

In Space No One Can Hear

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The silence was deafening, which was ironic in its own way.

Jacob Galiano tapped the side of his helmet again in an attempt to get the radio to work. Nothing. He sighed and continued crawling along the outside of the *Urshanabi*. The metal foil of his emergency EVA suit crinkled as he flexed his muscles. He made sure to face only the surface of the cylindrical spaceship; its continual rotation brought him within sight of the Sun every minute or so, and despite the protection of the visor, he didn't want to risk directly exposing his eyes.

Jake grabbed another handhold and pulled himself across. His senses confused him. He liked to think of the Earth as being down and the Moon as being up, but that didn't work in free fall, especially when clinging to a rotating spaceship that pointed towards neither.

Another handhold, another foothold, and Jake pulled his slender frame another few meters towards the passenger cabin. He cursed silently to himself. He was a shuttle pilot, not a repair technician. If security had been better, and the computer still functioned, he wouldn't have to be out here, risking his neck to save everyone's life.

Including that of his brother, Ron.

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It had all started back on Terra One, the civilian commercial space station and vacation spot run by People Movers, Ltd., in low Earth orbit. People with enough money would pay to visit the rotating station for a week or so, enjoying the low gravity and the view. People with more money, and the inclination to do so, would stop at Terra One briefly and then continue on their way to a moonside vacation.

Jake piloted the *Urshanabi*, one of the five passenger shuttles that routinely traveled between Terra One and Luna One. Standard procedure was for the flight crew to board the ship an hour before any passengers arrived. This time around, however, Jake had arranged to meet his brother Ron ten minutes before the rest of the flight crew was supposed to arrive. When he got to the docking bay, Ron was waiting there for him, a bag presumably stuffed to the limit of his mass allowance at his feet.

Jake hadn't seen Ron in a few years, and he took a moment to take in the sight of his brother. Ron's hair was still dark black, as opposed to Jake's gray-black hair, and his mustache was thick above his lip. Ron still wore glasses; he wasn't the sort of person to get his vision corrected. Jake had been required to get his nearsightedness eliminated, to qualify as a shuttle pilot.

Ron didn't notice Jake's approach until Jake was in his line of sight. As soon as they spotted each other, though, they smiled and hugged.

Once they disentangled, they began to converse in Sign.

" *It's really good to see you. How are you?*" Jake asked. " *It's been so long—too long.*"

" *Not that long—just years and years. You never write, you never call . . .*" Ron smiled at his joke chiding his brother; actually, they communicated quite frequently by electronic mail.

" *It's only been three years, Ron.*" Jake laughed and tousled his brother's hair.

" *So what's up? I see piloting spaceships agrees with you.*"

Jake felt sudden embarrassment for two reasons. First of all, he wanted to fly *real* spaceships, such as the explorer ships headed to the edges of the solar system. But he had failed to pass the test required by People Movers' parent corporation, System Explorations, for frontier pilots. Instead, he was stuck ferrying people in the Earth-Moon system.

And second . . . the second reason he didn't want to think about. It was too much like pitying Ron. Instead, he took the path of modesty. " *I don't really do much. Launching, docking, minor course corrections, that's all.*"

" *Still, you do pilot spaceships. It must be exciting.*"

Jake shrugged. " *The only excitement happens when another one of those anti-space groups decides to come up here for a demonstration. And I'm not flying spaceships, really. Just a shuttle. Have you seen it yet?*"

Ron shook his head. " *Only in pictures.*"

" *Here, take a look.*" Jake guided his brother over to one of the portholes, which gave a slightly askew view of the *Urshanabi*. Ron studied it for a few seconds, then turned back to Jake.

" *Interesting ship,*" he said. " *It's not like the one that brought me up here. That one had much larger rockets, but inside it was cramped.*"

Jake nodded. " *We don't need solid rocket boosters just to get from low Earth orbit to Moon orbit. We use—*"

Ron interrupted him. " *I know that!*" The quick movements of his hands showed his impatience.

Jake felt his face flush. " *Sorry.*"

" *Simple chemical thrusters, right? Oxidant mixed with propellant?*"

Jake nodded. " *The cabin's larger too. Overall, though, it's about the same size as the shuttle that took you up here—if you include the boosters.*"

The two continued chatting for a few more minutes, until the rest of the flight crew showed up. Ron was the first to notice them; he felt the vibration of their steps on the metal floor of the dock. Jake was only expecting three people, and he was slightly surprised to see a fourth person with them.

" *Come on, I'll introduce you.*"

Ron held him back. " *Could you let me know who they are, first?*"

"Huh?" Jake asked aloud. Then he remembered. Being Deaf, Ron preferred to know people's names before being introduced. It saved time later on. " *Oh, sure. The short Indian woman on the left, in the blue jumpsuit like mine, that's Shamita Rao .* " As usual, Jake fingerspelled the name, then assigned a shorthand name-sign to her so he and Ron could refer to her more quickly later on. He made a fist with the thumb across the fingers, the handshape for "S," and lifted it up to imitate the sign for "rocket." " *She's the other pilot. The tall blonde woman in the white jacket is Sally Gershon . She's one of the flight attendants. And the man with black curly hair in the matching white jacket is Yuri Smirnov. He's the other.*"

" *Russian?*"

Jake laughed. " *His family is, but he grew up in Boston , just like we did. Sha-mita's from Calcutta , though, and Sally's from London . As for the blond man in the white overalls and red cap . . .*"

" *Yes?*"

" *That's Matt Marino. He's one of the computer techs on board the station.*"

" *What's he doing here?*"

Jake shrugged. " *Remember the protestors I mentioned before?*"

" *Yes.*"

" *Well, every so often, the Earth Firsters or some other group manage to rig the entertainment computer to spout their nonsense. With lots of new vids constantly coming in from Earthside , it's easy to infect the disks. And company regulations say that all the ship's computer systems have to be checked by one of the techs for viruses and flushed. Annoying nuisance, if you ask me; it sometimes delays departure. But hey, that's regulations for you. Except . . .*"

" *Yes?*"

" *Well, we haven't had that problem in a while. I wonder why Matt's here.*"

A few seconds later, the four others had approached within conversation distance. They greeted Jake, who responded in kind, while Ron just stood there.

Finally, Jake said, "Guys, meet my older brother Ron."

Sally and Yuri said hello, shook hands with Ron in turn, then approached the airlock. "We've got a bit more to do than usual today," Sally said.

Matt nodded. "Damn straight. Those stupid protestors again." His eyes wandered around the dock. "Looks like they managed to clean up from last time, though. You guys missed a major demonstration when you were back on Luna One. When they were done, there was garbage everywhere."

"Matt," Jake asked, "why are you here? Our entertainment system's been running fine."

"New regs ," Matt replied. "Management's gotten antsy. They want the computer systems flushed before

every launch now."

"Of course," Jake said, rolling his eyes. "Well, you'd better get to work then. Don't want to delay takeoff."

The flight attendants cycled the airlock, causing Jake, Shamita, and Matt to cover their ears with their hands; the rush of air and the clanking of the electro-mechanical locks were a little noisy. Of course, the noise didn't bother Ron. Once the airlock was open, Sally, Yuri, and Matt passed through it in turn.

Shamita paused at the airlock, then turned to Ron, shook his hand and said, "Pleased to meet you."

Ron turned to his brother and signed, "*Nice to meet you, too.*"

Jake nodded at his brother. Aloud, he said, "Ron says it's nice to meet you too."

Shamita looked bemused. "What was that?" she asked Jake. "Why'd your brother wave his hands around like that?"

Jake smiled weakly. "Sorry, I haven't told you yet. Ron's Deaf."

Shamita turned to Jake. "Deaf? You mean he can't hear?"

"That's right."

"But—can't they fix that?"

Jake sighed. "It's a long story. But there are many Deaf people all over the world, and they communicate with Sign language."

"Oh." Shamita looked thoughtful for a moment, then asked, "Can your brother talk?"

Jake shifted; he felt uncomfortable, talking in front of his brother. "Yes, but—why don't you ask him? I'll serve as interpreter. Just make sure to look him in the eye when you talk; don't look at me."

Shamita looked a little uncomfortable, but nodded. "Oh, OK." She turned to Ron. "Jake tells me that you can talk. Is that true?"

Ron looked at Jake and signed: YES TALK I CAN, CHOOSE NOT HEARING UNDERSTAND ME NOT. In the traditional role of the interpreter, Jake spoke exactly what Ron signed. "Yes, I can talk, but I choose not to. Hearing people tend not to understand me too well anyway."

Jake saw Shamita turn to look at him, but he shifted his eyes back towards Ron as a cue for Shamita to keep facing Ron. She got the hint. "Oh. I'm sorry," she said to Ron.

Ron shrugged and signed: DEAF PERSON YOU MEET NEVER BEFORE. "Don't be," Jake interpreted. "You've probably never met a Deaf person before."

She nodded. "That's true." She paused, then said, "Jake doesn't usually talk about his family much."

Jake dutifully interpreted her words correctly, but felt himself flush as he interpreted Ron's next words. "Jake talks about work to me all the time. He tells me you're one of the best pilots in People Movers."

She smiled. "Thanks for saying that, both of you."

Jake interpreted her words, nodded, and then said to both of them with voice and Sign that it was time to get inside. Wordlessly, the three of them entered the *Urshanabi*.

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An hour later, the fifty or so passengers having boarded the shuttle and Matt Marino having left the ship, the airlock closed and the *Urshanabi* was ready to leave. Jake never tired of launch, no matter how standard the routine had become. Once the passengers and flight crew were strapped in, Jake and Shamita took the *Urshanabi* away from the station and burned the thrusters until they were floating in standard launch orbit. Jake enjoyed the sensation of free fall, but imagined Sally and Yuri didn't, dealing with the temporary disorientation of the passengers. He didn't envy them their job. At least the ship was only filled to about half its capacity.

"Well, that's it," Jake said once they were on their way. Regulations required both Shamita and him to be alert for another hour, although he knew nothing ever happened. Even this close to Earth, space was relatively empty. "Do you want the first sleep shift?"

"Sure, I'll take it."

"Chess first?" Jake smiled; they usually used the computer to play chess against each other at least twice per flight, and so far, he was ahead in wins.

"I'd rather just chat, actually."

"About what?"

"Your brother. You never mentioned him before."

Jake paused. "Oh. OK. Well, I suppose I had to talk about it sometime."

"Huh? Talk about what?"

Jake took a moment to check the controls, even though he knew the ship was on course. "I got my interest in space from Ron."

"Really? You never mentioned that."

Jake nodded. "It's something I've always felt bad about. Ron was always the one who was into space travel. And its early history. Mercury, Gemini, Apollo, Soyuz, Artemis—you name it, he devoured everything he could find about it. He always wanted to travel into space, fly to the Moon, see the outer solar system."

"So why didn't he— oh."

"Exactly. They don't hire deaf astronauts."

"Too bad," Shamita said. "So what does he do?"

"Well, he wanted to be an astronomer, but he didn't like math. So he does amateur astronomy on the side, but for a living he's a teacher of English literature. He also teaches Sign."

"How can he teach if he's deaf?"

Jake forgave Shamita in his mind for asking the question; there was no reason for her to have known. "Quite easily. He's the Stokoe Professor of English Literature at the Rochester Institute of Technology in North America."

That got Shamita's respect. "Really? A professor?"

"Uh-huh. In fact, it was Ron who told me that Urshanabi was the ferryman for Gilgamesh when I first got this assignment. He really knows his stuff. There's an international institute for the Deaf on the Rochester campus, so all his students also know Sign. And he teaches hearing people Sign, in the same way you can teach any foreign language to people who don't know it. He can communicate through speech, lip-reading, and electronic interpreters."

"Electronic interpreters? You mean like language translators?"

Jake nodded. "Only it doesn't translate what someone else says into another language. It just prints the text of what someone says onto a screen."

"The translators never seem to work too well," Shamita observed.

"Same for the interpreters. They tend to get a lot of words wrong. Besides, it also inhibits conversation because the hearing person has to speak into the microphone and then hand the interpreter over to the Deaf person to read. Have you ever tried to carry on a conversation using one of the electronic translators?"

Shamita nodded. "It's awkward."

"Then you can understand why Ron doesn't like them. Besides, they're somewhat expensive."

"Hm. How did your brother afford the trip to the Moon?"

Jake was slightly surprised at the question, but answered it. "He really wanted to go, so he saved up." And, although he didn't say it aloud, Jake had helped him out a bit. Spaceship pilots earned a lot more than teachers.

"Oh. OK. Um, Jake?"

"Yeah?"

"Can I ask you a personal question?"

Jake hesitated; she was doing it again. Didn't she realize that she was already asking a bunch of personal questions? He liked Shamita a lot, but she had a tendency to probe obliviously into private subjects. It often got on his nerves. Still, they had to do something during this dead time. "Sure."

"It seems to me that deafness ought to be, well, curable."

Jake winced. "First of all, don't use that word. A lot of Deaf people don't think of their condition as one that needs to be cured, or fixed. And secondly, while it is possible to—to correct congenital deafness, Ron is what's called 'post-lingual deaf.' He could hear until age three or so, but a bout of meningitis cost him his hearing."

"Ah. So gene therapy would do him no good."

"Right. Although . . ." Jake thought for a moment about two Deaf friends of his, who had congenital deafness in their family line but chose not to get gene therapy for their children. They hadn't wanted to raise hearing children, because they felt that, as the children grew up, they would become isolated from them. It was an ironic reversal of the usual case of hearing parents who find themselves raising a deaf child, unable to cope.

Shamita wouldn't understand. "Never mind," Jake said.

"OK." Then, as if she realized she had probed too deeply into his personal life, she changed the subject. "Tell me more about Sign language. It looks interesting."

Jake felt relieved at the change of subject. He found it easier to talk about something objective than to talk about his brother. "It is interesting, or at least I've always thought so. Most hearing people don't know Sign, but I picked it up being Ron's brother. It was established to be a real language in the twentieth century, although its roots go further back."

"You must not get to use it often."

Jake shrugged. "Well, not here in space, but at home I've used it quite a lot. I'm considered a member of the Deaf community—that's with a capital 'D' in Deaf. That's partly because I'm Ron's brother, but also because I can sign fluently."

"Can you show me how it works?"

"Certainly. Let's see." He thought for a moment. "OK. Watch closely."

First Jake wiped his left palm with his right palm, in a sweeping outward motion. Next he shaped his hands into two fists with his index fingers extended, and brought the fists together. Finally, he pointed directly at Shamita.

"These three signs mean 'NICE,' 'MEET,' and 'YOU.'" If you wrote it down in what's called ISL gloss, you would just write down those three words. But when signed, it's a proper sentence, the equivalent of saying 'Nice to meet you' in English."

Shamita looked confused. "ISL gloss?"

"Sorry. ISL is International Sign Language, developed in the twenty-first century when the international Deaf community decided to create one overall language that would transcend borders. It's based around American Sign Language, which in turn evolved from French Sign Language. Not all Sign languages were the same, although hearing people didn't often realize that."

"And gloss?"

"Gloss is—well, it's sort of a way of writing each sign as one English word. It's a bit technical."

Shamitalaughed. "You're sounding like a linguist, not a pilot."

Jake shrugged. "One of my hobbies. Grow up with a Deaf brother, and you become more conscious of sound—and the absence of sound. I actually grew up fluent in both English and Sign, so I know a lot about language."

Shamita bit her lower lip for a moment. "I have trouble thinking of that as a language. After all, it just seems like gesturing. You know, like pointing at me to indicate 'you.' That's somewhat simplistic."

Jake tried to keep the offense out of his voice, but didn't succeed. "Well, it's a lot more involved than that."

"Oh, obviously. It just seems weird, that's all."

Jake grunted. "Let's play chess now."

To his relief, Shamita assented.

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Shamita won two games out of three. She took her sleep shift, then woke in time for both of them to be ready at the halfway mark, twelve hours in, when it was time to turn the ship. Jake was yawning as Shamita strapped herself into her seat.

"Ready?" Jake asked her.

"Yes."

"OK, let's do it." Jake hit a button to communicate with the passenger cabin. "Ladies and gentlemen, this is Jacob Galiano, one of your pilots, speaking. We're about to turn the ship around to aim us right at Luna One. Until we dock, this will be the only time that we'll be out of free fall, as the rotation of the ship will feel like gravity pushing you down against your seat. Following the rotation, you'll feel another push in a different direction as we fire the rockets. Please stay in your seats, secure your belongings, and make sure you are strapped in until we say otherwise."

Jake released the button and pushed another one, to communicate directly with Sally and Yuri via their radio headphones. "Sally, Yuri, are we set?"

"One moment, Jake," came Yuri's reply.

Jake sighed and waited for a minute until Sally's voice came over the radio. "Sorry, Jake. Everyone's strapped in now. One of the passengers was having trouble with the free fall toilet. You know how it is."

"Yeah, I do. Listen, make sure my brother's strapped in as well."

"Hold on, he's right above me. Yes, he's strapped in."

"Good. Cockpit out." Jake released the button, and turned to Shamita. "Your turn, or mine?"

"Yours, I believe. Go to it. I'll fire the rockets."

Jake nodded and poised his finger above the gyro button. "Hold on." He pushed the button. The ship slowly began rotating, and a timer just above the button turned on, counting down from thirty-two seconds. Jake felt himself being pressed into his seat as the centripetal force did a good imitation of gravity. As soon as the timer hit zero, Jake released his finger from the button, expecting the feel of the induced gravity to decrease slowly back to nothing over the next thirty-two seconds.

But half a minute later Jake continued to feel the same constant push of his weight onto his seat. Confused, Jake looked out the window at the starfield, which was definitely continuing to rotate at the same constant rate.

"Jake? What's happening?"

He started to feel a slight panic. "I don't know. We must still be rotating. Check the status of the gyro on the computer, will you? Maybe something's stuck, and we can jiggle it loose."

Shamita pushed a button, and a status screen appeared on the monitor in front of them. "It reads—" she started to say, and then the computer beeped loudly and the monitor blanked out.

"What the—Jake, the computer's out!"

Jake stabbed at a few other buttons. Despite the controlled humidity of the cockpit, he felt himself beginning to sweat. "Not possible. Only thing that could do that is a solar flare, and the forecast was clear." It *had* to be clear, or launching *Urshanabi* would be a death sentence for all aboard.

"Wait a minute—something's coming back up." Shamita paused, then said, "What in the world . . . ?"

Text began to scroll down the screen, in many languages. Jake tracked the English. "Greetings to the pilots of People Movers. For too long has money been spent by the rich on pleasure jaunts in space, rather than to help the poor on Earth. Your corporation has consistently refused to acknowledge us and meet our demands, and so we have decided, finally, to take action.

"By activating your gyro, you have triggered a computer virus which has completely disabled your ship. Your complement of rich passengers will float forever in the limbo between worlds, a lesson to those who might choose to neglect Mother Earth and her inhabitants in favor of wasting their money on the siren song of outer space.

"And as for you, claiming your innocence in the crimes of your corporation, remember this. If you're not part of the solution, you're part of the problem.

"EARTH FIRST. EARTH ONLY. EARTH FOREVER."

Jake finished reading the text before Shamita. "How the hell did they do this?" he asked aloud, and then realization struck. "Marino! Why, that no good bastard. He must've infected the computers when he claimed to be flushing them." He thought a moment. "I should have been more on my toes this morning. If management had actually ordered a complete flushing of the computers before every trip, we would have been told." He shook his head. "I can't believe he'd throw himself in with those anti-space nuts."

Shamita finished reading the statement and turned to Jake, an uneasy look in her eyes. "You know, Jake, they do have a point."

Astonishment hit him. "Don't tell me you sympathize with them!"

Shamita glared at him. "If I did, would I be here? But, Jake . . ." Her eyes got a faraway look for a moment, and Jake could tell that there was more to it than the resentment she felt in piloting people who were much richer than she was. "My grandmother used to tell me how, when working in the fields, her friends and she would sometimes see jet planes flying overhead. All activity would stop until the trail of smoke faded away. She told me that every time she saw a jet, she would think of the money spent on it that could have gone to feeding the hungry."

Jake shook his head. "But space exploration benefits everyone in the long term! Colonization relieves population pressure, new technologies make it easier to feed people—"

"Jake, you're ranting. Both you and I know what the benefits of space exploration are." She pointed at the text still on the screen. "But it's them we have to convince, not us, and so far, we haven't done a great job of it."

Jake nodded slowly. "Speaking of jobs, we've got another job to do now, and that's to save our skins. You're the computer expert; see what you can do, OK?"

Shamita began hitting various buttons on her panel. Jake studied the controls in front of him, trying to think of something he could do.

After a minute, Shamita leaned back. "Hm."

Jake turned to her. "What is it?"

"Well, I've confirmed it. It's a computer virus set to activate when we turned on the gyro, just like they said."

"How bad is it?"

"Whoever wrote it is damn good. Our computer system is completely disabled. We can't do anything that requires the computer, and that includes shutting off the gyro, or firing the rockets. Thank God they didn't disable life support." She looked up, frowning. "Of course, that is a mixed blessing. They wanted us spinning out of control, but alive to suffer."

"So our deaths would be slow and painful. Can you fix the problem?"

Shamita rolled her eyes. "What do you think I've been trying to do?" she asked, and returned her attention to the computer.

A minute later, the computer beeped at her and she cursed.

"No go?" Jake asked.

She shook her head. "The system's just not designed for this kind of access."

"Can't you reboot the computer?"

"How? Turning off the computer means shutting down the life support systems."

Jake nodded. "Continue trying to deactivate the virus. I'll have Sally or Yuri turn off the gyro manually. At least then we can try to reorient ourselves." He pushed the radio button.

Silence.

"That's odd." He tried again, and still got nothing.

"Um, Jake?" Shamita said. "That's not going to do any good. The radio's digital tuning is designed to scramble the signal through the computer, remember? No direct link, so our internal communications can't be monitored." She grimaced. "It's a security feature."

Jake sighed. "Well, right now it's a bug. I doubt we can even radio for help. I'll go take care of the gyro myself." He unstrapped, stood up, stepped carefully over to the door, and pushed the button to open it.

It didn't budge.

"What the—" He pushed the button again, still to no avail.

"Oh, damn," Shamita said softly.

Jake's head snapped around. "What? What is it?"

"Jake, Matt had access to *all* the computers. Including—"

"Including the ones that control the doors." Jake nodded grimly. "Damn! Now what do we do?"

"Won't Yuri and Sally realize something wrong?"

"Even if they do, they're not about to try to fix it without knowing what the problem is. They'd be afraid of making things worse."

There was silence for a moment, which Shamita broke. "So we're stuck here until someone realizes that *Urshanabi* hasn't come in. Call it a day or so until we get rescued."

Jake shook his head. "Even when they realize we're missing, they still have to find a ship to search for us, and by then we'll be so far off the regular flight path . . ." He trailed off.

"We can't accept that, Jake. There's got to be a way to stop us from spinning."

"The only way to do that would be to tell Sally and Yuri to go into the gyro compartment and turn it off."

"But how? With no radio, there's no way they can hear us."

Jake thought for a moment. "They can't hear us. . . ." he murmured.

"What?"

"You're wrong. There is a way to get through to them, but it means I'll have to go outside. Will the emergency front airlock work?"

Shamita nodded. "It's a manual lock. But Jake, you won't be able to get inside the cabin. How can you

communicate with Sally and Yuri?"

Jake opened up the locker with the suits inside. "Through Ron."

* * *

And now, here Jake was, doing his best imitation of a human fly. He had just reached the edge of the cabin exterior; next, he had to find his brother.

Which was not going to be easy. The seats inside the *Urshanabi* went all along the "floor" of the inner cylinder, so all the windows appeared to face "down" as far as the passengers were concerned. Most of them would enjoy the view for the first few minutes of the trip, but then would stop looking down in preference to reading, sleeping, or watching the in-flight movies. Other more vertiginous passengers would ignore the windows altogether, and keep their eyes facing in any other direction.

Fortunately for Jake, vertigo was not a trait that ran in his family. It took the better part of an hour, but he finally found his starstruck brother. Ron was facing down, gazing into infinity, with a lazy smile on his face.

Jake pulled himself up close to the tinted window, so Ron could clearly see him. Ron's expression suddenly changed from contented to startled. Frowning, he signed histrionically, "*Jake? What are you doing out there?*"

Jake braced his feet against the handholds. "*Ron, don't draw attention to yourself. How are the passengers?*" It felt oddly constricted, signing in a spacesuit. He had to make his signs more expressive, slower.

"*Huh? They're fine.*"

"*They don't know about the problem?*"

"*Problem? What problem? You mean with the entertainment system?*"

Jake felt confused. "What problem with the entertainment system?"

"*The movie stopped, and some weird guy came on. I don't know what he said, because the captioning went out. But people got upset, so they turned it off.*"

Jake nodded. Infecting the movie computer was traditional for the Earth Firsters; he just didn't expect them to still do it when they had already done something worse. "*Sorry. Ron, we need your help. A computer virus has disabled the ship—*"

"*What do you expect me to do about this?*"

"*Ron, calm down! Just pay attention. Do you feel the pull of gravity towards the floor?*"

"*Yes. Isn't that normal? You said that we turn in the middle of the trip, and your friends were saying something to the passengers an hour ago.*"

Jake nodded. "*It's normal, but not for this long. Here's the problem. The gyro—*" Jake fingerspelled the word, as he didn't know the sign for it— "*the thing that's spinning the ship, is a round metal ring*"

in a compartment which surrounds the passenger cabin, directly at the center . It was supposed to stop spinning, but it's still going. I can't access it from out here, but there's an entrance panel inside there with you."

" But I don't know how it works!"

" No, I know that, but Sally and Yuri do. I want you to get one of them over here."

" Wait here," Ron signed, and then smiled and shook his head. " I can't believe I told you that. I mean, where can you go?"

Ha ha , Jake thought, and waited for Ron to return.

A few minutes later, Ron returned to the window, with Sally looking over his shoulder. She looked vaguely distressed. Jake gave Ron a puzzled look.

" She wants to know what's going on."

" First, ask her how the passengers are doing."

Ron nodded and spoke aloud to Sally. It was impossible to hear them through the window. Looking towards the window, Sally started to say something to Ron, but Ron stopped her and said something else. Sally finished her sentence, looking directly at Ron, and then Ron turned back to the window.

" Sorry. I had to explain to her that I couldn't read her lips if she didn't face me."

Jake nodded and smiled. *" So what's up?"*

" She says that the passengers don't realize anything's seriously wrong, although some of them are starting to wonder what's going on over here. But she and Yuri kept trying to reach you on the radio, and couldn't. She says the spinning should have stopped by now."

" She's right. OK, here's the story."

Through signing to Ron, Jake was able to explain to Sally about the computer virus and the problem with the gyro. *" Tell Sally that she or Yuri is going to have to open the hatch to the gyro compartment. Then they can go inside and activate the mechanical clamps. Once the ship has stopped spinning, we can figure out the rest."*

Ron conveyed the rest of the message to Sally. She nodded, gave Jake a thumbs-up, and then disappeared from his view.

" Are you going in now?" Ron asked.

" I want to wait until I know everything's under control," Jake replied.

A minute later, Sally returned, and went through the same rigamarole with Ron as before.

" She says that the clamps aren't functioning," Ron signed. " She pushes the buttons and nothing happens."

Jake wanted to rub his eyes in frustration, but obviously couldn't. The virus was too thorough. *" Tell her she'll have to crawl along the compartment ring, closing each clamp manually."*

Ron passed on the message, and after a moment had Sally's reply.

" She says that she can't do that."

" Why not?"

Ron smiled. *" Get this. Apparently, the screeching of the clamps on the gyro is beyond the pain threshold for human hearing."*

Jake paused. *" Ron, can you—"*

Ron interrupted him. *" Yeah, Jake, I've already figured it out."*

Jake nodded. *" Have Sally explain to you exactly what needs to be done. Remind her to time it correctly, so we're pointing in the right direction."*

" OK. Are you going back in?"

He shook his head. *" I'll wait until the ship is back on course,"* Jake replied. *" Then I'll go back to the cockpit. Stabilization is only part of the story. We still need to get the rockets to fire."*

" You said the computer was out."

" Yes, so—" Jake stopped signing, and stared out at the stars for a moment. *" You're right. Firing the rockets requires the computer. Unless . . . Ron, when the ship stops rotating, I'll need you to talk to Sally again. She and Yuri will have to fire the rockets manually."*

Ron nodded. *" Good thing I was along, then, isn't it?"*

Jake made a fist with his thumb over his fingers, and bent it back and forth at the wrist, like a nod. The sign for YES. *" Yes. Yes, it is."*

* * *

The *Urshanabi* arrived at Luna One only a few hours late. The docking bay was filled with anxious people—friends, relatives, and station personnel—wondering about the status of the ship. As they came in for final approach, Jake went back outside to fire the reverse jets manually. As the *Urshanabi* drifted towards the station, the docking crew had time to realize that they were not responding to their radio calls and that something was wrong. They came out with a small repair craft to get her; the *Urshanabi* would not have been able to dock easily without the computer.

Jake and Shamita's entrance into the docking bay was met with a wave of applause from the already disembarked passengers, as whispered rumor spread about what had happened. They had no time to enjoy it; they were whisked away by the station manager and a slew of company officials for a debriefing. Jake barely had time to tell Ron that he'd contact him later, when he was free.

The next station day, after a good night's sleep, Jake sent a message to Ron's hotel room to meet him for a drink that afternoon. A few hours later, Jake walked into the Moonlight Lounge, a split level bar in

the low-gee ring, with one large picture window always facing the Moon. A low murmur of conversation filled the empty space, bouncing off the metallic walls. A few people looked up and smiled at him, but he didn't see Ron.

"Hello, stranger." Jake turned around. It was Liz Hirsch, owner of the bar and an old friend. She gazed at Jake with brown eyes and twirled a strand of her curly black hair in one hand. Her other hand held an old fashioned beer stein.

"Liz! Heard about our exciting little trip?"

She cocked her head. "Are you kidding me? Everyone's been talking about it."

Jake shrugged, trying to appear modest. "Listen, Liz, I'm here to see—"

"Your brother. He's over there." She stopped playing with her hair and pointed over to the window; Ron sat at the table closest to the glass, facing away from the bar and into space. "Everyone's talking about him too."

"Thanks, Liz. I'll have my usual." He headed over to his brother's table.

There was only one other seat at the table, the one facing away from the window. As Jake settled into the comfortably molded chair, Ron's eyes lit up in delight.

"*You're late*," he signed.

Jake checked his watch. "*Only a few minutes. How are you feeling?*"

"*Fine*. I had a great time on the U-R-S-H-A-N-A-B-I." Ron smiled as he quickly fingerspelled the name of the shuttle. "*Your friends let me fire the rockets.*"

"*I know. I found that out during the debriefing.*"

"*Really?* What happened?"

Jake told his brother how he and Shamita went through the details of the sabotage over and over with different company bigwigs.

"*Did you tell them about me?*" Ron asked.

Before Jake could reply, Liz came over with a glass that matched Ron's, and set it down in front of Jake. "Vodka martini. Better not be piloting for the next few hours."

Jake winked at Liz. "Don't worry, I know the rules," he said as she strolled away. Then he turned back to Ron. "*What were we talking about?*"

"*Me!*"

They both laughed, and then Jake felt somber. "*Ron, I don't know if you realize this, but I was always a little jealous of you as we were growing up.*"

"*You?* Jealous of me? Why?"

Jake felt his face flush. " *Because you were deaf, and I wasn't. You always seemed to get all this special attention.*"

Ron gave his brother a look of disbelief. " *Jake, it's not the easiest thing in the world, being deaf.*"

Jake nodded. " *Oh, I know that now.*"

" *Besides, if anyone has anything to be jealous of, it's me. After all, you're living the life I always wanted.*"

Jake scratched his head and looked away for a moment. "That's what I wanted to talk with you about," he whispered aloud.

Ron waved his hand in front of his brother's face. " *Hello?*"

Jake smiled, put his fist at his heart and moved it around in a circle: the sign for SORRY. " *My apologies. I've got something important to tell you.*"

Ron nodded. " *What is it?*"

" *Well, during the debriefing I told them all about how you helped us through the crisis. And—and I suggested something to them.*"

" *What?*"

" *It occurred to me that astronauts could use Sign to communicate in space when radios go out.*"

Ron leaned back and laughed. " *Is that all? You're not the first one to think of that. The first American space agency, NASA, tried to teach Sign to their astronauts. Didn't get too far, though.*" He grimaced. " *They didn't think it was worth it.*"

Jake took a deep breath. " *Well, after this emergency, it may go farther. Ron, how would you like a job teaching Sign to astronauts?*"

Ron shrugged. " *I already have a job teaching Sign.*"

" *I mean, a job here in space.*"

Ron looked puzzled, and curled his right index finger down: the sign for HUH. " *Space?*"

Jake nodded. " *Most astronauts don't get down to Earth anymore. They'd need you to teach the ones who are already here.*"

It took a moment to sink in, but then Ron smiled. " *We could work together!*"

Jake shook his head. " *I already know Sign, and besides, they need me here. They would need you to teach Sign somewhere else, in an environment where people might really find it useful.*"

" *Really? Where?*"

Jake turned around and looked behind him, out the window at the Moon. He closed his eyes, and imagined seeing beyond it to the planets of the outer solar system, which lay ahead. The deep cold vacuum near Saturn, Neptune, Uranus, and Pluto was the most silent environment humanity had reached so far. Right now, astronauts were constructing orbital stations and establishing beachheads, pushing the frontier further and further out. Jake wanted so much to be a part of it, but knew he couldn't. Oh, he could have offered himself up as the Sign teacher for those astronauts, but he knew he would never forgive himself. He had already had his opportunities; this one was not for him, but for Ron.

He turned back to his brother and did his best to paste a smile on his face. " *You were always the one who wanted to be the space explorer. Here's your chance.*"

Jake saw the glint in his brother's eyes as Ron finally caught on. They smiled at each other, and raised their glasses in a silent toast