



Future of Space Exploration Could See Humans on Mars, Alien Planets

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BACKGROUND

In 1969, Neil Armstrong became the first astronaut to walk on Earth's moon. The next big step in space exploration is to put a person on another planet, such as Mars. In this article, former astronaut Mae Jemison and NASA engineer Adam Steltzner discuss the future of space exploration and what is needed to make it possible.

SCAN FOR
MULTIMEDIA



"An inclusive journey"

- M**ars may be one of the closest planets humans want to **colonize**, but it certainly isn't the only one. Mae Jemison described the 100-Year Starship project to an interested audience.
- Funded by NASA's Ames Research Center and the Defense Advanced Research Projects Agency (DARPA), the 100-Year Starship project aims to develop the tools and technology necessary to build and fly a spaceship to another **planetary** system within the next 100 years. The program isn't necessarily concerned with building the ship itself as much as it seeks to foster innovation and enthusiasm for **interstellar** travel.
- "The reason we're not on the moon has nothing to do with technology and everything to do with public will and commitment," Jemison said.
- As a result, the project, which Jemison heads, seeks to increase public enthusiasm for space as well. The 100-Year Starship

NOTES

Mark context clues or indicate another strategy you used that helped you determine meaning.

colonize (KOL uh nyz) *v.*

MEANING:

planetary (PLAN uh tehr ee) *adj.*

MEANING:

interstellar (ihn tuhr STEHL uh) *adj.*

MEANING:

program not only includes engineers and astrophysicists,¹ but also artists and science fiction writers.

5 “It has to be an inclusive journey,” she said.

6 Though many people object to funding the space program when there are humanitarian needs that have to be met on Earth, Jemison points out that such exploration often leads to innovation and unexpected technology that make an impact on Earth-based programs.

7 “I believe that pursuing an extraordinary tomorrow will create a better world today,” she said.

8 Traveling to another star takes far more time than just developing the necessary technology. Jemison compares the distance to Proxima Centauri, the nearest star, to that between New York City and Los Angeles. If NASA’s *Voyager 1* spacecraft, which launched in 1977, was en route, it would have traveled only 1 mile in the past four decades.

9 At that rate, it would take 70,000 years to reach Proxima Centauri.

10 Speaking to the long time frames of space travel, Steltzner said, “I can’t really think of a country that’s been stable for 1,000 years.”

11 Without the development of a method to warp or shrink space-time, or a new propulsion system²—both ideas that the 100-Year Starship program is exploring—humanity would need to find a way to overcome some of its instability problems.

12 To get there, Jemison emphasized that everyone must be involved in the process.

13 “The public did not leave space,” she said while discussing the reduced enthusiasm. “The public was left out of space.”

1. **astrophysicists** scientists who study how objects in space behave.

2. **propulsion system** parts of a rocket that push it through air and space.

MEDIA CONNECTION



Starship

Discuss It What skills and talents would benefit the space program?

Write your response before sharing your ideas.