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The Impact of Epistemic Communities on the Development of Future International Legal Regulation of Lunar Activities

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Abstract. Every human culture has reflected the Moon's influence in its cosmology, spirituality, science, creative and social life. For these reasons, the exploration and use of the Moon should be done thoughtfully and carefully, and possible resource extraction should not harm the Earth's only satellite and its environment as a whole. The adoption by some States of national legislation affecting the commercial exploitation of space resources, as well as the resumption of lunar programs by several leading spacefaring nations at a time, prompt the need for legal regulation in this area. However, to develop a detailed international legal regime for lunar exploration, the efforts of the States parties to the UN COPUOS alone are not sufficient since in practice other actors in international relations, including the so-called epistemic communities representing various types of non-governmental organizations, are also active participants in space activities. Such communities offer their own vision of the international legal regulation of relations arising in the framework of the exploration and use of the Moon basing on the norms of international space law and involving active participation of non-governmental legal entities, considering the interests of present and future generations, as well as of emerging space nations. The study presents a comprehensive analysis of the influence of epistemic communities on the development of the future international legal regime for lunar exploration. The authors consistently review the activities of non-governmental organizations within the UN COPUOS since its formation. Special attention is paid to the contribution of such communities to the progressive development of international space law and its codification, including the legal nature of the documents developed by such communities. The study concludes with a comprehensive international legal assessment of the activities of the epistemic communities.

Key words: international space law, lunar activities, sustainability, soft law, non-governmental organizations, epistemic communities

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Влияние эпистемических сообществ на разработку будущего международно-правового регулирования деятельности на Луне

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Аннотация. Каждая человеческая культура отразила влияние Луны в своей космологии, духовности, науке, творческой и социальной жизни. По этим причинам исследование и использование Луны должно происходить продуманно, а возможная добыча ресурсов не должна вредить единственному спутнику Земли и ее окружающей среде в целом. В связи с принятием некоторыми государствами национальных законов, затрагивающих коммерческую добычу космических ресурсов, а также с возобновлениями лунных программ сразу несколькими ведущими космическими державами становится очевидным необходимость универсального международно-правового регулирования данной области. Однако для разработки детализированного международно-правового режима по освоению Луны сегодня недостаточно усилий только основных космических держав, поскольку на практике активными участниками космической деятельности являются и другие субъекты международных отношений, в том числе так называемые эпистемические сообщества, представляющие различного рода и порядка неправительственные организации. Такие сообщества предлагают свое основанное на нормах международного космического права видение вопроса международно-правового регулирования отношений, складывающихся в рамках исследования и использования Луны, предполагающее активное участие неправительственных юридических лиц с учетом интересов нынешних и будущих поколений, а также развивающихся в космической отрасли государств. В настоящем исследовании представлен комплексный анализ влияния эпистемических сообществ на разработку будущего международно-правового режима освоения Луны. Авторами последовательно рассматривается деятельность неправительственных организаций в работе Комитета ООН по космосу с момента его образования. Особое внимание уделяется вкладу таких сообществ в прогрессивное развитие международного космического права и его кодификацию, в том числе рассматривается юридическая природа разрабатываемых такими сообществами документов. В заключительной части исследования дается комплексная международно-правовая оценка деятельности эпистемических сообществ.

Ключевые слова: международное космическое право, деятельность на Луне, устойчивость, мягкое право, неправительственные организации, эпистемические сообщества

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Вклад авторов: *Черных И.А.* – концепция исследования, сбор, обработка материалов, написание введения, вычитка и оформление всего текста; *Гугунский Д.А.* и *Черных И.А.* – написание части «Участие эпистемических сообществ в деятельности Комитета ООН по использованию космического пространства в мирных целях»; *Гугунский Д.А.* и *Солнцев А.М.* – написание части «Юридическая природа документов, разрабатываемых эпистемическими сообществами»; равный вклад всех авторов внесен в написание заключения.

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Introduction

The study of celestial bodies other than our planet Earth has been an important goal of the humanity since ancient times. Thinkers, philosophers and astronomers have been tempted by the space. When a practical possibility to study and use the celestial bodies emerged (with the beginning of the space age¹), states started launching spacecrafts to the nearby and other natural space objects of the Solar system, such as Mars, Venus, or to asteroids. The Moon (*Selene* in Greek), the natural satellite of the Earth, has always remained the most popular object for exploration.

The first lunar race, when the USSR and the USA competed in the exploration of the Moon and the cislunar space, lasted from the end of the 1950s till 1970s. This very period saw the flying around and photographing of the dark side of the Moon²; photographing of the lunar surface and the first soft landing on it³; the first movement on the surface of the Moon; the first manned program on the Moon⁴; delivery of the lunar soil to Earth, and many other studies that allowed mankind to obtain colossal new knowledge about the Earth's natural satellite.

The same very period witnessed the emergence of international space law, a separate branch of international law. The states developed the main international treaties regulating space activities through the UN Committee on the Peaceful Uses of Outer Space (hereinafter referred to as the UN COPUOS), which was established in 1958 as a special committee and became a standing UN committee in 1959. The first such treaty and the main one was the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies of

¹ It is generally recognized that the beginning of the space age is associated with the launch by the USSR of the first artificial Earth satellite – Sputnik-1.

² It was performed by the Soviet automatic interplanetary station Luna-3 (USSR).

³ It was performed by Luna-9 spacecraft (USSR).

⁴ Based on the UN General Assembly Resolution A/RES/76/76 of December 9, 2021, July 20 was declared the International Moon Day as the day of the first human landing on the Moon as part of the American Apollo-11 program.

January 27, 1967 (hereinafter referred to as the Outer Space Treaty)⁵. The most recent legally binding document developed by the UN Committee on Outer Space was the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies of December 18, 1979⁶. It detailed Art. I, IV, V, IX, X, XI, XII of the Outer Space Treaty and provided the vision of states on regulating activities on the Moon and other celestial bodies “for the future.”

At the same time, after a series of successful research missions to the Moon, up until the beginning of the XXI century, the countries did not pay much attention to the study of the Moon and regulation of activities on it. However, at present, due to the development of commercial activities and announcement of new space programs by states, the Moon has again become the object of increased attention. In just over 20 years, the United States announced the Artemis lunar program. The PRC, together with Russia, announced the creation of an International Scientific Lunar Station, despite the fact that each state has its own lunar program. India is successfully implementing its Chandrayaan lunar program. Japan and the UAE also have plans to explore the Moon with the help of automatic lunar stations. Moreover, the lunar programs of the United States and China involve other states, the private sector and the active use of public-private partnerships, which distinguishes modern lunar programs from those of the twentieth century.

Unfortunately, despite the ambitious plans to explore, use and develop the Moon, and because neither Russia, the United States nor the People’s Republic of China have joined the Moon Agreement, and it now involves only 17 member states⁷, there are still many unresolved legal issues as we approach practical activities on the Moon. For example, these include issues related to the order of placement of lunar space stations and bases, prevention of disturbance of the established balance of lunar environment, protection of cultural and scientific heritage located on the Moon, and others. In the absence of a universal detailed international legal regime for lunar activities, some states (USA, Luxembourg, UAE, Japan) have started to adopt national legislation on the development of space natural resources (Tolstykh, 2021; Al Ali, 2021; Abashidze & Chernykh, 2022; Yuzbashyan, 2017). In 2020, the United States developed for its lunar program, the Artemis Accords, in the form of “Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids for Peaceful Purposes”⁸.

In 2016, the States Parties to the Legal Subcommittee of the UN COPUOS proposed a separate agenda item for discussion, “General Exchange of Views on Potential Legal Models for Activities in Exploration, Exploitation and Utilization of Space Resources”. In 2021, they established a special Working Group on this agenda item. It is also worth noting that some States have made proposals to discuss and evaluate lunar coordination

⁵ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space of January 27, 1967 // *Gazette of the USSR Armed Forces*. November 1, 1967 No. 44. Art. 588. As of November 1, 2023, 114 states are parties to this Treaty.

⁶ Agreement Governing the Activities of States on the Moon and Other Celestial Bodies of December 18, 1979 // *Collection of the most important documents on international law*. Part II. Special. M., 1997.

⁷ As of November 1, 2023, these are Armenia, Australia, Austria, Belgium, Chile, Kazakhstan, Kuwait, Lebanon, Mexico, Morocco, the Netherlands, Pakistan, Peru, Philippines, Turkey, Uruguay, and Venezuela.

⁸ See: Translations of the Artemis Accords. Available at: <https://www.nasa.gov/wp-content/uploads/2022/11/Translated-Versions-of-the-Accords.pdf> [Accessed September 1st 2023].

mechanisms in the Committee⁹ or to include a new item on the Committee's agenda under the tentative title "Coordination for Sustainable Lunar Activities"¹⁰.

While States have intensified their lunar activities, epistemic communities have also started to play an important role. Epistemic communities involve various research groups¹¹ and non-governmental organizations¹², including international, and may engage representatives of the academic community, governmental structures (primarily space agencies and ministries), civil community, and private business due to the specific nature of relations in the exploration and use of outer space, the Moon and other celestial bodies. Members of such organizations are physical and legal entities. Such communities develop both narrowly focused and comprehensive projects to regulate space activities, including those on the Moon. If such a community has observer status with the UN COPUOS, it has the opportunity to present the results of its work as working documents of the Committee's meetings for the information of its member states.

Taking into account the increasing number of such organizations, the objectives of this study are to examine the impact of epistemic communities on the development of future international legal regulation of activities on the Moon, as well as to formally and legally assess the role of the documents they develop in relation to certain areas of such activities.

Participation of epistemic communities in the activities of the UN Committee on the Peaceful Uses of Outer Space

The main actors in the development of new norms of international space law are states and international intergovernmental organizations, led by the United Nations (hereinafter referred to as the UN), which occupies a central place (Hobe, 2023). However, there are a number of non-governmental organizations, including international organizations, whose activities are also aimed at the development of international space law. Such organizations are established by scientific communities, institutions or individuals, i.e., not by states. These organizations may participate in international intergovernmental organizations as observers (Friedl & Johnson, 2023:19–21), create alternative venues to discuss various issues of peaceful space exploration¹³.

It is important to note here that international space law does not exclude the possibility of non-governmental legal entities carrying out space activities. The activities of such organizations should only be carried out with the authorization and under the constant supervision of the state concerned (Gerhard, 2009). States have international

⁹ Proposal for assessing lunar coordination mechanisms within the Committee on the Peaceful Uses of Outer Space. Paper submitted by Romania. A/AC.105/2023/CRP.8.

¹⁰ Proposal for inclusion of a yearly agenda sub-item "Coordination for sustainable lunar activities" under the agenda item "Space exploration and innovation" at the sixty-sixth session of the Committee on the Peaceful Uses of Outer Space, in 2023. Conference room paper by Mexico and Romania. A/AC.105/2022/CRP.14.

¹¹ For example, the Hague International Working Group on Space Resource Management, the Space Treaty Project led by Denis O'Brien, the Outer Space Institute.

¹² For example, the International Institute of Space Law, the Moon Village Association and its Global Expert Group on Sustainable Lunar Activities, the Open Lunar Foundation, For all Moonkind organization.

¹³ See: Zhukov G.P., Gugunsky D.A., Koneva A.E., Solntsev A.M., Chernykh I.A. (2023) Abashidze, A.Kh. (ed.). International organizations in the field of peaceful space exploration. *Law of international organizations: textbook for universities*. 2nd ed., revised and supplemented. Moscow, Urigh Publishing House.

responsibility to ensure that activities of non-governmental legal entities are conducted in accordance with the provisions contained in the Outer Space Treaty¹⁴.

Today it can be seen that space activities are open for cooperation to all actors, both state and non-state, who are able and willing, and have the knowledge required to successfully carry out these activities (Lapaš, 2010).

It should be noted that three years after the establishment of the UN COPUOS, on March 29, 1962¹⁵, the Legal Subcommittee was established, which from May 28 to June 20, 1962 met at its first session¹⁶ under the chairmanship of one of the pioneers of international space law, Manfred Lachs (Lyll, 2013). Four international intergovernmental organizations were invited to the first meeting of the Legal Subcommittee as observers: the World Meteorological Organization (WMO), the World Health Organization (WHO), the International Telecommunication Union (ITU), the United Nations Educational, Scientific and Cultural Organization (UNESCO), as well as one non-governmental organization – the *Committee on Space Research (COSPAR)* of the International Council of Scientific Unions¹⁷. Thus, the Legal Subcommittee, from its very inception, has laid the foundation for a global platform for cooperation in the field of space exploration not only for States but also for international intergovernmental and non-governmental organizations.

As of 1 September 2023, 13 international intergovernmental organizations and 37 non-governmental organizations¹⁸ have observer status with the UN COPUOS. Non-governmental organizations may have temporary and permanent observer status. Temporary observer status is granted for three years. However, it can be extended for another year¹⁹. During this time, the organization must apply for special consultative status with the United Nations Economic and Social Council (ECOSOC) and go through the process of obtaining permanent observer status. The UN COPUOS may then grant the non-governmental organization permanent observer status with the Committee. For example, at the last meeting of the UN COPUOS in 2023, two non-governmental organizations – the European Astronomical Society and the Three Country-Trusted

¹⁴ Art. VI: States Parties to the Treaty shall bear international responsibility for national space activities, including the Moon and other celestial bodies, whether such activities are carried on by governmental agencies or by *non-governmental entities*, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty <...>».

¹⁵ By resolution 1721 A (XVI), the General Assembly invited the Committee on the Peaceful Uses of Outer Space to study and report on legal problems that may arise in connection with the exploration and use of outer space. At the end of its session in March 1962, the Committee, reporting that many specific proposals and requests concerning legal research had been made by its members, established a Legal Subcommittee to study these problems in detail and in accordance with the responsibilities assigned to the Committee by resolutions 1472 (XIV) and 1721 (XVI) of the General Assembly. Pursuant to these powers, the Legal Subcommittee considered the general principles and legal issues arising in connection with exploration and use of outer space.

¹⁶ Report of the Legal Sub-Committee. First session (28 May – 20 June 1962). A/AC.105/6.

¹⁷ International Council of Scientific Unions (ICSU). In 2018, a merger between the International Science Council (ICSU) and the International Social Science Council (ISSC) transformed the organization into the International Science Council (ISC); it works at a global level to catalyze and bring together scientific expertise, advice and influence on issues of serious concern to both science and society. See more details on the official website. Available at: <https://council.science/ru/about-us/> [Accessed October 13th 2023].

¹⁸ Committee on the Peaceful Uses of Outer Space: Observer Organizations // Official website of the UN Office for Outer Space Affairs. Available at: <https://www.unoosa.org/oosa/en/ourwork/copuos/members/copuos-observers.html> [Accessed September 1st 2023].

¹⁹ The right was first granted in 2010.

Broker – submitted applications to the Committee and received approval for “the status of observer, on a provisional basis, for a period of three years, pending information on the status of its application for consultative status with the Economic and Social Council” (paras. 396–400)²⁰.

Further on, we will focus on epistemic communities, observers of the UN COPUOS, whose work affects certain areas of lunar activities.

Characteristics and activities of certain epistemic communities in the exploration, development and use of the Moon

The previously mentioned *COSPAR* is the first non-governmental organization observer to the United Nations Committee on Outer Space (since 1962) and is an interdisciplinary scientific body established to promote international cooperation in space research. It was established by the International Council of Scientific Unions in 1958²¹.

COSPAR holds scientific and technical meetings, publishes various materials on space research, and develops major international joint research programs. Within the organization there is a *Commission B: Space Studies* of the *Earth-Moon System, Planets, and Small Bodies* of the *Solar System*, where Subcommission B3 has been established to cover all aspects of lunar science and research. Current lunar research includes remote sensing and in situ measurements of the lunar surface, laboratory analysis of lunar samples and theoretical modeling of the Moon’s internal structure and evolution.

In 2021, *COSPAR* published a Policy on Planetary Protection²² for spacefaring nations, both as an international standard on procedures to avoid organic and biological contamination in space exploration and as generally accepted guidance in this area for compliance with the provisions of the Outer Space Treaty and other relevant international agreements. The document invites states to provide documentation related to potential contamination of the Moon and the lunar environment (paras. 8.1., 8.2.).

Another equally important organization that joined the Legal Subcommittee in 1976 as an observer to the session of the Legal Subcommittee is *the International Astronautical Federation (IAF)*²³, which organizes the world’s largest discussion forum on space activities, the International Astronautical Congress. It regularly discusses various issues related to lunar and near-lunar exploration. On the sidelines of this Congress, the Colloquium on Space Law, organized by the International Institute of Space Law (IISL), is of particular importance for the discussion of international legal issues²⁴. For example, in 2023, the Colloquium organized, jointly with the International Academy of Astronautics, the 37th scientific and legal round table on Space Launch from Celestial Bodies: Technology, Law and Policy and a section on Legal Issues Relating to Emerging

²⁰ Report of the Committee on the Peaceful Uses of Outer Space. Sixty-sixth session (31 May – 9 June 2023). A/78/20.

²¹ For more details visit the official *COSPAR* website. Available at: <https://cosparhq.cnes.fr/> [Accessed October 13th 2023].

²² *COSPAR* policy on planetary protection. Prepared by the *COSPAR* Panel on Planetary Protection and approved by the *COSPAR* Bureau on 3 June 2021. Available at: https://cosparhq.cnes.fr/assets/uploads/2021/07/PPPolicy_2021_3-June.pdf [Accessed October 13th 2023].

²³ Report of the Legal Sub-committee. Fifteenth session (3–28 May 1976) A/AC.105/171.

²⁴ International Institute of Space Law (IISL).

Space Activities on Celestial Bodies, where scientists discussed, inter alia, lunar exploration. The results of such discussions are published in the collections of articles.

The International Institute of Space Law became an observer of the UN COPUOS in 2008. This organization has issued several official statements on the subject of lunar exploration and use: in 2004 – on claims to property rights regarding the Moon and other celestial bodies²⁵; in 2009 – on the “analysis of the international legal regime for the exploitation of space resources”²⁶, and in 2015 – “following the adoption of national legislation in the field of space resources by the United States”²⁷.

The International Law Association (ILA) is another example of a non-governmental organization dedicated to international space law. It was founded in Brussels in 1873. Its objectives, according to its Constitution of the Association, are “the study, clarification and development of international law, both public and private, and the furtherance of international understanding and respect for international law”²⁸. The Association first took part in the work of the Committee as an observer in 1991²⁹, although the status had been granted a year earlier. An important result of the organization’s work is the Model Law for National Space Legislation³⁰ adopted at the 75th Sofia Conference of the International Law Association in September 2012 (ILA Resolution 6/2012), which resulted in much controversy among international lawyers (Hobe, 2013; Bhat, & Kurlekar, 2017). This model law is important for those States that are just beginning their journey in the development of space activities, including the exploration and use of the Moon and other celestial bodies.

In 1995, *the International Academy of Astronautics (IAA)*³¹ joined the Committee an observer; its mission is to study and discuss cutting-edge issues in space research and technology and to provide leadership and governance in the non-military uses of space and the ongoing exploration of the solar system. Under the auspices of the Academy, various studies are being conducted in the field of space exploration, among which we should especially highlight the study on space traffic management, first published in 2006

²⁵ Statement by the Board of Directors of the International Institute of Space Law (IISL) On Claims to Property Rights Regarding the Moon and Other Celestial Bodies. Available at: https://iislweb.space/wp-content/uploads/2020/01/IISL_Outer_Space_Treaty_Statement.pdf. [Accessed October 13th 2023].

²⁶ Statement of the Board of Directors of the International Institute of Space Law (IISL) dated March 22, 2009. Available at: <https://iislweb.space/wp-content/uploads/2020/01/Statement-BoD.pdf> [Accessed October 13th 2023].

²⁷ Position Paper on Space Resource Mining, Adopted by consensus by the Board of Directors on 20 December 2015. Available at: <https://iislweb.space/wp-content/uploads/2020/01/SpaceResourceMining.pdf> [Accessed October 13th 2023].

²⁸ International Law Association. Constitution of the association (adopted at the 77th Conference, 2016). Available at: https://www.ila-hq.org/en_GB/documents/constitution-english-adopted-johannesburg-2016-1 [Accessed October 13th 2023].

²⁹ Report of the Committee on the Peaceful Use of Outer Space. Thirty-fourth session (27 May – 6 June). A/46/20.

³⁰ Draft model law on national space legislation and explanatory notes. Information on the activities of international intergovernmental and non-governmental organizations relating to space law. Draft model law on national space legislation and explanatory notes. A/AC.105/C.2/2013/CRP.6. Available at: https://www.unoosa.org/pdf/limited/c2/AC105_C2_2013_CRP06E.pdf [Accessed October 13th 2023].

³¹ The International Academy of Astronautics (IAA) was founded in Stockholm on August 16, 1960. The Academy was started by Dr. Theodore von Karman, one of the most important figures in the development of rocket technology and the first president of the IAA.

under the title *Cosmic Study on Space Traffic Management*³², and then republished in 2018³³. This extensive study addresses one of the most important challenges for mankind – the regulation of space traffic – taking into account the plans to extract resources from celestial bodies, including the Moon and the organization of so-called “lunar villages”³⁴ (Volynskaya, 2022).

In 2001, *the Space Generation Advisory Council*³⁵ was granted observer status. Its purpose is to unite and represent the interests of the younger generation – students and young professionals aged 18 – 35 working in the space field – at the national and international levels. The organization prepares and conducts events, helps the younger generation to obtain scholarships and internships, establishes research and project groups, and allows them to build their professional skills, propose their own projects and improve their education in various areas of space activities³⁶. The Council actively participates in the work of the UN COPUOS and its subcommittees. For example, in 2020, in order to ensure that the younger generation contributes to the discussion on the peaceful and sustainable development of the Moon, the Council decided to establish the Action Team on Effective and Adaptive Governance for a Lunar Ecosystem (E.A.G.L.E. Team), which in 2021 submitted a paper summarizing the results of the study to the Space Resources Working Group of the Legal Subcommittee³⁷. The submitted document contains the ideas and suggestions of the younger generation on the necessary governance regime on the Moon as part of peaceful and sustainable lunar exploration. The research team has also provided an analysis of studies on similar topics conducted by other international non-governmental organizations and proposed the adoption of the Charter for Lunar Governance³⁸.

The next, highly specialized international non-governmental organization with headquarters in the United States³⁹ is *For all Moonkind*; it was founded by Michelle and Tim Hanlon. The organization received observer status with the UN COPUOS in 2018 and participates in its work⁴⁰. The main goal of this organization is to promote the idea of protecting human heritage in space, namely on the Moon. As part of the organization’s activities, a catalog of the results of various types of human activity on the Moon ranging

³² Jorgenson, C., Petr, L. & Schrogl, K.-U. (2006) *Cosmic study on space traffic management*. Paris, International Academy of Astronautics (IAA).

³³ Schrogl, K.-U., Jorgenson C., Robinson J. & Soucek, A. (2018). *Space Traffic Management: Towards a Roadmap for Implementation*. Paris, International Academy of Astronautics.

³⁴ Schrogl, K.-U., Jorgenson C., Robinson J. & Soucek, A. (2018). *Space Traffic Management: Towards a Roadmap for Implementation*. Paris, International Academy of Astronautics.

³⁵ Space Generation Advisory Council, SGAC.

³⁶ About SGAC. Available at: <https://spacegeneration.org/about> [Accessed November 11st 2023].

³⁷ Effective and Adaptive Governance for a Lunar Ecosystem. Lunar Governance Report. Paper submitted by the Space Generation Advisory Council // Committee on the Peaceful Uses of Outer Space. Legal Subcommittee. Sixtieth session (31 May–11 June 2021). Item 14 of the provisional agenda** General exchange of views on potential legal models for activities in exploration, exploitation and utilization of space resources. A/AC.105/C.2/2021/CRP.13*.

³⁸ Effective and Adaptive Governance for a Lunar Ecosystem Lunar Governance Report Approved and adopted by SGAC May 10th, 2021. Available at: <https://spacegeneration.org/wp-content/uploads/2021/05/EAGLE-Report.pdf> [Accessed November 11st 2023].

³⁹ For All Moonkind. Available at: <https://www.forallmoonkind.org/> [Accessed November 11st 2023].

⁴⁰ For All Moonkind – Input to the Working Group on Legal Aspects of Space Resource Activities. A/AC.105/C.2/2023/CRP.35.

from astronaut footprints on the lunar surface and ending with spacecraft (for example, the Soviet Luna-9 or the American Surveyor-3) was created. At the same time, the criteria for classifying such results as protected are their cultural, historical, archaeological or other scientific special value for all humanity.

The most interesting non-governmental organization for the subject of our study is the *Moon Village Association*⁴¹ with headquarters in Vienna (Austria). It was created in 2017 and received observer status in the Committee in 2019. The Association acts as a permanent global informal forum for stakeholders, including representatives of government agencies, industry (private companies), academia (universities and research organizations) and the public interested in the development of the so-called “Moon village”. The Association promotes international cooperation within the framework of existing or planned space programs for lunar exploration. To achieve its goals and objectives, the Association may establish research initiative groups on various topics. On this very basis, in 2020, the Association took the initiative to form a Global Expert Group on Sustainable Lunar Activities⁴² to find solutions to anticipated problems that may arise in the course of lunar activities, in order to reduce the risk of future lunar missions and expand global cooperation in the exploration and use of the Moon (Reibaldi, Prunariu, Christensen, Xu & El-Shawa, 2023). The Group included representatives from space agencies, governments, industry, international organizations, non-governmental organizations, universities and research centers. The Group’s activities began in February 2021 and were finalized by the end of 2022 with the publication of the report Recommended Framework and Key Elements for Peaceful and Sustainable Lunar Activities⁴³. This report also includes Annex 1 on Guidelines for the implementation of the recommended framework and Annex 2 on future issues⁴⁴.

The Recommended Framework and Key Elements are designed to provide guidance for future lunar projects and offer recommendations for implementing safe and sustainable lunar activities through norm setting, coordination and governance. It is important to note that the document is aimed not only at states, but also at space actors represented by various organizations and companies that will carry out practical activities on the Moon, thus making it a practice-oriented document. The document is based on sectoral principles of international space law, the relevant provisions of the UN treaties on outer space and soft law documents⁴⁵ as well as other documents such as the Moon Village Association’s Best Practices for Sustainable Lunar Activities 2019⁴⁶, the 2020

⁴¹ Moon Village Association (MVA). Available at: <https://moonvillageassociation.org/> [Accessed November 11st 2023].

⁴² The Global Expert Group on Sustainable Lunar Activities or (GEGSLA). The Group involved 37 experts, including from Russia – I.A. Chernykh (RUDN University) and I.G. Mitrofanov (The Space Research Institute of the Russian Academy of Sciences).

⁴³ GEGSLA Recommended Framework and Key Elements for Peaceful and Sustainable Lunar Activities. Available at: <https://moonvillageassociation.org/gegsla/documents/gegsla-recommended-framework/> [Accessed October 13th 2023].

⁴⁴ GEGSLA Annexes. Available at: <https://moonvillageassociation.org/gegsla/documents/gegsla-annexes/> [Accessed October 13th 2023].

⁴⁵ See for example: Guidelines for the Long-Term Sustainability of Outer Space Activities. Report of the Committee on the Peaceful Uses of Outer Space. Sixty-second session (12–21 June 2019). A/74/20, pp. 54-69.

⁴⁶ Best Practices for Sustainable Lunar Activities – Issue 1. Available at: <https://moonvillageassociation.org/download/best-practices-for-sustainable-lunar-activities-issue-1/> [Accessed October 13th 2023].

Vancouver Recommendations on Space Mining⁴⁷ or the Artemis Accords developed for the U.S. lunar program entitled Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets and Asteroids⁴⁸. The Recommended Framework and Key Elements were submitted to the UN Committee on Outer Space in April 2023⁴⁹. The work of the Global Expert Group is now continuing in the operational phase of the Project. To this end, three working groups have been established to provide more focused discussions and appropriate solutions on various lunar-related issues, namely Working Group No. 1 Lunar Environmental Protection, Working Group No. 2 Lunar Technical Coordination and Working Group No. 3 Lunar Multistakeholder Coordination⁵⁰.

The Open Lunar Foundation is also a non-governmental organization founded in 2018, headquartered in San Francisco and an observer on the UN COPUOS since 2021. The Foundation is dedicated to developing projects and publishing action research, including research fellowships⁵¹. In 2021, the organization established the Breaking Ground Trust as an independent legal entity to develop policies for the sustainable, legal and multi-stakeholder management of lunar resources. In 2023, preliminary studies were conducted to create a global multi-stakeholder lunar policy platform that will help support and advance cooperative lunar development by exploring and addressing key policy, operational and coordination issues. The corresponding document with all the initiatives of the Open Lunar Foundation was presented to the Legal Subcommittee of the UN COPUOS⁵².

The Hague Space Resources Governance Working Group is another example of cooperation between intergovernmental and non-governmental organizations and scientific community⁵³.

In the course of its activities, the Working Group sought, first of all, to assess on a global scale the need for a governance framework for space resources activities and, having determined this, to prepare a document defining the main applicable governance elements. In 2019, the Hague Working Group adopted a document entitled Building

⁴⁷ Vancouver Recommendations on Space Mining, Outer Space Institute, April 20, 2020. Available at: https://www.outerspaceinstitute.ca/docs/Vancouver_Recommendations_on_Space_Mining.pdf [Accessed October 13th 2023].

⁴⁸ Principles for a Safe, Peaceful, and Prosperous Future. Available at: <https://www.nasa.gov/artemis-accords/> [Accessed November 11st 2023].

⁴⁹ Report of the Moon Village Association on the Global Expert Group on Sustainable Lunar Activities – Status/Deliverables/Plan. Paper submitted by the Moon Village Association. // Committee on the Peaceful Uses of Outer Space Legal Subcommittee. Sixty-second session (20–31 March 2023). A/AC.105/C.2/2023/CRP.31.

⁵⁰ Project Plan. Global Expert Group on Sustainable Lunar Activities Operational Phase – 2024. October 17, 2023. Available at: <https://moonvillageassociation.org/download/gegla-operational-phase-project-plan-2024/> [Accessed November 11st 2023].

⁵¹ Active Projects. Available at: <https://www.openlunar.org/work> [Accessed November 11st 2023].

⁵² Open Lunar Foundation – Input to the Working Group on Legal Aspects of Space Resource Activities // Committee on the Peaceful Uses of Outer Space. Legal Subcommittee. Sixty-Second session (20–31 March 2023). A/AC.105/C.2/2023/CRP.25.

⁵³ Note: established in 2016 on the basis of the International Institute of Air and Space Law at Leiden University to assess the need for a system of legal regulation of activities in the field of space resources. See: The Hague space resources governance working group. Committee on the Peaceful Uses of Outer Space. Legal Subcommittee. Fifty-fifth session (4–15 April 2016). A/AC.105/C.2/2016/CRP.17; The Hague International Space Resources Governance Working Group. Available at: <https://www.universiteitleiden.nl/en/law/institute-of-public-law/institute-of-air-space-law/the-hague-space-resources-governance-working-group> [Accessed October 13th 2023].

Blocks for the Development of an International Framework for the Governance of Space Resources Activities”⁵⁴ which was submitted to the Working Group on Space Resources of the Legal Subcommittee of the UN COPUOS. In 2020, as a follow-up to its work, the Group published a special commentary on the Building Blocks (de O Bittencourt Neto, Hofmann, Masson-Zwaan & Stefoudi, 2020). Although the Hague Working Group is not an observer in the UN COPUOS, the results of its work have been repeatedly presented jointly by the delegations of Luxembourg and the Netherlands as a working document at meetings of the relevant subcommittees⁵⁵.

The legal nature of documents developed by epistemic communities

In general, due to the reduced pace of codification in the UN COPUOS, the rule-making process in the field of space activities remains somewhat limited. In recent years, the UN has developed international instruments containing non-binding principles, norms, standards or other statements of expected conduct in the form of recommendations, principles, and guidelines with regard to the activities for the peaceful uses of outer space.

The above mentioned non-binding instruments qualify as “*soft law*”, which can be defined as follows, “all those social rules created by a state or other subjects of international law that are not legally binding but nevertheless have a special legal significance” (Thiirer, 2009). The term covers an extremely wide range of international instruments⁵⁶. Agreements, especially those governing cooperation on scientific projects or for the purpose of general exchange of information, are generating more and more practice, thereby acquiring corresponding political and economic significance.

Violation of soft law norms (defined mainly as social or political norms) does not entail legal consequences (Tronchetti, 2011). The most effective way to hold a party accountable for its failure to comply with the agreed common intentions and conduct would be the prospect of not being recognized as a reliable partner.

However, as can be seen from the earlier analysis, new types of documents are emerging today; they are created outside the UN COPUOS in an innovative and informal way at the initiative of those actors who feel the need for some guidance in their

⁵⁴ Building Blocks for the Development of an International Framework for the Governance of Space Resource Activities (2019). Available at: <https://www.universiteitleiden.nl/binaries/content/assets/rechtsgeleerdheid/instituut-voor-publiekrecht/lucht--en-ruimterecht/space-resources/bb-thissrwg--cover.pdf> [Accessed October 13th 2023].

⁵⁵ Building Blocks for the Development of an International Framework for the Governance of Space Resource Activities: A Commentary. Conference Room Paper submitted by Luxembourg and the Netherlands // Committee on the Peaceful Uses of Outer Space. Legal Subcommittee. Sixty-first session (28 March–8 April 2022). A/AC.105/C.2/2022/CRP.23; Building blocks for the development of an international framework on space resource activities. Working paper submitted by Luxembourg and the Netherlands // Committee on the Peaceful Uses of Outer Space. Legal Subcommittee. Fifty-ninth session (23 March–3 April 2020). A/AC.105/C.2/L.315.

⁵⁶ “Soft law instruments include, among others, resolutions of international organizations, resolutions or declarations of international conferences, declarations of high-level political summits, conclusions reached within the OSCE, conclusions of EU Presidencies, results of meetings of a bilateral nature, unilateral statements or recommendations under the WTO dispute settlement procedure” (Hafner, 2003: 150).

relations⁵⁷. In our case, this is an ever-increasing number of non-governmental organizations, whose members are physical and legal entities. The documents developed by such organizations, just like other “soft law” documents, are not legally binding for the subjects of international space law, but being oriented to the actual participants of future lunar space activities; they can be used in practice. For universal outreach and recognition by the international community, such organizations seek to submit final recommendations to the UN COPUOS as a contribution to its work in developing an international legal regime for lunar exploration. To disseminate these documents, one must either have observer status with the Committee or submit ideas by agreement through the member states of the Committee, whose delegation will distribute such a document among other member states as a conference room paper. The provisions of these documents, created by professional organizations, will be reflected in the final document on regulating activities on the Moon, which will be adopted within the framework of the UN COPUOS.

Conclusion

For decades, international intergovernmental and non-governmental organizations and associations have been rightful participants in the work of the UN COPUOS in regulating the peaceful uses of outer space, which has resulted in the inclusion of a permanent item “Information on the activities of international organizations relating to space law” on the agenda of the Subcommittee⁵⁸. This practice continues on a regular basis and in 2023, at its 62nd session⁵⁹, the Legal Subcommittee considered the issue Information on the Activities of International Intergovernmental and Non-Governmental Organizations Relating to Space Law. This session was attended by representatives of many non-governmental organizations with permanent observer status with the Committee, the activities of some of which were reviewed in this study.

Such organizations are often observers and participants at various global and regional platforms. They are involved both in the law-making process (for example, developing codes of conduct, technical documents, participation in scientific events at the international level) and in the process of implementing international law at the national level (for example, monitoring state activities).

Although non-governmental organizations are not subjects of international law, they act as a subject of international relations. That is why international cooperation among all space stakeholders is essential.

By developing “soft law” tools, the international space community demonstrates that the traditional international legal system is insufficient to regulate lunar space activities. Research conducted by epistemic communities can certainly be the basis for discussion in the UN COPUOS of the whole range of legal issues related to lunar exploration in the near future. Moreover, such organizations are less restricted than states

⁵⁷ “Soft law requires less internal process than contracts, is more flexible than contract law, and is much easier to change and quicker to terminate and implement.” (Welly, N.D., 2010: P: 306).

⁵⁸ Report of the Legal Subcommittee. Thirty ninth session (27 March – 6 April 2000). A/AC.105/738.

⁵⁹ Report of the Legal Subcommittee. Sixty-second session (20–31 March 2023). A/AC.105/1285.

in terms of the scope of their research and recommendations, as well as their membership and its qualifications.

The documents of such organizations and the informal codification that they perform can subsequently serve as an important start for the formation of “soft law” through such international platforms as the UN COPUOS, and later for their official codification, progressive development of international space law and adoption of a binding international document, since the solution to a number of problems should be sought exclusively in the international legal field, given that outer space is an international space. At the same time, it is important not to allow the active work of epistemic communities to be politicized and to hamper the work of the Committee and its subcommittees by overloading them with repetitive ideas and numerous working documents that require a balanced formal legal assessment.

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