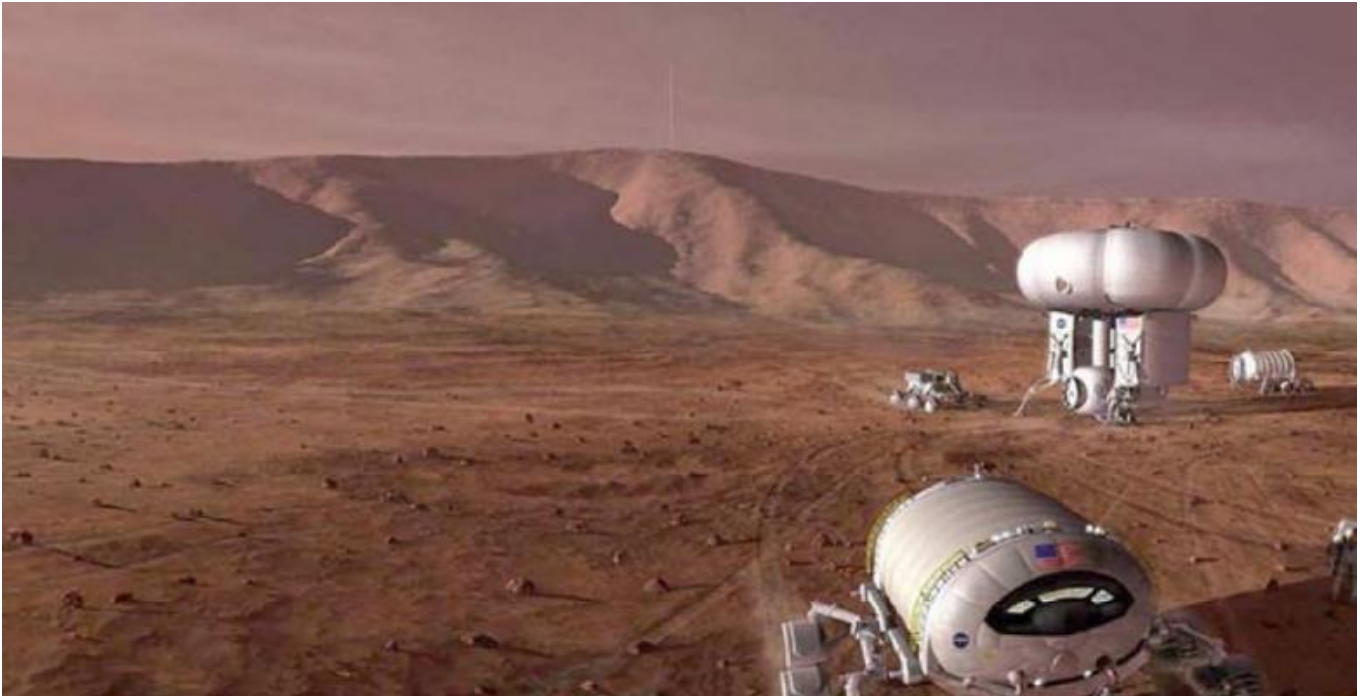

Tired Of Life On Earth? Maybe You Can Be One Of The First Humans To Go To Mars

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It would take six to eight months' travel by rocket, if the planet is lined up with Earth in the right way, but if you don't mind the wait and the risks, you could be among the first humans to set foot on the Red Planet.

The National Aeronautics and Space Administration (NASA) wants to send humans to Mars by the 2030s in an effort to determine whether there is, or was, life on the planet.

"The kids who are reading KidsPost," says Ellen Stofan, chief scientist at NASA, "are the ones we'll be sending to Mars."

Stofan, 55, is one of the principal architects of that mission, which she'll discuss April 17 at the USA Science & Engineering Festival in Washington.

She advises the head of NASA, former astronaut Charles Bolden, on all of the agency's scientific projects. On any given day, she might be meeting with researchers in her Washington office to discuss experiments on the International Space Station, where astronauts are studying the effects of spaceflight on human health. Or she might be planning a new study of planets outside of our solar system.

Or she might be working on her biggest project, that trip to Mars.

"It's part of our nature to explore," says Stofan, "but for me, it's about the science."

Her father, a NASA scientist, took her to her first rocket launch when she was 4. The rocket blew up on the launchpad (no one was inside), but Stofan was hooked. She studied planetary geology - that's rocks from other planets, and how those planets change over time - in college and graduate school and joined NASA as a researcher.

She was named chief scientist in 2013 and is doing her best to keep the agency on track for its 2030s Mars goal. NASA has two rovers on the planet, Curiosity and Opportunity, and a third is set to arrive around 2022. The rovers are searching for signs of life, but "it's going to take geologists on Mars cracking open rocks to find evidence of life," Stofan says.

What might they find? The surface of Mars was once very watery, and it seems likely that microbes - tiny organisms such as bacteria - were common and are preserved as fossils.

"On Earth, we find bacteria underground in mines and even in nuclear waste. Life has adapted to incredibly harsh conditions. Is that true for Mars also?" she wonders.

A human mission to Mars will face many challenges, especially in landing a craft on the surface, Stofan says. If astronauts are to spend a lot of time on the planet, they'll need to find a way to grow food and will probably need to go underground to find protection from the high-energy particles that penetrate Mars's thin atmosphere.

"We're going to need a team to go to Mars," Stofan says, "people with a huge range of backgrounds." That means scientists of all kinds: engineers and computer programmers, geologists and chemists, and even botanists (plant scientists).

It also means involving more women and people of color. "We're never going to solve the tough challenges that we have," she says, "if we're not tapping into all of our populations."
