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ANALYSIS OF THE OUTER SPACE TREATY AND ITS IMPACT ON INDIA

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ABSTRACT

The adoption of the Outer Space Treaty marked the foundation of modern international space law by establishing outer space as a global common dedicated to peaceful purposes. Negotiated during the Cold War era under the auspices of the United Nations, the Treaty sought to prevent the extension of geopolitical rivalries into outer space while ensuring that space exploration would benefit all humankind. India, as an emerging space power and a signatory to the treaty, has developed its national space programme within this multilateral framework. Through institutions such as ISRO (Indian Space Research Organisation), India has pursued a development-oriented model of space utilisation consistent with the treaty's principles of peaceful use and international cooperation. However, the rapid commercialisation of space, the entry of private actors, and growing strategic competition raise questions regarding the continued adequacy of the treaty's framework. This paper critically examines the legal architecture of the Outer Space Treaty and evaluates its impact on India's evolving space governance regime.

INTRODUCTION

It was almost 50 years ago, when Neil Armstrong landed on the moon, and the world was swept up in admiration and awe. Space exploration has evolved a lot; curiosity has pushed countries to make strategies, enabling them to use space as a power projection. Presently, space has been filled with debris rising several concerns. Today, the development of space has changed and become even more challenging, primarily for two reasons: one, the dynamics of geopolitics is pushing countries to go beyond low-Earth orbit and two, the intervention of private players that

are changing the space games. The two combined reveals how space has evolved to exist as an "uniquely hostile environment." [1] The term "space" is used in many different ways. Each use of the term can have very different legal implications. [2] Space law can be described as the body of law governing space-related activities.[3] Space law addresses a variety of matters, such as, for example, the preservation of the space and Earth environment, liability for damages caused by space objects, the settlement of disputes, the rescue of astronauts, the sharing of information about potential dangers in outer space, the use of space-related technologies, and international cooperation. A number of fundamental principles guide the conduct of space activities, including the notion of space as the province of all humankind, the freedom of exploration and use of outer space by all states without discrimination, and the principle of non-appropriation of outer space. [4]

Specifically, international space law is governed by the U.N. Treaties dealing with space issues. There are five of these treaties that were negotiated and came into force during the 1960s and 1970s. Reflecting that era, these treaties mainly were agreements and compromises between the United States and the Soviet Union, the two major space powers of that era. It is a testimony to the strength of the general principles guiding these Treaties that they have survived and continue (with some definitional modifications) to define space law in today's vastly different geopolitical and economic environment.[5] The Outer Space Treaty, formally called the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, is a multilateral treaty that forms the basis of international space law. [6]

India, though not a major space power at the time of the treaty's adoption, has since emerged as a significant actor through the establishment of The Indian Space Research Organisation (ISRO). From satellite- based development initiatives to ambitious lunar and mars missions, India's space programme has expanded both technically and commercially.

THE OUTER SPACE TREATY OF 1967

According to existing international law, "all states are free to explore and use outer space, including the moon and other celestial bodies, on a basis of equality". This also includes the right to unrestricted access to all areas of celestial bodies and the freedom to conduct scientific research in space. The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of

all mankind. Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies. There shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation.[7]

State parties to the treaty are prohibited from orbiting any weaponry including nuclear weapons around the Earth, from installing such weapons on celestial bodies and from stationing any weapons in space. The moon and other celestial bodies are to be used exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on celestial bodies is forbidden. In the event of any accident, emergency landing or distress call on the territory of another state party or on the high seas, the astronauts must be considered as "mankind's envoys" in space and must be swiftly and safely returned to the state where the spacecraft is registered. State parties to the treaty need to bear international responsibility for national activities in outer space. Each such party that "launches or procures the launching of an object into outer space, including the moon and other celestial bodies and from whose territory or facility an object is launched is internationally liable for damage to another state party or to its natural or juridical persons by such object or its component parts on the earth, in air space, in outer space including the moon and other celestial bodies". The jurisdiction and control over the object launched into outer space and over any personnel thereof, while in outer space or on a celestial body is to be retained by the state party on whose registry the object was launched into outer space.[8]

AGREEMENT ON THE RESCUE OF ASTRONAUTS, THE RETURN OF ASTRONAUTS AND THE RETURN OF THE OBJECTS LAUNCHED INTO OUTER SPACE

This agreement was adopted in 1986 as a follow-up to the Outer Space Treaty. It strengthens the humanitarian principle that astronauts must be helped in case of accident, distress, or emergency landing and ensures the return of space objects to the launching State.

1. **Article 1 – Duty to notify**

   If a state learns that astronauts are in distress or have made an emergency landing (on its territory, the high seas, or anywhere not under any states jurisdiction), it must:

- Inform the launching state
- Inform the secretary-general of the United Nations.

2. **Article 2 and 3 – Rescue and Assistance**
    - If astronauts land within the State's territory, that State must take all possible steps to rescue and assist them.
    - If astronauts land in international areas (like high seas), States capable of helping must assist in rescue operations.

3. **Article 4 – Return of astronauts**

Astronauts must be safely and promptly returned to the launching authority.

4. **Article 5 – Return of space objects**

    - States must notify the launching authority if a space object or its parts land in their territory
    - Upon request, they must recover and return it.

5. **Article 5 – Definition of launching authority**

The launching authority refers to:

- The state responsible for launching; or
- An international organisation responsible for launching (if it accepts the agreement's obligations).

6. **Article 7 – Entry into force**
    - Open to all states for signature and accession
    - Came into force after ratification by five states, including the U.S, U.K and USSR.

7. **Articles 8 and 9 – Amendments and withdrawal**
    - States may propose amendments
    - A state may withdraw with one year's notice.

8. **Article 10 – Authentic texts**

The agreements exist in five equally authentic languages and was signed in London. Moscow, and Washington D.C., on 22 April 1968.[9]

THE CONVENTION ON INTERNATIONAL LIABILITY FOR DAMAGE CAUSED BY SPACE OBJECTS, 1971

The convention came into force in September 1972 and establishes that a launching state bears absolute liability for any damage caused by its space object on the surface of the earth or to aircraft in flight. However, for damage occurring in outer space or elsewhere beyond the Earth's surface, the launching state is liable only if the damage results from its fault or the fault of persons for whom it is responsible. The convention also provides for the creation of a claims commission to resolve disputes when the affected state and the launching state are unable to reach a settlement through negotiations.

THEN CONVENTIONS ON REGISTRATIONS OF OBJECTS LAUNCHED INTO OUTER SPACE 1974

This Convention was adopted by the United Nations general assembly on 12 November 1974. It requires that whenever a space object is launched into earth orbit or beyond, the launching state must register the object in a national registry maintained by it and notify the secretary-general of the United Nations with the relevant details.

The convention entered into force on 15 September 1976 after being ratified by the United States, Bulgaria, Canada, Sweden, India, accepted to the convention on 18 January 1982.

AGREETMENT GOVERNING THE ACTIVITIES OF STATES ON THE MOON AND OTHER CELESTIAL BODIES

This agreement entered into force on 11 July 1994. It states that all activities relating to the exploration and use of the Moon must be conducted in accordance with international law, including the principles laid down in the 1970 Declaration on Friendly Re;lations adopted under the UN charter.

The moon is to be used exclusively for peaceful purposes. Its exploration and use must benefit

all countries, regardless of their level of economic or scientific development. The agreement guarantees freedom of scientific investigation for all States Parties, without discrimination and on the basis of equality, in conformity with international law. It further declares that the Moon

and its natural resources constitute the common heritage of mankind and are not subject to national appropriation by claims of sovereignty, occupation, or any other means.

The Agreement also calls for the establishment of an international regime, along with appropriate procedures, to regulate the exploitation of the moon's natural resources. Such resources must be developed in a safe, orderly, and rational manner. Opportunities for their use should be expanded, and the benefits derived must be shared equitably among participating States.

Additionally, states retain jurisdiction and control over their personnel, spacecraft, equipment, stations, and installations on the Moon, and such jurisdiction is not affected by their presence there. States are internationally responsible for all national activities on the Moon, whether conducted by governmental agencies or non-governmental entities, and must ensure that these activities comply with the provisions of the agreement.

UNISPACE-82 (SECOND UN CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE)

Held in Vienna in August 1982, UNISPACE-82 brought together representatives from 94 states along with 45 observers. The conference reviewed progress in space activities since 1968 and addressed emerging global concerns. A significant appeal was directed particularly at nuclear-capable nations, urging them to prevent the extension of the arms race into outer space.

By consensus, the conference adopted a report adherence to the principles of the Outer Space Treaty, especially its prohibition on placing weapons of mass destruction in outer space. The conference also highlighted the technological imbalance between industrialized and developing nations and called for stronger international collaboration to ensure more equitable access to space science and technology.

UNISPACE-III (THIRD UN CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE)

UNISPACE-III was convened in Vienna in July 1999 with the broader aim of shaping a strategic vision for peaceful space activities in the 21st century. The discussions focused on the future of planetary exploration, advancements in microsatellite and microwave technologies, and the growing challenge of space debris affecting long-term sustainability.

The conference also examined the protection and regulation of the space environment, along with expanding applications such as mobile satellite communications. Overall, it sought to establish practical directions for ensuring that outer space continues to be used responsibly and peacefully for the benefit of all humanity.

SPACE LAWS IN INDIA

India's engagement with outer space has historically been centred on civilian and developmental objectives rather than military expansion. The country's space journey began in 1963 with the establishment of the Thumba Equatorial Rocket Launching Station (TERLS). A major institutional milestone followed in 1969 with the creation of the Indian Space Research Organisation, which became the backbone of India's expanding space activities. In 1972, the government further strengthened the framework by setting up the Space Commission and the Department of Space to oversee policy and implementation.

Over time, India has become a party to several key international space treaties and declarations, reflecting its commitment to global space governance. The Indian space programme has been systematically structured around three core areas: application-based programmes, space transportation systems, and satellite development for communication and remote sensing.

India's ambitions are evident in its landmark missions such as Chandrayaan and Mars Orbiter mission, which demonstrated its technological maturity. The proposed human spaceflight programme, Gaganyaan, marks the next significant step in its space trajectory.

Since independence, India has viewed space technology as a strategic tool for national development. The launch of Aryabhata in 1975 signalled the beginning of indigenous satellite capability. Today, India's space activities extend beyond pure scientific exploration and are increasingly directed toward socio-economic advancement, including communication, disaster management, navigation, and resource mapping.

Functioning primarily under governmental supervision, India's space programme I designed to promote peaceful uses of outer space through sustained, cost-effective, and self-reliant technological growth.

INDIA'S SPACE FRAMEWORK (DOMESTIC)

Recent assessments indicate that India's space economy, valued at approximately USD 8-9 billion in the early 2020s, is projected to grow substantially over the next decade, with estimates

suggesting it could cross USD 40 billion by the early 2030s. This anticipated expansion is largely attributed to policy liberalization, increased private sector participation, and deeper international cooperation.

Even with this promising growth trajectory, India still does not have a single, comprehensive national space legislation governing all space-related activities. A major institutional reform occurred in 2020 with the creation of the Indian National Space Promotion and authorisation centre (IN-SPACe), which functions as an interface between the government and private industry. While this move significantly opened the sector, commercial space activity in India remains in a developing phase, strengthening the argument for a dedicated and detailed domestic space law.

EXISTING LAWS AND POLICY FRAMEWORK

At present, India regulates space activities through a combination of constitutional provisions, statutes, and policy instruments:

- Article 51(c) of the Constitution of India encourages the state to respect international law and treaty obligations and to promote peaceful dispute resolution.
- Article 253 of the Constitution of India empowers Parliament to enact legislation necessary to implement international treaties and agreements, thereby enabling India to give domestic effect to its international space obligations.
- The International Space Research Organisation (ISRO) functions as the central body for space research and development in India. Established in 1969, ISRO operates under the Department of Space and drives the country's scientific, technological, and application-oriented space programmes.
- The Satellite Communication Policy, 1997 lays down guidelines for the development and regulation of satellite communication services in India. It also facilitated foreign direct investment and strengthened infrastructure built under the INSAT system.
- The Remote sensing Data Policy, 2011 governs the acquisition and distribution of satellite-based remotes sensing data.
- ISRO's Technology Transfer Policy aims to promote the transfer of indigenous space technologies to private industry, encouraging domestic manufacturing and innovation.
- The India Space Policy marks a significant shift by formally allowing non-government entities to undertake a broad range of space activities, including owning and operating satellite systems for national and international services.

INTERNATIONAL COMMITMENTS

In addition to its domestic framework, India is a party to major international space agreements. It ratified the Outer Space Treaty, in 1982, the Rescue Agreement in 1985, and the Liability Convention in 1986. Although India signed the Moon Agreement, it has not ratified it.

More recently, during Prime Minister Narendra Modi's 2023 visit to the United States, India joined the Artemis Accord. Proposed by NASA in 2020, the Accords outline non-binding principles for peaceful civil exploration of the Moon, Mars, and other celestial bodies. While geopolitical debates surrounded India's decision, the Accords primarily reiterate commitments under the outer space treaty and establish practical guidelines for cooperation, transparency, resource utilisation and sustainable space governance.

IMPACT OF OUTER SPACE TREATY ON INDIA

The Outer Space Treaty has had a significant influence in India's formally committed itself to the peaceful use of outer space, the prohibition of weapons of mass destruction in space, and the principle that outer space is the province of all humankind. These foundational norms have shaped India's civilian oriented space programme led by the Indian Sace Research Organisation, ensuring that its activities focus on scientific advancement and socio-economic development rather than militarisation. The Treaty's provisions on international responsibility and liability have also encouraged India to develop regulatory oversight mechanisms, especially as private participation increases under the Indian Space Policy. Overall, the Outer Space Treaty has provided the legal and ethical framework within India has pursued responsible, cooperative, and development driven space exploration.

WAY FORWARD

With the rapid expansion of space exploration and intensifying geopolitical rivalries, space law has gained renewed importance in international discussions. As new legal frameworks emerge, they must safeguard the collective interest of humanity and promote a stable, cooperative legal order governing outer space, the Moon, and other celestial bodies.

India has increasingly positioned itself as an influential actor with the capacity to evolves into leading global space power. Partnerships and strategic collaborations with like-minded nations can strengthen the practical enforcement of existing treaties and conventions. At present, the extraction and utilisation of space resources occur in a largely unstructured environment. Equal opportunity in accessing and using resources should be guaranteed to all States, provided that

their activities remain peaceful and do not undermine the shared interest of humanity. A comprehensive global space policy is urgently required to respond to accelerating technological survival and shared destiny remain protected.

CONCLUSION

The continuous development of space law must guarantee that outer space remains open and accessible to all nations for collective progress. It should continue to be reserved for peaceful purposes while preserving freedom of scientific research and exploration. From India's standpoint, the absence of a comprehensive domestic legal regime governing outer space activities needs urgent attention, particularly in light of shifting geopolitical realities and expanding global space governance norms. Even though binding international agreements are already in force, every nation must regulate its space activities in alignment with the evolving dynamics of global space operations.

India is presently in what has been described as "Amrit kaal", a phase focused on national growth and strategic strengthening. To sustain its expanding role in space, India requires well-defined national space legislation that harmonises international obligations with domestic priorities. Beyond encouraging growth in the commercial space sector, such legislation would also strengthen India's defence preparedness in an era where strategic competition increasingly extends beyond Earth.

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