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The US-China Space Rivalry; Implications for Japan's National Security

Momina Irfan[1]

Abstract

The increasing competition between the United States and China in outer space has changed the way countries interact with each other. It has turned space into a place where countries show off their technology, military plans, and ideas. Japan, a country that wants to stay peaceful but also supports the United States in the Indo-Pacific region, faces big challenges to its safety because of this competition. This article looks at how the US-China space rivalry has changed, starting from the Cold War when countries were competing, to China becoming a strong space power, and the US creating the Space Force to respond. It also talks about the race to develop better technology, like China's ability to destroy satellites and the US's network of commercial satellites, and how these things affect Japan's important space-based systems. This article examines how Japan's space plans are changing, the dangers it faces from nearby threats, and how it is trying to deal with the rivalry, working with allies, and leading in making rules for space. This article aims to provide a guide for Japan to protect its interests in a time when powerful countries are competing with each other.

Keywords: space governance, strategic vulnerabilities, defense modernization, global influence, technological prowess, space policy, security dependence

Introduction

Amidst the boundless reaches of the cosmos, a fresh epoch of global competition is emerging, pitting the United States and China against each other in a contest that transcends the confines of our planet. This so-called "new space race" is not just a quest for scientific exploration but a high-stakes battle for strategic supremacy, propelled by advanced technologies, military aspirations, and divergent visions of global order. For Japan, a nation with a pacifist constitution, a robust technological

[1] Department of Political Science & International Relations, University of Management and Technology, Lahore – Pakistan

foundation, and a crucial role in the Indo-Pacific region, the US-China space rivalry presents both existential challenges and strategic opportunities. As space becomes increasingly vital to national security, supporting intelligence, communication, and defense systems, Japan finds itself at a critical juncture, striving to balance its historical commitment to peace with the need to safeguard its interests in an ever-militarizing domain (Kalender & Hughes, 2021).

The origins of this rivalry can be traced back to the Cold War era, when the United States and the Soviet Union used space as a platform to project their power, from the launch of Sputnik in 1957 to the Apollo moon landing in 1969 (Bowen, 2020). Today, China's ascent as a formidable space power, evidenced by its 2007 anti-satellite (ASAT) test, the Beidou navigation system, and the Tiangong space station, has begun to challenge the long-standing US dominance in space, raising concerns about potential conflict and the proliferation of orbital debris (Pollpeter et al., 2023; Secure World Foundation, 2023). In response, the United States established the Space Force in 2019 and forged partnerships with private companies like SpaceX, which have significantly transformed access to space (Foust, 2023). Japan, which relies heavily on space-based assets for monitoring threats such as North Korea's missile activities and China's naval maneuvers, faces heightened vulnerabilities in the context of this intensifying rivalry (JAXA, 2023).

In terms of rhetoric, the United States frames its space initiatives as a means of defending a "rules-based international order," while China emphasizes its pursuit of national rejuvenation. Japan, in turn, carefully navigates a delicate balance between its pacifist principles and pragmatic security needs (Daniels & Kliman, 2023). Japan's space policy, shaped by the 2008 Basic Space Law and the 2022 National Security Strategy, reflects a gradual shift towards enhancing defense-oriented capabilities, driven by regional security dynamics and its alliance with the United States (Japan Ministry of Defense, 2022). This article delves into the historical, technological, and rhetorical dimensions of the US-China space rivalry, examining its implications for Japan's national security and proposing strategies to reinforce its resilience, deepen its alliances, and take a leading role in global space governance (Suzuki, 2023; UNOOSA, 2023).

Review of the Literature

The intricate US-China space rivalry, which holds significant implications for Japan's national security, is a complex issue that necessitates a thorough examination of a diverse range of sources. These sources span scholarly articles, governmental reports, and analytical pieces, each offering unique perspectives and insights. In this context, seven meticulously chosen references are discussed in detail. Each paragraph provides an in-depth description of the source's content, its credibility, and its relevance to the article's exploration of the historical evolution, technological advancements, rhetorical strategies, and strategic consequences of the space rivalry. These sources, which include peer-reviewed journals, think tank reports, government documents, and space agency publications, collectively offer authoritative and comprehensive insights into the dynamics shaping Japan's space policy. They also shed light on Japan's alliance with the US and its role in the Indo-Pacific region, amidst the backdrop of great power competition in space. Each paragraph highlights how the source contributes to understanding the interplay of military capabilities, international norms, and national security imperatives, thereby ensuring a robust and multifaceted foundation for the article's analysis.

Bingen, K., & Harrison, T. (2025). Space Threat Assessment 2025. Centre for Strategic and International Studies (CSIS). The Space Threat Assessment 2025, authored by Kaitlyn Bingen and Todd Harrison and published by the Centre for Strategic and International Studies (CSIS), stands as a pivotal reference for comprehending the military aspects of the US-China space rivalry and its direct ramifications for Japan's national security. This annual report, emanating from a premier Washington-based think tank celebrated for its meticulous defense and security analyses, furnishes a thorough assessment of global counterspace capabilities, with a pronounced emphasis on China's progress. It meticulously outlines China's kinetic anti-satellite (ASAT) weapons, exemplified by the 2007 test that generated substantial orbital debris, in addition to its non-kinetic systems such as jammers, lasers, and co-orbital satellites that harbor the potential for sabotage. The report's significance is rooted in its dissection of how these capabilities endanger Japan's Information Gathering Satellite (IGS) program and Quasi-Zenith Satellite System (QZSS), which are indispensable for intelligence, surveillance, and reconnaissance (ISR) and missile defense amid regional threats like North Korea's missile activities and China's naval operations in the East China Sea. For the article, this source furnishes evidence of the technological vulnerabilities Japan confronts, thereby highlighting the

imperative for enhanced space situational awareness (SSA) and resilient satellite systems. The report also situates Japan's alignment with the US through joint SSA exercises, underscoring the strategic necessity of the US-Japan alliance in countering China's space threats. Its credibility is fortified by CSIS's access to open-source intelligence and expert consultations, rendering it an authoritative resource for policymakers and scholars alike. By delineating the escalating militarization of space, this source informs the article's discourse on Japan's strategic responses, encompassing investments in indigenous capabilities and international cooperation to alleviate risks.

Pollpeter, K. L., et al. (2023). This article, published in the Journal of Strategic Studies, a highly respected peer-reviewed journal known for its focus on strategic and security studies, delivers a comprehensive analysis of China's counterspace capabilities and their far-reaching implications for global space security, with particular significance for Japan's national security. Authored by Kevin Pollpeter and colleagues, who are affiliated with the Centre for Naval Analyses, the piece dissects China's advancements in kinetic ASAT weapons, electronic warfare systems, and co-orbital satellites, placing special emphasis on the role of the People's Liberation Army (PLA) Strategic Support Force in integrating space into China's military doctrine. For the purposes of the article, this source is indispensable for elucidating how China's capacity to target satellites in both low Earth orbit (LEO) and geostationary orbit (GEO) poses a threat to Japan's Information Gathering Satellite (IGS) program and Quasi-Zenith Satellite System (QZSS). These systems are crucial for monitoring regional threats and supporting missile defense systems such as Aegis and Patriot Advanced Capability-3 (PAC-3). The article's meticulous technical assessments, which are based on open-source intelligence and Chinese military documents, underscore the strategic challenge presented by China's non-kinetic capabilities. These include jammers and lasers, which have the potential to disrupt Japan's space-based assets without causing physical destruction. Rhetorically, the article draws a stark contrast between China's public narrative of peaceful space exploration and its underlying military ambitions. This dual messaging is a key element in the article's analysis, providing valuable context for understanding China's strategic intentions. The source's credibility is firmly established through its rigorous methodology and the authors' extensive expertise in Chinese military strategy. As a result, it serves as a vital reference for the article's exploration of the technological and military dynamics at play. Moreover, the article underscores the necessity for Japan to invest in resilient satellite systems and to deepen its

cooperation with the US. This is particularly important given that China's capabilities could disrupt critical alliance-dependent infrastructure in the event of a conflict. In summary, this source offers a detailed and authoritative perspective on the evolving space rivalry, making it an essential component of the article's analysis.

Japan Ministry of Defense. (2022). The National Security Strategy of Japan (2022), published by Japan's Ministry of Defense, serves as a definitive government document that delineates Japan's strategic priorities within the context of a rapidly changing security landscape, with a particular emphasis on space as a crucial domain. This source is of paramount importance to the article, as it offers primary and authoritative insights into the evolution of Japan's space policy. Specifically, it highlights the shift from a focus on peaceful exploration to the development of defense-oriented capabilities, a change largely driven by the intensifying US-China space rivalry and regional threats such as North Korea's missile program. The strategy underscores the significance of space situational awareness (SSA), the Quasi-Zenith Satellite System (QZSS), and the establishment of the Space Operations Group in 2020. This group is tasked with safeguarding Japanese satellites and monitoring potential threats. Additionally, the document reaffirms Japan's dedication to the US-Japan Security Treaty, outlining collaborative efforts in SSA and missile defense, which are essential for countering China's ASAT capabilities. Rhetorically, the document presents Japan's space policies as fundamentally defensive, aligning with the country's pacifist constitution while also demonstrating a pragmatic approach to the increasing militarization of space. This framing is central to the article's analysis of Japan's efforts to balance its traditional pacifist stance with the pragmatic necessities of modern security challenges. The credibility of this source is beyond reproach, as it represents official policy from Japan's government, informed by extensive consultations with defense experts and allies. For the article, it provides concrete evidence of Japan's strategic responses, including investments in indigenous capabilities and international cooperation. It also highlights the vulnerabilities associated with Japan's reliance on US-controlled systems like GPS. By integrating space into Japan's broader security framework, this source enriches the article's discussion of regional security dynamics and alliance commitments, offering a comprehensive view of Japan's strategic posture in the face of evolving space-related threats.

Daniels, J., & Kliman, D. (2023). Jeff Daniels and Daniel Kliman's article, featured in Global Studies Quarterly, an esteemed open-access journal published by Oxford

University Press, provides a nuanced comparative analysis of the structural power dynamics between the US and China in outer space. This analysis carries substantial implications for Japan's role in space governance and its national security posture. The authors, who are associated with leading think tanks, delve into how the US employs initiatives such as the Artemis Accords to shape norms for space exploration. In contrast, China advances its own frameworks, exemplified by the International Lunar Research Station in collaboration with Russia. For the purposes of the article, this source is essential for unpacking the rhetorical strategies that characterize the US-China space rivalry. It juxtaposes the US's advocacy for a "rules-based international order" with China's focus on national rejuvenation and technological self-reliance. The article underscores Japan's strategic decision to align with the Artemis Accords, which it signed in 2020, to support US-led norms while simultaneously managing its economic interdependence with China. This alignment is a central theme in the article's examination of Japan's intricate diplomatic balancing act. The source's detailed case studies, which are rooted in qualitative data and thorough policy analysis, offer compelling evidence of the fragmented space governance landscape. This fragmentation presents challenges for Japan as it endeavours to foster multilateral norms through platforms such as the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS). The credibility of this source is bolstered by the authors' recognized expertise in international relations and the journal's stringent peer-review process. By shedding light on the ideological and normative facets of the US-China space rivalry, this source enriches the article's exploration of Japan's role in mitigating risks through global cooperation. It provides a robust foundation for understanding how Japan navigates the complex interplay of strategic alliances, economic considerations, and the pursuit of a stable and rules-based space governance framework.

Secure World Foundation. (2023). The Secure World Foundation, a non-profit organization committed to promoting sustainable space use, has published a comprehensive report titled "Global Counterspace Capabilities: An Open Source Assessment" (2023). This report is a critical resource for the article, as it offers an in-depth evaluation of counterspace capabilities across the globe, with a particular focus on China's advancements and their implications for nations such as Japan. The report provides detailed technical and strategic insights into China's counterspace systems, encompassing both kinetic and non-kinetic capabilities. These include anti-satellite (ASAT) weapons, co-orbital satellites, and electronic warfare systems, all of which pose significant threats to Japan's satellite infrastructure. The analysis

of China's 2007 ASAT test and subsequent developments is particularly noteworthy, as it highlights the risk of orbital debris, a major concern for Japan's Information Gathering Satellite (IGS) and Quasi-Zenith Satellite System (QZSS). These systems are vital for intelligence, surveillance, reconnaissance (ISR), and disaster management. For the article, this report is instrumental in informing the discussion of technological vulnerabilities and the potential for Kessler Syndrome, a scenario where cascading debris could render low Earth orbit (LEO) unusable. The report also underscores Japan's efforts in space situational awareness (SSA) and its collaboration with the US Space Force, emphasizing the necessity for resilient systems to counter China's growing capabilities. The credibility of this source is firmly established by the Secure World Foundation's reputation for impartial, open-source analysis. The report draws on global data and expert consultations, ensuring a comprehensive and balanced perspective. By addressing the sustainability of the space environment, this report supports the article's exploration of Japan's strategic responses, including investments in debris mitigation and the promotion of international norms. In summary, this report is a vital reference for understanding the broader implications of the US-China space rivalry. It provides essential context for Japan's strategic decisions, highlighting the need for both technological resilience and international cooperation to mitigate risks and ensure the sustainable use of space.

Kalender, P., & Hughes, C. W. (2021). This article, featured in The Diplomat, a prominent online magazine specializing in Indo-Pacific affairs, delivers a detailed and insightful analysis of Japan's evolving space policy in the face of the growing militarization of space, primarily driven by the US-China rivalry and regional security concerns. Authored by Paul Kalender and Christopher W. Hughes, both recognized experts in Japanese security and space policy, the piece traces Japan's significant transition from a purely scientific space program under the National Space Development Agency (NASDA) to a defense-oriented approach following the enactment of the 2008 Basic Space Law. For the purposes of the article, this source is invaluable for understanding Japan's strategic pivot, particularly the development of the Information Gathering Satellite (IGS) program and the establishment of the Space Operations Group. These initiatives are specifically designed to address threats emanating from North Korea's missile activities and China's counterspace capabilities. The article also highlights Japan's reliance on the US-Japan Security Treaty, detailing collaborative efforts in missile defense and space situational awareness (SSA), while noting vulnerabilities arising from dependence on US

technologies such as GPS. Rhetorically, the article examines how Japan frames its space policies as defensive, aligning with its pacifist constitution while adapting to a rapidly changing security environment. This framing is a central theme in the article's analysis, offering a nuanced understanding of Japan's efforts to balance its traditional pacifist stance with pragmatic responses to emerging security challenges. The credibility of this source is bolstered by the authors' academic expertise and The Diplomat's reputation for providing well-informed commentary and analysis. By offering a historical and strategic perspective on Japan's space policy, this article enriches the discussion of Japan's national security challenges. It also provides critical context for understanding how Japan navigates the complex interplay between pacifism and pragmatism in response to the evolving US-China space rivalry.

NASA. (2020). The Artemis Accords, published by the National Aeronautics and Space Administration (NASA) in 2020, represent a significant milestone in shaping the principles of international cooperation in space exploration. This landmark document, signed by Japan and other US allies, is essential for the article as it offers primary evidence of the US's rhetorical strategy to foster a rules-based space order. This strategy stands in contrast to the alternative frameworks advanced by China. The Accords emphasize key principles such as transparency, interoperability, and debris mitigation, which align closely with Japan's interests in promoting sustainable space use. Japan's leadership in regional forums like the Asia-Pacific Regional Space Agency Forum (APRSAF) further underscores its commitment to these principles. For the article, the document provides crucial insights into Japan's strategic alignment with the US, highlighting its decision to support US-led norms while managing complex economic and diplomatic relations with China, its largest trading partner. The Accords' focus on lunar exploration also highlights Japan's technological contributions to the Artemis program, thereby enhancing its overall space capabilities. This involvement not only strengthens Japan's position in space exploration but also reinforces its strategic partnership with the US. NASA's credibility as the US's premier space agency ensures the document's authority, reflecting official policy that is informed by extensive international consultations. By detailing the normative framework that shapes space governance, the Artemis Accords support the article's exploration of Japan's role in mitigating the risks associated with the US-China rivalry through multilateral cooperation. In summary, the Artemis Accords are a critical reference for understanding the interplay of strategy and rhetoric in the space domain. They provide a foundational framework

for analyzing how Japan navigates its strategic interests, technological advancements, and diplomatic balancing acts in the context of evolving space governance.

Theoretical Framework

The analysis is grounded in a hybrid theoretical framework that integrates realism and liberal institutionalism, offering a multifaceted perspective to comprehend the US-China space rivalry and Japan's strategic responses:

- **Realism**

This theory provides a sturdy lens for analyzing the US China space rivalry and its implications for Japan's national security. It postulates that states prioritize survival and security in an anarchic international system, chasing power to safeguard national interests (Waltz, 1979). Key Realist concepts include "power balancing", where states counter rival's capabilities, and "security dilemmas" where one state's defensive action evokes insecurity in others. In the context of US China competition in space -circumscribing satellite systems, space weaponization and lunar exploration, reflects a struggle for technological and strategic dominance. The space rivalry is essentially a zero-sum contest for power. The United States ventures to protect its dominance in space through the establishment of the Space Force, while China actively challenges this hegemony by developing and deploying counterspace capabilities. This dynamic compels Japan to confront a security dilemma, prodding it to invest in defensive space systems. Realism frames Japan's national security strategy as a response to shifting power dynamics, where it must balance reliance on US alliances with autonomous space capabilities to deter threats such as Chinese anti-satellite weapons or Regional instability. This theory guides the study by explaining how Japan navigates US China rivalry to protect its interests, informing the analysis of its space policies, military alignments and technological investments.

- **Liberal Institutionalism**

Japan's active engagement in international frameworks such as the Artemis Accords and the Committee on the Peaceful Uses of Outer Space (COPUOS) is pivotal. These platforms enable Japan to advocate for norms that promote the peaceful use of space and mitigate the risks associated with space debris. By fostering cooperation within these multilateral institutions, Japan not only enhances its own security but also

amplifies its global influence, leveraging these frameworks to shape a more stable and secure space environment.

❖ The Historical Roots of the Space Rivalry

The US-China space rivalry is built upon a foundation laid during the Cold War, a period when space became a key battleground for geopolitical competition. The Soviet Union's launch of Sputnik in 1957 marked the beginning of the space age, prompting the United States to establish NASA in 1958 and culminating in the 1969 Apollo moon landing, a feat that symbolized both technological prowess and ideological dominance (Bowen, 2020). These achievements were not merely scientific; they were strategic, highlighting the critical link between space capabilities and national power. The development of intercontinental ballistic missiles (ICBMs) and reconnaissance satellites further blurred the boundaries between civilian and military applications, establishing space as a contested domain. China's entry into the space race came later, with the launch of its first satellite, Dong Fang Hong 1, in 1970, despite facing significant economic and political challenges (CNSA, 2022). By the 2000s, China's space program, managed by the China National Space Administration (CNSA) and supported by the People's Liberation Army (PLA), began to gain momentum. The Shenzhou program's 2003 manned spaceflight positioned China as the third nation to achieve human spaceflight, a powerful symbol of its technological progress. The 2007 ASAT test, which destroyed a defunct satellite and generated thousands of debris fragments, underscored China's military ambitions and raised alarms among the US and its allies, including Japan (Secure World Foundation, 2023). Subsequent achievements, such as the Chang'e lunar missions and the completion of the Tiangong space station in 2022, reflect China's dual pursuit of scientific prestige and strategic influence.

In response to these developments, the United States has revitalized its space strategy. The establishment of the Space Force in 2019 formalized space as a warfighting domain, with a mission to safeguard US and allied interests (U.S. Space Force, 2024). NASA's Artemis program, which aims to return humans to the moon by 2025, and partnerships with private companies like SpaceX, which operates the Starlink constellation, have significantly enhanced US capabilities (Foust, 2023). Rooted in historical precedents, this rivalry has transformed space into a critical arena for great power competition, placing Japan at the centre of these geopolitical dynamics.

Japan's Space Journey: From Peaceful Exploration to Strategic Imperative

Japan's journey into space exploration was initiated in the post-World War II period, significantly influenced by its pacifist constitution and its security dependence on the United States. The National Space Development Agency (NASDA), established in 1969 and subsequently merged into the Japan Aerospace Exploration Agency (JAXA) in 2003, initially concentrated on scientific endeavours such as launching weather and telecommunications satellites (JAXA, 2023). However, regional security concerns, particularly North Korea's 1998 Taepodong-1 missile launch that traversed Japanese territory, triggered a reassessment. This event underscored the interconnection between missile and space technologies, prompting Japan to initiate its Information Gathering Satellite (IGS) program in 2003, aimed at intelligence, surveillance, and reconnaissance (ISR) to monitor threats like North Korea's missile activities and China's military manoeuvres (Kalender & Hughes, 2021).

The 2008 Basic Space Law marked a pivotal moment, permitting the use of space for defense purposes within the constraints of Japan's constitution. This shift was largely driven by China's ASAT test and escalating regional tensions (Japan Ministry of Defense, 2022). The 2020 Basic Plan for Space Policy further emphasized priorities such as space situational awareness (SSA), the Quasi-Zenith Satellite System (QZSS), and international cooperation, indicative of Japan's evolving security-centric space strategy. The establishment of the Space Operations Group in 2020, which monitors threats and collaborates with the US Space Force, highlights Japan's proactive approach. However, Japan's continued reliance on US technologies, such as GPS, remains a notable vulnerability (Suzuki, 2023).

Japan's space industry, spearheaded by companies like Mitsubishi Heavy Industries, faces challenges in keeping pace with its US and Chinese counterparts due to limitations in funding and regulatory hurdles (JAXA, 2023). Initiatives like the Space Industry Vision 2030 are designed to spur innovation, but Japan must carefully balance its space investments with other critical defense priorities, including cybersecurity and maritime security, within a context of limited resources.

Technological and Military Dimensions: A New Arms Race in Space

The US-China space rivalry has catalyzed a technological and military arms race, with far-reaching implications for Japan. The United States Space Force is at the forefront of developing advanced systems such as the Next-Generation Overhead Persistent Infrared (OPIR) for missile warning and Protected Tactical SATCOM for secure communications (DoD, 2020). These advancements are complemented by commercial partnerships, particularly with SpaceX's Starlink constellation, which has deployed over 6,000 satellites in low Earth orbit (LEO). While these commercial endeavours enhance the resilience of space-based assets, they remain susceptible to counterspace threats (Foust, 2023).

China's People's Liberation Army (PLA) Strategic Support Force oversees a formidable counterspace arsenal, encompassing kinetic ASAT weapons, co-orbital satellites equipped with robotic arms, and non-kinetic systems such as jammers and lasers (Pollpeter et al., 2023). The 2007 ASAT test and subsequent developments have demonstrated China's capability to target satellites across various orbits, posing a significant threat to Japan's Information Gathering Satellite (IGS) and Quasi-Zenith Satellite System (QZSS) systems (Secure World Foundation, 2023).

China's Beidou navigation system, completed in 2020, represents a milestone in its pursuit of autonomous capabilities. This system reduces China's reliance on the US-controlled GPS and significantly enhances its military operations in the Indo-Pacific region (Klinger, 2023). In contrast, Japan's QZSS is a regional system that is critical for missile defense and civilian applications but is limited in scope compared to Beidou (JAXA, 2023).

The proliferation of space debris, particularly exacerbated by ASAT tests, poses a significant risk of triggering the Kessler Syndrome. This scenario involves cascading collisions that could render LEO unusable, thereby threatening Japan's satellite-dependent infrastructure. This infrastructure is crucial for telecommunications, weather forecasting, and disaster management, highlighting the urgent need for robust space situational awareness and debris mitigation strategies (Rajagopalan, 2021).

Rhetorical Strategies: Narratives of Power and Legitimacy

The United States, China, and Japan each employ unique rhetorical strategies to shape global perceptions of the space rivalry, reflecting their distinct national interests and strategic goals.

The United States frames its space activities as a defense of a rules-based international order, emphasizing transparency and sustainability through initiatives like the Artemis Accords (NASA, 2020). These narrative positions the US as a guardian of established norms, contrasting China's perceived militarization of space. By rallying allies such as Japan, the US aims to counterbalance China's growing influence and maintain its strategic edge (Daniels & Kliman, 2023).

China, on the other hand, promotes its space program as a symbol of national rejuvenation and technological prowess, highlighting achievements like the Tiangong space station while downplaying the military dimensions of its space activities to preserve its international legitimacy (CNSA, 2022). However, statements from the People's Liberation Army (PLA) reveal a more assertive stance, describing space as a "commanding height" for strategic competition, thereby signaling China's intent to establish dominance in this critical domain (Eastin, 2023).

Japan's rhetorical approach carefully balances its pacifist identity with its pragmatic security needs. Japan emphasizes its adherence to the 1967 Outer Space Treaty and focuses on defensive measures to safeguard its space assets (Japan Ministry of Defense, 2022). By aligning with the US's rules-based narrative, Japan seeks to legitimize its space policies while avoiding direct provocation of China, its largest trading partner. This delicate balancing act is evident in Japan's 2022 National Security Strategy, which underscores the concept of "active defense" in space while reaffirming Japan's commitment to maintaining peace (Suzuki, 2023).

Through these rhetorical strategies, each nation navigates the complex geopolitical landscape of the space rivalry, striving to advance its interests while managing the delicate dynamics of international cooperation and competition.

Implications for Japan's National Security

The US-China space rivalry poses multifaceted challenges to Japan's national security. Technological Vulnerabilities: Japan's reliance on US-controlled GPS and satellite communications creates risks, as a US-China conflict could disrupt these systems, impairing missile defense and ISR capabilities (DoD, 2023). China's counterspace capabilities, including electronic warfare, could target Japan's IGS satellites, critical for monitoring North Korea and China's activities in the East China Sea (Pollpeter et al., 2023). Regional Security Dynamics: China's Beidou-enhanced military operations strengthen its position in disputes like the Senkaku Islands, while North Korea's missile tests underscore the need for robust ISR (Eastin, 2023). Alliance Commitments: Japan's alignment with the US through the Security Treaty and Artemis Accords enhances cooperation but risks entanglement in a broader conflict, potentially straining economic ties with China (Lewis, 2021).

Economically, satellite disruptions could cost Japan billions, impacting sectors like agriculture, logistics, and finance (JAXA, 2023). The 2022 National Security Strategy identifies space as a critical domain, committing to enhanced SSA and resilient systems, but Japan's technological gap with the US and China remains a challenge (Suzuki, 2023).

Potential Conflict Scenarios

The rivalry introduces several conflict scenarios with implications for Japan:

Limited Skirmish: In a crisis over the Senkaku Islands, China could deploy non-kinetic measures like jamming to disrupt Japan's IGS satellites, impairing situational awareness (Pollpeter et al., 2023). Japan would rely on US SSA data and redundant systems, highlighting its dependence (Hitchens, 2022).

Large-Scale Space Conflict: A US-China conflict could involve ASAT attacks, disrupting US satellites and Japan's missile defense systems (DoD, 2023). Japan's Space Operations Group would struggle to maintain autonomy, requiring US support (Suzuki, 2023).

Kessler Syndrome: A large-scale ASAT conflict could trigger cascading debris, rendering LEO unusable and devastating Japan's satellite infrastructure (Secure

World Foundation, 2023). This would necessitate international cooperation, complicated by US-China tensions (Rajagopalan, 2021).

Japan's Strategic Pathways Forward

To navigate the rivalry, Japan must adopt a multifaceted strategy:

Indigenous Capabilities: Expanding QZSS for global coverage and developing anti-jamming ISR satellites are critical for autonomy (JAXA, 2023). Public-private partnerships, modelled on the US, could drive innovation, though increased funding is needed (Suzuki, 2023).

Alliance Cooperation: Deepening US-Japan SSA exercises and technology transfers, alongside Quad partnerships with Australia and India, enhances resilience (Lewis, 2021). Bilateral ties with the EU and South Korea could diversify options (Harrison et al., 2020).

Space Governance: Japan's leadership in COPUOS and APRSAF can advocate for ASAT test bans and debris mitigation, bridging US-China divides (UNOOSA, 2023; Rajagopalan, 2021). Its neutral stance positions it as a mediator, though diplomacy is key.

Rhetorical Strategy: Framing space policies as defensive and norm-driven maintains domestic support and international legitimacy, balancing pacifism with security needs (Suzuki, 2023).

Conclusion

The intensifying US-China space rivalry presents a pivotal inflection point for Japan's national security, compelling a recalibration of its strategic priorities in the face of evolving geopolitical dynamics. As space transitions from a domain of peaceful exploration to one of military contestation, Japan finds itself navigating a precarious path between maintaining its pacifist principles and ensuring the integrity of its space-based infrastructure. The vulnerabilities exposed by China's growing counterspace capabilities—ranging from kinetic anti-satellite weapons to sophisticated electronic warfare systems—highlight the urgency for Japan to invest in resilient and autonomous technologies. At the same time, Japan's alignment with

the United States through frameworks like the Artemis Accords reinforces a commitment to a rules-based space order, though it also raises the stakes of entanglement in great power competition.

Looking ahead, Japan must adopt a balanced, multi-pronged strategy that fortifies its domestic capabilities while amplifying its role in international space governance. This includes deepening alliances through technological cooperation and shared space situational awareness, while actively championing norms that mitigate the risks of conflict and orbital debris. As a technologically advanced yet diplomatically restrained actor, Japan is uniquely positioned to bridge divides between rival blocs and advocate for sustainable, secure space use. The choices Japan makes today—whether in capacity-building, diplomacy, or strategic alignment—will determine not only its resilience in an era of orbital uncertainty but also its influence in shaping the future architecture of global space security.

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Correspondence:

Momina Irfan

momina148@gmail.com