

"Astronauts" spend year on "Mars"

By Washington Post, adapted by Newsela staff

09.05.16

G9

A serious case of cabin fever ended on Sunday for a team of NASA astronauts who spent a year pretending to live on Mars. After twelve months inside a small white dome, the team finally stumbled out into the Hawaiian sun.

HI-SEAS IV (Hawaii Space Exploration Analog and Simulation) was the second-longest simulated trip of its kind. It was designed to help NASA researchers study the challenges that might be faced by astronauts during a real Mars mission.

The journey to Mars is long; it takes about six months each way. Astronauts will have to hunker down on the Red Planet for nearly two years while they wait for the planets to realign for a relatively speedy trip home. The longest human spaceflight endeavors so far have simply been stays on the International Space Station or the Soviet space station Mir, so NASA has a lot of things to figure out before sending its astronauts for an extended stay on Mars.

Hawaiian Volcano Serves As Mars

That's where Mauna Loa comes in. This barren Hawaiian volcano is as similar to Martian terrain as Earth gets, and NASA's 36-foot-wide dome is a good approximation of the kind of structure it could set up on Mars. Previous simulations on Mauna Loa have maxed out at eight months long. One Russian simulation in another location kept astronauts in isolation for a year and a half, but they were essentially trapped inside a "spacecraft" with no way out. They didn't venture onto the "alien" surface, as the astronauts in the Hawaiian experiment did.

Astronauts who journey to Mars will have to deal with:

That's not to say that isolation alone isn't worthy of study. In addition to having to put up with their crewmates for about three years, astronauts who journey to Mars will have to deal with the psychological effects of spaceflight, which entails darkness, stale air, bad food and cramped quarters. This will be followed immediately by the psychological effects of landing on an alien

world. We don't yet know what these effects will be.

"You Can Never Escape Them"

"It is kind of like having roommates that just are always there and you can never escape them," mission commander and soil expert Carmel Johnston told the BBC. "So I'm sure some people can imagine what that is like, and if you can't then just imagine never being able to get away from anybody," she said.

Sheyna Gifford, a medical doctor and writer, kept an online journal over the year to record her experience. In a post that she wrote just before the experiment ended on Sunday, she reflected on the effects of the isolation:

"How long has it been? A year and a day. Once again, I'll be able to walk down the street. To watch a cat curl up in a window; see a dog lying in the sun with such stillness that you wonder if he's still alive - and then he bolts upright at the sound of a passing car or twitches an ear, and you laugh at yourself for wondering. I'll be able to see the stars without cleaning my faceplate twice (once inside and once out). I'll be able to answer the phone. ... It's been 366 days since I answered a phone."

They Had To Use Buckets To Shower

It's hard to imagine how much more pronounced those feelings will be when astronauts experience a full-length mission, let alone one that's actually in space.

But HI-SEAS did more than just put a bunch of people in a box for a year. Gifford and Johnston (along with four others) had to tackle unforeseen "emergencies" and equipment malfunctions without the ability to get physical help from people on the outside. In one incident, they had to spend two weeks showering with buckets while they tried to figure out what had gone wrong with the dome's plumbing system.

Crew Faced Many Challenges

Meanwhile, the group practiced pretend trips out onto the Martian surface while wearing spacesuits, and lived only on food that could be carried to Mars and stored for years at a time.

Despite these challenges, it certainly sounds like boredom was the biggest concern during the length of the mission - but it wasn't all bad.

"I'm a military brat, I grew up with my dad in the Air Force, and where you live becomes home after a while, and I'm going to miss the place," said Andrzej Stewart, one of the astronauts.

What was the very first thing you thought when you read the title of this article?

Using evidence from the text, explain why NASA used Mauna Loa, Hawaii for its Mars simulation:

Do you think NASA will ever send astronauts to Mars? Explain your answer:

List two questions you have after reading this article: