

The Space Protection of American Command and Enterprise (SPACE) Act
Senator Marco Rubio
Background Information

A November 2019 report by the U.S.-China Economic and Security Review Commission detailed that China's goal is to "surpass other spacefaring countries in terms of space-related industry, technology, diplomacy, and military power," and to "dominate the space within the Moon's orbit of earth." China plans to incorporate its Belt and Road Initiative (BRI) to construct overseas space ground stations, including a Chinese military base in the Patagonia region of Argentina that the Pentagon has flagged about being a center of Chinese "militarization" of space and space-based spying concerns. Beijing aims to influence diplomatic ties and to create reliance on Chinese space-based services, including launch services, satellites, and navigation systems, thereby integrating Chinese international commerce and foreign policy into its space industry.

China's long-term goals for its space program include 1) establishing a crewed space station explicitly owned by China, 2) launching crewed lunar missions, 3) establishing a lunar base, 4) sending robotic missions to Mars, as well as 4) exploiting Earth-Moon space/resources and beyond for industrial development. The two state-owned enterprises primarily behind these objectives are China Aerospace Science & Industry Corporation Limited (CASIC) and China Aerospace Science and Technology Corporation (CASC).

Both CASIC and CASC produce the technology and devices required by the state space and military programs, including launch vehicles, satellites, manned spaceships, cargo spaceships, deep space explorers, space stations, nuclear missiles, conventional ground-to-ground missiles, and air and missile defense equipment, among other technologies. Furthermore, as of November 2020, China has approximately 160 commercial space companies engaging in overlapping investment activity to serve as supplements to and directed by CASIC and CASC. According to Bloomberg News, Chinese commercial space investment amounted to \$1.5 billion in 2020.

After several prior preliminary launches, on June 17, 2021, China successfully launched the Shenzhou-12 Spacecraft with three astronauts on board as a next step toward completing the construction of the Tiangong Space Station, China's planned independent space station. In December 2020, China successfully landed an unmanned probe called the Chang'e-5 on the Moon to collect lunar material samples to bring back to China, forming the groundwork for Chinese lunar mining. In June 2021, China and Russia announced a partnership to cooperate on robotic expeditions to asteroids and to construct a base on the south pole of the Moon by 2030.

The Pentagon recently warned that China has developed ground- and space-based anti-satellite, directed-energy, and electronic warfare capabilities that place the peaceful use of international space at a national security risk, which former Secretary of Defense Mark Esper has described as the "weaponization of space." According to the Defense Space Strategy by the Department of Defense, the U.S. must establish a "secure, stable, and accessible space domain that underpins our nation's security, prosperity, and scientific achievement. However, our adversaries have made space a war fighting domain and we have to implement enterprise-wide changes to policies, strategies, operations, investments, capabilities, and expertise for this new strategic environment." The Defense Space Strategy declared China and Russia as the "greatest strategic

threat due to development, testing, and deployment of counterpace capabilities and their associated military doctrine for employment in conflict extending to space.”

On October 21, 2021, the Subcommittee on Space and Science under the Senate Committee on Commerce, Science, and Transportation held a hearing titled “International Collaboration and Competition in Space: Oversight of NASA’s Role and Programs,” which detailed commercial threats the U.S. faces with regards to space industrial leadership, including Chinese and Russian efforts to dominate the space economy. Witness Mary Lynne Dittmar, Executive Vice President for Government Affairs of Axiom Space, a private company based in Houston working to develop the world’s first commercial space station, stated that China is seeking a “long-term, multi-pronged strategy that exploits weaknesses of the U.S. space industrial base,” especially among the “emerging entrepreneurial sector that is vulnerable to malfeasance and disruption.” In particular, Ms. Dittmar noted China’s efforts to steal intellectual property; direct state-owned enterprises to integrate with commercial space start-ups; penetrate American companies to obtain and exploit U.S. technology; invest in U.S. space companies for early venture technological surveillance and to obtain vertical control of U.S. supply chains for space commerce, and to engage in aggressive market tactics for this sector, such as predatory pricing and supply chain controls; and use of state-sponsored venture capital to impose market control and surveillance.

Notable examples of Chinese institutional investment in the U.S. space industry are below:

- **Boeing, Inc. canceled a satellite order with Global IP**, a California-based startup that received \$200 million in investment by the state-owned China Orient Asset Management Company using a complex array of offshore companies in Hong Kong and the British Virgin Islands. The firm allegedly was launching satellites for developing telecommunications in Africa but was exposed by a 2018 investigation by the Wall Street Journal.
- **Chinese telecommunications and technology company Tencent Holdings has invested in Moon Express**, a California-based startup for commercial lunar exploration that has worked closely with NASA and was selected for the Commercial Lunar Payload Services program.
- **Tencent Holdings has also invested in World View Enterprises**, an Arizona-based company that specializes in near-space exploration technologies and conducts flights for NASA’s Flight Opportunities Program.
- **Tencent Holdings has also invested in Planetary Resources**, an American company with the long-term goal of mining asteroids.
- **Tencent Holdings led capital fundraising for Satellogic**, a startup based in Buenos Aires, Argentina, specializing in microsatellites with an office in the United States. The startup aims to launch a constellation of remote sensing satellites with hyperspectral capabilities. In 2017, it reached an agreement with a CASC subsidiary to conduct various launches.
- **Kuang-Chi Science LTD partnered with NanoRacks, LLC**, an American space station hardware company, for the development of a helium-fueled spacecraft.
- **U.S. startup Global Constellation accepted a minority investment from HCH Group, a Hong Kong-based subsidiary of Haier Group**, a Chinese appliance and electronics giant with an opaque ownership structure. The startup aims to launch a constellation of low-orbit satellites that will act as a space-based cloud-computing center.