



## Mars Case Study

### *Stars in the Sky*

<http://library.thinkquest.org/C003763/index.php?page=mars07>

#### **Stars in the Sky**

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It seemed as if a star was descending from space, burning in the red sky. Firestar. That was what they used to call Mars, firestar. She could make out some of the details on the lander - its conical shape topping the impossibly bright star. As it rotated, Sarah saw sunlight reflected off its battered surface. It would probably be the last time she'd ever see something like this.

Sarah remembered herself, decades ago, standing in front of a group of students. She'd stayed on for at least twenty minutes after her talk had finished to take questions. A bad idea - she ended up arguing, shouting and finally pleading. It always happened like this, always.

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"Don't you understand? You're intelligent people. You can see that while our resources are dwindling, the population is exploding. And it's not getting any better. But it's not just that. We, as a race, don't have a cause. We don't have anything to work towards. If we don't go into space, if we don't go to Mars, it's the end of history. We'll be stuck on a planet that we've explored, colonised, mined and ruined. A self-made prison."

She looked around the hall for acknowledgement. Several hundred sceptical looks greeted her, so she went on.

"Let me put it another way. Wars are escalating in the Balkans and the Middle East. Practically every other country has nuclear weapons. Famine is spreading, and the gap between the east and west

is widening, except now the east has nukes. We have to get away and expand - because it would only take one mistake to set off another world war, and this time the human race wouldn't survive it, as long as we're all on the same planet." She looked towards the audience imploringly.

One student snorted derisively, and slowly stood up, smirking. She felt a sinking feeling in her heart. "So, quite literally, if we don't go to Mars it'll be the end of the world as we know it?" The entire hall burst out into laughter.

Instead of blushing, she clenched her teeth, listening to him with visible anger.

"Why should we pay billions so a bunch of dreamers and lab rats can live on Mars? We've got enough problems here, like you said. We should concentrate on them, not throwing away money into space where it's wasted on pieces of junk like those two Mars probes. I think that'd be a far more direct way of helping Earth, and it's a good enough cause for humanity, not your outdated Apollo dreams." He gained a cheer from the students, as they began to stand up and walk out of the auditorium.

She'd never been a particularly good speaker. Unlike her opponents who argued against her, she found it difficult to articulate her real feelings. Sarah just didn't know how to convince these people what Mars meant to her. To them, it was a red star in the sky, an idle curiosity. Earth was what was real and tangible. To her, it had the potential of revitalising the human race - damnit, it could be a new world. Students just didn't understand. She smiled grimly to herself. "You're a student yourself." But students, children, teenagers, they were the ones who mattered. They were the ones who would make the decisions of the future, and if you got them young, you'd have them for life. At this rate, though, she'd be lucky if she got anyone.



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It was always the same in these talks she gave. Some perfectly reasonable person would stand up, talking down to her as if she was a child, explaining that there was no need to go to Mars, or anywhere in space. They would use her arguments against her, citing the need to fix Earth before even thinking about Mars. Mars was just too expensive, too far away, too irrelevant. What good could a colony on Mars do for Earth? Never mind the fact that it could be done for less than \$10 billion and dropping, they simply refused on principle.

Earth was the be-all and end-all for them; it was as if the other planets and stars were in a galaxy far, far away, not less than a year's travel away. What made it worse was that they thought they knew that they were right, and she was wrong.

Mars would be an investment, she would say, a long term investment. It would cost more than the first American colonies did, but that investment was a paltry sum compared to the potential Mars possessed. As soon as the Mars colony became self-sufficient, it'd start paying us back, she'd explain, and maybe even before then. But by then, people had stopped listening.

Out of the hundreds who attended each talk, there might be a few who would come up to speak to her afterwards. They believed in the dream of going into space, of starting fresh. Bright-eyed, they'd ask what they could do to help. She shook her head. A human mission to Mars would never take off without the support of the people, never mind a colony. How could they achieve anything with only a few space-crazed enthusiasts?

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The lander was a few hundred metres above the Martian surface. It hovered, and slowly translated towards the landing pad. She shielded her eyes from the glare with her hand.

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Fifteen years after that talk, she squinted into the blue sky with a million others, following another bright star, but this one was rising, not falling. She smiled. They might have been space-crazed enthusiasts, but they managed to do this.

Sarah had never been able to win the support of the public for a human Mars mission. Instead, all she had was a hard core of supporters. They numbered only a few hundred thousand, but incredibly - impossibly - they had scrounged together enough money for this rocket, and the rest of the Mars project. True, there were more than a few millionaires among their ranks, and even a billionaire, but still, it was an impressive achievement.

It could have been different, she reminded herself. There could have been millions, billions who could have believed that we could go to the stars. Not as some useless jaunt into space, but to help everyone, to help Earth. With Earth behind us, we could have had a colony up there five years ago.

The Ares heavy lift booster, the Beagle, was a mongrel of spacecraft parts, hastily assembled together with new carbon nanotube struts and, in parts, she suspected, duct tape. The two ageing Space Shuttle rockets, remnants of an earlier era, looked remarkably in place on the booster. Which wasn't a good thing. "SSTO is what it ain't," she thought sarcastically. Yet despite her doubts, the star soared perfectly upwards, eventually fading into space. She turned away from the celebrations, troubled. There had to be something she could do to make Earth listen.

Instead of the massive public approval they had expected following the launch of the Beagle, they faced the complete opposite. The media looked on scornfully at the 'Martians' throwing their money away, and like sheep, their readers and viewers believed their every word.



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As a result, across the world government-funded space projects suffered crippling budget cuts. To the man on the street, the Mars mission was emblematic of the entire space program - a pointless waste of money that did them no good. Although they probably wouldn't use the word 'emblematic,' after all, it did have four syllables, she thought bitterly.

People didn't want to believe in space exploration any more. No matter how cheap it became, it was always cost too much. There was always something else funds could be diverted to, some more deserving cause. So the money from NASA, from the ESA, from Japan, from China was all drained away into 'voter-friendly' projects, like crime-prevention, education, helping the poor. But if you asked anyone if they thought crime as any less, or there were fewer homeless, they would have laughed at you. They would laugh even harder if you asked whether they thought the money would be better spent on Mars.

Even so, the first human on Mars attracted a fair bit of public attention. Some more people became interested in a Martian colony, but it was too little, too late. The follow-up missions continued, fuelled by the constant flow of money from her supporters. Over the years, launch vehicles became cheaper, manufacturing techniques streamlined. Every two years, another habitat was added on Mars, and another four people stepped out onto the surface. Another ten years later, they upped the schedule. More, larger, better habitats were launched towards Mars, more people each time. Soon, they began to stay on Mars, connecting the habitats, beginning the frameworks of a base. This freed up their ERVs, their Earth Return Vehicles, so even more people came. Thirty years after the first launch, over two hundred people were living on Mars, completely self sufficient.

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Sarah turned away from the lander, looking down on the base. By popular approval, it had been named Eos, the goddess of dawn. It was quite impressive, the bulk being made up of interconnected habitats of different shapes and sizes. She could even see the first ever habitat on the edge of the base. Colonists had started to produce geodesic domes using metals from the regolith, and plans for a second base, Asimov Point, were underway.

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Sarah had been among the last to leave Earth. An old woman now, Sarah climbed stiffly into the modified booster, her joints complaining. Age hadn't deadened her emotions though. She was still furious about her failure to convince the world to act with a little responsibility and foresight. Now, a starving world fought over land and resources. The first punch had been thrown by one of the new eastern countries, with a small cruise missile, which had 'accidentally' hit a highly populated civilian area in America. Sarah tried to tell herself that she, one person, could hardly take the whole blame for the downfall of the entire world, but she never stopped wondering whether things could have been better if she'd done things differently, in the beginning.

Maybe if she'd approached the space agencies earlier. Maybe if she'd canvassed the media more. Maybe if the public had approved a human Mars mission, and NASA and ESA had thrown their weight behind it, maybe they could have shown that there was more to life than just Earth. A whole load of hypothetical situations that were no use to anyone except for an old woman feeling sorry for herself.

There was more land, more resources in the solar system than could ever be wanted. They could have had thousands living on Mars, tens of thousands.



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People could have had hope. Maybe. The booster climbed ungainly into space, a star of fire, watched by a warring world

This wasn't her world anymore, the colonists were a new generation, with new ideas.

They didn't need Earth any more, and they didn't need her. She felt old, useless, and while they didn't say so, she knew she was quite literally a waste of space.

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Sarah watched the last lander from Earth touch down. No one else was there with her, they were all busy working on Project Prometheus. She felt she had a moral responsibility to see out this last landing - she'd been with the Mars project from the beginning - she would see it end.

As she removed her pressuresuit helmet and heard the air whistle out, Sarah's last fleeting thought was one of regret, that she would never see the world she'd dreamt of for all her life.

Earth had gone to hell... the first nuclear missile had been fired two months ago. It was hard to tell exactly what was going on, but one thing was for sure: people dying for shit, for nothing. Millions dead, for a few patches of land and some barrels of oil, when there were limitless amounts of both in space. They just didn't believe in space. They viewed it as some mythical, never-never land.

That belief would have been more tolerable to Sarah if they hadn't start killing each other as a result.

While she was watching the hatch of the lander open, and the crew climb out, something died inside her. Most likely, these were the last humans born on Earth to ever set foot on Mars. "I loved Earth," she thought, "and going to Mars would have only helped it. It didn't have to be like this."

The others didn't understand why she cared so much for Earth. They scorned the warring people, and anyway, what did it matter to them? Earth was a memory, a blue star in the sky, nothing more. Why should they care, for all Earth had done for them. They were creating a new world, here on Mars. Project Prometheus - the terraforming program - had just begun. Before long life would start growing on the surface.