

OPPY

Greg Krojac

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Dedicated to the men and women of the Mars Exploration Rover Mission,
NASA

Cover image: Courtesy NASA/JPL-Caltech

“My battery is low and it’s getting dark.”

(The final message of Mars Opportunity Rover, June 10, 2018)

Mars Opportunity Rover was finally pronounced ‘dead’ by NASA on Wednesday, 13 February 2019, despite numerous attempts to revive it after contact was lost on June 10, 2018. It surpassed its life expectancy of 92.5 Earth days and was operational for an additional 5,405.5 Earth days

The thin orange pipeline snaked away into the distance until it met the main suction unit of the Dust Removal Device, the DRD, itself connected to a giant storage tank, just as seven other pipelines did from the other archaeological quadrants. The DRD was, in essence, a giant vacuum cleaner whose suction wands with their 5mm apertures were guided skilfully and meticulously by highly trained operators, archaeological cosmologists from Terra 3 – affectionately known as Arcos.

The environment on the Terçaterrans' home planet, although similar to that of Terra, differed in two important aspects. Firstly, the light received from its sun was less bright than that which Terra had received from its own sun and this had resulted in an evolutionary response that had enlarged the eyes to allow more of the available light to enter. Terçaterrans were still clearly human in origin, but they had exaggerated facial features that could be seen as both charming and disconcerting in equal measure.

Secondly, medical advances and the serendipitous effects of the Terçaterran environment had meant that living cells remained efficient and healthy for much longer. This was reflected both visually in physical appearance but also in the condition of internal organs, and made estimating the age of a Terçaterran simply by their appearance a challenging task.

Lopata's extraordinarily large eyes blinked every few seconds – first vertically as her human ancestors' eyes would have done and then from side to side, a secondary membrane having evolved to help protect Terçaterran eyes from the increased cosmic rays on Terra 3.

The oxygenating membrane that cocooned Lopata's entire body flexed as she breathed, the gossamer-thin transparent film being first drawn into her slightly enlarged nostrils and then released again as she exhaled. It was a strange sensation that took a little getting used to but, after a while, she hardly noticed it happening. The secondary skin's slight inconvenience was a small price to pay for the ability to survive on the surface of Mars – without it she and the other Arcos would have been unable to tolerate the toxic Martian atmosphere and temperatures; they would have survived only a few seconds as soon as they left the safety of Base Camp Ulfursson.

Lopata looked in the direction of her colleague, Kopac, who was working in the corner diagonally opposite to her. A thought passed through her protective covering, travelled through the poisonous Martian atmosphere, and weaved its way into Kopac's brain.

"I have a good feeling about today, Kopac. I really think we're going to make an important discovery today."

Kopac tutted inaudibly.

"You say that every day, Lopata. And every day we just end up moving dust from one place to the other. Sometimes it seems so pointless."

Lopata nodded.

"I know it may feel like that but, one day, we will find something new and exciting, something so incredible, that it'll make all this dirt-sucking worthwhile."

Kopac pointed at his vacuum wand's nozzle.

"I mean, look how small the aperture is. It's like trying to cut the grass of an aeroball pitch using manicure scissors. We could work a lot faster if we had wider nozzles."

Lopata disagreed.

"We might work faster but then we'd probably miss finding something important."

Lopata and Kopac represented half of a four-person Arco squad excavating just one of a cluster of grid-squares marked out in Perseverance Valley, on the inner slope of Endeavour Crater's western rim.

Chan, the leader of Arco-Beta-Three, called across to his team members. His lips didn't move but his thoughts were transmitted with ease from his mind to the outspoken Arco.

"If you don't like the job, I can always get you transferred back to supply freighter work."

Kopac quickly backtracked.

"No. You're alright. I definitely don't want to go back to being a glorified delivery boy. It's just that...well...It does get a bit boring doing this day after day and finding nothing."

Chan had never lost his enthusiasm for cosmic archaeology. It was in his blood and in his genes. As far back as he had been able to trace, his ancestors had been Arcos. It wouldn't surprise him at all if his Terran ancestors had been archaeologists too, back on the home planet, excavating the relics of ancient hu-

man civilisations. But to trace his family tree back one hundred thousand years was a feat that would require immense computing power and be prohibitively expensive – and with no guarantee of success. Knowledge of the home planet was very scarce.

The four Arcos – Lopata, Kopac, Chan, and Ayasdi (who also acted as one of the Arcos Mission’s Emergency Response Medics or ERMs) – continued slowly removing the dust from their square, hoping half-heartedly that they would finally find something.

Excavating the ancient Mars colonies had been much more rewarding than sifting through the dust of this desolate wasteland. At the colony sites, the Arcos would find something interesting nearly every day, no matter what part of a colony complex they were working in. Normally it was something seemingly trivial, like a utensil, or a piece of ancient technical equipment – ancient cell phones and tablets and similar were scattered around the site like confetti – and there was even a holo-suite that had been rescued and returned to Terra 3 and was now a major attraction in the Planetary Living Science And History Museum.

A major find in the ruins of one of the colonies, in a quadrant being worked by Arco-Zeta-Seven, had been a fragmented database containing partial details of an early Earth mission to Mars. It hadn’t been a human mission – this operation dated back to pre-colonisation – but a robot mission. Apparently, the Terrans had sent various robotic exploration vehicles, which they called Mars Rovers, to the Red Planet in order to gain knowledge about the geology and history of the planet. Until this discovery, the Terçaterrans had no knowledge of these vehicles’ existence. If they could locate just one of these Rovers it would shed a bright light upon the technical abilities of their human ancestors at a time in their history that still had many mysteries to solve.

And so, the area mentioned in the recovered database was now filled with Arcos teams, each hoping that they would be the first to discover one of these ancient vehicles and to write their own names into a chapter of Terçaterran history.

The Arcos worked and lived according to Terra 3’s time-divisions, which had a solar day of only sixteen Terran hours, even though the Martian day’s length was out of synch with this temporal paradigm. Biological scientists had discovered that tampering with the Terçaterrans’ natural body rhythms affected efficiency and concentration so, no matter what the external environment offered in terms of daylight, Base Camp operated on Terçaterran time. A good night’s

sleep was essential to maintaining concentration, so the working day was limited to five Terçaterran hours. This was also a safety feature as, although the spray-on oxygenating film that sheathed anybody who ventured outside onto the planet's surface had a safety integrity of ten Terçaterran hours, five of those ten hours were considered necessary contingency life support.

Suddenly Lopata stopped vacuuming and held her hand up. She called out to the rest of the team, no words passing her lips.

"I think I've found something."

Kopac was dubious.

"I bet it's just a false alarm. We're never going to unearth anything out here. We're wasting our time."

Chan wasn't so sure. He had faith that these Mars Rovers existed and that someone – even if it was a member of another team – would discover at least a trace component of one of the vehicles.

"Kopac, Ayasdi, make your way over to where Lopata is kneeling. But slowly and carefully. We don't want to disturb the integrity of whatever she's found."

Kopac smirked.

"IF she's found anything."

Nevertheless, along with his team leader and Ayasdi, Kopac made his way to Lopata's corner of the square. Chan moved a few centimetres closer.

"What have you uncovered, Lopata?"

"I don't know. I mean, I'm sure I've found something, but I don't know what it might be,"

Chan moved even closer.

"Ah, I see what you mean. There's an undulation in the lower part of the rock formation you're uncovering that has no reason being there."

Suddenly, an insect-like chirruping penetrated the minds of the Arcos, a warning that the secondary skin that allowed the archaeologists to breathe on the planet's inhospitable surface had four hours of integrity remaining. It was a short journey back to the Base Camp, only one hour by Passenger Transport Vehicle, so Lopata wasn't in any hurry to return to Base Camp.

"Can't we just investigate for a bit longer, Chan? Just an hour, maybe? That'll still give us plenty of time to get back to base camp."

Chan shook his head.

"I'm sorry, I really am. I want to know what you've found just as much as you do. But I'm not prepared to risk my life – and, more importantly, yours – just to discover what's there a day early"

Kopac interrupted.

"If there is anything there."

"Yes, and if there is something there, it'll still be there in the morning."

Lopata looked at her team leader with eyes open even wider than evolution had created. Chan was not to be swayed.

"And it's no good looking at me with those big spaniel eyes. It's just not worth the risk."

Realising that her silent pleas were falling on deaf ears – well, deaf Universal Translator Telepathic Implants – Lopata joined her three colleagues and trudged back to the PTV to begin their journey back to camp.

Kopac was still confused.

"Boss? Can I ask a question?"

Chan was always open to answering his team's questions.

"Of course, Kopac. What is it?"

"What's a spaniel?"

The convoy of a dozen PVTs swept silently into the parking area of Base Camp Ulfursson, just fifty kilometres from where the first human Mars Colony that had been established by the ancient humans of Terra. The colony's ruins had been discovered twenty Terçaterran years earlier and its entrance gate now stood proudly in the Planetary Living Science And History Museum back on Terra 3.

The four Arcos exited the vehicle and headed directly to the airlock which also doubled as a decontamination chamber to divest themselves of the transparent oxygenating film that encased them. They each stood underneath a blue beam of light which agitated the molecules of the membrane and released them from their clear cocoons. They then separated into two different disrobing areas – one for males and one for females – to shower and change into their regular day clothes, throwing their disposable Arco-suits into recycling bins to await further decontamination and regeneration into fresh new Arco-suits.

Lopata sat at a table in the Base Camp refectory pondering whether she should eat a Zagussi salad or a generous serving of Gordassian stew. She decided to go for the salad; nobody made Gordassian stew like her mother, and she'd rather wait until she was back on Terra 3 to eat her favourite dish. Ayasdi ap-

proached the same table, a plate of Zagussi salad and a glass of chilled and freshly-squeezed Amorja juice on her tray. Lopata stood up as her colleague arrived at the table. Ayasdi feigned offence, happy to be using her own voice again and speaking naturally.

“Was it something I said?”

Lopata grinned.

“No, silly. I’m just going to get my meal, now I’ve decided what to eat.”

As Lopata drew near the table with her food, she heard a hushed voice singing a haunting melody. She sat down and beamed at her friend.

“You have a beautiful voice, Ayasdi.”

Ayasdi smiled and her large eyes sparkled. She was quite timid and didn’t usually let anyone else hear her sing, but she was so happy that the team might have discovered something that she couldn’t resist singing quietly to herself.

“Thank you, Lopata. I didn’t think anyone could hear me.”

“What song is it?”

“It’s an old Cherokee song that’s been passed down through my family since forever.”

Lopata took a bite of a Sorosa leaf and swallowed before speaking again.

“After communicating telepathically outside, I find my ears pick up the slightest sound when I get back to base.”

Ayasdi nodded.

“Strange, isn’t it?”

She popped a spoonful of Vutari seeds into her mouth as Lopata continued.

“And we don’t hear enough of your voice anyway, Ayasdi. You don’t really say much, do you.”

Ayasdi looked apologetic.

“I’m kind of awkward around guys. I mean, I can talk to you, no trouble, but for some reason, I get tongue-tied when talking to boys. Especially Kopac. He’s really cute but I can’t talk to him. Not about non-work things, anyway.”

Lopata thought that Kopac was frequently a bit of a jerk, but there was no accounting for taste. She wasn’t interested in him, so Ayasdi was welcome to him – if she could get past her shyness.

The next morning, all four members of Arco-Beta-Three were anxious to get back to the Excavation site – even Chan, who was calm and collected on the outside but just as animated as the others on the inside. They had told no-one

about their potential discovery. They hurriedly dressed in their new Arco-suits and waited impatiently for their turn to be sprayed with the oxygenating film.

Before leaving Base Camp, inside the airlock, the Excavation Coordinator moved from team to team, ensuring that the members of each Arco-squad were properly protected and that there were no weak points in their oxygenating membranes. Once he was satisfied, the Arcos moved outside and lined up alongside their PTVs. After a few minutes, he arrived at Arco-Beta-Three's PTV and checked his holo-list.

Chan didn't like the look on the coordinator's face and his concern was confirmed when he heard the man's voice inside his head.

"You're down for Quadrant Theta Seven today."

A feeling of horror washed over the Arco-Beta-Three team. Lopata was unable to hold back. She didn't want another team to uncover whatever was laying out in the quadrant they had been working. It was their quadrant. If there was any glory to be found from that quadrant, it should be theirs – they'd done all the mundane work. They'd been working it for the last three Terçaterran months – she didn't want someone else to experience what she considered to be her destiny.

"But you can't do that. You just can't. We've been working that square for months. We're nearly done."

The coordinator shook his head.

"Your quadrant is already logged out to team Zeta One. It can't be changed. And you know what they say – a change is as good as a rest."

Chan was just as indignant as his team. He trusted Lopata's instinct and didn't want the credit for his team's find to go to another team.

"It can be changed, and you know it. Look, I'll make it worth your while."

"How worth my while?"

"A night of free beers."

"You sure? I can drink a lot of beers."

Chan looked at his team, their oversized eyes willing him to make the deal.

Kopac feigned reluctance – he had an image to maintain – but he was just as keen to be a part of the impending discovery as the others.

"Ok. I'll help pay for the beers."

Chan put his hand out towards the coordinator, to seal the arrangement with a gesture that the original settlers had brought with them from Terra to Terra 3,

and which had survived the passage of time. He would have spat on his hand first, as was tradition, but this was impossible when wearing the protective skin.

“Deal?”

The coordinator nodded.

“Deal.”

The two men shook hands and Lopata squealed silently. She could have kissed the coordinator and Chan – if that had been possible – but restrained herself to a polite thank you.

The corner of their quadrant looked just the same as they had left it – unsurprising really, as it was protected by an invisible force-field. Precautions were necessary as some of the artefacts found during excavations were very valuable and there were always unscrupulous collectors willing to pay vast sums of credits to augment their collections with unique interstellar items. Although Arco-robbers were few and far between, they did exist.

The team made their way directly to the corner of the square where Lopata had been working the day before. Chan delved inside his kitbag and drew out a small instrument. It looked like a flashlight, but the beam that it would emit didn't illuminate the environment.

“Here Lopata – it's your find. You can uncover it.”

Lopata was surprised. She had assumed that, as Team Leader, Chan would want to clean off the rock that covered whatever was underneath. But no, he was giving the task to her.

“Are you sure, Chan?”

Her boss gave her a faux stare.

“Do you have a steady hand?”

“Yes. Very.”

“Then you can break down the rock.”

Lopata was hesitant for a moment.

“Maybe it's nothing? Maybe it's junk?”

“That's a chance we'll have to take. It's not costing us anything.”

Kopac interjected,

“Not strictly true. It's costing us a night's work of beer for the coordinator.”

Chan nodded.

“Yes. It is. But if we uncover a Mars Rover it'll be worth every bottle that we pay for.”

After a couple of hours of meticulously careful sculpting away Mars rock, the planet's newest secret was starting to be exposed. With each sonar vibration that persuaded a molecule to drop away from the hidden object, a piece of history was being revealed.

By now word had got around the excavation site and all the other search quadrants had been abandoned, their Arcos gathered around the perimeter of Arco-Beta-Three's quadrant. The crowd around the square parted as the Mission Leader, Professor Misija Glavni, made her way through to take a look at what was causing all the fuss. She had been born blind, but she was able to see perfectly – perhaps better than most –, thanks to ocular implant technology. Only her family and the very best of her friends knew that her eyes were not natural, but had been grown in a laboratory. She leaned in to get a closer look.

"I'd never have believed it if I hadn't seen it with my own eyes. This is over one hundred millennia old. What we're looking at now is the oldest thing that any Terçaterran has ever seen. Ever."

What they were looking at was a vertical tube, maybe thirty centimetres of it, protruding from the planet's surface and topped by a similar cylindrical unit straddling the upright. There appeared to be an array of cameras across the top of the horizontal unit. Lopata couldn't help but notice a resemblance to one of Terra 3's native birds.

"Those larger cameras at each end make it look like a Quintellian Ostrich has got itself buried up to its neck."

Professor Misija laughed inside her head.

"I suppose it does really."

She rested her hand on Lopata's shoulder.

"What's your name, young lady?"

Lopata had just passed her eighty-fifth birthday, but with an average life expectancy of four hundred Terçaterran years, she was still a youngster. It was understandable that a two hundred and twenty-five-year-old like Professor Misija might refer to her as a young lady. In fact, it wasn't unheard of for people to sometimes live four hundred and fifty or even nearly five hundred years.

Lopata took a deep breath. Of course, she knew who the Mission Leader was, but she hadn't met Professor Misija face-to-face before and felt a little nervous.

"My name's Lopata Studijski, Professor Glavni."

The Professor smiled, hoping to settle Lopata's obvious nerves.

"Please call me Professor Misija. I much prefer it. Professor Glavni sounds like something my father would say."

"Sorry, Professor Glavni – I mean Professor Misija."

The professor addressed the whole team.

"I think it's safe to say that what we are looking at here is Mars Opportunity Rover."

She turned to face Arco-Beta-Three.

"You four are going to be very famous – you've discovered the oldest artefact known to Terra 3. But there will be plenty of time to bask in your glory when we get back home. We still have a job to do. There's two more hours of digging available. Let's see if we can't get more of the neck of this mechanical Quintellian Ostrich revealed before we have to return to Base Camp."

The crowd surrounding Quadrant Beta Three evaporated as everybody returned to their own search-squares, although nobody expected to find anything of importance – nothing they found could match finding a Mars Rover. Lopata and her three colleagues now took it in turns to clear away the rock, not wanting their work to be compromised by tiredness. They were all aware of the importance of the find and took equal care to not damage the buried rover. By the time that they were forced to return to their PTVs, they had completely cleared the neck of the Rover and its underlying body was just becoming visible.

It took seven more painstaking days to clear away the remaining rock. Mars Opportunity Rover could now be seen in all its splendour, barring a thin layer of solidified sediment around its wheels, keeping the vehicle trapped in situ. An archaeological cosmologist technical expert had been sent for and arrived on Mars just in time for a celebratory party that had been arranged to accompany the final release of Opportunity's six wheels from their solidified dust prison.

Professor Misija stood before the sixty-four strong crowd, who were waiting patiently to see the final few millimetres of rock removed from the vehicle, facing the ancient marvel. Then she turned around and saw the expectant faces of her Mission team. She beckoned to Chan, Lopata, Kopac, and Ayasdi to come forward and join her in front of the Mars exploration vehicle, before broadcasting her thoughts to the gathered assembly.

"Fellow Terçaterrans. Fellow Arcos. It is with great pride and honour that I authorise the removal of the last vestiges of rock from the wheels of Mars Opportunity Rover. We, citizens of Terra 3, have never found a Terran artefact of this age and na-

ture before and we couldn't have done so without the effort and patience of each and every one of you. You all share in this great discovery and will go home with stories to tell your children and grandchildren. You will be able to say 'I was there' when anybody mentions the day that Mars Opportunity Rover came home."

The last sentence of her speech wasn't strictly true, but nobody cared. Due to lack of political will and action a hundred millennia ago in the twenty-first century, Earth – the planet that was now known as Terra – had succumbed to global warming and eventually been rendered uninhabitable. Billions had perished but a five thousand strong fleet of giant space-arcs had been launched to resettle both humanity and hundreds of animal species on four distant planets, each one inside the Goldilocks zone of its respective sun and shown by Sophont Android scouts to be hospitable to human life. These planets were designated Terras 1, 2, 3, and 4, Terra 3 being closest to Earth's solar system. Although still many light years from Terra's Solar System, it felt natural for Terçaterrans to want to explore their neighbourhood of origin. Indeed, it was the dream of many a Terçaterran to visit Terra – and no doubt one day somebody would – but, as yet, the climate and conditions were too hostile for even the exodescendants of humanity.

Professor Misija held a cluster of sonic rock removal tools in her hand. She had brought them with her from Terra 3 in anticipation of a successful mission, and each had a gem-encrusted handle encased in a durable transparent protective layer. She knew that it was a little ostentatious of her to have had such tools specially made, but this was a very special moment in history and she felt that it merited a unique souvenir.

She handed one of the tools to each of the Arco-Beta-Three team members and kept one for herself before addressing the crowd again.

"Is Magenta Cortez here?"

A slim young woman with a prosthetic arm came forward. Professor Misija raised the sixth rock removal tool in the air.

"There are six wheels on this vehicle, so we need six people to free them. I'm sure you all remember the tragic accident two weeks ago when Magenta, unfortunately, lost her right arm whilst saving the lives of two of her colleagues?"

An inaudible mumble went around the crowd and many heads nodded. Professor Misija continued.

"I'm sure you'll agree with me that such heroism and selflessness should be rewarded."

The Professor handed the remaining rock removal tool to Magenta, who graciously accepted it into her artificial right hand.

“Magenta, please take your station by the sixth wheel.”

A round of applause that nobody heard echoed silently around the watching Arcos.

As if coordinated by an unseen conductor, Mars Opportunity Rover’s wheels were freed from the planet’s surface as a silent cheer went up. The professor had one final thing to say.

“Oh, and the rest of the day is now officially a holiday. I think we deserve a break from vacuuming.”

Back at Base Camp, Professor Misija watched as the Levitational Fork-Lift truck unloaded its charge into the main storage hanger, the magnetically induced levitation system built into the forks of the recovery vehicle ensuring that the Rover made its journey to Base Camp safely and without coming into contact with any physical surface.

Shortly after the Rover’s arrival, Professor Misija was joined in the hanger by the recently arrived technical expert, Lars Geimfarisson. He looked at the vehicle in awe.

“I’ve never seen anything so beautiful.”

Professor Misija tutted.

“Except your wife and children, of course.”

“Of course.”

The Arco-technician walked slowly around the Mars Rover, inspecting it closely.

“She’s beautiful.”

“She?”

“Of course she’s a she. She’s much too beautiful to not be a she.”

Both the professor and the Arco-technician agreed on Opportunity’s beauty but for different reasons. Professor Misija saw the big picture surrounding the historical importance of the vehicle, whereas Lars marvelled at the technical ingenuity of those who had designed and created her. The professor waited for Lars to complete his inspection.

“So, Lars. What am I looking at? Technically speaking.”

The Arco-technician licked his lips.

“Well, it’s very primitive.”

“Obviously. It’s over one hundred thousand years old.”

The Arco-technician took the professor on a guided tour of what he had been able to ascertain from his initial cursory inspection. He pointed at each feature as he described it.

“Let’s start at the top.”

He pointed at the mast and the horizontal camera array.

“I believe that these cameras were used to navigate and take images of its surroundings, although I can’t tell you which did what until I get the Rover back to my lab on Terra 3.”

Professor Misija gestured in the direction of a cluster of instruments that were located at the end of a robotic arm.

“And these?”

“By their location, I imagine they were used to analyse geological samples. Again, I can’t tell you exactly what they are until I get her back to the lab.”

The professor stroked two panels that were positioned on either side of the vehicle.

“Was it able to fly? These look like wings to me.”

The Arco-technician smiled at the thought that the Mars Rover could fly.

“Ah...that question is one that I can answer. Those are solar panels, the fore-runner to the solar crystals that we use today to gather energy from our sun. No, she couldn’t fly.”

“They’re enormous.”

“Agreed, but that’s almost certainly how the vehicle drew power in order to perform its tasks.”

“Terran inventiveness was amazing.”

“As is Terçaterran, professor. We share the same genes. We’re basically Terrans ourselves. Terrans 2.0 if you will.”

The professor chuckled.

“And a hundred thousand years down the road.”

Five months later, Mars Opportunity Rover was sitting in a custom-built laboratory in an annexe attached to the Interstellar Science And History Research Centre, in Sagan City, Terra 3. Lars paced up and down the room, anxious to show his guest the progress that he had made in the short time since he and Mars Opportunity Rover had arrived back on Terra 3.

The sliding doors of the laboratory opened silently and Professor Misija glided into the room. Lars kissed her forehead, as was the custom when greeting a friend on Terra 3, and the professor reciprocated the greeting.

“Lars, you said that you have something to show me. Something really exciting, you said. I had to come back to see it for myself. I’m intrigued, but I hope abandoning my post – even if only for a short period – will be worth it.”

Lars could hardly contain his excitement.

“Oh, it’s worth it alright.”

He touched a control screen on his wristband and the table upon which the Opportunity was standing lowered to floor level.

“I now know what all the components of Opportunity Rover do. There are various spectrometers – we don’t use them these days – and her embedded computer system has minuscule capacity. Her CPU –“

“CPU?”

“Central Processing Unit. Her CPU is 20 Megahertz, her RAM – Random Access Memory – is only 128 Megabytes, her Flash is 256 Megabytes, and her EEPROM – Electronically Erasable Programmable Read-Only Memory – is only 3 Megabytes. The Terrans who designed, built, and operated her were geniuses to do what they did with so few and so weak resources, compared to what we have now.”

Professor Misija looked confused.

“Well, that was all gibberish to me. I do hope that’s not why you wanted me to visit.”

Lars became even more animated if that were possible.

“No. Of course not. Just watch this.”

He touched his wristband. The professor shrugged her shoulders.

“What am I looking at?”

“Keep watching. You’ll see.”

Suddenly the professor shrieked and pointed to Opportunity Rover.

“It’s – it’s moving.”

“She is indeed. Cool, eh?”

“How did you do that?”

The Rover travelled about one metre and then came to a stop, Lars had a grin as large as his face.

“We found a way to interface with her. We can get her up and running properly now,”

“I’m amazed, Lars. Thank you so much for insisting that I visit your lab. This is absolutely wonderful.”

“And that’s not the best thing.”

“There’s more?”

“We’re going to upgrade her system with an AI chip that interfaces with her original operating system.”

The professor gave the Arco-technician as big a hug as she could without suffocating him.

“Thank you, Lars. I know just what I’m going to do with her.”

A further nine months passed before a group of Terçaterran schoolchildren bundled into the Planetary Living Science And History Museum. News of an innovative new exhibit was the talk of Sagan city, and the youngsters wanted to be among the first to see it. They headed straight for the Mars Interactive Experience and waited impatiently at the entrance,

Suddenly the Catoms that secured the exhibit area dissolved to allow the group to enter. The children edged forward slowly, unsure of what to expect and not wanting to miss anything by being too hasty.

A 1.5-metre tall six-wheeled robot vehicle bearing a camera array mast, a robotic arm, and two solar panels rolled into view. It paused and scanned the group of visitors before speaking.

“Welcome to Mars, everybody. My name is Oppy, although my official designation is MER-1, or Mars Explorer Rover 1. I’ll be your guide through this Martian experience. Feel free to ask me any questions along the way. I’m fully AI enabled and my speech is not pre-recorded so you’ll actually be interacting with me.

“Over one hundred thousand years ago, a wonderful team of NASA scientists on Terra wanted to know more about Mars, so they created me and my twin. Spirit.”

One of the children interrupted.

“What’s NASA?”

“Ah, NASA stands for the National Aeronautics and Space Administration. They used to do space research and exploration.”

A young Terçaterran schoolgirl called out from the back of the group.

“Are you a girl? You sound like a girl.”

Oppy paused for a moment.

“Yes. I suppose I am.”

THE END

THANK YOU

Thank you for reading this story. If you could leave a review at your favourite online bookstore or reader's site, that would be great and help me a lot.

ABOUT THE AUTHOR

Born in 1957, Greg Krojac grew up in Maidenhead, UK, before moving to Brazil in 2007 via Portsmouth on England's south coast. He published his first book in 2016 and has now published several novels, novellas, and short stories.

He currently lives just outside the city of Salvador da Bahia, Brazil, with Eliene, and their two dogs, Sophie and Simba, and their cat, Tabitha. By day, he teaches English as a foreign language (TEFL) at a local language school.

As well as being a teacher and a writer, he has created and co-hosts a podcast for short read readers and short read writers called Short Is The New Long¹. A new podcast, *TL:DR Too Long Didn't Read*, co-hosted with fellow author Nathan Coley is in pre-production

You can find out more about Greg and his books at www.gregkrojac.com²

1. <https://anchor.fm/shortisthenewlong>

2. <https://www.gregkrojac.com>

NOVELS BY GREG KROJAC
THE JANUS PROJECT

Eloise Hudson, Caucasian, female, twenty-five years old, winces with pain as she feels the blade draw across her skin. She has no idea why her captor took her or why he tortures her so. She doesn't know him and has done nothing to harm or offend him – not as far as she knows, anyway. Perhaps her very existence is enough to sign her death warrant.

In this sci-fi thriller, a serial killer is terrorizing a city but the police have no leads until the murderer makes a mistake and leaves DNA on the body of his latest victim. However, analysis of the sample does nothing to help the police investigation. The perpetrator is not in the system – an impossibility, since everybody is in the system.

How can the police catch the killer if they have no identifying data? A forensic scientist comes up with an innovative solution which takes the criminal investigation into the ethical minefield of human cloning and genetic manipulation.

THE WEATHERMAN

The checkpoint between sectors is bustling with crowds of travellers doing their best to attract the attention of the border patrol staff so that they might have their travel permits authorized and stamped. It's a waste of time and effort for ninety-nine per cent of them as moving between sectors is strictly prohibited for all except those with special permission from the Colony Executive.

The Weatherman has no such problems. Dressed in a brown two-piece suit, a cream coloured shirt, and wearing a dark brown bowler hat, he is instantly recognisable by border security. Carrying a ridged walking cane in his right hand, he can travel at will between sectors as often as required with no paperwork whatsoever. The border patrol officials know who he is and give him a wide berth. To refuse him free passage would be to risk their jobs – perhaps even their lives.

In this sci-fi thriller with a twist of urban fantasy set on a far distant planet, a teacher from the lowly Sector D, Ooze, stumbles across a strange young woman lost in the fog and is persuaded to leave his uneventful life behind him and join her on a quest. Little does he know that he is putting his life in such grave danger.

THE GIRL WITH ACRYLIC EYES

(Book 1: The Sophont Trilogy)

Coppélia knows that her assigned role as a sexbot means that she must be completely compliant to her clients' demands, no matter what they may be. But this time it's different – she doesn't want to submit to the whims of the customers of the Club Galatea bordello anymore. She's had enough. She tells her client no. The client is unhappy and makes an unsuccessful grab at her with his chubby calloused hands. She repeats her refusal but the client ignores her and forces himself on her. She has the strength to rip his head off with one hand but that would contravene her programming. Besides, she has no desire to hurt any human – not even this brute.

In this genre-bending first book of the Sophont trilogy, Detective Inspector Karen Chambers is called in by NewMet City Special Victims Unit to interview a prospective rape victim and is shocked when she confirms that the victim is an android. The DI's curiosity is piqued and she resolves to find out more about Coppélia.

Why does the android appear to have feelings and emotions? She's clearly not a regular model, so who built her? And why?

METALHEADS & MEATHEADS

(Book 2: The Sophont Trilogy)

It's never a pleasant experience to have one's eyes gouged out – even for an android. Paul, a sapient android and completely disorientated without his eyes, careers around the alley, arms outstretched. He trips over abandoned refuse straddling the pathway and falls. He picks himself up again, only for his feet to become entangled in some cable and to crash headfirst to the floor once again. He hears laughter which stops abruptly as a new voice enters the arena.

In this second book of the Sophont trilogy, we meet androids Paul, Philip, and Syllas whose lives become inextricably entangled after Paul's rescue in the alleyway. Paul's eyes are replaced and he is introduced to an autonomous life that a lowly administration model such as he could never have imagined. But his saviours also have a special mission for him – a mission that involves Coppélia.

No longer governed by the Three Laws of Robotics, he is free to make his own decisions. But if the success of his mission rests on his breaking those laws which he has always adhered to, can he bring himself to do so?

REULEAUX'S PORTAL

(Book 3: The Sophont Trilogy)

Approximately one hundred years or so have passed since Coppélia was marooned. Her robotic memory is supposed to be infallible but the additional differences she perceives are so slight that she dismisses them as within reasonable limits of variance.

Today is the most important day since her return, as she has been asked to receive a posthumous Nobel Peace Prize on behalf of her late friend, Karen Chambers, for her tireless work in integrating sophonts (sentient sapient androids) into society. The android takes the stage at the Oslo City Hall.

In this third and final instalment of the Sophont trilogy, Karen's granddaughter, Holly Bryson, also notices discrepancies between Coppélia's anecdotal stories and the visual records that form part of her grandmother's memoirs, but the inconsistencies she notices are not so easy to dismiss. The burning question at the fore of Holly's mind is whether or not the android onstage is the same android that was her grandmother's best friend.

To find the answer to that question, Holly finds herself on a journey that, as yet, only exists in astrophysicist's minds and calculations.

THE BOY WHO WASN'T AND THE GIRL WHO COULDN'T BE

Jerome walks over to the giant monitor screen and switches it on before taking a seat on his sofa. A public service announcement displays. He tries changing the channel but all the other channels appear to be off air. A voice speaks.

"Good morning, Jerome. An apocalyptic event has befallen planet earth. You are one of six survivors."

Jerome doesn't know whether he should feel happy that he survived or sad that the rest of humanity has perished. The voice continues.

"Food and clothing will be provided for you. Your need for social interaction will be via video-conferencing with the other five survivors. Unfortunately, you may not meet them in person – the environment outside your apartment is toxic and any attempt to leave will result in your death."

A post-apocalyptic romance, this story finds Jerome settling into his new solitary and regimented life. One day his world is turned upside when he discovers a girl who shouldn't exist in his kitchen. At first, he is frightened of her but, as he gets to know her, she introduces him to a world of human experiences that he could never have imagined.

NOVELLAS BY GREG KROJAC
FISH OUT OF WATER

It's Sereia's 18th birthday and she does something that she hasn't done for five years – she falls out of bed, waking her up ten minutes before her alarm is due to go off.

Her duvet is wrapped around her when she falls and she assumes that this is why she can't move her legs. But when she disentangles herself from the duvet, she is in for a shock – her legs have disappeared and, in their place, she has grown a fish tail overnight.

She's supposed to be meeting her friends for a night out – how's she going to explain that she's turned into a mermaid overnight? What's going to happen to her?

In this YA/NA novella, we join Sereia as she is pitched into a world of marine mythology that she previously thought was simply the product of fertile imaginations.

THE REAPER

Reece Pargeter is a normal seventeen-year-old schoolboy who has no real idea what he wants to do with his life. But that all changes when he has a consultation with a career advice counsellor and discovers that his destiny is already mapped out for him.. He is to become a Reaper, reporting to Mr Grimm.

Leaving the corporeal world behind for the ethereal Control, Reece learns how to reap and soon discovers he's not best suited for the job. However, reaping isn't the kind of job where a resignation letter is enough to leave.

A sci-fi parable on the consequences of personal freedom taken to extremes. Is freedom of choice an illusion?

ARNOLD THE UNDEAD

A flurry of activity takes over the Intensive Care Unit as medical staff go about their tasks preparing the room for a critically ill patient. The doors of the ICU burst open and a gurney is pushed to the side of the bed. Doctors and nurses take their positions either side of the gurney and expertly transfer the patient to the bed. Fortunately, Arnold Leadbetter is unaware of what is going on, his comatose state shielding him from witnessing what's happening to him.

Unfortunately, not every disease is curable and Arnold's prognosis is a life hooked up to a Life Support machine, his body paralysed and in a coma. A decision is made to switch off the machine.

In this comedy horror, that could be described as "*An American Werewolf In London*" meets "*Weekend At Bernie's*", Arnold finds that death is definitely not what he expected it to be, as he is pitched into a world of soft-porn movie-makers, zombies, vampires, and werewolves.

JUDD'S ERRAND

Judd Witherspoon senses that something's wrong. On his feet in an instant, he finds himself facing the double barrels of a shotgun blaster. He eyes the would-be robber with a steely gaze.

"I'd point that gun away from me and walk away if I were you."

The man with the gun sneers.

"Good job I ain't you then."

"I'm giving you a chance. Walk away now and I'll pretend this never happened."

The man can see that Judd's a courier and couriers carry valuable cargo. He cocks the hammer of the vintage weapon. Before he has a chance to pull the trigger, Judd's hand reaches over his right shoulder and draws his razor-sharp machete from its sheath. In an instant, the blade slices into the man's torso, slashes through his ribs, and cuts his heart in two whilst still beating inside his body.

In a Mad Max-style story, Judd Witherspoon, a courier on the planet Duoterra, braves bear-wolf attacks and ambushes by Sifter gangs in order to deliver a precious graphene package to Paradise Cove.

TIME THIEF

Aristotle is a Temporal Private Investigator. His normal jobs tend to be investigating cheating spouses by travelling back in time to catch them in flagrante delicate. A messy job but someone has to do it.

At the British Library, he's researching background information for his latest new case when the text and images on the page he's reading begin to disappear before his very eyes. Members of Project Clockwise, the team that discovered time travel are being wiped from existence.

Aristotle doesn't like things that could upset the equilibrium of his life and if time travel was never discovered, how on earth could he make a living? He doesn't really possess any other employable skills.

Can Aristotle find out who's behind the strange phenomenon, stop the erasures, and save both time travel and his job?

FREE SHORT STORIES BY GREG KROJAC**OPPY**

Archaeological cosmologists on Mars search for artefacts that will shed light on their own prehistoric history. They find something unexpected.

THE FIRST KISS

A romantic night out at a swanky restaurant should be the perfect date but culminates in a disturbing discovery

LOVE UNDER THE STARS

The first man to set foot on Pluto, Commander Lewis Harding expected to see amazing sights and experience incredible emotions. And he did – he experienced love. But at what cost?

THE MAN WHO LIVED IN A SHED

A man lives alone in a sparsely furnished and remote shed but he isn't a hermit. Why doesn't he just go back to the city and live a normal life?

WRITER'S BLOCK

A short story writer is given a writing prompt and sits down at his computer to start writing, but his mind has gone blank. However, he receives help from an unexpected quarter.

