

Moon to Mars: Bridenstine Tells the Senate NASA's Plan for Deep Space Exploration

by Kesha Rogers

July 22—Just three days before the 50th Anniversary of the first American astronauts, the Apollo 11 astronauts, walking on the Moon, NASA Administrator Jim Bridenstine testified before a hearing of the Senate Committee on Commerce, Science and Technology.

The hearing was introduced by Committee Chair, Roger Wicker (R-MS):

Saturday will mark the 50th Anniversary of the Apollo 11 mission. The Moon landing still unites and inspires Americans, like few events in our nation's history. It's hard to believe that a half century has passed since the United States won the space race. Although it's fitting to celebrate such past achievements, we are pleased that NASA Administrator Jim Bridenstine is here to discuss the *future* of American space exploration. In December of 2017 President Trump outlined a bold vision to reinvigorate America's space leadership. Space Policy Directive 1 calls for returning humans to the Moon for the first time since 1972, but this time it will be for long term exploration and use and will be followed by manned missions to Mars.

Bridenstine responded:

We are indeed celebrating 50 years of Apollo, and in that era we had this great contest of great powers and we were trying to demonstrate our technological prowess, our ability to lead the world. In that era it wasn't just about technological prowess, we were trying to demonstrate that our political and economic system was, in fact, superior to that of the former Soviet Union. And, of course, we are also proud of what NASA did in those days when our Astronauts Buzz Aldrin and Neil Armstrong walked on the surface of the Moon for the first time in human history. And here we are fifty years later still celebrating that monumental, absolutely stunning achievement.

Committee Ranking Member Maria Cantwell (D-WA) reminded that after five additional missions following Apollo 11, and a total of 12 people walking on the surface of the Moon, the Apollo program simply ended. Bridenstine took the point. "I think that's kind of been a letdown for NASA for the last 50 years. We want to continue doing these stunning achievements and go further, and explore more."

'Cost and Schedule'

Conducting numerous media interviews July 14-15 as the anniversary approached, Bridenstine had described the difficult fight NASA is engaged in to return to the Moon within five years, as the test ground and base for travel to Mars. He had also expressed his confidence that the agency would carry out the mission, and inspire millions of Americans in the process, as Project Apollo did a half-century ago. Apollo is still celebrated 50 years later and still generates widespread public support and optimism about space exploration, he told C-SPAN's "Newsmakers" interviewers July 14, because of the feats of human progress it accomplished. "What will we do that will be celebrated 50 years from now?"

With difficulties posed by both "cost and schedule"—by the problems of Boeing, SpaceX and other contractors in testing and perfecting their rockets and capsules, and by NASA's slowly rising but still inadequate budget—Bridenstine showed that the administration is making the path more difficult, by rejecting cooperation with China, being still barred from doing so by the Wolf Amendment. He was asked on CBS News' "Face the Nation" July 14 whether China might beat the United States to the Moon, or whether there might be cooperation with China in this. He answered "I can tell you as of right now, 'No' to both. . . . We do not need to cooperate with China; we are so far ahead"; and described the number of times the United States has carried out soft landings on Mars.

While the United States is working with the European and Japanese space agencies to its benefit, its holding aloof from lunar exploration cooperation with both

China and Russia is a policy which does not fit the current great moment, and must change.

On the July 20 anniversary, NASA announced that the new crew launch vehicle Orion was tested and ready to be launched by the huge Space Launch System of Lockheed and Boeing, which remains behind schedule and to be tested. Two days later NASA announced that the future orbital path of its next element, the Moon-orbiting space station known as Gateway, had been determined—a “halo orbit” around the Moon. The European Space Agency has been in collaboration with NASA on both Gateway and Orion—it has provided the “European Service Module” for the Orion crew capsule.

During the July 17 hearing of the Senate Committee, Bridenstine placed crucial emphasis on the point, that if Congress fails to adopt a budget for Fiscal Year 2020, and merely enacts a Continuing Resolution which holds spending at current levels for another year, the effect on the Moon-to-Mars program, Project Artemis, will be “devastating.” He explained that such an outcome would not only deny funds for what Artemis needs to do, it would also require continued—wasted—spending on what NASA does not need to do. He said that NASA will not repurpose funds internally for Artemis. In particular, NASA would be left with *no means* to design and develop a Moon landing vehicle or module; the “lander” is the final element in the Artemis design, whose task is to take astronauts down to the Moon’s surface from the orbiting Gateway space station, and back up again for return to Earth in the Orion capsule.

This setback appeared to be avoided on July 22, when President Trump announced that a two-year overall budget agreement had been reached between the White House (with Treasury Secretary Steven Mnuchin negotiating) and Congressional negotiators led by House Speaker Nancy Pelosi. That deal would avoid a Continuing Resolution and “sequestering” of additional funds. It is likely to have included the \$1.6 billion in additional FY2020 funds for NASA, which Administrator Bridenstine considered crucial to keeping Project Artemis in an accelerating mode.

Twin Sister of Apollo

But again, Senator Cantwell told Bridenstine that the overall estimated cost of Artemis meant that NASA would have to request \$4-6 billion per year from FY2021 to 2024 for the project, and the Administrator agreed. NASA’s overall budget has risen roughly from

\$18 billion to \$21 billion during the Trump Administration, after years of stagnation, and is requested to rise in this budget to \$22.6 billion for FY2020. For comparison, the peak NASA budget during the Apollo “crash program,” reached in 1967, would be about \$160 billion in today’s dollars!

Bridenstine told the Senate that the new Moon project is named for the twin sister of Apollo, Artemis, the goddess of the Moon. “This time, under the Artemis program, when we go forward to the Moon sustainably, we go with a very diverse, highly qualified astronaut core that includes women,” he added. “In the next five years we will land the next man and the first woman, on the South Pole of the Moon.”

He also explained:

Discoveries in recent years have shown us that our belief for so many years that the Moon was bone dry, has been proven false. Now we know that there are hundreds of millions of tons of water ice on the South Pole of the Moon. Water ice represents air to breathe. It represents water to drink, and hydrogen and oxygen that can be put into cryogenic liquid form to create rocket fuel. We are going back to the Moon sustainably. We want to have access to all parts of the Moon and we want to use the Moon as the proving ground. It is how we learn to live and work on another world using the resources of that world, so we can . . . take that technology, and take that capability to Mars.

The cancellation of the Apollo Project from 1972 was not only a letdown for NASA, but for the American people and the rest of the world, because the optimism of those remarkable achievements created the inspired expectation of discoveries to come, which were denied. When American leaders effectively abandoned the Space program, a true visionary, economist and statesman, Lyndon LaRouche, stepped forward and dedicated himself to advancing the Extraterrestrial Imperative of mankind to explore and terraform the solar system. LaRouche’s 1988 nationally televised video, *The Woman on Mars*, is still the most inspiring and optimistic vision for space exploration as a science-driver crash program. As LaRouche said in his *Woman on Mars* presentation, “We must pick up where we left off with the old Apollo program.”

This time it cannot be stopped.