

# Brown Footprints on Lunar Soil | Empowering Philippine Leadership in Space Law Among Giants

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## Introduction

Humankind's venture into space has led to the dramatic advance of technology. Global positioning systems (GPS), navigation, and communications are now accessible via the fingertips of every individual with the help of smartphones. For typhoon-prone countries like the Philippines, satellite phones have helped people survive. Typhoon Yolanda, the most devastating typhoon to have hit the Philippines, had destroyed cellular towers; victims of the typhoon had only been able to access communication networks via satellite phones.<sup>1</sup>

States and private entities are venturing into mining outer space for minerals or possibly inhabiting said regions. These raise critical questions about the legal implications of such plans. What are countries' rights and obligations, especially for developing countries that lack the technological and financial capacity of developed states? For a developing country like the Philippines, having a voice in international negotiations is crucial. The Philippines is part of a global community deserving of its voice in the international arena. Studying space law ensures the Philippines has its rightful place at the table, even among powerful countries.

By understanding space law, we earn our spot to influence the legal regime governing spacefaring, exploration, and exploitation of outer space. As space technology grows, so does the importance of space law. For several reasons, the study of law is crucial for an emerging spacefaring nation like the Philippines. **First**, it ensures the Philippines' competent participation in the international community in developing and interpreting the legal regime of outer space. **Second**, it ensures compliance with our obligations and facilitates the consistent application of legal frameworks among nations. **Lastly**, it aids in developing our nation's internal laws and regulations, promoting private investments, ethical resource trading, and space tourism. Henceforth, this paper will be outlined in three parts, expounding on space law and the Philippines' role in each.

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<sup>1</sup> Rogel Mari Sese. *The Philippine Space Program: A Modern Take on Establishing a National Space Program in ASEAN Space Programs History and Way Forward*. SPRINGER. 62 (2022).

## I. Ensuring the Philippines' Competent Participation in the International Community in the Development and Interpretation of the Legal Regime of Outer Space

The world is laying the groundwork for developing rules, treaties, and customs for outer space. However, the legal regime faces significant challenges that must be addressed. Firstly, there is difficulty in defining the "common heritage of mankind" ("CH principle") in Article XI of the Moon Agreement.<sup>2</sup> This principle asserts that the exploration and exploitation of outer space is for the common benefit of mankind. Key elements include non-appropriation of outer space, shared management of common regions, equitable sharing of economic benefits, peaceful use, and open and free scientific research.<sup>3</sup> However, there is a challenge in implementing and enforcing the equitable sharing obligation enshrined under Article IV of the Moon Agreement. The CH principle calls for a resource-sharing mechanism, but countries have yet to agree on its form. Secondly, there is no law holding private entities "directly liable for any damage their space objects could cause";<sup>4</sup> under the Outer Space Treaty, such activities are attributed only to the launching state.<sup>5</sup>

Given these challenges, two scenarios may unfold: the rapid development of international space cooperation and multilateral treaty-making, or, increased fragmentation through national legislation as countries address gaps in international space treaties. In either case, the Philippines must be fully informed and equipped with knowledge of international law and geopolitical developments to ascertain its national position and legal arguments and to maintain its presence in global discussions.

The Philippines' position aligns with the CH principle of the Moon Agreement, as indicated by the Philippine Space Agency's (PhilSA) reaffirmation of its "commitment to the peaceful, responsible, and sustainable use of outer space for the benefit of all humanity."<sup>6</sup> However, the interpretation of the CH principle remains disputed. The

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<sup>2</sup> Agreement Governing the Activities of States on the Moon and Other Celestial Bodies [hereinafter "Moon Agreement"] United Nations, Treaty Series, vol. 1363, No. 23002.

<sup>3</sup> Jilliane Joyce R. De Dumo-Cornista, *The Curious Case of the Moon Agreement- An Overview of the Framework on International Space Law, the Philippine Space Agenda, and Issues on Equitable Resource-Sharing in Outer Space*, 66 *ATENEO L.J.* 851-852 (2022) note 161.

<sup>4</sup> Sude Capoglu, et al. *Loopholes and Lacunae in International Space Law*. *OXJOURNAL*. (2022). <https://www.oxjournal.org/loopholes-lacunae-space-law/>

<sup>5</sup> 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"] United Nations, Treaty Series, vol. 610, No. 8843.

<sup>6</sup> 60th Session Of The Legal Subcommittee Of The United Nations Committee On The Peaceful Uses Of Outer Space. Philippine National Statement Agenda Item No. 5 "*Status And Application Of The Five United Nations Treaties On Outer Space*" | 01 June 2021. Delivered By Atty. Noelle Riza D. Castillo Director, PHILIPPINE SPACE AGENCY (PhilSA)

<https://philsa.gov.ph/news/philippine-national-statement-delivered-under-agenda-item-no-5-on-status-and->

Philippines should formulate a clear stance on the interpretation it supports. This is not just a matter of preference but a crucial step for the Philippines to establish a well-defined position that could advocate for itself and other developing nations. One interpretation calls for a resource-sharing mechanism for equitable distribution of benefits. This approach is implicit in the Moon Agreement, which states that “States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the Moon as such exploitation is about to become feasible.”<sup>7</sup> While the Moon Agreement only has 17 State Parties, there is room for the international community to consider a similar international regime akin to the deep seabed’s. Having a centralized management approach for outer space, as with the deep seabed, is not unprecedented. Albeit taking 50 years to form, the International Seabed Authority (ISA) was created to manage the deep seabed, which is also considered a “common heritage of mankind.”<sup>8</sup> The ISA collects money from licensing and royalties of deep-sea exploration and mining, undertaking to distribute for the benefit of all nations, all while protecting the marine environment. Alternatively, “States could devise a credit trading system similar to that used under the Kyoto Protocol.”<sup>9</sup> The second interpretation of the CH principle subscribed by the United States (“US”) is a “Lockean” approach to promoting private investments and expanding market access to space resources. In this way, humanity benefits even without central management of profits and resources.<sup>10</sup>

Monitoring these developments is crucial for the Philippines for several reasons. Participation in treaty development guides interpretation, as the “travaux préparatoires” of space agreements<sup>11</sup> is a recognized mode of interpretation under the Vienna Convention on the Law of Treaties (VCLT).<sup>12</sup> State practice is essential in developing customary law, so maintaining a consistent stance on the CH principle is vital.<sup>13</sup>

Furthermore, outer space law could influence and develop the legal regime for deep-sea exploration and vice versa. This is relevant for the Philippines as an archipelagic country prone to ocean transboundary harm. China’s interest in mining the

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<sup>7</sup> Moon Agreement Article 11 para. 5

<sup>8</sup> Michael Lodge, The International Seabed Authority and Deep Seabed Mining. UN CHRONICLE. <https://www.un.org/en/chronicle/article/international-seabed-authority-and-deep-seabed-mining>

<sup>9</sup> Supra note 3, at 873 n. 275

<sup>10</sup> Laursen F, *Security Versus Access to Resources: Explaining a Decade of U.S. Ocean Policy*. WORLD POLITICS. 1982;34(2):197-229. doi:10.2307/2010263

<sup>11</sup> Francis Lyall, Paul B. Larsen - Space Law: A Treatise - 3rd ed. ROUTLEDGE 38 (2024). DOI: 10.4324/9781003496502

<sup>12</sup> Vienna Convention on the Law of Treaties [hereinafter “VCLT”] United Nations, Treaty Series, vol. 1155, p. 331, art 18.

<sup>13</sup> North Sea Continental Shelf Cases (Federal Republic of Germany v. Denmark; Federal Republic of Germany v. Netherlands) (Judgment) ICJ 1969

South China Sea<sup>14</sup> could exacerbate environmental damage within the Philippine Exclusive Economic Zone (EEZ), as ruled in 2016 by the Permanent Court of Arbitration.<sup>15</sup> The Philippines must remain steadfast in protecting its sovereign territory on Earth and its rights in outer space.

Forty-five years after the entry into force of the Moon Agreement, exploitation is now increasingly becoming viable. The State Parties to the Moon Agreement are at a crossroads on whether to implement its treaty provisions without the participation of highly capable spacefaring nations like the United States and Russia. They must do this against the backdrop of increasing tensions regarding the Moon Agreement, with Saudi Arabia withdrawing from the treaty in 2023<sup>16</sup> and India also thinking of withdrawing from the Moon Agreement.<sup>17</sup>

Despite the Moon Agreement's dismal success, there is hope. Similar challenges were faced with the Kyoto Protocol, which developed countries refused to ratify due to the accountabilities pinned on them. However, the Paris Agreement became possible through strong cooperation among nations. The Philippines must continue to advocate for equitable space exploration and use alongside other nations.

## II. Establishing Liability, Determining Responsibility, and Ensuring Compliance

Space activities are inherently dangerous, “subject to possibly catastrophic failures and potentially devastating to uninvolved others.”<sup>18</sup> As the Philippines embarks on its journey to becoming a space-faring nation, it must be well-informed about the legal rules governing liability, responsibility, and compliance. Below is a summary of the Philippines' entry into the major treaties on outer space:

	Outer Space Treaty (1967)	Rescue Agreement (1968)	Liability Convention (1972)	Registration Convention (1975)	Moon Agreement (1979)
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<sup>14</sup> Joshua Frank, The plundering of the South China Sea, *The Nation*.

<sup>15</sup> South China Sea Arbitration (Phil. v. China), PCA Case No. 2013-19 (Perm. Ct. Arb.), *available at* [http://www.pca-cpa.org/showpage.asp?pag\\_id=1529](http://www.pca-cpa.org/showpage.asp?pag_id=1529) (last accessed June. 29, 2024).

<sup>16</sup> Stefan-Michael Wedenig & Jack Wright Nelson. January 26, 2023. The Moon Agreement: Hanging by a Thread? McGill Institute of Air & Space Law Faculty of Law.

<https://www.mcgill.ca/iasl/article/moon-agreement-hanging-thread> accessed July 14, 2024.

<sup>17</sup> *Supra* note 4.

<sup>18</sup> *Supra* note 11, at 76.

Philippines	Signed <sup>19</sup>	Signed <sup>20</sup>	Signed <sup>21</sup>	Ratified <sup>22</sup>	Ratified <sup>23</sup>
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The Philippines is a State Party to the Moon Agreement and has recently ratified the Registration Convention. However, it remains a mere signatory to the Outer Space Treaty, the Rescue Agreement, and the Liability Convention. This is despite a Congressional Act from nine years ago committing the country to ratify all five treaties,<sup>24</sup> and even though the Philippines has already launched five satellites over the past 30 years: Agila-1, Agila-2, Diwata-1, Maya-1, and Diwata-2.

The Philippines' non-ratification of the Liability Convention and the Outer Space Treaty leaves the liability regime applicable to its space activities unclear. This ambiguity became evident when the Philippines recently launched a satellite through China, and space debris was expected to land on Philippine islands.<sup>25</sup> Furthermore, the issue of liability arose when debris from China's "Long March 5B rocket," which carried the final part of the Tiangong (Heavenly Palace) Space Station, fell in Occidental Mindoro and Palawan.<sup>26</sup>

According to the Outer Space Treaty, a state is responsible for its national activities in space.<sup>27</sup> Article VII of the OST specifies that liability falls on the launching state. The reason for the Philippines' non-ratification remains unclear. I can only surmise that it is to facilitate launching satellites from other states' territories until the Philippines can establish its own launch stations.

Until the Philippines ratifies the aforementioned conventions, it must rely on customary rules on responsibility and liability. Under the Vienna Convention on the Law of Treaties (VCLT), the Philippines cannot act against the object and purpose of treaties it is a signatory of.<sup>28</sup> For instance, the Philippines should not enter agreements that contravene the object and purpose enshrined in the Outer Space Treaty, Rescue

<sup>19</sup> A/AC.105/C.2/2024/CRP.3\* Status of International Agreements relating to activities in outer space as at 1 January 2024

<sup>20</sup> A/AC.105/C.2/2024/CRP.3\*

<sup>21</sup> A/AC.105/C.2/2024/CRP.3\*

<sup>22</sup> Joyce Ann L. Rocamora. May 15, 2024. PH accedes to UN convention on registration of space objects. Philippine News Agency. <https://www.pna.gov.ph/articles/1224746>

<sup>23</sup> A/AC.105/C.2/2024/CRP.3\*

<sup>24</sup> Philippine Space Act

<sup>25</sup> Philippine Space Agency. Advisory on the Long March 7A rocket launch. 29 June 2024. <https://philsa.gov.ph/news/advisory-on-the-long-march-7a-rocket-launch/>

<sup>26</sup> Geraldford Ticke, Madonna T. Virola. November 10, 2022. Ratify outer space treaty, gov't urged. Philippine Daily Inquirer. <https://newsinfo.inquirer.net/1691446/ratify-outer-space-treaty-govt-urged>

<sup>27</sup> OST, Article VI

<sup>28</sup> VCLT article 18

Agreement, or Liability Convention. A similar issue arose in the French Assembly, where legislators debated whether signing the Artemis Accords conflicted with their signature to the Moon Agreement, the latter emphasizing the CH principle, while the former allowed private enterprises to exploit outer space resources.

Recently, the Philippines ratified the Registration Convention, mandating the country to register its space objects. This step is crucial as it establishes jurisdiction, allowing the state party to retain control over the objects and any personnel launched into outer space. The study of space law equips the Philippines with the necessary knowledge to determine liability and responsibility and ensure compliance with its legal obligations.

### **III. Security and National Development of the Country**

#### *Enhancing Security*

Data from satellite imagery is crucial for enhancing national security. This importance is underscored in the Philippine Space Act, which involves the Philippine national defense in the National Space Council.<sup>29</sup> The Act states:

SECTION 2. Declaration of Policy. —

A. It is hereby declared the policy of the State: (a) To safeguard Philippine sovereignty, territorial integrity, Philippine interest, and the right to self-determination as mandated by Article II, Section 7 of the 1987 Constitution;<sup>30</sup>

C. To ensure access to space and its environs as a sovereign right in the promotion of national security towards the attainment and protection of national interest;

One significant challenge for the Philippines in patrolling the West Philippine Sea is the lack of operational space capabilities to provide regular satellite imagery to the Armed Forces of the Philippines (AFP).<sup>31</sup> In recent years, concerns have arisen about the ability of other countries to cut off access to satellite communications during disputes, as Russia did to Ukraine. Therefore, ensuring the Philippines has independent and secure access to satellite communications is vital.

#### *Economic Development*

Developing countries recognize the socio-economic benefits of space capabilities. For example, the Nigerian government regards its National Space Policy as

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<sup>29</sup> REPUBLIC ACT NO. 11363. Philippine Space Act, Sec 13

<sup>30</sup> *Id.*

<sup>31</sup> *Supra* note 1, at 62

essential for socio-economic development, and the South African government views space science and technology as a contributor to national and continental socio-economic development.<sup>32</sup> However, the Philippine Space Act lacks provisions for involving private actors in space activities. While the government has invested significantly in the Philippine Space Agency (PhilSA)—with a budget of PHP 10 billion for five years for capital outlay<sup>33</sup> and PHP 1 billion as an initial operating fund<sup>34</sup>—this is insufficient for establishing its own launching station. Therefore, the Philippines must develop its national space laws, internal rules, and policies that incentivize private investment to enhance space capabilities. Private entities make investment decisions based on risk calculations; it is national laws that create reasonable expectations for all parties involved. The lack of clear regulations and information can deter private sector investment.<sup>35</sup>

Moreover, as space resource exploitation advances, the international community and national governments must decide how to regulate trading to ensure ethical sourcing, legal extraction, and safe handling. Multiple Philippine agencies, such as the Department of Trade and Industry (DTI), the Department of Science and Technology (DOST), and the Department of Foreign Affairs (DFA), must collaborate. The World Trade Organization (WTO), which regulates international trade, is also expected to be involved. Space tourism is also in the works. The Department of Transportation (DOT) could play a role similar to the US Department of Transportation in undertaking the task of monitoring outer space aviation under national transportation.

## Conclusion

Fifty-five years ago, the world was put to a standstill as the crew of Apollo 11 became the first people to walk on the Moon on July 20, 1969.<sup>36</sup> Neil Armstrong and Edwin Aldrin Jr's footprints remain on lunar soil.<sup>37</sup> The day prior, on July 19, 1969, the Philippines etched its name in the universe as Gloria Diaz became the first Filipino to have been crowned as Miss Universe.<sup>38</sup> As we celebrate the 55th anniversary of these historic moments, let us ask ourselves the role of Filipinos in this universe. The

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<sup>32</sup> Ntlhe, and Magagula. 2016. Developing a Space Program in a Developing Country: Opportunities and Challenges. American Institute of Aeronautics and Astronautics, Inc.,

<sup>33</sup> PSA Sec 22

<sup>34</sup> PSA Sec 25

<sup>35</sup> Look for source.

<sup>36</sup> Encyclopaedia Britannica. Apollo 11 United States spaceflight. Last updated July 9, 2024. <https://www.britannica.com/topic/Apollo-11>

<sup>37</sup> BigThink. JULY 21, 2023 Ask Ethan: Are astronaut footprints disappearing from the Moon? <https://bigthink.com/starts-with-a-bang/astronaut-footprints-disappearing-moon/>

<sup>38</sup> Alexa Villano. JUL 19, 2019. LOOK BACK: Gloria Diaz, forever Miss Universe icon. <https://www.rappler.com/entertainment/pageants/235698-gloria-diaz-miss-universe-icon/>

Philippines faces significant challenges catching up with global leaders like the US, Russia, and China in space capabilities. However, geopolitical realities compel the country to advance its space ambitions despite technological and financial disparities. Firstly, protecting national sovereignty and security remains paramount, necessitating robust space capabilities and secure satellite communication infrastructure. Secondly, despite being a developing nation, the Philippines must assert its role on the global stage by actively participating in international space governance and decision-making. Thirdly, amidst global resource scarcity and equity considerations, the responsible exploitation of space resources and potential future habitation beyond Earth demand urgent attention. Establishing a framework for international rules and cooperation among states is essential to address these challenges and prepare for the future. In truly becoming space-capable, the Philippines has to dream of reaching beyond Earth rather than being a mere observer 350,000 kilometers below. Only then can we imprint our own footprints on lunar soil, too.