Space Tourism and India's International Obligations: Aligning With UN Treaties and Bilateral Agreements

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ABSTRACT

This paper critically examines India's emerging role in space tourism within the framework of its international legal obligations under United Nations space treaties and bilateral cooperation agreements. The commercialisation of outer space, led by private actors such as SpaceX, Blue Origin, and Virgin Galactic, has transformed space activities from state-centric ventures into market-driven enterprises, thereby generating complex regulatory, liability, and environmental concerns. As a signatory to foundational instruments such as the Outer Space Treaty and the Liability Convention, India bears international responsibility for both governmental and non-governmental space activities conducted under its jurisdiction.

The study evaluates the adequacy of India's current institutional and regulatory architecture, particularly the role of the Indian Space Research Organisation (ISRO), IN-SPACe, and proposed domestic legislation, such as the Draft Space Activities Bill, in addressing the challenges posed by commercial human spaceflight. It highlights significant legal lacunae concerning passenger safety standards, operator liability, insurance requirements, and environmental safeguards, especially in light of increasing risks related to orbital congestion and space debris.

Through a comparative analysis with regulatory regimes in the United States, France, and the United Kingdom, the paper identifies best practices in licensing, informed consent, and risk allocation mechanisms. It argues that India must harmonise its domestic regulatory framework with international treaty obligations while modernising bilateral agreements to accommodate commercial suborbital and orbital tourism operations.

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Ultimately, the paper contends that the sustainable development of India's space tourism sector requires comprehensive national legislation, institutional coordination, environmental accountability, and alignment with global governance standards to ensure responsible and equitable participation in the evolving space economy.

Keywords: Space Tourism, Outer Space Treaty, Liability Convention, Indian Space Law, Commercial Human Spaceflight

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1. INTRODUCTION

Space tourism continues its rapid growth in the space industry because it allows for a complete transformation of interstellar human activity. The operations of government space agencies that used to control space exploration now share the scene with private companies that provide luxurious space travel services for wealthy passengers. Private space ventures are presently transforming the commercialisation of space by developing ways to offer space flights for both space travellers and regular citizens.

The space tourism industry relies on three major companies named SpaceX, Blue Origin and Virgin Galactic to offer both suborbital and orbital flight experiences to customers. The growing space industry creates intricate legal, regulatory and ethical problems that mainly impact international space law.[1] The Indian Space Research Organisation controls extensive space capabilities that position India to enter the developing market for space tourism. India needs to analyse how existing international treaties affect its responsibility to use outer space safely as the worldwide space tourism market expands.

India has joined multiple space treaties at the United Nations that began with the Outer Space Treaty (OST) of 1967, together with its Rescue Agreement (1968) and Liability Convention (1972), which provide fundamental guidelines for outer space operations. The space exploration regulation, together with celestial body utilisation rules and state environmental protection responsibilities, appear in these space treaties.

[1] J S Sidhu and S Narula, 'The Commercialization of Space Tourism: Legal and Regulatory Challenges' (2023) 14(3) SLJ 45

The growth of space tourism creates fresh problems for the present laws governing activities in space. Space tourism threatens to worsen the space debris issue, which now poses an increasing environmental danger. The developing space power status of India forces the nation to achieve a balance between space tourism plans and its commitments to international space laws. India needs to follow its treaties while creating space tourism regulations that ensure the safety and sustainability of space tourism operations.[2]

India needs to examine its existing arrangements with other space powers when pursuing space tourism initiatives. International agreements between India and the United States and Russia and the European Union establish the framework through which the country integrates space tourism into its national space strategy. The development of space tourism requires India to handle sophisticated legal systems effectively and maintain regulatory foundations that match worldwide standards.[3]

We investigate the relationships between space tourism operations and both Indian regulations and international agreements. The analysis reviews Indian international treaty obligations alongside bilateral agreements to establish how India can create space tourism policies following international norms that support responsible and sustainable space exploration. The research examines India's space tourism regulations by comparing them with other established space powers using a comparative analysis to identify upcoming milestones and barriers India must overcome in its entry into the accelerating space tourism market.[4]

2. Historical Background Of Space Exploration And the Evolution of Space Tourism

Outer space exploration started in the middle of the twentieth century when Sputnik 1 launched from the Soviet Union in 1957, which inaugurated the space age. Space history advanced when human astronaut Yuri Gagarin launched Vostok 1 in 1961. Two superpowers engaged in an aggressive space race from 1961 to 1969 until the USA succeeded with the Apollo 11 Moon landing.

[2] R Kumar and P Mehra, 'Space Tourism and the Environmental Implications: A Legal Perspective' (2022) 21(4) ELR 112
[3] A Bhat, 'India's Space Diplomacy: Bilateral Agreements and Their Impact on Space Tourism' (2023) 18(2) JISL 98
[4] S Sharma, 'Space Tourism in India: The Legal Landscape and Regulatory Framework' (2023) 10(2) ISLR 77

The science fiction concept of space tourism became real at the beginning of the twenty-first century. The moment when Dennis Tito became the first person to buy a private spaceflight occurred in 2001 when he journeyed to the ISS with a Russian Soyuz spacecraft. Through this event, commercial spaceflight started to become a reality. Private companies, including SpaceX, Blue Origin and Virgin Galactic, started investing in suborbital and orbital flight operations for civilian customers after this new development.

Through their missions, these companies transformed the way we access space by changing it from state activities to commercial activities. Coleman argues that existing legal and safety frameworks fail to resolve the problems that emerge when new space technology developments advance.[5]

The Indian Space Research Organisation made its first move into space exploration by establishing itself in 1969 to implement space technology for national development purposes. India has achieved significant progress through its missions, including Chandrayaan and Mangalyaan, together with its present lunar achievements. While commercial space tourism remains out of reach for India today, policy changes such as the Space Activities Bill drafting and IN-SPACe foundation show signs of opening doors to private-sector involvement. Understanding the historical development of India's space sector enables us to identify its potential for regulatory reform and global market success in future space tourism operations.

Private individuals can experience commercial space flights by using orbital vehicles and suborbital spacecraft under the service of space tourism. The practice covers two main categories: short-duration suborbital flights and space station orbital visits, and future possible lunar flybys and planetary exploration missions. Space tourism focuses on delivering an appealing experience to clients while ensuring commercial business viability because it differs from missions with scientific or governmental objectives.[6]

Space tourism exists as the main implementation of outer space commercialisation despite being rooted in the broader concepts of commercial space endeavours. The concept that outer space belongs to all humanity, as well as the requirement of peaceful space utilization derives from international agreements. The participation of private operators challenges existing

[5] Ram S Jakhu, Joseph N Pelton and Yaw O Nyampong, *Space Tourism: Legal and Policy Aspects* (Springer 2017)
[6] Erik Seedhouse, *Tourists in Space: A Practical Guide* (Springer-Praxis 2008)

frameworks that govern real estate claims, as well as establishes territorial authorities and determines legal obligations, in addition to space resource distribution fairness. Space tourism brings together multiple legal, technological, economic and ethical aspects that need thorough regulatory oversight.[7]

Space tourism connects to sustainability objectives and environmental propagation (or protection?) and endorses worldwide fairness criteria. The main space-related problems include the rising quantities of space debris combined with launch-related carbon emissions and the potential dominance of space by private interests. The ethical disagreement exists about whether space luxury travel deserves emphasis when numerous ground-based problems continue to exist. A conceptual framework needs to be developed to unite economic achievements with legal requirements and moral duties as the space industry reaches maturity. The identity of space tourism as a commercial venture and multidisciplinary phenomenon requires a genuine understanding for creating appropriate governance structures.[8]

3. INTERNATIONAL LEGAL FRAMEWORK GOVERNING SPACE TOURISM

Outer space management, including space tourism, receives its primary legal framework through five United Nations treaties, which UNCOPUOS (UN Committee on the Peaceful Uses of Outer Space) implemented under their rules. Space belongs to all nations based on the Outer Space Treaty (1967) because it serves peaceful purposes while remaining free from territorial claims. The treaties establish states as accountable for space activities that involve launching state operations, including private space exploration. The launching state fulfils its international responsibility and liability obligations for all private spaceflight operations according to international laws.

Three additional space law agreements, which further describe state requirements, are the Rescue Agreement (1968), followed by the Liability Convention (1972) and the Registration Convention (1976). The Liability Convention establishes absolute responsibility of launching states to compensate damages on Earth as well as fault-based liability for damage occurring in space. Multiple jurisdictional factors, together with private operators in space tourism, create

[7] Ram S Jakhu and Joseph N Pelton, *Global Space Governance: An International Study* (Springer 2010)
[8] Fabio Tronchetti, *The Exploitation of Natural Resources of the Moon and Other Celestial Bodies: A Proposal for a Legal Regime* (Brill/Nijhoff 2013)

complicated legal challenges by making it difficult to determine who bears responsibility for liability, as well as how to protect passengers and how to oversee regulations.[9]

Commercial human spaceflight faces an important legal vacuum in its operational framework, even though basic treaties exist. During an era when government space missions dominated, key issues involving private space tourism received no mention in the treaties. Despite insufficient progress in chartering new space law, the Space Debris Mitigation Guidelines, along with multiple country-based regulations, try to fill gaps in the current framework. The worldwide implementation of uniform standards becomes more important daily because commercial space operators keep increasing in number.

4. INDIA'S INTERNATIONAL OBLIGATIONS UNDER SPACE LAW

Outer space management, including space tourism, receives its primary legal framework through five United Nations treaties, which UNCOPUOS (UN Committee on the Peaceful Uses of Outer Space) implemented under their rules. Space belongs to all nations based on the Outer Space Treaty (1967) because it serves peaceful purposes while remaining free from territorial claims. The treaties establish states as accountable for space activities that involve launching state operations, including private space exploration. The launching state fulfils its international responsibility and liability obligations for all private spaceflight operations according to international laws.

A substantial regulatory void exists today to protect human spaceflight commercial operations, which were founded by initial treaties. During an era when government space missions dominated, key issues involving private space tourism received no mention in the treaties. Only limited progress has been made in updating the regime despite soft law instruments such as the Space Debris Mitigation Guidelines, together with national regulations that have tried to address the regulatory deficit. The worldwide implementation of uniform standards becomes more important daily because commercial space operators keep increasing in number.[10]

[9] Department of Space (Government of India), *Draft Space Activities Bill* (2017) < https://www.isro.gov.in > accessed 05 January 2026

[10] Department of Space (Government of India), *Draft Space Activities Bill* (2017) < https://www.isro.gov.in > accessed 07 January 2026

5. India's Bilateral Agreements And Space Cooperation

India practices peaceful space diplomacy through its space cooperation agreements with other countries. Many international partners, including Russia and the United States, have agreed to work with India through MoUs and cooperation deals. The MoUs and cooperation agreements involve multiple space-centred operations, including spacecraft making and launch preparation, as well as remote sensing work and scientific space exploration. India builds better legal frameworks in space tourism by teaming up with other countries to use their highest quality standards for technology and security.[11]

The revival of U.S.-India space cooperation happened both through collaboration between the U.S.-India Civil Space Joint Working Group and direct commercial matches between ISRO and U.S. businesses. Common space projects receive support from partnerships between ISRO with both CNES and Roscosmos. The deals between these parties consist mainly of non-treaty agreements that set operational rules for commercial spaceflight teamwork and facility utilisation.[12]

Old international agreements between India and other nations about space exploration do not mention coverage of legal responsibility for commercial suborbital flight operations or passenger transportation by private companies. New agreements need to include international company license standards since the current methods need replacement. India should update existing global space partnerships or create new ones that match its market demands before launching its commercial space tourism business. Bilateral agreements enable India to join shared space operations with other countries while matching its standards to worldwide industry practices.

6. National Regulatory and Institutional Framework in India

Since its establishment, the Indian Space Research Organisation (ISRO) has operated under the Department of Space to control most domestic legal and institutional space frameworks in India. Before recent changes, India operated its whole space program by the state government under no formal private sector oversight system for space operations, including mission planning and satellite launches. The demand for space commercialization along with private

[11] Ministry of External Affairs (Government of India), *Bilateral Cooperation in Outer Space* (2020) < https://www.mea.gov.in > accessed 07 January 2026
[12] NASA, *U.S.–India Space Cooperation Overview* (2021), <https://www.nasa.gov./> accessed 07 January 2026

sector integration in space tourism activities, led to major policy transformation. Through institutional structures including IN-SPACe and NSIL, the government aims to promote public-private sector space involvement under state oversight.

The country needs a complete national space law despite current reforms. The Space Activities Bill (2017) has not yet been approved by the Indian Parliament. The Bill exists to control commercial space operations while setting authorisation standards and duties in addition to handling India's international bilateral agreements. The lack of enforcement in the proposed Space Activities Bill creates ongoing confusion, especially for private spaceflight insurance and safety regulations, as well as environmental impact assessments. Space tourism involving human lives together with cross-border operations faces legal risks because of missing binding national legislation, which reduces private investment opportunities.

India's space governance shows signs of evolution at an institutional level, while its legal-institutional synergy remains in the process of developing coherence. The divide between promotional services that IN-SPACe handles and commercial work handled by NSIL, along with operational duties done by ISRO, marks a positive move towards building a modern governance structure. Space tourism requires India to establish binding regulations for vehicle approvals alongside rules governing passenger protection releases, as well as safety plan disclosure procedures and operational security measures. The United States serves as a model for learning opportunities because it created licensing mechanisms for commercial space operations. The priority for India right now should be to make domestic space legislation that outlines the public interest roles and responsibilities and rights of private space tourism operators clearly.[13]

7. LEGAL CHALLENGES AND ENVIRONMENTAL HAZARDS OF SPACE TOURISM

Space tourism comes with unmanageable legal issues as well as environmental risks. The problem of large space accidents involving paying space tourists has become a legal problem to solve. The Liability Convention requires space operators to be responsible for their space objects, though buying travellers are not protected. If border agreements on exemption of

[13] J Salazar, 'Commercial Human Spaceflight Regulation: Comparative Legal Study' (2020) 33(2) HJLT 420

liability work together, who is responsible at the end, are the questions that remain unanswered with regard to laws regulating multi-enterprise missions.[14]

Because countrywide tests for space craft and space flight permits, as well as worldwide standards, are non-existent, it is hard to create countrywide tests for space craft and space flight permits. There are international rules to stop people from being harmed during plane flights, but none operate for space travel operators in all nations. Current laws remain silent about the required security for passengers and insurance protection in case of travel in a developing country like India, when its own space regulations have yet to be designed. Different national safety systems will be created due to international disagreement that threatens consumer safety.

Space tourism poses as many risks to the environment as do those risks. Pollution of the stratosphere with the help of multiple suborbital rocket launches and the release of greenhouse gases into the atmosphere. As new launches expand the population of space debris in orbit, multiple satellites need more protection. However, the United Nations Space Debris Mitigation Guidelines set friendly guidelines but do not call for police action or punishments. India must develop good space tourism rules, based on international ecological standards, as the nation progresses along the growing space activity and shows the way to world space tourism, which is ecologically sustainable.

8. Comparative Analysis of Legal Frameworks for Space Tourism

Worldwide research on space tourism indicates that the regulations for conducting space business differ among the nations that participate in this sector. The Federal Aviation Administration (FAA) operates space tourism licenses through the Commercial Space Launch Amendments Act of 2004 statutes in the United States. Before launching a space tourist, the private spaceflight operator needs the signed informed agreement from space tourists about potential flight dangers. Under current laws, operators need to prove they possess responsibility coverage insurance to promote investment expansion, together with government intervention.[15]

Every European Union member nation has its own regulations for space tourism, including France and the United Kingdom, which have created individual policies. Under the 2008 Space Operations Act of France, operators need a license to operate, while they must maintain

[14] Frans G von der Dunk, 'Regulation of Space Tourism: National Approaches' in Ram S Jakhu and Paul Pelton (eds), *Handbook of Space Law* (Edward Elgar 2015) 415
[15] Commercial Space Launch Amendments Act 2004 (US)

environmental compliance and obtain responsibility coverage insurance. Security measures and innovation promotion are two primary objectives of the Spaceport regulations in the United Kingdom, per the Space Industry Act 2018. The present governments implement statutory protections to shield their satellite customers, along with businesses involved in space tourism operations.[16]

9. Conclusion & Recommendation

9.1. Conclusion

Space tourism offers India new ways to develop while also presenting it with difficult regulations to manage. Human space flight gets more private business involvement, so a complete set of laws becomes important quickly. Although India has shown policy direction in the space sector, it lacks a functioning national framework to govern space tourism, which puts its position in the space tourism sector at risk.

The international treaties Outer Space Treaty and Liability Convention require India to control businesses that use outer space, while making non-governmental entities responsible for harms during any space activities done under international rules. The incomplete laws about private space companies and space safety make it clear that India needs better rules now.

The United States, France and the United Kingdom stand out since these countries have well-developed systems to manage space tourism. After companies must complete licensing requirements and safety checks before operating services. They need to follow established safety rules plus get permission from passengers. India needs to base its legal system on other countries' space tourism guidelines while respecting international agreements and creating practical industry-friendly rules and operating procedures.

9.2. Recommendations

1. To establish responsible behaviour in its market, India needs policies and legal systems right away. The implementation of the Space Activities Bill needs urgent focus by the government. India must get a Space Activities Bill that explains all required steps for space operator licenses and defines liability terms, while making space safety and environmental rules mandatory, plus insurance requirements. The legislation needs to establish formal

[16] R. Jakhu & J. Pelton, *Space Safety Regulations and Standards* (Springer 2017)

Indian involvement in every space treaty, especially in the Outer Space Treaty, Liability Convention and Rescue Agreement.

2. The Indian government should create a special document called the "space tourism code" to set exact performance rules for private spaceflights. Through its partnership with the Ministry of Law and Justice and private businesses, IN-SPACe will establish the space sector for India. The document must contain three main parts using mission safety audits as its starting point, alongside launch site approvals and international cooperation arrangements with informed consent requirements at its centre.
3. The Indian government should revise its international agreements to improve the spaceflight business and establish better terms for sharing risks with overseas companies.
4. National space legislation must create official rules about environmental protection. Indian authorities need to set legal rules for managing space debris in line with UN standards, plus regularly inspect space tourism activities for environmental impacts. Space tourism growth requires special funding to train astronauts and strengthen the controlling bodies.

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