

## COSMIC GOVERNANCE: NAVIGATING THE FRONTIERS OF SPACE LAW

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*Space is for everybody. It's not just for a few people in science or math, or for a select group of astronauts. That's our new frontier out there, and it's everybody's business to know about space. – Christa McAuliffe.*

### ABSTRACT

*This article delves into the evolving field of space law with a particular focus on different international treaties, agreements, conventions and emerging challenges such as space commercialization, space debris, ownership rights and sustainability challenges raised before different nations that test its relevance in the modern era. In order to give readers a strong foundation, the article starts out by giving a thorough overview of what space law is. It then goes on to discuss the history and background of international space law, concentrating on the base treaties that have shaped the current legal framework governing activities in outer space. space exploration continues to push beyond Earth's orbit, and the increasing presence of space debris and the rapid commercialization of outer space pose significant threats to the safe and sustainable use of space. Additionally, the article explores space law within India, highlighting the nation's legal and regulatory approach to space activities. The importance of international collaboration is also covered, with a focus on balancing the interests of both established and developing space-faring states while maintaining space as a global common that is safe and accessible to all of humanity. Further, it delves into contemporary issues, including the first-ever crime committed in the space, examining the complexities of jurisdiction and the legal authorities responsible for the same.*

**Keywords:** Space law, Outer Space treaty, Space Debris, Space Commercialization, International law.

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## INTRODUCTION

Back in the 1900s and until the mid-20<sup>th</sup> century many of us could not have imagined space exploration because of scientific and economic reasons, it was in the mid-20<sup>th</sup> century when space exploration and activities became a reality. Space is generally regarded as res

communis—it belongs to everyone. It is not any one State's territory.<sup>1</sup> “Outer space law, also known as space law, is a branch of international law that governs the exploration and use of outer space, including the Moon, asteroids, and other celestial bodies. Space law is a product of leading minds and jurists of various countries. The building up of practices and expectations in space activities, their tolerance by states and their final acceptance through the United Nations resolutions made the beginning of space law.<sup>2</sup>The entry into outer space and the subsequent developments have added a new dimension to both science and law, space research and study is an area where we can see a close interconnection between science and law, while scientific developments are necessary law is also important to govern the use and abuse of scientific knowledge. With the advancement in technology, we can see a new trend in space tourism, space enthusiasts are electrified by the notion of embarking on an intergalactic journey through the cosmos and the revolutionary industry of space tourism making this dream a reality, but here arises a question one may think what are the laws that regulate the activities going on in space or do outer space have no law? who will have the jurisdiction to decide on crimes committed in space? How one can commit a crime in space or is there anyone who committed any crime? who has the right to own, use or exploit the moon? Questions more like this will be answered as we go through this article so let's begin our journey to explore the space laws.

## BACKGROUND & HISTORY OF INTERNATIONAL SPACE LAW

Outer space is not the lawless, ungoverned frontier one may think, in fact, there is a framework of agreements, treaties & principles developed in the United States during the 1960s and 70s when the United States & the Soviet Union were in a race to demonstrate their superiority that establish the basis for arrangements that is now international space law.<sup>3</sup> Before diving into the history of space law first let us understand what is space through a definition: *Space is a nearly*

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<sup>1</sup> Danielle Ireland-Piper & Steven Freeland, ‘STAR LAWS: CRIMINAL JURISDICTION IN OUTER SPACE’, <<https://airandspace.law.olemiss.edu/wp-content/uploads/2023/06/7.-Article-2-Ireland-Piper-and-Freeland-pp-44-to-75.pdf>> accessed 14<sup>th</sup> August 2024

<sup>2</sup> S. Bhatt, ‘Reflections on Space Law After Thirty-Two Years of Space Exploration and Emerging Trends for the 21st Century’, 31 JILI (1989) 448. accessed 9<sup>th</sup> August 2024

<sup>3</sup> Space law <<https://www.britannica.com/topic/space-law>> accessed 9<sup>th</sup> August 2024

*perfect vacuum with very little pressure and almost no matter. the molecules aren't close enough to one another for sound to travel between them, sound cannot travel through space. Not quite empty, bits of gas, dust and other matter float around "emptier" areas of the universe, while more crowded regions can host planets, stars and galaxies.*<sup>4</sup>

Now let's talk about Space law- Space law can be described as the body of law governing space-related activities. Like general international law, space law is composed of several international agreements, treaties, conventions, decisions from the UN General Assembly and the policies and guidelines of international organizations.<sup>5</sup> Soviet jurist Marklen Lazarev defined international space law as "*a set of legal rules regulating, on the basis of the principles of peaceful coexistence, the relations between the states of the Earth in the context of space exploration*".<sup>6</sup> The inaugural decade of space exploration, spanning the 1950s-60s, witnessed the historic launch of the soviet satellite Sputnik 1 in 1957 and U.S. satellite Explore1 in 1958, which raised questions about the legal status of outer space and thus heralding the advent of the space age and setting the stage for development of international space law and policy.

- In the year 1959, a permanent outer space committee known as the Committee on the Peaceful Uses of Outer Space (COPUOS) was set up. The Committee on the Peaceful Uses of Outer Space started with 24 members. Since then, it has grown to 102 members making it one of the largest Committees in the United Nations.<sup>7</sup>
- **Role of COPUOS:** The Committee was set up by the General Assembly in 1959 to govern the exploration and use of space for the benefit of all humanity: for peace, security and development. The Committee was tasked with reviewing international cooperation in peaceful uses of outer space, studying space-related activities that could be undertaken by the United Nations, encouraging space research programmes, and studying legal problems arising from the exploration of outer space.<sup>8</sup>
- **1963's Test-Ban Treaty:** The United States, Great Britain, and the Soviet Union signed the Limited Test Ban Treaty in August 1963. The treaty, which was approved by the

<sup>4</sup> Elizabeth Howell, 'What is Space?' (17 Feb 2022) < <https://www.space.com/24870-what-is-space.html> > accessed 9 August 2024.

<sup>5</sup> Space Law <<https://www.unoosa.org/oosa/en/ourwork/spacelaw/index.html#>> accessed 9 August 2024

<sup>6</sup> Gennady Zhukov and Yuri Kolosov, 'INTERNATIONAL SPACE LAW' <[https://mgimo.ru/upload/2016/05/KOLOSOV\\_space\\_law\\_eng.pdf](https://mgimo.ru/upload/2016/05/KOLOSOV_space_law_eng.pdf)?> accessed 9 August 2024

<sup>7</sup> Members of the Committee on the Peaceful Uses of Outer Space, <<https://www.unoosa.org/oosa/en/members/index.html>> accessed 9<sup>th</sup> August 2024.

<sup>8</sup> Committee on the Peaceful Uses of Outer Space < <https://www.unoosa.org/oosa/en/ourwork/copuos/index.html> > accessed 9<sup>th</sup> August 2024

Senate, outlawed the testing of nuclear weapons in the atmosphere, space, and underwater.<sup>9</sup> This was all about the background and history of international space law.

## BASE TREATIES OF INTERNATIONAL SPACE COOPERATION

Space law is based on five international treaties that are supervised by UNCOPUOS, the United Nations Committee for the Peaceful Uses of Outer Space. The key part of international space law comes from the 1967 Outer Space Treaty, let's dive into to know about the treaties.

- 1. OUTER SPACE TREATY-** First part of Article I of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 1967 (henceforth referred to as Outer Space Treaty, 1967) states that: "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"<sup>10</sup>
  - Some of you might have a doubt about who owns the moon or does anyone has a claim over the moon and other celestial bodies this question was also answered by the Outer Space Treaty- Space activities are for the benefit of all nations, and any country is free to explore orbit and beyond. There is no claim for sovereignty in space; no nation can "own" space, the Moon or any other body.<sup>11</sup>
  - Article III of the Outer Space Treaty, 1967 states that, "Space activities must align with international law, prioritizing peace, security, and global cooperation.
- 2. RESCUE AGREEMENT-** Objects into Outer Space, the Rescue of Astronauts, and the Return of Astronauts. Signatories undertake to use every resource at their disposal to assist or rescue astronauts in need, and if appropriate, to repatriate them to their home country. Signatories also commit to assisting in the return of any space objects that come to Earth outside of their home country to the sponsoring nation.<sup>12</sup>

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<sup>9</sup> NATIONAL ARCHIVES <<https://www.archives.gov/milestone-documents/test-ban-treaty>> accessed 9<sup>th</sup> August 2024

<sup>10</sup> Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies  
< <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html> > accessed 9<sup>th</sup> August 2024

<sup>11</sup> International Space Law < [https://www.spacefoundation.org/space\\_brief/international-space-law/](https://www.spacefoundation.org/space_brief/international-space-law/) > accessed 9<sup>th</sup> August 2024

<sup>12</sup> *Ibid*

3. **THE MOON AGREEMENT-** ‘Agreement Governing the Activities of States on the Moon and Other Celestial Bodies.’ The agreement ensures that the bodies should be used exclusively for peaceful purposes, that their environment should not be disrupted, and that the United Nations should be informed of the location and purpose of any station established on those bodies. In addition, the Agreement provides that the Moon and its natural resources are the common heritage of mankind and that an international regime should be established to govern the exploitation of such resources when such exploitation is about to become feasible.<sup>13</sup>
4. **LIABILITY CONVENTION-** ‘Convention on International Liability for Damage Caused by Space Objects’ the Liability Convention provides that a launching State shall be absolutely liable to pay compensation for damage caused by its space objects on the surface of the Earth or to aircraft, and liable for damage due to its faults in space. The Convention also provides for procedures for the settlement of claims for damages.<sup>14</sup>
5. **THE REGISTRATION CONVENTION-** ‘The Convention on Registration of Objects Launched into Outer Space’ Expanding a space object register, the Convention empowers the UN Secretary-General to maintain a register of all space objects.<sup>15</sup>

In addition to the outer space treaties negotiated at the United Nations other international laws and non-binding principles both of public and private nature, national space laws regulations and policies also apply to space activities, so now it’s time to dive into the laws related to space in India.

## INDIA IN SPACE: HISTORY & LAWS

The launch of the first sounding rocket from Thumba near Thiruvananthapuram, Kerala on 21 November 1963, marked the beginning of the Indian Space Programme,<sup>16</sup> which was supervised by the visionary Dr. Vikram Sarabhai. Countries First Satellite Aryabhata was launched in the year 1975.

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<sup>13</sup> Agreement Governing the Activities of States on the Moon and Other Celestial Bodies < <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/intromoon-agreement.html> > accessed 9<sup>th</sup> August 2024

<sup>14</sup> Convention on International Liability for Damage Caused by Space Objects < <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introliability-convention.html> > accessed 11<sup>th</sup> August 2024

<sup>15</sup> International Space Law < [https://www.spacefoundation.org/space\\_brief/international-space-law/](https://www.spacefoundation.org/space_brief/international-space-law/) > (n8)

<sup>16</sup> Sounding Rockets, < <https://www.isro.gov.in/soundingRockets.html#> > accessed 11<sup>th</sup> August 2024

In 1962, the Department of Atomic Energy established the INCOSPAR (Indian National Committee for Space Research) under the direction of Dr. Sarabhai and Dr. Ramanathan. On August 15, 1969, the Indian Space Research Organization (ISRO) was established. ISRO's primary goal is to develop space technology and apply it to diverse national purposes. It is one of the world's six biggest space agencies. The Department of Space (DOS) and the Space Commission were established in 1972, and ISRO was transferred to the DOS on June 1, 1972.<sup>17</sup> In India, the space rules that are now in place are mostly policy frameworks., these policies include:

**(a) SATELLITE COMMUNICATION POLICY (SATCOM):** Introduced in 1997, this policy aims to advance satellite communication, launch capabilities, and encourage private investment. However, it was deemed insufficient, leading to the formulation of norms, guidelines, and procedures.<sup>18</sup>

**(b) NORMS, GUIDELINES AND PROCEDURE POLICY, 2000:** The laws outlined the process for private Indian companies with less than 74% foreign equity to set up a satellite system. The policy established multiple subcommittees to authorize and sanction the commercial use of the INSAT satellite system by private enterprises, as well as to impose restrictions on transponder and satellite network capacity and capability sharing.<sup>19</sup>

**(c) REMOTE DATA SENSING POLICY, 2011:** High-resolution imaging services up to one meter were approved for private use by the government, except for highly classified picture data from the nation's most important defence sites. Apart from providing opportunities for the remote sensing sector, the policy would ease restrictions, enabling a greater number of clients to obtain high-quality data for research and development purposes.<sup>20</sup>

**(d) ISRO TECHNOLOGY TRANSFER POLICY:** Designed to boost private participation and investment, this policy enables outsourcing manufacturing of satellite components and

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<sup>17</sup> Janaki S. Nair, *The Indian Space Program*, <https://www.livelaw.in/lawschool/articles/the-indian-space-program-237249>> accessed 11<sup>th</sup> August 2024

<sup>18</sup> Space Law and the Future of Space Exploration, < <https://www.drishtias.com/blog/space-law-and-the-future-of-space-exploration#>> accessed 11<sup>th</sup> August 2024

<sup>19</sup> Gibran Raza and Sariyah Khan, 'Space Laws in India: An Overview', *Integral Law Review*, Vol. 2 (2023-2024) accessed 11<sup>th</sup> August 2024.

<sup>20</sup> *Ibid*



other space-related technologies to national and international companies, freeing ISRO to focus on research and development.<sup>21</sup>

**(e) SPACE ACTIVITIES BILL, 2017:** the proposal was drafted in 2017 and is presently pending in the legislature, the proposed **Space Activities Bill, 2017 (Bill)**, seeks to dismantle the Government monopoly on space and encourage private sector involvement.<sup>22</sup>

**(g) INDIAN SPACE POLICY 2023:** The 2023 space policy is a significant departure from previous policies. It is more liberal in its approach to private sector participation, and it gives greater emphasis to the use of space technology for social and economic development. The policy is also more ambitious in its goals, and it sets out a vision for India to become a leading spacefaring nation.<sup>23</sup> This was about the space laws in India.

### SPACE COMMERCIALIZATION -EXPLORATION TO EXPLOITATION

Activities in outer space have increased significantly, we are now at a point where the private sector is capable of exploring space and at the brink of extracting resources for profit, earlier outer space activities were limited to state-based projects but with technological advancements shifted towards the commercialization with private sectors taking keen interest in it. One may think about what resources the private entities are more excited about.

Space-to-Earth activities make up most of the space economy, with exciting societal benefits as technology advances, Companies are exploring how moving their operations to the lower orbit could unlock new production models. For example, in the pharmaceutical industry, medical companies in orbit could grow organs for transplant patients on Earth and manufacture new drugs in orbit that target cancer cells.<sup>24</sup> The utilization of solar factories in orbit or on the Moon that can beam solar energy back to Earth is a long-awaited goal that has been hampered by high costs. These developments in broadband access and energy sources could be crucial for nations left behind by previous industrial revolutions, as they may be able to forge a new development path, Space mining of precious metals and rare elements could become the next

<sup>21</sup> Space Law and the Future of Space Exploration, (n16)

<sup>22</sup> Alice George, 'Race for Space', < <https://corporate.cyrilamarchandblogs.com/2019/05/race-for-space-activities-bill-2017-commercialization/>> accessed 11<sup>th</sup> August 2024

<sup>23</sup> Sreni Thota and Sumit Sharma, 'India's New Space Policy: A Leap Forward for a Future Space Superpower', IIPA Digest, < <https://www.iipa.org.in/cms/public/uploads/366111692781998.pdf>> accessed 11<sup>th</sup> August 2024

<sup>24</sup> Laundry Signe and Hanna Dooley, 'How space exploration is fueling the Fourth Industrial Revolution'. < <https://www.brookings.edu/articles/how-space-exploration-is-fueling-the-fourth-industrial-revolution/>> accessed 11<sup>th</sup> August 2024

competitive sphere as a way to meet the demand for in-space manufacturing, which needs raw materials, metals, and water.<sup>25</sup> There has also been progress in space mining. For example, Russia and the European Space Agency have established a program, PROSPECT, to test resource exploration potential in outer space and to work together to develop new technologies that may be used to extract those resources in future.<sup>26</sup> Space mining is expected to be the most significant future growth area in space activity, with the global demand for resources beyond those offered on our own planet Earth.<sup>27</sup>

## MAJOR CHALLENGES REGARDING SPACE ACTIVITIES

**1) SPACE DEBRIS MITIGATION & REMEDIATION-** space debris, artificial material that is orbiting Earth but is no longer functional. This material can be as large as a discarded rocket stage or as small as a microscopic chip of paint. Much of the debris is in low Earth orbit, within 2,000 km (1,200 miles) of Earth's surface.<sup>28</sup> As of 2021, the United States Space Surveillance Network was tracking more than 15,000 pieces of space debris larger than 10 cm (4 inches) across. It is estimated that there are about 200,000 pieces between 1 and 10 cm (0.4 and 4 inches) across and that there could be millions of pieces smaller than 1 cm.<sup>29</sup> The number of debris also known as space junk poses a threat to both crewed and non-crewed satellites as there are chances of collision.<sup>30</sup>

The first collision that destroyed an operational satellite happened on February 10, 2009, when Iridium 33, a communication satellite owned by the American company Motorola, collided with Cosmos 2251, an inactive Russian military communications satellite, about 760 km (470 miles) above northern Siberia, shattering both satellites.<sup>30</sup> With the increasing amount of space debris and the advent of mega-constellations of thousands of satellites, there are fears that collisions could set off a chain reaction (called the Kessler syndrome after American scientist Donald Kessler) in which the resulting space debris would destroy other satellites and so on, with low earth orbit eventually becoming unusable.<sup>31</sup> Considering the issue posed by

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<sup>25</sup> *Ibid*

<sup>26</sup> Scott Atkins, 'Outer space: The new frontier for restructuring and insolvency', <<https://www.nortonrosefulbright.com/en-au/knowledge/publications/b34b1f80/outer-space-the-new-frontier-for-restructuring-and-insolvency>> accessed 12<sup>th</sup> August 2024

<sup>27</sup> *Ibid*

<sup>28</sup> Erik Gregersen. 'Space debris', last updated July 28, 2024 <<https://www.britannica.com/technology/space-debris>> accessed 13<sup>th</sup> August 2024.

<sup>29</sup> *Ibid*

<sup>30</sup> Gregersen (n26)

<sup>31</sup> *Ibid*



space debris, particularly with regard to the utilization of LEO and GEO orbits, we can predict that there will soon come a point at which these orbits' very existence will be in jeopardy. The utilization of LEO and GEO orbits would be threatened to actually cause disruptions to the peaceful and advantageous utilization of space resources by humankind, which would ultimately result in a blatant breach of Article I and Article III of the 1967 Outer Space Treaty.<sup>32</sup> Francis Lyall also points out the fact that space debris could be treated as a threat to the peaceful use of outer space.<sup>33</sup> one of the reasons for the issue of space junk is that there is a lack of legal framework, no international law is made to tackle the issue of space junk which needs to be analysed by countries as it is high time.

- **Collision with space** The most serious hazard facing human activities in outer space is the risk of collision with space debris.<sup>34</sup> man-made space debris has already damaged a number of satellites being the most likely cause of several major accidents, Space debris poses a concern to the development of manned spacecraft.<sup>35</sup> Howard Baker, in his book *Space Debris: Legal and Policy Implications*, tracks a number of studies of collision probabilities and explains that "conclusions regarding the rate of growth of the space debris population suggest an imminent risk of collision".<sup>36</sup>
- **Harm and Evidence**-the Space debris can be a reason to kill an astronaut as a 0.5-millimeter paint chip could easily tear a space suit thus kill an astronaut or cosmonaut working outside a spaceship,<sup>37</sup>

## SPACE DEBRIS MANAGEMENT BY INDIAN COMPANIES

India's Innovative Initiatives in Debris Management are as follows:

India intends Debris Free Space Missions (DFSM). This initiative was declared by Shri Somanath S., Chairman, ISRO/Secretary, DOS during the inaugural opening plenary of the

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<sup>32</sup> Deva Prasad M., 'An Analysis of Applying Sustainable Development Concept to The Legal Issue of Space Debris', (2014) 4 GJLDP (July) 47, accessed 12<sup>th</sup> August 2024

<sup>33</sup> *Ibid*

<sup>34</sup> James P. Lampertius, 'THE NEED FOR AN EFFECTIVE LIABILITY REGIME FOR DAMAGE CAUSED BY DEBRIS IN OUTER SPACE', Michigan Journal of International Law, Volume 13 Issue 2, accessed 13<sup>th</sup> August 2024

<sup>35</sup> *Ibid*

<sup>36</sup> Lampertius, (n32)

<sup>37</sup> *Ibid*

42nd Annual Meet of Inter-Agency Space Debris Co-ordination Committee (IADC) held at Bengaluru on April 16, 2024.<sup>38</sup>

The way India involves itself with other countries in managing space junk is very complex and well thought out, for instance, by joining the Inter-agency Space Debris Coordination Committee (IADC). India participates in all the working groups and steering committees, thus ensuring active participation globally in shaping strategies and policies on space debris.<sup>39</sup>

## 2) ABSENCE OF REGULATIONS RELATED TO OWNERSHIP RIGHTS

The regulation of private entities' ownership rights in outer space is not expressly covered by the Outer Space Treaty. The Moon Agreement includes the idea of "common ownership" of resources obtained in space, which is important for space mining and engineering endeavours. However, this concept is exclusive to resources obtained from the Moon and does not apply to resources obtained from other celestial bodies. Therefore, no existing international instrument covers the enforcement of ownership claims in space.<sup>40</sup>

The concern is that individual States are now "going it alone" and enacting their own local laws to encourage commercial space activities by their own domestic private enterprises, instead of supporting the negotiation of additional international frameworks to provide a more comprehensive solution to these issues.<sup>41</sup> In relation to ownership rights, four nations – the United States, Luxembourg, the United Arab Emirates (UAE) and Japan – have now passed laws recognising the ability of private entities to acquire ownership rights over resources in outer space.<sup>42</sup>

- The ungoverned nature of outer space and lack of national ownership plainly create the possibility of conflict. Even if companies have rights to own a resource when they extract it, they do not necessarily have rights to a resource while it remains in place. If two

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<sup>38</sup> India's Intent on Debris-Free Space Missions –

Explained <[https://www.isro.gov.in/Debris\\_Free\\_Space\\_Missions.html](https://www.isro.gov.in/Debris_Free_Space_Missions.html)> accessed 13<sup>th</sup> August 2024.

<sup>39</sup> Keshav Verma, 'Mapping India's Path: Pioneering a Space Future Free from Debris', <[https://www.icwa.in/show\\_content.php?lang=1&level=3&ls\\_id=10800&lid=6872](https://www.icwa.in/show_content.php?lang=1&level=3&ls_id=10800&lid=6872)> accessed 13<sup>th</sup> August 2024

<sup>40</sup> Scott Atkins, 'The commercialisation of outer space,' <https://www.nortonrosefulbright.com/en-in/knowledge/publications/102a426e/the-commercialisation-of-outer-space#autofootnotel> > accessed 13<sup>th</sup> August 2024

<sup>41</sup> *Ibid*

<sup>42</sup> Atkins, (n36)

companies from different nations want to mine the same area, both technically have the right to do so, thus creating possibilities of conflict.<sup>43</sup>

### 3) CONFUSION REGARDING COLLISION LIABILITY

Although the Outer Space Treaty and the Liability Convention establish a framework for liability in the event of an outer space collision resulting in property damage, liability is contingent upon an imprecise interpretation of "fault" and there are no direct enforcement mechanisms available for private entities.<sup>44</sup> Although the treaty requires proof of fault for damages in outer space, it neither defines "fault" nor refers to a standard of care for determining fault.<sup>45</sup>

### 4) SUSTAINABILITY CHALLENGES OF SPACE EXPLORATION

The increased activity in space poses sustainability issues that need to be resolved in order to preserve celestial bodies for present and future generations.<sup>46</sup> To ensure space does not become the next setting of a Wild West gold rush, the international community should come together to create legal frameworks that keep in check the space industry.

**5) CRIMINAL LAW AND UNCERTAINTY REGARDING JURISDICTION IN SPACE-** The nature of the law itself is one of the main concerns about the application and operation of criminal law in space. In the classical context, criminal law is territorial by nature, meaning it can only be applied inside a state's borders. Thus, determining the applicable law and jurisdiction in cases concerning a field that has no boundaries and is not subject to the territorial rights of States may prove to be problematic and require consideration of a variety of issues.<sup>47</sup> The extraterritorial application of criminal law and the exercise of criminal jurisdiction in space is in search of a proper connecting factor so that a relevant State law and jurisdiction can be applied.<sup>48</sup>

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<sup>43</sup> Alex gilbert, 'Mining in space is coming', Published April 26, 2021 <

<https://www.milkenreview.org/articles/mining-in-space-is-coming>> accessed 13<sup>th</sup> August 2024

<sup>44</sup> Atkins, (n36)

<sup>45</sup> Lampertius, (n32)

<sup>46</sup> 'The path forward for sustainable space exploration', <

<https://www.weforum.org/agenda/2024/07/sustainable-space-exploration-path-forward/>> accessed 13<sup>th</sup> August 2024

<sup>47</sup> Tanmay Mehta, 'Beyond Borders: Applicability and Contours of Criminal Law in Space', Intergovernmental Agreement, Volume 3 Issue II, < <https://nujs.edu/casl/tag/intergovernmental-agreement/>> accessed 14<sup>th</sup> August 2024.

<sup>48</sup> *Ibid*

## Now talking about another very important question one might think **WHO HAS THE JURISDICTION TO DECIDE ON CRIMES COMMITTED IN SPACE?**

In August 2019, reports emerged of NASA investigating an allegation that an astronaut committed a crime in space. (**NASA Astronaut Anne McClain Accused by Spouse of Crime in Space**)<sup>49</sup>, Astronaut Anne McClain is accused of identity theft and improperly accessing her estranged wife's private financial records while on a sixth-month mission aboard the International Space Station,<sup>50</sup>This gives rise to the question: what criminal law is to guide individuals in outer space? The answer to this question is very much required as space activity is increasing rapidly and thus it is important to know how these cases will be dealt with. Here in the above case, it was very much clear that US laws will apply as both the accused and victim are US Nationals and also the crime took place at ISS.

We identify three categories of potential crimes to which different jurisdictional rules may apply: crimes committed on the International Space Station, crimes committed on commercial space vessels and crimes committed in space other than on a space vessel or the International Space Station.<sup>51</sup>

- Article VIII of the 1967 Outer Space Treaty states "A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body."<sup>52</sup> In other words, if a crime is committed on a craft belonging to a specific nation, that nation would have legal jurisdiction in the case and therefore investigate the person who committed the crime.<sup>53</sup>
- Intergovernmental Agreement (IGA): IGA provides detailed rules concerning jurisdictional issues in relation to criminal misconduct in space. In cases involving individuals from the same nation, Article 22(1) of the IGA specifically states that parties to the said agreement

<sup>49</sup> Mike Baker, 'NASA Astronaut Anne McClain Accused by Spouse of Crime in Space,' <<https://www.nytimes.com/2019/08/23/us/astronaut-space-investigation.html>> accessed 14<sup>th</sup> August 2024

<sup>50</sup> <<https://www.thehindu.com/sci-tech/science/nasa-investigating-first-crime-committed-in-space/article29251790.ece>> accessed 14<sup>th</sup> August 2024.

<sup>51</sup> Danielle Ireland-Piper & Steven Freeland, 'STAR LAWS: CRIMINAL JURISDICTION IN OUTER SPACE', <<https://airandspace.law.olemiss.edu/wp-content/uploads/2023/06/7.-Article-2-Ireland-Piper-and-Freeland-pp-44-to-75.pdf>> accessed 14<sup>th</sup> August 2024

<sup>52</sup> RESOLUTION ADOPTED BY THE GENERAL ASSEMBLY, <<https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/outerspacetreaty.html#>> accessed 14<sup>th</sup> August 2024.

<sup>53</sup> Chelsea Gohd, 'Who Investigates a Crime in Space?', <<https://www.space.com/who-investigates-space-crime.html>> accessed 14<sup>th</sup> August 2024.

may “exercise criminal jurisdiction over personnel in or on any flight element who are their respective nationals.”<sup>54</sup>

## CONCLUSION

Space law has covered a long path since its beginning in the 1960s, Space exploration has come to a completely next level. It would not be wrong to say that the golden era of space law has begun. Space law is a very complex issue that cannot be dealt with in a single piece of legislation it requires a deep study and analyses of different backgrounds by scholars. A number of treaties and accords have created the legal foundation for space travel, and the emphasis of space law has changed from government space activities to commercial space activities, year by year space is getting closer to our everyday lives, space commercialization and space tourism being the best examples. With the beginning of these activities, the need for a comprehensive and adaptive legal framework becomes increasingly paramount.

A multidisciplinary approach is necessary while studying Space due to the complexity of space law, incorporating concepts from international law, environmental law, intellectual property law, and human rights law. In order to ensure that the advantages of space exploration are fairly distributed while reducing the risks associated with space activities, the creation of space law must strike a balance between the interests of governments, businesses, and individuals. talking about our country India there is currently no space law officially promulgated under Indian law. At the moment, India lacks clear laws governing space-related activities. India is a developed nation that wants to advance scientific research and space exploration capabilities while also increasing the capacity for space research and scientific advancements, keeping this in mind various decisions were taken by the Authorities in India that we had discussed earlier.

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<sup>54</sup> Mehta, (n47).