

Successful launch of Artemis I: In the footsteps of Apollo, but no further

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The Artemis I mission launched from the Kennedy Space Center on Wednesday, November 16 at 1:47 a.m. Eastern Time, marking the first successful test of NASA's Space Launch System. The mission's goal is to send the main payload, an uncrewed Orion spacecraft, into orbit around the Moon and then safely return to Earth's surface. The mission is slated to last for 26 days and is serving as a test flight for future crewed missions that will possibly once again land humans on the surface of the Moon.

There has been a great deal of official fanfare surrounding the launch promoting various reactionary sentiments. Vice President Kamala Harris voiced American nationalism, asserting "America is charting a path back to the Moon." President Biden placed identity politics front and center, declaring, "This ship will enable the first woman and the first person of color to set foot on the lunar surface." And NASA Administrator Bill Nelson muddled science and religion, claiming that Artemis will "explore the heavens."

Above all, there has been an attempt to equate Artemis to the Apollo missions. The *New York Times*, for example, wrote that the launch was "evoking the bygone Apollo era." The *Washington Post* claimed that the launch was a "major milestone" for NASA and appropriated the comment of Apollo astronaut Eugene Cernan, who said as he left the lunar surface near the end of Apollo 17's mission in 1972, "we shall return."

From a scientific standpoint, Artemis is at best retracing Apollo, not going beyond it. While the Space Launch System launches with more initial thrust than any current rocket system, and second only to the 1980s Russian Energia rocket, it can carry only two-thirds of the payload capacity of the Saturn V, which was used for nine crewed flights to orbit and land on the Moon, and to launch the space station Skylab.

As a result, while the Saturn V was able to lift its

payload to the Moon and enter orbit in just a few days. In contrast, the SLS only has enough thrust to just barely get the Orion spacecraft to the point where the Moon's gravity is stronger than Earth's, at which point the Moon's gravity is used to pull the spacecraft into orbit. An astronomer who spoke to the WSWs said, "It's like coasting to the top of a hill with barely any extra to get over it, then coasting down slightly into the hollow beyond."

The result is that while the Apollo missions reached the Moon in two days, it will take the Orion six days to fly by the Moon and another four to actually enter orbit. And while there is certainly a scientific argument for lowering the energy requirement to enter lunar orbit, the reality is that the SLS is the cheapest rocket that NASA was able to produce to return to the Moon, not necessarily the most effective one.

Of course, certain advancements have been made. The Orion spacecraft is powered by solar panels instead of batteries, so missions can extend theoretically for months. It is also much larger than the command and service modules of the Apollo era, allowing six astronauts to travel comfortably aboard instead of three cramped together. And several modern advances in computing have been incorporated to make the spacecraft overall more capable of extended spaceflight.

Overall, however, Artemis is largely a rehash of Apollo. It is launched using what is essentially a smaller Saturn V with solid rocket boosters attached, along with re-used main engines from decommissioned space shuttles to further cut development costs. None of the myriad ideas to take spaceflight beyond 1960s rocketry that were developed over many decades have been considered, much less used, nor is there any significant funding for moving past what is ultimately a very expensive and inefficient endeavor.

There are, moreover, geostrategic aspects of Artemis

that are essentially the same as those of Apollo. It should not be forgotten that there might not have been a US space program if the Soviet Union had not launched Sputnik in 1957, forcing President Eisenhower to respond with the launch of Explorer 1 three months later. And President Kennedy only announced a manned mission to the Moon after a series of further successes and firsts by the USSR. There was a very real need to ensure that the image of American capitalism was not undermined by the ongoing triumphs of the workers state, degenerated as it was, that emerged from the 1917 October Revolution.

Today, the US return to space is also driven by geopolitical conflict, this time in response to efforts by China to develop its own space exploration program, even as the American ruling elite tries to maintain its hegemonic world position. There have been attempts since the 1990s to prevent technical information related to space flight from reaching either the Chinese government or Chinese corporations. The Obama administration worked to codify these attempts into law and oversaw the passage of the Wolf Amendment in 2011, which formally prevents NASA from interacting “in any way” with the Chinese National Space Agency.

There are other US imperialist interests bound up with Artemis. Despite the many international treaties and agreements to exclude outer space from warfare, it is still very much considered a battleground, as exemplified by the establishment of the US Space Force in 2019. The ability of other nations, above all China, to launch probes to Mars, to land rovers on the Moon and even to launch their own space station (China’s Tiangong space station was launched in 2021) are seen primarily as military threats.

Such interests of course also drive the Chinese Communist Party, and that of every bourgeois government. The division of the world into competing nation-states means that competition is extended to space. Rockets are not primarily for science, but for prestige and threats among world powers.

Arguably the major difference between the Apollo and Artemis missions is the vast increase of private business interests invested in the success of the program. That is not to say there were not business interests heavily involved in NASA’s early space program. Boeing, Lockheed Martin, Northrop Grumman, just to name a few aerospace and defense companies, have always been involved in building US spacecraft. But there was genuine innovation that led to the development of several technologies used in both in rocketry and across daily life.

Now, multibillion dollar-efforts are designed solely to enhance the portfolios of select individuals. The most infamous is Elon Musk, which has often claimed SpaceX will be the way forward for space travel, a claim echoed constantly by a slavish corporate media. And yet despite vast increases in technology over the past several decades, including several in computing, miniaturization and 3D printing from which Musk can draw, the flagship Falcon Heavy is only 45 percent as capable as the Saturn V.

Musk is joined by Amazon CEO Jeff Bezos and his company Blue Origin, as well as Richard Branson’s The Spaceship Company. And the latter two are barely interested in genuine spaceflight, more interested in providing suborbital flights so that ultra-wealthy patrons, like themselves, can claim the title astronaut.

There is also a more sinister aspect to the drive by private companies to conduct space flight. Many companies, Musk most of all, have made a point of having private missions to the Moon and even Mars. They are ultimately an attempt to stake private claim on whole worlds, with no oversight or regulations and the ability to exploit both resources and labor on a hitherto unseen scale. How could workers on the Moon, after all, possibly protest if their lives can just be snuffed out on the whim of one individual turning off life support?

Such is the logic of the Artemis project, and space exploration as a whole, under capitalism. What should be the continued expansion of humanity’s drive to understand and master nature is inevitably subordinated to the expansion of human exploitation and private profit.



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