Testimony of The Honorable James F. Bridenstine

Before the United States Senate

Committee on Commerce, Science, and Transportation

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Chairman Cruz, Ranking Member Cantwell, members of the Senate Committee on Commerce, Science, and Transportation, thank you for the opportunity to testify before you today at a pivotal time in the history of our nation.

We spent the latter part of the 20th Century in a great power struggle with the Soviet Union. Thanks in part to the space program, we came out on top and spent the last 30 years as the world's sole superpower. However, we once again find ourselves in a great power struggle, this time with China.

I truly believe that this Administration and this Congress, on both sides of the aisle, share a common goal of promoting American leadership in space. NASA can only succeed when we look across multiple presidential administrations, span many Congresses, and carry out programs through ebbs and flows of public support. NASA Authorizations are key tools that provide the continuity necessary to accomplish big things, so I am very grateful you are holding this hearing.

The Artemis Program

SLS, Orion, and Landing on the Moon

We are mere months away from sending humans to the Moon for the first time in over 50 years. Let me repeat that: in early 2026, we will send American astronauts to orbit the Moon. No other nation has been able to accomplish this. This is a monumental moment for the United States. Our leaders should be trumpeting this from the roof tops.

Those astronauts will go to moon on top of the Space Launch System (SLS), inside of the Orion Multi-Purpose Crew Vehicle. These vehicles represent the only human rated super heavy lift rocket and the only human rated capsule currently capable of taking astronauts to deep space. While the development of these programs has been too expensive, we are starting to see the fruits of those efforts come to bear. The One Big Beautiful Bill Act, signed by the President, which members of this Committee advanced, recognizes the importance of these systems and continues them through Artemis IV and V. However, it should be noted that the cost and throughput of SLS is not sustainable without significant changes.

While the United States should celebrate orbiting the Moon in 2026, the United States does not have a lander. Unless something changes, it is highly unlikely the United States will beat China's projected timeline to the Moon's surface. Our complicated architecture requires a dozen or more launches in a short time frame, relies on very challenging technologies that have yet to be developed like cryogenic in-space refueling, and still needs to be human rated. While the capability could be transformational over time if payload capacity increases (so far it has decreased), the complexity of the architecture precludes alacrity.

For comparison, Apollo landed on the Moon in 8 years. Today's lander is more of a large rocket. It has been under development for the same amount of time as the Apollo Program and needs new engines and a bigger core stage to increase payload capacity. It could be an important capability for the country but is unlikely to beat China's projected timeline to the lunar surface.

The Gateway

The Cislunar domain is the ultimate high ground for national security, and the Moon itself is a source of critical minerals and a potential solution to our long-term energy needs due to Helium-3. In the long term, we need permanent surface activity using in-situ resources. Administrator Sean Duffy is correct that we need nuclear fission power on the Moon and it should be accelerated.

A key component of the Artemis Program that will allow us to maintain a presence around and on the Moon is the Gateway. The Gateway provides sustainable access to the entirety of the Moon when coupled with a lander. It is also the component of Artemis where our international partners are shouldering the majority of the investment – over 60 percent. If desired, it is technically possible to leverage funding in the OBBBA to accelerate and launch Gateway in 2028, ahead of the projected landing by China.

Low Earth Orbit and Commercial LEO Development

When the United States leaves a gap in capability, our geopolitical competitors fill it. The United States and the world became dependent on the Russian Soyuz with the retirement of the Space Shuttles and the 9-year gap before Commercial Crew was ready. We don't want to leave a gap in LEO and watch our international partners join China's new space station.

Fortunately, Congress, particularly the Chairman, has repeatedly, across multiple administrations, ensured the continuation of the International Space Station and prevented a gap in permanent human presence in low Earth orbit.

We are close to having commercial space stations that can both meet NASA requirements and close a business case by providing a location for industry to undertake activities where

we've seen incredible early returns on the ISS – things like pharmaceuticals, advanced materials, and biomedical engineering. This is a place where both Congress and the Administration agree: we need to transition to commercial space stations as soon as possible.

Earlier versions of this Committee's NASA authorization have included a provision which sets permanent human presence in LEO as the policy of the United States. That's the right policy. I recommend the NASA Authorization include the following:

- No gap in a permanent human presence in LEO;
- Replace the ISS with fully mission capable (FMC) commercial space stations (not temporary space stations or partially tended space stations);
- Select 2 providers now and commit that NASA will procure at least a minimal set of services from those providers; and
- Require providers to compensate NASA for a portion of the certification. If NASA isn't the only user, NASA shouldn't bear the entire expense of certification.

By doing this, we can ensure a timely LEO transition, avoid a gap in access, and avoid ceding LEO superiority to China.

Science

Finally, I do want to speak a bit on the Science Mission Directorate. I appreciate the Administration's focus on human spaceflight – if we are going to beat China, it has to be a priority. But there is a lot of science that is valuable to our life that isn't directly applicable to human spaceflight, and it should be preserved.

Take, for instance, planetary defense. Preserving life and property is a critical function of the federal government, and NASA is uniquely situated to carry out planetary defense. Unfortunately, the budget proposes to cut key planetary defense missions, like OSIRIS-Apex. This would be misguided. We have an unbelievable opportunity to study an asteroid the size of a football stadium passing closer than the GEO belt. The data we get on the behavior of an object like this will be invaluable in our understanding of near Earth objects and planning future planetary defense missions. I hope Congress maintains the mission and others like it.

NASA Earth science provides data we use every day – monitoring weather, water, fire, space weather, air quality, agricultural out puts, and more. These missions supply data that is vital to our economy and is leveraged by people and businesses alike. Not all Earth science is partisan and I would ask Congress to consider authorizing agreeable programs.

Conclusion

Thank you again for the opportunity to appear before you. I look forward to your questions.