

Returning to the Moon: A close examination of the Artemis Accords

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“Those three men”, he said, “having carried into space all the resources of art, science, and industry. With that, one can do anything; and you will see that, someday, they will come out right.”¹ 158 years after Jules Verne published these lines, and 66 years after the launch of Sputnik 1 marked the beginning of the space race, Japan became the fifth country that landed on the moon² succeeding the United States, Russia, China, and India. What some call the new space race are ambitions to go to the moon and beyond, with the United States planning to land the first woman and first person of colour on the Moon in the first US lunar landing after more than 50 years.³ But the new space race doesn’t stop there. The United States and China both aim to build settlements at the moon’s south pole where water, in the form of ice, can be found in permanently shadowed craters.⁴ This development, the commercialisation of space and the growing importance of non-state actors call for a new legal regime. While the nature of space activities demands unprecedented levels of cooperation and stable partnerships, geopolitical considerations significantly impact the trajectory of these endeavours.⁵ In response to China’s noteworthy role in shaping the norms and standards for future space activities, the United States has proposed the Artemis Accords.⁶ Artemis, the twin sister of Apollo in Greek mythology and goddess of the moon, is the namesake of NASA’s moon landing mission, the Artemis Program, and the Artemis Accords.

¹ Jules Verne, ‘From the Earth to the Moon’ in Jules Verne, Seven Novels (Barnes & Noble, 2010) 401.

² Kenneth Chang, ‘Japan Becomes the Latest Country to Land on the Moon’ NYT (19 January 2024); Tomoko Otake and Joel Tansey, ‘Japan makes history as spacecraft lands on the moon’ JT (20 January 2024).

³ Foster Klug, ‘Behind the new space race: Who’s headed to the moon, and when’ AP (19 January 2024).

⁴ Christian Davenport, ‘Will China beat the United States back to the moon? It’s possible.’ WP (13 November 2023).

⁵ Riordan N, Machoň M and Csajková L, ‘Space Diplomacy and the Artemis Accords’ The Hague journal of diplomacy [2023] Vol. 18 (2-3), 382.

⁶ Davenport (n 4).

The Artemis Accords (the Accords)⁷, which are a non-binding⁸, legal instrument for political commitment drafted by NASA were signed on September 13, 2020 by its founding members, and as of January 2024 have 33 signatories, thus far exceeding the Moon Agreement⁹. One fundamental difference, beside its soft law character, is the fact that the Artemis Accords are not eligible for registration under Article 102 of the Charter of the United Nations,¹⁰ thus not constituting a treaty.¹¹ The Accords were signed by national space agencies on behalf of their respective states.¹² The territorial scope of the Artemis Accords comprises the Moon, Mars, comets, and asteroids, including both their surface and subsurface. Furthermore, it extends to the orbits of the Moon or Mars, incorporating the Lagrangian points within the Earth-Moon system and transit trajectories between these celestial bodies and locations. It is crucial to note, however, that celestial bodies and orbits beyond the Solar System do not fall under the jurisdiction of the Accords.¹³

While the Artemis Accords may give a boost to the development of the legal regime of outer space exploration and use¹⁴ - it was called the most ambitious international space policy¹⁵ since the Outer Space Treaty of 1967¹⁶ - it is highly contested due to its support of the United States' interpretation of the non-appropriation principle.¹⁷ Many perceived the US-friendly interpretation of the exploitation of resources with concern.¹⁸ Particularly Russia¹⁹ and China²⁰ expressed concern about the Accords. Russia, which is not a

⁷ The Artemis Accords Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids for Peaceful Purposes, (opened for signature 13 September 2020).

⁸ *ibid.*

⁹ Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, (opened for signature 19 December 1979, entered into force 11 July 1984) 1363 UNTS 22.

¹⁰ (n 7) Section 13.

¹¹ Balázs Bartóki-Gönczy and Boldizsár Nagy, 'The Artemis Accords' (2020) CUP International Legal Materials [2023] Vol. 62(5), 888.

¹² Athar ud Din, 'The Artemis Accords: The End of Multilateralism in the Management of Outer Space' *Astropolitics The International Journal of Space Politics & Policy* [2022] Vol. 20, NOS. 2-3, 142.

¹³ Bartóki-Gönczy/Nagy (n 11) 888.

¹⁴ *ibid.*

¹⁵ Davenport (n 4).

¹⁶ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (opened for signature 27 January 1967, entered into force 10 October 1967) 610 UNTS 205 (OST).

¹⁷ Rossana Deplano, 'The Artemis Accords: Evolution or Revolution in International Space Law?' *The International and comparative law quarterly* [2021] Vol.70 (3), 800.

¹⁸ 'Signatories of the U.S.-Led Artemis Accords Meet in Person for the First Time' *The American Journal of International Law* [2023] Vol. 117(1), 134.

¹⁹ Alexander Stirn, 'Do NASA's Lunar Exploitation Rules Violate Space Law' *Scientific America* (12.11.2022).

²⁰ Elliot Ji, Michael B. Cerny and Raphael J. Piliro, 'What Does China Think About NASA's Artemis Accords?' *The Diplomat* (17 September 2020).

signatory, disapproved of the US approach of exploiting the Moon's natural resources, while China, whose accession is prevented by the US internal laws,²¹ criticised the unilateral approach taken by the United States in regulating space activities.²² Todd Harrison, a non-resident senior associate at the Centre for Strategic and International Studies, emphasised the importance of establishing precedents for mining operations and the associated property rights in a manner consistent with the values and economic principles of the United States. He expressed concern, which is widely reflected within the United States, that if China were to reach the moon first, it would set precedents aligned with its values and economic system, potentially influencing the trajectory of future space activities.²³ India signed the Accords shortly before its successful moon landing.²⁴ Despite working closely with NASA on the Artemis Program, Germany and Hungary have not signed the Accords yet.²⁵ Though they share a name, the Artemis Accords are not directly related to the Artemis Program per se. However, there are concerns that signing the Accords might be perceived as a pressure tactic or a prerequisite for future collaboration with NASA. However, as of now, there is no concrete evidence indicating such a linkage. Additionally, concerns have been raised by scholars who warn that the Artemis Accords could potentially undermine international law, an attempt by the United States to diplomatically justify deviating from the principles outlined in the Outer Space Treaty.²⁶ Others are concerned that the Accords may lead to a fragmentation by abandoning multilateralism.

²¹ "Wolfgang Amendment", Pub. L. No. 117-103, §527, 136 Stat. 49 (2022).

²² Deplano (n 17) 800.

²³ Davenport (n 4).

²⁴ *ibid.*

²⁵ (n 7).

²⁶ Deplano (n 17) 800.

The Accords

The Artemis Accords can be divided in three categories. The first one reflects pre-existing principles of the Outer Space Treaty and transposes them into the Accords. The second category implements principles from the Treaty and adds details and clarity to the rights and obligations. The last category, which is the most contested, introduces novel concepts.²⁷

The first category which includes the principle of peaceful purposes in Section 3, or the principle of the accordance with international law are uncontroversial. These provisions are simply replicating the ones of the Outer Space Treaty and reflect international law and practices. Under these kinds of provisions fall Sections 1 and 7 which mirror the principle of the benefit of humankind, Sections 4 and 8 on transparency and sharing scientific information, Section 6 which deals with the rescue and assistance in outer space, Section 7 requiring Registration, Section 12 which reflects international norms of preventing and mitigating space debris, and the aforementioned Section 4. Due to its nature of only reaffirming already established principles, this category remains uncontested.²⁸

The second category consists of refined and optimised existing rules. This does not come uncontested with some criticising its inconsistent interpretation in light of Article 31 (3) of the VCLT²⁹ and a US-friendly exegesis. The contentious provision regarding space resources and the inclusion of safety zones warrants careful scrutiny and closer examination.

Provisions on Space Resources

Section 10 of the Artemis Accords declare that “the utilisation of space resources can benefit humankind by providing critical support for safe and sustainable operations” and “the Signatories affirm that the extraction of space resources does not inherently constitute national appropriation under Article II of the Outer Space Treaty”. This sparked a lot of controversy and was heavily criticised.³⁰ Mentioned Article II of the Outer Space

²⁷ *ibid* 801.

²⁸ *ibid* 803.

²⁹ Vienna Convention on the Law of Treaties, (opened for signature 23 May 1969, entered into force 27 January 1980) United Nations, Treaty Series, vol. 1155, p. 331.

³⁰ Yutaka Osada, ‘Governance of Space Resources Activities: in the Wake of the Artemis Accords’ *Georgetown journal of international law* [2022] Vol. 53 (3).

Treaty states the principle of non-appropriation, more precisely that “outer space [...] is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.” This leaves room for different interpretations, with the United States claiming that the exploitation of space resources does not fall within this prohibition.³¹ The United States perceives outer space as a legally and physically distinctive realm of human activity, diverging from the concept of a global commons. Instead, the US advocates for international backing in facilitating both public and private recovery and utilisation of resources in outer space, while adhering to relevant legal frameworks.³² The United States bases its claim on Article I of the Outer Space Treaty which states that outer space shall be free for exploration and use by all states.³³ Luxembourg adopted this idea in its national legislation,³⁴ succeeding the United States as the second country to do so.³⁵ The United Arab Emirates developed a space policy that outlines plans for the exploitation of space resources.³⁶ Additionally, Luxembourg³⁷ and the UAE are founding members of the Artemis Accords. This interpretation is highly contested, as there is a fundamental difference between exploration and use and exploitation.³⁸ Use can be described as non-economic and commercial use of outer space³⁹, thus allowing the exploitation of space resources. However, these rights are limited as they are granted to states only, and “for the benefit and in the interest of all countries”, for the “province of all mankind”.⁴⁰ These provisions, which were generally reflected in the treaties of the time, call for international cooperation that benefits all nations.⁴¹ While space mining is still fictional,⁴² there is national interest that might

³¹ U.S. Commercial Space Launch Competitiveness Act, Pub. L., 114-90, Title IV (2015).

³² Bartóki-Gönczy/Nagy (n 10) 889.

³³ ‘United States - Input to the Working Group on Legal Aspects of Space Resource Activities’ UNOOSA (21 March 2023) U.N. Doc A/AC.105/C.2/2023/CRP.37.

³⁴ Loi du 20 juillet 2017 sur l’exploration et l’utilisation des ressources de l’espace, Mémorial A No 674 (2017).

³⁵ ‘Contribution of the Grand Duchy of Luxembourg on the Mandate and Purpose of the Working Group on Legal Aspects of Space Resource Activities’ UNOOSA (16 December 2022).

³⁶ *id* Din (n 12) 145.

³⁷ ‘Luxembourg, NASA and several other partner countries are among the first signatories of the Artemis Accords’ The Luxembourg Government (14 October 2020).

³⁸ Bartóki-Gönczy/Nagy (n 11) 889.

³⁹ Stephan Hobe, ‘Cologne commentary on space law : in three volumes. Vol. 1, Outer space treaty’ (Carl Heymanns Verlag 2009) para 36.

⁴⁰ *ibid* para 45.

⁴¹ Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of all States, Taking into Particular Account the Needs of Developing Countries, G.A. Res. 51/122 (13 December 1996).

⁴² Jamie Carter, ‘NASA Teases New ‘Psyche’ Spacecraft to Explore An Asteroid Worth Trillions of Dollars’ Forbes (29 March 2021).

contravene the principle of global commons.⁴³ In the future highly valuable materials such as Helium-3 could be harvested from the moon⁴⁴ and other celestial bodies as well as certain precious metals.⁴⁵ Detractors of the United States' interpretation of the non-appropriation principle also point to Article 11 of the Moon Agreement which claims a common heritage in comparison to the Outer Space Treaty's province of mankind. The Moon Agreement was the initiative of the United States, as it wanted to protect possible investments in the international domain. Negotiations for it were concluded in parallel with the Montego Bay Convention,⁴⁶ which regulates the High Seas, and the Wellington Convention concerning Antarctica. The US delegation was a major contributor to the drafting of the Moon Agreement and even the aforementioned Article 11 was designed by its delegation. The Moon Agreement was drafted within the UN COPUOS and adopted by the General Assembly by consensus with strong support of the United States. Despite this effort, during the presidency of Reagan, the ratification of it was blocked.⁴⁷ As of now the Moon Agreement is in force, but only ratified by 17 states,⁴⁸ none of them being a space-faring nation.⁴⁹ Article 11 of the Moon Agreement, stipulates that the exploitation of space resources is permitted only if state parties establish an international regime, which is designed to guarantee equitable sharing of benefits among all state parties, with special consideration for the needs of developing countries. The Common Heritage of Mankind principle is therefore very similar to the one of UNCLOS⁵⁰ where an equitable sharing of benefits is also established. Notably, three Moon Agreement parties, namely Mexico, Saudi Arabia, and Australia, have signed the Artemis Accords. While Australia perceives no conflict,⁵¹ Saudi Arabia formally withdrew from the Moon Agreement in January 2023, as communicated to the Secretary-General of the United Nations.⁵² Australia's simultaneous

⁴³ John E. Noyes, 'The Common Heritage of Mankind: Past, Present, and Future' *Denver Journal of International Law and Policy* 40 [2012] Vol. 1-3, 447-471.

⁴⁴ Fabio Tronchetti 'Legal aspects of space resource utilization' in Frans von der Dunk (ed.) *Handbook of Space Law* (Elgar 2015).

⁴⁵ Andy Greenspoon, 'Precious metals in peril: Can asteroid mining save us?' *Science in the News* (25 October 2016).

⁴⁶ United Nations Convention on the Law of the Sea (opened for signature 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3.

⁴⁷ Michael Listner, 'The Moon Treaty: failed international law or waiting in the shadows?' *The Space Review* (24 October 2011).

⁴⁸ Stephan Hobe, 'Cologne commentary on space law : in three volumes. Vol. 2, Rescue Agreement, Liability Convention, Registration Convention, Moon Agreement' (2013).

⁴⁹ Bartóki-Gönczy/Nagy (n 11) 889.

⁵⁰ (n 46).

⁵¹ 'Australia – Input to the Working Group on Legal Aspects of Space Resource Activities' UNOOSA (20 March 2023) UN Doc. A/AC.105/C.2/2023/CRP.7, p. 6.

⁵² C.N.4.2023.TREATIES-XXIV.2.

membership to both has been subject to criticism from a diplomatic and legal standpoint.⁵³

Another interpretation, circumventing the non-appropriation principle, claims that there is a distinction between celestial objects and the resources they contain,⁵⁴ thus arguing that the resources contained can be exploited and even appropriated.⁵⁵ Scholars in favour of the Artemis Accords, view it simply as a clarification of the term “national appropriation”⁵⁶ and interpretation according to Article 31 (3) (b) VCLT⁵⁷, as a subsequent practice and agreement.⁵⁸ However, due to the unspecific nature of Section 10 of the Accords, the term inherently allows for many possible interpretations, and based on the number of signatories in comparison to the Outer Space Treaty is not relevant for an authentic interpretation of the latter.⁵⁹ Due to the heavy contestations of countries such as Russia and China the Artemis Accords will also very unlikely become customary international law.⁶⁰

Deconfliction of Space Activities

Section 11 of the Artemis Accords concerns space safety zones, the deconfliction of space activities reflecting Articles XI and XII of the Outer Space Treaty. The Accords require “necessary information regarding location and nature of space-based activities” creating a safety zone, a concept that was never mentioned in the Outer Space Treaty. The concept of the safety zones were initially developed by The Hague Space Resources Governance Working Group⁶¹ to avoid harmful interference, reflected in the UN Guidelines for Long-term Sustainability of Outer Space.⁶² Safety zones that enclose portions of the openly

⁵³ Tronchetti F and Liu H, ‘Australia’s signing of the Artemis Accords: a positive development or a controversial choice?’ *Australian journal of international affairs* [2021] Vol. 75 (3), 243.

⁵⁴ *id* Din (n 12) 141.

⁵⁵ Greg Melchin, ‘You Cant Take The Sky From Me: Gramscian Interpretation of the Common Heritage of Mankind Principle In Space Law’ *Dalhousie Journal of Legal Studies* [2015] Vol. 24, 150.

⁵⁶ Deplano (n 17) 805.

⁵⁷ (n 29).

⁵⁸ ‘Report of the International Law Commission on the Work of its Seventieth Session’ ILC (30 April–1 June and 2 July–10 August 2018) UN Doc A/73/10, at 23, Conclusion 3.

⁵⁹ Deplano (n 17) 805-807.

⁶⁰ *ibid* 808.

⁶¹ ‘The Hague Space Resources Governance Working Group Information provided by the Netherlands’ UNOOSA (12 April 2018) UN Doc. A/AC.105/ C.2/2018/CRP.18.

⁶² ‘Report of the Committee on the Peaceful Uses of Outer Space’ UNOOSA (20 August 2019) UN Doc A/74/20, Annex II.

accessible *res communis omnium* usus territories already exist for example in Maritime Law, where this provision allows for the creation of safety zones even in areas where freedom of navigation is otherwise intended to be unrestricted.⁶³ The Accords are proposed as potential mechanisms to facilitate In-Situ Resource Utilization (ISRU) without violating the non-appropriation principle.⁶⁴ This, however, does not come without criticism, with some scholars contesting that the dimensions of the safety zones are restricted only by the nature of the operation, reasonability, and scientific and engineering principles, which is not only vague but also may potentially clash with the principle of non-appropriation.⁶⁵ Hobe in particular contends that due to the nature of safety zones, the acquisition of such areas is prohibited by the Outer Space Treaty.⁶⁶ Others argue that it is unproblematic and that Section 10 merely adds detail and clarity to the Outer Space Treaty.⁶⁷

The third category introduces new concepts that are neither explicitly outlined in the Outer Space Treaty nor in international law at large. This includes the preservation of space heritage, which represents a novel consideration in the evolving landscape of space governance.

Space Heritage

Section 9 of the Artemis Accords governs space heritage, which is described as “historically significant human or robotic landing sites, artefacts, spacecrafts, and other evidence on activities on celestial bodies” which shall be preserved according to mutually developed standards and practices.⁶⁸ Such a provision cannot be found in the Outer Space Treaty and is only lightly touched upon in Article 7 (3) of the Moon Agreement. The provisions of the UNESCO World Heritage Convention apply neither.⁶⁹ The concept it introduces is not too different to that of the aforementioned safety zones. They can be distinguished as the purpose of a safety zone is to facilitate the utilisation of natural resources acting as a zone of deconfliction, while space heritage is protecting human

⁶³ Bartóki-Gönczy/Nagy (n 11) 890.

⁶⁴ Lucas Mallowan, Lucien Rapp and Maria Topka, ‘Reinventing treaty compliant “safety zones” in the context of space sustainability’ *Journal of Space Safety Engineering* [2021] Vol. 8(2), 2.

⁶⁵ *ibid* 156.

⁶⁶ Stirn (n 19).

⁶⁷ Deplano (n 17) 809.

⁶⁸ (n 7) Section 9, para 1.

⁶⁹ Convention Concerning the Protection of the World Cultural and Natural Heritage (opened for signature 16 November 1972, entered into force 17 December 1975) 1037 UNTS 151, art. 4.

heritage in outer space.⁷⁰ This provision already has predecessors within the United States' legislation such as NASA's recommendations on 'How to Protect and Preserve the Historic and Scientific Value of U.S. Government Lunar Artifacts'⁷¹ and the 'One Small Step to Protect Human Heritage in Space Act',⁷² including exclusion zones and the prohibition of close overflights.⁷³ While only certain human and robotic artefacts have significant historic value, there is ambiguity in this regard. This leads to legal uncertainty, considering that the damaging of such an object would trigger the principle of State responsibility outlined in Article IX of the Outer Space Treaty and the Liability Convention.⁷⁴ While some scholars state that the notion of heritage in outer space is not inherently incompatible with the provisions of the Outer Space Treaty, one must note that the Artemis Accords may be insufficient in providing effective protection.⁷⁵ Others disagree and see this provision as a US-centric initiative to safeguard space artefacts, with a potential guise for securing enduring rights over lunar territory.⁷⁶

Multilateralism

While substantively the Accords are controversial and innovative but not revolutionary,⁷⁷ the formal aspect deserves a closer examination. By turning away from multilateralism, there is a threat of fragmentation. One must accept, however, that the geopolitical dynamics shifted and changed since the first space treaty was drafted during the Cold War. Due to the high competition of entirely different ideologies of the Soviet Union and the United States, many compromises and commitments were out of fear that the enemy might win the space race.⁷⁸ Nowadays numerous states express a preference for non-binding treaties and advocating towards soft law instruments that lack enforceability. The consensus-based approach of the UN COPUOS is also very time-consuming. The bipolar world order has transformed into a multi-faceted landscape with numerous space-faring

⁷⁰ Deplano (n 17) 811.

⁷¹ 'NASA's Recommendations to Space-Faring Entities: How to Protect and Preserve the Historic and Scientific Value of U.S. Government Lunar Artifacts' NASA (20 July 2011).

⁷² One Small Step to Protect Human Heritage in Space Act, Pub. L. 116-275, 134 Stat. 3359 (2020).

⁷³ Bartóki-Gönczy/Nagy (n 10) 890.

⁷⁴ Convention on International Liability for Damage Caused by Space Objects (opened for signature 29 March 1972, entered into force 01 September 1972) 861 UNTS 187.

⁷⁵ Deplano (n 17), 812.

⁷⁶ Bartóki-Gönczy/Nagy (n 11) 890.

⁷⁷ Deplano (n 17) 812.

⁷⁸ Yun Zao, 'An International Space Authority: A Governance Model for a Space Commercialization Regime' (2004) *Journal of Space Law* 30, no. 02, 283.

nations.⁷⁹ Soft law instruments are able to flexibly react to scientific and technological advancements as well as to govern new activities in space, especially regarding the emergence of private space actors and the commercialisation of space, which were not taken into account when the space treaties were drafted.⁸⁰ This can be seen regarding the discussions about the exploration and utilisation of outer space. There is a notable shift away from multilateral forums like COPUOS towards domestic settings, where states prefer to formulate their space policies.⁸¹ This trend is particularly evident in the regulation of space resource activities, whereas aforementioned both the US and Luxembourg have enacted dedicated legislation that grants property rights to companies engaged in mining outer space resources.⁸² Despite these domestic regulations, these states assert that their actions fall within the limits of the multilateral treaties on outer space to which they are parties, which is highly contested.⁸³ The Legal Subcommittee reacted by establishing a Working Group, which formulated a set of principles for the exploitation of space resources.⁸⁴ The principles and ideas discussed within the Artemis Accords could potentially serve as a foundation for future discussions within the United Nations framework.⁸⁵ Even though the UN process has limitations, it serves as a forum where all states, including those without spacefaring capabilities, reach consensus-based solutions. In contrast, the Artemis Accords, which were solely drafted by the United States, possess the advantage of being potentially more adaptable to contemporary requirements, especially concerning private actors. The Artemis Accords can be viewed as a unilateral effort by the US to shape international space law, considering that the drafting of the accords was solely undertaken by the United States.⁸⁶ The future will reveal whether the Artemis Accords evolve into a significant instrument for space governance,

⁷⁹ Gennady M. Danilenko, 'International Law Making for Outer Space' (2016) 37 Space Policy 180.

⁸⁰ *ibid.*

⁸¹ Philip de Man, 'State Practice, Domestic Legislation and the Interpretation of Fundamental Principles of International Space Law' (2017) 42 Space Policy 92, 101.

⁸² Deplano (n 17) 813.

⁸³ Stephan Hobe and Philip de Man, 'National Appropriation of Outer Space and State Jurisdiction to Regulate the Exploitation, Regulation and Utilization of Space Resources' (2017) 66 German Journal of Air and Space Law 460, 475.

⁸⁴ 'Report of the Committee of the Peaceful Uses of Outer Space' UNOOSA (21 October 2021) U.N. Doc. A/76/20 Annex II, A. 3. (d)-(e).

⁸⁵ Bartóki-Gönczy/Nagy (n 11) 891.

⁸⁶ 'Signatories of the U.S.-Led Artemis Accords Meet in Person for the First Time' The American Journal of International Law [2023] Vol. 117(1) 136.

fostering as a catalyst for new development, or if they remain a US-centric policy tool that contributes to the fragmentation of space law.⁸⁷

Conclusion

With a novel race in lunar exploration and the ambitions to travel to Mars, the Artemis Accords emerge as a cornerstone in shaping the legal framework for outer space activities. Signed by 33 nations, the Accords, despite being non-binding, have sparked intense debates and discussions regarding their implications and adherence to established international space law. The contentious issues, particularly the stance on the exploitation of space resources, are poised to be a focal point for continued discussions and interpretations of the Outer Space Treaty.

While contested topics like safety zones and space heritage may find resolution within the UN COPUOS forum, the profound disagreements surrounding Section 10 cast doubt on the Accords' potential to evolve into customary international law. This uncertainty is compounded by the shifting dynamics away from multilateralism, as exemplified by the Artemis Accords, raising concerns about potential fragmentation in space governance.

In navigating these challenges, the future role of the Artemis Accords remains uncertain. Time will tell whether the Accords may contribute to the development of the legal regime for outer space exploration. As the world witnesses a resurgence of lunar exploration, the Artemis Accords will undoubtedly be a focal point for continued discussions and negotiations in the dynamic landscape of space governance. It remains to be seen what the lasting effects and impact of the Accords will be, especially in face of the Moon Agreement.

⁸⁷ Bartóki-Gönczy/Nagy (n 11) 891.

Bibliography

Bartóki-Gönczy B and Nagy B, 'The Artemis Accords' (2020) CUP International Legal Materials [2023] Vol. 62 (5)

Carter J, 'NASA Teases New 'Psyche' Spacecraft to Explore An Asteroid Worth Trillions of Dollars' Forbes (29 March 2021).

Chang K, 'Japan Becomes the Latest Country to Land on the Moon' NYT (19.01.2024)

Danilenko GM, 'International Law Making for Outer Space' Space Policy [2016] Vol. 37

Davenport C, 'Will China beat the United States back to the moon? It's possible.' WP (13 November 2023)

de Man P, 'State Practice, Domestic Legislation and the Interpretation of Fundamental Principles of International Space Law' Space Policy [2017] Vol. 42

Deplano R, 'The Artemis Accords: Evolution or Revolution in International Space Law?' (2021) CUP The International and comparative law quarterly [2021] Vol. 70 (3)

Greenspoon A, 'Precious metals in peril: Can asteroid mining save us?' Science in the News (25 October 2016).

Hobe S, 'Cologne commentary on space law : in three volumes. Vol. 1, Outer space treaty' (Carl Heymanns Verlag 2009)

Hobe S, 'Cologne commentary on space law : in three volumes. Vol. 2, Rescue Agreement, Liability Convention, Registration Convention, Moon Agreement' (2013)

Hobe S and de Man P, 'National Appropriation of Outer Space and State Jurisdiction to Regulate the Exploitation, Regulation and Utilization of Space Resources' German Journal of Air and Space Law [2017] Vol. 66

Ji E, Cerny MB and Piliero RJ, 'What Does China Think About NASA's Artemis Accords?' The Diplomat (17 September 2020)

Listner M, 'The Moon Treaty: failed international law or waiting in the shadows?' *The Space Review* (24 October 2011)

Mallowan L, Rapp L and Topka M, 'Reinventing treaty compliant "safety zones" in the context of space sustainability' *Journal of Space Safety Engineering* [2021] Vol. 8 (2)

Melchin G, 'You Cant Take The Sky From Me: Gramscian Interpretation of the Common Heritage of Mankind Principle In Space Law' *Dalhousie Journal of Legal Studies* [2015] Vol. 24

Noyes JE, 'The Common Heritage of Mankind: Past, Present, and Future' *Denver Journal of International Law and Policy* 40 [2012] Vol. 1-3

Osada Y, 'Governance of Space Resources Activities: in the Wake of the Artemis Accords' *Georgetown journal of international law* [2022] Vol. 53 (3)

Otake T and Tansey J, 'Japan makes history as spacecraft lands on the moon' *JT* (20 January 2024)

Riordan N, Machoň M and Csajková L, 'Space Diplomacy and the Artemis Accords' *The Hague journal of diplomacy* [2023] Vol. 18 (2-3)

Stirn A, 'Do NASA's Lunar Exploitation Rules Violate Space Law' *Scientific America* (12.11.2022)

Tronchetti F 'Legal aspects of space resource utilization' in Frans von der Dunk (ed.) *Handbook of Space Law* (Elgar 2015)

Tronchetti F and Liu H, 'Australia's signing of the Artemis Accords: a positive development or a controversial choice?' *Australian journal of international affairs* [2021] Vol. 75 (3)

ud Din A, 'The Artemis Accords: The End of Multilateralism in the Management of Outer Space' *Astropolitics The International Journal of Space Politics & Policy* [2022] Vol. 20, NOS. 2-3

Verne J, 'From the Earth to the Moon' in Jules Verne, *Seven Novels* (Barnes & Noble, 2010)

Zao Y, 'An International Space Authority: A Governance Model for a Space Commercialization Regime' *Journal of Space Law* 30 [2004] Vol. 02

'Australia – Input to the Working Group on Legal Aspects of Space Resource Activities' UNOOSA (20 March 2023) UN Doc. A/AC.105/ C.2/2023/CRP.7

'Contribution of the Grand Duchy of Luxembourg on the Mandate and Purpose of the Working Group on Legal Aspects of Space Resource Activities' UNOOSA (16 December 2022)

'Luxembourg, NASA and several other partner countries are among the first signatories of the Artemis Accords' The Luxembourg Government (14 October 2020)

'NASA's Recommendations to Space-Faring Entities: How to Protect and Preserve the Historic and Scientific Value of U.S. Government Lunar Artifacts' NASA (20 July 2011)

'Report of the Committee on the Peaceful Uses of Outer Space' UNOOSA (20 August 2019) U.N. Doc. A/74/20

'Report of the Committee of the Peaceful Uses of Outer Space' UNOOSA (21 October 2021) U.N. Doc. A/76/20

'Report of the International Law Commission on the Work of its Seventieth Session' ILC (30 April–1 June and 2 July–10 August 2018) UN Doc A/73/10

'Signatories of the U.S.-Led Artemis Accords Meet in Person for the First Time' *The American Journal of International Law* [2023] Vol. 117(1)

'United States - Input to the Working Group on Legal Aspects of Space Resource Activities' UNOOSA (21 March 2023) U.N. Doc A/AC.105/C.2/2023/CRP.37

'The Hague Space Resources Governance Working Group Information provided by the Netherlands' UNOOSA (12 April 2018) UN Doc. A/AC.105/ C.2/2018/CRP.18

Other Documents

Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (opened for signature 27 January 1967, entered into force 10 October 1967) 610 UNTS 205 (OST)

Vienna Convention on the Law of Treaties (opened for signature 23 May 1969, entered into force 27 January 1980) 1155 UNTS 331 (VCLT)

Convention on International Liability for Damage Caused by Space Objects (opened for signature 29 March 1972, entered into force 01 September 1972) 861 UNTS 187

Convention Concerning the Protection of the World Cultural and Natural Heritage (opened for signature 16 November 1972, entered into force 17 December 1975) 1037 UNTS 151

Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (opened for signature 19 December 1979, entered into force 11 July 1984) 1363 UNTS 3

United Nations Convention on the Law of the Sea (opened for signature 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3

Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of all States, Taking into Particular Account the Needs of Developing Countries, G.A. Res. 51/122 (13 December 1996)

The Artemis Accords Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids for Peaceful Purposes, (opened for signature 13 September 2020)

National Legislation

Luxembourg

Loi du 20 juillet 2017 sur l'exploration et l'utilisation des ressources de l'espace, Mémorial A No 674 (2017)

United States

U.S. Commercial Space Launch Competitiveness Act, Pub. L., 114-90, Title IV (2015)

One Small Step to Protect Human Heritage in Space Act, Pub. L. 116-275, 134 Stat. 3359 (2020)

“Wolfgang Amendment”, Pub. L. No. 117-103, §527, 136 Stat. 49 (2022)