

7 New Questions on the Future of Mars and Private Space for Buzz Aldrin

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(Photograph by Chris Buck/Corbis Outline)

NASA's *Apollo 11* mission is nearing its 40th anniversary, but former astronaut Buzz Aldrin has made a second career of keeping his eyes on the future. Whether he's charting a mission to Mars or getting a first look at the newest spacecraft from private industry, Aldrin isn't afraid to go against the grain. On tour for the new 3D movie *Fly Me to the Moon*, Aldrin (a member of PM's editorial board of advisers) recently stopped by the offices of *Popular Mechanics* to meet with editors and executives—and to take a moment to talk about life on Mars, lessons from the Russian and Chinese space programs and a lottery for space tourism. —*Jennifer Bogo*

Do you think the news of water ice on Mars will light a fire under NASA?

If it does, will it be lasting? We're living in a world of very rapidly changing, what-have-you-done-for-me-lately kind of concepts. It'll maintain support for some planned missions that are already in mind, leaning toward Mars Sample Return. If we are able to analyze the melt from the ice and find some other indications in that water, that would give rise to maybe a little bit more enthusiasm.

You've been critical of NASA's Constellation program, which will replace the space shuttle. Why?

What we're doing now is staying the course. Can we do more than that? Yeah, there may be some things that can improve a shortcoming that has been glaring ever since we stopped flying Apollo, which was that we were facing a gap—almost as soon as we started to design the shuttle, we knew it wasn't going to be ready. Do we want to fill the gap now by sending astronauts up in Soyuz to our \$100 billion space station? How many Americans realize how much of a setback that is? Not that many yet, but they will pretty soon. By that time it's too late to do very much about it.

How do you see the role of the private sector evolving?

The U.S. has an opportunity to develop a spacecraft in this country that's highly desirable for the future and for marketing to the European Space Agency. But if the only thing the U.S. pursues is a capsule that lands in the ocean, the Europeans will go buy Russian designs. They're clearly very reliable and they can be stretched. Or the Russians may approve a cargo return version of the cargo supply, called the *Jules Verne*, that just went up to the space station successfully. If they can bring back cargo, they can bring back people—but that won't be available until 2017. Certainly they can do better by working with us.

How do we need to approach a Mars mission to make it work?

We really need to understand the human purpose there. It shouldn't be one-two-three missions, the way we did with Apollo. I think the reason to go to Mars is to establish a permanent colony. If we're not willing to do that then we need to defer—which I don't think is acceptable—and do things with robots until we are ready to send people there and not bring them back right away. The more you think about that, the more economical, the more psychological, the more purposeful the whole endeavor becomes. You're there to establish a foothold.

What do you think of making the *Apollo 11* site off-limits to future lunar travelers?

We're always going to have concerns about whether we regulate things by government edict, by law, or by common decency. I don't want to be the guy saying, "No, you can't do that." There's not going to be a shortage of people who will. But I mean, how many times do we need to go there to look at it? The Japanese have a high-definition camera doing great things. What else do we need to keep track of the pace of deterioration?

Do we have a space race on our hands now?

The finish lines are entirely different. All China has to do is take a Shenzhou and join it up with a Russian propulsion stage and go around the moon and come back. Our purpose is not just to go around the moon. We need to establish a coherent, deliberate program that prepares for commercial use of lunar resources and permanence on Mars. And maybe we learn how to go to

smaller places with resources not on the moon. Asteroids just may have very high value.

How do you hope space travel will play out for regular folks?

I want to increase the opportunity for more people to share in going into orbit. I think I can establish a controlled, legal, highly productive, random selection of small investments by people and a selection process that works like a lottery. The experience that you win is nontransferable. You put a name down when you buy a ticket, and that person has to use it or lose it.