

COLD TESTING

by Eric Brown

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I phased *A Long Way From Home* from the void and brought us down on Nova Charon for a period of cold testing.

"Why the CT now?" Karrie my engineer asked, staring through the viewscreen at the outermost planet in the Antares system. Stark, ice-grey craters and serried peaks stretched across the horizon beyond the concrete apron of the spaceport.

"I'm considering taking the ship to the Epsilon Centauri system," I told her. "All the planets there are way beyond the Goldilocks Limit."

Karrie stared at me. "They're inhabited by Shlocken," she said. "You're not thinking of trading with them?"

"Who said anything about trading, Karrie? We're a salvage ship, remember?"

"And we do a bit of trading on the side. Why else would you take us into Shlocken territory? Surely not to salvage their ships? The shrimps have got their own—"

"I know, I know. And they don't like outsiders interfering."

"So...?" she asked, jerking her head forward and staring at me with wide eyes.

I told her what I'd kept to myself until now. "I've been talking with Ella about a rumor I heard way back."

“*Ella?*” She pronounced the name as if it tasted of Lyran poison-weed. There was no love lost between my long-time engineer and the latest recruit to the team. “What rumor?”

“I heard a story. I was in some bar in the Ophiuchi system and this spacer was telling a tale about an old colleague of his, who’d heard it from an old timer he’d worked with on the lanes.”

Karrie stared at me. “Heard *what*, for chrissake?”

“That a hundred years ago a Terran ship entered Shlocken territory before we’d had contact with the shrimps, and it went down with drive failure on a sequestered moon. Everyone aboard was killed.”

Karrie leaned back in her sling and regarded me. “And what does Ella know about this?”

I pointed at her. “Ella knows that it’s more than a story. She has records in her files of a report sent by the captain before the ship was lost.”

Karrie sneered. “Lost starships just happen to be another hobby of super-girl, Ed?”

I shrugged. “She has access to information we can only dream of.”

“So...” Karrie laughed. “We breeze in there, under the nose of the bellicose shrimps, and salvage the wreck. Nice dream. But what if the shrimps find us?”

“The Shlocken aren’t that bellicose, Karrie. Only if you cross them. Terran ships aren’t excluded from their system. And anyway, the moon is so far out and insignificant that they don’t patrol it.”

“And,” said a new voice, “the Shlocken know nothing about the crashed exploration vessel.”

Ella pulled herself onto the flight-deck, and it was all I could do to not to stare at her perfection. There is beauty, and then there is Ella—which is something of a paradox because my co-pilot isn’t even human.

“Anyway,” I said, “in a month we’re going in. If we find the ship, manage to get it back, it’ll be worth

millions.”

“And if the Shlocken find us we’ll be dead.”

Ella stared at Karrie with her vast Venezuelan eyes, and said coolly, “That is a mistaken assumption, Karrie. They will merely expel us from the system. You humans have a saying: nothing ventured, nothing gained.”

Karrie bit back her frustration. “We haven’t even voted—” she began. Then: “Okay, okay. But I’ll be going under protest, got that?”

I nodded. “Anyway, to answer your question: that’s why we’re on Nova Charon. We’re cold testing the ship.”

“And while we’re here,” Ella put in, “I’ll be cold testing myself, too.”

She slid into the co-pilot’s sling and regarded the bleak scene outside.

I could see that Karrie was considering whether to ask Ella just what the hell she meant by that, but she restrained herself. Instead she jumped from her sling and climbed down the ladder from the flight deck, muttering all the way.

* * * *

“Cold testing *yourself*, Ella?” I asked when we were alone.

Dammit, but when I was in her company my stomach fluttered like some lovesick schoolboy’s.

She turned lustrous eyes on me. “You find that surprising, Ed? I am, after all, an AI.”

“But...” I gestured beyond the screen. “You mean you can withstand ... *that*?”

“The air is breathable, Ed.”

“But it’s fifty degrees below out there!”

“I need to determine exactly what I can tolerate. It might be necessary, once we land on the Shlocken moon.”

I nodded, even though the thought of Ella out there in the elements didn’t sit well with my love-struck, macho desire to protect and cherish my co-pilot.

Through the viewscreen I watched as a small maintenance vehicle, for all the world like a trilobite, zipped from the terminal building and approached us. The com chimed and I accepted the call.

“We’re ready to begin just as soon as the main drive and auxiliaries have cooled,” an engineer said. “That okay with you?”

“A-OK,” I said. “She’s all yours.”

“While we’re working on the ship, perhaps you’d care to sample Nova Charon’s hospitality? We have an extensive subterranean hotel complex at the disposal of visiting crews.”

“We’re on our way,” I said, and cut the connection.

I smiled at Ella, but she didn’t respond. She was staring through the viewscreen at the ice fields with eyes that only appeared human.

* * * *

“Approximately ten thousand years ago,” said the tour guide, a small woman in a trim red uniform, “Nova Charon’s orbit of Antares was three AUs closer to its primary. The mean temperature on the surface of the planet was twenty degrees higher than it is now, and the planet sustained a native sentient lifeform called the Kreath.”

We were strolling along inside a glass tube that extended from the hotel complex into the hive of warrens and alien living-hollows that riddled the near surface of Nova Charon. Through the curved glass we stared at the Kreath tunnels, adorned with frescos showing the anthropoid aliens going about their everyday business. We'd passed through several living-hollows, vast chambers pocked with holes that were the entrances to Kreath dwellings.

We were a group of fifteen, the crews of various ships currently in port and a couple of rich tourists. Karrie had deigned to come along, muttering that she had nothing better to do. Ella was at my side—which gave me a cheery glow—murmuring her own commentary to fill in the gaps left by the tour guide's.

“The Kreath were what you term hunter-gatherers,” Ella murmured to me. “They lived on the surface of the planet, but as millennia passed and Nova Charon moved further from Antares, to protect themselves from the increasing cold they migrated underground.”

Karrie huffed and moved away from us.

The guide said, “Archaeological work has been ongoing beneath the surface for almost fifty years, as long as the Cold Testing station has been situated on Nova Charon. In that time, experts have learned much about the life of the aliens. They were a technologically primitive people by our standards, though with a rich culture of arts and a complex spiritual awareness.”

We moved along the tube, passing through more living-hollows and Kreath access tunnels toward the surface. The brochure I'd scanned in my room had boasted a moving climax to the tour on the surface of the planet.

One of the tourists asked, “What became of the Kreath? Did any of them survive?”

The guide turned to us and smiled. “Sadly, they were unable to overcome the irrevocable outward drift of their planet. They retreated ever deeper beneath the surface, but with the constant winter gripping their world, crops failed and food became scarce.”

Ella said, accessing files within her inexhaustible cache, “They were a noble people who disdained warfare, and went to their deaths—to ‘life beyond this realm,’ as they had it—with dignity. Many committed mass suicide before their food supplies ran out.”

We broke through the surface of the planet, the diaphanous tube emerging on a plain surrounded by distant peaks. Around us could be seen the faint footprints of Kreath buildings. Above the horizon, a billion miles away, Antares was a tiny pinprick of light in the darkness.

The glass tube terminated in a large dome, the whole reminding me of the cul-de-sac shape of a thermometer. The guide escorted us to a viewing platform overlooking the plain.

She gestured. We stared.

Ten meters from the curving surface of the viewscreen, I made out a humanoid statue: an upright grey figure whose definition had been lost beneath the accretion of ice and surface regolith over the millennia. It appeared to be reaching out for something.

One of the crew members said, "An art work?"

Beside me, Ella whispered, "It is not a statue, Ed."

I looked at her. "Then what...?"

The guide went on, "The figures before us are the last two members of the Kreath race."

Only then did I see the figure beyond the first one. It was perhaps a hundred meters distant, a smaller, humanoid shape facing the first and reaching out with its arms.

The sight produced in me a sudden welling of sadness, and I felt my throat constrict.

"Experts have interpreted this moving tableau as the ritual suicide of a mother and daughter, the last of the Kreath. Xenologists think that it was a ritual of sacrifice to their gods, a means of appeasing their deity and so easing the way into the next life."

We took this in. Then a voice amongst us broke the pensive reverie. It was Karrie.

“Of course, that’s merely an anthropocentric reading of the situation, surely?”

The guide blinked. “Ah ... experts have suggested that the Kreath, as a deeply religious people without a proscription against suicide, regularly took this way out.”

“But I read the literature back at the hotel,” Karrie went on. “Isn’t it true that the Kreath’s written word is indecipherable? So therefore much of the Kreath’s beliefs and customs are still opaque?”

“That is true to a certain extent,” the guide rallied. “But the experts have pieced together enough evidence to put forward a working hypothesis.”

So,” Karrie said, gesturing to the mother and daughter tableau, “all this is theory?”

“Based on expert understanding,” the guide parried.

Ella moved toward the dome, touched fingers to the sloping glass, and said, “The Kreath were a warm-blooded, humanoid people, and all the evidence is that they had emotions analogous to the human. I surmise that the xenologists’ interpretation of the tableau has much substance in fact. Though as to whether these two were indeed the last individuals—”

Karrie interrupted, “And what would you know about emotions, Ella, since yours are simulated programs anyway?”

Ella turned to her and blinked, and I felt suddenly sorry for her—which was ridiculous, I reminded myself.

She said, “I have an intellectual awareness of the basis of all human emotions, Karrie.”

My engineer just stared at Ella, then snorted and strode off.

“Ah...” said the guide, attempting to get things back on track. “I suggest a brief tour of the artifact museum before a break for lunch.”

* * * *

After lunch I took a nap in my room and awoke in the late afternoon, following the diurnal pattern we'd established aboard *A Long Way From Home*.

I decided to find Ella and see if she would like a drink before our evening meal.

As I approached Ella's room, the door opened and Karrie slipped out. "Oh!" She stopped short, almost colliding with me.

I said, "You were making up with Ella, Karrie?"

She looked at me contemptuously, thought about saying something, then shook her head and continued along the corridor.

I waited until she turned the corner, then rapped lightly on the door. It irised open and I stepped inside.

Ella was sitting stiffly by the viewscreen, spine vertical, and staring out across the surface of Nova Charon.

She didn't look around as I entered and sat on a foam-form a meter from her. I cleared my throat and said, "What did Karrie want, Ella?"

She turned those eyes on me, eyes which suggested so much humanity, but whose very warmth only served to mock the artificiality of the sentience behind them.

"She came to argue with me, Ed."

"Argue?"

"The essence of her opinion was that I, as an AI, had no grounds on which to theorize on the subject of emotion."

I shifted uncomfortably. I wanted to reach out and take her small hand. “What did she say, exactly?”

She blinked at me, “Exactly, Ed?”

I nodded.

“Okay,” Ella said. She froze, eyes glazed, and opened her mouth slightly. What happened next sent a shiver down my spine. I’d never seen, or heard, anything like it.

Her lips did not move, but sound issued from between them. It was Karrie’s voice, saying, “*Ah, there you are.*”

Then came Ella’s husky voice, replying, “*Karrie, hello. How can I help?*”

“*Help?*” Karrie said, “*You could help by walking out into the ice and freezing your transistors.*”

“*I intend to walk out onto the ice. But I do not have transistors. And anyway, how would that in any way help you?*”

I stared at Ella, transfixed, as she replayed the conversation. Her face was eerily still, frozen.

“*So fucking literal, aren’t you?*” Karrie had said. “*What do you know about emotions, anyway?*”

“*I am programmed with a comprehensive cache of emotional responses, and an intellectual understanding of the complexity of such emotions.*”

“*But do you feel?*” Karrie asked.

“*Feel,*” replied Ella, “*is a very subjective term. How might you define it?*”

“What do you feel, for instance, about Ed?”

Ridiculously, I colored at the sound of my name.

“Feel?” Ella’s voice issued from her perfect ventriloquist’s lips. *“Ed is the captain of the ship, my commander. I feel a debt of honor to Ed for hiring me, an obligation to discharge my duty to the best of my ability.”*

“No friendship, affection?”

“I feel that Ed is my friend, yes. Affection....”

“Yes?” Karrie said.

Ella responded, *“I am a Mark III, series XBα AI with an integral empirical self-programming sub-routine. I am, technically, a little over two years old. I am learning all the time.”*

Then silence.

Ella turned her face to me, suddenly reanimated.

I nodded. “And that’s it?”

“Karrie left immediately,” Ella said, her lips moving this time.

All the more I wanted to take her hand. I said, “You’re two, Ella, you’re learning all the time. Don’t let anything Karrie says make you feel...” I was about to say, “inferior,” but instead said, “feel that you aren’t valued, okay?”

I wanted to tell her that I felt affection for her, a warm feeling whenever I thought about her. And I told myself that these feelings had nothing to do with the fact that she looked like a beautiful twenty-year-old Venezuelan Indian, the somatype with which her manufacturer had issued her.

She nodded. "Very well, Ed."

"Anyway," I said, standing and clapping my hands breezily, "I was going along to the bar. I was wondering if you'd care to accompany me?"

She looked at me. "Yes," she said.

* * * *

The bar overlooked the spaceport. *A Long Way From Home* stood on its akimbo stanchions, nose in the air. A host of nano-mechs swarmed over it, while engineers in white protection suits jacked diagnostic coms into the ports that dotted its silver carapace.

I ordered a whisky. Ella sipped an orange juice.

Without my prompting, Ella said, "It's a paradox, Ed. I know so much about the universe out there, but little about the people with whom I spend my time."

"What would you like to know?"

She looked at me. "How long have you had the ship, Ed?"

"Ten years. Before her I had a rustbucket I picked up cheap from a yard out Acrab way."

"And Karrie has been with you how long?"

"Almost nine years now."

"You must be ... close?"

I shook my head. “We’re friends. She’s a good engineer, one of the best.”

Ella sipped her juice. “It is common for humans to have a mate, to marry. Have you ever married, Ed?”

“I ... not married, no. While I was studying for my captain’s papers, there was someone. We lived together a couple of years, before she left.” I shrugged. “Since then...”

“Yes?”

I didn’t want to tell Ella about the women I’d “known” in various ports across the Expansion. “There’s been no one,” I finished lamely.

She nodded. “Are you lonely?”

“Ah...” I thought about it. “No. I mean, sometimes I get a bit lonesome. Don’t we all?” I shrugged. “But then I’ve got you and Karrie to keep me company, haven’t I?”

She nodded, and I ventured, “And you? Do you ever get lonely?”

She looked at me. “Loneliness is a concept I have yet to experience, Ed. When I am alone I access my files, assimilate information, and learn.”

Why did I want to gather her into my arms, tell her that everything would be all right, cherish her and protect her and lavish upon her all the love I knew I had within me? I cursed myself for an old fool and went to the bar for another drink.

When I returned, Ella said, “I’ve arranged with the authorities to leave the hotel complex. I will cross the plain where the figures stand, as I would like to inspect them more closely. At the same time I’ll be monitoring my performance.”

“Take care, Ella. I wouldn’t want...”

She inclined her head and said, “I will return before any malfunction might occur, Ed. I will ensure that I don’t put you to the expense of having to repair me.”

I opened my mouth, but no words came.

A little later, she rose and said, “I have an appointment with a technician at exit seven in ten minutes.”

“I’ll come with you and watch, if you don’t mind.”

* * * *

I could tell from the tech’s manner that he’d never met an AI as beautiful as Ella, or anyone—human or AI—who’d wanted to cold test themselves outside the dome. He stared at her as she removed her flight jacket and passed it to me. She wore only her blue one-piece now, inadequate protection against the minus fifty degrees outside.

“You ready, miss?” the tech said as he keyed the code into the hatch.

Ella nodded, smiled at me and stepped through into the airlock. The tech closed the hatch behind her. “Take care,” I said before the hatch sealed completely.

I watched her through a viewscreen in the hatch. She turned and raised a hand. Behind her, the outer hatch cracked and swung open ponderously. A cold wind raced in, lifting a strand of Ella’s midnight hair.

She turned and walked outside.

“She knows the entry code,” the tech said. He indicated a red panel beside the hatch. “Press that if there’s an emergency and I’ll come running, okay?”

He moved off down the corridor, and I took a few paces in the opposite direction so that I could watch Ella through the curving glass of the observation dome.

She looked tiny in that immense ice-grey landscape. The width of the plain, and the colossal night sky above, worked to reduce her to the size of a doll as she strode across the tundra towards the first of the alien figures.

I pressed my hands against the warm dome and stared at her, willing her to look up and back and see me there, watching her. I wanted her to know that I cared.

She didn't look back, but stared straight ahead as she marched up to the figure of the mother and halted.

The sight of Ella out there, so warm and vital in a landscape so inimical, pulled at something within me and I wanted to cry out to her to come back. I glanced at my watch. Just three minutes had elapsed since her exit.

I stared at her for the first sign of the effect of the cold, shivering limbs or blue flesh, but she didn't even hug herself. By now, a human out there would have been on his knees in frozen agony.

She stood and stared at the mother figure, for all the world as if she were staring at an exhibit in a museum.

"Quite some gal, our Ella," Karrie said.

I turned. Karrie was watching Ella through the glass, her expression neutral.

"What are you doing here?"

She didn't look at me. "Just making sure your investment doesn't come to any harm, Ed."

I let a second pass before I said, "I don't see Ella that way, Karrie."

Under her breath she said, "And haven't I noticed...."

"And what," I said evenly, "do you mean by that?"

She laughed. “You think I haven’t noticed the way you look at her, Ed? Sometimes I don’t know whether to help you close your mouth or mop up your saliva.”

“If you think I hired her because—”

“I think you hired her because we needed a co-pilot,” Karrie said. “But since then you’ve let biology override your brain. Ed, for chrissake, it’s an AI, a robot. Okay, it might look like sex-on-legs, but underneath that it’s just a more powerful version of the ship’s smartware core.”

I said, “I don’t think so, Karrie.”

She just looked at me, pityingly.

“She might have started out as nothing more than a series of integrated circuits,” I said, “but she’s gained something over the past month.”

“Something?” she sneered.

“Humanity,” I said.

“Jesus Christ, listen to him.”

“And,” I went on, “that’s why I’m concerned about what’s happening to her out there.”

She placed a hand on my shoulder with patronizing mock-solicitude. “Oh, Ed, don’t be concerned. Look, if it freezes to death we just unfreeze it, reboot it, and it’ll be as good as new. Or if its bod becomes a corpsicle, we just go back to the manufacturer and order another one—one with bigger tits, if you want.”

“Fuck off, Karrie!”

“Grow up, Ed. I don’t like seeing you act like a fourteen-year-old.”

I closed my eyes briefly. “Just go away, Karrie. Leave me alone.”

She held up palms as if halting a taxi-ing shuttle. “Hey, I’m going. I’m gone. Give the girl a big, warm hug when she gets back, okay?”

I turned back to the glass wall and stared out, my pulse racing.

As I watched, a strange thing happened out there on the ice. From her stiff, frozen posture, Ella moved, and I realized what she was doing. Her pose imitated that of the alien mother as it reached out in the universal gesture of supplication toward its stranded infant.

She held the pose for perhaps a minute, then moved suddenly and paced across the tundra toward the smaller alien form. She turned, facing the dome now, and held out both arms in a silent, physical echo of the petrified alien child.

I lifted a hand and held it against the screen, wanting her to see that I was still here.

I wondered what she was doing—if, as I guessed, she was attempting in her own way to empathize with the plight of the alien beings some ten millennia dead....

Then she broke the posture, turned on her heel and began walking away from the dome. I checked my watch. She’d been out there for more than twenty minutes.

I wanted to call her back, tell her that enough was enough, that it was time to call a halt.

She walked and walked until she became a tiny sliver of sky blue against the blackness of space, and then she disappeared over the horizon and my heart began a labored thudding.

I waited, expecting at any second to see her emerge over the horizon and walk back towards the dome.

I looked at my watch again. Thirty minutes.

In five minutes, I told myself, if she isn't back by then I'll hit the alarm panel.

The minutes trickled past, with no sign of Ella on the horizon.

I could stand no more. I hit the alarm.

* * * *

A minute later the tech came running, as good as his word, and Karrie was with him.

"Thought you couldn't give a shit?" I said.

She looked at me. "I don't like to see you like this, Ed. What happened?"

I explained the situation and the tech nodded. "There's a buggy in the garage along the corridor," he said. "There's a couple of suits in the buggy if we need to get out."

We were already hurrying along the corridor. We came to a hatch and the tech keyed the code. The door slid open and we stepped into a cavernous chamber.

Karrie halted on the threshold. "I'll stay here, Ed. She'll be okay, okay?"

I looked at her. "Do you care?"

"Ed," she said, "I care about you."

I turned quickly and climbed into the buggy beside the tech. Seconds later he revved the engine and nosed the vehicle from the garage. As it bucked over the frozen, uneven surface, I found an atmosphere suit and struggled into it.

“Where’d you say you last saw her?”

I indicated the horizon and we sloughed around, spraying a spindrift of ice crystals, and accelerated towards the point where Ella had vanished.

We climbed a slight rise and came to the crest. The buggy halted. I leaned forward, heart in my mouth, and scanned the desolate plain that stretched away for miles below us.

“There!” I cried.

She was a dot of color in an otherwise empty plain.

The tech gunned the engine and the buggy surged down the incline, kicking spray. My heart was thudding and I stared at the tiny figure, willing it to move. She was very still and, worse, I saw as we approached within a couple of hundred meters, she was on her knees.

So Ella was a state of the art AI, and what Karrie had said was right, wasn’t it? That whatever damage Ella suffered out here would be fine because she was, when all was said and done, merely a machine which could be repaired, rebooted...?

But I knew that was garbage. Ella was a thinking, feeling intelligence, a being who learned from experience ... a woman who strove to comprehend the emotions of others—even aliens—so that she might come to some understanding of what it was to be caring and compassionate, so that she might, ultimately, become human.

Or was I kidding myself?

The buggy approached her, and she was as still as the frozen aliens back on the plain, and a terrible thought occurred to me. What if the cold had really killed her, not just her body, but her mind; what if it had wiped the identity of the being I knew as Ella?

The tech braked the buggy and I cracked the hatch and leapt out. Even the atmosphere suit did nothing to ameliorate the first shock of the cold—it hit me like a wall of steel. I gasped a breath through the mask

and stumbled over to Ella.

She was blue, her head flung back and her lips open, her eyes wide and staring, shattered with the effect of the extreme cold.

I held her, and she moved. She stood and came into my arms, and weeping I carried her to the buggy and laid her out as the tech revved the engine, turned and raced back towards the hotel complex.

I held her, willing life back into her. With her frozen eyes she stared at me blindly.

“Ed...” She said, her lips moving slowly. She whispered, “Compassion ... love ... empathy ... words, Ed. They mean ... they have meaning.... I was trying to...”

“Yes?” I said, cradling her.

“There’s something ... something I didn’t tell you, Ed.”

I just stared at her, my heart racing. “What?” I said.

“What I told Karrie, back in my room....”

“What?” I said again.

“We spoke for longer than I originally replayed to you.”

I said, “What did you say, Ella?”

She opened her mouth, and her lips didn’t move as she relayed the dialogue between herself and my engineer.

Ella had said, “*I am learning all the time.*” A pause, then, “*You asked if I could feel affection. Well, I*

am learning to feel affection, for Ed. I can respond.... If he evinces affection toward me, then maybe I can reciprocate."

I stared at the unmoving lips, the cheeks to which color was returning.

Karrie had made a strangled gasp, and then all was silent.

"Ella..." I said.

"I'm sorry, Ed," she said now.

"Sorry?" I asked through tears of joy.

"For ... for doing what I did. For stranding myself out here. You see..." she turned her head, her eyes staring at me, and I wondered if some sensors within her skull could apprehend me then, "you see, I wanted you to come for me."

"Ella," I said, pulling her to my chest and rocking with the motion of the buggy.

* * * *

Two days later we lifted off from the cold testing port and orbited Nova Charon.

I lay in the pilot's sling, and Ella climbed onto the flight deck and sat beside me. I glanced at her, something kicking in my heart.

She'd spent a day in the hospital on Nova Charon, then a further day in her cabin, plugged into a rejuvenation pod. We'd had no time alone to talk about what had happened out on the ice, or in the buggy on the way back.

Now I reached across to her, but she withdrew her hand.

“Ella?”

She said, “While I was in the rejuvenation pod, Ed, I ran a scrubbing program.”

I stared at her. “What...?”

“An erasure procedure,” she explained. “The version of Ella before this one thought long and hard about what happened. ‘I’ wanted it banished. ‘I’ wanted all memory of what had happened out there on the ice erased from my cache. ‘I’ left a reminder to myself to tell you, Ed. ‘I’ said, ‘sorry.’”

“Ella,” I said, a chasm opening in my chest.

“And something else ‘I’ wanted to tell you. The old Ella said, ‘To be human is to know pain.’ Does that make sense, Ed?”

I stared at her, at her full lips, at her Indian eyes, at the sable fall of hair around her shoulders, and I nodded. “Perfect sense, Ella,” I said, and turned to look through the viewscreen at the ball of ice that was Nova Charon. “I know exactly what she meant.”

“Good,” Ella said, and smiled.

Seconds later Karrie swung herself onto the flight deck and took her sling. “Main-drive engaged, auxiliaries stepping down.”

“Shall I take us out of here, Ed?” Ella asked matter of factly.

“Lay in the co-ordinates for Epsilon Centauri,” I said, and stared into the void as we phased out.

