

Red Horizon Odyssey

by Illia Zhupanov



Introduction

Red Horizon Odyssey chronicles the daring mission of the Red Horizon spacecraft and its intrepid crew as they venture beyond the confines of Earth to explore the enigmatic red planet.

Set against the backdrop of a stagnant era in space exploration, where attention was focused inward on Earthly struggles, NASA and ESA join forces to embark on the ambitious first crewed mission to Mars. This mission, meticulously planned and years in the making, represents a pivotal moment for humanity's aspirations to become a multi planetary species.

Led by Mission Commander John Brown, the crew of Red Horizon is a diverse and determined group, each bringing their unique skills and endearing personality quirks to the story. From the meticulous Executive Officer Andreas Lundström to the

technology-savvy Engineer Nils Fischer, and the fashion-conscious Biologist Camilla Deveraux, the crew provides a believable and entertaining human connection to a very technological mission.

As the Red Horizon crew navigates the complexities of interplanetary space travel, their camaraderie and resilience are tested. Each chapter offers gripping adventure as well as a few laughs while sharing an unshakable belief that such a mission might take place for real in the not so distant future.

Bruce Callow

Santa Ana, Costa Rica

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Chapter 1: Mission Profile

Launch date: June 21, 2065

Astronaut Training starts: 2058

Mission and spaceship name: Red Horizon (RH)

Agencies involved: NASA/ESA

Supply ships have been sent to Mars in advance of the human landing, carrying two rovers, food supplies, the habitation module, a laboratory as well as high tech orange and black space suits with high tech cooling and heating systems which provide comfortable living conditions for astronauts.

The mission utilizes current space rocket propulsion technologies for the spacecraft design and was assembled over a four year period in low Earth orbit. The spaceship was built in orbit to avoid weight and size restrictions of launching directly from Earth.

There has been stagnation in the overall space exploration industry and the leading countries have been focusing their attention on their problems on Earth for many years. The last Artemis crewed mission to the moon took place in 2038. There have been no crewed missions beyond low Earth orbit since then. Now NASA and ESA have finally agreed to undertake a promising and risky crewed mission to Mars.

The RH crew is made up of 46 year old Mission commander/Pilot John Brown from Livingston Montana, USA who is married with 2 children. John is very sporty and has no fear of the cold. The Executive Officer is 32 year old Andreas Lundström, from Sweden who is single and is obsessed with order, and insists that everything should be neat and tidy. He will be in charge of the command ship that will stay in orbit when the crew lands on Mars. Engineer Nils Fischer is from Hamburg, Germany, is 29 years old and single. Nils is obsessed with technology and coding and the computing systems for the mission. Biologist /Medical officer Camilla Deveraux is from Marseille, France and is very fashion conscious and loves to decorate everything she sees. She is 27 and is married with one child. Geologist /Seismologist Mariya (Masha) is from Kyiv, Ukraine. Masha is 31 years old, single and has a selfish and independent cat waiting for her that Masha is obsessed with.

Chapter 2: Simulated Struggles and Launch Preparation

“That was a difficult launch indeed,” say Camilla, gasping for air.”

“I know, sorry,” answers John. “But we have to practice every possible scenario in these mission simulations to prepare for the launch process, in order to survive the mission.”

“I’m going to die from anxiety before the end of the mission.”

“My cat will be worrying for me so much, poor thing!” exclaims Masha.

“My dear, your cat won’t understand anything about the events happening during your absence,” comments Nils.

“Okay guys, chill, let’s return to the living complex,” said Andreas.

“Just don’t forget to clean the test chamber before you leave.”

Everyone sighs.

Three days later, the crew gathers in the meeting room located in the crew living complex at Johnson Space Center. The mission director Andrew Klitchowski arrives to discuss the mission.

“Look, folks, I’ve dedicated my life for this mission to happen. You can’t imagine how difficult it was to convince NASA and ESA to fund this mission. Everyone has been telling me that it’s impossible to do so, that everyone’s focused on the ongoing African conflict against the Russians, but, finally, we’ve got the funding now. I’d like to clarify to you that the successful outcome of this mission is very important, because if you fail, there won’t be any crewed space missions to other planets for a very long time, because the big powerful countries won’t see them as

useful. So please, do succeed, for the sake of humanity's progress.”

Finally, after seven years of intensive training, it's finally the 21st of June 2065, the launch day. The astronauts are preparing to proceed to the launch site where the Airis-5 space shuttle is waiting for them. Conventional rockets were eventually abandoned in the 2050s because of their huge fuel consumption and inability to be reused. Everyone now travels to orbit with space shuttles that takeoff like regular planes, but are powerful enough to get astronauts to the four space stations currently operating in orbit. The Airis-5 model is among the newest. On it the astronauts will travel to the space shipyard Bracken-1, where their Red Horizon spaceship is already assembled and is waiting for them to embark on the voyage to Mars. But before that happens, the crew has to say goodbye to their families.



Chapter 3: The Road to Mars

Mission control: "Eight. Seven. Six. Five. Four. Three. Two. One."
(Camilla screams)
"Launch!"

The Airis-5's engines start roaring, and the shuttle starts to gain speed. John's sitting calmly, looking into a viewport, Andreas is trying to pick up a dust particle from his jacket, Nils is trying to look into the pilot's cockpit as he's curious about the takeoff process. Camilla's trying to distract herself from worrying by discussing ideas for cats' outfits with Masha. The takeoff goes exactly as planned, as the Airis-5 only experiences some light turbulence in the process.

After reaching orbit, the shuttle now has to proceed with docking to the Bracken-1. After aligning their orbits, the shuttle finally begins to approach the space shipyard.

Nils exclaimed: "Wow, this thing is so huge! They've expanded it since I've been here last time."

"So the construction's still in progress?" asked Andreas

"Yeah, it's like a space station, it gets expanded in the process of usage", explained Nils.

The shuttle's getting closer and closer to the docking port. The docking process is complete! Everyone's happy, Nils happily congratulates the shuttle pilot.

“Thanks, it’s only a routine flight, nothing that special”, tiredly smiles the pilot.

“No, no, the docking process was done brilliantly, smooth job!”, excitedly exclaims Nils.

“As a pilot myself, I agree”, smiles John.

“Thank you, thank you, you are too kind. Oh, by the way, John, the chief engineer wanted to see you regarding something about the RH.”

“Will do,” answers John.

The crew thanks the pilot again, and exits the Airis-5.

They meet the chief engineer at the meeting room on the Bracken-1. Everyone’s floating, as there’s almost no gravity. Andreas is irritated from trying to position himself on his chair, because he can’t stay in one place. Masha’s imagining her cat floating in zero gravity. The rest of the crew is intently listening to the chief engineer.

“We had a mechanical malfunction when connecting the living room with the airlock seal. We then proceeded to run extra tests, and everything checked out. Estimated chance of failure is below 1%, but I’ve got a bad feeling about this for some reason. Please, keep an eye on that.”

Everyone agrees, but only John and Andreas take the warning seriously. The others don’t consider the event with only 1% possibility of happening to be something important.

Finally, the crew enters their spaceship. Each crew member takes their designated position. Everything’s ready. Though worried, the

crew is excited to finally start the mission. John's holding his finger on the red button that starts the launch sequence.

"Is everyone ready?"

"Yes, captain!" everyone screams at once.

"Then, let the journey begin!"

The Red Horizon detaches from the Bracken-1. The engines start roaring, though no sound can be heard in space. The ship looks like a rotating disk with stationary engines. The rotating is causing gravitational force inside the disk, and this improves the quality of life and health of the astronauts inside.

It takes 6-7 months to get to Mars. The crew spends 3 months on the surface. That means that the mission goes on for around 14 months.

Crew members get up from their seats. Everyone's relieved that the spaceship launched successfully. Now there's a long way for them to get to their destination, the Red Planet.

The Red Horizon has already flown half way to Mars. John's on watch in the control cabin, while the rest of the crew is resting in the living room. Andreas is trying to wipe off a coffee stain on the table that Camilla left yesterday, as he can't stand anything dirty. Masha's watching her cat on a video call, but it refuses to pay any attention to her. Camilla's discussing future technologies that could be implemented into clothing with Nils. But, suddenly, the depressurization alarm goes off. Everyone's rushing for oxygen masks, terrified, as John says in the intercom.

"A depressurization happened in the compartment near the living room."

"1% chance? Really?" screamed Nils, rushing for his mask

“Yes, sadly. Discussing the possibility isn’t a priority now, we have to fix it. Nils, go grab some hermetic tape. The hole isn’t big because the leak is too small.”

“Okay, I’m going then. In the meantime, someone please make some smoke in the air so we can detect the hole.”

“Smoke? Are you kidding? We’re on a spaceship, there aren’t any ways to produce smoke. Nothing here is capable of burning,” screams Andreas.

“How about we try to boil some water and use the steam instead?” suggests Masha.

“Good idea! You go do that, I’ll be back with the tape in a minute,” replies Nils as he rushes towards the storage room.

In a minute, he comes back. The rest of the crew has boiled a bit of water by that time, therefore a bit of steam is floating in the air. Of course, it’s dangerous to do that, and the heater in the living room wasn’t designed to boil water, but they manage to do it anyway.

“Good job guys! Now let’s wait and see where the steam starts floating to,” says Nils happily.

The crewmates wait for a few minutes. Steam slowly starts to drift towards the compartment where the hole is. Almost there...

“Got it!” exclaims Nils and puts the tape over the hole. Everyone screams happily.

“I’ll have a lot to tell my cat about today,” says Masha.

The crew breaks out in relieved laughter.

Chapter 4: Smooth Landing and Setting Up Base

“The tilt is not enough yet!” exclaims Andreas.

“I can see that as well... just give me a minute,” shoots back John.

“But we can’t afford to spend too much thruster fuel to align the orbit!”

“Don’t be such a perfectionist, we’ve got more than enough left,” answers John.

A few minutes pass, and John screams,

“I got the perfect angle!”

Everyone congratulates him with applause.

Now, the Red Horizon has to fly for a few hours before entering orbit.

“Are you sure you haven’t forgotten anything? I won’t be able to send it down after you leave,” worries Andreas.

“Don’t worry, all necessary supplies have been sent to the surface already. We can’t forget anything that we can’t survive without”, answers Nils.

“I wish I could bring my cat”, sighs Masha.

“Where did you put my decorating glitter?” angrily asks Camilla.

“Camilla, we’ll miss the launch window soon if we don’t hurry up and start descending,” answers John tiredly.

“Just a minute, please... here it is! Masha, why did you put the photo of your cat on top of my glitter?!” Camilla screams angrily.

“The photo of my precious cat is far more important than some glitter, which isn’t necessary for our mission on Mars anyway.”

“As if the photo of your pet is.”

“Calm down, girls. Let's get into our module”

The astronauts are descending onto the surface with the help of the module equipped with engines and parachutes to slow it down. The engines are only used to adjust the attack angle, since the astronauts will need the fuel to get back into orbit and dock with RH. John is the pilot and Andreas stays in orbit, performing tasks like photographing the planet, adjusting the orbit of the spaceship, and assisting his crewmates remotely.

“Good luck out there,” NASA mission control in Houston communicates.

Thus, the descent process begins. Everyone’s stressing out about how it will go, while John remains calm and confident that everything will turn out well.

The landing module reaches the upper atmosphere. John is slowly adjusting the attack angle to ensure the landing is at a designated site. Everything’s within acceptable norms.

And, finally... Touchdown! The landing is as smooth as possible and the crew does not experience any unexpected changes in the trajectory.

“Thank God we’ve got John as the pilot,” whispers Camilla into her radio intercom.

Everyone agrees, as John blushes. He feels pleased that everyone appreciated his landing and piloting skills.

Our crew has landed on the surface of Mars near the Hellas Basin.

After everyone changes their space suits to the ones used on the surface, the crew exits the module.

“Now this planet will be our home for the next three months,” says John.

Then, the crew goes after supplies. They need to get the rovers running as well as inflating the living module. Nils starts to assemble one of the rovers, while everyone else proceeds with inflating the living module. It’s an inflatable dome that is erected with the help of air pressure from inside as well as aluminum beams. After the construction process is finished, Nils goes to retrieve the supplies that landed further away. During his absence, everyone else proceeds with setting up the internal section of the living module. Masha and Camilla are preparing their laboratory, while John assembles tables, beds and other necessary equipment. When Nils returns, everything is finished. Camilla decorated the module with ribbons and glitter. Everyone’s very tired and they fall asleep shortly after dinner and checking their messages from family and friends back on Earth.



Chapter 5: On the Ground on Mars

The next day (sol) everyone begins with their designated duties. Masha's strolling around in the rover together with John picking up some rock samples to analyze them in the laboratory later. Camilla is conducting research on growing plants in the Martian soil. She's trying to figure out the quantity of bacteria that is needed for the soil to be fertile. Nils is setting up the solar panel arrays.

A few days later John is speaking to Andreas:

"There's a sand storm coming your way. It's not major, but still, the solar panels must be cleaned more frequently."

"Okay, I'll warn Nils about that."

"Also, you mustn't move away from the module too far. There's a possibility that the rover gets stuck in the sand."

"Okay, we won't then."

Nils is angry because of the fact that he has to do extra work, but bears with it.

Generally, aside from the sand storm, the mission's going as intended. Camilla achieves success with her research, as she manages to grow spinach in the Martian soil. Somehow she manages to decorate the living module in her free time. Masha successfully gathers a lot of rock samples and now she examines them in the laboratory. John is now helping Nils with the solar panels, since Masha stays in the module most of the time.

A few days later, while Masha is carrying a rock inside the living module, suddenly a scream is heard by everyone on the intercom. John rushes towards Masha, who is laying on the ground.

“Ouch, I sprained my ankle!” she exclaims.

“Don’t try to stand on that leg or you might collapse. Here, lean on my shoulder”, says John.

They get inside the living module, as Camilla’s preparing her medical aid kit.

“Let me have a look... Oh, it’s nothing serious, you just need to rest for a few days. I’ll apply some ointment,” she says.

“Oh, so that means I’ll have some free time to look at my cat!” happily exclaims Masha.

After a week, Masha’s leg fully recovers. The sand storm has passed, therefore there’s no need for extra cleaning of the solar panels and other equipment. One evening, the crew assembles in the living module to discuss an important topic: recovering an old unmanned rover, which was sent to the Red Planet ten years ago. Contact was lost just two years after the landing, but there’s still hope that the data and important samples it gathered are recoverable. The approximate location of the rover is around 400 km from the living module.

“Wait, Nils, what is the maximum range that our rovers are capable of traveling?” asks John.

“600 km, but that’s without taking the solar panels into account. We can use them to recharge the batteries mid-way.”

“But doesn’t that pose too much risk? What if there’s another sandstorm, for example?” asks Camilla.

“There are no sandstorms in the range of 1000 km around you right now, and no signs that one is forming,” answers Andreas through intercom.

“The samples that the rover gathered may be very important for my research,” says Masha.

“Okay. Then, if mission control approves, we’ll embark on this journey.” says John.

The rovers are capable of reaching speeds of 40 km/h.

Approval from mission control was received, and thus, the preparation begins. It was decided that John and Masha are going after the samples. Camilla and Nils are staying behind, since Camilla has to proceed with her biological experiments, and Nils has to take care of the solar panels and other electrical equipment in and near the living module.

The supplies are loaded into one of the rovers and everything’s ready. John and Masha say goodbye to Camilla and Nils, and their expedition starts.

After the first day, everything’s going as intended. Solar panels show better effectiveness than estimated. John has a little problem with driving the rover. The sandstorm that happened earlier filled potholes with sand, and they’re much harder to notice because of that. Aside from that, everything is alright. Masha’s excitedly collecting a lot of interesting rock samples.

“I can’t wait till I get to examine them in the laboratory!” she says.

“Don’t collect too many of them, the space in our rover isn’t infinite”, answers John, smiling.

“Ok, I’ll try not to. My cat will be so excited after I bring it a rock as a souvenir from Mars!”

The next day starts as usual. John and Masha wake up, have their breakfast and John starts driving. But he doesn’t notice a big pothole on the ground right in the way of the rover. Suddenly, the rover stops abruptly. Masha and all equipment falls on the floor and the rover tilts.

“What happened?” screams Masha.

“I didn’t notice the pothole on the ground. It was filled with sand, and our rover drove into it. You stay here, and I’ll go outside and assess the damage,” John.

A few minutes later he returns.

“The rover isn’t drivable anymore. One of the wheels fell off. Also, I suspect that the suspension is damaged.”

“Oh great. What the hell are we going to do now?” complains Masha.



Chapter 6: Rescue Mission & Preparations for Returning Home

“Ok, so I need to get the second rover and rescue you?” asks Nils.

“Yes, that’s correct”, answers John by radio.

“I’m in! Andreas, send me their coordinates.”

“Already did”, answers Andreas.

“Camilla, you stay in the living module,” says John.

“Oh, as if I wanted to go”, answers Camilla.

“Nils, be very careful with the potholes. Some of them are more dangerous than they seem,” warns John.

“Roger,” answered Nils.

The supplies are loaded, and Nils starts his rescue mission.

He’s driving very carefully and slowly, in order not to get stuck as well. While he’s driving, Andreas connects with John.

“Commander, there’s a sandstorm forming not far from you”, he informs.

“Oh, that’s not good. We might get stuck even more”

“Also, the effectiveness of your solar panels will be reduced.

Maybe we should tell Nils to drive faster?” asks Andreas.

“No, don’t tell him anything. He might start to worry and lose focus. The same thing that happened to us might happen to him as well, and all of us will be doomed,” answers John.

All major news channels on Earth are reporting on this, making headlines like “Will Nils arrive in time?” or “Human vs Sandstorm.”



After a suspenseful first day of driving, Nils suddenly stops answering on the radio. Everyone's worried.

"Andreas, can you take a shot of Nils' rover from orbit, so we can get to know if anything happened?" asks John on the radio.

"Yes, we just need to wait for two hours until I'll be flying over his location"

After two hours, Andreas photographs the rover. His scream is heard on the radio.

"His wheel fell off as well!"

Everyone is in stunned disbelief. Andreas sends the photo to the crew and to the mission control. It appears that, as Andreas said, one wheel has fallen off from the chassis. Attempts to contact Nils through radio aren't successful. After 4 hours, Red Horizon

completes one lap around Mars and Andreas takes another photo.

“Something’s changed... I can see some rocks... Got it! It's Morse code!” he screams.

“Transcript it!” screams Camilla.

“Gimme a sec... gosh, if only he positioned the rocks more carefully...”

“Andreas, for God’s sake stop complaining! Tell us what he wrote already!” angrily shouts John.

“Okay, okay! He says that he got stuck in a pothole as well, and his communication system broke down. One wheel detached from the chassis, but it isn’t serious. He’ll repair the rover and carry on with his rescue mission.”

“Thank God that his rover is repairable. If it wasn’t, we’d all be stuck here forever”, whines John.

“Yes! That means that we’ll get rescued and I’ll see my precious cat again!” exclaims Masha.

After another four hours, Andreas takes another photo of Nils’ Morse message. It says: “Rover repaired. Now sleep. Tmrw continue.”

The next day Nils continues driving. At this rate, he’ll get to John and Masha in a few hours. John connects with Andreas.

“Hey deputy, how’s our sandstorm?”

“Dangerous, but not deadly. Nils should pick you up just in time. But, since he has been driving quite slowly, you will need to hurry up on your way back.”

“Okay, no problems. Masha found an interesting rock sample. She says it’s for her experiments, but I presume that she picked this up because of the form. It resembles a cat’s paw if you ask me”

“Maybe, she’s going to gift it to her cat?”

Camilla connects to the radio channel as well.

“Hey John! Hey Andreas! I decorated solar panels arrays with ribbons I brought! Do you like the idea?”

“Camilla! What did I say about your decorations on important equipment?! You mustn’t put them there, it may have severe consequences!” screams Andreas.

“Oh Andreas, stop being such a p—”, answers Camilla

“Why does everybody think...”

“You two, stop arguing! I think I can see Nils’ rover on the horizon”, says John

It actually is Nils’ rover. He’s driving very slowly because he doesn’t want to damage his vehicle even more. He’s feeling lonely since he’s got no contact with his crew or any other human creature. But now, he notices the other rover. He’s very relieved.

In an hour, Nils finally meets with Masha and John. Everyone is very happy. John tells Nils about the approaching sandstorm.

“Oh, I see. Andreas, what are your predictions, based on the data?”

“Well, I think that you still have barely enough time to get back to the living module safely”, answers Andreas

“Well, better safe than sorry. John, Masha, help me extract the battery from your rover”

Three crewmates move the battery to the Nils' rover. Now, they've double the electricity reserve. Masha wants to load lots of rock samples she found during the period of waiting for Nils but there's not enough space in the functioning rover because of the second battery.

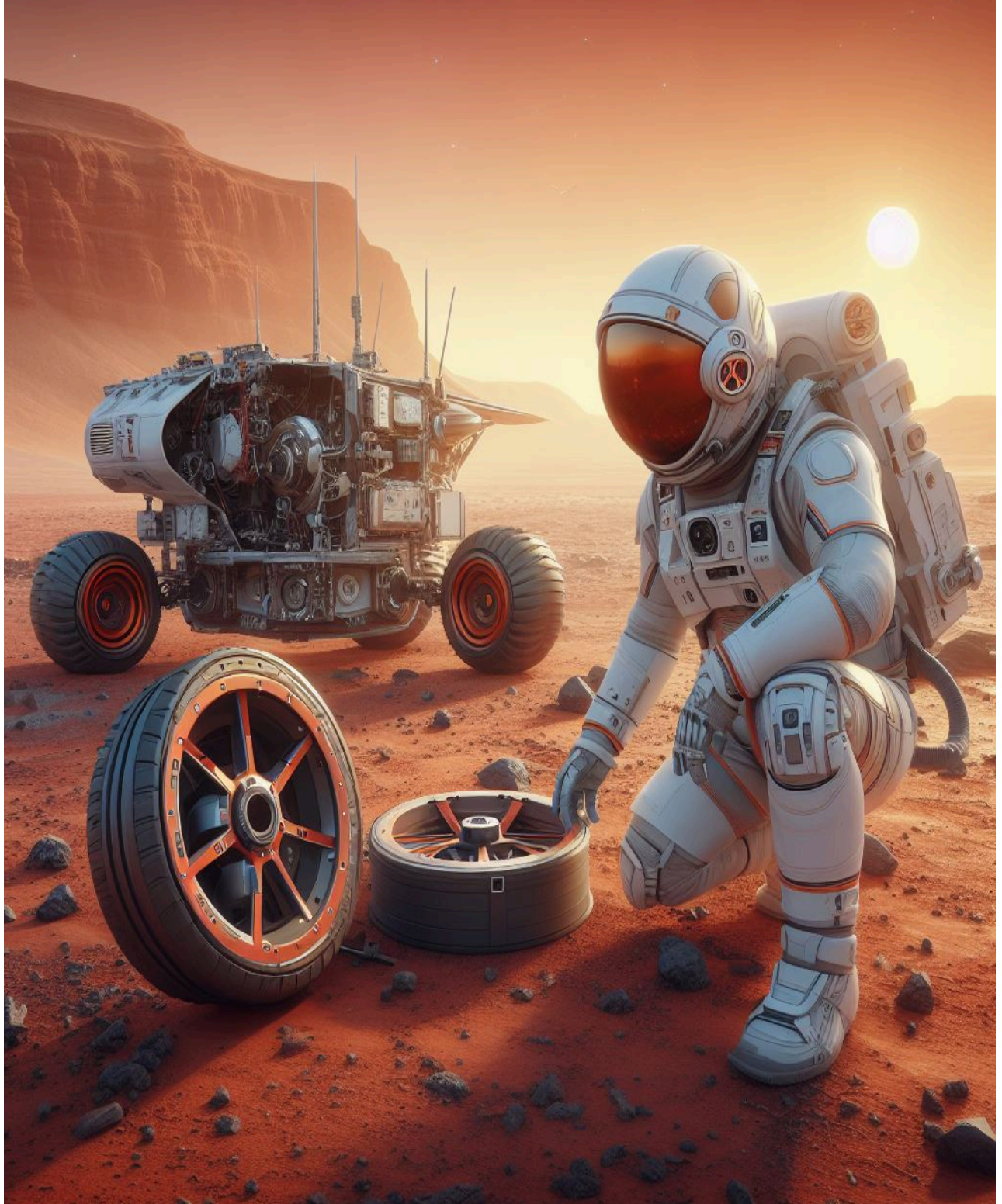
Now, the three crewmates start their journey back to the living module. During the day, Nils drives the rover. In the evening, they swap the batteries, and John gets behind the steering wheel. He's driving with headlights on because the visibility during the nighttime is very limited. Nils falls asleep in the cabin. Masha's looking at photos of her cat, as she can't sleep because the rover is shaking.

In the morning, the crew stops. They're close to their destination, but both batteries are drained of electricity. John connects with Andreas by radio:

"Hey deputy! How are we looking?"

"Not so bad, chief. The sandstorm moves faster than we expected, but you and Nils have done a fantastic job driving the rover"

After a few hours of waiting for batteries to recharge from solar panels, John, Masha and Nils continue their drive. They can't wait to get back to the living module. And finally, they reach the destination! Everyone, including Andreas, ground control and people on Earth, is relieved. The astronauts are again in the headlines of the top news outlets. Masha is overjoyed because they featured her cat in the media reports including on CNN and BBC.



Chapter 7: Homeward Bound

Several more weeks pass, and now it's time to depart the Red Planet. The living module and the rest of the infrastructure will remain on Mars because it's too expensive to transport all of it back to Earth. Masha leaves a printed photo of her cat in the module and Camilla does the same with all her ribbons. All equipment is packed and left in the module, just in case anybody needs to use it in the future. Rock samples are loaded into the landing module. Everything is prepared for the departure of the crew. On the last evening on Mars, the crew assembles in the living module to have their last dinner on the surface. John makes a speech on ending the mission:

"It's our last evening on Mars. We are the first crew that has set foot on this planet. We've all done a great job. Let's hope that this mission is the first one in a sequence of the missions that will eventually lead to the colonization of this planet!"

The next day everyone puts on their space suits and gets into the landing module. John is the last one. Before entering the module, he turns and looks around for the last time. Mars answers him with silence, slightly interrupted with rustle of the wind. John smiles and takes his pilot seat. He asks his crewmates:

"Think carefully please, has anybody forgotten anything? We won't be able to return here to recover the forgotten stuff."

Everyone laughs.

"Okay, are you all ready?"

"Yes, captain!" the crew screams enthusiastically.

John starts the countdown:

“Eight. Seven. Six. Five. Four. Three. Two. One. Liftoff!”

The pressure is on, as the landing module starts rising into the Martian sky. John’s piloting it. Nils is thinking of structural flaws of the rovers used during the mission, Masha’s thinking of writing a book about cats on Mars, and Camilla just can’t wait to get back home. After a few hours of ascending and aligning orbits, they finally get to the Red Horizon. Everybody’s very happy to see Andreas again. On the next rotation around the orbit John launches the engines. Thus, the 6 month journey begins once more, with the only difference being that the crew is returning home.



Chapter 8: Arrival on Earth

After half a year Red Horizon docks with the ISS. The flight back went flawlessly, without any technical issues. The RH crew is congratulated for the successful mission by the ISS crew. Now, it's time for descent to Earth. Although the astronauts have to endure the Earth's gravity, which is devastating after spending so much time in the weightlessness, they are happy to be back home. John and Camilla are finally reunited with their families, and Masha's finally together with her cat.

The successful outcome of the Red Horizon has had a big influence on world governments. They now realize that the space industry deserves to be invested into. Half a year after the end of the mission, NASA and ESA have already started preparations for the Red Horizon 2.

And what about our crew? John and Andreas are working with the space agencies, training and sharing their knowledge with future astronauts. Nils is engineering new technology to be utilized on upcoming missions to Mars. Camilla is designing a clothing collection inspired by her experience on Mars. Masha's writing a book about a proposed mission involving sending cats to Mars, based on her personal experience. She's also dreaming of returning to Mars in the future but with her cat this time.

And who knows? Maybe her dream just might come true one day.



The End