BROOKINGS

COMMENTARY

Musk's Mars idea is not crazy

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- → While Elon Musk has a history of over-promising, his ambition to go to Mars has merit thanks to recent technological advancements.
- → President Trump has spoken about increased space exploration and appears to favor closer ties between the private and public sectors.
- → Reaching Mars would be a scientific breakthrough, but it also has the opportunity to bring humanity together in a shared goal.

Skeptics are deriding Elon Musk's idea ↗ to go to Mars. It admittedly is hard to take him seriously given some of his recent debacles. For example, his Department of Government Efficiency (DOGE) budget and staff cuts have fallen short ↗ of their targets and are unpopular ↗ with the public. Tesla has encountered hard times ↗ with sales and a stock price that have dipped considerably. Several of his SpaceX rockets ↗ have failed to launch or land properly. Last week's fallout with President Trump casts a shadow of uncertainty over his ability to work with the Administration in the future. And the business executive has a persistent habit of over-promising and under-delivering.

Still, his Mars ambitions are not crazy. Consider the following achievements. In part through the pioneering development of reusable rockets, launch costs have fallen dramatically, dropping from an average cost of $50,000 per kilogram for NASA's Space Shuttle to $1,500 per kilogram ↗ for SpaceX's Falcon Heavy rocket. The

financial progress here sharply cuts the costs of space missions and makes more frequent launches and exploration more feasible.

President Donald Trump has talked frequently about Mars, and his former adviser Musk is Earth's most vocal proponent ↗ of Martian launches. When he returned to the Oval Office in 2025, Trump announced America "will pursue [its] manifest destiny ↗ into the stars, launching American astronauts to plant the Stars and Stripes on the planet Mars."

Once we get into space and land on other objects, 3D printing ↗ could make it possible to embed manufacturing systems on space missions far from home, which eases supply issues. Furthermore, scientists have learned how to convert ice into water ↗ that could potentially be used for human consumption as well as hydrogen fuel ↗, which addresses two of the primary barriers to space travel.

Of course, not all Mars exploration problems have been addressed. Space radiation ↗ remains a major health risk as it takes six months to reach the Red Planet and travelers could be exposed to excessive amounts. And as evidenced by the failure ↗ of many countries to successfully land probes and rovers on the planet, Mars landings continue to be challenging. The planet has a different gravity and atmospheric pressure ↗ than Earth, and there are lengthy gaps ↗ in Earth-to-Mars communications, all of which complicate the ability of capsules to land there. Large-scale dust storms ↗ endanger equipment and solar panels, and we have not yet mastered the science of Mars weather forecasting ↗.

For Mars missions to be successful, Musk is going to have to bat nearly one thousand to appease NASA supervisors with memories of the catastrophic 1986 Challenger shuttle explosion, who remain quite averse to failure. Musk's tendency to "fail quickly and fix quickly ↗" runs counter to a space agency that prefers long planning timelines and extensive testing before anything is launched.

The SpaceX Mars challenge will be as cultural as it will be technological in overcoming NASA's interests in reducing risk and completing missions that don't blow up upon launch. It is one thing for satellites to be destroyed through an unsuccessful launch, but it is far more dangerous and politically sensitive when humans are on board.

Whether the United States can maintain its space edge is important both economically and strategically. The space program has spawned many technological innovations ↗ such as GPS and mobile communications that have been commercialized to the rest of the world. Americans should be cognizant of the tremendous success of the Chinese space program ↗ in recent years and the importance of competing effectively with it in the future.

Beyond its scientific and technological payoffs, a successful Mars mission might even have the unexpected benefit of making humans feel better about themselves, getting us to be part of a cause bigger than any one political tribe, and perhaps bringing humanity together in a shared goal. At a time when the globe is sharply divided along many different lines, space exploration has the potential to unite people who are dispirited and at loggerheads in virtually every other dimension. We should all cheer for that objective.

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