

Why We Shouldn't Go to Mars: Someday people may walk on the planet, but not until it makes technological sense*

"Two centuries ago, Meriwether Lewis and William Clark left St. Louis to explore the new lands acquired in the Louisiana Purchase," George W. Bush said, announcing his desire for a program to send men and women to Mars.¹ "They made that journey in the spirit of discovery... America has ventured forth into space for the same reasons."

Yet there are vital differences between Lewis and Clark's expedition and a Mars mission. First, Lewis and Clark were headed to a place amenable to life; hundreds of thousands of people were already living there. Second, Lewis and Clark were certain to discover places and things of immediate value to the new nation. Third, the Lewis and Clark venture cost next to nothing by today's standards. In 1989 NASA estimated that a people-to-Mars program would cost \$400 billion, which inflates to \$600 billion today. The Hoover Dam cost \$700 million in today's money, meaning that sending people to Mars might cost as much as building about 800 new Hoover Dams. A Mars mission may be the single most expensive non-wartime undertaking in U.S. history.

The thought of travel to Mars is exhilarating. Surely men and women will someday walk upon that planet, and surely they will make wondrous discoveries about geology and the history of the solar system, perhaps even about the very origin of life. Many times I have stared up at Mars in the evening sky—in the mountains, away from cities, you can almost see the red tint—and wondered what is there or was there.

But the fact that a destination is tantalizing does not mean the journey makes sense, even considering the human calling to explore. And Mars as a destination for people makes absolutely no sense with current technology.

Present systems for getting from Earth's surface to low-Earth orbit are so fantastically expensive that merely launching the 1,000 tons or so of spacecraft and equipment a Mars mission would require could be accomplished only by cutting health-care benefits, education spending, or other important programs— or by raising taxes. Absent some remarkable discovery, astronauts, geologists, and biologists once on Mars could do little more than analyze rocks and feel awestruck beholding the sky of another world. Yet rocks can be analyzed by automated probes without risk to human life, and at a tiny fraction of the cost of sending people.

It is interesting to note that when President Bush unveiled his proposal, he listed these recent major achievements of space exploration: pictures of the rings of Saturn and the outer planets, evidence of water on Mars and the moons of Jupiter, discovery of more than 100 planets outside our solar system, and study of the soil of Mars. All these accomplishments came from automated probes or automated space telescopes. Bush's proposal, which calls for "reprogramming" some of NASA's present budget into the Mars effort, might actually lead to a reduction in such unmanned science—the one aspect of space exploration that's working really well.

Rather than spend hundreds of billions of dollars to hurl tons toward Mars using current technology, why not take a decade—or two decades, or however much time is required—researching new launch systems and advanced propulsion? If new launch systems could put weight into orbit affordably, and if advanced propulsion could speed up that long, slow transit to Mars, then the dream of stepping onto the red planet might become reality. Mars will still be there when the technology is ready.

Space exploration proponents deride as lack of vision the mention of technical barriers or the insistence that needs on Earth come first. Not so. The former is rationality, the latter the setting of priorities. If Mars proponents want to raise \$600 billion privately and stage their own expedition, more power to them; many of the great expeditions of the past were privately mounted. If Mars proponents expect taxpayers to foot their bill, then they must make their case against the many other competing needs for money. And against the needs for health care, education, poverty reduction, reinforcement of the military, and reduction of the federal deficit, the case for vast expenditures to go to Mars using current technology is very weak.

The drive to explore is part of what makes us human, and exploration of the past has led to unexpected glories. Dreams must be tempered by realism, however. For the moment, going to Mars is hopelessly unrealistic.

*Easterbrook, Greg. "Why We Shouldn't Go to Mars: Someday people may walk on the planet, but not until it makes technological sense." *Time* 26 Jan. 2004: 51.

¹The Louisiana Purchase was a very large area of land that was bought by the United States from France in 1803. Two men, Lewis and Clark, spent more than two years exploring and mapping the area.