingot of metal could become green-hot if it was raised to a certain temperature. Instead, something was veiling them -- staining their light, like coloured glass. Whatever it was stole energy from the stellar spectra at the frequencies of chlorophyll. Stars were shining through curtains of vegetation, like lanterns in a forest. The greenfly machines were turning the Galaxy into a jungle.

It was time to talk. Time -- as in the old plays of the dead islanders -- to initiate the final act, before the two of them fell into the cold of intergalactic space. She searched her repertoire of communication systems, until she found something which was as ancient as ceremony demanded.

She aimed the message laser at him, cutting through his armour. The beam was too ineffectual to be mistaken as anything other than an attempt to talk. No answer came, so she repeated the message in a variety of formats and languages. Days of ship-time passed -- decades of worldtime.

*Talk, you bastard.*

Growing impatient, she examined her weapons options. Armaments from the Nestbuilders were among the most advanced: theoretically they could mole through the loam of spacetime and inflict precise harm anywhere in Markarian's ship. But to use them she had to convince herself that she knew the interior layout of the *Hideyoshi*. Her mass-sensor sweeps were too blurred to be much help. She might as easily harm the sleepers as take out his field nodes. Until now, it was too much risk to contemplate.

But all games needed an end.

Willing her qualms from mind, she enabled the Nestbuilder armaments, feeling them stress space-time in the *Hirondelle's* belly, ready to short-circuit it entirely. She selected attack loci in Markarian's ship; best guesses that would cripple him rather than blow him out of the sky.

Then something happened.

He replied, modulating his engine thrust in staccato stabs. The frequency was audio. Quickly Irravel translated the modulation.

"I don't understand," Markarian said, "why you took so long to answer me, and why you ignored me so long when I replied?"

"You never replied until now," she said. "I'd have known if you had."

"Would you?"

There was something in his tone which convinced her that he wasn't lying. Which left only one possibility: that he had tried speaking to her before, and that in some way her own ship had kept this knowledge from her.

"Mirsky must have done it," Irravel said. "She must have installed filters to block any communication from your ship."

"Mirsky?"

"She would have done it as a favour to me; maybe as an order from my former self." She didn't bother elaborating: Markarian was sure to know she had died and then been reborn as a clone of the original Irravel. "My former self had the neural conditioning which kept her on the trail of the sleepers. The clone never had it, which meant that my instinct to pursue the sleepers had to be reinforced."

"By lies?"

"Mirsky would have done it out of friendship," Irravel said. And for a moment she believed herself, while wondering how friendship could seem so like betrayal.

Markarian's image smiled. They faced each other across an absurdly long banquet table, with the Galaxy projected above it, flickering in the light of candelabra.

"Well?" he said, of the green stain spreading across the spiral. "What do you think?"

Irravel had long ago stopped counting time and distance, but she knew it had been at least 15,000 years and that many light-years since they had turned from the plane. Part of her knew, of course: although the wave swallowed suns, it had no use for pulsars, and their metronomic ticking and slow decay allowed positional triangulation in space and time with chilling precision. But she elected to bury that knowledge beneath her conscious thought processes: one of the simpler Juggler tricks.

"What do I think? I think it terrifies me."

"Our emotional responses haven't diverged as much as I'd feared."

They didn't have to use language. They could have swapped pure mental concepts between ships: concatenated strings of qualia, some of which could only be grasped in minds rewired by Pattern Jugglers. But Irravel considered it sufficient that they could look each other in the eye without flinching.

The Galaxy falling below had been frozen in time: light waves struggling to overtake Irravel and Markarian. The wave had seemed to slow, and then halt its advance. But then Markarian had turned, diving back towards the plane. The Galaxy quickened to life, rushing to finish 30,000 years of history before the two ships returned. The wave surged on. Above the banquet table, one arm of the star-clotted spiral was shot through with green, like a mote of ink spreading into blotting paper. The edge of the green wave was feathered, fractal, extending verdant tendrils.

"Do you have any observations?" Irravel asked.

"A few." Markarian sipped from his chalice. "I've studied the patterns of starlight among the suns already swallowed by the wave. They're not uniformly green -- it's correlated with rational angle. The green matter must be concentrated near the ecliptic, extending above and below it, but not encircling the stars completely."

Irravel thought back to what the Nestbuilder had shown her.

"Meaning what?" she asked, testing Markarian.

"Swarms of absorbing bodies, on orbits resembling comets, or asteroids. I think the greenfly machines must have dismantled everything smaller than a Jovian, then enveloped the rubble in transparent membranes which they filled with air, water and greenery -- self-sustaining biospheres. Then they were cast adrift. Trillions of tiny worlds, around each star. No rocky planets any more."

Irravel retrieved a name from the deep past. "Like Dyson spheres?"

"Dyson clouds, perhaps."

"Do you think anyone survived? Are there niches in the wave where humans can live? That was the point of greenfly, after all, to create living space."

"Maybe," Markarian said, with no great conviction. "Perhaps some survivors found ways inside, as their own worlds were smashed and reassembled into the cloud..."

"But you don't think it's very likely?"

"I've been listening, Irravel -- scanning the assimilated regions for any hint of an extant technological culture. If anyone did survive, they're either keeping deliberately quiet or they don't even know how to make a radio signal by accident."

"It was my fault, Markarian."

His tone was rueful. "Yes... I couldn't help but arrive at that conclusion."

"I never intended this."

"I think that goes without saying, wouldn't you? No one could have guessed the consequences of that one action."

"Would you?"

He shook his head. "In all likelihood, I'd have done exactly what you did."

"I did it out of love, Markarian. For the cargo."

"I know."

She believed him.

"What happened back there, Markarian? Why did you give up the codes when I didn't?"

"Because of what they did to you, Irravel."

He told her. How neither Markarian nor Irravel had shown any signs of revealing the codes under Mirsky's interrogation, until something new was tried.

"They were good at surgery," Markarian said. "Seven's crew swapped limbs and body parts as badges of status. They knew how to sever and splice nerves." The image didn't allow her to interrupt. "They cut your head off. Kept it alive in a state of borderline consciousness, and then showed it to me. That's when I gave them the codes."

For a long while Irravel said nothing. Then it occurred to her to check her old body, still frozen in the same casket where Mirsky had once revealed it to her. She ordered some children to prepare the body for a detailed examination, then looked through their eyes. The microscopic evidence of reconnective surgery around the neck was too slight to have ever shown up unless one was looking for it. But now there was no mistaking it.

*I did it to save your neck*, Markarian had said, when she had held him pinned to the ice of Seven's ship.

"You seem to be telling the truth," she said, when she had released the children. "The nature of your betrayal was..." And then she paused, searching for the words, while Markarian watched her across the table. "Different than I assumed. Possibly less of a crime. But still a betrayal, Markarian."

"One I've lived with for 300 years of subjective time."

"You could have returned the sleepers alive at any time. I wouldn't have attacked you." But she didn't even sound convincing to herself.

"What now?" Markarian said. "Do we keep this distance, arguing until one of us has the nerve to strike against the other? I've Nestbuilder weapons as well, Irravel. I think I could rip you apart before you could launch a reprisal."

"You've had the opportunity to do so before. Perhaps you never had the nerve, though. What's changed now?"

Markarian's gaze flicked to the map. "Everything. I think we should see what happens before making any rash decisions, don't you?"

Irravel agreed.

She willed herself into stasis; medicines arresting all biological activity in every cell in her body. The 'chines would only revive her when something -- anything -- happened, on a Galactic

timescale. Markarian would retreat into whatever mode of suspension he favoured, until woken by the same stimulus.

He was still sitting there when time resumed, as if only a moment had interrupted their conversation.

The wave had spread further now. It had eaten into the Galaxy for 10,000 light-years around Sol - a third of the way to the core. There was no sign that it had encountered resistance -- at least nothing that had done more than hinder it. There had never been many intelligent, starfaring cultures to begin with, the Nestbuilder had told her. Perhaps the few that existed were even now making plans to retard the wave. Or perhaps it had swallowed them, as it swallowed humanity.

"Why did we wake?" Irravel said. "Nothing changed, except that it's become larger."

"Maybe not," Markarian said. "I had to be sure, but now I don't think there's any doubt. I've just detected a radio message from within the plane of the Galaxy; from within the wave."

"Yes?"

"Looks like someone survived after all."

The radio message was faint, but nothing else was transmitting on that or any adjacent frequency, except for the senseless mush of cosmic background sources. It was also in a language they recognized.

"It's Canasian," Irravel said.

"Fand subdialect," Irravel added, marvellingly.

It was also beamed in their direction, from somewhere deep in the swathe of green, almost coincident with the position of a pulsar. The message was a simple one, frequency modulated around one and a half megahertz, repeated for a few minutes every day of Galactic time. Whoever was sending it clearly lacked the resources to transmit continuously. It was also coherent: amplified and beamed.

Someone wanted to speak to them.

The man's disembodied head appeared above the banquet table, chiselled from pixels. He was immeasurably old; a skull draped in parchment; something that should have been embalmed rather than talking.

Irravel recognized the face.

"It's him," she said, in Markarian's direction. "Remontoire. Somehow he made it across all this time."

Markarian nodded slowly. "He must have remembered us, and known where to look. Even across thousands of light-years, we can still be seen. There can't be many objects still moving relativistically."

Remontoire told his story. His people had fled to the pulsar system 20,000 years ago -- more so now, since his message had taken thousands of years to climb out of the Galaxy. They had seen the wave coming, as had thousands of other human factions, and like many they had observed that the wave shunned pulsars; burnt-out stellar corpses rarely accompanied by planets. Some intelligence governing the wave must have recognized that pulsars were valueless; that even if a Dyson cloud could be created around them, there would be no sunlight to focus.

For thousands of years they had waited around the pulsar, growing ever more silent and cautious, seeing other cultures make errors which drew the wave upon them, for by now it interpreted any other intelligence as a threat to its progress, assimilating the weapons used against it.

Then -- over many more thousands of years -- Remontoire's people saw the wave learn, adapting like a vast neural net, becoming curious about those few pulsars which harboured planets. Soon their place of refuge would become nothing of the sort.

"Help us," Remontoire said. "Please."

It took 3,000 years to reach them.

For most of that time, Remontoire's people acted on faith, not knowing that help was on its way. During the first thousand years they abandoned their system, compressing their population down to a sustaining core of only a few hundred thousand. Together with the cultural data they'd preserved during the long centuries of their struggle against the wave, they packed their survivors into a single hollowed-out rock and flung themselves out of the ecliptic using a mass-driver which fuelled itself from the rock's own bulk. They called it *Hope*. A million decoys had to be launched, just to ensure that *Hope* got through the surrounding hordes of assimilating machines.

Inside, most of the Conjoiners slept out the 2,000 years of solitude before Irravel and Markarian reached them.

"*Hope* would make an excellent shield," Markarian mused, as they approached it, "if one of us considered a pre-emptive strike against the other."

"Don't think I wouldn't."

They moved their ships to either side of the dark shard of rock, extended field grapples, then hauled in.

"Then why don't you?" Markarian said.

For a moment Irravel didn't have a good answer. When she found one, she wondered why it hadn't been more obvious before. "Because they need us more than I need revenge."

"A higher cause?"

"Redemption," she said.

#### *HOPE, GALACTIC PLANE -- AD CIRCA 40,000*

They didn't have long. Their approach, diving down from Galactic North, had drawn the attention of the wave's machines, directing them towards the one rock which mattered. A wall of annihilation was moving toward them at half the speed of light. When it reached *Hope*, it would turn it into the darkest of nebulae.

Conjoiners boarded the *Hirondelle* and invited Irravel into the *Hope*: The hollowed-out chambers of the rock were Edenic to her children, after all the decades of subjective time they'd spent aboard since last planetfall. But it was a doomed paradise, the biomes grey with neglect, as if the Conjoiners had given up long ago.

Remontoire welcomed Irravel next to a rockpool filmed in grey dust. Half the sun-panels set into the distant honeycombed ceiling were black.

"You came," he said. He wore a simple smock and trousers. His anatomy was early-model Conjoiner: almost fully human.

"You're not him, are you? You look like him -- sound like him -- but the image you sent us was of someone much older."

"I'm sorry. His name was chosen for its familiarity; my likeness shaped to his. We searched our collective memories and found the experiences of the one you knew as Remontoire... but that was a long time ago, and he was never known by that name to us."

"What was his name?"

"Even your Juggler cortex could not accommodate it, Irravel."

She had to ask. "Did he make it back to a commune?"

"Yes, of course," the man said, as if her question was foolish. "How else could we have absorbed his experiences back into the Transenlightenment?"

"And did he forgive me?"

"I forgive you now," he said. "It amounts to the same thing."

She willed herself to think of him as Remontoire.

The Conjoiners hadn't allowed themselves to progress in all the thousands of years they waited around the pulsar, fearing that any social change -- no matter how slight -- would eventually bring

the wave upon them. They had studied it, contemplated weapons they might use against it -- but other than that, all they had done was wait.

They were very good at waiting.

"How many refugees did you bring?"

"One hundred thousand." Before Irravel could answer, Remontoire shook his head. "I know; too many. Perhaps half that number can be carried away on your ships. But half is better than nothing."

She thought back to her own sleepers. "I know. Still, we might be able to take more... I don't know about Markarian's ship, but --"

He cut her off, gently. "I think you'd better come with me," said Remontoire, and then led her aboard the *Hideyoshi*.

"How much of it did you explore?"

"Enough to know there's no one alive anywhere in this ship," Remontoire said. "If there are 200 cryogenically frozen sleepers, we didn't find them."

"No sleepers?"

"Just this one."

What they'd arrived at was a plinth, supporting a reefersleep casket, encrusted with gold statuary; spacesuited figures with hands folded across their chests like resting saints. The glass lid of the casket was veined with fractures; the withered figure inside older than time. Markarian's skeletal frame was swaddled in layers of machines, all of archaic provenance. His skull had split open, a fused mass spilling out like lava.

"Is he dead?" Irravel asked.

"Depends what you mean by dead." The Conjoiner's hand sketched across the neural mass. "His organic mind must have been completely swamped by machines centuries ago. His linkage to the *Hideyoshi* would have been total. There would have been very little point discriminating between the two."

"Why didn't he tell me what had become of him?"

"No guarantee he knew. Once he was in this state, with his personality running entirely on machine substrates, he could have edited his own memories and perceptual inputs – deceiving himself that he was still corporeal."

Irravel looked away from the casket, forcing troubling questions from her mind. "Is his personality still running the ship?"

"We detected only caretaker programs; capable of imitating him when the need arose, but lacking sentience."

"Is that all there was?"

"No." Remontoire reached through one of the casket's larger fractures, prising something from Markarian's fingers. It was a sliver of computer memory. "We examined this already, though not in great detail. It's partitioned into 190 areas, each large enough to hold complete neural and genetic maps for one human being, encoded into superposed electron states on Rydberg atoms."

She took the sliver from him. It didn't feel like much. "He burned the sleepers onto this?"

"Three hundred years is much longer than any of them expected to sleep. By scanning them he lost nothing."

"Can you retrieve them?"

"It would not be trivial," the Conjoiner said. "But given time, we could do it. Assuming any of them would welcome being born again, so far from home."

She thought of the infected Galaxy hanging below them, humming with the chill sentience of machines. "Maybe the kindest thing would be to simulate the past," she said. "Re-create Yellowstone, and revive them on it, as if nothing had ever gone wrong."

"Is that what you're advocating?"

"No," she said, after toying with the idea in all seriousness. "We need all the genetic diversity we can get, if we're going to establish a new branch of humanity outside the Galaxy."

She thought about it. Soon they would witness *Hope's* destruction, as the wave of machines tore through it with the mindlessness of stampeding animals. Some of them might try and follow the *Hirondelle*, but so far the machines moved too slowly to catch the ship, even if they forced it back towards Galactic North.

Where was there to go?

There were globular clusters high above the Galaxy -- tightly packed shoals of old stars where the wave hadn't reached, but where fragments of humanity might have already sought refuge. If the clusters proved unwelcoming, there were high-latitude stars, flung from the Galaxy a billion years ago, and some might have dragged their planetary systems with them. If those failed -- and it would be tens of thousands of years before the possibilities were exhausted -- the *Hirondelle* could always loop around towards Galactic South and search there, striking out for the Clouds of Magellan. Ultimately, of course -- if any part or fragment of Irravel's children still clung to humanity, and remembered where they'd come from, and what had become of it, they would want to return to the Galaxy, even if that meant confronting the wave.

*But they would return.*

"That's the plan then?" Remontoire said.

Irravel shrugged, turning away from the plinth where Markarian lay. "Unless you've got a better one."