

BBC
BOOKS

DOCTOR WHO

THE WHEEL OF ICE



RESILIENCE.
REMEMBRANCE.
RESOLUTION.
WHATEVER
THE COST.

STEPHEN
BAXTER

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About the Book

The Wheel. A ring of ice and steel turning around a moon of Saturn, and home to a mining colony supplying a resource-hungry Earth. It's a bad place to grow up.

The colony has been plagued by problems. Maybe it's just gremlins, just back luck. But the equipment failures and thefts of resources have been increasing, and there have been stories among the children of mysterious creatures glimpsed aboard the Wheel. Many of the younger workers refuse to go down the warren-like mines anymore. And then sixteen-year-old Phee Laws, surfing Saturn's rings, saves an enigmatic blue box from destruction.

Aboard the Wheel, the Doctor, Jamie and Zoe find a critical situation – and they are suspected by some as the source of the sabotage. They soon find themselves caught in a mystery that goes right back to the creation of the solar system. A mystery that could kill them all.

About the Author

Stephen Baxter is recognised as one of the world's foremost science fiction writers. Since 1987, he has published over forty books, including the *Manifold Trilogy*, as well as the award-winning *The Time Ships* and over a hundred short stories. He is President of the British Science Fiction Association, a Vice-President of the H.G. Wells Society, and is also co-author with Terry Pratchett of *The Long Earth* series.

Stephen's books have won the Philip K. Dick Award, the John W. Campbell Memorial Award, the British Science Fiction Association Award, and have been nominated for several others, including the Arthur C. Clarke Award, the Hugo Award and Locus awards.

DOCTOR WHO

THE WHEEL OF ICE

STEPHEN
BAXTER



*To
Clare Baines, top Who fan;
Paul Cornell, top Who writer;
Paul McAuley and Kim Newman, top Who buddies;
and the memory of Patrick Troughton, top Who.*

PROLOGUE

ARKIVE

Resilience. Remembrance. Restoration.

One day, in the dusty libraries of Gallifrey, she would be given a name: *Arkive*. All things are named in the libraries of Gallifrey.

But she did not need a name. She needed only her mission: Resilience. Remembrance. Restoration.

All that she was, all that survived of her – and she was all that survived of Home – was embedded in an ice moon. A moon orbiting a planet, a ball of roiling gas, that itself orbited a feeble sun.

This solar system itself had no value for her, no interest. Nor did the life forms that swarmed and died on the surfaces of its planets. A sculpture of debris and rubbish, the system owed its very existence to the destruction of Home.

She had survived in this system of garbage for billions of years. Survived though she was damaged. The detonation of the star that had destroyed Home had been too severe. It had caught her, it had overwhelmed the elaborate survival mechanisms given her by her designers.

She had not demonstrated Resilience. She could not be certain of the veracity of her Remembrance. And she could not be sure she could fulfil her ultimate goal of Restoration. She could not fulfil her mission.

And so she had formulated a plan. A strategy. If she could not fix herself, if she could not fulfil her mission, then she would return to the arms of those who made her. Who had perished billions of years before. Who had entrusted her with all that they were, all that they could have been. Who would grant her forgiveness.

She would bathe in the light of a long-dead sun. And she would try again.

She would reach through time, even though it would take the sacrifice of this pointless little moon to do it.

She even prepared a fallback. For now, on one of the garbage worlds, a kind of intelligence had arisen, low, cunning, but useful. An intelligence whose destiny would be sacrificed to her purposes, should she awake to find herself still trapped in the ruins of this lump of ice.

Deep in the heart of the moon, there was a kind of bomb.

Searing light.

A detonation visible from Earth, to curious eyes.

She huddled in the wreckage of the moon, what was left of it.

Fragments of shattered moonscapes gathered in a gleaming band around the primary planet.

And through a rift in space and time, branching, cracking, a tiny artefact fell into the deep past...

1

IN THE VORTEX that lies beyond time and space tumbled a police box that was not a police box.

The control room was empty. It was a spacious, brightly lit chamber. It alone was too big to have fitted into the battered exterior of the police box, and doors and passageways leading from it hinted at more inexplicable volumes beyond. Inset multicoloured roundels pleasingly adorned the walls. A central console dominated the room, a hexagonal platform encrusted with switches, dials, monitor screens and levers, with a translucent cylinder standing motionless at the console's heart. The room was silent save for a hum of unseen engines.

And on the gleaming floor, in one corner, lay two modest musical instruments, a wooden recorder and a bagpipe's practice chanter. Beside them was an elderly hardback book, the reader's place carefully marked with a sliver of plastic. Its title was *Brave New World*, the author Aldous Huxley.

Abruptly the console's central cylinder began to rise and fall, and a strange sound rent the air, a rhythmic metallic wheezing.

Distracted from their different pursuits, the ship's three crew hurried towards the control room.

Zoe Heriot was first to arrive. She was a short, compact young woman with her hair cut in a neat bob. She had an open, pixie-like face and, when she was in the mood, an

infectious smile. She wore a jumpsuit from her own era, the latter half of the twenty-first century, comfortable but form-fitting, panelled with pastel colours.

She glanced around the control room and spotted the book on the floor, the latest she had borrowed from the ship's chaotic library. Once she had worked as a librarian, and had fallen in love with books. Since joining the crew of the TARDIS she had become fascinated by history – or rather, she had joined the crew to discover history, and the wider universe. And she was intrigued by books like this, speculations about the future by a man who had become a historical figure in his own right.

Jamie hurried in moments later. 'Och. What *now*?' James Robert McCrimmon, brawny, strong-featured, wore the kilt and shirt with lace-up throat and cuffs that characterised his own origins in the Scotland of the eighteenth century. The effect was spoiled only a little by the pair of roomy carpet slippers on his feet.

They both knew what the column's motion signified, the robotic grinding. 'This boat's landing,' said Jamie.

As Zoe opened her mouth to reply, the Doctor bustled in, pulling a battered old frock coat over a shabby white shirt. 'Well, I'm glad I arrived in time to hear you two remark on the utterly obvious,' he said rather grumpily as he hurried to the console. He was a small man with a mop of black hair cut to a fringe, and somewhat ragged sideburns. He wore a grubby red cravat, clumsily tied, and loud check trousers. And he wore no shoes, only worn-looking socks, and Zoe realised where Jamie had got the slippers from. The Doctor might have been in his late forties, had he been human. His rather lined face showed only impatience now, but it was capable, Zoe knew, of looks of deep wisdom, as well as childlike smiles of delight.

Zoe said, 'The issue is where we are landing. And why.'

The Doctor hurried around the console, snapping switches, peering at dials, and he stared at the rising

column as if in disbelief. 'Well, the "why" is rather obvious. One of you must have been meddling again. How many times have I told you two to leave the controls alone? She is a rather temperamental old bird, you know.'

'Dinna look at me,' Jamie protested. 'I wasna even here.'

'And you needn't blame me either,' Zoe snapped. 'The TARDIS was in landing mode before I left my room. And as for "meddling", Doctor, let me remind you of the rather large number of times you've relied on me to help you get this "temperamental old bird" under control.'

'Aye, and me,' put in Jamie. 'Like that time ye had me hit yon button with the handle of ma dirk—'

'All right, all right,' the Doctor said. 'If you'd both stop your chattering and give me a moment to think, I might have a chance to work out what's going on.'

As she so often did when annoyed, Zoe retreated into the logic which had been the bedrock of her education. 'I think it's perfectly obvious what's going on. The TARDIS is landing. And as none of us were here to set the controls to land—'

'She's made the decision for herself,' the Doctor muttered. 'Yes, thank you, Zoe.'

Jamie, concerned, crossed to the console. 'Can she do that?'

'Well, evidently she can, yes. The TARDIS is capable of a great many things you've yet to witness. Or, indeed, I,' he said ruefully. 'But I can tell you *why* she's suddenly taken things into her own hands. Not that she has hands...' He tapped a small monitor screen which flared red. 'She's detected a Relative Continuum Displacement Zone.'

'Has she now? And what's that when it's not got its fur coat on?'

'That, Jamie, is a hole in time!'

Zoe frowned. 'That sounds rather dangerous.'

'Indeed it is, Zoe. Such a thing in the wrong hands can cause a great deal of damage, for it can lead to

destabilisation. What is known as a direct continuum implosion.'

'How much damage would that cause?'

He shrugged. 'Whole worlds, perhaps.' He cupped his hands together, making a globe, spread his fingers. 'Poom!'

'That's aye verra well,' said Jamie, 'but wha's it got tae do with the TARDIS?'

'Well, it is a fact, Jamie, that the TARDIS was not really designed for, umm, the purposes to which I put her. My people, who have mastered the technologies of time themselves, rather frown on mucking about with time by anybody else. And so, you see, the TARDIS is specifically designed to react when she detects evidence of any such, ah—'

'Mucking about.'

'Quite so.'

'Ah,' said Jamie. 'So she's taking us in for a look-see.'

'That's the idea.'

'It doesn't sound very safe,' Zoe said, trying to sound sensible rather than wary.

'Oh, we should be fine. According to the read-outs we're heading for a landing on a perfectly ordinary moon of the planet Saturn.'

'Saturn? *My* Saturn? I mean—'

'Yes, Zoe. And not so terribly far away from your own time, in fact.'

Jamie was listening to the TARDIS's groaning. 'I think we'll land soon.' Jamie came from a technologically primitive culture, relatively, but he had had a lot more experience of the TARDIS and her whims than Zoe. The wheezing engine noise ended with a thump, and the ship shuddered. Jamie flicked on the external scanner, a wall screen filled with grey static that slowly cleared. 'Doctor...'

The Doctor was still at the console. He patted a row of switches. 'You really are a clever old girl, aren't you?'

Zoe could swear the TARDIS was leaning. She glanced around, and saw her Huxley book slide silently across the polished floor. 'I say, Doctor—'

'Let's take a look at this mysterious moon, shall we?'

But Jamie pointed to the screen. 'That doesnae look like any moon to me.'

In the monitor Zoe saw darkness. Empty space, spattered with stars. And a band of gleaming particles lying slantways across the image.

Jamie walked up to the screen and pointed to one bright fleck. 'I've my eye on that beastie yon. I think - whoa!' He slithered sideways.

Zoe grabbed a corner of the console. 'We're tilting, Doctor!'

Holding on to the tipping console to anchor himself, the Doctor peered at his instruments. 'That's not supposed to happen. Ah! The inertial lock has destabilised. The TARDIS is confused.'

'By what?'

'Well, she should have landed on a solid surface. That's what her space-time sensors told her to expect. But there's no solid surface here.'

Jamie said, 'Doctor, that speck o' light there—'

'In fact, you're right, there's no wretched moon at all! Ah.' He snapped his fingers. 'Of course! The Relative Continuum Displacement Zone. *That's* where the moon has gone. Down the hole in time - or more likely, blown up by it —'

'Doctor!' Jamie, waving his arms for balance, was shouting now.

And Zoe could see why. Over his shoulder the scanner showed a speck emerging from the background band. A speck becoming larger, more solid, a three-dimensional object. White. Gleaming.

Spinning.

Growing.

Heading straight for the ship.

‘Duck!’ cried Jamie.

As one Zoe and Jamie leapt for the Doctor, and the three of them huddled under the console, clinging to hatch handles. The control room filled with the noise of a blaring klaxon.

And the object hit.

2

HIGH ABOVE THE plane of Saturn's rings, a girl and a robot watched the drama unfold.

From the point of view of Phee Laws, the sun was a bright star, off to the left. Saturn itself was half full, a misty globe banded with subtle browns. Phee could see lightning crackle at the north pole - there were permanent depressions, like unending hurricanes, at both poles - and, deep in the night of the dark side, more lightning flared purple, each strike a sheet of energy bigger than the Earth. The ring system was like a tremendous roadway stretching around the planet, barely tilted away from the horizontal from Phee's point of view. She could see detail, ringlets as fine as if drawn by the pen of a careful artist. There were moons embedded in the ring system itself, small shapeless objects. The larger, perfectly spherical moons hung further out, like lanterns: silver Enceladus, burnt-orange Titan.

The sun was so far away that it cast its light across this system of moons and rings like a distant spotlight, making razor-sharp shadows. The shade of Saturn itself lay across the rings, etching straight-line edges thousands of kilometres long. The longest straight lines in the solar system, Phee's mother Jo liked to boast to the occasional visitors that came out to the Wheel.

And, right in the middle of the ring system, clearly visible if Phee worked the magnifiers in her skinsuit visor, was a tumbling blue box. There seemed to be some

attempts at piloting it, but she saw ring fragments whack into it like stones thrown by unruly children.

Another big chunk came spinning in to clout the box. 'Ouch,' she murmured.

'Aye, that's ganna sting in the mornin',' said the robot.

Hovering over her scooter, MMAC was something like a fat spider, with a battered main body ten metres across, crusted with sensors and access hatches, and arms branching away around the rim, some terminating in tools, others brachiating into finer and finer manipulators. Rocket nozzles stuck out of the hull in every direction. 'MMAC' stood for 'Malenfant-IntelligeX Modular Autonomous Component'. MMAC had begun the construction of the Wheel of Ice, where Phee lived. But 'it' was a 'him' to those who found him good company, and they all called him MMAC - 'Mac'.

'Yon box is unlucky,' MMAC said now. 'Turned up right in the midst of a B belt, where the frags is as big as hooses.'

He was right. 'And they seem to be in the middle of a spoke.'

The rings of Saturn were made up of billions of ice fragments, all following their own orbits around the planet, shepherded by the subtle gravities of Saturn's many moons. The rings further out were composed of dust grains almost too fine to see. But the big rings towards the centre of the complex, labelled A, B and C by long-dead astronomers on Earth, contained fragments that could indeed be as big as houses. Across much of its tremendous area the ring system was no more than ten or fifteen metres deep. That blue box, if it had any manoeuvrability at all, could easily have ducked out of that. But as MMAC said it was right in the middle of a spoke. The ring system was full of complexities, waves and ridges and even spokes that turned with the planet. And in such places the rings could be kilometres deep.

'I wonder who they are.'

'Aye. And how they got there. I dinna see a ship turn up. Did ye?'

Phee knew he was just being polite to ask. MMAC, crusted with radar and other sensors, 'saw' far beyond the capability of the eyes of a mere human like her. 'I expect Marshal Paley will be interested.' Sonia Paley was the latest security chief imposed on the Wheel by Earth, by the International Space Command in Geneva.

'Oh, aye.'

'She'll probably lock the crew up.'

'But she will nae ha' a chance if yon box is smashed to smithers.'

'Do you think we should save them, MMAC?'

'Thought ye'd ne'er ask. After yiz.'

Phee ran a quick check of the systems of her skinsuit and scooter. Then she stood straight on her scooter, grasped the handle, and swept on a brilliant flame down towards the rings of Saturn. It was like falling down to a tremendous floor, thousands of kilometres wide. Behind her she sensed the bulk of MMAC, following at a careful distance.

And before her ice fragments pinged from the carcass of the blue box, a drama unfolding in utter silence.

3

THE TARDIS CONTROL room was anything but silent. Zoe had anchored herself to a corner of the console, facing the external scanner. Peering into the murky, juddering screen, she was doing her best to call out warnings of the incoming hail of ice boulders. 'Upper left! Left! Now upper right!' The TARDIS bucked and shook as the Doctor responded at his controls. 'Now low right - right, Doctor! Now right again! I said *right!*'

Wham. Yet another block hit, almost dead on, despite all their efforts. Zoe thought she could feel the impact transmitted through the fabric of the ship to her own bones. But there was no time to reflect, for here came more of the unending storm. 'Another one from the right - now from dead centre, above us - this one's tumbling, it's going to hit—'

Scrape. Another bruising impact.

'Not fast enough, Doctor!'

'I'm doing my best, Zoe!' the Doctor wailed. He was held in place at his console only by Jamie's strong arms wrapped around his waist. 'It's not easy, you know!'

'You're telling me - left incoming!'

'Why don't we just leave this place?'

'Well, we can't for now, Jamie. You see—'

Wham.

'Surely this ship has an automated defence system!'

'Oh, Zoe, of course it has. But if it wasn't disabled, don't you think I'd have activated it by now?'

‘Disabled!’

‘I have been meaning to get around to looking into it...’

‘I know you say yon blocks are only ice, but how much more o’ this can she take, Doctor?’

‘Well, she’s built for punishment, but not this much. I daresay the hull will survive, but the contents might not.’

‘The contents?’

‘The mercury fluid links, for example.’

‘Tae perdition with the mercury fluid links. What about us?’

‘*Left*, Doctor!’

The Doctor wrenched at his controls again.

Wham.

Zoe turned, exasperated. ‘Why *not* just leave? Why not dematerialise?’

‘Because she won’t let me!’ the Doctor called back, distressed. ‘It’s all because of that wretched Continuum Displacement Zone. Until we’ve sorted that out we’re not going anywhere.’

Jamie pointed. ‘Zoe!’

And Zoe turned to the scanner in time to see a wall of white bearing down, not a cannonball this time, but a tremendous jagged mass heading straight for the TARDIS – she hid her face behind her hands—

There was no impact.

Zoe peeked through her fingers. The TARDIS was intact. Jamie and the Doctor stood breathing hard at the console. She was still here, uninjured. She saw, an odd detail, that the Huxley book had slithered across the floor and ended up at her feet, but it had lost her bookmark.

On the scanner screen there was only a fine hail of glittering dust. The great boulder had vanished. But now another block emerged from the swarm – she braced and prepared to call out—

The second block detonated and dispersed.

And a machine swam across her field of view, like a fat disc studded with flaring rockets. A forest of manipulator arms waved.

The TARDIS crew stood and stared.

'It saluted us,' Zoe said, breathlessly. 'I'll swear it saluted us.'

With a nonchalant spin the robot turned and zapped another brace of incoming ice blocks.

The Doctor came to life. He tapped a control to open a communication channel. 'This is the Doctor, aboard the TARDIS. Calling unidentified robot. We, umm, we're very grateful for your assistance.'

A speaker crackled to life. 'Aye, nae problem, wee man.'

Jamie stared. 'Ye're Scottish.' He leant over the console. 'I said, ye're Scottish!'

'Really, Jamie,' said the Doctor, 'there's no need to shout. This equipment is very sensitive.'

'So I am, fella, and you too by the sound o' it. Call me MMAC. That's M, M, A, C.'

'James Robert McCrimmon,' said Jamie proudly.

'McCrimmon? The sept of the McLarens?'

'Aye, tha's right. Ye know of it?'

'Ye wouldn'a be a piper by any chance? The McCrimmons are famed for that.'

'Tha's me. Served with the laird hisself.'

'Which laird?'

But the Doctor shook his head sharply.

Jamie asked instead, 'Wha' about ye? Where're ye from?'

Zoe snorted. 'Ask him where he was *manufactured*.'

But the robot answered, 'Born and bred in Govan.'

Jamie's face fell. 'Govan? Glasgae? Och, I should hae known. Here I am off in space and the mechanical Scotsman I meet has tae be from Glasgae.'

The robot calmly zapped a couple more blocks.

'That looks like a meson shield to me,' murmured Zoe. 'Short range but effective.'

‘And wha’s wrong with Glasgae, if I may ask?’

‘Only that ye lowland jessies supported the Anglish in the ‘45, tha’s all.’

MMAC laughed, a convincingly human sound. ‘Ye’ve a laing memory, fella.’

Now a new figure appeared in the scanner’s view. ‘Maybe we could talk about this later when we’ve got you to safety.’

Zoe stared, fascinated. With the robot continuing its defensive work in the background, in the foreground a spacesuited figure rode a simple rocket craft, just a platform on which she stood, a handle before her with basic controls. She was a young girl by the sound of her voice, maybe not much younger than Zoe. She wore a transparent sealed suit over what looked like straightforward T-shirt and shorts, in plain grey colours. Her face, serious and sensible, was dimly visible through her visor.

The Doctor murmured, ‘That suit rather reminds me of the equipment on your own station, Zoe.’

Zoe felt oddly defensive. ‘Well, we didn’t walk around in transparent pressure suits. And nothing like that *broomstick* would have been allowed on Station Three. I mean, where’s its backup propulsion system?’

‘I think ye’re jealous,’ said Jamie with a grin.

‘Oh, be quiet, Jamie.’ She raised her voice. ‘You, on the broomstick. Please identify yourself, and your rank.’

The Doctor raised his eyebrows at her aggressive tone.

‘My name’s Phee Laws.’ She sounded amused, and snapped out, ‘Josephine Miranda Laws, *ma’am*! I’m sixteen years old. I don’t really have a rank. My tentative parapsychological-socioeconomic classification is A, if that helps. My mother has a rank, I suppose. She’s Jo Laws. She’s the mayor, sort of, on the Wheel. Oh, her grade is B.’

‘The Wheel?’

‘The Mnemosyne Cincture. We call it the Wheel of Ice. Look, we ought to get you out of there before MMAC’s

meson gun runs out of juice. The best way is for MMAC just to tow you out of the plane of the rings. Then we'll take you to the Wheel.' She glanced around, evidently eyeing up the TARDIS's unprepossessing exterior. 'Is there any kind of grappling handle?'

'Oh, that's easily sorted out,' the Doctor said brightly. 'Do you have a line? We'll just wrap it around the control console, here inside the ship.'

Phee looked surprised. 'OK. It's your vessel. Where's the airlock?'

'Oh, no need for that. Hang on while I open the door.' He reached for the control.

Zoe cried, 'Doctor - no!' She lunged towards him, every space-trained instinct clamouring to keep the pressurised environment intact.

But the Doctor opened the door, long before she could reach him. Through the door Zoe saw a star field, a smattering of ice fragments, the spidery robot spinning and whirling, and the astonished-looking girl on her rocket craft, with a cable trailing back to the robot. And, rather to Zoe's surprise, the air did not rush out of the TARDIS leaving them gasping like stranded fish.

The Doctor smiled. He held out his arm to the girl outside. 'This way.'

Phee hesitated. Then, with a skilful blip of her rocket, she sailed in towards the TARDIS. She killed her relative motion before she collided with the ship, reached out an uncertain hand, and allowed the Doctor to pull her through the force field, or whatever it was that contained the TARDIS's air. She stood with a slight stumble on the gleaming floor, evidently surprised by the gravity, her lightweight craft in her hand. Zoe saw that under her transparent suit she wore a heavy pendant at her neck, a slim black panel about the size and shape of a playing card. It reminded Zoe of the communicators they had used on Station Three.

Somewhere inside the TARDIS an alarm chimed faintly.

The Doctor let the newcomer get her bearings. 'Welcome aboard,' he said gently, his face crumpled in a beaming smile.

'What is this thing, some kind of escape pod?'

'Well, we have done rather a lot of escaping in it, I suppose...'

And then Phee took in the size of the control room. Looked back at the open door that had taken up half of one of the TARDIS's external faces. Looked around the cabin again, with the doorway lost against one vast wall.

'Don't worry,' the Doctor said. 'Everybody reacts like that. Most people far worse, in fact.'

Zoe had heard this routine a hundred times. 'Isn't that a bit patronising, Doctor, considering that this girl and her robot spider are saving all our lives?'

'Yes, all right, thank you, Zoe. I wonder if you would mind glancing over at the console to check on that alarm? As for our visitor, it's perfectly safe to open your visor now, you know.' To back that up he filled his own lungs with a deep breath.

Phee cautiously tapped a control, and her visor slid back. Her hair was a rich red. Her face was serious, square rather than pretty, and she squinted in the control room's bright lights, her pupils oddly large.

Jamie came up to her with his usual clumsy friendliness. 'My name's Jamie.'

Phee grinned. 'Ah, yes, the proud Scot. MMAC's not so bad, you know, when you get to know him.'

'Aye, well, if he pulls us out o' this hole I'll even forgive him for being born in Glasgae. If he was born. Can I take this?'

'My scooter? Thanks.'

He propped it in the corner. 'Light, this thing. Might hae a go mesel'. Now here, let me gi' ye a hand with yon cable...'

The Doctor joined Zoe at the controls. 'You found the alarm.'

She pointed. 'This one.' The indicator was labelled PEDLERON PARTICLES. 'Went off just as Scooter Girl over there walked in.'

'Umm. Then the mystery we have to solve before we can leave here has just deepened, Zoe.'

'What do you mean?'

He tapped the display with his forefinger, and looked across at Phee, puzzled. 'I mean that the presence of pedleron particles tells me that the TARDIS has detected an object, something that has just been brought into this control room, that has *travelled through time...*'

Soon the cable was fixed in place around the base of the console. It snaked off out of the door, across open space, to the labouring, spinning, multi-limbed robot. With a squirt of rockets MMAC drifted away, the cable went taut, and the TARDIS followed like a dog on a lead.

4

THERE WERE FIVE members of the loosely constituted inner council that ran affairs on the Mnemosyne Cincture, known to its inhabitants as the Wheel of Ice. Or rather, Mayor Jo Laws admitted to herself tiredly as the arguments rambled on, they liked to believe they ran those affairs, rather than just react to the latest calamities.

There was herself, Josephine Mary Laws, with the more or less informal title of mayor of the mining colony. She was, however, the only one of the council actually elected by those they were here to serve.

She had one firm ally among the other four, she believed, in the colony's chief medical officer, Sinbad Omar.

Then there were the two representatives of Earth's tangled politics. Marshal Sonia Paley was the cop imposed as security officer by the ISC in Geneva, the International Space Command. And Luis Reyes, ambassador from the PEC, the Planetary Ethics Commission, was here to monitor their moral behaviour – and, in extremis, shut the operation down if they didn't wash behind their ears thoroughly enough. Both following other people's agendas, both not bad folks in themselves, both thoroughly out of their depth out here on the edge of the solar system.

And then there was Florian Hart, who was talking now, as usual dominating the session in her ferocious way. Her official title was a corporate rank: Administrator. In practice she was the embodiment of Bootstrap, Inc., the mining consortium that had put up the money for this

operation in the first place. As Florian never hesitated to remind them all.

She actually had some bernalium on the table in front of her, a frothy lump of it mined from Mnemosyne, the ice moon at the centre of the Wheel. The sample was embedded in lead-doped glass that would, hopefully, contain its residual radiation. Florian lifted the lump and let it drop; it swam down through the air in the low-spin gravity.

‘Let me just put it on the record once again,’ Florian said sternly. ‘Bernalium, mined from the core of the moon. *This* is why we’re all here. Bernalium, a highly conductive mineral, essential for the next-generation high-energy technologies that will fuel mankind’s leap outward into deep space...’ Raised in America, she was very beautiful, in a rich-kid, hothouse way. But there was nothing soft about her, nothing spoiled. On the contrary, Jo had learned, her background, and what had become of her father, had left her hard, driven to progress the fortunes of Bootstrap, Inc., locked in deadly competition across the solar system with its commercial rivals.

The rest listened to Florian with strained patience. She was a nightmare to work with.

The council was meeting in one of the smaller buildings in Residential One, the Wheel’s top-class habitation sector monopolised by A-grades like Florian; as a mere B, Jo felt out of place. There were windows set in the ceiling, and when she looked up Jo could make out the battered hulk of Mnemosyne itself. When Jo worked up there, in the little moon’s miniscule gravity, her disability, her legs shattered and amputated after an encounter with a roadside IED in Venezuela far away and long ago, counted for nothing. But down here on the Wheel, even though the spin gravity was no higher than Earth’s moon’s, she was confined to chairs.

Florian dropped the bernalium lump again. ‘Bernalium is the reason we’re all here. The *only* reason. Once we extract

it in significant quantities – assuming we ever do, assuming we get past the trial-bore stage we’ve been stuck at for months – this dump might pay for itself at last.’

Dr Sinbad Omar, an elegant, restrained North African, leaned forward. ‘You don’t need to remind us, Ms Hart. We need bernalium-based technology ourselves, in this hazardous environment. Almost every day I treat impact injuries caused by ring fragment collisions – crushing, broken limbs, decompression incidents. To keep at bay the swarm of ice missiles we live in requires something beefier than our elderly meson shields. The new laser technologies they are trialling on Earth’s moon will be much more effective, but barely affordable until bernalium becomes more widely available.’

Florian took this as support for her position. ‘Fine. Then we should accelerate the bore programme.’

Luis Reyes was a Spaniard; he came across as diffident, even nervous, and Jo suspected he was on a steep learning curve. But she had detected a strong moral core in him. ‘You rush to conclusions, Florian,’ he said now. ‘We of Planetary Ethics will not sanction any pressure to accelerate the work programme here unless we are certain of the safety of the workers. Especially,’ he said, emphasising his point with a hand slapped on the table, ‘the young people, the children, born here in what is effectively a labour camp, many of whom are already working on the mine projects in a quite unacceptable manner.’

Florian sneered. ‘There’s more at issue than the fate of a bunch of C-grade loser kids.’

A bunch of kids that included Jo’s own son, Sam. Jo seethed silently.

Florian Hart went on, ‘I know what your agenda is, Reyes. It’s always the same with you people. Let’s give up. Let’s roll up the colonies, let’s all go back to Earth, let’s

pull the blankets over our heads and pretend the rest of the universe doesn't even exist, and boo hoo. Yes?'

Luis was intimidated, but he stood his ground. 'I know what you're hinting at. The Pull Back to Earth faction holds one extreme and unrepresentative philosophical position, and is nothing to do with me. The Planetary Ethics Commission is a widely backed, government-supported moral initiative. As you know very well, Ms Hart. If it's a choice between slowing down this particular project and risking harm to children—'

Florian laughed loudly to drown him out.

Sonia Paley sighed. 'Let's all try to keep calm, shall we?'

Jo suppressed a smile. That was the authentic voice of a British bobby, which was what Sonia had been before joining the ISC: calming, reassuring, even rather boring.

But Florian rounded on Sonia. 'More Brit smugness from you, Marshal Paley? It's a shame you and your deputies aren't concentrating on cracking down on the vandalism and theft and downright sabotage that seems to be endemic in this sinkhole. As long as you and your half-trained goons sit on your hands—'

'We've no suspects.' Sonia sighed. 'We've been through this, Florian. I don't deny there have been incidents.'

"Incidents"!

'I've no reason to call it "sabotage". There's no evidence that the incidents of damage have in any way been organised, motivated. And despite heavy surveillance we've no confirmed perpetrators. Unless *you* have something you haven't shown us. I mean, it's Bootstrap systems that have the mines under surveillance, not ISC.'

'It's the kids. It has to be.'

'So what would you have me do, Florian? Lock up everybody under the age of seventeen?'

'A curfew would be a start.'

Luis Reyes grinned. 'Might work, as long as we could make sure the Blue Dolls obeyed the curfew, too.'

‘Oh, for crying out loud.’ Florian sat back in her chair in disgust.

Sinbad tapped the slate in front of him on the table; data flowed across its surface. ‘There *have* been more of these strange sightings. Most by very young children – including your little Casey, Jo. With kids that age it’s difficult to pin anything down. But I’ve no clinical evidence that they’re suffering from any kind of mass delusion, or that there’s any environmental factor that might be causing this—’

Florian snorted. ‘The damn kids are pulling our chains. It’s all a hoax.’

Sinbad laughed. ‘What, a hoax organised by three-year-olds?’

Jo let the arguments flow on, wondering when she could bring them back to the meeting’s actual agenda items, the next of which concerned a plumbing problem in the Recreation sector.

Then her own slate flashed, with a puzzling text message. She tapped out a reply. *Phee? What do you mean, you picked up three refugees?*