

VEKAJ

AN AMAZING AEROSPACE SHORT STORY
BY RUPERT W BROWN



ARCHANGEL II
MARS LINE



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“Amazing Aerospace” is a project where Rupert reimagines aircraft of the past and imagines what the future holds for human space exploration. These short stories (the burning line series) are to illustrate how people interacted with and will interact with these airships, aeroplanes and space craft. This story focusses on the Archangel II Mars Line, the first inter-planetary luxury clipper operating between Earth and Mars , active from 2070 to 2100.

This short story is hosted on <https://www.rupert-writing.com>
For more information on Amazing Aerospace visit <https://www.rupert-design.com>

Vekaj

The crew of Archangel II have a word – vekaj. It means awake or awakened and they use it to refer to a state of mind. The voyage from Earth to Mars is so strange, so profoundly different to anything people have done before, it changes everybody. Everybody, at some point, becomes overwhelmed and needs time to process their experience. They find themselves seated at a window for hours, staring into the void, marvelling at the stars, distraught as the Earth recedes to nothing, and anxious as the red disc of Mars grows larger. Mars, a true God of War, assaults your senses. Nothing is normal. Nothing is familiar. The experience makes you vekaj, awakened.

In a way the journey back to Earth is far worse than the one to Mars. Archangel II moves at speed but even that is not fast enough. Once onboard there is a longing to be home, to breathe real air, eat food gathered fresh from the land. Only by being away do we realise how much we are a part of the Earth. The Earth created and shaped us. We are precisely adapted to thrive in its environment. Mars is not that. Make one mistake, suffer one failure, and Mars will kill you. And Mars has monsters, terrifying visions that will have you longing for the safety of home. In the great story of Dune, God created Arrakis to train the faithful. Mars is there to test them. If the Moon is a harsh mistress, Mars is the murderous master.

He swirled his brandy. He was in the Archangel II lounge, seated at a window, suffering from the rigours of digestion. In a couple of days he would enter his cabin and the long sleep would descend upon him. A sleep that lasted the best part of five months as Archangel II crossed the space between worlds. In the meantime the galley seemed hell bent on stuffing him with as much protein as possible in preparation for the wasting state of sleep. The meal had been spectacular and there was so much of it!

He is a biologist specialising in alien life forms. Till recently the most exciting thing he'd looked at was a fossilised microbe but he had always suspected there was more, far more on Mars. If you take what we know about Mars' past, the presence of liquid water and the timescales involved, there was always a chance, just a chance, that complex life had developed. Then they discovered the Frozen Lake, and that changed everything.

He had been living a very quiet and comfortable life in the ancient City of York. He liked the pubs, walks along the Roman wall, the curry houses, the Minister. At the university he studied the rocks returned to Earth from numerous planetary exploration missions. His breakthrough

had been the creation of a technique that let him capture the DNA of fossils, something that had always been thought impossible. His paper catapulted him to scientific stardom, and led to his quiet life being a lot less tranquil. Now he had to travel, and talk to strangers, and learn how to do TV interviews, and they said he couldn't wear his favourite cardigan, rather he had to be 'styled'. The University encouraged all of this activity. Now he was one of their stars and they cherished the royalties from his DNA mapping process. It was not surprising then that when the research team at Mars One base found the Frozen Lake, he got the call.

He was sitting in the Vice Chancellor's office. He was so shocked he hadn't said anything for a full minute.

'Well?' said the Vice Chancellor.

'You want me to pack up a fossil DNA sequencer and go with it on a thing called Archangel II to Mars?'

'Yes, exciting isn't it?'

'Then when I get to this place Mars One I have to set up a lab.'

'Great opportunity eh? Once in a lifetime.'

'Then I have to go scuba diving, in a frozen lake, in a lava tube, on Mars to look for fossils! Seriously are you mad?'

'You'll be like Alan Grant meets Mark Watney, but for real. The adventure! You'll be dining out on this for years!'

'If I survive! I can barely swim, let alone go deep water diving on another planet. You are bloody mad!'

'Think of the greater good,' exclaimed the Vice-Chancellor, 'the prestige you're bringing to York, to Vanburgh! And the money! Your research will be funded in perpetuity.'

'Why can't they just send me back the rocks and let me look at them here?'

'Because up to now we know, or are at least sure, that in the samples sent to you, there has been nothing actually alive that poses a risk to the good people of Earth. There is a chance, albeit a slim one, that Frozen Lake actually harbours life, real live life, and we can't afford to have that finding its way to Earth before we know more about it.'

'Oh, so, on top of everything else, I'm the guinea pig to see if these alien life forms are dangerous?'

'Well, not exactly. You'll be working with strict quarantine protocols.'

'Oh my goodness, I feel quite faint.'

'Come on man, where's your spirit of adventure? Time to leave the concrete spires of the University and venture forth! Now, first thing, we have to get you to a special training course in Toulouse, private jet and everything.'

He realised it was pointless to resist. The whole university board was behind the endeavour. Everybody was too excited. He was going to be a 'space professor' whether he liked it or not. That evening he walked home from the university bumping into the Phoenix Inn on the way, and ended up having far too many pints of Golden Pippin.

Jenny joined him in the lounge. She delivered another brandy and sat down next to him without saying a word. Together they stared out of the window at the great red disk of Mars gradually receding as Archangel II forged a path along its Hohman transfer orbit. Jenny reached out and took his hand, giving it a little squeeze.

'OK?'

He turned to look at her and smiled. Her face told tales of a thousand adventures, of a bravery that was so complete he often felt embarrassed she was paying him attention.

'Yes, well no, you know. I can't believe the things we did. Well I can because it was real, but I'm still processing it all, the implications. How are you?'

'Same. It was wild. Come on, let's sleep.'

They finished their drinks and left the lounge, passing through the short corridor to the dining room. A few hardy souls were finishing their meals with generous glasses of digestifs. They found their cabin, threw off their clothes, kissed each other then curled up in their sleep cubbies, individual beds that soon they would be using for the long sleep. He hoped he wouldn't dream. Whenever he did it was always about those deep cold places on Mars. Always about a desire to escape, to breath free air again. He found Archangel II a kind ship though. It had a reassuring calmness about it which was a comfort.

The Vice-Chancellor had his way and he found himself in the Mars base training centre in Montaudran. The whole experience was surreal. He was in the beautiful old city of Toulouse, surrounded by young, attractive people, made even more so by their French accents, calmly talking about survival techniques on a planet hundreds of thousands of kilometres away, while eating Cassoulet and drinking red burgundy. They helped him work out how he could pack and reassemble his DNA analysis equipment, and where it might go on Mars One. They took him up in an aeroplane to let him experience low gravity. He went in the big water tank to learn how to use the scuba gear. The one thing they couldn't do is train him for diving in low gravity conditions. That, according to the handsome instructor, 'was something to look forward to on planet'. He spent his time at the training school terrified but fascinated by the experience. Then they pronounced him ready to go. He wrote a letter to his mother. He felt like he was facing certain death so that was an appropriate thing to do.

He was shocked the first time they took him to the airport and he saw Archangel II. It seemed impossibly big, too huge to fly. He mentioned this to one of his French companions.

'It iz, but it cheats. When we take off, ze gravity plate pushes, makes us weightless. Eazy to fly then. At ze top of th'atmosphere, za ion drives kick in. We 'ave tree tokomak fusion engines. Zoom zoom, off to Mars very fast. Très bon eh!'

Not only was he leaving the relative safety of Earth's atmosphere, he was doing it in the company of three fully energised fusion reactors. I mean, what could possibly go wrong?

On the journey to Mars, he had decided to spend as much time as possible in the deep sleep. Archangel II was a generous ship in terms of living space, but he just had no real sense of how he would cope in that confined space. So he had his week aboard acclimatising to the idea of space travel before he retired to his cabin and they put him into suspended animation. At the other end they woke him with a week to go before they landed on Mars. He had never felt as rough in his life.

The descent to Mars was blissfully anti-climactic. Archangel II used its gravity plate again, and they simply descended onto the landing pad. The thin Martian atmosphere was no hindrance, but also no help to Archangel II. Mars can whip up fast winds, but they blow with little real force. At the same time they lift dust that can blanket the planet for a year. Fortunately, for the time being, the atmosphere was clear. The landing may have been of little consequence but the realisation he was on Mars nearly unhinged his brain. Part of the training in Toulouse had been to prepare him for this moment, and he was grateful he had paid attention. Mars. He was on Mars. Mars in spring.

Mars One is built in an underground kilometre long section of a lava tube. Where the tube reaches the surface, a glass geodesic dome has been built to seal the opening. At the other end, an airtight wall has been built to seal the tube. Behind the wall, further down in the tube are some of the water ice deposits that allow humans to live on this otherwise dry planet. Beneath the dome they have planted a garden, primarily for food, but also to create a little corner of green Earth on this red rock. But Mars exerts its will. With gravity only 0.38 that of Earth's, the trees grow tall and thin, and alien.

The Mars One science team wrapped their arms around him and helped him to settle in. Together they set up his DNA analysis equipment and his small lab. He was given a studio flat for living quarters and shown the laundry, canteen and gym. To his horror he was required to do at least an hour of exercise a day to counter the muscle wasting effects of low gravity. Then they started talking about fossil collecting protocols, classification systems and how to report

results. Again Mars revealed its differences. There was no dealing with the familiar, the Cretaceous, Jurassic or Cambrian. The science team were developing a new language around the Noachian, Hesperian and Amazonian, and it seemed to be in a constant state of flux.

A young man from New Zealand, Sam, helped him put on his exo suit for the first time. His hands shook too much to properly engage the seal on his helmet. Sam guided the joint closed, then checked his gloves, boots and life support system.

'It's all good Bro,' Sam reassured him. 'When you get out there, you'll soon forget you're even wearing a suit. Just don't forget to take a drink every now and then. Dehydration sucks.'

That day the team made their way to the airlock in the rear wall, and passed through into the lava tube. The walls of the lava tube were smooth, almost glassy in places, but the thing that struck him was the darkness. Even with their powerful lights, they were presented with a corridor of black. They boarded the shuttle and made a fifteen minute trip to Research One. There they topped up with oxygen before heading out to the fossil hunting area for that Sol.

He was on his knees staring at the rocks. The lights on his exo suit were gently cycling through colours from infra red to ultraviolet. He was concentrating so hard on rocks that the realisation crept up and startled him. He almost panicked. Mars, this planet caught him again. He was searching for rocks on Mars. He lent forward and put his hands on the ground. He recovered his breathing.

'Will this ever be normal?' he said to himself. Then he spotted it. A shape, a small protrusion, set off an alarm in his head. Very gently he tapped around it with his hammer and was able to dig it from the ground. It was smooth and egg shaped, not dissimilar to the nodules found in limestone on Earth. He used the suit camera to take a picture and mark its location relative to Science One. Then he put it in his pack. He had his first find, whatever it was.

That first trip they only stayed out for two hours, but when he got back to his studio he was exhausted. They warned him that would be the case. He tried to sleep, but again the Martian 24.6 Earth-hour Sol was messing with his head. Whisky helped.

After he had been at Mars One for what seemed like a lifetime, but was actually only three months, the science leader announced that a small science team would begin dive training with a view to start exploring Frozen Lake. He was to be part of that team. They were introduced to Jenny who was to be their dive instructor. She and her team had already been working in Frozen Lake, charting the lake bed and checking for hazards.

'It's called Frozen Lake. How can we swim in it then?' he asked during the introductory presentation.

‘The edges of the lake are frozen, but the water is being warmed somehow. We think there are thermal vents further down in the tube. Once past the edges the ice disappears and the water gets warmer. We’ve found parts that are at fifteen degrees and we have to conclude that further down it gets warmer still,’ explained Jenny. ‘Overall we think the lake is benign, but we are always cautious. Warm water constantly rises to the surface and in return the colder water, which cools at the surface, has to move downward, so there are currents. Being dragged down would not be good for obvious reasons, so we’ve been working to find those currents and assess whether they are stable. From what we’ve seen so far they are and we have a map. Our dives will be based around those maps.’

‘Oh, well that’s alright then,’ he said to himself, ‘no worries there then.’

On that morning they moved through the tube wall into the darkness as usual. They boarded the shuttle and drove off, but this time sailed right past Research One. They were going to Research Two, the station by Frozen Lake. Once inside they changed out of their exo suits into aqua suits. They said very little. Everybody was very conscious of what was about to happen. Only Jenny moved with the confidence of somebody who knew what she was doing. Research Two has a jetty that leads out across Frozen Lake. Carrying all their gear, they made their way to the end of the jetty and into the dive boat that was waiting there. Once aboard, the boat moved off across the water to their first dive site.

He fought to control his breathing. A voice inside his head was screaming that this was madness, but then, thanks to some encouragement in the form of a shove from Jenny, he was in the water. Thankfully his training kicked in. He suppressed his panic, stabilised his breathing, then set about making sure his buoyancy device was correctly set. The group formed a ring a couple of metres below the surface. Jenny checked that everybody was OK and then they set off in pairs to their designated search areas. His buddy was Jenny herself on the basis that she thought he was the biggest liability. He was absolutely sure he was the biggest liability.

The water was so clear they could have been floating in space. The water depth was only fifteen metres in this part of the tube. They reached the tube floor quickly and started their search for something, anything, that might indicate the presence of life. Their powerful search lights revealed an almost smooth rock surface, largely unchanged since the last lava flows surged along these paths to the surface. They only stayed underwater for half an hour. Jenny was still recalibrating the no-decompression diving limits for Mars. During that first dive he found nothing of interest, other than the inner strength to control his feelings of terror.

Over the next month their dives extended to a full two hours and they ventured deeper into Frozen Lake. Their sensors told them the water was getting warmer. They were diving down to forty metres. He suspected that the water wasn't clear as it had been when they started. As they went further in, he was sure he could see particulate matter, dust in the water. Jenny agreed and their water samples indicated increased levels of sulphides, and barium and calcium salts. Jenny knew they were getting close to a thermal vent. Then they found it.

He had been head down, looking for rock fossils to such an extent he didn't realise he was actually pulling himself up a curious formation. He reached the top and was knocked back by a blast of water so hot it set off his temperature alarm. He sank, hiding against the rock formation and radioed for Jenny. She joined him and very slowly they peered over the top shining spotlights into the darkness. The light picked up a smoker spewing out white cloudy water. Jenny let out a whoop that nearly made him jump out of his skin. The water was too hot at the top of their formation so they descended again and worked their way around hoping they could come at it in cooler water. Some thirty metres to the left afforded them a chance to observe the whole vent in cool water. It was everything they had hoped for and more. The vent was surrounded with giant tube worms, clams, limpets, and shrimp, Martian shrimp! How long before that became the World's most expensive prawn cocktail?

The discovery made, they quickly abandoned the dive and got back to Research Two. Life, like real living life, required a whole new set of protocols. They had plans in place but now everything had to be reviewed and tested. With all the wonderful Martian seafood would come bacteria and viruses, the likes of which they would not have seen before. They had to make sure they could get samples back to the labs for analysis without wiping out the whole of Mars One. If there were little critters down there, there could also be big person eating size critters. It was time to break out the javelin tasers – just in case.

Although the discovery was fantastic and World changing, he felt conflicted. His role had been to analyse fossils. What point was there to that now they actually had living things? The Science Director spent a lot of time persuading him that he wasn't redundant. The fact that life existed meant it was almost certain there was a fossil record, and that would be crucial in determining how life had developed over time on Mars. Also his DNA analysis machine was the only one they had on Mars One. He just had to tweak it a bit to work with living tissue. So he accepted his role and continued to dive with Jenny. He was very glad Jenny knew how to use the javelin taser.

Over the next few weeks they found more thermal vents in deeper water and they were sure there would be more, but they were beyond the no-decompression limit. Those vents would be something for another time. In the meantime, having mapped and photographed the whole structure of the first vent, they very carefully started to collect samples. On their second outing he was holding the lights for Jenny. She was working very close to the vertical surface of the formation, trying to prise away a clam. There was a change in the water, a tingling through their suits and static across the radio. Something huge and black flicked him out of the way and sent him spiralling off across the tube floor. The lights were lying metres away. 'Jenny!' he shouted into the radio, but only got static back. He swam to the lights and picked them up, then spun back round to illuminate the vent. Jenny was there being pummelled against the rock by the snout of a thing, a monster. In the light he could see it was some kind of giant eel, like a Moray but blind. The creature had no eyes.

He had never swum so fast in his life. He grabbed the javelin taser and plunged it into the creature's nose. There was no reaction. It just continued to grind Jenny against the rock as she fought to push it away. He stabbed again and again, and then remembered he had to turn the thing on. He cursed himself, then stabbed again, as hard as he could, driving the steel tips deep into the creature's flesh, then hit the on switch. There was a flash and he and Jenny were sent tumbling by the thrashing of the eel, as it tried to rid itself of the javelin. It rolled against the floor, dislodging the taser and then moved quickly back into the darkness of the lava tube.

He reached Jenny. Her suit was damaged, her breathing equipment looked smashed. She wasn't responding. He started shouting 'Mayday, mayday!' into the radio. He wasn't sure that was the right thing to say, but had no clue what was. He filled his buoyancy device with air and made for the surface with Jenny as fast as he could. The dive boat wasn't very far away. They pulled Jenny onboard and put her in a pressurised survival bag and made the dash to Research Two. Once in the safety of an atmosphere they removed her suit. She was unconscious with broken ribs and a punctured lung. They had no idea how long she might have gone without breathing.

Back at Mars One they put her in an induced coma. Her blood oxygen levels were OK which indicated that she hadn't lost her air supply. Her internal injuries were dire. The creature had really worked a number on her. He was beside himself with worry. When needed he helped with the DNA analysis of the samples, but the rest of his time he camped out by Jenny's bed. He didn't have the words to say anything. He didn't know how to express his feelings. He just knew he was desperate for her to come back to him, just to see her smile again. In the absence of any other ideas he took to reading Shakespeare to her, but only the comedies.

He was asleep in the chair in Jenny's room as usual when something called him back to consciousness. He opened his eyes and there was Jenny staring back at him. Her face broke into a smile.

'Oh by all good grace!' he yelled and grabbed her into a hug. She screamed as he squeezed her damaged ribs so he dropped her again and rushed off to get a nurse.

Jenny was damaged. Her tour of duty on Mars was almost up, so they decided to send her back to Earth to recuperate. He persuaded them they didn't need him any longer now that the DNA lab was established. So together they boarded Archangel II for the trip home.

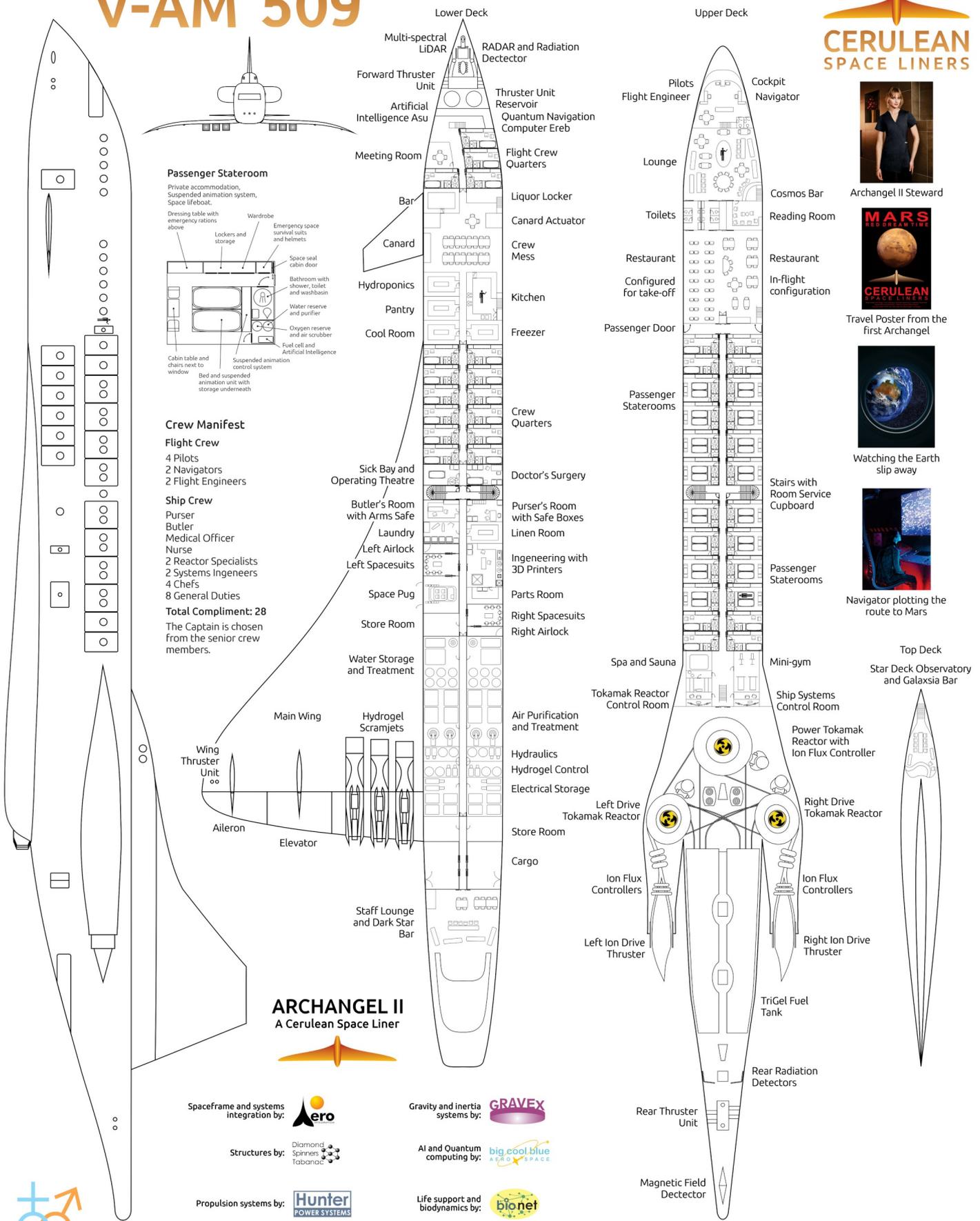
He had never been in love. He wasn't sure what it felt like. What he did know was that he never wanted to be apart from Jenny again. He wanted to take her back to his house in York and look after her, get her well again. That was all that mattered. Like him, Jenny was in love for the first time too. She was just astonished it was with her fossil scientist, and she liked the sound of York. It was time perhaps to lead a less dangerous life.

They lay in their sleep cubbies. The technician checked Jenny's vital signs, then quietly closed the lid. He watched as she fell into the long sleep of the journey home. He would join her soon, and in the new life they would have together back in York. That first nodule he had found contained a perfectly preserved Martian Ammonite. He held it in his hand, felt its smooth ridges, then gave it to the technician to store away. For the first time in his life he felt truly alive and looking forward to the future. He and Jenny were bound together by a burning line that stretched from Mars to their home, the Earth.

The End – 4341 words

ARCHANGEL II MARS LINE

V-AM 509



Archangel II Steward



Travel Poster from the first Archangel



Watching the Earth slip away



Navigator plotting the route to Mars

ARCHANGEL II A Cerulean Space Liner

Spaceframe and systems integration by: **ero**

Gravity and inertia systems by: **GRAVEX**

Structures by: **Diamond Spinners Tabanac**

AI and Quantum computing by: **big cool blue AERO SPACE**

Propulsion systems by: **Hunter POWER SYSTEMS**

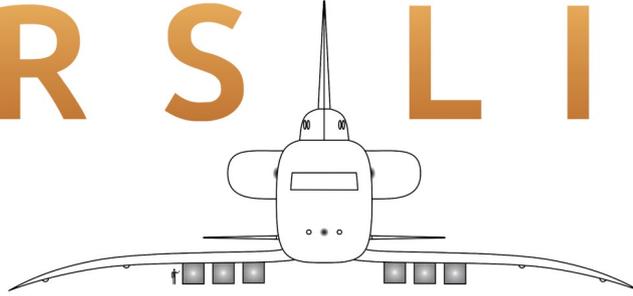
Life support and biodynamics by: **bionet**

Power systems by: **TOKAMAK SPACE**

In cabin ergonomics and luxury by: **Imberteloni COMFORTATA**



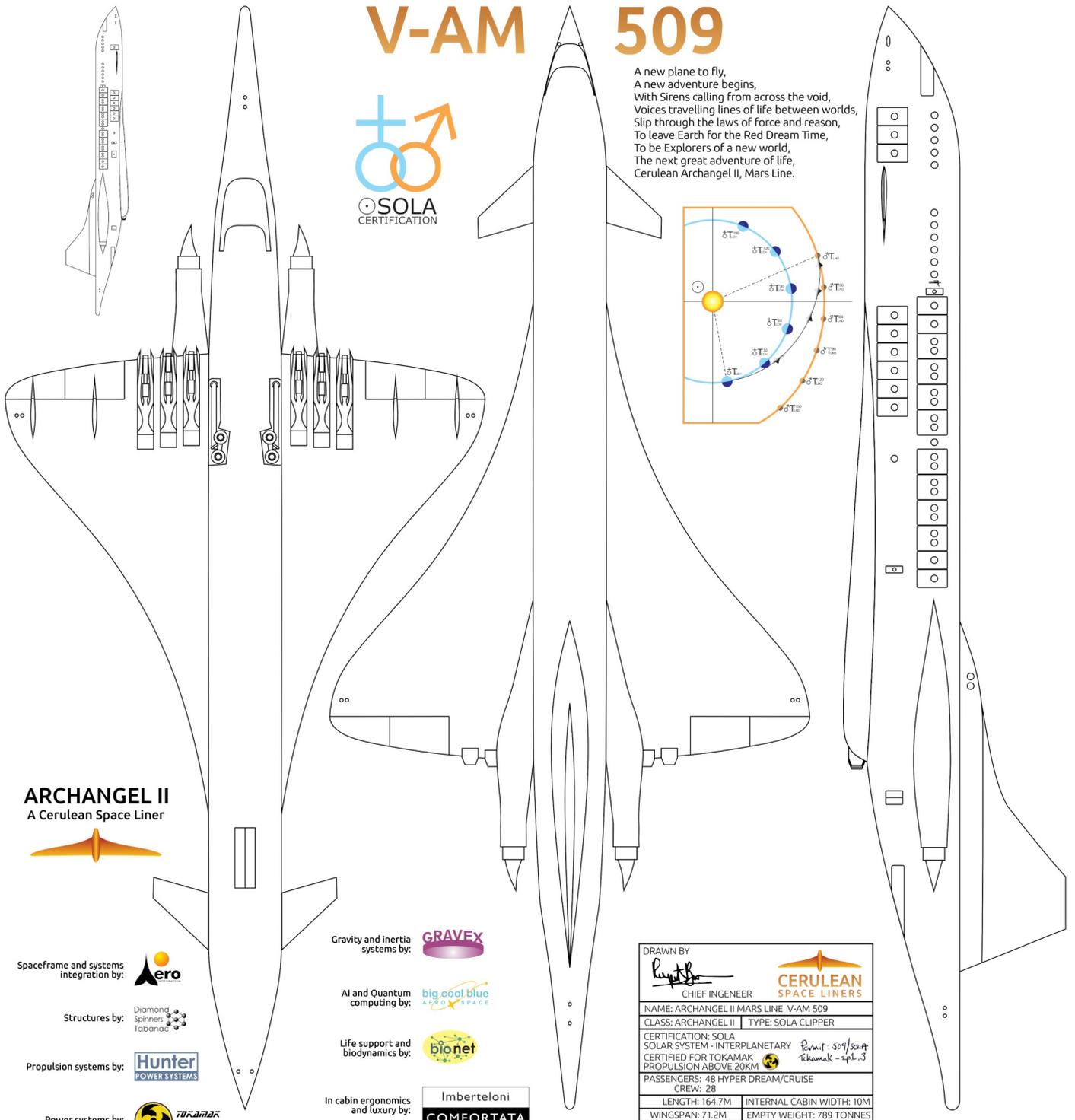
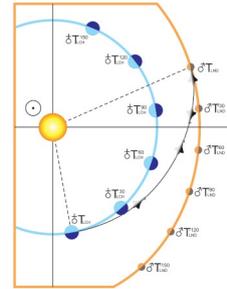
ARCHANGEL II MARS LINE



V-AM 509



A new plane to fly,
A new adventure begins,
With Sirens calling from across the void,
Voices travelling lines of life between worlds,
Slip through the laws of force and reason,
To leave Earth for the Red Dream Time,
To be Explorers of a new world,
The next great adventure of life,
Cerulean Archangel II, Mars Line.



ARCHANGEL II
A Cerulean Space Liner



Spaceframe and systems
integration by: 

Structures by: 

Propulsion systems by: 

Power systems by: 

Gravity and inertia
systems by: 

AI and Quantum
computing by: 

Life support and
biodynamics by: 

In cabin ergonomics
and luxury by: 

DRAWN BY 		
CHIEF ENGINEER		
NAME: ARCHANGEL II MARS LINE V-AM 509		
CLASS: ARCHANGEL II TYPE: SOLA CLIPPER		
CERTIFICATION: SOLA		
SOLAR SYSTEM - INTERPLANETARY <i>Peravit - set/sout</i>		
CERTIFIED FOR TOKAMAK  <i>Tokamak - zpl.3</i>		
PROPULSION ABOVE 20KM		
PASSENGERS: 48 HYPER DREAM/CRUISE		
CREW: 28		
LENGTH: 164.7M	INTERNAL CABIN WIDTH: 10M	
WINGSPAN: 71.2M	EMPTY WEIGHT: 789 TONNES	

MARS



ARCHANGEL II MARS LINE

