



GROWING COMPETITION IN OUTER SPACE

By
Sheroze Zaman Khan
Intern

Arms Control & Disarmament Centre (ACDC), ISSI

Edited by
Najam Rafique

October 24, 2020

(Views expressed in the brief are those of the author, and do not represent those of ISSI)



In December 2019, US President Donald Trump made an executive order for a defense bill for the establishment of the US Space Force, which became the 6th branch of the US military.

Currently, there are only three major space faring nations, USA, Russia and now China, with the latter being a powerful competitor. Besides the US, Russia and China there also exist a total of 13 nations - Canada, India, Japan, Australia, France, Iran, UK and NATO with independent capabilities but dependent somehow on space-enabled capabilities provided by commercial entities like SpaceX. Canada, Japan and France are newcomers in this league. In 2019, India launched Mission-Shakti, which was an anti-satellite (ASAT) test that destroyed its own satellite in Low Earth Orbit. This was clearly a signal to the world that they had joined the elite-club of space major powers. In 2019, the French President, Emmanuel Macron, also announced that they will create a space force with the help of their air force, which will help them explore space and protect satellites. Japan has also joined the race spending more on the defense budget and taking interest in the exploration of space. But what does all this development actually mean? What enabled these nations to make such a space force which will be placed on the forefront at the outer space? Do these nations want to claim their superiority? If one wants to understand the pivotal importance of space in the contemporary era, it's better to first understand the system in which space-based technologies works.

In the 21st century, everyday communications and mobilization have a lot to do with outer space. These satellite innovations and technologies are the foundation of the internet, emails,

communications, weather updates, natural disaster handling, navigation or GPS, traffic control, aviation authority management, financial control and geographical-topographical mapping. Besides civil uses of satellites, they are also vital for military purposes like communication, navigation, intelligence and reconnaissance. Even though these technologies are invisible, they are of significant importance in political, economic, social and military areas. Being dependent on outer space also means that the satellites are vulnerable, especially vulnerability in the military domain is a concern for great powers.¹

The new US Defense Space Strategy is a decent beginning, setting conditions for the US military focal points in space and forming key rivalry there. Having said that, the outcome of space competition will be broader. The US needs to include space advancement in a comprehensive manner, giving preference to the industrial presence in the outer space for wider national and economic goals.² According to the US, China is working on developing offensive capabilities in space. Not only China, but Russia as well is working on developing such capabilities. However, this is used as a pretext by the US to develop offensive space capabilities of its own. Two years ago, China launched a larger number of rockets into Earth's orbit than any other nation. In January 2019, China surprised the world by successfully landing robotic probe *Chang'e 4* on the undiscovered side of the moon. Beijing has additionally declared designs to set up a robotic outpost on the moon before the end of the following decade.³

SpaceX in May 2020 became the first private organization to successfully transport two of NASA's astronauts to the international space station with their Falcon 9 rocket and attached Crew Dragon capsule. Following the launch, Donald Trump said the private growing space industry is the future, and if the journey remains successful they will be used for transportation of astronauts and space tourists. NASA also aims to collaborate with private firms to launch its Artemis program which will enable the astronauts, especially women, to land on the moon by 2024.⁴

In the last one decade, there has been an advancement in the development of space weapons that could destroy the enemy's space capacities. The US, Russia and China, as of now, have ASAT abilities. Of these nations, the US has the most complex ASAT abilities. The US possesses almost 50% of the

¹ Steer Cassandra "Why Outer Space Matters," Centre for Ethics and Rule of Law, *University of Pennsylvania*, January 8, 2020, <https://www.law.upenn.edu/live/files/10053-why-outer-space-matters-for-national-and>

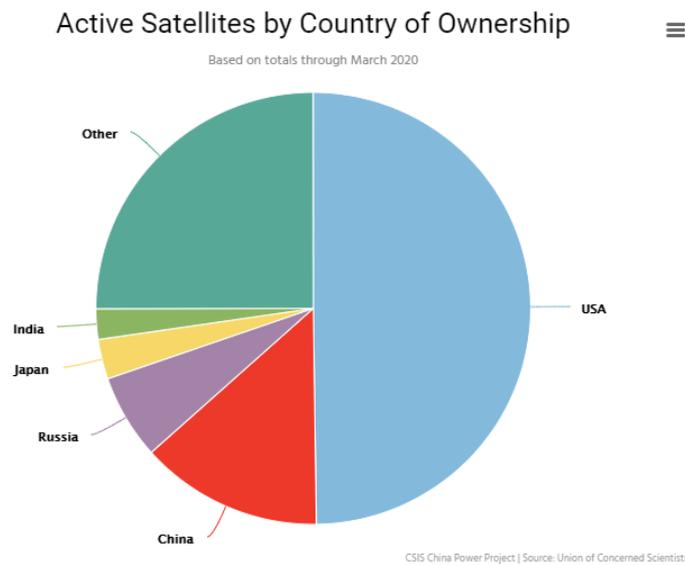
² Becker Jeffrey, "A Strategic Pivot to Outer Space," *The Strategy Bridge*, July 20, 2020, <https://thestrategybridge.org/the-bridge/2020/7/20/a-strategic-pivot-to-outer-space>

³ Borroz Nicholas, "The Risks and Rewards of Growing US-China Space Rivalry," *The Diplomat*, September 13, 2019, <https://thediplomat.com/2019/09/the-risks-and-rewards-of-growing-us-china-space-rivalry/>

⁴ "Renewing America, Space Exploration and US Competitiveness," *Council on Foreign Relations*, June 10, 2020, <https://www.cfr.org/backgrounders/space-exploration-and-us-competitiveness>

world's working satellites in space, but they are at risk now. Creating advanced ASAT abilities is not rational as one nation can hold another's satellites in danger and vice versa. From numerous points of view, it can be seen as working like nuclear deterrence which can cause mutually assured destruction. Consequently, having ASAT abilities may hold the enemy's satellites in danger yet it does not shield one's own satellites from assault. The most ideal approach to move toward the issue is to have an understanding of the mutual vulnerability of satellites.⁵

China is investing in the advancement of a new spaceship that aims to take people to the moon. China's vital need to rule the space lines of communication is to keep away from the difficulty faced on Earth as the US Navy dominates the sea lanes of communication. Moreover, China and India relations have been worsening, especially during the last few months as skirmishes took place between the two at the border. However, India itself is working to develop military space capabilities that may be actively aggressive in nature. Pakistan may face a potent threat from India.⁶ The Chinese Communist Party has to define still more great objectives in order to become the all-round space power by 2030. It plans to finish its global navigation satellite set-up 'Beidou' by 2020, a working space station by 2025 and a durable lunar exploration station by 2035.⁷



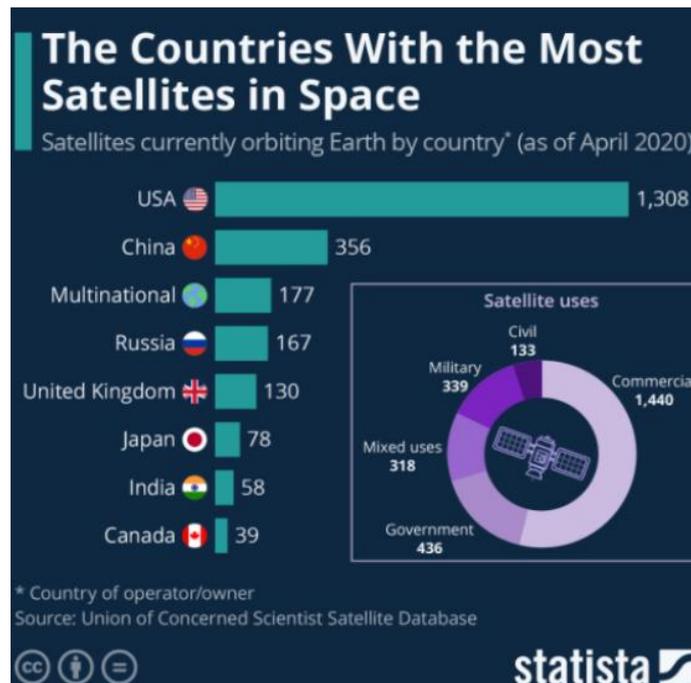
The surveillance network in space that belongs to China and Russia have the capacity to search, trace and distinguish satellites in the spheres of Earth. This potential contributes operations in space

⁵ Ghazala Yasmin Jalil, "US Space Force: Is Competition in Space Inevitable?" Issue Brief, *Institute of Strategic Studies Islamabad*, April 6, 2020, http://issi.org.pk/wp-content/uploads/2020/04/IB_Ghazala_April_6_2020.pdf

⁶ Namrata Goswami, *The Space Review*, May 18, 2020, <https://www.thespacereview.com/article/3944/1>

⁷ Christian Shepherd, Williams Aime, and Peel Michael, "Vulnerable Satellites: The Emerging Arms Race in Space," *Financial Times*, November 13, 2019, <https://www.ft.com/content/a4300b42-f3fe-11e9-a79c-bc9acae3b654#comments-anchor>

as well as the counter-space systems. The two countries are working on new developments that include having the capability of cyberspace and jamming, directed energy weapons and also having on-orbit potential. Both are also working on anti-satellite missiles that are based on the ground, which are capable of receiving multiple effects that may be reversible or non-reversible. On the other hand, the US rivals - Iran and North Korea - are posing a challenge to militaries all over the globe by using space-enabled services like jamming capabilities. Both have independent space launch capabilities, which makes them eligible to test ballistic missile technologies.



The space forces will not only make powerful nations even stronger, but will endanger the environment of outer space. Growing competition in outer space in the contemporary era is escalating rapidly, which has its own costs and benefits. States should pursue their national interest first but also avoid indulging in hostile actions in outer space. As all these peaceful uses of space have helped mankind achieve growth and development, the advancement in military and R&D in offensive space capabilities are giving rise to another arms race in yet another dimension.

⁸ "Challenges to Security in Space. DefenceIntelligenceAgency," DIA Public Affair, March 18, 2019, https://www.dia.mil/Portals/27/Documents/News/Military%20Power%20Publications/Space_Threat_V14_020119_sm.pdf