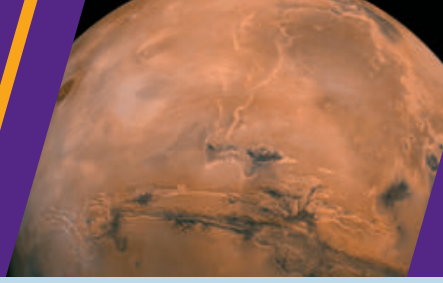
SPACE ACE



DESTINATION: MARS

Our universe is full of mysteries, and some of the most mind-boggling are in space. In this issue, George Hatcher from the National Aeronautics and Space Administration (NASA) answers our questions about his ambition to live on Mars. What sparks your curiosity about space? Send your questions to brilliant@usbnc.org (with your name and age), and our friends at NASA will answer them.

Q: What inspired you to want to go to Mars?

A: I remember being captivated by space exploration when I was very young . . . My parents sent me to space camp when I was in sixth grade . . . and that was when I learned about Mars as the destination for humans in space that made the most sense, after the moon . . . I'm still excited about space exploration. I still think that humans need to get out there.

Q: How would you communicate with Earth?

A: [By using] some frequency of light . . . the same way we send signals between Earth and Mars now . . . I think the average time delay to Mars is around 20 minutes. So you will record a video or an audio message, and once you're finished recording it, you'll send it to Earth. It will take 20 minutes to get there.

Q: Do you want to be the first to set foot on Mars?

A: When I was younger, I wanted to be first . . . Given the fact that I'm a Bahá'í now, and I know that the first crew will be two women and two men . . . it would be important for . . . one of the women to go first. I think it's time for us to demonstrate to all humans the equality of men and women.

Q: What are three things that most people don't know about Mars or about traveling in space?

A: Mars has very ephemeral weather. There are clouds. There are dust storms. There are changing seasons . . . But what I would really want to impress upon people is that the environment on the surface of Mars is effectively a vacuum . . . And it's also incredibly cold.

Q: Tell us about the Mars One mission.

A: Their . . . goal is to start the first permanent human colony on Mars. And they would like to . . . [send] crews of four every two years . . . and slowly build a colony, four people at a time . . . They really want it to be a representative sample of humanity, so male and female, all countries, all backgrounds, all races.

Q: How would you grow food on Mars, and what kinds of food would you eat?

A: A certain percentage of the Martian diet [will] be self-grown vegetables, probably hydroponically, probably with artificial lighting, probably in an inflatable habitat covered with Martian soil to protect from radiation, and to gradually increase that percentage of fresh vegetables and herbs and whatever else [can] be grown economically in the diet of the settlers.

Q: When do you think the mission will be ready to go to Mars?

A: I think . . . they would be shooting for the 2026 departure window at the earliest . . . That would be an arrival in . . . 2027 . . . My eldest child will be 14 in 2026, and our second child will be 12. So if I am not a member of the first four-person crew, I will not be heartbroken.

Look for our full interview with George at www.brilliantstarmagazine.org (coming soon).


Mars One Transit Vessel (MTV)


Mars One lander

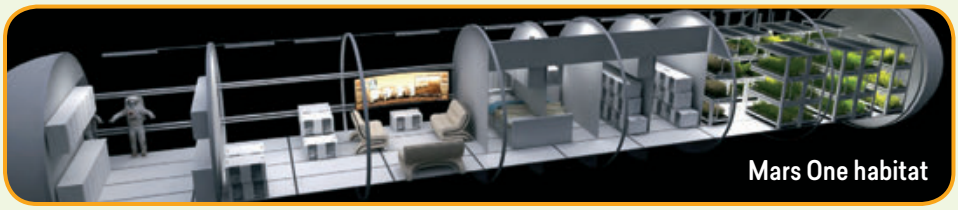

Mars One settlement

Q: What are the most important skills you would need?

A: The most important skill for a Mars One mission . . . would be interpersonal relationships . . . the manner in which you conduct yourself with your fellow human beings . . . Not only are you in a confined space for the rest of your life, but your lives are in constant danger. So resolving conflict is probably the single most important skill for a current settler of Mars.

Q: What do you think you'd miss most on Earth?

A: Everything . . . Thinking about what it would be like to live on an airless frozen block, you know, tens of millions of miles away from everything that sustains life as we know it for the rest of your life, *really* puts you in a mood for appreciating everything that this planet has to offer . . . What would you *not* miss?


Mars One habitat

Q: How did you like *The Martian*? Did the movie portray a realistic idea of what it would be like to be on Mars?

A: I loved *The Martian* . . . [It] is without question the most realistic depiction of human exploration of Mars to date . . . It will likely be years before another film portrays humans on Mars so authentically. When they do, they would do well to show just how pitifully weak Martian dust storms are in the barely-there atmosphere of Mars. They will have to invoke CGI [computer-generated imagery] or use parabolic flights [with periods of weightlessness] to properly showcase human locomotion in [.38 of Earth's] gravity. And the easiest improvement will be to show Martian sunsets as they truly are: blue, not orange. But it will be a tall order to do all that with a plot that is simultaneously as accurate and plausible as that of *The Martian*.

Q: In *The Martian*, the characters face one disaster after another. How do you personally handle problems under pressure?

A: I tend to function best under pressure . . . When it comes to emergency situations, you train as much as you can . . . and you understand your systems that keep you alive like the back of your hand . . .

GEORGE HATCHER is an avionics engineer at the Kennedy Space Center in Florida, U.S. He works on electrical systems of uncrewed rockets. He also studies planetary science at the University of Central Florida. Working for NASA is a dream come true for George. He's aspired to be an astronaut since he was three. He's one of 100 finalists in the Mars One Project, which aims to create a human settlement on Mars.

Q: What else do you want to tell our readers?

A: Don't give too much credence to the naysayers, because there are going to be a lot of people out there that, for whatever reason, are going to be discouraging. So whatever it is that you are pursuing, whatever it is that you feel like is your calling, do not be discouraged.

Images: Renderings by Bryan Versteeg and Mars One, Mars by NASA