UNITED NATIONS OFFICE
FOR OUTER SPACE AFFAIRS

BBIMUN XI

UNOOSA

Forestalling the weaponisation of outer space and safeguarding satellite infrastructure

14

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1. LETTER FROM THE EXECUTIVE BOARD

Greetings Delegates!

It gives us immense pleasure to welcome you all to this simulation of the **United Nations Office for Outer Space Affairs (UNOOSA) at 'BBIMUN 2026'**. We look forward to an enriching and rewarding experience.

Agenda: ***"Forestalling the Weaponisation of Outer Space and Safeguarding Satellite Infrastructure"***

This study guide is by no means the end of the research; we would very much appreciate it if the members are able to find new realms in the agenda and bring them forth to the committee. Such research, combined with good argumentation and a solid representation of facts, is what makes an excellent performance.

In the session, the executive board will encourage you to speak as much as possible, as fluency, diction, or oratory skills have very little importance as opposed to the content you deliver. So, prime emphasis on research is recommended.

The Executive Board looks forward to an efficient & progressive committee as the issue is very sensitive. We, therefore, expect you all to play your roles with responsibility. Hopefully, we, as members of the Executive Board, will also have a chance to gain insight from this committee.

All the best!
Regards,

Aaditya Wadhwa
Chairperson
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Vice Chairperson
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2. Suggested Pattern For Researching

To start researching the agenda of the committee, participating members should do the following:

1. Start researching your respective countries and their geopolitics. As no definite document may be found which contains the stand of a country, the delegates must do the tedious yet rewarding work of going through past news clippings/ magazine articles/ government websites/ social media handles/ YouTube videos to understand the country's stance on the said agenda.

2. After gaining knowledge about the portfolios, the delegates must start their research on the agenda at hand. This must be done by researching further upon the agenda using the footnotes and links given in the guide and from other sources such as academic papers, institutional or governmental reports, national reports, news articles, blogs, etc.

3. Characterise the agenda into sub-topics and prepare speeches and statements on them. The delegates should also prepare a list of possible solutions and actions that UNOOSA can suggest/adopt on the issue.

4. Assemble proof/evidence for any important piece of information/ allegation you are going to use in committee, and keep your research updated using various news sources, specifically government studies or data released by the same.

5. To have an edge in the committee in terms of debate, delegates must also research the other countries and try to find their contradictory statements or controversial stands on various issues to raise allegations/ substantial questions in the committee.

6. Lastly, we would expect all the delegates to put in serious efforts in research and preparation for the simulation and work hard to make it a fruitful learning experience for all.

3. Committee Overview

About UNOOSA

The **United Nations Office for Outer Space Affairs (UNOOSA)** is a United Nations Secretariat office headquartered at the Vienna International Centre, Austria, established in 1958 to support the UN's work on the peaceful uses of outer space. UNOOSA serves as the Secretariat of the Committee on the Peaceful Uses of Outer Space (COPUOS) and its Scientific and Technical and Legal Subcommittees. COPUOS was established as a permanent UN committee by General Assembly Resolution 1472 (XIV) of 1959 and currently comprises 102 Member States.

UNOOSA's mandate is principally to promote international cooperation in the peaceful exploration and use of outer space, advance international space law, support the implementation of UN space treaties and principles, and assist developing States in accessing space science, technology and applications for sustainable development. It also maintains the United Nations Register of Objects Launched into Outer Space and provides legal, technical and capacity-building assistance to Member States.

UNOOSA itself is not an arms-control or enforcement body. Its work is carried out within mandates established by the General Assembly and COPUOS; consequently, the Committee can facilitate cooperation, develop norms and guidelines, support treaty implementation, promote transparency and confidence-building, and formulate recommendations, but cannot independently impose binding sanctions or authorise military measures.

Among its landmark institutional achievements is its role in supporting COPUOS, which served as the principal negotiating forum for the five UN space treaties. These include the 1967 Outer Space Treaty, adopted through General Assembly Resolution 2222 (XXI), which established foundational principles governing the exploration and use of outer space.

More recently, UNOOSA has contributed to initiatives concerning long-term sustainability of space activities, space applications, disaster management, space-law implementation and capacity-building, reinforcing its role as a bridge between international space governance and the practical use of space technology.

4. Introduction

For centuries, outer space belonged almost entirely to imagination. Today, it belongs to infrastructure, commerce, science, and increasingly, strategy.

The satellite overhead is no longer an abstraction. It can carry a telephone call, guide an aircraft, forecast a cyclone, connect a battlefield, synchronise financial transactions or observe the movement of an adversary. The same orbital environment that enables civilian life has become indispensable to national security. As dependence has grown, so has vulnerability.

The transformation is visible in the extraordinary expansion of human activity beyond Earth. The International Space Station has represented decades of multinational scientific cooperation, while the Artemis Accords, launched in 2020, have developed a growing framework of principles for peaceful and sustainable civil exploration; as of August 2026, NASA lists 71 signatories. The Accords address transparency, interoperability, emergency assistance, harmful interference and orbital-debris mitigation.

But cooperation exists alongside competition.

The United States, China and Russia are developing increasingly sophisticated space capabilities, while India, Japan, Europe and other emerging space powers expand their own presence. The frontier is moving outward, from Earth orbit toward the Moon, lunar resources and eventually deeper space. The legal and geopolitical question is therefore no longer merely who can reach space, but who gets to shape the rules governing what happens there.

Even astronomy illustrates this geopolitical frontier. Humanity's most powerful eyes on the Universe are distributed across international facilities such as ESO's Paranal observatory, with four 8.2-metre telescopes, and ALMA, an international partnership operating at 5,000 metres in Chile. Space is simultaneously a scientific commons, an economic domain and a strategic theatre.

And the urgency is no longer theoretical. In September 2026, the United States publicly acknowledged operating on-orbit space-control weapons, prompting sharp objections from China and Russia and renewed warnings about a possible arms race.

The legal framework, however, was largely constructed for an earlier era.

The Outer Space Treaty prohibits placing nuclear weapons and other weapons of mass destruction in orbit, but does not comprehensively prohibit conventional weapons in outer space. That gap lies at the heart of this agenda.

The question confronting the international community is therefore stark:

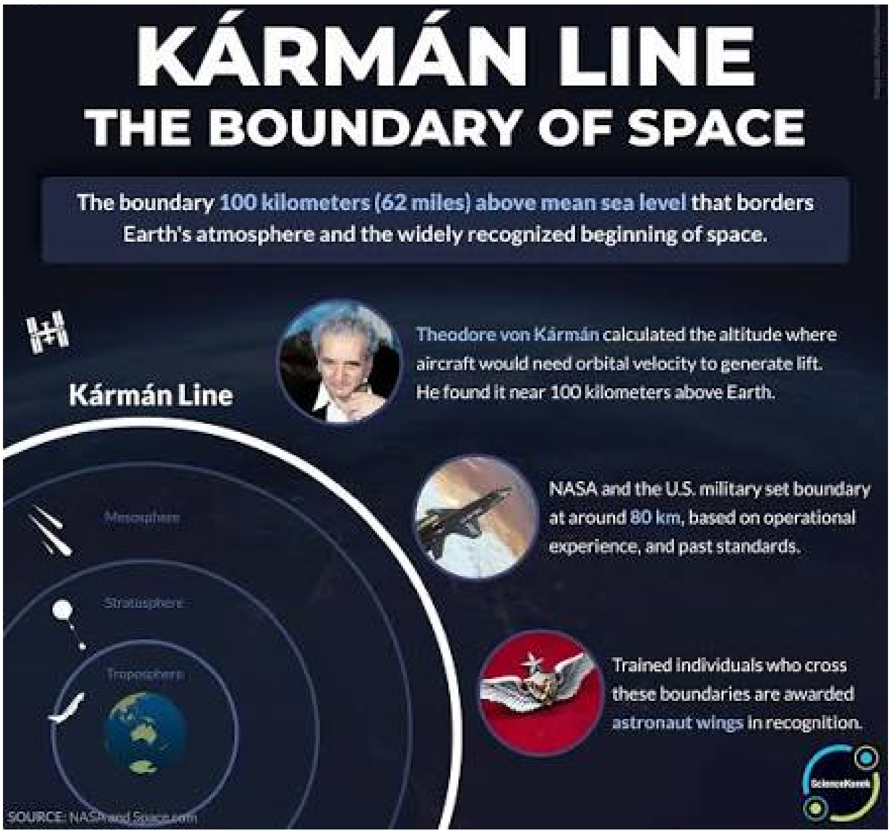
> *Can humanity secure the frontier before competition transforms it into the next battlefield?*

5. <u>Key Concepts</u>

Outer Space

The term **outer space** refers to the region beyond Earth's atmosphere where celestial bodies, satellites, and spacecraft operate. Scientifically, it is the near-vacuum environment that begins beyond the upper layers of the atmosphere and extends infinitely throughout the universe. Contrary to popular belief, outer space is not completely empty. It contains trace amounts of hydrogen and helium gas, cosmic dust, electromagnetic radiation, and charged particles. The absence of atmospheric drag allows satellites to remain in orbit and enables long-distance space exploration.

Unlike the scientific understanding, **international law does not define the precise boundary at which outer space begins**. The most widely recognised scientific benchmark is the **Kármán Line**, located approximately **100 kilometres above mean sea level**. Proposed by aerospace engineer **Theodore von Kármán**, it represents the altitude at which an aircraft would need to travel faster than orbital velocity to generate sufficient aerodynamic lift. Although used by organisations such as the **Fédération Aéronautique Internationale (FAI)** to recognise spaceflight records, the Kármán Line has **no binding legal status**, and no international treaty specifies where airspace ends and outer space begins.



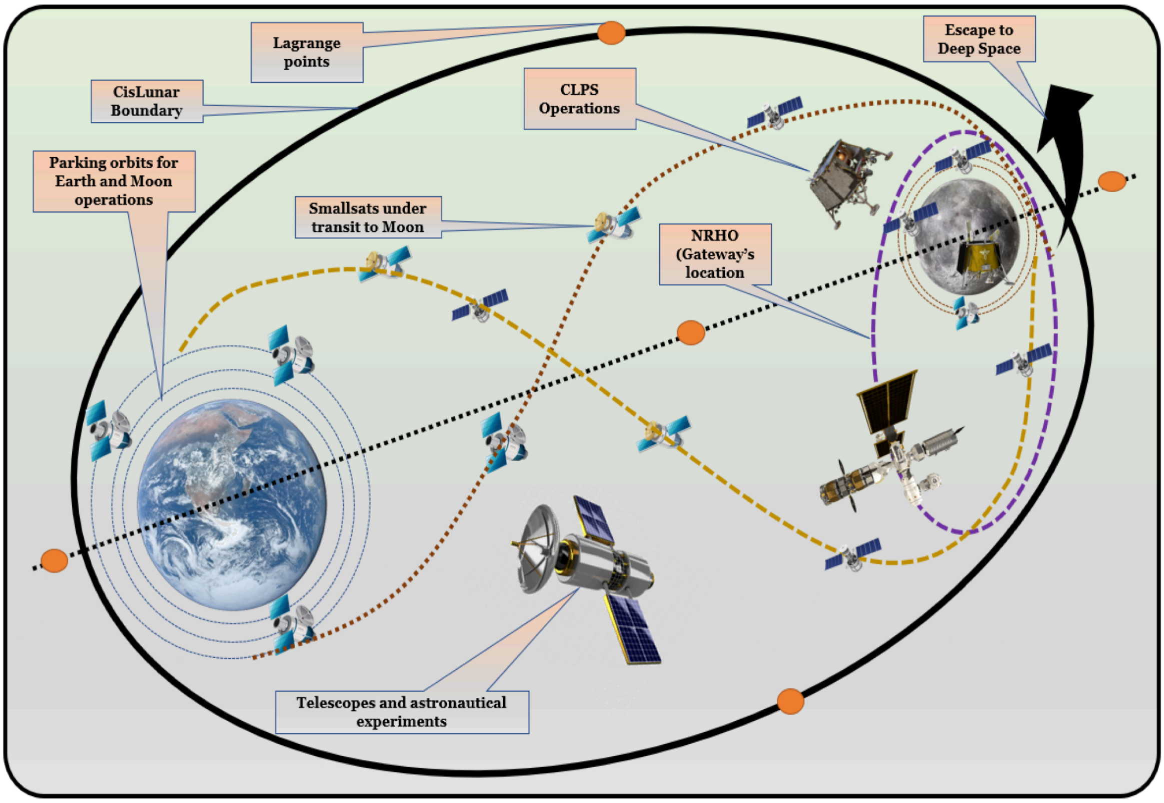
The legal significance of outer space stems from the **Outer Space Treaty, 1967**, which serves as the foundation of modern international space law. **Article I** declares that the exploration and use of outer space shall be carried out **for the benefit and in the interests of all countries**, making it the **"province of all mankind." Article II** further prohibits any State from claiming sovereignty over outer space, the Moon, or other celestial bodies through occupation, use, or any other means. Consequently, unlike territorial land or airspace, no nation can legally annex or own any part of outer space.

Today, outer space has become an increasingly important strategic domain. More than **10,000 active satellites** support global communications, navigation, banking, weather forecasting, disaster management, and national security. At the same time, renewed lunar exploration through programmes such as **NASA's Artemis Programme**, China's **International Lunar Research Station (ILRS)** initiative, and growing private-sector participation have raised complex legal questions regarding resource utilisation, space traffic management, cybersecurity, and the peaceful use of outer space. As humanity expands beyond Earth, the governance of outer space has emerged as one of the defining challenges of twenty-first century international law.

Cislunar Space & Lunar Exploration

Cislunar space refers to the vast region extending between the Earth and the Moon, including the Earth-Moon orbital environment, the five **Earth-Moon Lagrange Points (L1–L5)**, and the various trajectories used by spacecraft travelling between the two celestial bodies. The term is derived from the Latin prefix ***cis***, meaning **"on this side of,"** distinguishing it from ***translunar***, which refers to travel beyond the Earth toward the Moon. Although cislunar space has existed since the formation of the Earth-Moon system, it has only recently emerged as a strategically important domain due to advances in human spaceflight, satellite communications, and lunar exploration.

Historically, cislunar space was traversed only during the **Apollo Missions (1968–1972)**, when NASA successfully landed astronauts on the Moon. Today, however, it is becoming a permanent operational environment. NASA's **Artemis Programme**, China's **International Lunar Research Station (ILRS)** initiative, India's expanding **Chandrayaan Programme**, and planned missions by the **European Space Agency (ESA)**, **JAXA**, and private companies all envision regular travel through cislunar space. The proposed **Lunar Gateway**, a space station to be placed in **Near-Rectilinear Halo Orbit (NRHO)** around the Moon, will further establish cislunar space as a hub for scientific research, logistics, and future missions to Mars.



Lunar exploration has likewise evolved beyond symbolic achievement. The Moon is now viewed as a potential source of **water ice**, particularly in permanently shadowed craters near the south pole. Water can be converted into oxygen for life support and hydrogen-based rocket fuel through **In-Situ Resource Utilisation (ISRU)**, significantly reducing the cost of sustained deep-space missions. The Moon is also believed to contain valuable minerals, including rare earth elements and helium-3, although the commercial viability of these resources remains uncertain. Consequently, lunar exploration is increasingly driven by scientific discovery, strategic competition, technological innovation, and long-term economic interests.

This renewed activity has created new governance challenges. Modern lunar missions rely heavily on **cislunar communication networks**, navigation satellites, relay systems, and deep-space tracking infrastructure linking Earth with spacecraft operating around the Moon. As more nations and private entities establish a presence in cislunar space, concerns have emerged regarding cybersecurity, interference with communication systems, orbital congestion, resource extraction, and the interpretation of the **non-appropriation principle** under **Article II of the Outer Space Treaty, 1967**. These developments have transformed cislunar space from a transit corridor into a strategically significant domain requiring active international cooperation, updated legal frameworks, and sustainable governance.

Artemis II Mission

The **Artemis II Mission** was the first crewed mission of NASA's **Artemis Programme** and marked humanity's return to the vicinity of the Moon after more than five decades. It was the first crewed mission beyond **Low Earth Orbit (LEO)** since **Apollo 17 in 1972**, representing a significant milestone in modern human spaceflight. Unlike the Apollo programme, which unfolded amid Cold War competition, Artemis II formed part of NASA's broader strategy for sustained human exploration of the Moon and eventual missions to Mars.

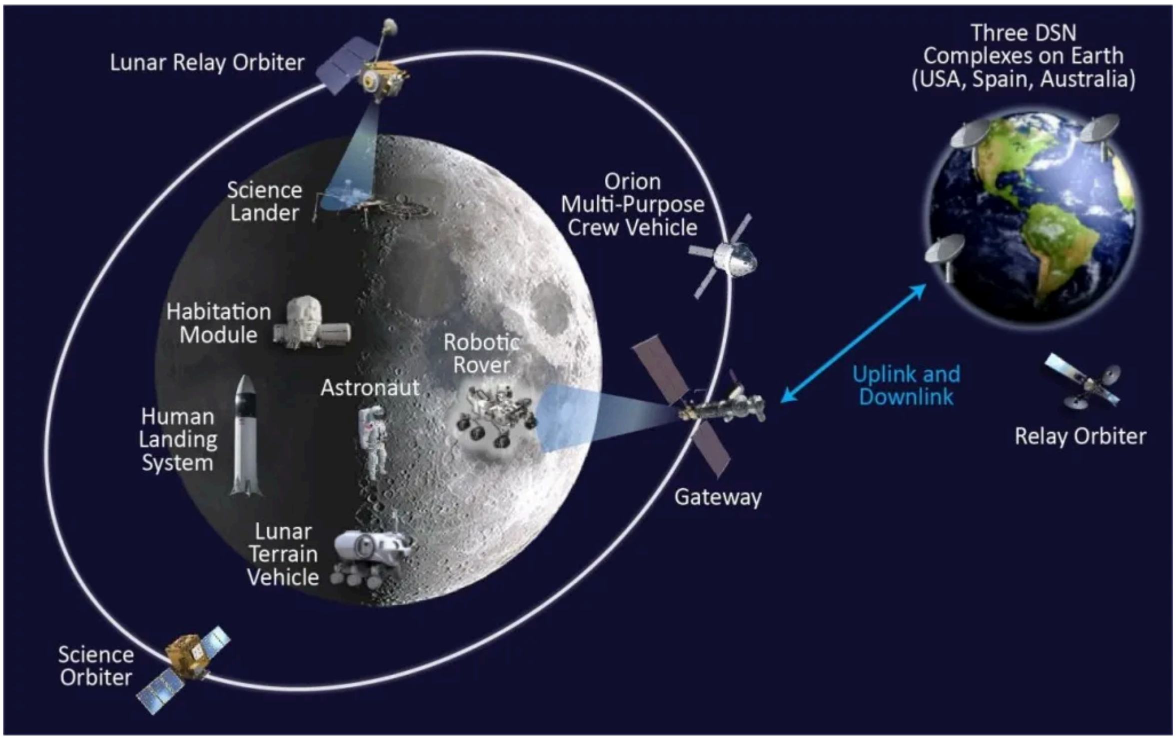
Artemis II **launched on 1 April 2026** aboard NASA's **Space Launch System (SLS)** rocket and carried four astronauts aboard the **Orion Multi-Purpose Crew Vehicle**: NASA astronauts **Reid Wiseman, Victor Glover and Christina Koch**, and Canadian Space Agency astronaut **Jeremy Hansen**. The crew completed a **crewed lunar flyby**, travelling approximately **252,756 miles from Earth** at their farthest point and approaching within approximately **4,067 miles of the lunar surface**. The mission lasted **9 days, 1 hour and 32 minutes**, concluding with a successful splashdown in the Pacific Ocean off the coast of San Diego on **10 April 2026**.

Beyond its scientific significance, Artemis II tested Orion's systems and demonstrated human operations in deep space, providing experience relevant to future lunar missions.

Beyond its scientific significance, Artemis II represents a major geopolitical development. The mission forms part of a broader international effort involving **NASA**, the **European Space Agency (ESA)**, the **Canadian Space Agency (CSA)**, and the **Japan Aerospace Exploration Agency (JAXA)**, while operating within the broader framework of the **Artemis Accords**. The mission also supports the planned **Lunar Gateway**, a space station that will serve as a logistics and research hub in cislunar space for future lunar surface operations.

Cislunar Communication Networks & Deep Space Network (DSN)

Modern lunar exploration is no longer dependent solely on powerful rockets or advanced spacecraft. Every mission operating beyond Earth's orbit relies upon a sophisticated **cislunar communication network** that enables spacecraft to communicate with mission controllers, navigate accurately, transmit scientific data, and ensure astronaut safety. **Cislunar communication networks** refer to the interconnected system of ground stations, relay satellites, navigation systems, and communication links that facilitate the exchange of information between the Earth and spacecraft operating in the region between the Earth and the Moon. As humanity prepares for sustained lunar missions under programmes such as **NASA's Artemis Programme**, these networks are rapidly becoming critical infrastructure comparable to global internet cables or terrestrial power grids.



At the centre of this network is NASA's **Deep Space Network (DSN)**, the world's largest and most sophisticated international spacecraft communication system. Established in **1963** and managed by **NASA's Jet Propulsion Laboratory (JPL)**, the DSN consists of three strategically located complexes in **Goldstone (California, USA)**, **Madrid (Spain)**, and **Canberra (Australia)**. Positioned approximately **120 degrees apart in longitude**, these facilities ensure continuous communication with spacecraft as the Earth rotates. Using massive radio antennas measuring up to **70 metres in diameter**, the DSN provides command transmission, telemetry, spacecraft tracking, navigation, and scientific data reception for missions exploring the Moon, Mars, asteroids, and the outer Solar System.

The importance of secure cislunar communications has increased dramatically with the emergence of long-duration lunar missions. During **Artemis II**, astronauts depended on uninterrupted communication with Earth for navigation updates, spacecraft health monitoring, emergency response, and mission coordination.

Future infrastructure such as the **Lunar Gateway**, autonomous lunar rovers, robotic mining systems, and permanent surface habitats will require continuous, high-bandwidth communication networks operating across cislunar space. To support these objectives, space agencies are developing relay satellites and optical laser communication technologies capable of transmitting significantly larger volumes of data than traditional radio-frequency systems.

These developments also introduce new security concerns. Cislunar communication networks may become vulnerable to **cyberattacks**, signal **jamming**, **spoofing**, electronic interference, or deliberate disruption by state or non-state actors.

Because many communication satellites and tracking systems possess **dual-use capabilities**, serving both civilian and national security functions, attacks on these networks could jeopardise not only scientific missions but also international stability.

Existing international space law, including the **Outer Space Treaty (1967)**, establishes the principle of peaceful exploration but provides limited guidance on protecting deep-space communication infrastructure from cyber threats or hostile interference. Consequently, strengthening the resilience, interoperability, and cybersecurity of cislunar communication networks has emerged as one of the most important governance challenges in the next era of lunar exploration.

6. Historical Background

Sputnik and the Dawn of the Space Age (1957)

The modern era of space exploration began on **4 October 1957**, when the Soviet Union successfully launched **Sputnik 1**, the world's first artificial satellite. Weighing approximately **83.6 kilograms**, Sputnik orbited the Earth every 96 minutes and transmitted simple radio signals detectable around the world. Although scientifically modest, the launch fundamentally altered global geopolitics. It demonstrated that rockets capable of placing satellites into orbit could also potentially deliver intercontinental ballistic missiles (ICBMs), intensifying Cold War rivalry between the Soviet Union and the United States.

The launch triggered the **Space Race**, leading to massive investments in science, engineering, and defence. In response, the United States established the **National Aeronautics and Space Administration (NASA)** in **1958** under the National Aeronautics and Space Act. Sputnik also prompted the United Nations to begin discussions on regulating outer space, laying the groundwork for modern international space law.


"All the News That's Fit to Print"

The New York Times.

LATE CITY EDITION

VOL. CVII..No. 36,414. NEW YORK, SATURDAY, OCTOBER 5, 1957. FIVE CENTS

SOVIET FIRES EARTH SATELLITE INTO SPACE; IT IS CIRCLING THE GLOBE AT 18,000 M. P. H.; SPHERE TRACKED IN 4 CROSSINGS OVER U. S.

HOFFA IS ELECTED TEAMSTERS' HEAD; WARNS OF BATTLE

Defeats Two Foes 3 to 1 —Says Union Will Fight 'With Every Ounce'

COURSE RECORDED

Navy Picks Up Radio Signals—4 Report Sighting Device

By WALTER SULLIVAN

560 MILES HIGH

Visible With Simple Binoculars, Moscow Statement Says

By WILLIAM J. JORDEN

IN TOKEN OF VICTORY: Dave Beck, retiring head of the Teamsters Union, raises hand of James R. Hoffa upon his election as union's president. At right is Mrs. Hoffa.

The approximate orbit of the Russian earth satellite is shown by black line. The rotation of the earth will bring the United States under the orbit of Soviet-made moon.

Device Is 8 Times Heavier Than One Planned by U.S.

FAUBUS COMPARES HIS STAND TO LEE'S

Flu Widens in City; 10% Rate Predicted; 200,000 Pupils Out

ARGENTINA TAKES EMERGENCY STEPS

SATELLITE SIGNAL

The Space Race and the Apollo Missions (1961–1975)

The Space Race reached its peak during the 1960s as the United States and the Soviet Union competed for technological and ideological supremacy. Following Soviet achievements, including **Yuri Gagarin's** historic orbital flight in **1961**, U.S. President **John F. Kennedy** announced the ambitious objective of landing a man on the Moon before the end of the decade.

This culminated in **Apollo 11**, which landed astronauts **Neil Armstrong** and **Buzz Aldrin** on the lunar surface on **20 July 1969**, while **Michael Collins** remained in lunar orbit. Armstrong's famous words, *"That's one small step for man, one giant leap for mankind,"* symbolised humanity's first steps on another celestial body. Between **1969 and 1972**, six Apollo missions successfully landed twelve astronauts on the Moon. The programme ended with **Apollo 17** in **December 1972**, after which human exploration beyond low-Earth orbit ceased for more than fifty years. Although politically driven, the Apollo programme generated lasting scientific discoveries and demonstrated the feasibility of sustained human exploration of deep space.

The Outer Space Treaty and the Birth of International Space Law (1967)

As space activities expanded during the Cold War, the international community recognised the need to prevent outer space from becoming another arena of territorial competition or military conflict. This led to the adoption of the **Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space**, commonly known as the **Outer Space Treaty (OST)**, which entered into force on **10 October 1967**.

Often described as the **"Constitution of Outer Space,"** the Treaty established several foundational principles that continue to govern international space activities. **Article I** declares that outer space shall be explored for the benefit of all countries and is the **"province of all mankind."**

Article II prohibits national appropriation of outer space, the Moon, and other celestial bodies through claims of sovereignty, occupation, or any other means. **Article IV** prohibits the placement of nuclear weapons or other weapons of mass destruction in orbit and requires the peaceful use of celestial bodies.

Despite dramatic technological advances, the Outer Space Treaty remains the cornerstone of international space law and continues to govern emerging issues such as lunar exploration and resource utilisation.

From International Cooperation to Commercial Spaceflight (1975–2020)

Following the end of the Apollo era, space exploration gradually shifted from geopolitical competition towards international cooperation. A symbolic milestone was the **Apollo–Soyuz Test Project (1975)**, the first joint mission between the United States and the Soviet Union. This cooperative approach culminated in the construction of the **International Space Station (ISS)**, launched in **1998** through collaboration among NASA, Roscosmos, the European Space Agency (ESA), JAXA, and the Canadian Space Agency (CSA). For over two decades, the ISS has served as the world's largest laboratory for microgravity research and international scientific cooperation.

During the same period, private companies fundamentally transformed the space sector. The emergence of **SpaceX**, **Blue Origin**, and other commercial launch providers significantly reduced launch costs and enabled reusable rocket technology. Governments increasingly relied on commercial partners for cargo transport, astronaut missions, and lunar development, giving rise to what is often described as the **New Space Economy**, where public and private actors jointly shape the future of space exploration.

Return to the Moon: The Artemis Programme (2020–2026)

Recognising the strategic and scientific importance of the Moon, NASA announced the **Artemis Programme**, an international initiative aimed at establishing a **sustainable human presence** on and around the Moon. Unlike the Apollo missions, Artemis is designed not merely to visit the Moon but to support long-term exploration through technologies such as the **Lunar Gateway**, reusable lunar landers, and surface habitats. The programme is supported by the **Artemis Accords (2020)**, a non-binding framework promoting peaceful exploration, transparency, interoperability, emergency assistance, and responsible utilisation of space resources. By early **2026**, more than **50 countries** had endorsed the Accords, making them the most widely supported international framework governing lunar exploration outside the UN treaty system. Parallel initiatives, including China's proposed **International Lunar Research Station (ILRS)**, demonstrate that the Moon has once again become a focal point of international cooperation and strategic competition. Consequently, questions surrounding lunar governance, resource utilisation, and cislunar security have become increasingly prominent.

Artemis II Mission and the New Era of Cislunar Governance

The **Artemis II Mission** was the first crewed mission of NASA's **Artemis Programme** and marked humanity's return to the vicinity of the Moon after more than five decades. Launched on **1 April 2026**, the mission carried NASA astronauts **Reid Wiseman, Victor Glover and Christina Koch**, alongside Canadian Space Agency astronaut **Jeremy Hansen**, aboard NASA's **Orion spacecraft**, launched by the **Space Launch System (SLS)**. The approximately 10-day mission completed a crewed lunar flyby before successfully splashing down in the Pacific Ocean on **10 April 2026**.

Artemis II travelled approximately **694,481 miles**, reached a maximum distance of **252,756 miles from Earth**, and came within approximately **4,067 miles of the lunar surface**, setting a new record for the farthest distance travelled by humans. The mission tested Orion's systems and operational procedures in deep space and included scientific investigations and communications demonstrations, including the use of **laser communications** to transmit high-definition data between Orion and Earth.

Beyond its exploration significance, Artemis II demonstrated the growing importance of **resilient communications, satellite infrastructure and cislunar connectivity**. As future missions expand human and robotic activity around the Moon, the protection of these systems will become increasingly relevant to the broader challenge of maintaining a **secure, peaceful and sustainable outer-space environment**.

7. Why the Space Matters Again

For much of the twentieth century, outer space was viewed primarily as a domain of scientific exploration and geopolitical prestige. That understanding has fundamentally changed. Today, space-based systems form an essential layer of modern society, supporting **global communications, navigation and timing, weather forecasting, disaster management, remote sensing, financial systems, scientific research and military operations**. The growing dependence of terrestrial infrastructure on satellites has consequently transformed outer space into a domain of strategic, economic and security significance.

This transformation has also created a fundamental vulnerability: **the disruption of a single space-based system can produce consequences far beyond the satellite itself**. Modern satellites depend upon an interconnected ecosystem comprising spacecraft, ground stations, communication links, tracking systems and data infrastructure. These systems can be subjected to **jamming, spoofing, cyberattacks, electronic interference, physical interception or deliberate destruction**. The dual-use nature of much satellite infrastructure further complicates the distinction between civilian and military systems. The existing guide already identifies cyberattacks, jamming, spoofing and electronic interference as vulnerabilities of space communication infrastructure.

At the same time, the increasing sophistication of **counter-space capabilities**, including Anti-Satellite (ASAT) systems and rendezvous and proximity operations, has raised concerns regarding the potential weaponisation of outer space. A destructive engagement in orbit may also generate long-lasting space debris, threatening satellites and services belonging to states uninvolved in the original confrontation. Consequently, the security of outer space cannot be considered solely through the lens of military competition; it is equally a question of **infrastructure resilience, environmental sustainability, international law and global stability**.

The central challenge for the international community is therefore not simply preventing weapons from reaching space, but **forestalling the development and use of capabilities that could turn an increasingly indispensable domain into an arena of conflict**. This requires examining existing international law, responsible behaviour, transparency and confidence-building measures, space traffic coordination, satellite resilience and the role of institutions such as **UNOOSA and COPUOS**.

8. Understanding The Core Issue

Outer space is no longer merely a domain of exploration. It has become an essential component of modern economic, civilian and military activity. Satellites support navigation, communications, weather forecasting, remote sensing, financial systems, disaster response and military command and control. Consequently, the weaponisation of outer space presents a unique problem: **an attack intended to disable one military capability can potentially disrupt infrastructure on which entire societies depend**.

The distinction between **militarisation and weaponisation** is therefore fundamental. Militarisation: the use of satellites and space systems for military purposes,has existed for decades. Weaponisation concerns the development or deployment of capabilities intended to threaten, disrupt, damage or destroy space objects or space-enabled systems. The concern becomes particularly serious because many space systems are **dual-use**. A communications satellite may simultaneously serve civilian users and military forces; a navigation constellation may support both commercial aviation and military operations.

The issue is no longer hypothetical. On **14 September 2026**, U.S. Secretary of the Air Force Troy Meink publicly stated that the United States had **"on-orbit space control weapons capable of defending the Joint Force against hostile adversary action."** The following day, U.S. Space Force Chief Gen. Douglas Schiess similarly stated that personnel operate on-orbit weapons capable of defending against space-enabled attacks. Neither official disclosed the number, location, nature or specific capabilities of these systems.

The significance of this announcement lies partly in its ambiguity. "Space control weapons" could encompass different capabilities, and public reporting has not established that these systems are kinetic weapons capable of physically destroying satellites. Analysts have pointed to possibilities including electronic warfare or other non-kinetic capabilities. Thus, delegates should **not equate the U.S. admission automatically with the deployment of destructive ASAT weapons**. The more important development is the acknowledged existence of weapons intended to operate in or affect the orbital environment.

The announcement has already generated an international security response. China urged Washington to halt what it described as military expansion in outer space, with Chinese officials warning that such developments could fuel an arms race and undermine strategic stability. The episode illustrates the classic **security dilemma**: one State may describe a capability as defensive and deterrent, while another State may interpret the same capability as preparation for offensive action. The resulting uncertainty can incentivise both sides to develop additional capabilities, even where neither initially intended to initiate a conflict.

The danger is amplified by the vulnerability of satellite infrastructure. Counter-space operations need not involve destroying a satellite. **Jamming** can interfere with signals; **spoofing** can provide false information; **cyber operations** can target ground infrastructure or command systems; directed-energy systems may impair sensors; and rendezvous and proximity operations can create uncertainty about an object's intentions. A physically destructive ASAT attack presents an additional danger because it can generate large quantities of debris. The consequences may therefore extend to satellites belonging to States that were completely uninvolved in the original confrontation.

The strategic consequences can also extend to Earth. Disruption of navigation systems can affect aviation, shipping and military operations. Interference with communications can affect emergency services and financial or governmental networks. Loss of remote-sensing satellites can impair weather forecasting, disaster response and environmental monitoring. The same infrastructure that enables civilian life can simultaneously support military operations, making target identification and proportionality particularly difficult.

The issue is consequently not simply whether weapons exist in space. The deeper questions are what constitutes a weapon, what constitutes a hostile act, when interference becomes a use of force, how States can distinguish defensive activity from offensive preparation, and what rules should govern conduct before an incident escalates into armed conflict.

This is precisely why the issue demands international attention. The Outer Space Treaty prohibits the placement of nuclear weapons and other weapons of mass destruction in orbit, but it does not establish a comprehensive prohibition on every conventional space weapon. The international community therefore faces a regulatory and strategic challenge: how can States preserve their ability to protect vital space infrastructure without creating incentives for an arms race in which increasingly ambiguous capabilities become normalised?

9. Challenges

Escalating Weaponisation and the Development of Counter-Space Capabilities

Outer space is increasingly becoming a domain in which states seek not only to protect satellites but also to acquire capabilities capable of disrupting, degrading or destroying those of an adversary. The distinction between **militarisation**, the use of space systems for military purposes and **weaponisation**, the development or deployment of capabilities intended to interfere with another state's space assets, is therefore central to the emerging security problem.

Counter-space capabilities now extend well beyond conventional anti-satellite (ASAT) missiles. They include **direct-ascent interceptors, co-orbital spacecraft, electronic jamming and spoofing, cyber operations, directed-energy systems and rendezvous-and-proximity operations (RPOs)**. The 2026 *Global Counterspace Capabilities Report* identifies these as major categories of capabilities being developed across 13 countries, while noting that publicly documented active military use has so far involved non-destructive counter-space capabilities.

The escalation is particularly significant because counter-space systems can produce effects without physically destroying a satellite. Jamming can deny communications, spoofing can manipulate navigation signals, cyber operations can compromise satellite or ground systems, while RPO-capable spacecraft can approach another satellite in ways that may be difficult to distinguish between servicing, inspection and hostile activity. This ambiguity increases the possibility of miscalculation and escalation, particularly where the victim cannot immediately determine whether an interference event is accidental, technical or deliberate.

The issue became especially prominent in September 2026 when the United States publicly acknowledged that it possesses "on-orbit space control weapons" capable of defending its forces against hostile action, without disclosing their specific capabilities. China subsequently criticised the development as contributing to an arms race in outer space.

The consequences extend beyond military competition. Destructive ASAT testing can generate persistent orbital debris capable of threatening unrelated spacecraft. More broadly, the growing availability of counter-space capabilities creates a security dilemma: measures described by one state as defensive may be interpreted by another as preparations for offensive action. The resulting cycle of capability development, uncertainty and counter-development increasingly challenges the stability and peaceful, sustainable use of outer space.

Vulnerability and Protection of Critical Satellite Infrastructure

The security of outer space increasingly depends on the resilience of infrastructure that extends far beyond the satellite itself. Modern economies rely on space systems for communications, positioning, navigation and timing, weather forecasting, disaster response, transport, agriculture, finance and defence. The OECD's *Space Economy at a Glance 2026* identifies this growing dependence as a source of systemic vulnerability: disruption to space infrastructure can produce consequences across interconnected terrestrial sectors.

The vulnerability is particularly significant because satellite infrastructure is an interconnected chain comprising spacecraft, ground stations, communication links, software, data networks and user terminals. An adversary therefore does not necessarily need to physically destroy a satellite. Jamming can overwhelm legitimate signals; spoofing can transmit false navigation or timing information; and cyberattacks can target satellites, ground systems or end-user equipment. The OECD records all three categories as contemporary security risks to space systems.

The consequences are already observable. In February 2022, a cyberattack targeting Viasat's **KA-SAT** network disrupted thousands of satellite modems across Ukraine and other parts of Europe. The incident demonstrated how an attack directed at satellite communications infrastructure during an armed conflict could produce effects extending across national borders and civilian networks.

Navigation infrastructure presents another vulnerability. ESA reported in August 2026 that more than 10,000 ships were affected by malicious GNSS interference globally during the second quarter of 2025, while noting that GNSS underpins transportation, emergency response, public safety and other critical services.

The challenge is therefore broader than protecting individual satellites. It concerns maintaining the continuity, integrity and reliability of space-enabled services when adversaries can attack different points of an interconnected system. The increasing use of commercial and dual-use satellites further complicates the security environment: infrastructure serving civilian users may simultaneously support governmental or military functions.

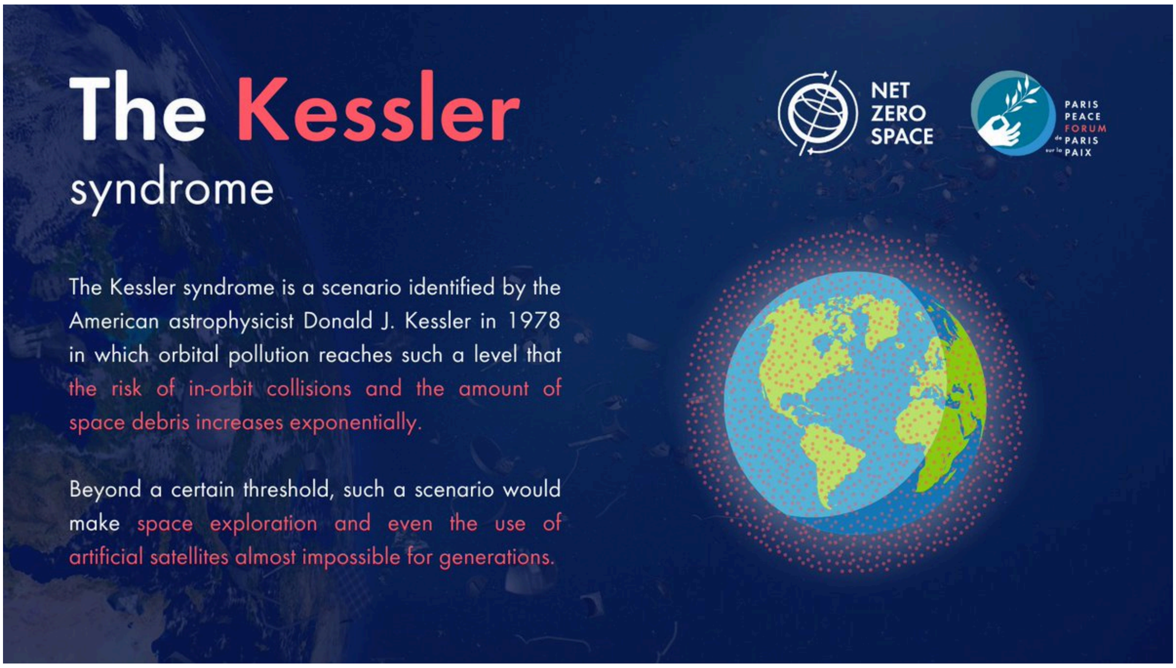
Consequently, safeguarding satellite infrastructure has become inseparable from preventing the weaponisation of outer space. The strategic question is no longer simply whether a satellite can be destroyed, but whether an adversary can disrupt the space-dependent systems on which modern societies and military forces rely without ever physically destroying the satellite itself.

Space Debris, ASAT Testing and the Risk of Cascading Collisions

The growing weaponisation of outer space carries a physical consequence that extends beyond the state whose satellite is targeted: space debris can remain in orbit long after the military operation that created it has ended. This is particularly acute with destructive direct-ascent anti-satellite (ASAT) tests, in which an interceptor collides with a satellite at high velocity and fragments both objects. The resulting debris travels through different orbital paths, potentially threatening spacecraft that had no connection to the original confrontation.

The 2007 destruction of China's Fengyun-1C weather satellite demonstrated the scale of this problem. NASA's Orbital Debris Program Office records the event among the largest fragmentation events in low-Earth orbit, with more than 3,500 catalogued debris objects. Russia's destruction of Cosmos 1408 in November 2021 produced at least 1,500 trackable fragments. NASA reported that the resulting debris cloud created a conjunction threat to the International Space Station, forcing astronauts and cosmonauts to take precautionary shelter.

The danger is not confined to large, trackable fragments. ESA estimates that more than one million objects larger than one centimetre may exist in Earth orbit. Even relatively small fragments can travel at orbital velocities capable of causing catastrophic damage to spacecraft. As orbital traffic increases, debris therefore becomes an infrastructure-security problem: a fragment generated by one state's military activity can threaten commercial satellites, scientific missions, navigation systems or human spaceflight belonging to entirely different actors.



This creates the possibility of a **cascading collision scenario**, commonly associated with the *Kessler Syndrome*. A collision produces fragments; those fragments increase the probability of further collisions, which generate additional debris. ESA cautions that continued growth of the debris population could make particular orbital regions increasingly difficult or even unsafe to use. This remains a risk scenario, not an assertion that such a cascade is inevitable.

The security dilemma is consequently broader than whether an ASAT test successfully disables its intended target. The debris field itself can become an indiscriminate and persistent hazard, challenging the long-term sustainability of outer-space activities and demonstrating why destructive testing has consequences far beyond the immediate military objective.

Legal and Normative Gaps in Preventing an Arms Race in Outer Space

The international legal regime governing outer space is extensive, but it was not designed to regulate the full spectrum of modern counter-space capabilities. The **1967 Outer Space Treaty (OST)** remains the cornerstone of space law, yet its most explicit weapons prohibition is narrow: Article IV prohibits placing nuclear weapons and other weapons of mass destruction in orbit and restricts military activities on celestial bodies. It does **not** establish a comprehensive prohibition on conventional weapons in orbit, ground-based ASAT systems, cyber operations, electronic warfare or other means of disrupting satellites. Recent UN discussions have expressly identified this limitation as a central issue in preventing an arms race in outer space.

The difficulty is compounded by the absence of an agreed legal definition of a **"space weapon."** A satellite capable of approaching another spacecraft may perform inspection or servicing, but similar technology could potentially be employed for hostile purposes. Likewise, communications and remote-sensing satellites may serve civilian, commercial and military functions simultaneously. This dual-use character makes regulation based solely on the object itself difficult and has contributed to continuing disagreements over whether future rules should regulate weapons, particular behaviours, or both. UN disarmament discussions have identified these definitional and verification problems as significant obstacles to a comprehensive regime.

The jurisprudential framework also predates many of these technologies. **Nicaragua v. United States (1986)** and **Oil Platforms (2003)** developed important principles concerning the prohibition on force and the requirements surrounding self-defence; the ICJ's **Nuclear Weapons Advisory Opinion (1996)** confirmed that the UN Charter and international humanitarian law remain relevant to the use of force involving technologically advanced weapons. Yet no ICJ judgment has directly determined how an ASAT strike, cyber operation or hostile rendezvous in orbit should be legally characterised.

Consequently, the current regime operates through several overlapping layers: the OST and related treaties, the UN Charter, customary international law, international humanitarian law where applicable, and emerging political commitments concerning responsible behaviour. The **Prevention of an Arms Race in Outer Space (PAROS)** debate reflects the unresolved question of whether these existing rules are sufficient or require new legally binding obligations. Proposed approaches, including the Russia-China **PPWT**, have faced disagreements over definitions, verification and their coverage of ground-based and non-kinetic threats.

The resulting problem is therefore not a complete **"legal vacuum,"** but an incomplete and contested regulatory framework struggling to address technologies capable of producing strategic effects without necessarily destroying a space object.

Attribution, Dual-Use Technologies and Responsible Behaviour in Outer Space

Determining **who is responsible for hostile activity in outer space** is becoming increasingly difficult as space systems become more sophisticated, interconnected and dual-use. A satellite conducting rendezvous and proximity operations, for example, may be performing legitimate inspection or servicing, while the same capability could potentially be used to interfere with another spacecraft. Similarly, electronic warfare, cyber capabilities and autonomous systems can produce disruptive effects without leaving the physical evidence associated with a conventional attack.

The problem is particularly acute because attribution requires more than observing that harmful activity occurred. The UN's Open-Ended Working Group on reducing space threats has highlighted the difficulty of determining the nature and intended purpose of space objects because of their **dual-use character** and the limited space-situational-awareness capabilities available to many states. It has consequently emphasised that observable **behaviour**, rather than merely the apparent nature of an object, can provide a more practical basis for identifying potentially threatening activity.

International law nevertheless provides an existing framework for responsibility. **Article VI of the Outer Space Treaty** makes states internationally responsible for national activities in outer space, including activities conducted by non-governmental entities, while Article IX requires states to conduct activities with due regard to the corresponding interests of other states and to undertake consultations where potentially harmful interference may occur. The difficulty lies in applying these principles to technologically opaque incidents where the actor, intent and causal chain may initially be uncertain.

The jurisprudential development of attribution is particularly relevant in **Military and Paramilitary Activities in and against Nicaragua (Nicaragua v. United States)**. The ICJ held that, for conduct of an organised armed group to be attributed to a state on the basis of control, the relevant standard required proof of ***"effective control"*** over the military or paramilitary operations in which the violations occurred. While Nicaragua concerned armed groups rather than space or cyber operations, its approach illustrates the evidentiary difficulty of connecting conduct to a state for purposes of international responsibility.

This is why the emerging international debate has increasingly focused on responsible behaviour rather than attempting to prohibit every dual-use technology. The UN working group has examined norms, rules and principles designed to improve transparency, communication, consultation and predictability. In the context of satellite infrastructure, such measures address the central problem: when intentions cannot reliably be observed, predictable behaviour becomes an important mechanism for reducing miscalculation and escalation.

10. Relevant International Law

Any discussion on the weaponisation of outer space must begin with the sources and binding nature of international law. Article 38(1) of the Statute of the International Court of Justice (ICJ) identifies the principal sources applied by the Court: international conventions, international custom, general principles of law, and, as subsidiary means, judicial decisions and scholarly writings. Importantly, Article 38 does not itself establish a hierarchy in which every ICJ judgment automatically becomes binding law for all States. Under Article 59, an ICJ decision has binding force only between the parties and in respect of that particular case. Nevertheless, ICJ judgments and advisory opinions are highly authoritative in identifying, interpreting and developing existing rules of international law.

For this agenda, the distinction between treaty law and customary international law is particularly important. A treaty creates binding obligations for its parties, while customary international law may bind States independently of treaty participation where sufficiently established State practice is accompanied by *opinio juris*. This distinction becomes significant where States seek to regulate conduct, such as the use of force, self-defence, or harmful interference, that is not comprehensively addressed by space-specific treaties.

Principal Space-Law Instruments

The foundational instrument is the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty), 1967. It establishes that outer space shall be explored and used for the benefit of all countries, prohibits national appropriation of outer space and celestial bodies, and requires activities to be conducted in accordance with international law and the UN Charter. Article IV specifically prohibits placing nuclear weapons or other weapons of mass destruction in orbit and restricts military activities on celestial bodies. However, the Treaty does not constitute a comprehensive prohibition on all conventional weapons or all forms of military activity in outer space.

The wider treaty framework also includes the Rescue Agreement (1968), Liability Convention (1972), Registration Convention (1975), and Moon Agreement (1979). Together, these instruments regulate assistance to astronauts, liability for damage, registration of space objects and, for States Parties, activities concerning the Moon and its resources.

The Artemis Accords (2020) should be distinguished from these treaties. They are a non-binding political framework, rather than a multilateral treaty creating equivalent legal obligations. They address principles including peaceful exploration, interoperability, emergency assistance, registration, release of scientific data and the utilisation of space resources consistently with the Outer Space Treaty. They may therefore contribute to State practice and normative development, but should not be described as universally binding international law.

Common Heritage of Mankind

The expression **"common heritage of mankind"** has a specific and important place in international space law. **Article 11(1) of the Moon Agreement** provides that the Moon and its natural resources constitute the common heritage of mankind. The provision is developed through restrictions on national appropriation and a contemplated international regime governing exploitation of lunar resources.

However, the concept should not be incorrectly attributed to the Outer Space Treaty. The OST describes outer space as the "province of all mankind", whereas the legally distinct formulation "common heritage of mankind" appears expressly in the Moon Agreement. Moreover, as of September 2026, the Moon Agreement has 17 States Parties, making its direct treaty obligations considerably narrower than those of the Outer Space Treaty.

Relevant ICJ Jurisprudence

Although the ICJ has not yet adjudicated a case specifically concerning an ASAT attack or warfare in outer space, several decisions provide principles that may be applied by analogy.

In ***Military and Paramilitary Activities in and against Nicaragua (Nicaragua v. United States)*** **(1986)**, the Court recognised the prohibition on the use of force and the principle of non-intervention as obligations under customary international law. It also affirmed that self-defence is subject to **necessity and proportionality** and is linked to the occurrence of an armed attack. These principles are directly relevant when considering whether interference with or destruction of a satellite could constitute a prohibited use of force or potentially trigger the right of self-defence.

In the ***Legality of the Threat or Use of Nuclear Weapons*** **Advisory Opinion (1996)**, the Court confirmed that the UN Charter's rules concerning the threat or use of force apply **regardless of the weapon employed**. It further held that even where a use of force satisfies the requirements of self-defence, it must comply with the applicable rules of international humanitarian law. This reasoning is significant for outer space because the absence of a specific prohibition on a particular conventional space weapon does not automatically make its use lawful.

***Oil Platforms (Iran v. United States)* (2003)** is relevant to the assessment of self-defence, particularly the requirements surrounding an alleged armed attack and the necessity and proportionality of responsive force. Similarly, ***Armed Activities on the Territory of the Congo (DRC v. Uganda)* (2005)** provides important jurisprudence concerning the invocation of self-defence and the limits of force used in response to alleged attacks.

Finally, ***Pulp Mills on the River Uruguay (Argentina v. Uruguay)* (2010)** is relevant by analogy to questions of **due diligence, prevention and environmental harm**. Its principles can inform discussions concerning activities in outer space that create substantial risks to the orbital environment, particularly the generation of persistent debris.

11. <u>List of Valid Sources</u>

1) United Nations Office for Outer Space Affairs (UNOOSA)
2) United Nations Committee on the Peaceful Uses of Outer Space (COPUOS)
3) Outer Space Treaty (1967)
4) Rescue Agreement (1968)
5) Liability Convention (1972)
6) Registration Convention (1975)
7) Moon Agreement (1979)
8) Artemis Accords
9) Official Government Sources

NOTE: The information provided in this guide is illustrative and based on a variety of sources. The aim is to provide the delegates with an in-depth understanding of the agenda. The guide does not hold any evidentiary value in the simulation.

Happy Researching!
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