

ASTROPOLITICS: A HOLISTIC PERSPECTIVE ON MODERN GEOPOLITICS

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Introduction

Everett Carl Dolman in his book, “Astropolitik: Classical Geopolitics in the Space Age” elaborates on how modern Geopolitics has outgrown its territorial landscape, encompassing the Spatial Arena, thus giving birth to the term “Astropolitics”. The politicisation of space programmes amalgamated with space-related policies in both the public and private spheres depicts the importance of the application of strategy in the current global landscape, which forms a significant part of Geopolitics. Thucydides, while illustrating the concept of *Realism*, talked about how the absence of an overarching authority may cause the state to lay in a position of constant conflict with other state systems leading to the need for a ‘Balance of Power’ (Oldemeinen, 2010), which in today’s era of technological and scientific advancement becomes essential, with respect to the politics of space.

This article aims to explore the distinct aspects of Astropolitics rooted in Modern Geopolitics and trace their relevance in the 21st Century along with future prospects.

What is Astropolitics?

Astropolitics, in terms of modern geopolitics, refers to the study and analysis of the political, strategic, and policy-related aspects of outer space activities and their impact on international relations (Alonso-Trabanco, 2019). It involves examining the interactions, conflicts, and cooperation among nations in the context of space exploration, satellite technology, space policy, and the utilisation of space resources.

This term is derived from “astro” meaning related to space and “politics” pertaining to the governance and relations between states. Astropolitics comprises a wide range of topics, including space security, space law, space exploration, satellite communications, and the militarisation of space.

Historical Context

The foundation of Astropolitics emanated from the ballistic missile-based nuclear arms race between the two nations during the Cold War era following World War-II, thus, leading to an unprecedented space race of the time. The Soviet Union scored a major victory in the early stages of the space race by

launching Sputnik-1 on October 4th, 1957 (The Launch, 1957). Later, Soviet cosmonaut Yuri Gagarin became the first human to journey into space aboard the Vostok-1 spacecraft (Mahmud, 2002). This milestone solidified the Soviet Union's lead in space exploration, demonstrating their ability to put a human into orbit and safely return them to Earth. It was at this point in political history when the world began to witness an arms race beyond the *terra firma*, extending itself to the realm of space.

In the face of the Soviet successes, US President John F Kennedy subsequently delivered a speech in which he set the ambitious goal of landing an American on the moon (The Apollo, n.d.) before the end of the decade. This challenge, known as the "Moonshot," galvanised the American space program and led to the Apollo program (The Apollo, n.d.). Neil Armstrong's famous words, "*That's one small step for man, one giant leap for mankind*," (The Apollo, n.d.) marked a monumental achievement in human history. Additionally, Both the US and USSR invested heavily in aerial and satellite-based reconnaissance programs as part of their overall intelligence-gathering efforts (Muszyński-Sulima, 2023).

The *U-2 program* (Muszyński-Sulima, 2023), initiated by the US in the 1950s, focused on employing high-altitude reconnaissance aircraft capable of flying at extreme altitudes. These U-2 aircrafts conducted overflights of the Soviet Union, gathering crucial intelligence on nuclear installations, military facilities, and other strategic targets. This initiative proved invaluable during the early Cold War years, providing critical insights into Soviet missile capabilities and even influencing pivotal events like the Cuban Missile Crisis. In the 1960s, the US introduced the *SR-71 Blackbird program* (Prisco, 2020), unveiling a high-speed, high-altitude reconnaissance aircraft designed to operate at near-invulnerable speeds and altitudes. This aircraft conducted reconnaissance missions over hostile territories, including the USSR, significantly bolstering US intelligence capabilities. In tandem with these aircraft-based efforts, the US developed satellite-based reconnaissance capabilities under programs like *Corona and Midas* (Muszyński-Sulima, 2023). This initiative involved deploying satellites equipped with advanced cameras to capture detailed images of the Earth's surface. The intelligence gathered from Corona and Midas proved instrumental in obtaining vital information on military and strategic targets, thus contributing substantially to the evolving landscape of Astropolitics.

The Soviet Union, during the Cold War, established a multifaceted approach to aerial and satellite-based reconnaissance, significantly influencing the dynamics of astropolitics. The *MiG-25 "Foxbat"*, (MiG-25 Foxbat, 2023) originally known as an interceptor, also featured reconnaissance variants equipped with high-speed and high-altitude cameras. These specialised versions were employed for overflights, gathering vital intelligence on potential adversaries. Additionally, the *R-12 "Dvina" missile* (Soviet Missile, 2023), initially designed as a medium-range ballistic missile for offensive purposes, found a secondary role in training Soviet air defence units. It was used to simulate intercepting reconnaissance aircraft, contributing to defence strategies. The Soviet Union paralleled the US's efforts by developing satellite-based reconnaissance capabilities through the *Zenit program* (Muszyński-Sulima, 2023). This initiative involved deploying satellites equipped with advanced cameras and film-return capsules, akin to the US Corona program.

These programs, led by the US and USSR, significantly contribute to the understanding of how the Cold War rivalry led to the politicisation of space in the modern era.

Astropolitics in the Contemporary Multipolar World

In the current multipolar world, the space race has evolved beyond the historic rivalry between the United States and the Soviet Union. At present, various countries are actively engaged in space exploration, driven by scientific, commercial, and strategic interests.

Space agencies such as National Aeronautics and Space Administration (US), Roscosmos (Russia), Japan Aerospace Exploration Agency (Japan), Indian Space Research Organisation (India), China National Space Administration (China), and European Space Agency (Europe) have launched myriad space missions over the course of time, thus, emphasising their paramourcy in the spatial arena of the 21st century. However, such missions may conceal within themselves a political motive transcending the goal of scientific advancement.

For instance, India's 2023 Lunar mission, Chandrayan-3 attracted massive attention and appraisal from countries worldwide. However, the phenomenon also invited negative comments from UK journalists asking India to return the 2.3 billion dollar aid that India had received in the past few years. Furthermore, this was paired with unproven allegations of using the aid money for the furtherance of ISRO's space programs (UK Aid Worth, 2023).

This example depicts how achievements in the field of science can lead to the nationalisation of space programs and problems in fostering a unified space agenda.

In another instance, amid increasing tensions with Ukraine in March 2022, the Russian government's space agency removed flags of several countries painted on a rocket in the spaceport, Baikonur. While flags of nations including the United States, the United Kingdom and Japan were taken off, India's flag was kept intact.

This exemplifies how geopolitical conflicts between countries may explicitly reflect their space programs and policies.

Commercialisation of Space

Besides governments, various private companies such as SpaceX, Blue Origin, and Virgin Galactic have also joined the sphere of space exploration. Many of these companies have commercialised this sector by providing space tourism services and asteroid mining.

Redwire, a private space agency, is one of the pioneers in the field of asteroid mining. The agency's primary focus is on developing technologies to extract resources from asteroids and other celestial bodies. Additionally, another private space agency, OffWorld, is developing a fleet of robots designed for asteroid mining and planetary construction. Their technology aims to create a scalable solution for resource extraction..

In 2015, the US government passed the US Commercial Space Launch Competitiveness Act (CSLCA), which states that US companies are entitled to maintain property rights of resources they have obtained from outer space (Blount, 2016). Moreover, other countries such as Luxembourg and Japan have also expressed their interest in the field of asteroid mining. The convergence of this common interest rightly points out the fact that in future, the central governments of varying nations may clash with each other for the celestial resources mined by private space agencies, thus, giving a more commercial and capitalist-oriented shift to the concept of Astropolitics.

Space Governance and Laws with a need for International Cooperation

As space activities grew more prevalent, there arose a need for legal frameworks to govern the use of outer space. This led to the development of international space law, which culminated in the creation of the *Outer Space Treaty in 1967* (Treaty on Principles, n.d.). Also, with the recognition of a need to have a permanent space body within the United Nations, *the United Nations Officer for Outer Space Affairs (UNOOSA)* was established in 1961 through United Nations General Assembly Resolution 1721 (XVI). UNOOSA's mandate emphasizes the peaceful use and exploration of outer space. It focuses on promoting international cooperation, ensuring the equitable benefits of space activities, and mitigating potential conflicts.

Several countries have collaborated on mega projects such as the International Space Station, which is a collaborative effort involving multiple space agencies from different countries. These include NASA (United States), Roscosmos (Russia), ESA (European Space Agency), JAXA (Japan Aerospace Exploration Agency), and CSA (Canadian Space Agency), amongst others. Such initiatives require a great deal of cooperation and collaboration among the states, thus, enhancing the need for proper space governance and cooperation laws.

Space Security and Militarisation

The military use of space is not new, yet it has developed and become more advanced today. Major powers, such as the US, China, and Russia, now have their own military units specialised in space operations, indicating that space has become a new big power competition .

It is believed that the Strategic Defense Initiative (SDI) project – often referred to as “Star Wars” – heralded the militarisation of outer space. As a comprehensive and complex space-based missile shield, SDI was conceived as a game-changer that could decisively alter the strategic balance of power in favour of Washington (Alonso-Trabanco, 2019).

In China, the *People's Liberation Army (PLA)* established the *Strategic Support Force (SSF)* in 2015 to meet the new types of threats of the modern age. The SSF is a new type of combat force operating in near space, outer space, and network space. The organisation is divided into two departments; the *Network Systems Department*, which focuses on electronic warfare and cyber operations, and

the *Space Systems Department*, which is responsible for executing the SSF's space missions such as space launches, tracking, and surveillance.

On the other hand, Russia developed a mobile ground-based laser weapon system called 'Peresvet', which is said to be able to dazzle or even fight satellites in orbit. Russia also has great electronic warfare capabilities, such as jammers and communications satellites (Wehtje, 2023).

Considering these instances, one can gauge that national security has expanded to outer space as independent access to space is considered a strategic and critical asset in the modern era.

Emerging Challenges and Future Prospects

With the advancement of science, technology, and a race for establishing dominance in this multipolar world, the future of Astropolitics possesses the mettle to open doors of new opportunities and ventures for geopolitical diplomacy via space exploration. In his *Sea Power Theory*, Mahan argued that control of the seas, particularly the Pacific, was crucial for a nation's global influence. He believed that a powerful navy was essential for securing maritime trade routes, protecting colonies, and projecting power internationally (Foundations: From Geopolitics, n.d.). Similarly, Mackinder in his geopolitical 'Heartland Theory,' argued that control over the Heartland would give the controlling power significant advantages in global geopolitics (Foundations: From Geopolitics, n.d.). The same strategies can be applied in the case of space diplomacy.

Dr Thomas S Cole proposed the idea of using celestial bodies, such as the moon and asteroids, as "stepping stones" to facilitate the expansion of human activities beyond Earth (Foundations: From Geopolitics, n.d.). This aligns with the idea of 'colonisation' of Mars and utilising its resources as proposed by billionaire Elon Musk (Sankaran, 2023). This vision, which is aimed at saving humanity in times of crisis, is set to bring in a new world order and political system of governance altogether in the coming future.

Conclusion

The emergence of astropolitics marks a significant evolution in the realm of modern geopolitics. As territorial boundaries become less defining, the spatial arena of outer space has gained prominence, leading to the birth of astropolitics. This paradigm shift is highlighted by the increasing politicisation of space programs and policies, both in the public and private sectors, demonstrating the criticality of strategic application in the global landscape.

The historical context of astropolitics is rooted in the Cold War rivalry between the United States and the Soviet Union, culminating in an arms race that transcended Earth's boundaries into the realm of space. The achievements and strategic advancements made during this period set the stage for a new era of political dynamics, profoundly influencing international relations. In the contemporary multipolar world, space exploration has diversified beyond the historical dichotomy, with various nations actively

engaged in endeavours driven by scientific, commercial, and strategic imperatives. This has given rise to a complex web of interactions where scientific ventures in space may inadvertently become arenas for geopolitical confrontations. Moreover, the commercialisation of space by private entities introduces a capitalist-oriented dimension to astropolitics, potentially leading to future disputes over celestial resources. The development of space governance and international cooperation mechanisms, exemplified by the Outer Space Treaty and the UNOOSA, highlights the growing recognition of the need for collective frameworks in managing outer space activities. Simultaneously, the militarisation of space introduces new security concerns, emphasizing the necessity for responsible and regulated use of this strategic domain.

Considering these emerging challenges and prospects, the future of Astropolitics promises to be a dynamic arena for geopolitical diplomacy and strategic manoeuvring. As humanity ventures further into space, the governance, security, and utilisation of this final frontier will undoubtedly shape the geopolitical landscape of the 21st century and beyond.

References

- Alonso-Trabanco, J. M. (2019, December 16). *The dawn of the age of 'astropolitics'?* Geopolitical Monitor. <https://www.geopoliticalmonitor.com/the-dawn-of-the-age-of-astropolitics/>
- Blount, P. J., & Robison, C. J. (2016). One small step: The impact of the U.S. commercial space launch competitiveness act of 2015 on the exploitation of resources in outer space. *North Carolina Journal of Law and Technology*, 18(2), 160-186.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3388543
- Dolman, E. C. (2002). Foundations: from geopolitics to astropolitics. In C. Gray & W. Murray (Eds.), *Astropolitik: Classical geopolitics in the space age* (pp. 11-51). Frank Cass Publication.
- Economic Times. (2023, August 25). *UK aid worth nearly £2.3 billion to India sparks heated debate amid Chandrayaan-3 triumph.*
<https://economictimes.indiatimes.com/news/new-updates/uk-aid-worth-2-3-billion-to-india-sparks-heated-debate-amid-chandrayaan-3-triumph/articleshow/103070330.cms>
- Encyclopedia Britannica. (n.d.). *Mig-25 Foxbat.*
<https://www.britannica.com/technology/MiG-25-Foxbat>
- Firstpost. (2022, March 4). *Russia removes flags of US, UK and Japan from its space rocket; leaves India's flag untouched.*
<https://www.firstpost.com/world/russia-removes-flags-of-us-uk-and-japan-from-its-space-rocket-leaves-indias-flag-untouched-10428461.html>
- Mahmud, K. U. (2022). *A critical analytical essay (review) on "Astropolitik: Classical geopolitics in the space age", by E. C. Dolman.* ResearchGate.

- https://www.researchgate.net/publication/362301900_A_Critical_Analytical_Essay_on_the_Book_Astropolitik_Classical_Geopolitics_in_the_Space_Age_Written_by_Everett_C_Dolman
- Muszyński-Sulima, W. (2023). Cold War in space: reconnaissance satellites and US-Soviet security competition. *European Journal of American Studies*, 18(2). <https://doi.org/10.4000/ejas.20427>
- National Aeronautics and Space Administration. (n.d.). *International space station*.
<https://www.nasa.gov/international-space-station/>
- National Aeronautics and Space Administration. (n.d.). *The Apollo program*.
<https://www.nasa.gov/the-apollo-program/>
- OffWorld. (n.d.). *Extracting critical materials on Earth and in space using swarms of industrial smart robots*. <https://www.offworld.ai/>
- Oldemeinen, M. (2010, February 15). *The political realism of Thucydides and Thomas Hobbes*.
E-International Relations.
<https://www.e-ir.info/2010/02/15/the-political-realism-of-thucydides-and-thomas-hobbes/>
- Prisco, J. (2020, July 20). *SR-71 Blackbird: The Cold War spy plane that's still the world's fastest airplane*. CNN style.
<https://edition.cnn.com/style/article/sr-71-blackbird-spy-plane-design/index.html>
- Redwire. (n.d.). *Asteroid Mining*. <https://www.factoriesinspace.com/redwire>
- Sankaran, V. (2023, April 12). *Elon Musk reveals how he plans to colonise Mars in the next few years in new short animated clip*. Independent.
<https://www.independent.co.uk/space/elon-musk-mars-mission-spacex-b2318366.html>

The National Museum of Nuclear Science & History. (n.d.). *Soviet missile to arrive at the National Museum of Nuclear Science & History.*

<https://www.nuclearmuseum.org/connect/press-releases/soviet-missile-on-display>

The Office of Electronic Information, Bureau of Public Affairs. (n.d.). *The launch of sputnik, 1957.* U.S.

Department of State Archive. <https://2001-2009.state.gov/r/pa/ho/time/lw/103729.htm>

United Nations Office for Outer Space Affairs. (n.d.). *About us.*

<https://www.unoosa.org/oosa/en/aboutus/index.html>

United Nations Office for Outer Space Affairs. (n.d.). *Treaty on principles governing the activities of states in the exploration and use of outer space, including the Moon and other celestial bodies.*

<https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html>

Wehtje, B. (2023, June 6). *Increased militarisation of space – A new realm of security.* Beyond the

Horizon. <https://behorizon.org/increased-militarisation-of-space-a-new-realm-of-security/>