

## Farmers in the Sky by Rob Chilson

Illustration by Tom Kidd

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New abilities create new opportunities--and new barriers.

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### 1: It's Good to be Back

The wheat field that had once been an asteroid hung off to the side of the boat.

"Log," Shanda Konigsberg said, releasing the throttles. "Date-time. Floating free, about fifty meters off the pole of field North Seven."

"Logged," said the boat in its toneless voice.

The field was a dark green blob of elephant-ear leaves, smothering the slowly wheeling rock. Each leaf was a quarter of a hectare in area and a hundred meters from the surface. They were the dark green of plants that grow slowly in subarctic climates.

"Not bad," said Shanda's older brother, Latimer. "Almost as good as Emrys can do." Emrys was her younger brother.

"Hey!" she said. "I've only been on Earth five years--"

"Hey yourself, Shandy," said Emrys. "I'm seventeen now, you know."

She sighed. "I know, and I've been home from college every year, but I still remember you as the twelve-year-old I left behind. How's it look, Latt?"

Latimer looked up from the doppler. "Close enough to zero. Emrys, shoot a line."

"Let me," Shanda cried, unbelting.

"Too late!" Emrys swiveled the line-throwing gun around. "White whale in sight. Take that, Moby Dick!" The boat thumped to the recoil, and Emrys grabbed the joystick. The harpoon hit the center of the field. "Bull's-eye!"

"All right," Latimer said. "Let's go bring in the sheaves." He turned to the com. "K-boat Three to Konigsberg Home," he said. "We're off North Seven and anchored."

"Konigsberg Home Farm acknowledges," the computer replied. "One moment."

While they waited for a human to get to the com, they started "putting on their clothes." They were already wearing their skinsuits and coveralls, and Shanda's feet had been hurting ever since they left Konigsberg--the skinsuit's socks squished her toes together. Now they put on helmets and tanks, boots and overgloves.

Their grandmother's voice came: "Shandy, you got company. The Dietzes dropped off a feller from Earth. Met you in college. Says his name's Charles Durant."

*Charles!* Shanda thought.

Gran continued, very dry: "Wants to talk to you. I told him it'll keep."

Shanda kept her voice steady. "Yes, tell 'im I'll see him tonight."

"Yeah, we got work to do," Latimer said. "K-boat Three off."

"K-berg Home off."

*Charles Durant!* she thought, banging her helmet down and jumping for the airlock. She had thought she'd never see Charles again. It had broken her heart to leave him on Earth. And now here he was, in the middle of the asteroid belt--she'd see him tonight!

"Charles?" Emrys asked, crowding into the airlock, making room for Latimer. "You never mentioned him."

"Oh, I'm sure I did," she said; to her surprise the joy surging through her wasn't audible.

"So what's he like?" Latimer asked, with elaborate casualness, pumping the lock.

"He's all right," Shanda said. "Tall and good-looking--and being tall means more on Earth, where you see people parallel. Charming and friendly, very bright."

"Can't complain about that," Latimer said, noncommittal.

The lock door opened, not soon enough for Shanda. She needed to be alone, to get a grip. *You don't know he's immigrating*, she told herself. But why else would he have come Out? He loved her, wanted to be with her, she'd told him she would live nowhere but in the Belt. So he had come.

She followed Latimer, swung out onto the hull, gripped a handhold. As third-generation farmers, they could afford a pressurized "boat" that was actually a rotund harvester ship. It was the shape of two pears joined together at the big end. Shanda snapped her safety line, gripped a hold.

Immense in the sky was the field, a dark green Presence.

"But what's this bright charming Charles doing in the Belt?" Emrys asked.

"You know as much as I do," she said.

"But what about Ozzy Takahashi?" Emrys asked, plaintive.

Shanda had intended to marry Osborn Takahashi since she was fourteen. "I like Ozzy very much."

"But you like this Charles guy more?" Emrys instantly said. "Did you arrange for him to come Out?"

"I would've said, idiot!" Shanda said.

Latimer had brachiated to the harvester's pod, swinging from handhold to handhold. "Go on, you two, we're burnin' daylight," he said. His tone, as had Shanda's, told Emrys he had asked too many questions.

"Sorry," Emrys said. Shanda thumped his shoulder in forgiveness.

"Chaytor coming out," Latimer warned them, and sprang the pod open. The harvester unfolded its long spidery legs, clambered out, and attached a line to the boat. It gave off a brief jet of steam--jumping would have pushed the boat--and soared toward the field.

Emrys gave the harpoon line a couple of experimental tugs, and snapped his belt loop around it. Detaching his safety line, he pulled on the line with casual skill, swooped away.

Shanda waited till Emrys vanished amid the leaves and reported the harpoon tight, lest their repeated tugs pull the anchor loose. Tugging the line, she soared toward the field. Presently leaves closed over her head. Tough, bamboo-like stems bent under her boots, soaking up her momentum. She touched down with a slight shock and snapped her safety to a stem.

Here at the pole there was little undergrowth; not enough light. The surface was a brown mat, generations of top-dressing over shattered rock, covered with moss adapted to space. It was all tightly bundled by the tough roots of the spatiophytes or "spytes."

Latimer and Emrys were busy. Latimer clutched the boat's gyros to set it spinning at the same stately pace as North Seven, lest their lines foul. Emrys checked the anchor set by the harvester.

Shanda stretched herself parallel to the surface and began a desultory search of the ground for previous anchors. The spytes were coarse and tough; they rasped at the fiberglass canvas of her coveralls. Gloves and boots further protected her. The boots each had a single claw curving down from the toe, for further traction. She pulled herself between stems, digging her toe-claws in, scanning the broken surface.

Charles.

She'd stayed free of men and other distractions during most of her five years on Earth. The Grange had financed her education beyond the normal two years, on condition that she teach what she'd learned--genetic engineering--at the college on Nerdstrom. All had gone well until she'd met Charles Durant at Texas A&M in her fifth year.

Falling in love wasn't something she'd planned on.

But Charles dismissed the whole notion of space, including her intention of coming home to K-berg. In his confident view of the future, she would marry him and settle down on Earth. Emigration? He'd never considered it.

Shanda had refused to move in with him or make any other commitment. That had not discouraged him as it should. How could it, when any fool could see she loved him? Stupid, stupid; everyone knew you shouldn't get encumbered with an Earthman, unless he was willing to move Out to the Belt.

He had proposed to her the night they graduated.

"Here's one!" Emrys cried.

Shanda came back to her task, saw a rusty spike sticking out of the shattered surface, and said, "Here's another!" She thumped it a couple of times. There was enough oxygen leakage to corrode it, but it was still sound.

"Bringing a line," Latimer said, and in a few moments, he crashed down in silence between the leaves. They pulled on the line, drawing the telfer cables down, and made them fast to three anchors.

Landing the boat on the field would mean crushing the spytes. While the space-adapted plants were hardy, they had limits and grew slowly. Latimer leaped again for the boat, and shortly the telfer began to move. It was not unlike an endless clothesline, hung with sacks of compost enriched with nitrates, lime, phosphates, and ice.

Emrys and Shanda were kept busy detaching and piling the bags in a circle between the spyte stems, a dreamy slow-motion dance that taxed every muscle. Shanda was soon panting and sweating through her skinsuit; she'd gotten soft on Earth. Her calves and the arches of her feet ached. But this was normal; it didn't distract her.

It had been raining in Texas Station on the evening of graduation, though that hadn't damped anyone's pleasure. There was still a mist in the air when she stepped out for a breath during the dance. Charles followed her. She should have been on guard, she thought. Then: no, he intended to propose; better to have gotten it over with.

And so she'd had to turn him down. She could still see the incomprehension in his face. "Why?" he'd asked.

"Because I'm going home, day after tomorrow. You've made it plain that you will never emigrate. So this is goodbye." She'd touched his cheek, spoke sadly through her ache: "Goodbye, Charles."

She hadn't returned to the dance.

And now, three months later, when home had, she thought, begun to heal her heart, he was back in her life again.

She'd see him tonight. Joy filled her; she felt like singing. Then she thought of Ozzy.

"That's all," said Latimer. "I'm coming down."

Shanda began to tie bags of enriched compost together into a kite tail. Poor Ozzy. She'd only seen him once since she got back, at the homecoming party, though Takahashi Home Farm currently wasn't far from K-berg. Now her joy was mixed with sadness. And guilt.

Trailing a line of sacks behind her, Shanda pulled herself into the thicket, and into a dim, warm, green world. Here, away from the poles, rotation permitted glances of light to filter down. Thousands of vines sought it, thrusting their small leaves into every gleam. She pushed through something like a stand of grass or reeds with palm-like clusters at the top. It wasn't tangled; each stem pointed relentlessly up. Every meter or so she passed one of the trunks, thick as her wrist, that supported the huge outer leaves.

Here at the bottom, there was no break between undergrowth and upper; every level was jammed with life; she swam through a pool of green. From above, shaken leaves marked her passage.

Disorienting: a dark green curtain of leaves before her, a hint of mist, the glimmer of water condensed on stems. Disorienting, but familiar. Shanda had first started working in the fields when she was nine, and had been in vacuum since she was six. She'd been in free fall, inside, as long as she could remember. This was home, and it was good to be back.

Charles, she thought; Ozzy. Poor Ozzy. He deserved better than this. He'd always been there, steady as a brother. She loved him, too and had always meant to marry him. He knew it. Now Charles was here.

Shanda paused to orient herself, brushing damp leaves off her helmet. The asteroid had been no bigger than a large Earth house, but the plants had subjected it to a slow explosion. The roots of the spytes went to the very center of the former rock. The field was now a pile of boulders, rocks, gravel, sand, clay--and humus--bound together by roots and gravity. It had a living soil, composed of shattered rock, top-dressing, moss, and the soil bacteria that first began the breakdown of the rock.

Shanda disentangled her train of fertilizer sacks and pulled herself on.

It got darker as she approached the other pole, where no gleams penetrated. Pulling up the compost bags, Shanda unzipped the first one and spilled the top-dressing with practiced ease into the aerial roots. No fear of the compost freezing; the spytes pumped heat down from the big outer leaves.

And then the next sack, and so on back to the other pole, where Shanda loaded up with another pile of

fertilizer bags. She concentrated on her work, trying to put Charles Durant and Osborn Takahashi out of her mind.

Over her head, the Chaytor clambered among the stems, harvesting the meter-long pods, choosing only the brown ripe ones. The pods were jammed full of kernels that would have been instantly familiar to an Earthly wheat farmer.

They worked and rested, spreading fertilizer, checking the health of the leaves, climbing the trunks to harvest ripe pods. On Earth, at the University of Iowa, and again at Texas A&M, she'd seen Earthly farms. After coming home she realized that only in space, supported by cutting-edge technology, did farmers do so much hard manual labor. Earthly harvesters were simple machines; theirs were complex, fragile, and expensive.

Six hours it took them to service this small field, but they'd telphered tons of wheat aboard. Back in the boat, Shanda was exhausted and her hair sprayed out in damp ribbons.

"I'm racked," she said, and was glad to see that her brothers were just as spent.

"A good day's work," Latimer said, and turned to the com. "K-boat Three to K-berg Home," he said. "Coming in--and ready for supper."

Presently Gran's voice: "K-berg to K-boat Three. Supper'll be ready when you are. That feller wants to talk to you real bad, Shandy."

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## **2: A Menace from Earth**

Their blunt bow pointed toward Konigsberg Light: blue red blue, the brightest light in the universe, except for the Sun. It drowned the faint stars that were the rocks of home.

"An hour to Home," Latimer said. "So, you like this Charles?"

Emrys looked at her eagerly; ready, she saw, to grin.

Shanda was ready for this question. "Well enough, but I never thought he'd follow me Out."

"You must've made a bigger hit than you realized," Latimer mused. "You were studying pretty hard all the time."

"That's true." Her grant from the Grange was conditional on her maintaining a high GPA, as well as on her teaching what she'd learned.

To Emrys's visible disappointment, Latimer dropped it, turning to the computer. Shanda tried not to let her relief show. Work helped. They went over the records of North Seven: tons of wheat harvested, tons of fertilizer spread, the field's instrument readings--rotation, insolation, the strain gauges, their general impressions of the field's health.

Shanda worked automatically, thinking of Charles.

Konigsberg grew before them, from a dim constellation to a cluster.

K-berg Home was a tight swarm: the Wheel, the older Little Wheel, the original tumbling Rock; also, five small fields, the algae composting bubble, a couple of small metallic asteroids, numerous stony ones of various size. The Ship, two small boats, frames of steel beams, gangway cables, and nets of assorted

stuff. The big harvester boat wasn't in, so Caldi and her crew weren't back yet. Shanda saw it all as if for the first time, wondering how it had looked to Charles Durant.

Rocks, docks, and socks, all in a complex slow pavane around K-berg's unseen center of gravity.

There was a working party at the warehouse, making up capsules for Earth. They offered to unload the boat--probably had heard about Charles. Emrys brought them nearly to zero at the hub, and she and Latimer stepped across into the lock. When the lock pressurized, they took their helmets off. First to her room for a quick shower and shampoo--what to wear?

Shanda swung herself out of the lock and against the bulkhead, gripping the handhold. She was immediately tackled.

"Shanda! It's so good to see you--"

Charles--he'd met them at the airlock--

"Ow!" The impact banged her against the bulkhead hard enough to start tears. "Hey! No free-fall wrestling!"

"Oh, sorry, I'm still not used to microgravity," Charles said, flailing around with one hand for a hold.

Shanda twisted out of his grip, pushing him against the bulkhead. Damn, better to have had Emrys grinning like a goof than Latt's steady assessing stare.

"Shanda! I'm so glad to see you! It's been months!" He was smiling, looking happy and self-satisfied.

She looked like a witch. She knew she did. "Good to see you, too, Charles. And a bit of a surprise."

"I should've called ahead? I wanted to surprise you. I counted on Spacer hospitality." He turned to Latimer, held out a hand. "Charles Durant. You'd be--Latimer? Shanda's brother?"

"Yeah," said Latt. He nodded at the hand. "Shaking in free fall is a jig, so we don't bother."

"I see your point. Pleasure to meet you, anyway. You've been out harvesting, Caitlin tells me."

Shanda, smoothing her sweaty hair, froze at this casual mention of Gran's name.

"Yes," Latt said, imperturbable. He nodded at Shanda. "It's not good etiquette to meet someone at the hub, especially if they've been working in free fall. Give the girl time to take a shower and fix her hair."

Charles laughed, and Shanda's heart thumped. She forgave him everything. He was good-looking, but he was also so--so boyish, so unoffended and inoffensive--as eager as a kitten.

"All right, I get it. It'll take me a while to get the hang of Spacer ways." He turned to Shanda, did an absurd bend that brought his knees up--a bow, she realized. Covering his eyes, he said, "Sorry to have seen you in dishabille. Fortunately I didn't get a good look. I'll soon forget everything; I have a very bad memory--"

Shanda smiled but cut him off. "All right, all right, don't trip on your tongue. Come on, let's get down."

Latimer and she got off on the third deck. "See you in a few," she said, and hurried down the corridor to her room.

She was panting as if she'd been working hard. *My hair!* she thought, wishing she could have washed

and dried it on the boat. What he must think! Then she thought, well, it's probably just as well that he see me at my worst. I thought that time I was out in the rain was bad enough--but now I smell as well as look bad.

She dived into the shower, rinsed off her skinsuit, unzipped it and peeled out of it with a moan of relief. Then a hasty shower; she washed her hair. Peering into the mirror as she dried and brushed it, Shanda groaned. It was going to look fluffy, as if she was still in free fall.

At the end of the corridor, beside the elevator, a door gave onto the third-level terrace. Each of the three levels of the building block was smaller than the one below, giving two terraces. Shanda peered over the rail at the terrace below. The family was already gathering. She hurried down the stairs, smiling, feeling a surge of pure joy.

Charles was among the group at the kitchen hatch. Shanda felt that about a thousand of the two hundred K-bergers were staring at her as she joined them.

Charles smiled at her. "It was worth the wait," he said.

They all grabbed bowls and platters and carried them to the tables that overlooked the fields below. This took a couple of trips. Shanda realized that only about fifty K-bergers were here--they worked three shifts.

"Sit here, Charles," Gran said, indicating the chair at her right hand. "You here, Shanda," at her left.

Charles turned and bowed to her. "Thank you, Caitlin." Already he'd learned to handle himself in the one-third Standard gravity.

"This afternoon I bored your grandmother," he said to Shanda. "I don't know exactly what I expected, but Konigsberg is much bigger and, well, more comfortable, than I expected. I know, don't believe what you see on video, but it's hard to overcome all that childish conditioning. The heroic space miners in their rude habitats, ignorant but shrewd."

"Well, we're farmers, and third-generation ones; we have a big capital investment," Gran said. "Beginners do struggle, though not as much as in the old days. It's not the kind of investment where you get rich. Farming's a way of life."

"So is mining and prospecting," Latimer said. "But modern miners live in the smelter habitats. Very comfortable."

Charles looked down out at the fields and ponds, up at the blue translucent ceiling that aped the sky of Earth. "I expected melt-stone walls and bare pipes. Log cabins in space."

"Nowadays there are space companies who'll build you a rough wheel pretty cheaply," Gran said. "Thousands of immigrant farm companies setting up."

"The Wheel's cheaper than it looks," Latimer told him. "It's just a tube of melt-stone with an inside diameter of twenty meters. Braced with a microsteel net, in a steel frame with four elevators to the hub. Most of it, in other words, was made in the Belt."

"But even those parts cost money, and the parts that are imported cost even more," Gran said. "It's ten years old now, and we'll be paying for it for the next twenty."

The family fell silent, subdued: Shanda's father had died during the building of the Wheel.

"But even Home Rock was not as uncomfortable as in Earthly videos," Shanda said, after a moment. "Maybe you saw it on your way in--the one that looks like a long potato with a big lump on each end. It tumbles end over end, and the two lumps are the habitats--about a tenth gee. Even in the old days, it was fixed up quite comfortably. Nowadays it's mainly used for offices, storage, and by ... newlyweds."

He smiled at that but, she noted gratefully, forbore to comment. He turned to Gran. "Your capital investment must make Konigsberg Farm a valuable property."

"Couple of hundred million." Gran shrugged. "It's the same as on Earth. Farmers have a lot of capital, so you'd call them rich. But their income above outgo makes them poor, and they don't work any eight-hour day to get it, nor any four-day week. We sell wholesale and buy retail, you know."

"Yes, but you've set up buyers' co-ops, so you're not doing so badly as all that, surely?"

Everybody stared at him. "Son," Gran said, "only the Grange keeps our heads above water. Most of the price of asteroid foods on Earth is the shipping, handling, and processing."

Charles looked at the table, smiling. "You do eat well, for po' folks."

Gran nodded, looked down the table with some pride. There were four kinds of vat-grown meat, fish, fresh fruit, three kinds of bread, and scads of vegetable dishes. All their own produce. Also a half-grown cat, prowling from dish to dish.

"Deloise," Latimer said. "Get your cat off the table."

"K-berg has always been able to feed itself," Shanda said, as her niece pursued the kitten. "Only our strenuous lives keep us in shape. I was getting soft on Earth."

Charles laughed. "Here I thought I'd be the strong guy because of my Earthly muscles. But do you have some way to offset the price of goods you must buy from Earth?"

Gran chewed thoughtfully and swallowed. "Well, it's no secret that the Belt is trying to industrialize itself. We're building our own ships, processing plants, and so on. Lots of good investment opportunities there. Upwards of sixty percent of the grain we ship to Earth is milled--flour, meal. Soon we'll be selling meat; already some farms are selling fish. And we've been building tug hulls for a long time, just buying the fusion rockets and instruments from Earth."

"Tugs?"

Gran gave him a look; surely everybody knew about the canisters of grain, chemicals, and metal that were at all times falling toward Earth?

Shanda explained briefly.

"Oh, I remember seeing something about 'The Pipeline from Space.'"

Gran turned to Latimer. "How was the field?"

"Good," he said, and gave a few details about soil condition and production. "It's put by for, say, a year. Next harvest, three or four months."

Gran nodded and turned to Shanda. "You remember Outer Nine? One of your earliest fields, back when you were, what, ten? Well, it's drifted so far out that we're selling it to the Takahashi family. I've invited Nogalese Devander over to discuss it. And Ozzy."



"G-good," Shanda said, and quickly took a sip of coffee.

"You're selling one of your fields?" Charles asked, showing nothing but polite interest, but looking at her alertly.

Shanda felt alarm, guilt, and confusion. She had no idea what her face showed.

"Yes," said Gran. "We don't have a planet for our fields to orbit around, so the outer ones wander, and over the years they get so far away that it doesn't pay to work them. We'll make a deal with the Takahashis. We'll take turns working the field for a few years; then it'll drift farther into their zone, and they'll own it."

To Shanda: "Ozzy'll be here tomorrow. You haven't seen him since your homecoming, have you?"

"No, I haven't," she said, managing to sound normal, *you conniving old woman*.

Charles's expression was thoughtful.

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### **3: The Green, Green Hills of Earth**

After supper Gran got Shanda aside. The old woman led the way slowly down the stairs to the lawn that edged the fields here.

"Gran," Shanda said, as soon as they were out of hearing. "What did you mean by inviting Ozzy Takahashi over? You could've waited--"

"You know this Charles a lot better than you ever let on, right?"

"Ye-es."

"I knew before I ever saw you two together. Well, one of those young men is going to get a hell of a disappointment. You can't marry them both."

They descended in silence.

"Think Ozzy'll get over it?" Gran asked.

"He-he's able to t-take care of himself. I mean, he's not romantic." Weakly she added, "He'll be all right."

Gran grunted in skepticism. "So, what are this young feller's prospects?"

Shanda was aghast. "Gran, he hasn't said anything about immigrating yet."

"Well, marrying in is the classic way of joining the company." Konigsberg, Inc. was a closed corporation.

They were on the grass now. Shanda frowned. "Well. He's--or his family--is mildly wealthy. A chain of hardware stores in the American Midwest. Obviously he can afford a long trip into space."

"On a wild goose chase, if he never proposed to you before starting."

Shanda was silent, guilty.

Gran sighed, leading her toward the edge of the lawn. "Well, even if he can't buy in, it won't affect anything to split the stock again. It's not as if it's for sale."

Shanda's heart jumped. "You'd give him a share, just for me?"

Slowly Gran bent over a bush, picked a peanut pod. She shelled seven red peanuts from it, looked up over her shoulder. "We did as much for Mary." Latimer had brought his wife from Earth. "It'd mean we'd be gaining a hand, instead of losing one."

"He doesn't know a thing."

"True. But he'd have you to teach him."

Shanda thought of teaching Charles all she knew about farming. She stood smiling, looking out over the field, thinking of Charles--here.

The field stretched before them, so ordinary to her, so strange to Charles. How would it seem to him?

*Artificial*. Shanda suddenly saw that it was the bottom of the inside of a tube. It sloped up to the sides and curved up into the distance, perspective chopped off. For the first time she saw how fragile it was. Did Charles love her enough to overcome an Earthman's fears?

"Hope he takes to it," Gran said. "But what could beat this?"

Shanda stood shaken. She glanced at Gran. The old woman was smiling, sincere. Gran had been born on Earth; her family had immigrated when she was eleven. She'd never been back. She'd worked hard for years to achieve--this.

"I hope he takes to it too," Shanda said, subdued.

Caldi's hair was beginning to be streaked with gray. Shanda had been home three months now and still hadn't got used to it.

"Mother," she said. "I didn't invite him out here! I don't *know* if he means to immigrate--he may not know yet himself."

"I know all that, but it's still your fault." Caldi grinned; it was a line she had often used when compelled to punish her only daughter.

Shanda smiled, rueful. "I guess it is."

"Gran says he's after you. And face it, you do like him. Don't you?"

"Ye-es."

"Hmmp. Well, let's go meet this Earthman."

Shanda followed, feeling nervous. "Try to be tactful, okay?"

Caldi glanced back at her with a grin. "Don't worry."

"I worry 'cause I know you. Mom, tell me the truth. Did *you* get involved with an Earthman in your college days?"

Caldi said, "You bet I did, girl, a dozen at a time. Well, two or three at a time, a dozen or two over all."

"In just two years!"

"Three years. None of your lip, girl. You know about Outer Nine?"

"Yes," with restraint.

"Good."

They found the others on the terrace at the other end of the building block. Caldi was gracious when introduced, and took Charles's compliments with only a raised eyebrow. Latimer was building a fire in the fireplace. Charles was fascinated by it, and said so.

"We don't use it much," Gran said. "I remember one on Earth, massed a thousand kilos--"

"Gran!"

"Well, half a ton anyway. It was beautiful."

"Where do you get your wood?" Charles asked.

Gran looked around inquiringly and Latimer spoke.

"This is old apple wood we've been saving. You rate as a special occasion, Charles. Mostly we burn stalks, which we press into sort-of logs."

"It's another of those paradoxical luxuries we Earthworms don't expect to find in space."

"It's actually a necessity," Shanda said. "Often a lot of us are off the Wheel, and the atmosphere gets out of balance. So we have to burn stuff."

"But not very often," Charles said, warming his hands. "I'm flattered!"

There were half a dozen children gathered around, too young to be sent off to school. The familiar miracle of the fire could not compete for their attention with a real live Earthman. Their marshmallows wavered wildly.

"Charles? Do you really call yourselves Earthworms?"

He laughed. "We don't even call ourselves Earthmen. We're just us."

"What's it like on Earth?"

"I don't really know. You should ask someone who wasn't raised there." He shook his head, looked out over the fields--on this side of the building block, it was an orchard. He pointed toward the bend. "You can see a long way, farther than that. Shanda, what do you think of Earth?"

Shanda swallowed a bite of apple. "The gravity was the first thing that got to me." They all laughed. Shanda mused for a bit, finally said, "I think if there's anything I miss from Earth, it's sunrises and sunsets."

They'd seen videos, and were disappointed. "That's all?"

"You don't understand. Even with the wide visiplat, it's not the same as *being there*. It's like, well ... sunrise. I remember in Iowa, in spring, when the Sun would rise through a mist."

They'd seen mists.

"Not like our mists. Much thicker, and it goes on for *kilometers* and *kilometers*. And the Sun is just a deep red glow in the east, at first. Then there's pale gold above the red, and there's a row of narrow gray clouds overhead. The eastern edges of the clouds turn pink, and now you can see the Sun as a deep

cherry red ball. The clouds are pink and gold, and the sky above the mist is gold. Then the Sun comes up a bit higher, getting bright, a lighter red, and the clouds are flushed with bright sticky gold. The birds start to call and sing, more different kinds of birds than those down there," nodding at the orchard. "Now the Sun's too bright to look at, and the mist isn't as thick as you thought it was, and all those clouds are white, and you didn't see that happen...."

They sat in silence for a moment, enthralled. "And the sky is blue!"

"Yes, by now the sky is blue and it's early in the day and no one around you has even noticed the miracle. They're grumbling and pouring coffee, not looking out the windows."

The kids laughed at that, except Deloise, who burned her mouth on her marshmallow and had to be comforted.

Charles was looking at Shanda in admiration. "I've got to start getting up early," he said, shaking his head. "I had no idea there was all this free entertainment."

Shanda smiled. "And that's not even mentioning thunderstorms. I'm glad I never saw a tornado, though." To the kids, she added, "Of course there's other attractions, like the Grand Canyon. I know, not as big as Valles Marineris, but really *big* when you're going down it on a horse's back."

"Tell about horses!"

Shanda laughed. "You've seen the videos. They're fun, much like big dogs--personality-wise. I never rode one at a gallop. I suppose it would be a slower and rougher version of riding a motorcycle. A friend," pre-Charles, he was, "took me for a ride on a motorcycle once."

"What was it like?"

She drew her elbows in. "Scary. But not as scary as a plane ride."

"Is it *really better* to go to the Grand Canyon than do the video tour?"

"Oh, yes. You could *fall*, so it's scary. And it takes hours; you can't just shut the machine off. It's an *experience*, not an entertainment. And all of Earth is like that. Just driving through Iowa and seeing kilometers and kilometers of grass and rolling hills and farmhouses hundreds of years old, it's like nothing you've ever experienced, and it's all beautiful. All beautiful."

Shanda came back from her distance, looked at them. "We came from there, you know. We're *designed* for that planet."

Charles's expression was as admiring as those of the children.

\* \* \* \*

Lying on her bed's thin foam pad, Shanda remembered how soft and cuddling the beds of Earth were. They had to be, in that gravity. The presence of Charles had brought Earth poignantly back.

She turned restlessly. Charles, Charles. Were his intentions honorable? He hadn't mentioned his plans. He'd only said he could stay till they took the off-shift students to Nerdstrom and brought back the on-shift--a week, then.

He'd made no attempt to get her alone, but if he'd seen the glances her folks had exchanged, he couldn't have any doubt that they, at least, were sure she was in love with him. For that matter, she thought, her own expression must have given her away repeatedly. She'd felt radiant--she must have shown it.

She cautioned herself--he still hadn't mentioned immigrating. And even Caldi hadn't been impolite enough to ask.

Shanda punched up her pillow, and sighed. But why else would he come Out? He'd had only casual interest in space, whenever she had mentioned it. His only interest in it had been because of her, she realized. Then he'd lost her. He knew that if he wanted her, he'd have to immigrate.

And from the way he had looked at her, he wanted her.

She sighed again. Poor faithful Ozzy. And damn Gran. She could've waited a week or two before selling Outer Nine.

Shanda had the pics and stats on Outer Nine pulled up, in the office on deck level, when Nogalese Devander and her nephew, Osborn Takahashi, were ushered in by Latimer. Gran stood and greeted them expressionlessly and received expressionless greetings in return.

"Oz," Shanda said, standing. "Nogalese."

"Shan," Oz said, nodding back. Nogalese nodded without speaking.

The Takahashis had been Out as long as the Konigsbergs, and there weren't many of the original Japanese genes left. Ozzy had dark hair, but it was a deep blackish brown, not the raven-wing black his ancestors had had. There was very little of the epicanthic fold left, and his nose was too big for his name. But he retained the ageless, even features of Asia, features so regular that you might not realize at first how handsome he was.

He's heard about Charles, she thought, aching for him, guilty.

They all turned their attention to the stats, and began to hammer out a deal. Gran bargained hard and got essentially the deal she'd outlined last night. She was hampered by the Takahashis' knowledge that they need only wait for a few years and Outer Nine would wander into their laps.

Gran settled for a sliding scale. At first Konigsberg would harvest three out of four times, then half the time, and down to zero by intervals. Then a long hard bargain to determine the length of the intervals. Finally they settled on a number of years, shorter than she wanted, and Gran held out her hand to Nogalese.

"You're a tough bitch, Devander."

Nogalese grinned. "From you, that's a real compliment."

Shanda grinned in relief, and intercepted a relieved grin from Ozzy, who was stretching. It was the first unconstrained emotion either had shown since entering the room.

"And just in time for dinner," Nogalese added. "I planned it that way."

They went upstairs for the "noon" meal.

Ozzy walked near her. "So who is this Charles Durant?"

"A college friend. I didn't know he was coming Out."

He nodded. "The Dietzes said he asked them not to call ahead, when they dropped him off."

"We haven't asked, but it's possible he's thinking of immigrating. He's full of questions about farming." He

nodded without expression, and she quickly added, "He hasn't said anything."

She introduced him to Charles on the terrace.

"A pleasure," said Charles. He was taller than Ozzy. "Please don't crush the hand--I've been learning what wimps us Earthworms are."

Ozzy laughed, sounding surprised.

They carried bowls and platters to the table and sat. Shanda had foreseen what was coming and knew it was useless to try to avoid it: they sat on either side of her.

Nogalese and Gran exchanged small smiles, and Shanda felt her face heat up. Old witches--they probably planned this together.

Charles addressed Gran. "I hope you got a good deal. Deloise took me floundering in--you don't say microgravity, do you? Why not?"

Everybody looked blank. "We just don't," Gran said.

Shanda murmured, "Free fall may not be accurate, but we know what we mean. It's two syllables, easy to pronounce, where microgravity has, uh, five. And they have to be pronounced slowly. So how did you like it?"

"It was like flying," Charles said. He smiled down the table at Deloise, who seemed about to burst with delight.

"According to your records," Nogalese said to Gran, "nobody's looked at Outer Nine in seven months."

"It's due for a visit," Gran admitted. "Soybeans are fetching a good price, too."

"I haven't got time to go myself, but if you can get Ozzy home, I'd like to have him take a look."

"No problem." Gran looked down the table. "Latt and Shandy have chores today--Emrys too if he's caught up on his lessons. Ozzy could give them a hand, then go with them tomorrow. Okay?"

Nogalese looked around at all the nodding heads and agreed.

Charles spoke to Gran. "Would it be possible for me to go out to the asteroid tomorrow? I'd keep out of the way."

Gran looked as startled as Shanda felt. She looked blankly at Shanda, then at Latimer, who, Shanda saw, was smiling slightly.

"No problem," Latimer said. "We can find a skinsuit to fit you. You might even want to give us a hand in the home fields this afternoon."

"A pleasure!" His smile said he meant it.

Today's chore was clearing old potato vines and tilling the soil for the next crop. They put on wide straw hats against the UV from the ceiling and raked the dry vines onto sheets of pulp paper.

"Some we may burn, yes," Latimer said. "Most of it will be composted. Some we'll make paper of, like that," nodding at the crude sheets.

"I *wondered* about your toilet paper," Charles said, wincing.

They laughed. Ozzy said, "Farmers are hard-assed."

Charles smiled, and Shanda quickly said, "Some farmers also make wrapping paper and cardboard, but nobody yet does fine notepaper or artificial wood."

If Ozzy wanted to ride Charles, he forbore. Perhaps he was hampered by their presence. Charles himself never showed any sense of rivalry, not even when he lagged behind them. He straightened painfully and rubbed his back from time to time, and drank a lot of water, but didn't complain. Indeed, he got Shanda to join him in singing some of the nonsense songs that had been popular in their class.

Soon he had them all singing along--even Ozzy. Oh, Ozzy. Damn Gran and Nogalese both.

\* \* \* \*

#### **4: Between Worlds**

Latimer's wife Mary got back from Nerdstrom that evening--their oldest son had broken his wrist playing free-fall tag--and wanted to go with them. Another hand would be useful--Emrys had his studies.

"Outer Nine is so far away that we'll make the trip overnight," Shanda explained to Charles. "It means no privacy, and worse, sleeping in skinsuits. In free fall."

"Now, that's more like the videos!" he said, grinning.

After supper they kitted him out with a skinsuit, and ran through the helmet drill. "Never had a hull puncture yet, but we take no chances," Latimer told him.

Charles felt of his toes. "This is a case where the video tour is definitely better."

Latimer grinned. "Wait'll you meet the free-fall toilet."

They made sure his helmet and tanks were tight, strapped him--and themselves--onto the flitter, and Emrys squeezed the controls. The flitter was just a hat-rack with a nuclear battery and a tank of water. Steam shot out the rear, and they spent endless minutes wafting across a vast sky sleeted with light.

Nobody said anything, not even Charles. Shanda loved these moments, alone in the privacy of her helmet, drifting among stars. Especially here, amid all the familiar things of her home: the Wheel, the fields, a gangway like a ladder across the dark sky. As a girl, once she'd realized that as a woman she'd marry and leave home, never to return except at rare intervals for visits, she had been overcome with a premonitory nostalgia. She couldn't believe, as a child, that she could bear to leave all this, and she still, somehow, couldn't believe it.

The stars stared at her, friendly, waiting. Far, far away, but infinitely closer than the stars, were the lights of other farms and smelters, blinking and blinking in different colors, and "above" her, K-berg's light also flashed. I'm here, are you there? I'm here, are you there? I'm here, I'm here.... She'd been dismayed to realize that none of them could be seen in Earth's night skies.

The flitter drifted behind K-boat One, its attitude changing, and the Sun poured its light across her helmet. The helmet darkened instantly, stopping all the UV and most of the light. The Sun went with dreamy slowness behind the boat, setting through the mistlike darkhaze in her helmet. For a moment Shanda held her breath, returned by the magic of memory and association to Earth. Then the Sun was gone and Night returned, and she sighed.

"Charles, make sure your safety is attached, then step across to the boat," Latimer said. "Hook on to one of the handholds there."

Shanda unstrapped, hopped over to the boat, fastened her safety, and brachiated forward to the line attaching them to the warehouse. By the time she had cast off, the rest were waiting in the lock and Emrys was shoving the flutter away from the hull.

Inside, they took off their helmets, trying to avoid each other's elbows. "Our home away from home, for a couple of days," Latimer said. "Shanda and I will take pilot, unless you'd like a turn, dear?"

"I'm a little rusty," Mary said. "I'll get us under way, if you don't mind."

"Good. The rest of you can find places--"

Ozzy was already pushing off for the back of the cabin. Shanda groaned silently and joined the rivals on the pads against the bulkhead. There weren't enough seats, and she wanted to leave the boys alone a little less than she wanted to be between them.

They squatted cross-legged on the pads, one ankle thrust through a loop. Latimer--I must give him more credit for tact, Shanda thought--turned around in his seat and asked Ozzy about affairs at Takahashi Home.

Ozzy was a little subdued, but he began to tell of all their small doings while Mary worked her problem, got Latimer to check it, and put them under low boost. The pads pushed against them; now they were sitting. Latimer, and then Mary, asked Ozzy questions about farming and family, and shortly a conversation was going.

Charles had no part in it, of course. He listened silently for twenty minutes, with no evidence of pique, then asked a question.

"Something you said--forty years--I mean, aren't you all in the same orbit?"

There was a blank pause. Ozzy spoke first. "Lots of people on Earth have the feeling that the Belt is solid, like a wheel, and all turns at the same rate. Even people who know better."

"Or should, like me," Charles said, smiling. Shanda was proud of him.

Ozzy grinned, and said, "But Takahashi Home is farther from the Sun than K-berg is, so we orbit more slowly. K-berg is catching up to us now."

"Like Earth passing Mars in its orbit," Charles said.

"Ye-es, but not exactly. Earth makes two orbits to Mars's one. Out here, the orbits are closer to the same period. That means that K-berg only passes Takahashi once every forty years."

"Ahh, and in, say, twenty years, K-berg and Takahashi will be on opposite sides of the Sun from each other."

"Right."

"So how long is your year?"

"Twelve months. The orbit is about six years, but *it* doesn't matter."

"Of course. So all your lives long you're meeting and re-meeting people who you maybe haven't seen in



... decades. Man, the Earth videos have *no idea* what things are like out here!"

"Actually, we do see each other from time to time, like at Nerdstrom, but yeah, the neighbors are always changing. It's kind of ... sad, I guess."

"Like school reunions," Charles said, musing. "Time plays hash with us all, and I haven't even had my first reunion yet!" Ozzy nodded, solemn.

Shanda had been watching, as at a tennis game, and didn't quite know what had happened. But Ozzy was no longer politely hostile.

"That's one thing common to Earth and the Belt," Latimer said.

"Kids always grow up too fast," Mary said, and Shanda knew she was thinking of her son.

"On the other hand," Ozzy said, "it takes forever to turn a rock into a money-making field."

"How long, usually?" Charles asked.

"Depends on the rock, and the crop, but usually six to eight years. Of course, one planting is all it needs, since the spytes are perennial. These are all variations on the plants developed for the Moon, you know."

They wandered off into a discussion of the economics of farming, and to her irk, ignored Shanda. *What is it about men and bonding?* she thought, getting up for a drink. They were at it when she stretched out and floated off to sleep, still annoyed.

She was swimming in the pool at the College Station campus of Texas A&M. The Sun was rising over the long green hills of Iowa, and she thought she had never been so content, so much at home. Then she realized that Charles was swimming toward her, and that she was nude. He grabbed her ankle and started to take her down. With a stab of fear she realized that it wasn't sex that he wanted: he meant to drown her.

When her head went under the water she jerked away, sitting up and scrambling for her helmet. Mary was tugging on her ankle and the guys were all forward, looking at view aft on the monitors. A field rotated slowly, green and improbable. Her toes were mashed into toe-cream pie.

"Agh!" Shanda said, using all her intelligence. She yawned, blinked at Mary's smile. "Are we there yet?"--as more brain cells came on line.

"Another hour. Time to wash your hands and eat a bite."

\* \* \* \*

## **5: A Rolling Stone**

At five times the diameter of North Seven, Outer Nine had about a hundred twenty-five times the mass. It looked like a huge green fuzball.

"You're getting a bargain," Latimer said to Ozzy. "It was tumbling pretty erratically, and we had to damp a lot of the rotation."

"The rotation is still pretty fast, despite the leaves," Ozzy said. The spytes had shifted so much of the asteroid's mass outward that they had slowed the rotation, like a skater spreading her arms. "What's the period?"

"Seven hours, give or take," Latimer said.

"It's so small," Charles said. "I expected something kilometers in length."

The men looked at him. "Oh, farmers rarely bother with big rocks," Latimer said. "Too expensive to move."

"Unless they use one as a home base," Ozzy said. "These little rocks, we can push into small clusters. Big ones--" He shrugged.

"Ah, yes." Charles pointed at the visiplane. "Are those the pods?"

There were hints of brown amid the green.

"Yes, and they're far out," Latimer said. "We should have harvested two months ago."

Charles looked his question, and Ozzy explained, "The spytes set their pods down low on the stems, where there's less solar radiation. When the lower spots are filled, they set farther out."

Still ignored, Shanda readied herself, somewhat soothed by Mary's eye roll and quirk of smile.

Presently they were all on the hull, Ozzy and Latimer taking care of Charles. K-berg One was the big boat; it had three harvesters, a Chaytor and two old International Harvesters that they called Harvey One and Harvey Two. The Harveys were enameled in an improbable purple that had faded under the solar wind. Latimer sent them into the upper growth. Shanda and Mary took gunnysacks and went gleaning also.

"Watch your step," Mary said.

Shanda felt her feet slowly swinging out. The centrifugal reaction wasn't strong, but it was noticeable--stronger than the gravity. "It's four point six centimeters per second, according to the stats," she said. This wasn't North Seven, where the rotation was so slow it was like free fall. Not microgravity but, amused, she thought: milligravity. Or milli-antigravity. Takahashi Light went slowly by under her aching toes, blue ... blue ... blue....

"Remember," Latimer was saying to Charles, "always clip your safety to a good thick root. Four point six isn't much pull, but it can surprise you. It never lets up."

"And don't dig in too hard with your toe-claws," Ozzy said. "You have to stop with your arms. That's how Latt's son broke his wrist."

Shanda and Mary clipped their lines to the roots at the surface of the field and pulled their way out along thick stems, stripping off the brown pods as they went. At the outer end, hop to another stem and pull back to the surface, picking pods all the way, move the safety, and repeat. Tow the stuffed sacks to the boat and start over.

There were male chuckles, and Latimer said, "You don't hold your mouth right," as they instructed Charles in "milligravity" maneuvering.

Shanda could remember big brother Latt telling her that, as she learned to handle herself in free fall, then in the fields, learned to compute vectors, and--she smiled--learned to whistle.

Charles stayed with the men while they looked over the field. Shanda and Mary heard the terse professional conversation. The field was in good shape overall, but could use fertilizer, especially water and carbon.

Finally, the men rejoined Mary and Shanda. For the first time in hours, Charles and Ozzy paid attention to her. Hard work had soothed her, and being noticed again brought Shanda into a sunny mood.

She was laughing at something Ozzy had said when the stem she was gripping trembled in her fist. At that moment the boat blared: "Alarm! Strain gauge alarm! Strain gauge alarm!"

"Back to the boat!" Latimer cried, and Ozzy was shouting something about ripping.

Both the trunks Shanda was now gripping were vibrating like struck strings. She stared mesmerized into the mass of greenery that seemed to be above her.

"Too late," she said, and the field came apart.

It was not rapid, though faster than a snail. By now, Shanda was pulling herself up her safety line; so were the others, and none of them were moving like snails. She heard Latimer asking Charles where he was.

"Near the south pole, heading back to the surface," he said.

"South pole? You mean the pole opposite the boat?"

"Yeah, sorry."

Shanda went crashing through a mattress of green soft stuff, leaves and twiggy vines in the inner mat. She felt a frisson of panic as it absorbed her momentum, pulled hard on the nearest stem. She needed to be near enough to the surface for her toe claws to dig in, to make speed laterally toward the boat.

Once near enough to the surface for her claws to grip, she was of course blind. But she could feel the continuing vibration as the field tore itself apart. Earthquakes must feel like this, she thought.

Ozzy Takahashi started to laugh.

"You K-bergers!" he cried. "Selling us a field about to rip! I bet you couldn't wait to get rid of it!"

Latimer started to laugh, then Mary; Shanda heard herself giggling.

"Well, it let go just a little too soon!" Ozzy continued.

"Whattaya mean, too soon? The contract's already signed and registered!" Latimer said.

"Yeah," said Ozzy with quiet relish. "Auntie Nogalese will be kicking her pants for a week." He chuckled with a different kind of humor.

Shanda was looking at rocks, moss, soil, and torn roots. By the width of the crack, she guessed Outer Nine's surface had moved upward by half a meter.

She reported her find. But now that she was ready to push toward the boat, she couldn't see it. She didn't know which way to go, here where all the indicators pointed up or down.

"Ozzy?" came Charles's quiet voice. "I'm at the surface of the field at the opposite pole. Now what do I do?"

The field jolted as something tore loose; Shanda felt the sound up her arms. Still, this wasn't like Shanda's only fender-bender on Earth, where it was all over in a gasp. Here, crises usually took time.

"Get to the rotational center of the pole chunk," Latimer told Charles.

The cracks between clods of rock and dirt were now much wider. But what was the worst that would happen? The field would tear itself apart and leave a wide enough gap in the center for her to see and jump for the boat.

No, wait; the poles would tear off in separate chunks, and one would be between her and the boat. But she'd be able to see it. She'd be all right, because the field was small and its rotation so slow she'd be able to jump the distance, even if she just froze here for the next few minutes.

Fortunately Shanda was inhaling, so that she merely gasped rather than screamed, when she was seized from behind.

She was unable to breathe at all as she twisted around to see. Then her breath gusted out in a sigh she hoped none of them heard, and she reached for the snap of her safety. "Shan here," she said. "Harvey Two has me. I'm off to the boat."

"Oh no!" Charles cried, with a sound of laughter in his voice. "It's got her! The bug-eyed monster. Dragging her off to its lair!"

Shanda joined the laughter, swarming up on Harvey Two's back, and quoted "The Green-Eyed Dragon," an old children's song: "Off to his lair he'll drag, and each of his thirteen tails he'll wag."

"Hey, the red one's come for me," Charles said, adding: "He'll feed, with greed, on little boys, puppy dogs, and BIG, FAT snails!"

"Climb up on the Chaytor's back, Charles," Ozzy said.

"Harvey One is coming for me," Latimer said.

Charles started singing "The Green-Eyed Dragon" and Shanda joined in, then the others, as they flew back to the boat.

They had time to go through all four verses, watching Outer Nine unravel. The field still looked almost normal when they had cast off and were all inside, looking at the monitors. A thousand seconds had merely increased the field's equatorial diameter by twenty percent--a slow-motion explosion indeed. But the longer trunks were bending as the roots moved at a tangent, leaving the outer leaves behind. Ultimately the equatorial pieces would spray off, improbable comets with clods for heads and huge leaves for tails.

"Wow," said Charles. "Does this happen often?"

"No, hardly ever," Latimer said. "We've never had it happen before. It's only with these little rocks, you know, that sometimes have high spin 'cause of a past collision. Most asteroids have centrifugal reaction much less than their gravity."

"So why'd it happen just now?"

There was a silence; then Latimer said, "Our added mass."

"Yes," Ozzy said. "Three massive harvesters and five people all in the upper reaches."

"Not to mention the mass of all those pods," Mary added.

"What will happen to it?" Charles asked.

"It'll go on till it's totally torn up, of course," Latimer said. "But it'll eventually fall back together."

They started pulling up the stats to answer: how long?

"The original rock's surface gravity was three point seven times ten to the minus fifth centimeters per second squared," Shanda said. "Fertilizer input was probably more than balanced by harvests."

"Minus outgassing from the spytes," said Latimer.

"Can't estimate that. Just ignore it," Ozzy said.

"Initial velocity, four point six centimeters per second, at least for the equatorial pieces. The rest will move more slowly and get back first," Mary said. "The polar pieces aren't going anywhere."

They worked for a bit, and Ozzy said, "Not bad--faster than I would have guessed. A hundred and twenty-four thousand seconds, over two thousand minutes--thirty-four hours, give or take half an hour." He turned to Charles with a smile. "See, they're--the pieces--are flying apart thousands of times faster than they're being pulled together, but the push is off, whereas gravity never stops pulling--oops--Shan, you farm girl!"

She exploded with laughter; Mary whooped. Even Latimer deserted the men and smiled.

"I forgot the other half of the problem," Ozzy confessed to Charles. "Thirty-four hours is how long it'll take the pieces to stop receding; it'll take that much longer for them to come back together."

He mock-glared at Shanda, who was holding onto Mary.

"Wenches," said Charles, joining the mock glare. "But that's typical; we do the hard part with care and precision, then goof on the easy part like multiplying by two. If you think physics is bad, try double-entry bookkeeping! How far apart will the pieces get?"

"Too far," Latimer said.

"--Five or six kilometers," Ozzy interjected.

"We don't have time to waste," Latimer continued. "I want all those pods harvested. We'll take turns manning the boat. Shan, you're youngest; you take the first trick. Let's go, boys and girls." He rammed his helmet on.

"Oh, boy. The next few hours will be hard," she said to Charles, turning on the com. Laser beams leaped toward K-berg and Takahashi Home.

The home farms had already heard the emergency alarm from the boat, and had heard enough of their conversation to know that there was no need to worry. To Shanda's surprise, Nogalese was the one who laughed; it was Gran who cursed.

"We'll have to renegotiate the contract. Someone'll have to go out and survey the field *again* in a couple months," Gran complained. "And Devander will bite us on the butt again."

"You bet I will, Konigsberg," said Nogalese. "But we'll see what the survey shows. We've lost twenty years' worth of fertilizer, but the root development shouldn't be hurt much. Most of the spytes will survive, though some of those lumps will be upside down. Maybe take another year before they get back up to normal bearing rates, if so."

"More like two years," Gran grumbled. Her tone brightened. "Actually, I doubt if we've lost all that much

soil; the roots will hold on to it. Hmm. Could be worse."

"The rotation will be a lot slower, too," Shanda said.

"Yeah. I think we'll want to band it, though, taking no chances."

The bands were wide belts woven of microsteel, to be wrapped around the equator.

Shanda listened to them planning, looking at the monitors where roots and rocks separated, carrying men she loved away from her.

\* \* \* \*

## **6: Time for the Stars**

Twelve hours of hard labor stripped Outer Nine, and a night of sleep in low-gee left Shanda with only a few muscle twinges. Charles proclaimed himself crippled, but game to help off-load. Instead, they dropped him off at the Wheel and suggested a hot bath.

"Wish I could see them put the field back together," he said.

Working parties from Konigsberg and Takahashi were on their way to Outer Nine. They were going to use harvesters' steam jets to guide the cometary lumps of the field, landing them feet-first. Many of the paddlewheel leaves would be edgewise to the Sun, but would twist about within a couple of days.

"Wouldn't mind seeing that myself," said Latt. "But we got work."

This being the last week before the end of Nerdstrom's semester, there was a rush to get the fields laid by then. They had two crews out every day; Ozzy and Charles usually joined them. The simplest way of getting Ozzy home was to take him three hundred fifty million kilometers to Nerdstrom, and let him ride back to Takahashi Home with his siblings.

Shanda spent the time working on her lesson plan.

"You're not harvesting with us?" Charles asked her.

"No, I have to be ready to start teaching as soon as the next term starts." Nerdstrom's schools and colleges ran three four-month terms per year, and farmers sent their older kids to two out of three of them.

"Oh, I remember you saying that you have to teach to pay back your education grant."

Though Charles and Ozzy seemed to like each other, Shanda noticed that neither allowed the other to get her alone. It was three days before either managed it.

She was at a table in the orchard, deep in the third month of term three, when Ozzy sat down opposite her. Shanda smiled at him, trying not to let her sadness for him show.

"We'll be saying goodbye, soon enough," he said. "At Nerdstrom."

"A week or so, I guess." Most of it in a crowded ship.

"Don't suppose I'll be seeing you again soon."

Shanda's heart beat steadily but there was a pain in her chest. So this is heartache, she thought; she had thought it was a poetic fancy.

*Oh, Ozzy.* "I'll see you at the fair--that's three months off," she said, and the way his face brightened nearly brought tears.

"Right, yeah, see you then," Ozzy said, too hurriedly. He gave her a brief glance. "Charles is a good guy," he muttered, looking away. "Make some girl a good husband. Be happy to have him as a ... brother-in-law, myself."

"Thank you, Ozzy, I'm ... glad to hear that." She was unable to go on.

"Well, you take care. I'll see you at the fair, then." Ozzy stood hastily and was gone.

Shanda spent the next hour in her room, wiping away tears but not crying. Deep sighing breaths don't count.

\* \* \* \*

The day before their departure, Shanda took a break from her lesson plan. At her Aunt Bea's request, she went to net fish for supper from the streams that bracketed the orchard. Charles joined her, having evaded his comet-tail of children. Shanda had been expecting him.

"This is almost goodbye," he said.

"Yes. I was hope--expecting to have a few days with you at Nerdstrom." He had had better sense than to come knocking on her door at night. College wasn't real life.

"It's very kind of K-berg to drop me off at Earth. I can cash in the other half of my ticket."

To go to Nerdstrom required cutting a chord through the Inner System. Earth was out of their way, but with constant-boost fusion rockets, the expense was small and the time lost minor.

Charles smiled at her and her heart, already molten, slumped further. She was trembling faintly and hoping he wouldn't notice.

"You can't be in any doubt as to why I'm here," he said. "You know I love you. I knew it, too, but even I didn't realize how much, till you ran away. Will you marry me?"

Shanda's eyes overflowed. "Oh, *yes*, Charles." She walked into him, tried to put her arms around him, dropped the net and tried again.

"I know you can't settle down until you've negotiated your debt to the Grange," he said. "I hope you can come to Earth after this term."

"Come to Earth? Oh, to meet your parents--"

"Yes, and settle down together."

Shanda froze. After a moment she tipped her head back, looked up at him. He was quite serious.

"Emigrate to Earth? Charles!" She bent her head down, stricken. "Oh, Charles, I thought you were g-going to immigrate. W-we all did."

Charles gaped. "Good God, no!" More quietly, he said, "All my plans and expectations are for Earth. My education, my prospects, my family--my whole future!"

She felt the tears on her face. "And all of mine are for space."

Charles opened and closed his mouth, looking helpless. "Women have always left home, their home cultures, even learned new languages, to be with their men."

"That's true. But--"

"You *belong* on Earth," he said. "You spent five years there. Didn't it seem like you'd come home?"

Shanda was baffled. "No. *This* is home. What do you mean?"

"Well, I mean ... Earth is where you came from. It's where we belong. The center of the human race, of everything. Our culture, our heritage, our whole history. What would we be without knowing where we came from? Thanks to you Spacers, mining and refining and now even farming is moving off-Earth, so the world is turning into a park. Population is expected to dip below two billion within fifty years. It's--" he waved his hand as if feeling for words.

She could only stare in astonishment.

"It's a shame that a beautiful and intelligent woman like you should be wasted out here. You should be back at the center, where things are happening. Earth needs you, and I think you need Earth." He smiled, sadly. "I know I need you."

She was shaking her head, and he said, plaintive, "You never *thought* of moving to Earth?"

"Of course not! This is *home*." She blinked away more tears. "The Belt is not exactly the boonies, you know. It's *out here* that things are happening." Shanda took a breath. "Look, as you just said, the Belt supplies seventy or eighty percent of the metals Earth uses, and everybody on Earth and in the Belt is eagerly waiting for the day when it's a hundred percent."

"Except a few miners, I guess. Your point is...?"

"And we provide eleven point four percent of the food you eat, including forty-three percent of the cereal grains. The gas miners at Jupiter are just getting started, but soon they'll be providing more plastics and other hydrocarbon products than Earth. You see where I'm going with this?"

He shook his head. "You're threatening a strike? Want your independence?"

"No, no. Look, there's too much metal in the Belt for Earth to use. If it were all taken to Earth, the continents would sink. The same for food. The same for Jupiter's gasses--"

"The Belt has only a fraction of Earth's mass--"

"But it's a very large fraction of the mass of Earth's *crust*, which is where people live. No. Earth simply can't use the resources of space. If the human race wants those resources, it'll have to go where they are."

His face had gone totally blank.

"You've probably seen the projections yourself--in a hundred years, there'll be more people living in space than on Earth. I want my descendants," she said quietly, "to live in the mainstream of human life, not the backwater."

Charles turned to frown into the stream.

"You've never even considered moving Out here to be with me? Would it be so bad?"



"It would mean giving up everything, everything I planned for," he muttered. He had a wrenched expression. "You know it's not really safe out here," he said. "I don't want my children to face such dangers."

Her father, her grandfather, two cousins. "Yes, we have dangers," she said. "But you told me that your ancestors migrated to the Midwest in the nineteenth century--in covered wagons. The settlers had a saying: The cowards never started--and the weaklings died by the way."

He smiled briefly at that. "No, it's not cowardice. But you're asking me to recast my whole plan for my life, in just a few minutes. It's a worse wrench to the mind than free-fall farming is to the muscles."

Her smile trembled with hope. "You don't have to decide this minute," she said. "Do nothing in a hurry. Take a month."

Charles looked down, muttered, "You're asking me to give up everything. Everything."

"Yes, just what you're asking of me." She made her voice as steady as she could, as final. "But I will never emigrate to Earth. *Here* is where I belong."

\* \* \* \*

The best way to travel space is asleep or while studying. Shanda was too upset to do much of either, but the hours passed till finally they docked with Little Earth at L4. Charles had also been subdued. He squeezed all their hands, said goodbye in a firm voice, and was gone.

To her relief, Ozzy did not approach her during the rest of the trip.

Nerdstrom was a swarm of asteroids, many in crops, and five big wheels. Two more were under construction. They were mobbed at the lock, the kids who'd been away all term swarming over them, babbling loudly. Shanda managed to smile and respond. The Takahashis met Ozzy and dragged him away.

Shanda spent an hour logging in and being assigned a room.

Latimer found her in the refectory, staring at nothing. "So, is Charles going to join us Out here?" he asked.

"I don't know. He's thinking it over. I ... don't think so," she said. Now she had said it, and the tears could come.

"Pity," Latimer mused, touching her hair. "A man like that is wasted on Earth."

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