

Moon Six

Stephen Baxter

a novelette by Stephen Baxter

Foreword

The seeds for 'Moon Six' were a fragment of speculation about what kind of world we'd have if sf had never existed, and a NASA puff about the spin-off possibilities of an Apollo space suit.

Moon Six

Bado was alone on the primeval beach of Cape Canaveral, in his white lunar-surface pressure suit, holding his box of Moon rocks and sampling tools in his gloved hand.

He lifted up his gold sun-visor and looked around. The sand was hard and flat. A little way inland, there was a row of scrub pines, maybe ten feet tall.

There were no ICBM launch complexes here.

There was no Kennedy Space Center, in fact: no space programme, evidently,

save for him. He was stranded on this empty, desolate beach.

As the light leaked out of the sky, an unfamiliar Moon was brightening.

Bado glared at it. "Moon Six," he said. "Oh, shit."

He took off his helmet and gloves. He picked up his box of tools and began to walk inland. His blue overshoes, still stained dark grey from lunar dust, left crisp Moonwalk footprints in the damp sand of the beach.

Bado drops down the last three feet of the ladder and lands on the foil-covered footpad. A little grey dust splashes up around his feet.

Slade is waiting with his camera. "Okay, turn around and give me a big smile. Atta boy. You look great. Welcome to the Moon." Bado can't see Slade's face, behind his reflective golden sun-visor.

Bado holds onto the ladder with his right hand and places his left boot on the Moon. Then he steps off with his right foot, and lets go of the LM.

And there he is, standing on the Moon.

The suit around him is a warm, comforting bubble. He hears the hum of pumps and fans in the PLSS - his backpack, the Portable Life Support System - and feels the soft breeze of oxygen across his face.

He takes a halting step forward. The dust seems to crunch beneath his feet, like a covering of snow: there is a firm footing beneath a soft, resilient layer a few inches thick. His footprints are miraculously sharp, as if he's placed his ridged overshoes in fine, damp sand. He takes a photograph of one particularly well-defined print; it will persist here for millions of years, he realises, like the fossilised footprint of a dinosaur, to be eroded away only by the slow rain of micrometeorites, that echo of the titanic bombardments of the deep past.

He looks around.

The LM is standing in a broad, shallow crater. Low hills shoulder above the close horizon. There are craters everywhere, ranging from several yards to a thumbnail width, the low sunlight deepening their shadows.

They call the landing site Taylor Crater, after that district of El Lago - close to the Manned Spacecraft Center in Houston - where he and Fay have made their home. This pond of frozen lava is a relatively smooth, flat surface in a valley once flooded by molten rock. Their main objective for the flight is another crater a few hundred yards to the west that they've named after Slade's home district of Wildwood. Surveyor 7, an unmanned robot probe, set down in Wildwood a few years before; the astronauts are here to sample it.

This landing site is close to Tycho, the fresh, bright crater in the Moon's southern highlands. As a kid Bado had sharp vision. He was able to see Tycho with his naked eyes, a bright pinprick on that ash-white surface, with rays that spread right across the face of the full Moon.

Now he is here.

Bado turns and bounces back towards the LM.

After a few miles he got to a small town.

He hid his lunar pressure suit in a ditch, and, dressed in his tube-covered cooling garment, snuck into someone's back yard. He stole a pair of jeans and a shirt he found hanging on the line there.

He hated having to steal; he didn't plan on having to do it again.

He found a small bar. He walked straight in and asked after a job. He knew

he couldn't afford to hesitate, to hang around figuring what kind of world he'd finished up in. He had no money at all, but right now he was clean-shaven and presentable. A few days of sleeping rough would leave him too dirty and stinking to be employable.

He got a job washing glasses and cleaning out the john. That first night he slept on a park bench, but bought himself breakfast and cleaned himself up in a gas station john.

After a week, he had a little money saved. He loaded his lunar gear into an old trunk, and hitched to Daytona Beach, a few miles up the coast.

They climb easily out of Taylor.

Their first Moonwalk is a misshapen circle which will take them around several craters. The craters are like drill holes, the geologists say, excavations into lunar history.

The first stop is the north rim of a hundred-yard-wide crater they call Huckleberry Finn. It is about three hundred yards west of the LM.

Bado puts down the tool carrier. This is a hand-held tray, with an assortment of gear: rock hammers, sample bags, core tubes. He leans over, and digs into the lunar surface with a shovel. When he scrapes away the grey upper soil he finds a lighter grey, just under the surface.

"Hey, Slade. Come look at this."

Slade comes floating over. "How about that. I think we found some ray material." Ray material here will be debris from the impact which formed Tycho.

Lunar geology has been shaped by the big meteorite impacts which pounded its surface in prehistory. A main purpose of sending this mission so far

south is to keep them away from the massive impact which created the Mare Imbrium, in the northern hemisphere. Ray material unpolluted by Imbrium debris will let them date the more recent Tycho impact.

And here they have it, right at the start of their first Moonwalk.

Slade flips up his gold visor so Bado can see his face, and grins at him.

"How about that. We is looking at a full-up mission here, boy."

They finish up quickly, and set off at a run to the next stop. Slade looks like a human-shaped beach ball, his suit brilliant white, bouncing over the beach-like surface of the Moon. He is whistling.

They are approaching the walls of Wildwood Crater. Bado is going slightly uphill, and he can feel it. The carrier, loaded up with rocks, is getting harder to carry too. He has to hold it up to his chest, to keep the rocks from bouncing out when he runs, and so he is constantly fighting the stiffness of his pressure suit.

"Hey, Bado," Slade says. He comes loping down the slope. He points. "Take a look."

Bado has, he realises, reached the rim of Wildwood Crater. He is standing on top of its dune-like, eroded wall. And there, planted in the crater's centre, is the Surveyor. It is less than a hundred yards from him. It is a squat, three-legged frame, like a broken-off piece of a LM.

Slade grins. "Does that look neat? We got it made, Bado." Bado claps his commander's shoulder. "Outstanding, man." He knows that for Slade, getting to the Surveyor, bringing home a few pieces of it, is the finish line for the mission.

Bado looks back east, the way they have come. He can see the big, shallow

dip in the land that is Taylor, with the LM resting at its centre like a toy in the palm of some huge hand. It is a glistening, filmy construct of gold leaf and aluminium, bristling with antennae, docking targets, and reaction control thruster assemblies.

Two sets of footsteps come climbing up out of Taylor towards them, like footsteps on a beach after a tide.

Bado tips back on his heels and looks at the sky.

The sky is black, empty of stars; his pupils are closed up by the dazzle of the sun, and the reflection of the pale brown lunar surface. But he can see the Earth, a fat crescent, four times the size of a full moon. And there, crossing the zenith, is a single, brilliant, unwinking star: the orbiting Apollo CSM, with Al Pond, their Command Module pilot, waiting to take them home.

There is a kind of shimmer, like a heat haze. And the star goes out.

Just like that: it vanishes from the sky, directly over Bado's head. He blinks, and moves his head, stiffly, thinking he might have just lost the Apollo in the glare.

But it is gone.

What, then? Can it have moved into the shadow of the Moon? But a little thought knocks out that one: the geometry, of sun and Moon and spacecraft, is all wrong.

And anyhow, what was that heat haze shimmer? You don't get heat haze where there's no air.

He lowers his head. "Hey, Slade. You see that?"

But Slade isn't anywhere to be seen, either; the slope where he's been standing is smooth, empty.

Bado feels his heart hammer.

He lets go of the tool carrier - it drifts down to the dust, spilling rocks - and he lopes forward. "Come on, Slade. Where the hell are you?"

Slade is famous for gotchas; he is planning a few that Bado knows about, and probably some he doesn't, for later in the mission. But it is hard to see how he's pulled this one off. There is nowhere to hide, damn it.

He gets to where he thinks Slade was last standing. There is no sign of Slade. And there aren't even any footsteps, he realises now. The only marks under his feet are those made by his own boots, leading off a few yards away, to the north.

And they start out of nothing, it seems, like Man Friday steps in the crisp virgin Moon-snow. As if he's stepped out of nowhere onto the regolith.

When he looks back to the east, he can't see the LM either.

"Slade, this isn't funny, damn it." He starts to bound, hastily, back in the direction of the LM. His clumsy steps send up parabolic sprays of dust over unmarked regolith.

He feels his breath getting shallow. It isn't a good idea to panic. He tells himself that maybe the LM is hidden behind some low ridge. Distances are deceptive here, in this airless sharpness.

"Houston, Bado. I gets some kind of situation here." There isn't a reply immediately; he imagines his radio signal crawling across the light-seconds' gulf to Earth. "I'm out of contact with Slade. Maybe he's fallen somewhere, out of sight. And I don't seem to be able to see the LM.

And -"

And someone's wiped over our footsteps, while I wasn't looking.

Nobody is replying, he realises.

That stops him short. Dust falls over his feet. On the surface of the Moon, nothing is moving.

He looks up at the crescent Earth. "Ah, Houston, this is Bado. Houston.

John, come in, capcom."

Just silence, static in his headset.

He starts moving to the east again, breathing hard, the sweat pooling at his neck.

He rented an apartment.

He got himself a better job in a radio store. In the Air Force, before joining NASA, he'd specialised in electronics. He'd been apprehensive that he might not be able to find his way around the gear here, but he found it simple - almost crude, compared to what he'd been used to. They had transistors here, but they still used big chunky valves and paper capacitors. It was like being back in the early '60s. Radios were popular, but there were few TVs: small black and white gadgets, the reception lousy.

He began watching the TV news and reading the newspapers, trying to figure out what kind of world he'd been dropped in.

The weather forecasts were lousy.

And foreign news reports, even on the TV, were sent by wire, like they'd been when he was a kid, and were often a day or two out of date.

The Vietnam war was unfolding. But there'd been none of the protests against the war, here, that he'd seen back at home. There were no live TV

pictures, no colour satellite images of soldiers in the mud and the rain, napalming civilians. Nobody knew what was happening out there. The reaction to the war was more like what he remembered of World War Two. There really was no space programme. Not just the manned stuff had gone: there were no weather satellites, communication satellites. Sputnik, Explorer and all the rest just hadn't happened. The Moon was just a light in the sky that nobody cared about, like when he was a kid. It was brighter, though, because of that big patch of highland where Imbrium should have been.

On the other hand, there were no ICBMs, as far as he could tell.

His mouth is bone-dry from the pure oxygen. He is breathing hard; he hears the hiss of water through the suit's cooling system, the pipes that curl around his limbs and chest.

There is a rational explanation for this. There has to be. Like, if he's got out of line of sight with the LM, somehow, he's invisible to the LM's radio relay, the Lunar Communications Relay Unit. He is linked to that by VHF, and then by S-band to the Earth.

Yeah, that has to be it. As soon as he gets back in line of sight of the LM, he can get in touch with home. And maybe with Slade.

But he can't figure how he can have gotten out of the LM's line of sight in the first place. And what about the vanished footsteps?

He tries not to think about it. He just concentrates on loping forward, back to the LM.

In a few minutes, he is back in Taylor Crater.

There is no LM. The regolith here is undisturbed.

Bado bounces across the virgin surface, scuffing it up.

Can he be in the wrong place? The lunar surface does have a tendency to look the same everywhere ... Hell, no. He can see he is right in the middle of Taylor; he recognises the shapes of the hills. There can't be any doubt.

What, then? Can Slade have somehow gotten back to the LM, taken off without him?

But how can Bado not have seen him, seen the boxy LM ascent stage lift up into the sky? And besides, the regolith would be marked by the ascent stage's blast.

And, he realises dimly, there would, of course, be an abandoned descent platform here, and bits of kit. And their footsteps. His thoughts are sluggish, his realisation coming slowly. Symptoms of shock, maybe.

The fact is that save for his own footfalls, the regolith is as unmarked as if he's been dropped out of the sky.

And meanwhile, nobody in Houston is talking to him.

He is ashamed to find he is crying, mumbling, tears rolling down his face inside his helmet.

He starts to walk back west again. Following his own footsteps - the single line he made coming back to find the LM - he works his way out of Taylor, and back to the rim of Wildwood.

Hell, he doesn't have any other place to go.

As he walks he keeps calling, for Slade, for Houston, but there is only static. He knows his signal can't reach Earth anyway, not without the LM's big S-band booster.

At Wildwood's rim there is nothing but the footfalls he left earlier. He looks down into Wildwood, and there sits the Surveyor, glistening like some aluminium toy, unperturbed.

He finds his dropped carrier, with the spilled tools and bagged rocks. He bends sideways and scoops up the stuff, loading it back into the carrier.

Bado walks down into Wildwood, spraying lunar dust ahead of him.

He examines the Surveyor. Its solar cell array is stuck out on a boom above him, maybe ten feet over the regolith. The craft bristles with fuel tanks, batteries, antennae and sensors. He can see the craft's mechanical claw where it has scraped into the lunar regolith. And he can see how the craft's white paint has turned tan, maybe from exposure to the sunlight.

There are splashes of dust under the vernier rocket nozzles; the Surveyor is designed to land hard, and the three pads have left a firm imprint in the surface.

He gets hold of a landing leg and shakes the Surveyor. "Okay," he calls up. "I'm jiggling it. It's planted here." There was a fear that the Surveyor might tip over onto the astronauts when they try to work with it. That evidently isn't going to happen. Bado takes a pair of cutting shears from his carrier, gets hold of the Surveyor's TV camera, and starts to chop through the camera's support struts and cables. "Just a couple more tubes," he says. "Then that baby's mine."

He'll finish up his Moonwalk, he figures, according to the timeline in the spiral-bound checklist on his cuff. He'll keep on reporting his observations, in case anyone is listening. And then -

And then, when he gets to the end of the walk, he'll figure out what to do

next. Later there will be another boundary, when his PLSS's consumables expire. He'll deal with those things when they come. For now, he is going to work.

The camera comes loose, and he grips it in his gloves. "Got it! It's ours!"

He drops the camera in his carrier, breathing hard. His mouth is dry as sand; he'd give an awful lot for an ice-cool glass of water, right here and now.

There is a shimmer, like heat haze, crossing between him and the Surveyor. Just like before.

He tilts back and looks up. There is old Earth, the fat crescent. And a star, bright and unwavering, is crossing the black sky, directly over his head.

It has to be the Apollo CSM.

He drops the carrier to the dirt and starts jumping up and down, in great big lunar hops, and he waves, as if he is trying to attract a passing aircraft. "Hey, Al! Al Pond! Can you hear me?" Even without the LM, Pond, in the CSM, might be able to pick him up.

His mood changes to something resembling elation. He doesn't know where the hell Apollo has been, but if it is back, maybe soon so will be the LM, and Slade, and everything. That will suit Bado, right down to the lunar ground he is standing on. He'll be content to have it all back the way it had been, the way it is supposed to be, and figure out what has happened to him later.

"Al! It's me, Bado! Can you hear me? Can you ..."

There is something wrong.

That light isn't staying steady. It is getting brighter, and it is drifting off its straight line, coming down over his head.

It isn't the CSM, in orbit. It is some kind of boxy craft, much smaller than a LM, descending towards him, gleaming in the sunlight.

He picks up his carrier and holds it close to his chest, and he stays close to the Surveyor. As the craft approaches he feels an unreasoning fear.

His kidneys send him a stab of distress. He stands still and lets go, into the urine collection condom. He feels shamed; it is like wetting his pants.

The craft is just a box, on four spindly landing legs. It is coming down vertically, standing on a central rocket. He can see no light from the rocket, of course, but he can see how the downward blast is starting to kick up some dust. It is going to land maybe fifty yards from the Surveyor, right in the middle of Wildwood Crater. The whole thing is made of some silvery metal, maybe aluminium. It has a little control panel, set at the front, and there is someone at the controls. It looks like a man - an astronaut, in fact - his face hidden behind a gold-tinted visor.

Bado can see the blue of a NASA logo, and a dust-coated Stars and Stripes, painted on the side of the craft.

Maybe fifty feet above the ground the rocket cuts out, and the craft begins to drop. The sprays of dust settle back neatly to the lunar soil.

Now little vernier rockets, stuck to the side of the open compartment, cut in to slow the fall, kicking up their own little sprays.

It is all happening in complete silence.

The craft hits the ground with a solid thump. Bado can see the pilot, the astronaut, flick a few switches, and then he turns and jumps the couple of feet down off the little platform to the ground.

The astronaut comes giraffe-loping across the sunlit surface towards Bado.

He stops, a few feet from Bado, and stands there, slightly stooped forward, balancing the weight of his PLSS.

His suit looks pretty much a standard EMU, an Apollo Extravehicular Mobility Unit. There is the usual gleaming white oversuit - the thermal micrometeorite garment - with the lower legs and overshoes scuffed and stained with Tycho dust. Bado can see the PLSS oxygen and water inlets on the chest cover, and penlight and utility pockets on arms and legs. And there is Old Glory stitched to the left arm.

But Bado doesn't recognise the name stitched over the breast. WILLIAMS.

There is no astronaut of that name in the corps, back in Houston.

Bado's headset crackles to life, startling him.

"I heard you, when the LFU came over the horizon. As soon as I got in line of sight. I could hear you talking, describing what you were doing. And when I looked down, there you are."

Bado is astonished. It is a woman's voice. This Williams is a goddamn woman.

Bado can't think of a thing to say.

He didn't find it hard to find himself a place in the community here, to gather a fake id around himself. Computers were pretty primitive, and there was little cross-checking of records.

Maybe, back home, the development of computers had been forced by the Apollo project, he speculated.

He couldn't see any way he was going to get home. He was stuck here. But he sure as hell didn't want to spend his life tuning crummy 1960s-design radios.

He tinkered with the Surveyor camera he'd retrieved from the Moon. It was a much more lightweight design than anything available here, as far as he could tell. But the manufacturing techniques required weren't much beyond what was available here.

He started to take camera components to electronic engineering companies.

He took apart his lunar suit. In all this world there was nothing like the suit's miniaturised telemetry system. He was able to adapt it to be used to transmit EKG data from ambulances to hospital emergency rooms. He sent samples of the Beta-cloth outer coverall to a fibreglass company, and showed them how the stuff could be used for fire hoses. Other samples went to military suppliers to help them put together better insulated blankets.

The scratch-proof lens of the Surveyor camera went to an optical company, to manufacture better safety goggles and other gear. The miniature, high-performance motors driving the pumps and fans of his PLSS found a dozen applications.

He was careful to patent everything he "developed" from his lunar equipment.

Pretty soon, the money started rolling in.

"Maybe I'm dreaming this," Williams says. "Dehydration, or something ...

Uh, I guess I'm pleased to meet you."

She has a Tennessee accent, he thinks.

Bado shakes the hand. He can feel it through his own stiff pressure glove.

"I guess you're too solid for a ghost."

"Ditto," she says. "Besides, I've never met a ghost yet who uses VHF frequencies."

He releases her hand.

"I don't know how the hell you got here," she says. "And I guess you don't understand this any better than I do."

"That's for sure."

She dips her visored head. "What are you doing here, anyway?"

He holds up the carrier. "Sampling the Surveyor. I took off its TV camera."

"Oh. You couldn't get it, though."

"Sure. Here it is."

She turns to the Surveyor. "Look over there."

The Surveyor is whole again, its TV camera firmly mounted to its struts.

But when he looks down at his carrier, there is the TV camera he's cut away, lying there, decapitated.

"Where's your LM?" she asks.

"Taylor Crater."

"Where?"

He describes the crater's location.

"Oh. Okay. We're calling that one San Jacinto. Ah, no, your LM isn't there."

"I know. I walked back. The crater's empty."

"No, it isn't," she says, but there is a trace of alarm in her voice.

"That's where my LM is. With my partner, and the Payload Module."

Payload Module?

"The hell with it," she says. "Let's go see."

She turns and starts to lope back to her flying craft, rocking from side to side. He stands there and watches her go.

After a few steps she stops and turns around. "You want a lift?"

"Can you take two?"

"Sure. Come on. What choice do you have, if you're stuck here without an LM?"

Her voice carries a streak of common sense that somehow comforts him.

Side by side, they bound over the Moon.

They reach Williams's flying machine. It is just an aluminium box sitting squat on its four legs, with vernier rocket nozzles stuck to the walls like clusters of berries. The pilot has to climb in at the back and stand over the cover of the main rocket engine, which is about the size of a car engine, Bado supposes. Big spherical propellant and oxidiser tanks are fixed to the floor. There is an S-band antenna and a VHF aerial. There is some gear on the floor, hammers and shovels and sample bags and cameras; Williams dumps this stuff out, briskly, onto the regolith. Williams hops up onto the platform and begins throwing switches. Her control panel contains a few instruments, a CRT, a couple of handsets.

Bado lugs his heavy tool carrier up onto the platform, then he gets hold of a rail with both hands and jumps up. "What did you call this thing? An LFU?"

"Yeah. Lunar Flying Unit."

"I've got vague memories," says Bado. "Of a design like this. It was never developed, when the extended Apollo missions were cancelled."

"Cancelled? When did that happen?"

"When we were cut back to stop when we get to Apollo 17."

"Uh huh," she says dubiously. She eyes the tool carrier. "You want to bring that thing?"

"Sure. It's not too heavy, is it?"

"No. But what do you want it for?"

Bado looks at the battered, dusty carrier, with its meaningless load of rocks. "It's all I've got."

"Okay. Let's get out of here," she says briskly.

Williams kicks in the main rocket. Dust billows silently up off the ground, into Bado's face. He can see frozen vapour puff out of the attitude nozzles, in streams of shimmering crystals, as if this is some unlikely steam engine, a Victorian engineer's fantasy of lunar flight.

The basin of Wildwood Crater falls away. The lift is a brief, comforting surge.

Williams whoops. "Whee-hoo! What a ride, huh, pal?" She takes the LFU up to maybe sixty feet, and slows the ascent. She pitches the craft over and they begin sailing out of Wildwood.

The principles of the strange craft are obvious enough to Bado. You stand on your rocket's tail. You keep yourself stable with the four peroxide reaction clusters, the little vernier rockets spaced around the frame, squirting them here and there. When the thrust of the single big downwards rocket is at an angle to the vertical, the LFU goes shooting forwards, or

sideways, or backwards across the pitted surface. Williams shows him the hand controls. They are just like the LM's. The attitude control moves in clicks; every time Williams turns the control the reaction rockets will bang and the LFU will tip over, by a degree at a time. The thrust control is a toggle switch; when Williams closes it the lift rockets roars, to give her a delta-vee of a foot per second.

"These are neat little craft," Williams says. "They fly on residual descent stage propellants. They've a range of a few miles, and you can do three sorties in each of them."

"Each?"

"We bring two. Rescue capability."

Bado thinks he is starting to see a pattern to what has happened to him.

In a way, the presence of the camera in his carrier is reassuring. It means he isn't crazy. There really have been two copies of the Surveyor: one of which he's sampled, and one he hasn't.

Maybe there is more than one goddamn Moon.

Moon One is the good old lantern in the sky that he and Slade touched down on yesterday. Maybe Slade is still back there, with the LM. But Bado sure isn't. Somehow he stumbled onto Moon Two, the place with the Surveyor, but no LM. And then this Williams showed up, and evidently by that time he was on another Moon, Moon Three, with its own copy of the Surveyor. And a different set of astronauts exploring, with subtly different equipment.

As if travelling to one Moon isn't enough.

He thinks about that strange, heat-haze shimmer. Maybe that has something to do with these weird transfers.

He can't discuss any of this with Williams, because she hasn't seen any of the changes. Not yet, anyhow.

Bado clings to the sides of the LFU and watches the surface of the Moon scroll underneath him. There are craters everywhere, overlaid circles of all sizes, some barely visible in a surface gardened by billions of years of micrometeorite impact. The surface looks ghostly, rendered in black and white, too stark, unmoving, to be real.

He knew he was taking a risk, but he took his lunar rocks to a couple of universities.

He got laughed out of court. Especially when he wouldn't explain how these charcoal-dark rocks might have got from the Moon to the Earth.

"Maybe they got blasted off by a meteorite strike," he said to an "expert" at Cornell. "Maybe they drifted in space until they landed here. I've read about that."

The guy pushed his reading glasses further up his thin nose. "Well, that's possible." He smiled. "No doubt you've been reading the same lurid speculation I have, in the popular science press. What if rocks get knocked back and forth between the planets? Perhaps there are indeed bits of the Moon, even Mars, to be turned up, here on Earth. And, since we know living things can survive in the interiors of rocks - and since we know that some plants and bacteria can survive long periods of dormancy - perhaps it is even possible for life to propagate itself, across the trackless void, in such a manner."

He picked up Bado's Moon rock, dubiously. "But in that case I'd expect to see some evidence of the entry of this rock into the atmosphere. Melting,

some glass. And besides, this rock is not volcanic. Mr Bado, everyone knows the Moon's major features were formed exclusively by vulcanism. This can't possibly be a rock from the Moon."

Bado snatched back his rock. "That's Colonel Bado," he said. He marched out.

He gave up, and went back to Daytona Beach.

The LFU slides over the rim of Taylor Crater. Or San Jacinto. Bado can see scuffed-up soil below him, and the big Huckleberry Finn Crater to his left, where he and Slade made their first stop.

At the centre of Taylor stands a LM. It glitters like some piece of giant jewellery, the most colourful object on the lunar surface. An astronaut bounces around in front of it, like a white balloon. He - or she - is working at what looks like a surface experiment package, white-painted boxes and cylinders and masts laid out in a star formation, and connected to a central nuclear generator by orange cables. It looks like an ALSEP, but it is evidently heavier, more advanced.

But the LM isn't alone. A second LM stands beside it, squat and spidery.

Bado can see that the ascent stage has been heavily reworked; the pressurised cabin looks to be missing, replaced by cargo pallets.

"That's your Payload Module, right?"

"Yeah," Williams says. "The Lunar Payload Module Laboratory. It got here on automatics before we left the Cape. This is a dual Saturn launch mission, Bado. We've got a stay time of four weeks."

Again he has vague memories of proposals for such things: dual launches,

well-equipped long-stay jaunts on the surface. But the funding squeezes since '66 have long since put paid to all of that. Evidently, wherever Williams comes from, the money is flowing a little more freely.

The LFU tips itself back, to slow its forward velocity. Williams throttles back the main motor and the LFU starts to drop down. Bado glances at the numbers; the CRT display evolves smoothly through height and velocity readings. Bado guesses the LFU must have some simple radar-based altimeter.

Now the LM and its misshapen partner are obscured by the dust Williams's rocket is kicking up.

At fifty feet Williams cuts the main engine. Bado feels the drop in the pit of his stomach, and he watches the ground explode towards him, resolving into unwelcome detail, sharp boulders and zap pits and footprints, highlighted by the low morning sun.

Then vernier dust clouds billow up around the LFU. Bado feels a comforting surge of deceleration.

The LFU lands with a jar that Bado feels in his knees.

For a couple of seconds the dust of their landing cloaks the LFU, and then it begins to settle out around them, coating the LFU's surfaces, his suit.

There is a heat-haze shimmer. "Oh, shit."

Williams is busily shutting down the LFU. She turns to face him, anonymous behind her visor.

There wasn't much astronomy going on at all, in fact, he found out when he looked it up in the libraries. Just a handful of big telescopes, scattered

around the world, with a few crusty old guys following their obscure, decades-long projects. And all the projects were to do with deep space: the stars, and beyond. Nobody was interested in the Solar System.

Certainly in nothing as mundane as the Moon.

He looked up at Moon Six, uneasily, with its bright, unscarred north-west quadrant. If that Imbrium meteorite hadn't hit three billion years ago - or in 1970 - where the hell was it now?

Maybe that big mother was on its way, right now.

Quietly, he pumped some of his money into funding a little research at the universities into Earth-neighbourhood asteroids.

He also siphoned money into trying to figure out what had happened to him.

How he had got here.

As the last dust settles, Bado looks towards the centre of Taylor Crater, to where the twin LMs stood.

He can make out a blocky shape there.

He feels a sharp surge of relief. Thank God. Maybe this transition hasn't been as severe as some of the others. Or maybe there hasn't been a transition at all ...

But Williams's LM has gone, with its cargo-carrying partner. And so has the astronaut, with his surface package. But the crater isn't empty. The vehicle that stands in its place has the same basic geometry as a LM, Bado thinks, with a boxy descent stage standing on four legs, and a fat ascent stage cabin on top. But it is just fifteen feet tall - compared to a LM's twenty feet - and the cabin looks a lot smaller.

"My God," Williams says. She is just standing, stock still, staring at the little lander.

"Welcome to Moon Four," Bado whispers.

"My God." She repeats that over and over.

He faces her, and flips up his gold visor so she can see his face. "Listen to me. You're not going crazy. We've been through some kind of - transition. I can't explain it." He grins. It makes him feel stronger to think there is someone else more scared, more shocked, than he is.

He takes her through his tentative theory of the multiple Moons.

She turns to face the squat lander again. "I figured it had to be something like that."

He gapes at her. "You figured?"

"How the hell else could you have got here? Well, what are we supposed to do now?" She checks the time on her big Rolex watch. "Bado. How long will your PLSS hold out?"

He feels embarrassed. Shocked or not, she's cut to the chase a lot more smartly than he's been able to. He glances at his own watch, on the cuff next to his useless checklist. "A couple of hours. What about you?"

"Less, probably. Come on." She glides down from the platform of the LFU, her blue boots kicking up a spray of dust.

"Where are we going?"

"Over to that little LM, of course. Where else? It's the only source of consumables I can see anywhere around here." She begins loping towards the lander.

After a moment, he picks up his carrier, and follows her.

As they approach he gets a better look at the lander. The ascent stage is

a bulbous, misshapen ball, capped by a fat, wide disk that looks like a docking device. Two dinner-plate-sized omnidirectional antennae are stuck out on extensible arms from the descent stage. The whole clumsy-looking assemblage is swathed in some kind of green blanket, maybe for thermal insulation.

A ladder leads from a round hatch in the front of the craft, and down to the surface via a landing leg. The ground there is scuffed with footprints.

"It's a hell of a small cabin," she says. "Has to be one man."

"You think it's American?"

"Not from any America I know. That ascent stage looks familiar. It looks like an adapted Soyuz orbital module. You know, the Russian craft, their Apollo equivalent."

"Russian?"

"Can you see any kind of docking tunnel on top of that thing?"

He looks. "Nope. Just that flat assemblage at the top."

"The crew must have to spacewalk to cross from the command module. What a design."

An astronaut comes loping around the side of the lander, swaying from side to side, kicking up dust. When he catches sight of Bado and Williams, he stops dead.

The stranger is carrying a flag, on a pole. The flag is stiffened with wire, and it is clearly bright red, with a gold hammer-and-sickle embroidered into it.

"How about that," Williams whispers. "I guess we don't always get to win,

huh."

The stranger - the cosmonaut, Bado labels him - takes a couple of steps towards them. He starts gesticulating, waving his arms about, making the flag flutter. He wears a kind of hoop around his waist, held away from his body with stiff wire.

"I think he's trying to talk to us," Williams says.

"It'll be a miracle if we are on the same frequency. Maybe he's S-band only, to talk to Earth. No VHF. Look how stiff his movements are."

"Yeah. I think his suit is semi-rigid. Must be hell to move around in."

"What's with the hoolahoop?" Bado asks.

"It will stop him falling over, in case he trips. Don't you get it? He's on his own here. That's a one-man lander. There's nobody around to help him, if he gets into trouble."

The cosmonaut is getting agitated. Now he hoists up the flag and throws it at them, javelin-style; it falls well short of Bado's feet. Then the cosmonaut turns and lopes towards his lander, evidently looking for more tools, or improvised weapons.

"Look at that," Bado says. "There are big funky hinges, down the side of his backpack. That must be the way into the suit."

Williams lifts up her visor. "Show him your face. We've got to find some way to get through to this guy."

Bado feels like laughing. "What for?"

The light changes.

Bado stands stock still. "Shit, not again."

Williams says, "What?"

"Another transition." He looks around for the tell-tale heat-haze flicker.

"I don't think so," Williams says softly. "Not this time."

A shadow, slim and jet-black, hundreds of feet long, sweeps over the surface of Taylor Crater.

Bado leans back and tips up his face.

The ship is like a huge artillery shell, gleaming silver, standing on its tail. It glides over the lunar surface, maybe fifty feet up, and where its invisible rocket exhaust passes, dust is churned up and sent gusting away in great flat sheets. The ship moves gracefully, if ponderously. Four heavy landing legs, with big spring-loads shock absorbers, stick out from the base. A circle of portals glows bright yellow around the nose. A huge bull's-eye of red, white and blue is painted on the side, along with a registration number.

"Shit," Bado says. "That thing must be a hundred feet tall." Four or five times as tall as his lost LM. "What do you think it weighs? Two, three hundred tons?"

"Direct ascent," she says.

"Huh?"

"Look at it. It's streamlined. It's built for landing on the Moon in one piece, ascending again, and returning to Earth."

"But that was designed out years ago, by von Braun and the boys. A ship like that's too heavy for chemical rockets."

"So who said anything about chemical? It has to be atomic. Some kind of fission pile in there, superheating its propellant. One hell of a specific impulse. Anyhow, it's that or antigravity -"

The great silver fish hovers for a moment, and then comes swooping down at the surface. It flies without a quiver. Bado wonders how it is keeping its stability; he can't see any verniers. Big internal flywheels maybe.

As the ship nears the surface dust comes rushing across the plain, away from the big tail, like a huge circular sandstorm. There is a rattle, almost like rain, as heavy particles impact Bado's visor. He holds his gloved hands up before his face, and leans a little into the rocket wind. The delicate little Russian lander just topples over in the breeze, and the bulbous ascent stage breaks off and rolls away.

In the mirror of his bedroom he studied his greying hair and spreading paunch.

Oddly, it had taken a while for him to miss his wife, Fay.

Maybe because everything was so different. Not that he was sorry, in a sense; his job, he figured, was to survive here - to earn a living, to keep himself sane - and moping after the unattainable wouldn't help.

He was glad they'd had no kids, though.

There was no point searching for Fay in Houston, of course. Houston without the space programme was just an oil town, with a big cattle pasture north of Clear Lake where the Manned Spacecraft Center should have been. El Lago, the Taylor housing development, had never been built.

He even drove out to Atlantic City, where he'd first met Fay, a couple of decades ago. He couldn't find her in the phone book. She was probably living under some married name, he figured.

He gave up.

He tried, a few times, to strike up relationships with other women here.

He found it hard to get close to anyone, though. He always felt he needed to guard what he was saying. This wasn't his home, after all.

So he lived pretty much alone. It was bearable. It even got easier, as he got older.

Oddly, he missed walking on the Moon more than anything else, more than anything about the world he'd lost. He kept reliving those brief hours. He remembered Slade, how he looked bouncing across the lunar sand, a brilliant white balloon. How happy he'd seemed.

The silver ship touches down with a thump, and those big legs flex, the springs working like muscles.

A hatch opens in the ship's nose, maybe eighty feet from the ground, and yellow light spills out. A spacesuited figure appears, and begins rolling a rope ladder down to the surface. The figure waves to Bado and Williams, calling them to the ship.

"What do you think?" Bado asks.

"I think it's British. Look at that bull's-eye logo. I remember war movies about the Battle of Britain ... Wherever the hell that's come from, it's some place very different from the worlds you and I grew up in."

"You figure we should go over there?" he asks.

She spreads her hands. "What choice do we have? We don't have an LM. And we can't last out here much longer. At least these guys look as if they know what they're doing. Let's go see what Boris thinks."

The cosmonaut lets Williams walk up to him. He is hauling at his ascent stage. But Bado can see the hull is cracked open, like an aluminium egg,

and the cosmonaut's actions are despairing.

Williams points towards the silver ship, where the figure in the airlock is still waving at them.

Listlessly, the cosmonaut lets himself be led to the ship.

Close to, the silver craft looks even bigger than before, so tall that when Bado stands at its base he can't see the nose.

Williams goes up the ladder first, using just her arms, pulling her mass easily in the Moon's shallow gravity well. The cosmonaut takes off his hoop, dumps it on the ground, and follows her.

Bado comes last. He moves more slowly than the others, because he has his tool carrier clutched against his chest, and it is awkward to juggle while climbing the rope ladder.

It takes forever to climb past the shining metal of the ship's lower hull.

The metal here looks like lead, actually. Shielding, around an atomic pile? He thinks of the energy it must take to haul this huge mass of metal around. He can't help comparing it with his own LM, which, to save weight, was shaved down to little more than a bubble of aluminium foil.

The hull shivers before his face. Heat haze.

He looks down. The wreckage of the little Russian lander, and Williams' LFU, has gone. The surface under the tail of this big ship looks unmarked, lacking even the raying of the landing. And the topography of the area is quite different; now he is looking down over some kind of lumpy, sun-drenched mountain range, and a wide, fat rille snakes through the crust.

"How about that," Williams says drily, from above him. Her voice signal is degraded; the amplifier on the LFU is no longer available to boost their

VHF link.

"We're on Moon Five," he says.

"Moon Five?"

"It seems important to keep count."

"Yeah. Whatever. Bado, this time the geology's changed. Maybe one of the big primordial impacts didn't happen, leaving the whole lunar surface a different shape."

They reach the hatch. Bado lets the astronaut take his tool carrier, and clambers in on his knees.

The astronaut closes the hatch and dogs it shut by turning a big heavy wheel. He wears a British Union Flag on his sleeve, and there is a name stitched to his breast: TAINÉ.

The four of them stand around in the airlock, in their competing pressure suit designs. Air hisses, briefly.

An inner door opens, and Taine ushers them through with impatient gestures. Bado enters a long corridor, with nozzles set in the ceiling.

The four of them stand under the nozzles.

Water comes gushing down, and runs over their suits.

Williams opens up her gold sun visor and faces Williams. "Showers," she says.

"What for?"

"To wash off radioactive crap, from the exhaust." She begins to brush water over her suit arms and legs.

Bado has never seen anything like such a volume of water in lunar conditions before. It falls slowly from the nozzles, gathering into big

shimmering drops in the air. Grey-black lunar dust swirls towards the plug holes beneath his feet. But the dirt is ingrained into the fabric of his suit legs; they will be stained grey forever.

When the water dies they are ushered through into a third, larger chamber. The walls here are curved, and inset with round, tough-looking portholes; it looks as if this chamber reaches most of the way around the cylindrical craft.

There are people here, dozens of them, adults and children and old people, dressed in simple cotton coveralls. They sit in rows of crude metal-framed couches, facing outwards towards the portholes. They stare fearfully at the newcomers.

The astronaut, Taine, has opened up his faceplate; it hinges outward like a little door.

Bado pushes back his hood and reaches up to his fishbowl helmet. He undoes it at the neck, and his ears pop as the higher pressure of the cabin pushes air into his helmet.

He can smell the sharp, woodsmoke tang of lunar dust. And, overlaid on that, there is a smell of milky vomit: baby sick.

The Russian, his own helmet removed, makes a sound of disgust. "Eta oozhasna!"

Williams pulls off her Snoopy flight helmet. She is maybe forty, Bado guesses - around Bado's own age - with a tough, competent face, and close-cropped blond hair.

Taine shoos the three of them along. "Welcome to Prometheus," he says.

"Come. There are some free seats further around here." His accent is flat, sounding vaguely Bostonian. Definitely British, Bado thinks, probably from

the south of England. "You're the last, we think. We must get away. The impact is no more than twelve hours hence."

Bado, lugging his tool carrier, walks beside him. "What impact?"

"The meteorite, of course." Taine sounds impatient. "That's why we're having to evacuate the colonies. And you alternates. The Massolite got most of them off, of course, but -"

Williams says, "Massolite?"

Taine waves a hand. "A mass transporter. Of course it was a rushed job. And it had some flaws. But we knew we couldn't lift everybody home in time, not all those thousands in the big colonies, not before the strike; the Massolite was the best we can do, you see." They come to three empty couches. "These should do, I think. If you'll sit down I'll show you how to fit the seat belts, and instruct you in the safety precautions -"

"But," Williams says, "what has this Massolite got to do with -" She dries up, and looks at Bado.

He asks, "With moving between alternate worlds?"

Taine answers with irritation. "Why, nothing, of course. That's just a design flaw. We're working on it. Nonlinear quantum mechanical leakage, you see. I do wish you'd sit down; we have to depart ..."

Bado shucks off his PLSS backpack, and he tucks his helmet and his carrier under his seat.

Taine helps them adjust their seat restraints until they fit around their pressure suits. It is more difficult for the Russian; his suit is so stiff it is more like armour. The Russian looks young, no more than thirty. His hair sticks up in the air, damp with sweat, and he looks at them forlornly

from his shell of a suit. "Gdye tooalyet?"

The portholes before them give them a good view of the lunar surface. It is still Moon Five, Bado sees, with its mountains and that sinuous black rille.

He looks around at their fellow passengers. The adults are unremarkable; some of them have run to fat, but they have incongruously skinny legs and arms. Long-term adaptation to lunar gravity, Bado thinks.

But there are also some children here, ranging from babies in their mothers' arms up to young teenagers. The children are extraordinary: spindly, attenuated. Children who look facially as young as seven or eight tower over their parents.

The passengers clutch at their seatbelts, staring back at him.

Bado hears a clang of hatches, and a siren wails, echoing from the metal walls.

The ship shudders, smoothly, and there is a gentle surge.

"Mnye nada idtee k vrachoo," groans the Russian, and he clutches his belly.

As the years wore on he followed the news, trying to figure out how things might be different, back home.

The Cold War went on, year after year. There were no ICBMs here, but they had squadrons of bombers and nuke submarines and massive standing armies in Europe. And there were no spy satellites; nobody had a damn clue what the Russians - or the Chinese - were up to. A lot of shit came down that Bado figured might have been avoided, with satellite surveillance. It slowly leaked out into the paper press, usually months or years too late.

Like the Chinese nuking of Tibet, for instance. And what the Soviets did to Afghanistan.

The Soviet Union remained a monolith, blank, threatening, impenetrable. Everyone in the US seemed paranoid to Bado, generations of them, with their bomb shelters and their iodine pills. It was like being stuck in the late 1950s.

And that damn war in Indochina just dragged on, almost forgotten back home, sucking up lives and money like a bloody sponge.

Around 1986, he felt a sharp tug of wistfulness. Right now, he figured, on the other side of that heat haze barrier, someone would be taking the first steps on Mars. Maybe it would be his old buddy, Slade, or someone like John Young. Bado might have made it himself.

Bado missed the live sports on TV.

In free fall, Taine gives them spare cotton coveralls to wear, which are comfortable but don't quite fit; the name stitched to Bado's is LEDUC, and on Williams's, HASSELL.

Bado, with relief, peels off the three layers of his pressure suit: the outer micrometeorite garment, the pressure assembly and the inner cooling garment. The other passengers look on curiously at Bado's cooling garment, with its network of tubes. Bado tucks his discarded suit layers into a big net bag and sticks it behind his couch.

They are served food: stodgy stew, lukewarm and glued to the plate with gravy, and then some kind of dessert, like bread with currants stuck inside it. Spotted dick, Taine calls it.

There is a persistent whine of fans and pumps, a subdued murmur of conversation, and the noise of children crying. Once a five-year-old, all of six feet tall, comes bouncing around the curving cabin in a spidery tangle of attenuated arms and legs, pursued by a fat, panting, queasy-looking parent.

Taine comes floating down to them, smiling. "Captain Richards would like to speak to you. He's intrigued to have you on board. We've picked up quite a few alternate-colonists, but not many alternate-pioneers, like you. Would you come forward to the cockpit? Perhaps you'd like to watch the show from there."

Williams and Bado exchange glances. "What show?"

"The impact, of course. Come. Your German friend is welcome too, of course," Taine adds dubiously.

The cosmonaut has his head stuck inside a sick bag.

"I think he's better off where he is," Bado says.

"You go," Williams says. "I want to try to sleep." Her face looks worn to Bado, her expression brittle, as if she is struggling to keep control.

Maybe the shock of the transitions is getting to her at last, he thinks.

The cockpit is cone-shaped, wadded right in the nose of the craft. Taine leads Bado in through a big oval door. Charts and mathematical tables have been stuck to the walls, alongside pictures and photographs. Some of these show powerful-looking aircraft, of designs unfamiliar to Bado, but others show what must be family members. Pet dogs. Tools and personal articles are secured to the walls with elastic straps.

Three spacesuits, flaccid and empty, are fixed to the wall with loose ties. They are of the type Taine wore in the airlock: thick and flexible,

with inlaid metal hoops, and hinged helmets at the top.

Three seats are positioned before instrument consoles. Right now the seats face forward, towards the nose of the craft, but Bado can see they are hinged so they will tip up when the craft is landing vertically. Bado spots a big, chunky periscope sticking out from the nose, evidently there to provide a view out during a landing.

There are big picture windows set in the walls. The windows frame slabs of jet-black, star-sprinkled sky.

A man is sitting in the central pilot's chair. He is wearing a leather flight jacket, a peaked cap, and - Bado can't believe it - he is smoking a pipe, for God's sake. The guy sticks out a hand. "Mr Bado. I'm glad to meet you. Jim Richards, RAF."

"That's Colonel Bado." Bado shakes the hand. "US Air Force. Lately of NASA."

"NASA?"

"National Aeronautics and Space Administration ..."

Richards nods. "American. Interesting. Not many of the alternates are American. I'm sorry we didn't get a chance to see more of your ship.

Looked a little cramped for the three of you."

"It wasn't our ship. It was a Russian, a one-man lander."

"Really," Richards murmurs, not very interested. "Take a seat." He waves Bado at one of the two seats beside him; Taine takes the other, sipping tea through a straw. Richards asks, "Have you ever seen a ship like this before, Colonel Bado?"

Bado glances around. The main controls are a conventional stick-and-rudder

design, adapted for spaceflight; the supplementary controls are big, clunky switches, wheels, and levers. The fascia of the control panel is made of wood. And in one place, where a maintenance panel has been removed, Bado sees the soft glow of vacuum tubes.

"No," he says. "Not outside the comic books."

Richards and Taine laugh.

"It must take a hell of a launch system."

"Oh," says Richards, "we have good old Beta to help us with that."

"Beta?"

"This lunar ship is called Alpha," Taine says. "Beta gives us a piggyback out of Earth's gravity. We launch from Woomera, in South Australia. Beta is a hypersonic athodyd -"

Richards winks at Bado. "These double-domes, eh? He means Beta is an atomic ramjet."

Bado boggles. "You launch an atomic rocket from the middle of Australia?"

How do you manage containment of the exhaust?"

Taine looks puzzled. "What containment?"

"You must tell me all about your spacecraft," Richards says.

Bado, haltingly, starts to describe the Apollo system.

Richards listens politely enough, but after a while Bado can see his eyes drifting to his instruments, and he begins to fiddle with his pipe, knocking out the dottle into a big enclosed ashtray.

Richards becomes aware of Bado watching him. "Oh, you must forgive me, Colonel Bado. It's just that one encounters so many alternates."

"You do, huh."

"The Massolite, you know. That damn quantum-mechanical leakage. Plessey

just can't get the thing tuned correctly. Such a pity. Anyhow, don't you worry; the boffins on the ground will put you to rights, I'm sure."

Bado is deciding he doesn't like these British. They are smug, patronising, icy. He can't tell what they are thinking.

Taine leans forward. "Almost time, Jim."

"Aha!" Richards gets hold of his joystick. "The main event." He twists the stick, and Bado hears what sounds like the whirl of flywheels, deep in the guts of the ship. Stars slide past the windows. "A bit of showmanship, Colonel Bado. I want to line us up to give the passengers the best possible view. And us, of course. After all, this is a grandstand seat, for the most dramatic astronomical event of the century - what?"

The Moon, fat and grey and more than half-full, slides into the frame of the windows.

The Moon - Moon Five, Bado assumes it to be - looks like a ball of glass, its surface cracked and complex, as if starred by buckshot. Tinged pale white, the Moon's centre looms out at Bado, given three-dimensional substance by the Earthlight's shading.

The Moon looks different. He tries to figure out why.

There, close to the central meridian, are the bright pinpricks of Tycho, to the south, and Copernicus, in the north. He makes out the familiar pattern of the seas of the eastern hemisphere: Serenitatis, Crisium, Tranquillitatis - grey lakes of frozen lava framed by brighter, older lunar uplands.

He supposes there must be no Apollo 11 LM descent stage, standing on this version of the Sea of Tranquillity.

The Moon is mostly full, but he can see lights in the remaining crescent of darkness. They are the abandoned colonies of Moon Five.

Something is still wrong, though. The western hemisphere doesn't look right. He takes his anchor from Copernicus. There is Mare Procellarum, to the western limb, and to the north of that -

Nothing but bright highlands.

"Hey," he says. "Where the hell's Mare Imbrium?"

Richards looks at him, puzzled, faintly disapproving.

Bado points. "Up there. In the north-west. A big impact crater - the biggest - flooded with lava. Eight hundred miles across."

Richards frowns, and Taine touches Bado's arm. "All the alternate Moons are different to some degree," he says, placating. "Differences of detail -"

"Mare Imbrium is not a goddamn detail." Bado feels patronised again.

"You're talking about my Moon, damn it." But if the Imbrium impact has never happened, no wonder the surface of Moon Five looks different.

Richards checks his wrist watch. "Any second now," he says. "If the big-brains have got it right -"

There is a burst of light, in the Moon's north-west quadrant. The surface in the region of the burst seems to shatter, the bright old highland material melting and subsiding into a red-glowing pool, a fiery lake that covers perhaps an eighth of the Moon's face. Bado watches huge waves, concentric, wash out across that crimson, circular wound.

Even from this distance Bado can see huge debris clouds streaking across the lunar surface, obscuring and burying older features, and laying down bright rays that plaster across the Moon's face.

The lights of the night-side colonies wink out, one by one.

Richards takes his pipe out of his mouth. "Good God almighty," he says.

"Thank heavens we got all our people off."

"Only just in time, sir," Taine says.

Bado nods. "Oh, I get it. Here, this was the Imbrium impact. Three billion years late."

Richards and Taine look at him curiously.

It turned out that to build a teleport device - a "Star Trek" beaming machine - you needed to know about quantum mechanics. Particularly the Uncertainty Principle.

According to one interpretation, the Uncertainty Principle was fundamentally caused by there being an infinite number of parallel universes, all lying close to each other - as Bado pictured it - like the pages of a book. The universes blurred together at the instant of an event, and split off afterwards.

The Uncertainty Principle said you could never measure the position and velocity of any particle with absolute precision. But to teleport that was exactly what you needed to do: to make a record of an object, transmit it, and recreate the payload at the other end.

But there was a way to get around the Uncertainty Principle. At least in theory.

The quantum properties of particles could become entangled: fundamentally linked in their information content. What those British must have done is take sets of entangled particles, left one half on their Moon as a

transmitter, and planted the other half on the Earth.

There was a lot of technical stuff about the Einstein-Podolsky-Rosen theorem which Bado skipped over; what it boiled down to was that if you used a description of your teleport passenger to jiggle the transmitter particles, you could reconstruct the passenger at the other end, exactly, from the corresponding jiggles in the receiver set.

But there were problems.

If there were small nonlinearities in the quantum-mechanical operators - and there couldn't be more than a billion billion billionth part, according to Bado's researchers - those parallel worlds, underlying the Uncertainty Principle, could short-circuit.

The Moon Five Brits had tried to build a cheap-and-dirty teleport machine. Because of the huge distances involved, that billion-billion-billionth nonlinearity had become significant, and the damn thing had leaked. And so they had built a parallel-world gateway, by accident.

This might be the right explanation, Bado thought. It fit with Captain Richards's vague hints about "nonlinear quantum mechanics".

This new understanding didn't make any difference to his position, though. He was still stranded here. The teleport devices his researchers had outlined - even if they'd got the theory right, from the fragments he'd given them - were decades beyond the capabilities of the mundane world Bado found himself in.

Reentry is easy. Bado estimates the peak acceleration is no more than a couple of G, no worse than a mild roller-coaster. Even so, many of the passengers look distressed, and those spindly lunar-born children cry

weakly, pinned to their seats like insects.

After the landing, Alpha's big doors are flung open to reveal a flat, barren desert. Bado and Williams are among the first down the rope ladders, lugging their pressure suits, and Bado's tool carrier, in big net bags.

Bado can see a small town, laid out with the air of a military barracks. Staff are coming out of the town on little trucks to meet them. They are processed efficiently; the crew of the Prometheus gives details of where each passenger has been picked up, and they are all assigned little labels and forms, standing there in the baking sunlight of the desert.

The spindly lunar children are lowered to the ground and taken off in wheelchairs. Bado wonders what will happen to them, stranded at the bottom of Earth's deep gravity well.

Williams points. "Look at that. Another Prometheus."

There is a launch rail, like a pencil line ruled across the sand, diminishing to infinity at the horizon. A silver dart clings to the rail, with a slim bullet shape fixed to its back. Another Beta and Alpha. Bado can see protective rope barriers slung around the rail.

Taine comes to greet Bado and Williams. "I'm afraid this is goodbye," he says. He sticks out a hand. "We want to get you people back as quickly as we can. You alternates, I mean. What a frightful mess this is. But the sooner you're out of it the better."

"Back where?" Bado asks.

"Florida." Taine looks at them. "That's where you say you started from, isn't it?"

Williams shrugs. "Sure."

"And then back to your own world." He mimes stirring a pot of some noxious substance. "We don't want to muddy the time lines, you see. We don't know much about this alternating business; we don't know what damage we might do. Of course the return procedure's still experimental but hopefully we'll get it right."

"Well, the best of luck. Look, just make your way to the plane over there." He points.

The plane is a ramjet, Bado sees immediately.

Taine moves on, to another bewildered-looking knot of passengers.

The Russian cosmonaut is standing at Williams's side. He is hauling his stiff pressure suit along the ground; it scrapes on the sand like an insect's discarded carapace. Out of the suit the Russian looks thin, young, baffled, quite ill. He shakes Bado's hand. "Do svidanya."

"Yeah. So long to you too, kid. Hope you get home safely. A hell of a ride, huh."

"Mnye nada k zoobnomoo vrachoo." He clutches his jaw and grins ruefully.

"Schastleevava pootee. Zhilayoo oospyekhaf."

"Yeah. Whatever."

A British airman comes over and leads the Russian away.

"Goddamn," Williams says. "We never found out his name."

He got a report in from his meteorite studies group.

Yes, it turned out, there was a large object on its way. It would be here in a few years time. Bado figured this had to be this universe's edition of that big old Imbrium rock, arriving a little later than in the Moon

Five world.

But this rock was heading for Earth, not the Moon. Its path would take it right into the middle of the Atlantic, if the calculations were right. But the margins of error were huge, and, and ...

Bado tried to raise public awareness. His money and fame got him onto TV, even, such as it was. But nobody here took what was going on in the sky very seriously anyhow, and they soon started to think he was a little weird.

So he shut up. He pushed his money into bases at the poles, and at the bottom of the oceans, places that mightn't be so badly affected. Somebody might survive. Meanwhile he paid for a little more research into that big rock in space, and where and when, exactly, it was going to hit.

The ramjet takes ten hours to get to Florida. It is a military ship, more advanced than anything flying in Bado's world. It has the bull's-eye logo of the RAF painted to its flank, just behind the gaping mouth of its inlet.

As the ramjet rises, Bado glimpses huge atomic aircraft, immense ocean-going ships, networks of monorails. This is a gleaming world, an engineer's dream.

Bado has had enough wonders for the time being, though, and, before the shining coast of Australia has receded from sight, he's fallen asleep.

They land at a small airstrip, Bado figures somewhere north of Orlando. A thin young Englishman in spectacles is there to greet them. He is wearing Royal Air Force blue coveralls. "You're the alternates?"

"I guess so," Williams snaps. "And you're here to send us home. Right?"

"Sorry for any inconvenience you've been put through," he says smoothly.

"If you'll just follow me into the van ..."

The van turns out to be a battered diesel-engined truck that looks as if it is World War Two vintage. Williams and Bado with their bulky gear have to crowd in the back with a mess of electronic equipment.

The truck, windowless, bumps along badly-finished roads.

Bado studies the equipment. "Look at this stuff," he says to Williams.

"More vacuum tubes."

Williams shrugs. "They've got further than we have. Or you. Here, they've built stuff we've only talked about."

"Yeah." Oddly, he's forgotten that he and Williams have come from different worlds.

The roads off the peninsula to Merritt Island are just farmers' tracks, and the last few miles are the most uncomfortable.

They arrive at Merritt Island in the late afternoon.

There is no Kennedy Space Center.

Bado gets out of the van. He is on a long, flat beach; he figures he is a way south of where, in his world, the lunar ship launch pads will be built. Right here there will be the line of launch complexes called ICBM Row.

But he can't see any structures at all. Marsh land, coated with scrub vegetation, stretches down towards the strip of beach at the coast.

Further inland, towards the higher ground, he can see stands of cabbage palm, slash pine and oak.

The place is just scrub land, undeveloped. The tracks of the British truck

are dug crisply into the sand; there is no sign even of a road near here.

And out to the east, over the Atlantic, he can see a big full Moon rising.

Its upper left quadrant, the fresh Imbrium scar, still glows a dull crimson. Bado feels vaguely reassured. That is still Moon Five; things seem to have achieved a certain stability.

In the back of the truck, the British technician powers up his equipment.

"Ready when you are," he calls. "Oh, we think it's best if you go back in your own clothes. Where possible." He grins behind his spectacles. "Don't want you -"

"Muddying up the time lines," Williams says. "We know."

Bado and Williams shuck off their coveralls and pull on their pressure suits. They help each other with the heavy layers, and finish up facing each other, their helmets under their arms, Bado holding his battered tool carrier with its Baggies full of Moon rocks.

"You know," Bado says, "when I get back I'm going to have one hell of a lot of explaining to do."

"Yeah. Me too." She looks at him. "I guess we're not going to see each other again."

"Doesn't look like it."

Bado puts down his carrier and helmet. He embraces Williams, clumsily.

Then, on impulse, Bado lifts up his helmet and fits it over his head. He pulls his gloves over his hands and snaps them onto his wrists, completing his suit.

Williams does the same. Bado picks up his tool carrier.

The Brit waves, reach into his van, and throws a switch.

There is a shimmer of heat haze.

Williams has gone. The truck has vanished.

Bado looks around quickly.

There are no ICBM launch complexes. He is still standing on an empty, desolate beach.

The Moon is brightening, as the light leaks out of the sky. There is no ancient Imbrium basin up there. No recent impact scar, either.

"Moon Six," Bado says to himself. "Oh, shit."

Evidently those British haven't ironed out all the wrinkles in their "experimental procedures" after all.

He takes off his helmet, breathes in the ozone-laden ocean air, and begins to walk inland, towards the rows of scrub pine.

On the day, he drove out to Merritt Island.

It was morning, and the sun was low and bright over the ocean, off to the east, and the sky was clear and blue, blameless.

He pulled his old Moon suit out of the car, and hauled it on: first the cooling garment, then the pressure layer, and finally the white micrometeorite protector and his blue lunar overshoes. It didn't fit so well any more, especially around the waist - well, it had been fitted for him all of a quarter-century ago - and it felt as heavy as hell, even without the backpack. And it had a lot of parts missing, where he'd dug out components and samples over the years. But it was still stained grey below the knees with lunar dust, and it still had the NASA logo, his mission patch, and his own name stitched to the outer garment.

He walked down to the beach. The tide was receding, and the hard-packed

sand was damp; his ridged soles left crisp, sharp prints, just like in the lunar crust.

He locked his helmet into place at his neck.

To stand here, as close as he could get to ground zero, wasn't such a dumb thing to do, actually. He'd always remembered what that old professor at Cornell had told him, about the rocks bearing life being blasted from planet to planet by meteorite impacts. Maybe that would happen here, somehow.

Today might be the last day for this Earth. But maybe, somehow, some piece of him, fused to the glass of his visor maybe, would finish up on the Moon - Moon Six - or Mars, or in the clouds of Jupiter, and start the whole thing over again.

He felt a sudden, sharp stab of nostalgia, for his own lost world. He'd had a good life here, all things considered. But this was a damn dull place. And he'd been here for twenty-five years, already. He was sure that back home that old Vietnam War wouldn't have dragged on until now, like it had here, and funds would have got freed up for space, at last. Enough to do it properly, by God. By now, he was sure, NASA would have bases on the Moon, hundreds of people in Earth orbit, a couple of outposts on Mars, plans to go on to the asteroids or Jupiter.

Hell, he wished he could just look through the nonlinear curtains separating him from home. Just once.

He tipped up his face. The sun was bright in his eyes, so he pulled down his gold visor. It was still scuffed, from the dust kicked up by that British nuclear rocket. He waited.

After a time, a new light, brighter even than rocket light, came crawling
down across the sky, and touched the ocean.

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