

# Planetquake

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## **AUTHOR'S NOTE**

The book is set in the future. All characters in the work are wholly fictional and do not record living persons. Theological errors are mine alone, and my apologies go to atmospheric chemists if the urgency of plot occasionally overwhelms the slowness of kinetics. My thanks to all those who have helped, especially the critical readers, and to Philip and Fiona at Highland for their support and kindness. Special thanks go to Alice, my editor: her professionalism, diligence, insight and patient rigour are greatly appreciated.

## CHAPTER 1

# Breaking the Rainbow

That year there were no rainbows. They'd left the Earth. Men made them leave.

Well, hardly any. A few bows lingered, uncertain. Brave lights blessed the holy isles. But the rest? Men forced them away. Men blocked the soft hidden infrared; men ripped Earth's protective veil, to bask in the ravaging ultraviolet.

In the long-ago days when Earth was Eden and fat children played under warm wet clouds, the arcs of Grace shone abundantly. Under tropical skies low rainbows came gently curving in the late evenings, as promises after thunder, or unexpectedly in the early mornings, showering souls with blessings under the dawn sun.

In the Mediterranean lands, in cool weather when gentle rains fell long on soft ground, little bows flittered like winter butterflies, momentary fragments of wing, chords of beauty. Arching over Jerusalem and Rome, and the distant Cape of Good Hope, these winter bows were friends in the east, in clearing skies of evening, or morning angels of life, bringing rain from the west.

Further north, in the moister lands, the bows were commonplace, winter and summer, unremarked delights in rain opposite sun, messengers of hope in time of dark cloud.

Near the Poles, where the world is glittering hard, and the sun is everywhere or nowhere, solar haloes came as often as sparkles danced on the sea. Occasionally they hung playfully upside down in the cirrus, great smiles in the heavens. In the long winter night they sometimes circled the glimmering moon. Mostly, the bows lived in ice crystals close by the sun. They stood beside the fire, two great curving pillars of gold, visible splendour flanking the great unseeable light, a trinity

of glory. Turn, and sometimes far on the opposite horizon was the sharp anthelion spire of white; watching Lucifer.

A planet with bright rainbows is a planet fit for life. But that year Earth had no home for them. The angelic rainbows went unseen. Men changed the air, the air in which they lived and moved and had their being. Men made them hide.

Men broke them, broke the Rainbow Covenant, God's free gift of Grace.

But Grace remains, in every sparkle of light, each rainbow diamond. The host of the Lord encamps around the dwellings of the just. Our guardian angels watch, in time and beyond time, to record, to protect.

Here is the record of one such guardian, a rainbow of Grace.

## Spitsbergen

Ash breathed out and her breath hung in the air, changing it, making it warm. "Speak to the Earth and it shall teach thee," she thought, from the twelfth chapter of Job. "I wonder what it will say to my breath?"

She shivered, drew up the string round her parka hood so that only her eyes sneaked out. She stood on a metal grating welded over the roof of the air-monitoring cabin. Far below, a thousand feet down, the tiny huts and aerials of the research station glistened. To the south, behind her, curving to the horizon was the snow-plateau, a lovely bright dome of ice. Eastwards, the great glacier swept down to the head of the bay. Flanking the ice river were mountains, the dragon's teeth of Spitsbergen, each fierce peak a jutting triangle of rock.

Beside her to the west, the atmospheric monitoring cabin hugged into its own sharp summit. She could see the cable car pylon standing on its separate concrete pillar; clinging to the peak. Below and beyond, the sweep of King's Bay widened to the Atlantic Ocean. Beyond that lay Greenland, a few hundred miles away – the Atlantic here shrunk to a mere channel, but profound: in the gap lay the extraordinary hole in the Earth's crust that is the Molloy Deep.

She turned northwards, looking over the sheer cliff below her. The little jetty stood out into the bay. Blue icebergs drifted in the dark open water. In places plates of white ice made a crazy pavement on the sea surface. Across the still water of the sound she could see far over the northern hills: it seemed she could almost reach to grasp the Pole,

hiding over the horizon where the fire of the new sun lay flat across the north, bright and potent in the midnight air, just before Easter.

Her mountain shimmered. Flakes of snowy confetti fell on the lacy veil of white that capped the summit over the warm brown features of the vertical cliff faces. Brows of dark rock lined the bays of snow, like eyes. Around the base of the peak the snow spread out a wide skirt, full and soft. Something old – the gentle rocks; something new – the tinsel-bright glisten of the research station; something borrowed – the warmth of the waters in the inlet, bringing in the Atlantic heat from the far tropics; something blue there, the Arctic, the northern Mediterranean – the wide polar sky, pastel blue, lightest soft blue, not the deep azure of the tropics but the thin fragile sky of the North.

Enough of the sublime – it was time to get on with the job. She leaned out over the railing to grapple with the air-inlet funnel. She hated the task, yet the adrenalin was fun. Out and out over the sky she leaned, stretching with her thin-gloved right hand, while her thick-mittened left gripped tight to the icy railing.

As she leaned, she felt a ripple of vibration in her feet. She glanced down. The roof grating under her boots was shaking, snowflakes falling from it. The movement stopped. She leaned further. The air inlet funnel was only just within her reach, far out from the rail. It had been installed by the Norwegian air chemistry institute's giant Viking, whose arms were as long as a Cambridge punt pole. Yes! She had it. She clasped the cold metal and began to work her fingers round the funnel to clear the ice block.

That's when the Earth struck.

She lost her footing. Her feet slipped on the icy steel in the first great shake. As her legs scabbled up the rails to regain balance, the bigger pulses came. She tipped, her back on the rail. The shaking got worse.

Her handhold on the rail slid, turned, was gone.

She hung, hung in space, over the cliff, a hundred feet sheer, then a thousand feet down.

Her right hand tightened, grasping the funnel cone, gripping for her life. Absurdly, she saw, far below, a startled Arctic hare bounding across the cliff-edge, snow-white against snow, escaping as the snow began to avalanche.

The hare saved her, made her think. The hare didn't lose its footing on heights. The cabin was shaking more, but it was strong steel. The funnel was mounted on an armoured airhose, tough, reinforced.

“You’re a scientist, Ash, THINK!” she screamed to herself. She swung her loose heavy gloved left hand round and grabbed the funnel, closer to the apex of the cone, just as the other hand was slipping off.

Yes, the Viking had attached the funnel properly. He always did. It would hold her hundred and ten pounds.

She was swinging now, two hands on the funnel and hose, arcing over the cliff.

Now came noise. Rumbling, crashing, groaning.

Then human noise.

Feet pounding on the ladder steps. Wild hair. The Viking. He’d seen her. In seconds he was over the rail, right leg twisted round a bar, leaning out with his huge arm. He gathered in the tough air hose pipe gently, like an elephant softly using its trunk to rein in a calf. Then he lunged. She felt her tough tool belt hauled by his vast paw. He lifted her like that, belt first, over the railing, then lost his grip and dropped her face down on the icy metal.

“Still breathing?” he asked, when he’d climbed back to safety and she’d sat up.

“Thanks. Could have given me a softer landing. Vikings! Always dumping poor women on the deck. What happened?”

“Earthquake I think. Big one. Very big. That first warning ripple – must have been the P wave. You know – the first fast wave. I figured maybe something was coming. You sure fixed that funnel good. I bet the shake cleared every crystal of ice in the inlet.”

They clambered down the ladder and pulled open the heavy insulated door of the cabin. Norwegians build well – there seemed to be no damage to the steel frame. The cabin was mounted on deep concrete piles. Paper had fallen from the shelves, but the power was on and the gas chromatographs were ticking gently. They spent the next twenty minutes meticulously checking each instrument. Every gas line needed to be followed, every computer put through its paces. All was well; they turned to pick up the loose issues of the *Journal of Geophysical Research* that had fallen from the top shelf.

Tidy. She sighed and sat down at last, then poured coffee from her thermos. It spilled on the worktop. Her hands were still shaking. She snapped open her laptop and plugged into the net – Ny-Alesund is perhaps the only place on Earth where wi-fi and all stray wireless signals are banned pollutants. After ages of wheel-spin, the screen settled. She stared at the picture: her husband and children, glowing with life. Both children were grinning ear-to-ear, wee Morag leaning

forward tickling her father's ear with long straws, while Andrew looked down. Tim was deep in a peat trench, back bowed under a huge load of peat cuttings, kilt swinging in the breeze.

They'd met in grad school in Vancouver, both new master's students at the Friday induction party to mark the new academic year. She'd collapsed in fits of giggles at seeing the kilt. Two days later they'd met again in church.

She still asked herself what the rough Scots rower and rigger player had seen in a then-featherweight South African. There was no answer, except that they'd been married three months later, that Christmas, a chaotic African affair of kudu roast, bagpipes and outrageously expensive airline tickets. Andrew was born the next December, wee Morag two years later, just after they'd migrated to Cambridge.

It took her six years to finish her doctoral thesis, working part-time. They had survived, barely, on his postdoc salary until, with the kids in school, he'd got his toes on the bottom rung of the academic ladder. She'd found a part-time job in the air lab. With family help, they'd found the down payment on a tiny house, 14 ft across, in a Victorian terrace. Now she was bottle-blond and, though very fit, her heels left a slightly deeper dent. The kids were with their Scottish grandparents, while she and Tim did spring fieldwork on opposite ends of the planet. Tim had fallen in love with her Africa, she with his Atlantic winds.

She expanded the picture, zooming on each kid's face in turn.

Then the nerves hit again.

"Where'd you leave the can?"

"Behind the ammonia monitoring system. Where else?"

"Don't look." There wasn't any plumbing in the air-monitoring cabin. It had an ultra-strict bring it in and you bring it out rule. Nothing must affect the atmospheric measurements, not even human emissions. "Leave the air as you find it." No gases. No toilet. No yellow snow outside. She knelt by the rack of humming instruments, reached under, and found the chamber pot. She could hear the Viking chuckle. Next she fished out the old rubber bedtime hot-bottle a Kiwi scientist had left years before. Bedroom heating is poor in New Zealand. Then she found the funnel. Some lab tasks need care.

She tossed the tissues and hot bottle in the down bag, replaced the chamber pot, and nipped out the side door to rub her hands in clean snow. Hand wiping at least was allowed by the green code: it didn't emit volatiles. As she knelt down there was another quake, an after-

shock. But this time it was much gentler, a ripple. She laughed. Far away on a cliff face she could see a small avalanche start and descend; presumably snow loosened by the first shake, now tipped over. It was lovely to watch the powder rise. Seconds later the noise reached her – bigger than she'd thought. The distance had deceived her.

When she came back in, the Viking was hunched over his laptop, plugged to the internet socket. He was a great hairy sixty-something man, with huge hands capable of minute adjustment to a complex piece of equipment. He was tapping out a web address with one vast finger. The other hand held the phone. He grunted. Then another grunt and he put down the phone.

“Some damage down at the station. Concrete cracked in the new building. Old wood buildings did better, though – strained but unbroken. The satellite comms dish was shifted too. They've switched in the back-up microwave radio link to Longyearbyen.”

The Viking forgot about the quake. He was back to his job, fretting about a huge plume of dirty air swirling around the Arctic, full of chlorofluorocarbons. Where did the CFC pollution come from? Someone was letting an awful lot of CFC get into the air. The winds were unusually coherent. They were coming from central Siberia, and before that North Korea or China. He muttered “There's still a criminal trade in the stuff. Smuggled all over the world. Lots of people with old equipment need it. Could be an illegal factory. Maybe they were dumping gas to escape an investigation?”

Ash wasn't impressed with his forensics “Maybe. Or else there could be a giant pile of old fridges someone has bulldozed into a landfill. Recycled from Europe no doubt, at a vast fee.”

He grumbled and then gave up. They'd probably never catch the source. But it was big, really big.

Ash left him to it. While she waited for an instrument to complete a measurement cycle, she caught up with the local news from Cambridge. It was good. On the front page was a photo of one of Africa's up-and-coming entrepreneurs, Hokoyo Imbwa. He was very handsome – Ash enlarged the image furtively. He was standing outside a famous college building. He'd generously donated a scholarship for bright students from poor nations in tropical Africa. Ash was filled with a warm feeling. There was hope for her home, with new goodness like Imbwa emerging.

Suddenly the Viking whistled.

“Hey, look at this.”

She leant over his shoulder to peer at the screen, smelling the week of unwash. It was fun to argue with a legend, but maybe a yard further away would help. He was so big that, even standing on tip-toes behind his seated bulk, she could barely see past the shoulders and the forest of hair. The Viking was an aquaphobe. He only liked water when it was at least 5% ethanol or 500 milligrams caffeine to the mugful. It certainly put hairs on his chest, and on his head, a shiny, high albedo Pole ringed by vast boreal forests.

The Viking had emailed a friend at the Norwegian seismic array near Oslo. Seismic P waves travel at 8km a second. There were plenty of close stations that had already heard the waves – Greenland, Iceland, and the Norwegian array. Now they had a preliminary solution. Later the big US computer systems would correct it. She looked at the message.

The Viking was gesticulating. “Over in east Greenland. Right next to us, few hundred kilometres away, say two, three hundred miles across the Atlantic. Initial calculation is magnitude 9.3. That’s big, very big, very, very big. Bigger than the Indonesian quake, Boxing day, after Christmas 2004.”

They peered at the map. The quake had been shallow, 10km deep or so, just to the west of them. It was what geologists call a normal fault – Greenland going up, the Atlantic margin going down.

The Viking sat back. “The Earth moves.”

Ash whistled. She looked out of the window, over the peerless silent whiteness. It seemed eternal again.

Down below, she saw a truck from the research station making its way on the snow road to the cable hut just beneath them. The phone rang. The engineer was in the cable car hut at the bottom of the line. For the next hour they tested the cable car for quake damage, running it up and down the thousand foot climb twice, peering at all the bits of the winding gear and the wheels, while the engineer checked out the motors at the bottom. Everything seemed fine. The down bag with the hot bottle went on the second run. The engineer wasn’t happy.

In the research station below, Prof Dr Frau Consuela, the Viking’s Bride, otherwise Connie, was waiting for them. She was a trim, kempt, warmly kind and highly respected American botanist in her mid 50s. Strangely she, the American, had kidnapped his Viking boat, thirty-five years ago, commanding the Norwegian grad student to paddle his pride and joy of a canoe to hard-to-get-at plants on islets in northern lakes. Eventually she had hauled him home, screaming and protesting. He still wore his favourite Canadian voyageurs check

flannel shirts from his days in Quetico Park. He wore each one a month, resisting all hints.

All was well. They ran a final quick check on the instruments. Everything was perfect. She and the Viking picked up their laptop packs and some air sample bags and loaded them into the car. They climbed in and pulled the door closed. He pressed the start button. A second later the cable car jerked and swung out over the drop, dipped, and started its silent descent.

She noticed the hare was back, far below her, bounding across the snow.

They moved out, over the abyss, moving in stillness. They were silent, as always; the loveliness was too great for talking.

Then suddenly she noticed the cable wire shivering, a perfect, elegant wave-shake spreading from the pylon. It entranced her.

To the west, the ground came alive. The snow was boiling. She could see the front of the violence shimmering. It moved, speeding towards her. She first saw it a couple of miles away. It only took half a second or so to reach the ground below them. Snow foamed and leapt, a maelstrom of white.

The Viking bellowed, "Look!"

But he was late. The shaking had already hit them.

Shaking.

Violent. The line jerked up. Thirty feet up. Then whipping down, thirty feet below their first height. Sixty feet in all.

Then up. Down. Up. On, and on. The shaking seemed endless. For ten seconds, fifteen, she could see the snow below rippling, bursting into the air, wave after wave breaking in the shaking. Then the snow grew more still, began to settle. But in the cable car they kept shaking, smaller shakes now, but still ten feet up and down. They could see the undulation moving up and down the cable car rope. She blessed the Swiss builders who had made it so robust.

Slowly, slowly the rope calmed, the waves lessened, stopped.

Down below she could see the motor hut and the engineer's truck. The roof had collapsed. Through the gaps she could see the winding gear. Something was wrong. The cable wheel was still in place, but a beam had fallen on the motor.

The Viking was looking too.

"He'll wind us down by hand?"

He looked carefully at the hut.

“Nope. That beam’s jammed down across the works. They’ll need to get heavy gear to move it. We’ll be frozen long before it’s fixed.”

He paused.

Then he said, very quietly. “And look.”

She stared. Through a gap in the fallen roof she could see a colour of fabric and a leg. The engineer was there, lying, unmoving.

The Viking grunted. “Hope he’s alive. It’ll be hours before the people at the station think of us. There’ll be damage at the station too. We’ll be forgotten.”

“How do we get out?”

“This way.”

The Viking stood tall and opened the emergency hatch in the ceiling of the cable car. He pulled in a drop down ladder, then opened the safety box on the roof. Inside was a heavy coil of nylon rope.

“Can you abseil?”

“No. Never learned.”

“Ah. Never mind. It is good to have a weight on the rope.”

He took the rope and paid out a few feet. Then he tied the rope round himself and looped it carefully to a strong handle in the car. He tied the other end of the rope coil carefully around her waist. He opened the door.

“Ready? Going to drop you. Second time today. You’re making it a habit. Don’t jump. Good thing I have my thick gloves on.”

She climbed out and eased herself off the doorsill, holding the pillar. He gently lifted her until she was hanging out in space, two hundred feet up. Then she went down, as he paid out the rope. Fast, but not too fast. Ten feet a second she guessed. His huge hands were easily able to control the rope.

Half a minute and she was in the snow. He dropped her the last ten feet – his hands must have tired. But the snow was soft and she landed safely, falling over on her back. Above she could see he was clambering out of the cable car to start abseiling down. She yelled encouragement and began to untie herself.

He was about a hundred feet down the rope, hanging from the cabin, still far above the snow, when it happened.

An aftershock. Slowly, slowly, she could see the mountain crumble above her. Snow shook from the roof of the air-monitoring cabin, the roof she’d fallen from, and the cliffs beside. The white falls seemed small, pretty. But on the peak above, a huge jutting rock creaked, moved. The tear in the rock face widened, the edge of the crack

creeping, detaching the mass of rock. The rock was moving, inches at first, then feet. Suddenly it slipped down the cliff.

The monstrous mass of stone slammed into the housing that held the concrete anchor at the head of the cable. The line shook and turned. As the noise reached her, a wave of slackness shot along the taut cable.

He saw it too. Above she could see him unloop, rope in hands and feet only, sliding, faster, faster, deliberately scorching his hands to get down.

He almost made it. Then the cable car began to fall. Below it, the Viking was still sliding down the falling rope.

Thirty feet up. The cable line anchor broke completely loose. The wire detached, came snapping back from the mountain, looping against the car, snaking down, twisting, cracking.

It hit him, flicking past, sending his legs flying.

A grunt of agony. She saw him fall. Above him, the cable car tumbled from the sky, like a leaf in the wind.

Thuds. Thuds. More thuds. First, the Viking, a soft noise, legs pounding snow, toppling, rolling against a small rock outcrop. Then the cable car, piercing through the whiteness, to burst into jagged fragments on the rock beside him. Last, the cable line fell from the sky like a snake from a tree, writhing. Above them the landslide clattered down. Boulders rolled out on the snow. Suddenly it was still. She looked up. High above the air sampling hut was there, untouched, rock fast. But beside it, the cable mount was gone – only the fresh rough bare rock ripped by the landslip.

She ran to the Viking.

He was alive, lying on his back. Both legs were bleeding through the torn snow trousers, red over the pristine snow. Unconscious. Breathing, but weakly. Pulse present. She got behind his head and checked his tongue. Too risky to turn him. She thrust his jaw out into a safe position. Then she checked the wounds as best she could. His head was a mess where he'd hit the rock. She guessed a fractured skull. But maybe it wasn't that bad – just the final topple. The legs were bad, both broken, deep compound fractures. There was a great rip across one thigh, where the wire rope must have lashed him. But his back and neck seemed undamaged.

He moaned. Then consciousness flickered. His legs were hit, then he'd bumped his head. Like hitting a house-fly in flight. Had there been any resistance, had he been standing on the ground, the wire

would have sheared both legs right through. Then she laughed at him. The Viking was like that. Impossible to turn off the mind of a physicist.

Blood was spurting from the ripped thigh. The snow was carmine. She put her thumbs on the pressure point in the groin. The bleeding stopped. But she couldn't hold. Too much else to do. He was still conscious, but fading. She put her booted foot hard on the pressure point, unzipped her parka and pulled off her thin T shirt. The cold hammered her. Parka back on. She tore the shirt in strips. Made a tourniquet. The cold would help. But he'd die unless she got him to help. She checked the back and neck again. She was convinced the spine was unhurt. But she was small, a fraction of his size. She took his elbows and started dragging. His broken head bent and snagged across the snow sastrugi. The snow was soft, but it wasn't good. His consciousness had gone.

She took her parka off again and cradled it around to cushion his head, tying the parka's arms around his chest. If only she had skis. She kept on dragging. He started groaning, muttering. That made her feel better.

A few minutes later she was a hundred yards from the cable car hut. Suddenly she heard an engine and saw a pick-up truck tearing up the snow road. It stopped. Connie jumped out. She was still in her thin nightdress, thick winter eiderdown coat thrown over, boots untied, racing across the snow. Trust her, thought Ash. Quickest thinker. She'd have seen the mountain crumble. She knew we'd be in trouble.

They half-dragged, half-carried the Viking to the truck. The engine was still running. They couldn't lift the injured giant into the cab. Connie threw her coat onto the snow. She was sweating in her thin nightie. They managed to lift him onto the coat and then onto the steel floor of the back of the pick-up. Connie wrapped the coat round him. It didn't meet. She tied it across with the drawstring. At least it would help. Ash's parka went under his head. He'd lost consciousness again. As Connie made him comfortable, Ash felt his wrist. She couldn't find his pulse.

"Go," shouted Ash "I'll ride on the back."

The Viking's wife suddenly stopped.

"No," Connie shouted. "Jens! The engineer."

They ran to the motor hut. The man was pinned down by a side beam of the roof, chest and arm in blood, moaning. He was fully dressed for the cold, but even so he'd be dead soon. They managed to

wedge off the beam and slide him out. There was a roll of large black garbage bags in the hut for trash they brought down the mountain. They scrunched snowballs under the plastic corners of a sheet ripped-open bag and made handles. Ash took the front and Connie the back of the improvised stretcher. They carried him to the other pick-up, his own truck, trying hard not to bend his back. Ash quickly covered him with more garbage bags. He was a lot smaller than the Viking. As always on the station, the key was in the truck's ignition.

Both men looked bad, especially the Viking. She knew the station doctor. He was good. But he'd be busy – how many were injured on the station?

It would take several minutes to get to the doctor, more if the doctor was operating.

“Go now,” shouted Ash.

Connie leapt into her pick-up.

A second later Ash followed with the engineer.

Did prayer work?

## CHAPTER 2

# The Waves

### Spitsbergen: Palm Sunday

A mass of shards, like ice crystals, hung from the fractured glass wall. Through the gap in the station centre's wall hung a green tropical tree, frozen. A technician was trying to duct-tape unruly plastic garbage bags across the void.

Ash skidded, stopped, screamed at him.

He pointed at one of the old buildings: shouted,  
"Doc's over there."

The brand new two-bed hospital was ruined. The triple-glazed glass-wall had shattered. But the old clinic was OK. Next to it was an old 1930s wood hut, once a miners' dormitory. That too stood intact, long and low, warm and comforting.

Hands rushed to help. She could see the Viking being carried in. Inside, the doc had a dozen casualties. No deaths so far. Midnight was a lucky time for a quake. The sleeping huts were mostly older wooden buildings, strong against being pulled apart. Everyone habitually drew the thick curtains to keep out the bright midnight sunlight. The fabric had caught the flying glass. The casualties were people who were awake, working in offices, cut by shards from uncurtained windows.

Twenty minutes later, the Viking was embedded in drip and wires, but becoming sensible again. The two women were sitting beside him, drinking coffee. Ash had her parka back on.

The Viking groaned. "What happened?"

Connie kissed him, "Snow diving with a metal snake. You spilled a lot of blood, but you'll mend."

"But why?"

“Quake. Second one, right here – not the Greenland one,” Ash told him.

“That’s ridiculous. We don’t get quakes here.”

“We do now. Big fault break by the airstrip. Forty foot drop to the west. Sheer. We drove past it. Station’s a bit higher now, coast’s dropped.”

“How’s Jens?”

Connie waved her hand around the ward. “He’s got a punctured lung; arm and most of his ribs bust. He’ll mend. Otherwise, lots of people with broken bits. No deaths, you came closest. The wire cable glanced you. You’ve got concussion, one cut artery and two badly broken legs. Plus some fresh new blood.”

“How much damage?” he asked.

“You mean not you but the station?” Connie touched him gently. “Plenty mess. We’ve still got power. Lots of busted windows. They’re taping them over with garbage bags before the toilets freeze. The microwave link’s OK. Doc’s enjoying life, but they’re loading medics on a plane from Longyearbyen to help out. Doc here says you’re too fragile to evacuate. So they’re coming to you.”

Then she grinned. “He’s shading the truth. He knew you’d never leave your experiments.”

The Viking wasn’t interested. He cut to the important bit.

“How’s the lab?”

“Typical,” his wife grumbled. “Not a thought about your torn pants.”

Ash leaned forward to join in. “All’s well. I emailed my mother-in-law to tell the kids and Tim I’m OK, just in case the quake was on the news. Then I checked the lab’s data loggers. Sorry they came second but you don’t need to worry. The lab’s OK.”

“All the instruments?”

“All fine. Except the methane GC. It’s gone dead. Shake probably blew out the flame.”

“Go up and relight it,” The Viking muttered.

“Cable car, remember. You broke it...”

The Viking clutched his head. “Yes, I do remember. Wish I didn’t. You’ll have to go anyway. Use the chopper.”

Ash looked doubtful. “Right now it’s busy with the geologists mapping the fault break.”

“Snowshoe up and ski down.”

“It’s a long way. I’ll get some sleep and go tomorrow.” Ash promised.

Connie turned to Ash. “I’d better come with you, if all’s well here tomorrow. You’ll need a guard. You’re polar bear tasty.”

Then she looked harder at Ash. Suddenly Connie stood up and walked off towards the dorm reception room. She came back clutching a doctor’s white coat. Ash was still earnestly talking gas chromatography technobabble to the Viking.

Connie pointed at Ash’s unzipped open parka, stained with blood.

“Doctor Ashleigh Kolokotronis-Fraser, you’re higher than a radiosonde balloon. I’m all in favour of my ancient husband enjoying life. But if you keep leaning over him like that you’ll kill him with a heart attack. Enough lap dancing. Get yourself a shirt or I’ll tell Tim.”

She flung the coat at the embarrassed Ash. Then she bent over and kissed her cheek.

“Thanks for saving the old beast’s life.”

“Mother Earth needs him alive, to speak for her. And he saved mine.”

The doctor came over with the nurse to check on the Viking. The doc was cheerful, he reckoned they’d all been lucky. Connie and Ash silently finished their coffee.

“What about your plants and your 24 hour sun experiment?” Ash asked.

“Oh. Hadn’t thought. Better go and look. Doc will be a while and I don’t think I’m wanted.” The doctor was going to try to settle the Viking into rest.

They walked out and past the assortment of huts and labs that made up the station. They turned down the track towards the port. A few yards on they came to the greenhouses, triple layers of plastic tubes.

The continuous winter night had ended just a few weeks before. Each spring there were a few weeks around the equinox when days and nights alternated. But now twenty-four hour daylight had begun. Working times became anyone’s choice. Ash and the Viking had been up to the cabin for routine maintenance; the daily check on the automated instruments. They’d chosen to carry out the work just before midnight. That way they could be on the mountain peak to see the glorious sun shining from due north, skimming the horizon straight over the North Pole several hundred miles away.

Sun up was the day Connie's plant experiments had begun. Now the seedlings were rising. As they walked into the greenhouse there was a small aftershock. The plastic lining flexed on the steel hoop frames. It boomed and flopped but nothing broke. The big earthquakes had done little damage, apart from knocking some boxes off shelves. The plants were cheerful and warm.

They came out of the greenhouse and looked across the sound. To the left, they could see the new fault break – a sharp new cliff and the sea beyond. To the right, eastwards, was the wide mouth of the glacier at the head of the bay.

Nobody was nearby. They could hear pounding from further away, staff hammering plywood sheets over big breaks.

In front of them, down the hill, was the port. Now, suddenly, it was high above the water level. A boat was grounded at the empty dock, in a wide plain of newly exposed mud, that glistened in the northern sun. A small blue iceberg, calved from the glacier at the head of the bay, sat in the black mud. It looked like an almond in chocolate porridge.

There was a rumbling, a shaking, more than before. The water shivered.

“What's that?” Connie muttered.

“Must be another aftershock. Bigger. Not serious,” Ash reassured her.

Ash stared at the scene. “That's odd,” she said.

“What?”

The water's gone away here. OK, we've been lifted up. But look, the water is vanishing from the down side of the fault break also. Look!”

She pointed seawards. “See! Even on the seaward side of the fault. It's going. There! It's drying out over there, west of the break! Rushing out to sea.”

They peered westwards.

“What's that?”

Above the noise of the out-rushing water came a new deeper rumbling. Seawards there was whiteness in the distance.

“Looks like an ice wall, rising. Another quake?”

The wall rose higher, noisier.

“Tsunami. Run!” screamed Ash.

“Where?” Connie stopped her.

Ash gabbled.

Connie cut her off. "We're already on a height of land. If we run there's a hundred yards of hollow before we get back up to the station level. We'll just have to watch," Connie said quietly.

The wall came closer, closer, higher, roaring.

It hit the fault break like a cannon shot.

The cliff, formed by the quake's sharp new fault break, cut the wave in half. Even so, the huge wall of the flood still pounded over and inwards. The water swept into the port. The boat tossed like a leaf in wind, then vanished. The small blue iceberg was thrown, whole, a dozen feet clear of the water, tumbling into the air.

Then the wave swept up the road towards them. It lifted the store huts. It overthrew the old steam engine that long ago had pulled the train from the coal mine. The flood kept coming.

The women stood, silent, watching.

The surge came two-thirds of the way up the road to them. Then the water faltered, stopped. They were lucky. The new uplifted cliff had saved them. Just. Apart from the port and outlying stores and old coal-mine ruins, the station was untouched.

Over on the hill was the airstrip in the snow. Lining it was Ny-Alesund's array of radiotelescope dishes, star-gazers and satellite-talkers. The station bulldozer had been clearing snow, preparing the landing strip for the incoming medical plane. There too the waves came close to the frantically fleeing dozer, but stopped.

Ash and Connie stood, transfixed, staring at every point. The huge surge rose, lapped and slowed, began to recede. Ash had her camera in her parka pocket. She'd taken it up to the cabin to snap the sun over the pole. She looked along King's Bay, eastwards, inland, following the wave as it swept on. She zoomed to the glacier head. The wave hit. It lifted and fragmented the ice into a million toy boats. Minutes later, these began sailing slowly out seawards towards her, until they grounded. Further inland, the back of the glacier lifted and was broken as water surged under it.

They'd survived.

As they stared east to the slow-arriving noise from the far glacier, crackling and screeching, there came an opposite noise from the west. This growled deeper, getting louder, coming faster. They turned.

An even bigger wall was coming, and behind it another, still larger. Nowhere to run.

The hammer blows of the new waves trashed the crumbling fault break, already eroded by the earlier attack. The port vanished. The wave surged up the track, closer, closer, slowing but still climbing towards them. Its angry crest was surmounted by a thrusting breccia of debris.

Behind it, the second new flood, even larger than its slowing precursor, was already upon and overwhelming the first new onslaught.

The flood almost took them. In its final rush, it swirled around their feet, a wide sheet of dirty water, two feet deep. The whole mass cracked and groaned as the water slowly spread, floating off all the dirty winter's snow.

They turned, looked. The station behind them still stood, untouched, in clean icy snow. Behind the huts stretched clean whiteness, endlessly up into the mountain. But in the hollow between them and the huts there was a strip of black mud and the mass of dirty water, dotted with soiled masses of floating ice. As the water edged slowly out, the port reappeared. The solid concrete had vanished, under the heaped eroded mass of soil and snow and ice. Only the ancient steam locomotive miraculously re-emerged, upside down, half buried in sludge, still there.

The airstrip remained an island of white. The bulldozer was perched at the high end. The lowest radio mast was leaning precariously, but the radio telescope dishes were untouched, though some steel feet strode from mud. The lights were on. The buried power cable was obviously working under the mud, though now a bit more buried.

The new waves moved up the bay. They were now hitting the glacier, tossing it like hay on a pitchfork. The surge went much further inland than the first attack — the whole mass of ice seemed to lift and move outwards to sea. Then, long later, came the rolling noise, crushing, grinding, smothering.

There were two further waves, smaller but still large. Finally, the waters settled. All this while they had stood, photographing.

“Two tsunamis,” Connie said.

Ash tried to think it out. “I guess the first one was from the Greenland quake. That was when I was knocked off the roof. It must have crossed the Fram strait between Greenland and us. The second must have been somehow connected to our quake this side of the ocean. Maybe a submarine landslip? Maybe that was the aftershock we felt?”

Connie was trying to gauge the size of the waves. “Pretty big, both of them. Thirty foot or more, the second one. We’re protected here by the island at the mouth of the bay. Maybe that’s why it was multiple. Goodness knows what those tsunamis did on the open coast.”

The station was intact. They went back to the clinic. The Viking was still awake, fearful for them, then cheerful, grilling them on the tsunamis.

Eventually, Ash left and went to her room, to find some sleep in the brilliant light. The excitement was over. In a few weeks it would be a forgotten footnote as the world moved on.