

**Statement of
Dr. Patrick Besha
Founder, Global Space Group
before the
Subcommittee on Space and Aeronautics
Committee on Science, Space, and Technology
United States House of Representatives**

December 4, 2025

Chairman, Ranking Member, and distinguished Members of the Subcommittee, thank you for the opportunity to provide my perspective on China's space strategy and its implications for the US. When I started at NASA nearly 20 years ago as a specialist on China, the country had just launched their first astronaut into orbit and had not yet launched their first lunar mission. How times have changed.

Today, the US and China are the two most powerful spacefaring nations, engaged in a long-term strategic competition that spans multiple elements: geopolitics; national security; economic competitiveness; social and cultural influence; and, science. I'll briefly discuss each major area in the context of China's space program.

Geopolitics, national pride and prestige have been central drivers of China's space program since its establishment. Today, human spaceflight missions are most closely associated with these goals, including its current space station and planned human lunar landing and International Lunar Research Station. Human spaceflight is extraordinarily expensive and highly symbolic, performing a powerful signaling function. The geopolitical stakes were once summed up by Lyndon Johnson: "In the eyes of the world, first in space means first period; second in space is second in everything." Today, the importance of space has only grown, with our economy and national security reliant on it. Developing a major space program is also an exercise in compelling excellence - from propulsion and materials science to industrial organization and supply chains. Space missions pull and push the development of new technologies while adhering to the highest quality standards. In essence, such missions provide a tangible measure of a nation's economic strength and geopolitical power.

Secondly, our ability to operate in space is integral to national security including our utilization of position, navigation and timing systems; reconnaissance; communications, and other technologies. The same holds true for all major space powers. Second, space has always been intensely dual-use, from military-funded civilian startups to federally-funded research centers that build both civil and military spacecraft. In China, a similar phenomenon is referred to as "military-civil fusion", and is part of a comprehensive effort to exploit the best innovation wherever it may exist. In 2019, images of *Chang'e 4* on the far side of the moon were celebrated in the Great Hall of the People. Xi Jinping hailed the mission as a demonstration of a "new type of whole-nation system".

Social and cultural influence also shapes the strategy of the space program. Spaceflight is a core part of the China Dream of national rejuvenation - a return to the country's preeminent place at

the center of the world and now, the expansion of civilization deeper into the solar system. Tying together China's ancient and modern cultures is a hallmark of Xi Jinping Thought and a push to promote the country's unique cultural identity while legitimizing Party rule. One way this is symbolized is the use of traditional mythology in the naming conventions of its space missions.

Economic competitiveness is a measure of how well a nation's firms compete globally. It can provide insight into firm productivity, or how efficiently inputs are turned into products and services. China's state-owned enterprises typically lag its private sector firms in productivity. For this reason, it expanded the commercial space sector, which is now the world's second largest after the US. However, under its state capitalist model, the commercial sector is still robustly controlled by the state, from capital markets to firm management.

Core to the country's competitiveness is its manufacturing. China's ability to out-produce and out-scale others is reflected by its roughly one-third share of all manufacturing in the world. With this comes process knowledge, not simply the building instructions, but the hands-on knowledge of how to build, innovate and become more efficient. China has hundreds of space companies competing to drive down costs through process and scale efficiencies. As space becomes commoditized, this approach may greatly improve its economic competitiveness (just as it has in other sectors such as solar).

The pursuit of science and the expansion of knowledge is evident in the country's recent achievements such as the first return of lunar surface samples since 1976 and the successful landing on Mars in 2021, making China only the second country to do so. Its latest space science strategy covering the next 25 years proposes ambitious missions to Jupiter and Neptune. Other key strategies such as "Made in China 2025" also prioritize space. Success in goals such as building infrastructure on the lunar South Pole and returning samples from Mars would mark exceptional world-first achievements, with significant national prestige and soft power effects.

We are engaged not so much in a space race but a long-term, broad strategic competition. I recommend a few measures that could support an enduring American advantage: Support Earth and space science robustly, including strategic missions of national importance such as planetary defense and next-generation space observatories; Establish a long-term Artemis mission manifest; and, advance a strategic international cooperation approach. I recently left NASA, but I have great optimism that the Agency and its partners in industry can, if appropriately funded, continue to achieve the highest level of excellence.