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One-way ticket to Mars

By Marc Kaufman, Tuesday, May 24,
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How would you like to take a trip to Mars? That's right, only to Mars. There would be no coming back.

You don't have to make up your mind right now, because there are no missions planned or even on the horizon. But when the idea of a one-way ticket to Mars was first broached last year in a cosmology journal, the response was rather overwhelming: More than 1,000 people said they'd be eager to go.

It was not proposed as a suicide mission, although the chances of a long life on Mars probably aren't great. Rather, it was pitched as what would potentially be the greatest scientific adventure and exploration of all time.

The idea was floated by two scientists, Paul Davies of Arizona State University and Dirk Schulze-Makuch of the University of Washington, in an article in the *Journal of Cosmology*. One of the journal's editors, Ron Becker, said that as the hundreds of e-mails flowed in from prospective Mars explorers, the initial reaction of both researchers and journal staff was to dismiss them as not serious. But that changed as it became apparent that many of the correspondents were quite sincere. "Our initial goal was to find a way to develop a human mission to Mars that could actually take place, that wouldn't cost so much that it would be impossible to pull off," Davies said. "And the one-way trip, as we costed it out, would be about one-quarter the price of a there-and-back mission."

"But the response told us the spirit of exploration remains alive around the globe and that some people understand that the science involved would be extraordinary," he said. "Just like with earlier explorers, they are prepared to set out knowing they won't come back, but willing to do it because their time on Mars would be so remarkable."

The idea, which is clearly not what NASA managers have in mind for Mars exploration, has now led to the release of "[A One Way Mission to Mars: Colonizing the Red Planet](#)," a compilation of articles from the *Journal of Cosmology*, plus some additions from scientists with the Mars Society and others.

Among the articles in the book are "The Search for Life on Mars," "Medical Care for a Martian Transit Mission and Extended Stay on the Martian Surface" and "Sex on Mars: Pregnancy, Fetal Development and Sex in Outer Space." The authors include dozens of NASA researchers, some former astronauts and some scientists and advocates who have pushed for decades (with no success) for a human mission to Mars.

The whole effort, authors say, is geared to sparking public interest in a human mission to Mars, something long discussed by NASA and others but receding into the distance with diminished NASA budgets expected in the years ahead. With that dynamic in mind, the book's authors say they are looking to the burgeoning private space industry as the ticket to the Red Planet.

Schulze-Makuch said the idea would be to start a colony on Mars, not simply to send astronauts there and abandon them. He imagines them living in the shelter of a lava tube or some habitat they take with

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them, and imagines that a stream of others would follow. Robotic exploration has shown there is substantial water ice below the Martian surface, so many of the ingredients for survival are present.

But enormous challenges are present as well: The temperatures are frigid, the atmosphere is too thin to protect people from deadly radiation, and it consists primarily of carbon dioxide, with little oxygen. Ultimately, Mars colonists would need to develop means for growing their own food in controlled and protected areas.

"Yes, these people will be isolated and, yes, they will probably die sooner than they otherwise would," he said. "But they would have all of society behind them, and their time on Mars would be unlike anything experienced before. Thinking more about it, I'm not surprised so many people came forward to volunteer."

'Why not?'

NASA officials were reluctant to discuss the idea, which goes very much against the grain of the agency's idea of human exploration in space. But in a statement earlier this year, NASA officials responded to the *Journal of Cosmology* articles by saying: "Mars is not the current focus for NASA's human exploration efforts but it is our ultimate goal. Last April, President Obama informed NASA in a speech that the agency would be sending astronauts to an asteroid by 2025. The President also said that he 'believed by the mid-2030s that we could send humans to orbit Mars and safely return them to Earth. And that a Mars landing would soon follow.'

"So the President is not considering one-way trips to Mars and neither is NASA. We want our astronauts to safely return home to Earth."

Elon Musk, founder of the private rocket company SpaceX and a great advocate of Mars exploration, also demurred. He said that a one-way trip is inconsistent with his idea of building a fleet of spaceships that would one day take not a handful but thousands of people to colonize Mars.

But as a thought experiment and a challenge to how human exploration of space is now conducted, the proposal has found some traction. Not necessarily much financial support, but some strong feelings among the public.

The initial volunteers are a broad range of people — old and young, male and female, military and civilians.

Jeff Lane, for instance, is 45 and a police officer in Youngstown, Ohio. He said that his kids would be grown by the time any Mars mission would be ready and that the mission would need some kind of law enforcer on the flight.

"Growing up, I watched the moon shots and shuttle missions and would have loved to have been a part of it. Never came to be, so I thought I would volunteer. Strange for some people to think that way but why not? I'm gonna die, right? So why not die doing something really cool?" he said.

Jessica Sloan of Rosslyn, a 27-year-old business developer for nonprofits, said in an e-mail that she was always fascinated by space and admired "good old-fashioned American frontierism."

"My great-grandfather came to the United States in the cargo hold of a Russian ship and slept in a bathtub in New York City," she said. "He, like so many others before, left his home to start a new life in an unknown land. I'm not saying that I think Mars is the promised land or that I'm fleeing any great adversity. But space really is the 'final frontier' and perhaps humanity's last great adventure."

Paul Gregerson of Clarno, Wis., is a 61-year-old former Marine, now a clergyman in the United Methodist Church. He said that mental health is important in such an endeavor and qualified caregivers would need to come along.

"I feel that spiritual advisers would also be necessary," he said in an e-mail. "That would be where I come in, along with my other background experiences as a combat engineer (I doubt we would need the combat part) and administrator. I am a firm believer in a God that created the universe and all that is in it. So where we go, God is already there, and folks of faith will be going."

The ideal candidate

Given the long lead time for such a mission, Gregerson would no doubt be too advanced in years. But Davies and Schulze-Makuch said that the ideal candidate would not be a young person but rather someone who has had many of the experiences that make up a rich life: marriage, child-rearing, satisfying work, long-term friendships.

The crew would certainly need engineers and a pilot, as well as scientists who could conduct the testing needed to determine if Mars has life. But there would also be room for the kind of eager, disciplined and well-rounded people who don't get selected to be astronauts, Davies and Schulze-Makuch said.

The trip to Mars would be inherently dangerous, as are many sports, journeys and other nonessential endeavors on Earth, the authors point out. They acknowledge as well that while setting up one small Mars colony would be an enormous and costly undertaking, following up with more would be even more of a stretch.

Yet the authors say it is both important for the long-term survival of humanity to do it and it is in keeping with the most basic nature of human beings.

"The culture has become risk-averse, and creativity and the pioneering spirit get lost in that kind of atmosphere," Davies said. "This is an opportunity to do something remarkable for science, and we've seen many, many people are willing to take up the challenge."

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