

A WALK IN THE SUN
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The pilots have a saying: a good landing is any landing you can walk away from.

Perhaps Sanjiv might have done better, if he'd been alive. Trish had done the best she could. All things considered, it was a far better landing than she had any right to expect.

Titanium struts, pencilslender, had never been designed to take the force of a landing. Paperthin pressure walls had buckled and shattered, spreading wreckage out into the vacuum and across a square kilometer of lunar surface. An instant before impact she remembered to blow the tanks. There was no explosion, but no landing could have been gentle enough to keep *Moonshadow* together. In eerie silence, the fragile ship had crumpled and ripped apart like a discarded aluminum can.

The piloting module had torn open and broken loose from the main part of the ship. The fragment settled against a crater wall. When it stopped moving, Trish unbuckled the straps that held her in the pilot's seat and fell slowly to the ceiling. She oriented herself to the unaccustomed gravity, found an undamaged EVA pack and plugged it into her suit, then crawled out into the sunlight through the jagged hole where the living module had been attached.

She stood on the grey lunar surface and stared. Her shadow reached out ahead of her, a pool of inky black in the shape of a fantastically stretched man. The landscape was rugged and utterly barren, painted in stark shades of grey and black.

"Magnificent desolation," she whispered. Behind her, the sun hovered just over the mountains, glinting off shards of titanium and steel scattered across the cratered plain.

Patricia Jay Mulligan looked out across the desolate moonscape and tried not to weep.

First things first. She took the radio out from the shattered crew compartment and tried it. Nothing. That was no surprise; Earth was over the horizon, and there were no other ships in cislunar space.

After a little searching she found Sanjiv and Theresa. In the low gravity they were absurdly easy to carry. There was no use in burying them. She sat them in a niche between two boulders, facing the sun, facing west, toward where the Earth was hidden behind a range of black mountains. She tried to think of the right words to say, and failed. Perhaps as well; she wouldn't know the proper service for Sanjiv anyway. "Goodbye, Sanjiv. Goodbye, Theresa. I wish I wish things would have been different. I'm sorry." Her voice was barely more than a whisper. "Go with God."

She tried not to think of how soon she was likely to be joining them.

She forced herself to think. What would her sister have done? Survive. Karen would survive. First: inventory your assets.

She was alive, miraculously unhurt. Her vacuum suit was in serviceable condition. Lifesupport was powered by the suit's solar arrays; she had air and water for as long as the sun continued to shine. Scavenging the wreckage yielded plenty of unbroken food packs; she wasn't about to starve.

Second: call for help. In this case, the nearest help was a quarter of a million miles over the horizon. She would need a highgain antenna and a mountain peak with a view of Earth.

In its computer, *Moonshadow* had carried the best maps of the moon ever made. Gone. There had been other maps on the ship; they were scattered with the wreckage. She'd managed to find a detailed map of Mare Nubium and a small global map meant to be used as an index. It would have to do. As near as she could tell, the impact site was just over the eastern edge of Mare Smythii "Smith's Sea." The mountains in the distance should mark the edge of the sea, and, with luck, have a view of Earth. She checked her suit. At a command, the solar arrays spread out to their full extent like oversized dragonfly wings and glinted in prismatic colors as they rotated to face the sun. She verified that the suit's systems were charging properly, and set off.

Close up, the mountain was less steep than it had looked from the crash site. In the low gravity, climbing was hardly more difficult than walking, although the twometer dish made her balance awkward. Reaching the

ridgetop, Trish was rewarded with the sight of a tiny sliver of blue on the horizon. The mountains on the far side of the valley were still in darkness. She hoisted the radio higher up on her shoulder and started across the next valley.

From the next mountain peak the Earth edged over the horizon, a blue and white marble halfhidden by black mountains.

She unfolded the tripod for the antenna and carefully sighted along the feed. "Hello? This is Astronaut Mulligan from Moonshadow. Emergency. Repeat, this is an emergency. Does anybody hear me?"

She took her thumb off the transmit button and waited for a response, but heard nothing but the soft whisper of static from the sun.

"This is Astronaut Mulligan from *Moonshadow*. Does anybody hear me?" She paused again. "*Moonshadow*, calling anybody. *Moonshadow*, calling anybody. This is an emergency."

"shadow, *this is Geneva control. We read you faint but clear. Hang on, up there.*" She released her breath in a sudden gasp. She hadn't even realized she'd been holding it.

After five minutes the rotation of the Earth had taken the ground antenna out of range. In that time after they had gotten over their surprise that there was a survivor of the *Moonshadow* she learned the parameters of the problem. Her landing had been close to the sunset terminator: the very edge of the illuminated side of the moon. The moon's rotation is slow, but inexorable. Sunset would arrive in three days. There was no shelter on the moon, no place to wait out the fourteen-day-long lunar night. Her solar cells needed sunlight to keep her air fresh. Her search of the wreckage had yielded no unruptured storage tanks, no batteries, no means to lay up a store of oxygen.

And there was no way they could launch a rescue mission before nightfall.

Too many "no"s.

She sat silent, gazing across the jagged plain toward the slender blue crescent, thinking.

After a few minutes the antenna at Goldstone rotated into range, and the radio crackled to life.

"Moonshadow, *do you read me? Hello, Moonshadow, do you read me?*"

"*Moonshadow here.*"

She released the transmit button and waited in long silence for her words to be carried to Earth.

"*Roger, Moonshadow. We confirm the earliest window for a rescue mission is thirty days from now. Can you hold on that long?*"

She made her decision and pressed the transmit button. "Astronaut Mulligan for *Moonshadow*. I'll be here waiting for you. One way or another."

She waited, but there was no answer. The receiving antenna at Goldstone couldn't have rotated out of range so quickly. She checked the radio. When she took the cover off, she could see that the printed circuit board on the power supply had been slightly cracked from the crash, but she couldn't see any broken leads or components clearly out of place. She banged on it with her fist. Karen's first rule of electronics: if it doesn't work, hit it and reaimed the antenna, but it didn't help. Clearly something in it had broken.

What would Karen have done? Not just sit here and die, that was certain. Get a move on, kiddo. When sunset catches you, you'll die.

They had heard her reply. She had to believe they heard her reply and would be coming for her. All she had to do was survive.

The dish antenna would be too awkward to carry with her. She could afford nothing but the bare necessities. At sunset her air would be gone. She put down the radio and began to walk.

Mission Commander Stanley stared at the Xrays of his engine. It was four in the morning. There would be no more sleep for him that night; he was scheduled to fly to Washington at six to testify to Congress.

"Your decision, Commander," the engine technician said.

"We can't find any flaws in the Xrays we took of the flight engines, but it could be hidden. The nominal flight profile doesn't take the engines to a hundred twenty, so the blades should hold even if there is a flaw."

"How long a delay if we yank the engines for inspection?"

"Assuming they're okay, we lose a day. If not, two, maybe three."

Commander Stanley drummed his fingers in irritation. He hated to be forced into hasty decisions. "Normal procedure would be?"

"Normally we'd want to reinspect.

"Do it."

He sighed. Another delay. Somewhere up there, somebody was counting on him to get there on time. If she was still alive. If the cutoff radio signal didn't signify catastrophic failure of other systems.

If she could find a way to survive without air.

On Earth it would have been a marathon pace. On the moon it was an easy lope. After ten miles the trek fell into an easy rhythm: half a walk, half like jogging, and half bounding like a slowmotion kangaroo. Her worst enemy was boredom.

Her comrades at the academy in part envious of the top scores that had made her the first of their class picked for a mission had ribbed her mercilessly about flying a mission that would come within a few kilometers of the moon without landing. Now she had a chance to see more of the moon up close than anybody in history. She wondered what her classmates were thinking now. She would have a tale to tell if only she could survive to tell it.

The warble of the low voltage warning broke her out of her reverie. She checked her running display as she started down the maintenance checklist. Elapsed EVA time, eight point three hours. System functions, nominal, except that the solar array current was way below norm. In a few moments she found the trouble: a thin layer of dust on her solar array. Not a serious problem; it could be brushed off. If she couldn't find a pace that would avoid kicking dust on the arrays, then she would have to break every few hours to housekeep. She rechecked the array and continued on.

With the sun unmoving ahead of her and nothing but the hypnotically blue crescent of the slowly rotating Earth creeping imperceptibly off the horizon, her attention wandered. *Moonshadow* had been tagged as an easy mission, a loworbit mapping flight to scout sites for the future moonbase. *Moonshadow* had never been intended to land, not on the moon, not anywhere.

She'd landed it anyway; she'd had to.

Walking west across the barren plain, Trish had nightmares of blood and falling, Sanjiv dying beside her; Theresa already dead in the lab module; the moon looming huge, spinning at a crazy angle in the viewports. Stop the spin, aim for the terminator at low sun angles, the illumination makes it easier to see the roughness of the surface. Conserve fuel, but remember to blow the tanks an instant before you hit to avoid explosion.

That was over. Concentrate on the present. One foot in front of the other. Again. Again.

The undervoltage alarm chimed again. Dust, already?

She looked down at her navigation aid and realized with a shock that she had walked a hundred and fifty kilometers.

Time for a break anyway. She sat down on a boulder, fetched a snackpack out of her carryall, and set a timer for fifteen minutes. The airtight quickseal on the food pack was designed to mate to the matching port in the lower part of her faceplate. It would be important to keep the seal free of grit. She verified the vacuum seal twice before opening the pack into the suit, then pushed the food bar in so she could turn her head and gnaw off pieces. The bar was hard and slightly sweet.

She looked west across the gently rolling plain. The horizon looked flat, unreal; a painted backdrop barely out of reach. On the moon, it should be easy to keep up a pace of fifteen or even twenty miles an hour counting time out for sleep, maybe ten. She could walk a long, long way.

Karen would have liked it; she'd always liked hiking in desolate areas. "Quite pretty, in its own way, isn't it, Sis?" Trish said. "Who'd have thought there were so many shadings of grey? Plenty of uncrowded beach. Too bad it's such a long walk to the water."

Time to move on. She continued on across terrain that was generally flat, although everywhere pocked with craters of every size. The moon is surprisingly flat; only one percent of the surface has a slope of more than fifteen degrees. The small hills she bounded over easily; the few larger ones she detoured around. In the low gravity this posed no real problem to walking. She walked on. She didn't feel tired, but when she checked her readout and realized that she had been walking for twenty hours, she forced herself to stop.

Sleeping was a problem. The solar arrays were designed to be detached from the suit for easy servicing, but had no provision to power the lifesupport while detached. Eventually she found a way to stretch the short cable out far enough to allow her to prop up the array next to her so she could lie down without disconnecting the power. She would have to be careful not to roll over. That done, she found she couldn't sleep. After a time she lapsed into a fitful doze, dreaming not of the *Moonshadow* as she'd expected, but of her sister, Karen, whom the dream wasn't dead at all, but had only been playing a joke on her, pretending to die.

She awoke disoriented, muscles aching, then suddenly remembered where she was. The Earth was a full handspan above the horizon. She got up, yawned, and jogged west across the gunpowdergrey sandscape.

Her feet were tender where the boots rubbed. She varied her pace, changing from jogging to skipping to a kangaroo bounce. It helped some; not enough. She could feel her feet starting to blister, but knew that there was no way to take off her boots to tend, or even examine, her feet.

Karen had made her hike on blistered feet, and had had no patience with complaints or slacking off. She should have broken her boots in before the hike. In the onesixth gee, at least the pain was bearable.

After a while her feet simply got numb.

Small craters she bounded over; larger ones she detoured around; larger ones yet she simply climbed across. West of Mare Smythii she entered a badlands and the terrain got bumpy. She had to slow down. The downhill slopes were in full sun, but the crater bottoms and valleys were still in shadow.

Her blisters broke, the pain a shrill and discordant singing in her boots. She bit her lip to keep herself from crying and continued on. Another few hundred kilometers and she was in Mare Spumans "Sea of Froth" and it was clear trekking again. Across Spumans, then into the north lobe of Fecundity and through to Tranquility. Somewhere around the sixth day of her trek she must have passed Tranquility Base; she carefully scanned for it on the horizon as she traveled but didn't see anything. By her best guess she missed it by several hundred kilometers; she was already deviating toward the north, aiming for a pass just north of the crater Julius Caesar into Mare Vaporum to avoid the mountains. The ancient landing stage would have been too small to spot unless she'd almost walked right over it.

"Figures," she said. "Come all this way, and the only tourist attraction in a hundred miles is closed. That's the way things always seem to turn out, eh, Sis?"

There was nobody to laugh at her witticism, so after a moment she laughed at it herself.

Wake up from confused dreams to black sky and motionless sunlight, yawn, and start walking before you're completely awake. Sip on the insipid warm water, trying not to think about what it's recycled from. Break, cleaning your solar arrays, your life, with exquisite care. Walk. Break. Sleep again, the sun nailed to the sky in the same position it was in when you awoke. Next day do it all over. And again. And again.

The nutrition packs are lowresidue, but every few days you must still squat for nature. Your life support can't recycle solid waste, so you wait for the suit to desiccate the waste and then void the crumbly brown powder to vacuum. Your trail is marked by your powdery deposits, scarcely distinguishable from the dark lunar dust.

Walk west, ever west, racing the sun.

Earth was high in the sky; she could no longer see it without craning her neck way back. When the Earth was directly overhead she stopped and celebrated, miming the opening of an invisible bottle of champagne to toast her imaginary traveling companions. The sun was well above the horizon now. In six days of travel she had walked a quarter of the way around the moon.

She passed well south of Copernicus, to stay as far out of the impact rubble as possible without crossing mountains. The terrain was eerie, boulders as big as houses, as big as shuffle tanks. In places the footing was treacherous where the grainy regolith gave way to jumbles of rock, rays thrown out by the cataclysmic impact billions of years ago. She picked her way as best she could. She left her radio on and gave a running commentary as she moved. "Watch your step here, footing's treacherous. Coming up on a hill; think we should climb it or detour around?"

Nobody voiced an opinion. She contemplated the rocky hill. Likely an ancient volcanic bubble, although she hadn't realized that this region had once been active. The territory around it would be bad. From the top she'd be able to study the terrain for a ways ahead. "Okay, listen up, everybody. The climb could be tricky here, so stay close and watch where I place my feet. Don't take chances better slow and safe than fast and dead. Any questions?" Silence; good. "Okay, then. We'll take a fifteen minute break when we reach the top. Follow me."

Past the rubble of Copernicus, Oceanus Procellarum was smooth as a golf course. Trish jogged across the sand with a smooth, even glide. Karen and Dutchman seemed to always be lagging behind or running up ahead out of sight. Silly dog still followed Karen around like a puppy, even though Trish was the one who fed him and refilled his water dish every day since Karen went away to college. The way Karen wouldn't stay close behind her annoyed Trish. Karen had *promised* to let her be the leader this time but she kept her feelings to herself. Karen had called her a bratty little pest, and she was determined to show she could act like an adult. Anyway, she was the one with the map. If Karen got lost, it would serve her right.

She angled slightly north again to take advantage of the map's promise of smooth terrain. She looked around to see if Karen was there, and was surprised to see that the Earth was a gibbous ball low down on the horizon. Of course, Karen wasn't there. Karen had died years ago. Trish was alone in a spacesuit that itched and stank and chafed her skin nearly raw across the thighs. She should have broken it in better, but who would have expected she would want to go jogging in it?

It was unfair how she had to wear a spacesuit and Karen didn't. Karen got to do a lot of things that she didn't, but how come she didn't have to wear a spacesuit? *Everybody* had to wear a spacesuit. it was the rule. She turned to Karen to ask. Karen laughed bitterly. "I don't have to wear a spacesuit, my bratty little sister, because I'm *dead*. Squished like a bug and buried, remember?"

Oh, yes, that was right. Okay, then, if Karen was dead, then she didn't have to wear a spacesuit. It made perfect sense for a few more kilometers, and they jogged along together in companionable silence until Trish had a sudden thought. "Hey, wait if you're dead, then how can you be here?"

"Because I'm not here, silly. I'm a fignewton of your overactive imagination."

With a shock, Trish looked over her shoulder. Karen wasn't there. Karen had never been there.

"I'm sorry. Please come back. Please?"

She stumbled and fell headlong, sliding in a spray of dust down the bowl of a crater. As she slid she

frantically twisted to stay facedown, to keep from rolling over on the fragile solar wings on her back. When she finally slid to a stop, the silence echoing in her ears, there was a long scratch like a badly healed scar down the glass of her helmet. The double reinforced faceplate had held, fortunately, or she wouldn't be looking at it.

She checked her suit. There were no breaks in the integrity, but the titanium strut that held out the left wing of the solar array had buckled back and nearly broken. Miraculously there had been no other damage. She pulled off the array and studied the damaged strut. She bent it back into position as best she could, and splinted the joint with a mechanical pencil tied on with two short lengths of wire. The pencil had been only extra weight anyway; it was lucky she hadn't thought to discard it. She tested the joint gingerly. It wouldn't take much stress, but if she didn't bounce around too much it should hold. Time for a break anyway.

When she awoke she took stock of her situation. While she hadn't been paying attention, the terrain had slowly turned mountainous. The next stretch would be slower going than the last bit.

"About time you woke up, sleepyhead," said Karen. She yawned, stretched, and turned her head to look back at the fine of footprints. At the end of the long trail, the Earth showed as a tiny blue dome on the horizon, not very far away at all, the single speck of color in a landscape of uniform grey. "Twelve days to walk halfway around the moon," she said. "Not bad, kid. Not great, but not bad. You training for a marathon or something?"

Trish got up and started jogging, her feet falling into rhythm automatically as she sipped from the suit recycler, trying to wash the stale taste out of her mouth. She called out to Karen behind her without turning around. "Get a move on, we got places to go. You coming, or what?"

In the nearly shadowless sunlight the ground was washedout, twodimensional. Trish had a hard time finding footing, stumbling over rocks that were nearly invisible against the flat landscape. One foot in front of the other. Again. Again.

The excitement of the trek had long ago faded, leaving behind a relentless determination to prevail, which in turn had faded into a kind of mental numbness. Trish spent the time chatting with Karen, telling the private details of her life, secretly hoping that Karen would be pleased, would say something telling her she was proud of her. Suddenly she noticed that Karen wasn't listening; had apparently wandered off on her sometime when she hadn't been paying attention.

She stopped on the edge of a long, winding rille. It looked like a riverbed just waiting for a rainstorm to fill it, but Trish knew it had never known water. Covering the bottom was only dust, dry as powdered bone. She slowly picked her way to the bottom, careful not to slip again and risk damage to her fragile lifesupport system. She looked up at the top. Karen was standing on the rim waving at her. "Come *on!* Quit *dawdling*, you slowpokeyou want to stay here *forever?*"

"What's the hurry? We're ahead of schedule. The sun is high up in the sky, and we're halfway around the moon. We'll make it, no sweat."

Karen came down the slope, sliding like a skier in the powdery dust. She pressed her face up against Trish's helmet and stared into her eyes, with a manic intensity that almost frightened her. "The hurry, my lazy little sister, is that you're halfway around the moon, you've finished with the easy part and it's all mountains and badlands from here on, you've got six thousand kilometers to walk in a broken spacesuit, and if you slow down and let the sun get ahead of you, and then run into one more teensy little problem, just one, you'll be dead, dead, dead, just like me. You wouldn't like it, trust me. Now get your pretty little lazy butt into gear and *move!*"

And, indeed, it was slow going. She couldn't bound down slopes as she used to, or the broken strut would fail and she'd have to stop for painstaking repair. There were no more level plains; it all seemed to be either boulder fields, crater walls, or mountains. On the eighteenth day she came to a huge natural arch. It towered over her head, and she gazed up at it in awe, wondering how such a structure could have been formed on the moon.

"Not by wind, that's for sure," said Karen. "Lava, I'd figure. Melted through a ridge and flowed on, leaving the bole; then over the eons micrometeoroid bombardment ground off the rough edges. Pretty, though, isn't it?"

"Magnificent."

Not far past the arch she entered a forest of needlethin crystals. At first they were small, breaking like glass under her feet, but then they soared above her, sixsided spires and minarets in fantastic colors. She picked her way in silence between them, bedazzled by the forest of light sparkling between the sapphire spires. The crystal jungle finally thinned out and was replaced by giant crystal boulders, glistening iridescent in the sun. Emeralds? Diamonds?

"I don't know, kid. But they're in our way. I'll be glad when they're behind us."

And after a while the glistening boulders thinned out as well, until there were only a scattered few glints of color on the slopes of the hills beside her, and then at last the rocks were just rocks, craggy and pitted.

Crater Daedalus, the middle of the lunar farside. There was no celebration this time. The sun had long ago stopped its lazy rise, and was imperceptibly dropping toward the horizon ahead of them.

"It's a race against the sun, kid, and the sun ain't making any stops to rest. You're losing ground."

"I'm tired. Can't you see I'm tired? I think I'm sick. I hurt all over. Get off my case. Let me rest. Just a few more minutes? Please?"

"You can rest when you're dead." Karen laughed in a strangled, highpitched voice. Trish suddenly realized that she was on the edge of hysteria. Abruptly she stopped laughing. "Get a move on, kid. Move!"

The lunar surface passed under her, an irregular grey treadmill.

Hard work and good intentions couldn't disguise the fact that the sun was gaining. Every day when she woke up the sun was a little lower down ahead of her, shining a little more directly in her eyes.

Ahead of her, in the glare of the sun she could see an oasis, a tiny island of grass and trees in the lifeless desert. She could already hear the croaking of frogs: *braap, braap, BRAAP!*

No. That was no oasis; that was the sound of a malfunction alarm. She stopped, disoriented. Overheating. The suit air conditioning had broken down. It took her half a day to find the clogged coolant valve and another three hours soaked in sweat to find a way to unclog it without letting the precious liquid vent to space. The sun sank another handspan toward the horizon.

The sun was directly in her face now. Shadows of the rocks stretched toward her like hungry tentacles, even the smallest looking hungry and mean. Karen was walking beside her again, but now she was silent, sullen.

"Why won't you talk to me? Did I do something? Did I say something wrong? Tell me."

"I'm not here, little sister, I'm dead. I think it's about time you faced up to that."

"Don't say that. You can't be dead."

"You have an idealized picture of me in your mind. Let me go. *Let me go!*"

"I can't. Don't go. Heydo you remember the time we saved up all our allowances for a year so we could buy a horse? And we found a stray kitten that was real sick, and we took the shoebox full of our allowance and the kitten to the vet, and he fixed the kitten but wouldn't take any money?"

"Yeah, I remember. But somehow we still never managed to save enough for a horse." Karen sighed. "Do you think it was easy growing up with a bratty little sister dogging my footsteps, trying to imitate everything I did?"

"I wasn't either bratty."

"You were too."

"No, I wasn't. I adored you." Did she? "I *worshipped* you."

"I know you did. Let me tell you, kid, that didn't make it any easier. Do you think it was easy being worshipped? Having to be a paragon all the time? Christ, all through high school, when I wanted to get high, I had to sneak away and do it in private, or else I knew my damn kid sister would be doing it too."

"You didn't. You never."

"Grow up, kid. Damn right I did. You were always right behind me. Everything I did, I knew you'd be right there doing it next. I had to struggle like hell to keep ahead of you, and you, damn you, followed effortlessly. You were smarter than me you know that, don't you? and how do you think that made me feel?"

"Well, what about me? Do you think it was easy for me? Growing up with a dead sister everything I did, it was 'Too bad you can't be more like Karen' and 'Karen wouldn't have done it that way' and 'If only Karen had....' How do you think that made *me* feel, huh? You had it easy! I was the one who had to live up to the standards of a goddamn *angel*."

"Tough breaks, kid. Better than being dead."

"Damn it, Karen, I loved you. I love you. Why did you have to go away?"

"I know that, kid. I couldn't help it. I'm sorry. I love you too, but I have to go. Can you let me go? Can you just be yourself now, and stop trying to be me?"

"I'll...I'll try."

"Goodbye, little sister,"

"Goodbye, Karen."

She was alone in the settling shadows on an empty, rugged plain. Ahead of her, the sun was barely kissing the ridgetops. The dust she kicked up was behaving strangely; rather than falling to the ground, it would hover half a meter off the ground. She puzzled over the effect, then saw that all around her, dust was silently rising off the ground. For a moment she thought it was another hallucination, but then realized it was some kind of electrostatic charging effect. She moved forward again through the rising fog of moon dust. The sun reddened, and the sky turned a deep purple.

The darkness came at her like a demon. Behind her only the tips of mountains were illuminated, the bases disappearing into shadow. The ground ahead of her was covered with pools of ink that she had to pick her way around. Her radio locator was turned on, but receiving only static. It could only pick up the locator beacon from the *Moonshadow* if she got in line of sight of the crash site. She must be nearly there, but none of the landscape looked even slightly familiar. Ahead was that the ridge she'd climbed to radio Earth? She couldn't tell. She climbed it, but didn't see the blue marble. The next one?

The darkness had spread up to her knees. She kept tripping over rocks invisible in the dark. Her footsteps struck sparks from the rocks, and behind her footprints glowed faintly. Triboluminescent glow, she thought nobody has ever seen that before. She couldn't die now, not so close. But the darkness wouldn't wait. All around her the darkness lay like an unsuspected ocean, rocks sticking up out of the tidepools into the dying sunlight. The undervoltage alarm began to warble as the rising tide of darkness reached her solar array. The crash site had to be around here somewhere, it had to. Maybe the locator beacon was broken? She climbed up a ridge and into the light, looking around desperately for clues. Shouldn't there have been a rescue mission by now?

Only the mountaintops were in the light. She aimed for the nearest and tallest mountain she could see and made her way across the darkness to it, stumbling and crawling in the ocean of ink, at last pulling herself into the light like a swimmer gasping for air. She huddled on her rocky island, desperate as the tide of darkness slowly rose about her. Where were they? *Where were they?*

Back on Earth, work on the rescue mission had moved at a frantic pace. Everything was checked and

triplechecked in space, cutting corners was an invitation for sudden death, but still the rescue mission had been dogged by small problems and minor delays, delays that would have been routine for an ordinary mission, but loomed huge against the tight mission deadline.

The scheduling was almost impossibly tightthe mission had been set to launch in four months, not four weeks. Technicians scheduled for vacations volunteered to work overtime, while suppliers who normally took weeks to deliver parts delivered overnight. Final integration for the replacement for *Moonshadow*, originally to be called *Explorer* but now hastily rechristened *Rescuer*, was speeded up, and the transfer vehicle launched to the Space Station months ahead of the original schedule, less than two weeks after the *Moonshadow* crash. Two shuttleloads of propellant swiftly followed, and the transfer vehicle was mated to its aeroshell and tested. While the rescue crew practiced possible scenarios on the simulator, the lander, with engines inspected and replaced, was hastily modified to accept a third person on ascent, tested, and then launched to rendezvous with *Rescuer*. Four weeks after the crash the stack was fueled and ready, the crew briefed, and the trajectory calculated. The crew shuttle launched through heavy fog to join their *Rescuer* in orbit.

Thirty days after the unexpected signal from the moon had revealed a survivor of the *Moonshadow* expedition, *Rescuer* left orbit for the moon.

From the top of the mountain ridge west of the crash site, Commander Stanley passed his searchlight over the wreckage one more time and shook his head in awe. "An amazing job of piloting," he said. "Looks like she used the TEI motor for braking, and then set it down on the RCS verniers."

"Incredible," Tanya Nakora. murmured. "Too bad it couldn't save her."

The record of Patricia Mulligan's travels was written in the soil around the wreck. After the rescue team had searched the wreckage, they found the single line of footsteps that led due west, crossed the ridge, and disappeared over the horizon. Stanley put down the binoculars. There was no sign of returning footprints. "Looks like she wanted to see the moon before her air ran out," he said. Inside his helmet he shook his head slowly. "Wonder how far she got?"

"Could she be alive somehow?" asked Nakora. "She was a pretty ingenious kid."

"Not ingenious enough to breathe vacuum. Don't fool yourselfthis rescue mission was a political toy from the start. We never had a chance of finding anybody up here still alive."

"Still, we had to try, didn't we?"

Stanley shook his head and tapped his helmet. "Hold on a sec, my damn radio's acting up. I'm picking up some kind of feedbackalmost sounds like a voice."

"I hear it too, Commander. But it doesn't make any sense."

The voice was faint in the radio. "Don't turn off the lights. Please, please, don't turn off your light. . ."

Stanley turned to Nakora. "Do you ... ?"

"I hear it, Commander ... but I don't believe it."

Stanley picked up the searchlight and began sweeping the horizon. "Hello? *Rescuer* calling Astronaut Patricia Mulligan. Where the hell are you?"

The spacesuit had once been pristine white. It was now dirty grey with moondust, only the ragged and bent solar array on the back carefully polished free of debris. The figure in it was nearly as ragged.

After a meal and a wash, she was coherent and ready to explain.

"It was the mountaintop. I climbed the mountaintop to stay in the sunlight, and I just barely got high enough to hear your radios."

Nakora nodded. "That much we figured out. But the rest the last month you really walked all the way around the moon? Eleven thousand kilometers?"

Trish nodded. "It was all I could think of. I figured, about the distance from New York to LA and back people have walked that and lived. It came to a walking speed of just under ten miles an hour. Farside was the hard part turned out to be much rougher than nearside. But strange and weirdly beautiful, in places. You wouldn't believe the things I saw."

She shook her head, and laughed quietly. "I don't believe some of the things I saw. The immensity of it we've barely scratched the surface. I'll be coming back, Commander. I promise you."

"I'm sure you will," said Commander Stanley. "I'm sure you will."

As the ship lifted off the moon, Trish looked out for a last view of the surface. For a moment she thought she saw a lonely figure standing on the surface, waving her goodbye. She didn't wave back.

She looked again, and there was nothing out there but magnificent desolation.