Half a century after Apollo, why haven’t we been back to the Moon?



Enlarge / Since Apollo, NASA’s human spaceflight plans for deep space have been all hat and no cattle. Unlike this photo of two cattle in Johnson Space Center’s Rocket Park.

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The 50th anniversary of NASA’s historic landing on the Moon—this Saturday, July 20th—provokes a decidedly bittersweet feeling. Certainly, this marks an appropriate time to pause and celebrate a singular moment in our shared history, the first time humans ever set foot on another world. Neil

Armstrong, Buzz Aldrin, and Michael Collins really did push back the frontier for all of humanity

And yet, for all that this technological and geopolitical tour de force achieved, there has been a decided lack of follow through by the US spaceflight enterprise since Apollo 11. On such an anniversary, this raises uncomfortable questions. Why have we not gone back? Was the Apollo Program really America's high water mark in space? And will we actually return in the next half century?

Why we went

Beginning with Sputnik in 1957 and continuing through the flights of Yuri Gagarin and other cosmonauts, the Soviet Union ticked off an impressive succession of "firsts" in space during the middle of the Cold War. As the United States waged a hearts-and-minds campaign against the Soviets around the world, technological superiority represented a key battlefront.

Newsworthy space achievements offered critical wins for the Russians. As Charles Fishman's entertaining new book *One Giant Leap* notes, Gallup polling in 1960 showed that large majorities of people in countries such as Great Britain, France, West Germany, and India believed the Soviet Union would lead the world in science during the 1960s.

Shortly after becoming president in 1961, John F. Kennedy sought ideas to demonstrate American, rather than Soviet, technological superiority. His first notion did not concern space exploration, rather he wanted to find a means of desalinating sea water to provide a fresh source of drinking water for the developing world. This was deemed not splashy enough.

- President Kennedy delivers his "Decision to Go to the

Moon” speech on May 25, 1961 before Congress.

- The president and first lady watch Alan Shepard’s flight on TV in the White House, on May 5, 1961.
- President John F. Kennedy presents astronaut Alan B. Shepard Jr. with NASA’s Distinguished Service Medal Award in a Rose Garden ceremony on May 8, 1961, at the White House.
- Shepard, again, at the White House ceremony. Vice-President Lyndon B. Johnson and NASA Administrator James E. Webb are in the background.
- President John F. Kennedy (left) visits Mercury’s Flight Control Area a few days after John Glenn’s flight in February 1962. To Kennedy’s right are Glenn and astronaut Alan Shepard.
- John Glenn, standing next to the Friendship 7 capsule in which he made his historic orbital flight, meets with President John F. Kennedy. Mrs. Glenn stands next to her husband.
- President John F. Kennedy, astronaut John Glenn, and General Leighton I. Davis ride together during a parade in Cocoa Beach, Florida, after Glenn’s historic first US orbital spaceflight.
- In this photograph from 1962, President Kennedy attends a briefing given by Major Rocco Petrone during a tour of Blockhouse 34 at the Cape Canaveral Missile Test Annex. Also in attendance are Vice-President Lyndon Johnson and Secretary of Defense Robert McNamara.
- This 1961 photo shows JPL Director Dr. William H. Pickering, (center) presenting a Mariner spacecraft model to President Kennedy, (right). NASA Administrator James Webb is directly behind the Mariner model. Mariner 2 launched on August 27, 1962.
- President Kennedy and Wernher von Braun walk through facilities at Marshall Space Flight Center in 1962.
- Dr. Wernher Von Braun explains the Saturn system to President Kennedy at Complex 37 while the president tours the Cape Canaveral Missile Test Annex on November

16, 1963.

- President John F. Kennedy, right, gets an explanation of the Saturn V launch system from Dr. Wernher von Braun, center, at Cape Canaveral in November 1963.
- President Kennedy visits The Manned Spacecraft Center in Houston in 1962.
- During his 1962 speech at Rice University, Kennedy declared: “Many years ago the great British explorer George Mallory, who was to die on Mount Everest, was asked why did he want to climb it. He said, ‘Because it is there.'”

Eventually, Kennedy was persuaded that America would have to go tit-for-tat with the Soviets in space. Because the Russian space program had flown so far ahead of NASA, Kennedy had to choose a goal far enough into the future that the United States would have a chance to catch up—and this became the genesis of the audacious Moon landing program.

Before his assassination, Kennedy had already begun to rethink the America-first nature of the space program. After the Cuba missile crisis, he envisioned space as a potential uniter of the two superpowers, and in 1963 he proposed a joint mission to the Moon between NASA and the Soviet Union. However, just six days after his death that November, new president Lyndon B. Johnson announced in a nationwide television address that he would rename NASA’s Florida launch site in Kennedy’s honor. The program soon became entrenched as a way to honor the slain leader.

Thus, the Apollo Program was born out of a desire to strengthen the geopolitical standing of the United States during the Cold War, and it was sustained in the memory of its author’s untimely death.

Why we failed to return

Whenever the White House directs NASA on a program to send humans back to the Moon, or Mars, or elsewhere, one of the first things the agency does is scramble together advisory panels to provide messaging advice. How, best, can the need for such exploration be explained to the public? How can NASA justify costs in the tens or hundreds of billions of dollars?

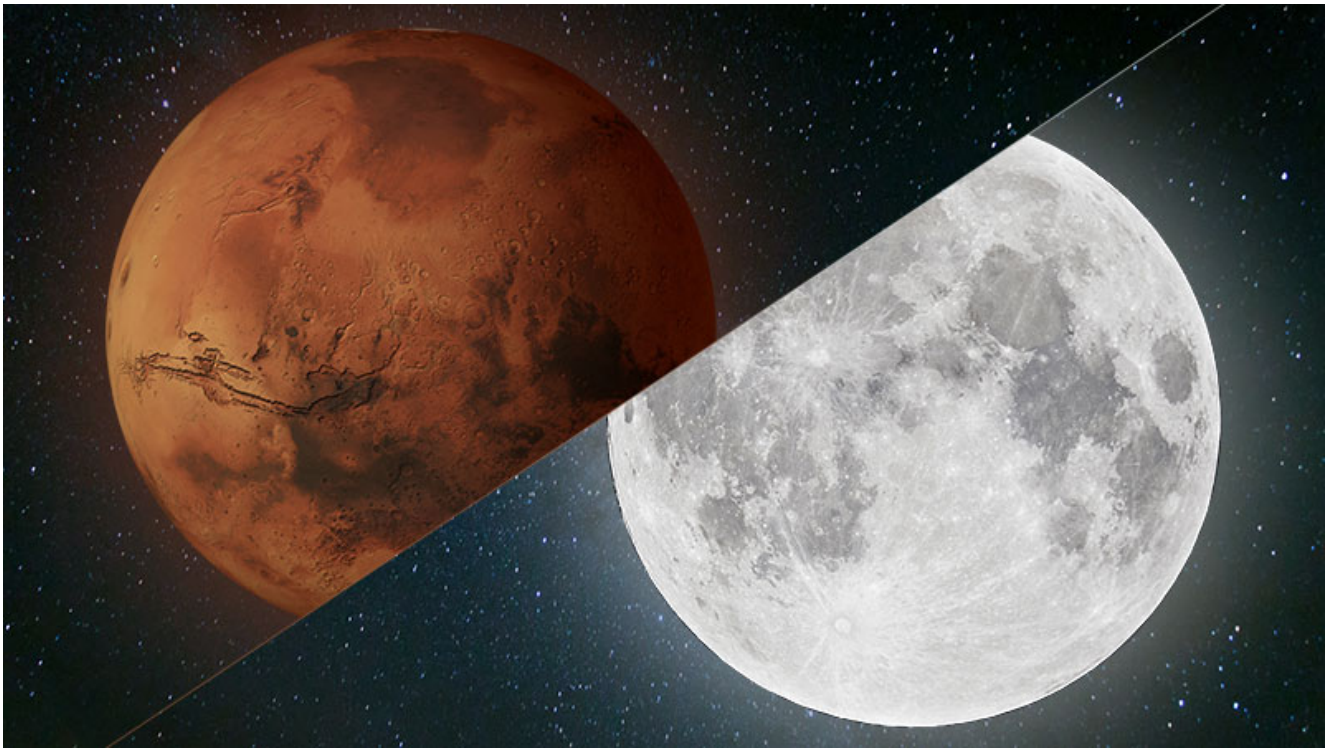
There is little economic justification. By going to Mars, NASA will not generate new wealth for the United States. And while humans in space can explore with more dexterity than robots, that hardly justifies a hundred-fold cost increase or the ultra-high safety risks of sending people instead of machines to explore distant worlds. This leaves NASA with fuzzy explanations, often along the lines of *it is human nature to explore and expand our horizons*.

The American public has been unmoved by such appeals. A recent poll found that only about one in four Americans believes sending humans to the Moon or Mars is “very” or “extremely” important, and this poll is consistent with other surveys of public opinion since the end of the Apollo program. Large majorities of Americans say the space program should mostly focus on protecting Earth from asteroid strikes, studying this planet, and the robotic exploration of other worlds.

The hard reality is that, since the Cold War, the human exploration of deep space has not been part of the strategic national interest. NASA had already sent humans to the Moon, and the United States was universally viewed as the global science superpower. How would landing more men and women on the Moon change that?

Unfortunately, difficult though it was to reach, the Moon was low-hanging fruit. There isn’t anywhere else for humans to reasonably go in deep space that could make a similar statement. The engineering challenge of mounting a human

mission to Mars—complete with pre-supplying the planet, surviving the radiation environment, providing surface power, launching from the Martian surface, and safely returning to Earth—represents an order of magnitude greater challenge. As NASA astronaut Don Pettit says, if the toilet breaks on the International Space Station, NASA can send a replacement up. If a toilet breaks on the way to Mars, the crew dies.



Mars or the Moon? It’s a debate that has bedeviled NASA for decades.

In contemplating a deep space exploration program, NASA has been stuck between Scylla and Charybdis. A choice to return to the Moon would be met by a “been there, done that” attitude from most Americans, whereas a decision to embark upon a multi-decade, enormously expensive program to send humans to Mars would be met with a “just send the robots” response. So for the last 30 years, presidential administrations have bounced between the Moon and Mars for NASA’s human exploration program.

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