

## DETERMINATION OF JURISDICTION IN THE CASES OF CRIMINAL LAW IN OUTER SPACE: AN UNTOUCHED AND ROUGH TERRAIN

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### ABSTRACT

*In this research paper, the author has attempted to analyze the not so talked about issue of determining jurisdiction related to criminal law in the space. Determination of jurisdiction, no matter which area of law it relates to is always a challenging task for courts worldwide. It becomes even more complicated when we go beyond Earth's atmosphere into space. The author has tried critically analyzing the laws and practices present in case we need to determine the criminal law jurisdiction in the "space" and the predicament and loopholes related to the same. Furthermore, the author has tried to come up with solutions regarding some complex cases in which identifying jurisdiction is an arduous task and suggested some steps and measures which can be taken as precautions before the world witnesses the first official criminal case of space. This piece results from a detailed analysis of multiple reliable sources, and the methodology used is a literature review.*

**Keywords:** Jurisdiction, Space, Criminal Law, Punishment, Citizenship, Nationality.

### INTRODUCTION

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We cannot imagine a world where a person takes a human life and goes scot-free because nobody in that society considers it a "[crime](#)." In order to deter criminals from doing or repeating crimes, impose proportionate punishment and give justice to the victims, every nation has a set of criminal laws.

But what about space, which is said to belong to everyone? Even when 1969, Neil Armstrong made history by placing a US flag on the moon due to the 1967 Outer Space Treaty. This gesture, which may have inferred territorial possession, was entirely symbolic.<sup>1</sup>

The question of jurisdiction is becoming increasingly significant with the rising number of private players in space. If we take a look at the global scene, the US and other nations like

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<sup>1</sup> Yasmin Ali, *Who owns outer space?*, BBC NEWS (Sept. 25, 2015), <https://www.bbc.com/news/science-environment-34324443>.

France, Japan, Russia, Italy, etc., have a dominant presence in private business, with the exception of China, which is pursuing an ambitious space project with full government support. India's portion in the commercial space sector, which is expected to be around \$350 billion, is a pitiful 3–4%. Billionaires like Richard Branson of Virgin Atlantic, Elon Musk of Tesla, and Jeff Bezos of Amazon invest heavily to realize their space goals and create chances for future interplanetary missions and space tourism.<sup>23</sup>

According to research findings, the commercial economy currently makes up about 80% of the space industry's total financial output. It is predicted to continue to be the primary driver of future expansion. Furthermore, according to an estimate, the space economy might reach about US\$1.5 trillion by 2040.<sup>4</sup>

The scope of this paper has been limited to criminal jurisdiction only, and other areas of laws like civil, family, etc., have not been analyzed. The author could not come up with an unequivocal definition of “space” or “outer space”. This research article does not define The kinds of crimes that can take place.

In this research paper, space vehicle has been defined as all kinds of space crafts, satellites and other automated or manual machines which go the space to perform various purposes. This term has been used by the author for the lack of a better phraseology.

## RESEARCH QUESTIONS

1. What are the challenges while determining jurisdiction in criminal law cases in space?
2. What possible solutions exist to let go of the ambiguity present in existing treaties and laws related to the same?

## DEFINING OUTER SPACE

To this date, we do not have an official, formal and uniform definition of outer space agreed upon and consented to by all. Some organizations claim that space starts from approximately 100km upwards in the sky and that delineation is popularly termed the “Karman Line”; others

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<sup>2</sup> John Coykendall et al, *Riding the exponential growth in space*, DELOITTE INSIGHTS (Mar. 22, 2023), <https://www2.deloitte.com/us/en/insights/industry/aerospace-defense/future-of-space-economy.html>.

<sup>3</sup> M Somasekhar, *Private players rush into Space Sector as it is offering massive growth scope*, SIASAT (Sept. 23, 2021), <https://www.siasat.com/private-players-rush-into-space-sector-as-it-is-offering-massive-growth-scope-2196270/>.

<sup>4</sup> Damini Rana & Dr. Mritunjay Sharma, *The New Final Frontier: A Case Study Analysis of Private Sector's Increasing Role in the Space Industry*, 10 Int. J. Stud. Res. 1, 1-18 (2021).

disagree. United Nations and many other institutions are trying their level best to come up with a suitable definition of outer space so as to get a clearer picture of its starting line. Even a functional definition can suffice to an extent for the purpose of space laws.<sup>5</sup>

There are a few issues pertaining to a literal demarcation of space, especially for private players who started their journeys in the field of space tourism not too long ago, for commercial spaceflight firms, like Virgin Galactic, which is creating a sub-orbital tourist space plane, a physical distinction leads in a lot of formalities to be done<sup>6</sup>. Even if Virgin is only “in space” for five or six minutes, this means that the company must adhere to both international aviation laws and space legislation. It is necessary to reach a reasonable compromise.<sup>7</sup>

### **THE ALLEGED FIRST CRIME WHICH HAPPENED IN“SPACE”**

In 2019, it was asserted that an astronaut accessed her ex-partner’s bank account while she was residing on the International Space Station (ISS).<sup>8</sup>It appeared that this was the first instance of a crime allegedly being committed in low Earth orbit. While on the ISS, Anne McClain admitted that she had access to the account but maintained that she did nothing unlawful. She has maintained, via a lawyer, that she was in charge of managing the couple’s still-complicated finances. Summer Worden, her estranged spouse, is rumoured to have complained to the Federal Trade Commission. According to Worden, a computer network connected to NASA was used to gain unauthorized access to her bank account.

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Additionally, a family member reported McClain to NASA’s office of inspector general, charging him with identity theft and unauthorized access to Worden’s confidential financial details. Worden’s young son from a previous relationship was being raised and supported financially by McClain prior to their split. According to her attorney, she used the bank account to check on the family’s finances to make sure there was money to cover the family’s expenses and take care of Worden’s son. She was unaware that Worden had asked her to stop

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<sup>5</sup> YASMIN ALI, *supra* note 1.

<sup>6</sup> Matthew Weinzierl & Mehak Sarang, *The Commercial Space Age Is Here*, HARVARD BUSINESS REVIEW (Feb. 12, 2021), <https://hbr.org/2021/02/the-commercial-space-age-is-here>.

<sup>7</sup> YASMIN ALI, *supra* note 1.

<sup>8</sup> Mike Baker, *NASA astronaut Anne McClain Accused by Spouse of Crime in Space*, THE NEW YORK TIMES (Aug. 23, 2019), <https://www.nytimes.com/2019/08/23/us/astronaut-space-investigation.html>.

using the account.<sup>9</sup> This assertion was found to be disproved eventually, but this does not mean that crimes like this cannot take place in the upcoming future.<sup>10</sup> As humans have started spending more and more time in space, the frequency and intensity of offences of such nature will probably increase.

## DETERMINATION OF CRIMINAL JURISDICTION AS A CONUNDRUM

If the assertion made in the case mentioned above were legit, then it could be the first crime committed in space in the history of humankind. But, this particular case would not have suffered from any quagmire regarding jurisdiction. NASA could have assisted in the investigation, and the American court would have had the jurisdiction, and that is what happened while the case was going on because both the accused and the alleged victim were citizens of the United States of America. This sort of jurisdiction is termed “active nationality” jurisdiction. A separate partner country’s criminal code would be applicable if the victim of a crime committed on the ISS was a citizen of that country and the US did not guarantee it would pursue the offender. The term “passive nationality” jurisdiction describes this. A partner country’s criminal law might also be relevant if the offence occurred in that country’s portion of the space station.

Space is regarded as *res communis*, meaning that no nation can claim it and that it belongs to everyone. This is similar to how the high seas are considered. However, this does not imply that international law does not apply to space. The nationality principle, which covers crimes committed by a country’s citizens outside of its borders, and the universality principle, which permits governments to prosecute anyone for severe violations of international law, such as piracy, are two ways that countries can assert jurisdiction outside of their borders under international law.<sup>11</sup>

The International Space Station (ISS) has an intergovernmental agreement that was signed by the countries involved in the project and that expressly allows for nationality-based criminal jurisdiction. It states that “Personnel in or on any flight element who are their respective

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<sup>9</sup> Robin McKie, *Nasa astronaut ‘accessed ex-partner’s bank account from space station’*, THE GUARDIAN (Aug. 24, 2019), <https://www.theguardian.com/us-news/2019/aug/24/nasa-astronaut-allegedly-accessed-ex-partners-bank-account-while-living-on-iss>.

<sup>10</sup> Christina Zdanowicz, *NASA astronaut’s estranged wife charged with lying about claim that spouse improperly accessed account from space*, CNN (Apr. 08, 2020), <https://edition.cnn.com/2020/04/08/us/nasa-astronaut-anne-mcclain-estranged-wife-charged-trnd/index.html>.

<sup>11</sup> Danielle Ireland-Piper, *Star Laws: What happens if you commit crime in space?*, THE CONVERSATION (Aug. 27, 2019), <https://theconversation.com/star-laws-what-happens-if-you-commit-a-crime-in-space-122456>.

nationals may be subject to criminal jurisdiction by Canada, the European Partner States, Japan, Russia and the United States.”<sup>12</sup>

Things may become even more challenging for other space missions that the ISS does not carry for myriad reasons. The framework of space criminal law treaties mainly relies on nationality. A dual citizen who is accused of a crime complicates matters further. That agreement won't apply because it's unlikely that future space tourists will be on board the ISS. It is most likely that the criminal law of the nation where the spacecraft is registered will apply, but this could provide a problem if the countries whose individuals are aboard also try to assert their jurisdiction.<sup>13</sup>

### **PRESENT LEGAL STANDING IN THE CONTEXT OF INTERNATIONAL CHARTERS**

The Outer Space Treaty, the Rescue Agreement, the Liability Convention, the Registration Convention, and the Moon Agreement are five crucial international treaties that govern space. When addressing suspected space crimes, the Outer Space Treaty is one of the most important.<sup>14</sup> A spacefaring criminal would typically be subject to the law of the country of which they are a citizen or the country aboard whose registered spacecraft the crime was committed because the treaty grants that country authority “over any personnel thereof.” However, because the term “personnel” is not defined, it is unclear what the situation may be for ordinary individuals, such as, say, an African space tourist travelling onboard a spacecraft with a Canada registration.<sup>15</sup>

The United Nations Office for Outer Space Affairs, in charge of the convention, which talks about a few facets of space laws, has 129 signatories, including China, Russia, the UK, and the US. It lays out crucial tenets such as the idea that space should be seen as belonging to all of humanity, that outer space is open to all governments' study and use, and that the moon and other celestial bodies cannot be claimed by a nation-state. Weapons will not be launched into orbit or space, and the moon and other heavenly bodies will only be used for peaceful purposes.<sup>16</sup> Thus, since space is not owned by a single entity or even multiple for that matter

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<sup>12</sup> *Id.*

<sup>13</sup> DANIELLE IRELAND-PIPER, *supra* note 11.

<sup>14</sup> Omri Bouton, *Gibraltar: The 101 Guide To Space Crimes*, MONDAQ (Jun. 04, 2020), <https://www.mondaq.com/gibraltar/crime/947248/the-101-guide-to-space-crimes>.

<sup>15</sup> DANIELLE IRELAND-PIPER, *supra* note 11.

<sup>16</sup> YASMIN ALI, *supra* note 1.

because it is considered to belong to everyone, the question of where should the court trials take place and proceed in case of any offence (criminal offence according to the gamut of this paper) looms large.

One of the solutions is resorting to alternate dispute resolution and settling damages among the parties involved in a particular case. This route was taken by the Space Liability Convention of 1972. Responsibility, if a space object causes damage is outlined in the Space Liability Convention 1972. According to the treaty, a launching State is obliged to pay damages for harm done to aircraft or the Earth's surface by its space objects, as well as for harm caused by its mistakes in space. The convention also outlines processes for the resolution of damage claims. The only issue with this approach is that it can only be applied to those cases which can be compromised with and appropriately disposed of only with a suitable amount of monetary damages and cannot take into account grave and non-compoundable criminal offences.<sup>17</sup>

#### WAY OUT AND SUGGESTIONS

The question of jurisdiction is very unclear, and criminal jurisdiction is not talked about in the mainstream to the extent it should, as there has been no known criminal case in the space witnessed so far. But, now that space exploration, technology and interest germane to it is growing far and wide, we need to come up with solutions for the same. The ambiguous term "personnel", used with an unclear meaning in the Outer Space Treaty, generally means the country the person is a citizen of.<sup>18</sup> Some of the possible solutions can be as follows. Suppose the accused belongs to one country but was flying a spacecraft registered in another. In that case, the jurisdiction can rest with the country they are a citizen of, in case the crime committed was individualistic in nature, for example, identity theft, and the victim of the crime belongs to the same country as that of the accused.

If the crime is germane to the spacecraft, i.e., in the cases of space pollution (the author has not delved into either the research or the question of whether space pollution is a criminal offence or not but has merely used this as a hypothetical example) caused by the debris created by those space crafts, satellites and space vehicles which are no longer functional or valuable, the international organizations like ICJ or ICC (the clear distinction of their duties

<sup>17</sup> Carl Q. Christol, *International Liability for Damage Caused by Space Objects*, 74 AJIL 346, 346-371 (1980).

<sup>18</sup> DANIELLE IRELAND-PIPER, *supra* note 11.



and functions are another issue) can intervene as this crime is not against a particular nation. Additionally, a fund can be created to collect compensation for such acts, and the same money can be used to develop and strengthen space laws in general. In those cases in which the accused has more than one citizenship, the jurisdiction can be based on the domicile they belong to. If the accused and alleged victim are citizens of different countries, the jurisdiction can be imparted to the land of the party who got wronged.

Another way can be resorting to the concept of territoriality, which states use to justify their right to punish criminal defendants who commit crimes on their soil. In such a circumstance, offenders may include foreigners in addition to citizens and temporary or permanent residents. The air space over such national land and territorial waters, and national waterways would be considered part of the national territory. One of the issues with this kind of jurisdiction can be the extent of air and water jurisdiction is not clearly defined. This kind of jurisdiction can be exercised when the criminal acts take place on a space vehicle but cannot be applied when happens on any celestial body which is owned by none.

The injured forum principle, also known as the “protective” concept and the “impact territoriality” principle with varying connotations, is another way to assert competence. According to this theory, a state may prosecute a criminal who violated its laws outside its borders if the offence causes harm to its citizens or property<sup>19</sup>. Only when there is a threat to national security, including financial, political, and currency stability interests, do some states assert their legal authority?<sup>20</sup> This is one of the best possible solutions from the lens of natural justice.

Gradually, customary laws can be developed with the consent of all the concerned nations encouraging healthy space practices and behaviour. A treaty related to this upcoming problem can be developed, enlisting a non-exhaustive list of crimes that can be committed in space and sanctions and punishments should be recommended depending on the gravity of the crime in order to aid the national courts and international institutions deal with such complex issues. The treaty should only be advisory in nature to let nations in dispute maintain their sovereignty. It should merely help the court having the jurisdiction reach a conclusive and just decision. The sanctions or punishments given in the treaty should only be implemented when both parties are signatories to it and consent to the same. The

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<sup>19</sup> Stephen Gorove, *Criminal Jurisdiction in Outer Space*, 6 INT. LAWYER 313, 313-323 (1972).

<sup>20</sup>*Id.*

Intergovernmental Agreement (IGA) on Space Station Cooperation may serve as a useful starting point, and possibly the United Nations will write a resolution addressing this topic.<sup>21</sup>

When it comes to implementing most of the space laws, in reality, they are either enforced by national space organizations or merely rely on treaties. The International Criminal Court's (ICC) authority might reach beyond Earth's atmosphere.<sup>22</sup> As far as the International Court of Justice, it does not have a unique mandate for the implementation or enforcement of space laws. However, it may become involved in resolving legal disputes relating to space operations if such problems are brought before it, but nevertheless, it is not its primary function. Space law implementation is not directly the responsibility of the United Nations Office for Outer Space Affairs (UNOOSA) either. Though UNOOSA helps member states create their national space policies and legal frameworks, it also plays a vital role in promoting and enabling international collaboration in the peaceful use of space. Thus, we do not have any global agency or institution which can aid in enforcing space laws in practice, especially the ones pertaining to crimes committed in space and help guide the countries and parties in dispute and help develop criminal law of space. During the course of the research, the author also realized that there had been limited research on this topic, and further in-depth analysis should take place.

## CONCLUSION

Only seven private individuals had paid to travel to space since 2001 when Dennis Tito became the first. However, Virgin Galactic guarantees that "a regular schedule of spaceflights for private individuals and researchers" will be available in the future.<sup>23</sup> No one has ever been accused of a crime committed in space, as far as is known. However, as access to space increases, criminal activity that is common on Earth will probably travel into space with people. The laws now in force are nonetheless outdated and challenging to uphold. The Outer Space Treaty, which is most related to the criminal law in space and is effectively called the Magna Carta of space law, was ratified by more than 100 countries in 1967 and is not robust

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<sup>21</sup> Loren Grush, *The first alleged crime committed in space raises questions about jurisdiction in orbit*, THE VERGE (Aug. 27, 2019), <https://www.theverge.com/2019/8/27/20833761/nasa-iss-international-space-station-alleged-crime-anne-mcclain-jurisdiction-framework>.

<sup>22</sup> Danielle Ireland Piper, *Space Laws: Criminal Jurisdiction in Outer Space*, INTERNATIONAL LAW ASSOCIATION (Aug. 17, 2019), <https://ilareporter.org.au/2019/10/space-laws-criminal-jurisdiction-in-outer-space-danielle-ireland-piper/>.

<sup>23</sup> DANIELLE IRELAND-PIPER, *supra* note 11.



regarding specifics.<sup>24</sup> It does not address the issue of jurisdiction clearly if any criminal offence were to take place.

Although there haven't been any serious crimes committed in space, there have been cases in other high-stress, remote situations, such as the Antarctic researcher who stabbed a colleague after spending six months at the remote outpost. Crime has also been sparked by exercises only intended to simulate space. Astronauts did not act appropriately during trials to simulate 110 days aboard Mir conducted by the Russian Institute of Biomedical Problems in the late 1990s. One of the Russian astronauts—the Russian commander—allegedly abused and harassed a Canadian astronaut, Judith Lapierre, while the other two engaged in battery, assault, and attempted murder. The Russian commander had earlier assaulted a Russian male cosmonaut on the same day. Another Russian astronaut was forced to conceal the blades in the galley of the space station after two Russian astronauts who had previously argued threatened to kill one another. It's possible that we could completely overhaul our criminal justice system, but it's more likely that we'll modify terrestrial rules to deal with space crime.<sup>25</sup> Thus, the possibility of crime transpiring in space is not negligible, and when it happens, jurisdiction will be a significant bone of contention.

Although no criminal conviction, at least on record, has taken place in space so far we need to be prepared before that happens so that space does not end up becoming a haven for criminals. Specific rules in the space law are now in effect, although they are more like vague recommendations than actual rules at this point and thus require changes and additions.<sup>26</sup>

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<sup>24</sup> Paola Rosa Aquino, *What happens if you break the law in space and 3 times people or government have tested the rules*, BUSINESS INSIDER (Nov. 12, 2022), <https://www.businessinsider.in/science/news/what-happens-if-you-break-the-law-in-space-and-3-times-people-or-governments-have-tested-the-rules/articleshow/95474199.cms>.

<sup>25</sup> Jane C. Hu, *Someday, Someone Will Commit a Major crime in Space*, SLATE (Aug. 28, 2019), <https://slate.com/technology/2019/08/space-crime-legal-system-international-space-station.html>.

<sup>26</sup> *Ibid.*