

Space Law under International Conventions and International Documents

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ABSTRACT

This paper aims to frame the evolution and formation of the sources of international space law for the first Symposium on Space Economy, Space Sciences and Space Law of Istanbul University, held on 29-30 May 2021. The normative background of the status of outer space and activities held in space shall be shown. The legal rules governing outer space are a relatively new and junior field of Public International Law; nevertheless, the laws are formed by both customary and conventional international rules. Space law consists of all the legal rules that may apply to outer space and activities in and relating to it. The main rules of Space Law stand on five UN treaties about the activities in space. Nearly seven decades after the adoption of these rules, following a long period of stability, new challenges give rise to some issues concerning space law which are still unsolved. The dramatic shift of the actors operating in outer space and latest activities there have created the term “new space”. New Space is in a commercial phase, with significant challenges dealing with new industries such as space mining, space flights or space tourism, space debris, human settlement on other outer space objects, etc. In this phase, potential risks relating to technological accidents and security problems regarding liability and responsibility issues are unknown. Future legal norms which shall address these issues shall not be disregarded by the dynamic nature of space law.

Keywords: Space Law, Space Treaty, Moon Treaty, Outer Space, State Responsibility

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1. Introduction to Space Law

The space age began with the launch of man-made (artificial) satellites into earth's orbit for the first time in 1957 by the USSR. This was the starting point of the so-called "old space" today. That adventure, which started by enlarging the vision of the world and other planets and transmitting this information to the world, not only served for the remote sensing of the earth and communication, but also evolved into the search for life opportunities on other planets, space mining, space tourism, and the activities of private law persons in space. Space law, which was born and developed entirely as a part of international law, is on the agenda of both international law and national law, with probable problems that may arise from new commercial ventures in space, as well as technological developments. It is clear that the new activities of private law persons in space will henceforth bring along the responsibility of states in domestic law, as well as state responsibility arising from international law. Additionally, the pollution (space debris) created by satellites that have completed their functions as a result of satellite launching activities until now, is one of the issues waiting for a solution under a legal framework.

1.1. Terminology

Both outer space and space are terms used in academic writings in public international law. Besides this, international treaties and documents mention both terms as synonyms. This duality is caused by the non-distinction of a definite border between airspace and outer space. Outer space is the space around the earth beyond an altitude undefined (Cassese, 2005). As a result, international law is not spatially restricted (Brownlie, 2013).

2. The Legal Status of Outer Space under International Law

There is no legal provision or precise scientific rule for the clarification of the boundary between outer space and airspace, which also refers to the limit between the regime of *res communis* and the sovereignty of states over their national territory on the latter (Brownlie, 2013). For outer space, as of the high seas, based on the freedom of utilization and a prohibition of national claims of jurisdiction by states (Brownlie, 2013).

3. The Development of Space Law

The formation of space law can be described on three pillars. These are: The Non-conventional Era (The Preparatory Stage), The Conventional Era (The Law-making Stage), and The Soft Law Era (Current Stage).

3.1. The Preparatory Stage

Space activities conducted by both the USSR and the USA gave rise to the creation and afterwards to the development of space law by the formation of principles governing the exploration and exploitation of outer space, which would then reflect and form the customary norms of space law. The United Nations was involved in space activities from the very beginning of the Space Age, and it was the first step for the commitment of using and preserving space for peaceful purposes in the light of the arms race going on at that time. In this stage, the non-

conventional era refers to the pre-conventional period when the initial Russian and American outer space activities were held upon UN General Assembly Resolutions. These resolutions are Res. 1348/XIII (1958), Res. 1721/A and B, (XVI), Res. 1884 (XVIII) and Res. 1962 (XVIII). The last and the most important resolution, “*Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space*”, is the core document of international customary norms of space law. As an important step on the way to the adoption of main space law treaties, basic principles governing the use and exploration of outer space were all formulated and embodied in a resolution adopted unanimously by the members of the United Nations. So, undoubtedly, we may easily say that the generality element of customary international law is justified by this unanimity. Hence, the non-binding nature of UNGA Resolutions are no longer in question. The principles declared by this resolution are legally binding for all states. These principles shall be examined under the next subtitle in the context of the treaty provisions of space law.

3.2. The Law-Making Stage

As a result of efforts of the UN and COPUOS, five main international conventions were concluded governing international space law in the late 60s and 70s. This period may be also named as the conventional period of space law. These international treaties are as follows:

- 1967- The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, (*hereinafter “Outer Space Treaty”, OST*);
- 1968- The Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, (*hereinafter “Rescue Agreement”, ARRA*);
- 1972- The Convention on International Liability for Damage Caused by Space Objects (*hereinafter “Liability Convention”, LIAB*);
- 1975- The Convention on Registration of Objects Launched into Outer Space (*hereinafter “Registration Convention”, REG*);
- 1979- The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (*hereinafter “Moon Treaty”, MOON*).

These Cold War born instruments are the core legal rules of space law with UNGA Resolutions. During the Cold War, legally binding rules, in other words treaty law, had a crucial importance because of the fear of armed conflict and the need for international cooperation (Galloway, 2008). The launch of Sputnik into orbit (a family of satellites launched by the USSR, marking the beginning of the Space Age and the birth of Space Law and of space pollution) caused great fear in the West, in those days carrying the peril of a nuclear war (Matignon, 2019). So, the two decades of the 1960s and 1970s witnessed the initiation of the drafting of legal rules applicable to space activities and objects (Doyle, 2011). The USSR and USA were leading actors for space activities, dominant at space flights, and any agreement between them on those issues relevant to space gave path for the creation of rules (Doyle, 2011). The first treaty, dating from 1967, “*Outer Space Treaty*” (*OST*), is the master document, almost the constitution of space, with the elaboration of the principles and the other treaties (Hertzfeld, 2009). However, as a leading space technology country, the USA is not a state party to the Moon Treaty.

3.2.1. Overview on Key Principles Governing Space Law in the light of Founding Treaties of Space Law and UN Resolutions

3.2.1.1. Space for the Benefit and in the Interest of All Mankind

The exploration and use of outer space shall be carried out *for the benefit and in the interests of all mankind*. In other words, the research and utilization of space shall be to the benefit of all mankind. It serves for the collective interest of all states. According to the Outer Space Treaty, articles I and III reaffirm that space is under the mandate of international law, and the Moon Treaty makes reference to the art.2 of The Declaration on Principles of International Law concerning Friendly Relations and Co-operation Among States, in accordance with the Charter of the United Nations, adopted by the General Assembly on 24 October 1970.

3.2.1.2. Equality on Exploration and Use of Space by All States

Outer space and celestial bodies are *free for exploration and use by all states on a basis of equality and in accordance with international law*. Not only outer space, but also celestial bodies are free for research, study and examination to all states on a non-discrimination basis, according to the equality principle under international law. The emphasis on equality is a very good example of the reflection of “the general principles of law recognized by civilized nations” as the complementary source of international law, stated in art. 38/1(c) of the Statute of International Court of Justice. Under art.1 of the Outer Space Treaty, this equality principle is reaffirmed disregarding both the economic and scientific development levels of countries.

3.2.1.3. Res Communis Status of Space and Celestial Bodies

The *res communis* status of space and celestial bodies is at the heart of space law in analogy to the high seas. Outer space and celestial bodies *are not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means*. For common areas, under customary international law, there is open access for all states to those areas. This status was confirmed by the Outer Space Treaty art.2 and 4 in 1967. However, the Moon Treaty of 1979 states that the moon and its natural resources are the common heritage of mankind in art.4/1 and art.11/1. In addition, the same treaty explicitly mentions that the moon is not subject to national appropriation by any claim of sovereignty, by means of use or occupation, or by any other means. Both provisions aim to prevent the abuse of the *res nullius* aspect by taking the advantage of being the first comer. Under international customary law, prior to the Resolutions of UNGA in 1961, 1963, and five UN Treaties on space, outer space was *res nullius*, and could have been lawfully occupied and subjected to exclusive jurisdiction by states (Schwarzenberger, 1976). The emphasis of the Moon Treaty on the common heritage of mankind is confusing in comparison to the seabed and ocean floor in international law (Brunnée, 2008). The crucial point concerning this concept is that the allocation of the benefits obtained by the exploitation of resources of space was left unaddressed (Cassese, 2005). Because of the minor ratification quantity of the Moon Treaty, it did not give rise to a huge discussion on this point.

Private persons are also bound by these principles, because of their derivation of rights from the state (Matignon, 2019).

3.2.1.4. Peaceful Use of Space

The freedom of states on space activities is not absolute. Space activities are under the mandate of International Law. The UN and its member states are under the obligation to maintain international peace and security, to promote international co-operation in space.

The activities of states in the exploration and use of outer space shall be carried out in accordance with international law, including the Charter of the United Nations, *in the interest of maintaining international peace and security* and promoting international co operation and understanding. Space and other celestial bodies shall not be used for military purposes, but there is no legal prohibition of the employment of military personnel in space. Military personnel may take part in scientific research as long as peaceful purposes are maintained. Furthermore, the moon and other celestial bodies shall be used exclusively for peaceful purposes. States shall not place nuclear weapons or other weapons of mass destruction in orbit or celestial bodies or space stations in space by any justification (OST, 1967, art.4). These legal provisions serve for the prohibition against the militarization of space.

3.2.1.5. Legal responsibility for The Activities in Space

According to the UNGA Res. 1962, the states bear international responsibility for national activities in outer space, whether carried out by governmental agencies or by non-governmental entities to ensure that national activities are carried out in conformity with the principles set in the Declaration (*Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space*). Besides this, the activities of non-governmental entities in outer space shall require authorization and continuing supervision by the state concerned. When activities are carried out in outer space by an international organization, responsibility for compliance with the principles set forth in the Declaration shall be borne by the international organization and by the states participating in it.

Article VI of the OST states that national activities of non-governmental entities in outer space, including the moon and other celestial bodies, shall require “*authorization and continuing supervision by the appropriate State Party to the Treaty*”. National activities are the activities by a State’s nationals, such as individuals or private companies, or by foreigners within their territory, or even activities by their nationals in other countries and international areas. Because of aforementioned *authorization and supervision, the activities which cause a wrongful act, it shall be attributed to the state for legal responsibility*. With the ongoing trend of privatisation and commercialisation for space activities, many states establish their national space legislations, for this reason COPUOS has issued guidelines for the states wishing to create national legislation (Matignon, 2019).

3.2.1.6. Due Diligence Obligation and No Harm Principle

In the exploration and use of outer space, according to Article IX of the OST, the states shall be guided by the *principle of cooperation and mutual assistance and shall conduct all their activities in outer space with due regard for the corresponding interests of other states. If a state has reason to believe that an outer space activity or experiment planned by it or its nationals would cause potentially harmful interference with activities of other states in the peaceful*

exploration and use of outer space, it shall undertake appropriate international consultations before proceeding with any such activity or experiment. A state which has reason to believe that an outer space activity or experiment planned by another state would cause potentially harmful interference with activities in the peaceful exploration and use of outer space may request consultation concerning the activity or experiment. As an analogy to the regime and rules of the international watercourses and use of high seas, on this point we may see the environmental aspect of space law and the appearance of no harm principle.

However, by the same legal provision, any introduction of extra-terrestrial matter from space to the earth, with adverse effects to the environment of the Earth, at the potential risk of harmful contamination is under international consultations obligation to states.

3.2.1.7. Registration Obligation

Legal provisions of registration obligation are basically set by OST art. VIII and the Convention on Registration of Objects Launched into Outer Space, art.2,3 and 4. Article VIII of the OST provides that the state on whose *registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and any personnel thereon*, while in outer space. *Ownership of objects launched into outer space, and of their component parts is not affected by their passage through outer space or by their return to the earth. Such objects or component parts found beyond the limits of the state of registry shall be returned to that state, which shall furnish identifying data upon request prior to return.* This provision was further elaborated in the 1976 Registration Convention by the national and international registration within the UN Secretariat. The state of registry is the launching state, so, it shall be held liable for damage. A station or installation constructed in space or on a celestial body is owned by the state of registry, which has jurisdiction over it.

3.2.1.8. Liability for Damages

According to the OST, article VII, each state which launches or procures the launching of an object into outer space, and each state from whose territory or facility an object is launched, is internationally liable for damage to a foreign state or to its natural or juridical persons by such object or its component parts on the earth, in air space, or in outer space. The solutions of any dispute arising from damage and extent of the liability is further elaborated in The Convention on International Liability for Damage Caused by Space Objects of 1972. The Liability Convention explicitly defines the term “damage” to mean loss of life, personal injury or other impairment of health; or the loss of or damage to property of states or of persons, natural or juridical, or property of international intergovernmental organizations (art.I). At the same time, a launching state is defined very broadly as any state that launches a space object; procures the launching of a space object or launches a space object from its territory or facility.

However, as a result of damage, remedies were designed under art XIII. These are compensation or any reparation to the claimant and injured state. For damage on Earth or in the air, liability is absolute, meaning that no proof of fault is required. On the contrary, for damage in outer space, liability is based on fault. International responsibility and international liability of states are different concepts. Liability is a regime for harmful consequences of lawful activities involving high risk (Fitzmaurice, 2008). Responsibility can be seen as “*due diligence*”: States

must take care that their entities conduct space activities while respecting the rules that the state itself follows. Liability comes into play when damage has occurred as a result of a space activity (Matignon, 2019).

3.2.1.9. Astronauts as Ambassadors of Humanity

States shall regard *astronauts as envoys of mankind in outer space*, and shall render to them *all possible assistance in the event of accident, distress, or emergency landing on the territory of a foreign state or on the high seas*. Astronauts who make such a landing shall be safely and promptly returned to the state of registry of their space vehicle.

The 1968 Astronaut Rescue Agreement codified the principles contained in the Article V of the 1967 OST relating to their legal status. It grants protections to astronauts in distress who are described as “envoys of humanity” and requires State Parties to take all possible measures to assist and rescue an astronaut in the event of an accident, distress, emergency or forced landing, as well as to hand over the crew to the representatives of the launching authority.

The Agreement also provides for the recovery and return of objects launched into space, including dangerous or deleterious objects, as well as measures that the launching authority must take immediately to eliminate any possibility of danger or harm.

3.3. The Soft Law Era (Current Stage)

This period following the era of legally-binding law making is over. The rise of the number of states involved in space activities and their varied interests, was the reason of the creation of new rules of a non-binding nature. Soft law rules, which are mostly significant in the field of international environmental law, international human rights law and international trade law, are on stage from now on as a consequence of contrasting interests of new actors in space activities. These soft law natured products of that legal work are “The Space Debris Mitigation Guidelines (2007)” of COPUOS and “The Safety Framework for Nuclear Power Source Applications in Outer Space (2009)” in collaboration with UNOOSA and International Atomic Energy Agency (IAEA).

4. Conclusion

Space law is not an isolated, self-containing regime, it is in relevance to the other rules and branches of international law. The evolution of the legal background of the space law which started in the early 60s, has not fully been completed yet. As a modern and improving branch of international law, new technological developments, recent private space operations and initiatives shall cause the formation of new rules about these non-traditional new space activities. Even today, many issues remain unresolved in those founding treaties of space law. The future of space activities is very promising but results are ambiguous. As Cassese points out, the tension and conflict between state sovereignty oriented approach and community oriented approach, demonstrate a new aspect of private initiatives on space. Legal uncertainty of the products of space mining between the OST provisions of non-appropriation principle and the “common heritage of mankind” concept mentioned in The Moon Treaty should be noted as hot legal topics. The commercial exploitation of outer space as the “new” space, marine

pollution caused by space debris, light pollution to Earth caused by the satellites in orbit, the orbit congestion, and the status of space debris are growing current and critical problems.

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