

Modern Views on Criminal Liability for Crimes in Outer Space

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The article attempts to answer the following questions: What criminal law, if any, is applied in outer space when a crime is committed there? How will the issues of demarcation of criminal jurisdiction be resolved? Who and how will investigate such crimes? Which international or national institution will decide the issue of criminal prosecution and application of sanctions for crimes in space? Basing on the analysis of the sources of space and international law, it was concluded that today there is no detailed procedure for investigating and bringing to criminal responsibility for committing a crime in space. There is also no international legal act that would establish a list of space criminal offenses. To solve existing problems, it is suggested to adopt the Convention on Criminal Liability for Space Crimes and to create a Space Criminal Statute (code). The article also claims that the creation of a World Space Union on regulating the commercial space activities will help in solving many issues in the field of research.

Keywords: criminal space crime, criminal responsibility, space activity, outer space, criminal jurisdiction, extraterritorial criminal jurisdiction.

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Introduction

Crime as a criminal phenomenon, social phenomenon and socially dangerous act has existed since ancient times. This is evidenced by both archaeological findings and Bible texts. Neither education nor technological advances have changed anything in human nature. And although the issues of criminal liability in the field of outer space activities may not be very relevant today, this situation can change at any time. After all, more than 50 countries of the world are actively exploring outer space (Soroka, 2022).

That is why we should already be prepared for such events. Moreover, there is already a precedent. Thus, in 2019, it was reported that NASA was investigating a case that may be the

first crime in space. Astronaut Ann McClain was accused of committing a crime using the Internet while on board the International Space Station (ISS). McClain's ex-wife, Summer Warden, accused the NASA astronaut of illegally accessing her bank accounts while being in orbit around the Earth (Bateman, 2020; Soroka, 2022).

In this connection, the following questions arise. What criminal law, if any, applies in outer space when a crime is committed there? How will the issues of demarcation of criminal jurisdiction be resolved? Who and how will investigate such crimes? Which international or national institution will decide the issue of criminal prosecution and application of sanctions for crimes in space?

Another important question is whether there is a need at all to create a global space administrator that could regulate and control commercial space activities (Soroka, 2022). After all, as the full-scale war in Ukraine clearly showed, no international organization proved to be capable of constructively and effectively regulating anything or controlling it. Even the UN, with all its structures, has shown its incapacity. Other international organizations responsible for global security, such as the IAEA, show the same inability (Parkhitko, 2022; Resolution, 2022) or the Red Cross organization (Pryshchepa, 2022; Olenivka, 2022), which have a wide functionality, but a narrow jurisdiction.

So, do we need the international organizations and global administration?

Today, we can state with certainty only that the international law, sustainable development, and global world security are in danger of disappearing. All this does not exist in today's realities. No laws, no political system – work. There is no mechanism today that would guarantee safety in the future, even if all established norms and rules are followed. For example, Ukraine has signed the Memorandum on security assurances in connection with Ukraine's accession to the Treaty on the Non-Proliferation of Nuclear Weapons (Memorandum, 1994), and fulfilled all his conditions – so what? The guarantees that were given for giving up its own nuclear arsenal have not been fulfilled by any guarantor country. In addition, the Russian Federation, which was one of these guarantor countries, started a war against Ukraine, threatens with nuclear weapons, global hunger, energy terror and even the use of nuclear space weapons.

Experiments with space forces and nuclear weapons are not isolated, other countries with dictatorial systems also create and test such weapons. But the question is that the detonation of nuclear weapons in space is the disabling of satellites, that is, aggression against third countries, as well as the scenario of the start of a nuclear attack. The location and use of nuclear weapons in space is prohibited, and if an electromagnetic pulse is used, it is capable of blowing out electrical networks at a considerable distance and causing extremely heavy damage (Electromagnetic, 2022). The application of such momentum against Ukraine also threatens the Russian Federation (Pardo-Maurer, 2022).

Then the question is – how can we master the outer space and talk about long-term plans, if we cannot restore order on Earth? How can we be sure that critical space infrastructure won't become even more critical?

In the context of this research, the problems of criminal jurisdiction and those problems that arise when a crime is committed in space are studied. The authors, while investigating the problem of the delimitation of criminal jurisdiction in the first part of this work, state that there is no universal international order for resolving disputes on the application of criminal jurisdiction in disputed territories (special maritime zone, Arctic, Antarctic, space, and cyberspace). The authors preliminarily advocate the adoption of the Convention on Criminal Liability for Space Crimes and the creation of a Space Criminal Statute (code), rather than going through the process of making changes to national legislation. The article also claims

that the creation of a World Space Union to regulate commercial space activities will help in solving many issues in the research field.

Criminal jurisdiction under international law

The term “jurisdiction” means that the law gives a court the power to process cases and make decisions on legal issues in a certain geographical area and/or in relation to certain types of legal cases (Search, 2022). As very rightly mentioned in the note on the topic “jurisdiction” in the “American and English Encyclopaedia of Law,” “There is perhaps no word in English law that has been more frequently defined than this of “jurisdiction.” From the earliest times we find the question of its proper definition engaging the attention of jurists” (Walsh, 1901).

Jurisdiction is always considered in the context of state sovereignty, since the right to make and enforce laws is an essential feature of a state. In classic Westphalian (Ryngaert, 2015) understanding, this right was limited to the territory of the state, a limitation which at the same time guarantees that no state interferes in the affairs of another state.

There are five basic jurisdictional principles in international law (Perkins, 1971: 1155; Hook, 1978; Benchbook, 2014):

1. Territoriality (it is the principle by which a country can regulate both civil and criminal matters within its sovereign borders, both as to the act and as to the consequences).
2. Nationality/Active Personality (a sovereign state has the right to regulate the behaviour of its own citizens anywhere).
3. Passive Personality (the nationality of the victim or the person against whom the disputed conduct was directed is relevant).
4. Protective Principle (the state can exercise jurisdiction over the actions of a person committed outside its territory – both by its citizens and non-citizens – if their behaviour threatens national interests and security).
5. Universality (a state can exercise extraterritorial jurisdiction even in the absence of all the other four jurisdictional links discussed above – but only if the act of a person falls under a separate category of crimes).

In the national legislation of different countries, these principles receive different interpretations, establishing different types of jurisdictions. For example, in the Law on the Foreign Relations of the United States, three types of jurisdiction are defined: (a) jurisdiction to establish, that is, the ability of a country to apply its law to persons, conducts, relations or interests; (b) Jurisdiction to adjudicate and impose sanctions, i.e. the ability of a country to prosecute individuals before national courts or administrative tribunals; (c) enforcement jurisdiction, i.e. the ability of a country to induce or compel compliance with decisions or punish failure to comply with its laws or regulations (Page II.A-1) (Benchbook, 2014; Multi-jurisdictional, 2014).

Thus, when delimiting jurisdictional powers and when developing permissive and prohibitive rules, they mainly rely on sovereignty and its territorial character. As a general practice, neither the Constitution of any country nor its laws apply to the territory of another country, but there is an exception if the dispute concerns only their citizens. Therefore, the country’s jurisdiction over a specific case is decided on the basis of international treaties and agreements, or on the basis of the principles of international law. The same rules exist in the application of criminal jurisdiction, with the exception of issues of extraterritoriality. This will be mentioned in the next section.

The law of extraterritorial criminal jurisdiction

In space law, the norms of maritime law are sometimes used by analogy, as well as the norms governing the jurisdiction of special territories, such as: the open sea, the Arctic, and the Antarctic. At the same time, the starting point is that outer space, like the mentioned territories, is considered either “res communis” or “res nullius” – they belong to everyone and no one.

International agreements are concluded to settle issues of demarcation of criminal jurisdiction over the specified territories. For example, according to the conditions Antarctic Treaty (The Antarctic, 1959), signed by 53 countries, workers who were accused of serious crimes at the research base were subject to the jurisdiction of their country. For example, when a cook, a US citizen, attacked a colleague with a hammer in 1996 at McMurdo Station (Antarctica), the FBI sent agents to investigate and take the perpetrator into custody (Rousseau, 2016). Also, in the jurisdictional practice of the USA, there is a procedure for consideration of minor offenses and environmental crimes that were committed on the territory of the polar station. As a rule, they are considered by the chief scientist of the station, who is a deputy US marshal (James, 1996).

These examples, as well as the analysis of other known cases of crimes committed in territories outside the jurisdiction of any country, indicate that the participants in such crimes were mainly citizens of one country, therefore, the jurisdiction of the country of which they were citizens was applied. Therefore, the national principle of the jurisdiction (active and passive) was applied. And if the participants in the crime are citizens of different countries, then as correctly mentioned by Alan Hemmings (Handbook, 2017), an expert on polar law, the question of “whose jurisdiction” beyond national jurisdiction has not yet been resolved.

In addition to several international treaties and conventions on the delimitation of criminal jurisdiction in territories that do not belong to any country, national jurisdictional norms are applied. For example, the United States made a special provision in US Code considering the outer space jurisdiction, as well as in other related areas. It is known as the “special maritime and territorial jurisdiction of the United States” and deals with how to handle criminal disputes outside the jurisdiction of any country.

It states that “The “special maritime and territorial jurisdiction of the United States” has been expanded to include any place outside the jurisdiction of any nation when the offense is committed by or against a national of the United States. Among the offenses within the special maritime and territorial jurisdiction of the United States are the crimes of murder, manslaughter, maiming, kidnapping, rape, assault, and robbery. Pursuant to 18 USC § 7(1) there is also jurisdiction over such offenses when they are committed on the high seas or any other waters within the admiralty and maritime jurisdiction of the United States that is out of the jurisdiction of any particular state” (Justice, 2018). With regard to the jurisdiction of the United States in outer space, it is specified in paragraph 6 of Article 18 USC Code § 7 that the United States takes responsibility for “the vehicle and for persons and property aboard” (United, 1948).

As a result, it's possible to use the “special maritime and territorial jurisdiction of the United States” in the outer space when we have three reasons: 1) vehicle: (a) used/intended for flight or navigation in space; (b) registered in accordance with the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies and the Convention on Registration of Objects Launched into Outer Space; (c) is airworthy; 2) the crime was committed by or against a US citizen. At the same time, it is noteworthy that in Clause 6 of Article 18 of the US Code § 7 uses the

term “persons,” not “personnel,” as in the Liability Convention; 3) the crimes are federal, namely directed against the national interests or security of the United States or are murder, manslaughter, maiming, kidnapping, rape, assault, and robbery. Therefore, we can assume that if a US astronaut was attacked and harmed during a spaceflight, or if a member of the staff of another country was distributing drugs while on a US spacecraft, then this special type of jurisdiction would work.

But suppose that a space hotel is built by a company in one country, operated by a company in another, and launched in a third state – which of them will have jurisdiction over theft committed on the territory of such a hotel by representatives of different countries? Taking into account that thanks to various private space companies, in one the year 2021, more than 20 individuals have already flown into space on four different spacecrafts (Chebakin, 2022). We express consent with Alan Hemmings, who says that there’s no answer on that for now.

By taking into account the mentioned above, it can be stated that today in the international legal field, there are no universal norms that would regulate criminal jurisdiction and the procedure for consideration of criminal cases in the event of a crime being committed on the territory that does not belong to any country in the world and the parties to which are citizens of different countries.

Although, there was a historical precedent when several countries managed to agree on criminal jurisdiction in the disputed territory, in addition, to prescribe the procedure and outline the powers of the responsible persons in case of committing a crime in this territory.

Thus, in 1910, on the initiative of Norway, a conference was convened, as a result of which, in 1912, the Spitzbergen protocol (Hook, 1978). Among other things, it was noted there that the signatory countries formed a Commission, whose members were representatives of these countries, to manage and resolve disputes on the archipelago. The powers of the Commission included the establishment of rules for ensuring law and order and security and sanctions for their violation. In addition, the Commission was an appellate authority in the event of a disagreement regarding the decision rendered in cases of violation of established rules by the international police commissioner. But if a serious crime was committed, the case was sent for judgment to the national court of the country whose citizen committed it.

As correctly mentioned by Elizabeth K. Hook, “The Spitzbergen protocol therefore presented the following framework: 1) a penal code enacted by treaty (in this case by vesting drafting powers in an international commission); 2) an international criminal tribunal and court of appeal; and 3) an international police force. No facet of the plan was dependent upon or connected with sovereignty; that is, the jurisdiction of the tribunal and the power of the Commission to draft the penal code were not based on territorial sovereignty. Instead, it was founded simply on the terms of the treaty or convention itself. Since this treaty never went into force, it is, of course, impossible to assess the difficulties which might have been encountered after its implementation. It is nonetheless indicative of the fact that, for an area similar to Antarctica, international cooperation in enactment of a regime unrelated to sovereignty was possible” (Hook, 1978).

Therefore, the international community has not yet reached an agreement on the development of such international rules that would clearly delimit criminal jurisdiction in territories or spaces outside the sovereignty of any country. The existing five international principles of demarcation of jurisdiction need to be modernized, taking into account the intensification of human activity in outer space and cyberspace, which exist outside the sovereignty of any country.

Analysis of the sources of space law regarding criminal jurisdiction

Currently, there are five key treaties that regulate space activities: the Treaty on the Principles of the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (Outer Space Treaty), the Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Astronauts objects launched into outer space (Salvage Treaty), the Convention on International Liability for Damage Caused by Space Objects (Liability Convention), the Convention on the Registration of Objects Launched into Outer Space (Registration Convention) and the Agreement on activities of states on the Moon and other celestial bodies (Moon Treaty).

The Liability Convention has significant jurisdictional implications because it provides procedures for settling claims for damages, while the Registration Convention creates an obligation to register space objects, which in turn may relate to the issue of jurisdiction over the object. However, the fundamental jurisdictional norms are enshrined in the Outer Space Treaty, which is also called the Space Constitution, as it established the guiding principles of peaceful space exploration. There at article VIII it states that “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” (Treaty, 1967). At the same time, it does not matter whether this object is in a state or private ownership.

The specified agreement established the rules of behaviour in space, but it is based on the “good will” of participants in space activities and does not establish any mechanisms or tools for the application of coercion or sanctions in case of violation or non-fulfilment of its norms. Also, there are a number of controversial issues regarding the terminology used in it. Thus, to this day, there is no clear definition of what “space” is, its boundary has not been established, and the legal status of individual participants in space flight has not been defined. For example, this applies to the “personnel” category because it is not clear whether its status applies to space tourists or only to professional astronauts.

It should be noted that before the flight of the first space tourist, there was no regulatory framework at all that regulated flights into space by individuals. But after Dennis Tito’s flight to the International Space Station (ISS), “Principles Regarding Processes and Criteria for Selection, Assignment, Training and Certification of ISS (Expedition and Visiting) Crewmembers” (Principles, 2001) were developed. Who defined such a concept as “space flight participants” and regulated the necessary issues for their participation in the expedition to the station. In particular, “space flight participants” will be eligible to be assigned as visiting scientists, commercial users, or tourists (Principles, 2001). Towards whom requirements are put forward to meet established medical criteria for both physical health and behavioural aspects. In addition, you must be fluent in English and undergo minimal training. Another thing to think about, consider and legislatively regulate – the fact that mentioned space flight participants should also pay for their space travels.

As for the settlement of the delimitation of criminal jurisdiction in outer space, the first attempt at such a settlement was during the implementation of the ISS project, because the station is still the only long-term environment for the stay of people outside the Earth. And it is clear that when sending their envoys there, the countries had to agree on how to resolve disputes in the event of their occurrence.

In 1998, the parties involved in ISS international treaty, have signed the Intergovernmental Agreement (IGA) (Agreement, 1998) on Space Station Cooperation and Memoranda of Understanding (MOUs) (Astronaut, 2022), which gave them criminal jurisdiction over their own citizens during their stay on the station. The basic rule is that “each partner shall retain jurisdiction and control over the elements it registers and over personnel in or on the Space Station who are its nationals” (Article 5 of the Intergovernmental Agreement) (International, 2022). In the case of a crime committed by a representative of the European Space Agency (ESA), the laws of the European countries participating in the agency will be applied. Such a legal regime recognizes the jurisdiction of the courts of the partner states and allows the application of national legislation in such areas as criminal cases, issues of liability and the protection of intellectual property rights (Bateman, 2022). Simply put: the national laws of each country apply to the ISS, as well as in the case of a criminal offense committed by their citizens.

This rule was also used during the qualification in the above example with the participation of the American astronaut Ann McClain. Thus, McGill University of Montreal professor Ram Jakhu noted that since both McClain and Worden were US citizens, the crime allegedly took place in the US module of the ISS and involved assets stored in the US (Bateman, 2022). As a matter of result, in this case the US laws should be applied.

If we suppose that the criminals who commit a crime at the International Space station would be citizens of different states. How should the issue be solved under these circumstances?

The manual of ECA “International Space Station legal framework” mentions that: “Any conflicts of jurisdiction between the Partners may be resolved through the application of other rules and procedures already developed nationally and internationally” (International, 2022).

According to the Liability Convention, if a dispute arises regarding jurisdiction, the following procedure is established: a Claims Review Commission is established and consultations are held between partner states, parties to the conflict. These consultations can be held within 90 days (Convention, 1972). The decisions are published (Article. XIX. 4), but the specified decisions are only of a recommendatory nature, unless the parties have agreed otherwise in advance (Article XIX.2). The optional nature of this mechanism is often criticized. This method of dispute resolution is only used as conciliation if the parties have not agreed that the decision of the claims panel will be binding on them (or if they have done so only after the Commission’s decision) (Tayal, 2022).

Thus, it can be stated that the sources of space law have significant uncertainties, which include that not all disputes that arise will ever be brought to trial; investigations and prosecutions can take a very long time, and the decisions made may be far from satisfactory and, most likely, will not even be enforceable (Tayal, 2022).

Considering these blurred provisions of Space Law, potential conflicts can be foreseen. What happens, for example, when states do not agree on who will administer justice after a crime is committed? What if the state demands the extradition of the criminal, but this request is not fulfilled? Sources of space law do not answer these questions.

In addition to terminological and procedural problems regarding criminal prosecution for committing a crime in space, there are also dogmatic problems – this is the normative establishment of an act as a crime committed in space, as well as the definition of the composition of such a crime.

Principle of individual criminal responsibility in outer space law

As we noted above, governments are responsible for what their space companies and private organizations do in space. As a matter of fact, we are talking about the responsibility of states and legal entities, but in criminal law, only a specific natural person or individual whose actions constitute a crime, as well as proven guilt, can be prosecuted.

If we turn to international law, it, as in criminal law, has the principle of personal or individual criminal responsibility. The principle of personal criminal responsibility is enshrined in the Fourth Geneva Convention (Geneva, 1949), as well as directly foreseen in several military statutes and guidelines (Multilateral, 1969; Joint, 2001). This is one of the basic norms of most, if not all, national legal systems. This principle is used during international and local armed conflicts (Individual, 2022). But again, as in the case of the “special maritime and territorial jurisdiction of the United States,” the application of this principle has limitations. It applies only if an individual commits a war crime, a crime against humanity or genocide (Individual, 2022) and the responsibility for these crimes is in the relevant national legislation.

However, as the volume of space activity increases, the nature of space crimes may become more complex and require more complex solutions. Such crimes include not only classic earthly crimes against a person’s life and health (murder, grievous bodily harm, banditry, theft, fraud, etc.), but also crimes in other spheres: economic (for example, criminal extraction of space resources), military (for example, placement and use of nuclear weapons), environmental (destruction of a space body or pollution of the space environment).

And if we add to certain problems the problems of legal regulation of the use and application of artificial intelligence in space activities, the issues of liability in general and criminal liability, in particular, are taking on a new meaning. After all, it is not clear if a program with artificial intelligence, created for protection, neutralizes a space object whose actions are accidentally mistaken for danger (Boucher, 2021). What will it be: an instrument or a subject of a crime?

Therefore, it can be stated that today there is no detailed procedure for the investigation and prosecution of criminals for committing a criminal act in space. Just as there is no international legal act that would establish a list of space criminal offenses. Moreover, it is not clear which body or institution will consider such crimes, if it is not possible to apply national jurisdiction.

Possible solutions to the delimitation of criminal jurisdiction in outer space

Among the scientists, there are proposals to create a body for resolving disputes in the space sphere at the UN or to grant powers to already existing structures (White, 2021: 333; Bateman, 2022). For example, it was suggested to use the Inter-Agency Space Debris Coordinating Committee (Bourbonniere, 2005), or the Space Claims Commission is proposed to be treated as a special tribunal (Tayal, 2022).

Other researchers believe that it is necessary to continue the application of the current international principles of jurisdiction in space, and not to develop a specialized regime. For example, Danielle Ireland-Piper (Ireland-Piper, 2019) argues that, despite a number of challenges, national courts remain an adequate forum for adjudicating criminal conduct in space to date. So, for example, the Canadian Parliament passed the first reading of the draft law on amendments to “Civil Lunar Gateway Agreement Implementation Act” (Civil, 2022)

in which it is assumed that Canadian law will also apply to acts committed in space, that is, anything that would be illegal in Canada will become illegal on board spaceships traveling to Lunar Gateway, on the Gateway itself and on the surface of the Moon (Civil, 2022). Or another example, in the UAE in 2021, it was suggested to create the world's first "Space Court" as part of the DIFC "Courts of the Future" initiative (Atkins & Battison, 2022).

But, in most cases, these suggestions concerned the resolution of commercial disputes or disputes regarding the safety of space ecology. Therefore, in our opinion, in order to regulate criminal jurisdiction in space, countries need to conclude a Convention on Criminal Liability for Space Crimes or create a Space Criminal Statute (code), rather than go by the way of making changes to national legislation.

In our opinion, the creation of a Special Tribunal for consideration of space disputes, including criminal ones, is a valid proposal. But we need specialists with special knowledge both in the field of jurisprudence and forensics and in the field of space activities. In addition, the commanders of the spacecraft, the station, or the head of the space hotel must be empowered by the international space commissioner to make decisions regarding: the initiation of investigative actions, the detention, and isolation of a suspect, the recording and preservation of evidence, etc.

Conclusions

Sources of international law partially resolve the issue of criminal jurisdiction in territories that do not belong to any state. A number of international treaties and conventions have been concluded, but not all countries have joined them, nor have they created a universal mechanism for resolving disputes regarding the delimitation of criminal jurisdiction. Some countries (the USA, Canada, Australia, the UAE) have taken the path of adopting national legislation to settle issues of criminal jurisdiction over disputed territories, including outer space.

As for the sources of space law, they regulate the issue of the jurisdiction of registered and launched objects into space and the personnel stationed on them. Partial settlement of the issue of criminal jurisdiction over crimes committed on the territory of the International Criminal Court and against citizens of one country. Issues of criminal jurisdiction remain unresolved in the case of crimes committed by citizens of different countries both on the territory of the ISS and outside it, for example, on the territory of a private space facility, in open space, or on the surface of a space body.

The existing procedure for dealing with jurisdictional disputes through consultations is also not perfect. First, it is based on the "good will" of the parties and is not applicable for cases when the party does not want to implement the decisions made. Secondly, 90 days are set aside for the settlement of disputes, and for the objective investigation of a crime, the timely conduct of investigative actions is of great importance. Therefore, the resolution of disputes about criminal jurisdiction due to the Commission of a crime in space through consultations between states is not an option.

Therefore, we believe that it is necessary to: 1) conclude the Convention on Criminal Liability for Space Crimes or create a Space Criminal Statute (code); 2) create a Special Tribunal for consideration of space disputes; 3) to form the World Space Union to regulate commercial space activities; 4) to modernize the current international space legislation (to determine the terminology, as well as the status of individual space flight participants); 5) create a program for training ship captains and leaders of space expeditions in the basics of criminology and the criminal process.



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