



Great Power Strategic Competition on Earth and in Space

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Great power conflict has for millennia been earth-based.[1] However, humanity is now at a pivot point where the great powers may take their conflicts into space. The United States must maintain its military primacy to deter adversaries from starting disputes resulting in catastrophic conflicts.[2] The recent Space Capstone Publication, "Spacepower," summed up the U.S. Space Force's main challenge: "The U.S. must adapt its national security space organizations, doctrine, and capabilities to deter and defeat aggression and protect national interests in space." [3] The document cites the late U.S. Air Force General Bernard Schriever, who notably stated in 1957 that "our safety as a nation may depend upon our achieving space superiority." [4]

Following the end of the Cold War, some international relations (IR) and foreign policy scholars, such as Francis Fukuyama, argued that great power conflict was a relic of the past and that liberal democracy would continue to flourish.[5] President Barack Obama similarly argued that great power conflict is passé and the United States should prioritize multilateral issues such as terrorism, climate change, nuclear proliferation, pandemics, energy, and migration.[6] However, many of the global flashpoints today are great power motivated.[7] Space may intensify and amplify these flashpoints. Space itself may become the ultimate flashpoint.

The changes today are alarming. The first change is the United States' slow disengagement from the dominating role after WWII, marked by a rollercoaster of lowering or increasing its defense spending and commitments.[8] During the Trump administration, America considered retreating from its leadership role in the rules-based liberal international order.[9] The fringes of the two major U.S. political parties, for different reasons, call on the United States to have either a light or a non-existent footprint across much of the globe.[10] This is not only a military footprint but also a cultural, economic, and diplomatic role.

The United States has begun a global recoil, as evident in the calls for a drawdown in Europe, Iraq, Afghanistan, and South Korea. There are calls in America's body politic to withdraw further. This American withdrawal coincides with the second change. Four of the current great powers, such as Russia, China, India, and Japan, are re-evaluating, amplifying, or changing aspects of their grand strategy, especially as it applies to space. That last change is what this article discusses.

Russia Resurgent

The Global Firepower 2021 Military Strength Index ranks Russia second out of 140 countries ranked worldwide. According to the International Institute for Strategic Studies (IISS), Russia ranks fourth globally in defense spending, with a defense budget of \$61 billion in 2019.[11] Russia also spent nearly \$4.2 billion on space programs in 2018.[12]

Creating and exploiting the "constellation of forces" to benefit "Mother Russia" governed Soviet grand strategy.[13] Russian strategic thinking today is dominated by several factors, all of which provide a window into their quest for space power. These factors include the border it shares with Eastern Europe, North Atlantic Treaty Organization (NATO) expansion, its border with China, a blessing and curse of natural resources, military modernization, nuclear weapons, and national pride. One of its greatest fears is an attack along its periphery. This requires the creation of buffers between itself and potential adversaries. Russia can do this by claiming to protect ethnic Russians in what it often calls the "near abroad," where Russian minorities are large and loyal to Moscow.[14] One can postulate that the desire for strategic buffers will carry over into space.

Russian space strategy reflects its current and historical grand strategy. The U.S. and its allies and partners such as NATO, South Korea, Japan, and Anzus are preoccupied with the rise of China.[15] This preoccupation is a mistake for many reasons. China is the most severe threat to allied geopolitical interests, but that is different from dismissing Russia. Despite its relative weakness in comparison to China, Russia has a history of overcoming privation, setback, disaster, and incompetence. In the words of Edward Luttwak, "Drunk they defeated Napoleon, and drunk again they defeated Hitler's armies and advanced all the way to Berlin." [16] Drunk they could win against NATO.

President Vladimir Putin is attempting to reinvigorate the Russian space program that has been in decline following the collapse of the Soviet Union. Citing threats from U.S. missile defenses and programs like the X-37B experimental spaceship, Vladimir Putin restarted various counter space programs to prevent Russia from falling behind.[17] Russia will also likely continue to deploy new anti-satellite weapons within the next few years that will threaten U.S. space assets.[18] Some national security experts have contended that Russia is far more aggressive in threatening American satellites than China.[19]

According to Vladimir Putin, Russian's intentions in space are "to drastically improve the quality and reliability of space and launch vehicles ... to preserve Russia's increasingly threatened leadership in space.[20] Russia's space strategy includes essential modern warfare critical components such as space access and denial. Russia has begun the genesis of creating an organization that is similar to a space force.

The Russian Aerospace Forces is in many ways a three-branch service combining elements of the space forces, air forces, as well as air and missile defense forces under a single command.[21] The Russians are developing enhanced jamming and cyberspace capabilities and advanced weaponry such as directed energy weapons, on-orbit capabilities, and ground-based anti-satellite missiles that can achieve a range of reversible to nonreversible effects.[22]The service will monitor space objects and identify potential threats, attack prevention, and carry out spacecraft launches and placing into orbit controlling satellite systems.[23]

The United States has taken notice. Earlier this year, General John "Jay" Raymond, the service chief of the U.S. Space Force, detailed how Russian satellites were tailing American spy satellites.[24] However, a even more significant strategic concern is Russia's plans to establish a moon colony between 2025 and 2040.[25]Russia recently signed a memorandum of understanding with China to construct a lunar research station on the moon's surface or in lunar orbit.

The current Russian space doctrine can be titled the 3 Ds: disparate, desperate, and dynamic. Globalnaya Navigazionnaya Sputnikovaya Sistema (GLONASS) is an excellent example of the establishment, fall, and rise of their independent global positioning system (GPS). Russian resilience and its willingness to endure deprivation and long-term sacrifice will likely spoil this myopic view. Russia may rise to turn out to be the more significant threat to international safety and stability, and one that the west may pay a high price for ignoring.

The Dragon Reborn-China

China's strategic doctrine since the Deng Xiaoping era has been defined by the phrase "to preserve China's independence, sovereignty, and territorial integrity." [26] In recent years, other slogans and statements have been added, such as desiring a "harmonious world" system and taking advantage of a period of "strategic opportunity." [27] The Global Firepower 2021 Military Strength Index ranks China third in overall military strength internationally.[28]The IISS ranks China second in military spending with a defense budget totaling \$181 billion, of which the space budget is estimated to be around \$8 billion.[29]

The Mao Zedong era attempted to destroy the "olds" of Chinese Taoism, Buddhism, Christianity, and classical Confucianism. China is filled with bellicose nationalism and wounded pride.[30] The Chinese Communist Party (CCP) and its allies in the People's Liberation Army use aggressive nationalism to unify them. There is no difference between the party, the government, and large Chinese business enterprises.[31]

Under President Xi Jinping, China has resurrected neo-Maoist evangelism and appealed to third-world Marxists. Xi's ideology is anti-democratic, self-righteous, and revanchist. In many ways, China is restoring Ming and Qing dynasty ambitions by trying (with much difficulty) to create semi-vassal states in Burma, Thailand, Vietnam, and North Korea. If the battle in Russia was between Slavophiles and Westernizers, the struggle in China is between the "Yangtze River" mentality and the "Pacific Ocean." The former desires to sit behind the Great Wall like the late Ming and Mao periods. The latter desires domination through adoption and expansion exhibited by Zheng He's treasure fleet and the current President Xi Jinping. Nothing could be more evident than this latter view concerning the space front.

Space provides critical capabilities for China: China wants "cislunar space supremacy." [32] China is obsessed with "First Presence" and currently exhibits the world's second-largest space budget.[33] In addition to reaching Mars in 2021, China's goals include sending probes to asteroids, Jupiter, and Uranus, developing quantum satellites, building a scientific research station in the moon's southern polar region, and establishing a sophisticated large-scale space station within ten years.[34] In 2019, China continued to develop its space launch capabilities, providing cost-savings through efficiency and reliability, extending its reach into multiple Earth orbits, and improving its capacity to reconstitute space capabilities in low Earth orbit rapidly.[35] In 2020, China reached total operating capacity with its BeiDou-3 constellation, providing worldwide positioning, navigation, and timing capabilities to its users and additional command and control for the PLA, reducing China's dependence on U.S. GPS.[36]

China plans to place a permanently operating space station in orbit by 2022. By 2025, China plans to construct a lunar research station to develop into an established crewed lunar research and development base before 2050.[37] They are using a similar timeline to pursue space-based solar power.[38] Under the current schedule, China will be the following country after the United States to send an astronaut to the moon by 2030 and is pursuing a Mars base, which they are currently testing the prototype of on Earth.[39]

China's privatized space industry is flourishing, as are the private-military partnerships. The China Aerospace Science and Technology Corporation states that China plans to become the most developed space power by 2045.[40]

China's development of a space force is beyond that of the other great powers. The Chinese equivalent of the U.S. Space Force has identified space as a vulnerability for the United States and is doing everything it can to capitalize on that vulnerability by advancing its space capabilities.[41]The creation of the People's Liberation Army Strategic Support Force (PLASSF) in 2015/2016 made one organization responsible for developing the PLA's space and information warfare forces.[42]This will allow China to integrate its capabilities into a space force by enabling long-range precision strikes and denying other militaries the use of overhead command, control, communications, computer intelligence, surveillance, and reconnaissance systems.[43]

The PRC continues to strengthen military space capabilities despite a propaganda public stance against the weaponization of space. [44] China claims to be building a "nuclear fleet" of carrier rockets.[45] Reusable hybrid-power carriers will be ready for "regular, large scale" interplanetary flights and carrying out commercial exploration and exploitation of natural resources by the mid-2040s.[46] According to state media, they will have the ability to mine resources from asteroids and build solar power plants in space soon after. [47] "The nuclear vessels are built to colonize the solar system and beyond," Wang Changhui, associate professor of aerospace propulsion at the School of Astronautics at Beihang University in Beijing, stated.[48]

If Russia is the 3 Ds, China is the 3 A(s): adventurous, advanced, and aggressive. The Biden administration is considering its options about China to include an aggressive containment strategy.[49]Any discussion of China's power politics will weigh space as a significant factor.

Japan- Rising or Setting Sun?

Japan is not usually considered a great power. However, it remains an economically powerful nation with space ambitions. Japan solidified its great power status in the late 19th century. Japan is at the cusp of recapturing aspects of that period as it faces rising rivals and the threats of the new frontier of space. Japan perceives the world as hostile due to Chinese imperial dreams in Asia, North Korean aggression, and Russian resurgence.

The Global Firepower 2021 Military Strength Index ranks Japan fifth in global military power.[50]The IISS ranks Japan eighth in military capability and international status with a defense budget of \$48.6 billion.[51] Japan's space budget is estimated to be \$4 billion.[52] Unlike the other great powers, Japan's constitution, written by the United States, hampers its military, and it depends on the United States for its national defense.[53]Then-Prime Minister Shinzo Abe, the most critical prime minister of the 21st century, continued the evolution away from this dependency by slowly returning Japan to its intrinsic geopolitical imperatives.[54]If America retreats, Japan will accelerate its strategic independence. Traditionally, Japan's need to protect its sea lanes of communication to provide raw resources to fuel its economy at home dictated its grand strategy.[55]

Under Abe's direction in 2013, the Japanese cabinet approved Japan's first national security strategy, resulting in creating a Japanese National Security Council.[56] In response to China's aggressive moves in the Pacific areas such as the Senkaku Islands, the strategy argues that Japan needs to make a more "proactive contribution to peace," and thus it needs to contribute more to its military alliance with America despite its pacifist constitution.[57]

Japan's national security space ambitions have been limited compared to Russia and China. The government exploration agency, Japan Aerospace Exploration Agency (JAXA), has stated that it does not intend to militarize space. The Basic Space Law of 2008 emphasized that Japan will "*guarantee international peace and security as well as ensuring the security of the country*" within the framework "*of the pacifist principles of the Constitution*," while the Space Act of 2016 encouraged and defined the role of the private sector and space. These offer other windows into Japanese space thinking.[58] The Japanese government is currently working on a ground-based space tracking system expected around 2023.[59] The unit's main task will be to monitor space debris, threats of attacks, or interference by other countries' satellites.[60]Cooperation between the United States and Japan is crucial for the new space race because their primary goal for space is democratic control.

Japan's Space Force is currently limited. There is a space operations squadron as part of Japan's Self-Defense Forces; however, it has less than 100 members.[61] Japan's Ministry of Defence (MoD) has revealed that it will assign 100 military personnel to its space domain mission unit expected to be stood up by their fiscal year 2022 and probably merged with the space operations squadron.[62] This began when Japan announced its desire to launch a military space force by 2019 with the initial tasking of protecting satellites from dangerous debris orbiting the Earth.[63]The move to a Japanese space force aims to strengthen Japan-U.S. cooperation in space and comes after the countries pledged to boost joint work on monitoring space debris.[64] The number of personnel assigned to the space domain mission unit may increase over the coming years as Japan participates in a growing number of space-centric joint operations with allies such as the United States and some European countries. In August of 2020, Abe met with Raymond. They agreed to enhance bilateral defense cooperation in outer space between the U.S. Space Force and the Japan Air Self-Defense Force's Space Operation Squadron.[65]

Japan's space posture mirrors its overall grand strategy, tied to the United States in almost all areas.[66]Its geopolitical imperative is based on its negative WWII legacy, its inherent natural resource problem, and its robust alliance with the United States. Both Tokyo and Washington, D.C. must enhance this alliance into space to counter adversarial power.

India- Expanding Power or Regional Hostage?

While not yet a global power, India is a regional power and a strategic competitor to China. India also has space ambitions. India spent much of its post-independence history as a nominal leader of the non-aligned movement, though it has recently dedicated minimal attention to articulating a grand strategy. The Global Firepower 2021 Military Strength Index ranks India fourth in military capability.[67] The IISS ranks India fifth in military spending with a defense budget of \$60.5 billion.[68]

India's strategic outlook is within the context of Hinduism and Hindu nationalism, using concepts like Niti (Difficult choices, unworthy means to achieve good ends), Artha (prosperity), Dharma (Moral obligations, duty), Mandala (geopolitical configuration), and Danda (force and punishment).[69] General V. K. Singh's "Transformation Study" created a window into India's new strategic thinking by envisioning an Indian military able to fight on "two-and-a-half fronts" - namely, against China, Pakistan, and an Islamic insurgency at home.[70] However, India has been unable to develop a consistent policy for its three major geopolitical issues: Pakistan, China, and the Indian Ocean.

India's decision over the Indian Ocean will determine its pathway as a great power. A new generation of policymakers has indicated that they want to consider the Indian Ocean as an Indian lake.[71] India's naval power projection buildup continues, despite the nation spending only \$60.5 billion on defense. It has two aircraft carriers, and by 2022 intends to have a third.[72] This would give it the largest carrier fleet in the eastern hemisphere, aside from the United States. India's challenge will be to build the technological and military capabilities of great power without a clear goal or strategy. In conceiving such a strategy, India may align itself with the United States and the West, which it has avoided since independence. That choice will dramatically affect the worldwide geopolitical situation and likely increase tensions with China.

India is on the cusp of becoming a space power but spends only \$1.2 billion on space.[73] The Indian space force is rudimentary. India's first military application of space was surveillance of Pakistan.[74] This is potentially one of India's most serious handicaps, not only in space but in geostrategy. She is a prisoner of her adversarial relations with Pakistan. India is forming a space force equivalent to its tri-service Defense Space Agency (DSA) of the Indian Armed Forces.[75] In April 2019, India formed the DSA to command its military space assets, including its anti-satellite capability.[76] The DSA is also in charge of formulating a strategy to protect India's interests in space, including addressing space-based threats. India successfully tested an anti-satellite weapon in March 2019.[77]

The DSA's integrated space cell uses the country's space-based assets for military purposes and defends these assets from various threats.[78] India proclaims that it remains committed to the non-weaponization of space. Still, there is the emergence of offensive counter-space systems and anti-satellite weaponry seen as new threats to counter.[79]

India's participation in the global space arena has primarily focused on making scientific advancements and discoveries, not on military development of space, as evident in the Chandrayaan project, which, so far, has sent two probes to the moon.[80] India strives to launch its astronauts into space by 2022, becoming just the fourth country behind the United States, China, and Russia.[81] It is also increasingly collaborating with the United States on lunar exploration.[82] India is also becoming more autonomous with its Indian Regional Navigation System and its Polar Satellite Launch Vehicle, launching satellites from India, the United States, and Brazil in 2021. Indian grand strategy needs cohesion and foundation and is attempting to straddle realism with Hindu nationalism.

Conclusion

Conflict is fully rooted in the international relations system because most great powers use realist theory. Religion, history, and cultural influences also shape some great powers' realism.[83] Strategic culture is a product of grand historical strategy, and national security policies are both.

Space is an organic extension of great power conflict. All great powers are engaging in space force creation, and powers that have a thriving space strategy will, by definition, have a grand strategy for the future. Russian and Chinese grand strategies are on hostile trajectories with the United States and allied nations.

A multi-polar world and a less engaged United States will result in more chaos and instability on Earth and space. The creation of the U.S. Space Force in December 2019 signaled that the United States wants to retain strategic leadership in space. Whether the Space Force will be funded and manned to compete with the increasing ambitions of great power rivals is a critical concern with significant implications for the security, safety, and stability of space and the world.

Dr. Lamont Calucci is a senior fellow in national security affairs at the American Foreign Policy Council. Joshua Carlson is the author of Spacepower Ascendant, chosen for the 2021 National Security Space Institute's Reading list. This paper represents solely the authors' views and do not necessarily represent the official policy or position of any Department or Agency of the U.S. Government. If you have a different perspective, we'd like to hear from you.

NOTES

[1] A great power is defined as a nation, rather than a state, with global reach and scale. It influences the international relations system as a whole, can exert hard power and aspects of soft power, and go beyond DIME (Diplomatic/Informational/Military/Economic) instruments of power to include cultural and religious influence.

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