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## From Geopolitics to Lunapolitics: A Response to Lee's *The Future of the Law on the Moon*

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**FROM GEOPOLITICS TO LUNAPOLITICS: A RESPONSE  
TO LEE’S *THE FUTURE OF THE LAW ON THE MOON***

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TABLE OF CONTENTS

I. INTRODUCTION.....	211
II. DEFINING “SPACEFARING STATES” .....	212
III. LAW, COURTS, AND THE LUNAR DEVELOPMENT TIMETABLE.....	216
IV. CHALLENGING “TECHNOPOLITICAL DOMINANCE” AS AN OBJECTIVE.....	219

I. INTRODUCTION

**I**N THE 2020S, HUMANITY HAS seen a renewed push to the Moon. From programs proposed by the governments of the United States and the People’s Republic of China to private entities looking toward lunar commercialization, a human presence and increased robotic presence on the Moon is on the horizon.<sup>1</sup> Andrew Lee in his article, *The Future of the Law of the*

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<sup>1</sup> See Keith Bradsher, *China Maps Out Plans to Put Astronauts on the Moon and on Mars*, N.Y. TIMES (Dec. 12, 2022), <https://www.nytimes.com/2022/12/12/science/china-space-moon-mars.html> [<https://perma.cc/8ZF5-MJYN>]; Kenneth Chang, *Artemis II, Artemis III and Beyond*, N.Y. TIMES (Dec. 11, 2022), <https://www.nytimes.com/2022/12/11/science/artemis-ii-astronauts-moon.html> [<https://perma.cc/W8BF-TQ25>]; Jackie Wattles, *Full Crew for SpaceX’s Privately*

*Moon*, correctly identifies that the legal environment, both internationally and domestically within the United States, is insufficiently robust for the challenges ahead. His proposed solutions to these gaps, however, are likely to create more problems than they solve for the international community and for American relationships with partners and competitors alike.

Lee makes a laudable effort to answer questions about jurisdiction, applicable law, and court structures to govern activities on the Moon. This Response addresses three particularly significant problems with his proposed solutions. First, the implicit definition of “spacefaring states” provided in the article does not accurately represent either the factual or legal realities of future lunar activities. Second, the timetable for lunar development that Lee proposes does not warrant the development of a lunar court *on* the Moon. Finally, continuing calls for American dominance in space—in this case, a call for “technopolitical dominance” on the Moon—are not only unhelpful but counterproductive to the continued development of lunar activities.

Instead, I propose legislative changes, regulatory changes, or both to the domestic legal system that will satisfy authorization and supervision obligations of the United States and foster lunar development. Additionally, answers to larger questions addressing governance of multinational lunar activities inherently need to involve the international community. The group of Artemis signatories would be a good starting place regarding cooperative efforts involving the United States and other states. Additionally, a topic should be added to the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) agenda addressing lunar governance to mitigate the risk of miscommunication or conflict between “lunar-faring” states.

## II. DEFINING “SPACEFARING STATES”

A definition of spacefaring states shapes the understanding of the extent of space activities and the number of domestic legal systems that could be potentially implicated by such activities. Lee lists only eleven states with native-launch capability as spacefaring states. He limits his list to those states who claim the launch facility, launch territory, and launch vehicle, omitting

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*Funded Moon Mission Announced*, CNN, <https://www.cnn.com/2022/12/08/world/spacex-dear-moon-yusaku-maezawa-scni/index.html> [https://perma.cc/PP6J-YAGM] (Dec. 8, 2022, 8:23 PM).

states with launch facilities located on their territories that can be used to launch vehicles provided by other states, such as the Baikonur Cosmodrome in Kazakhstan or the Alcântara Space Center in Brazil.<sup>2</sup> He characterizes all states save for those eleven as “non-spacefaring nations.”

The limitation of spacefaring states to these eleven only does not reflect the factual or legal realities of space activities. The Outer Space Treaty (OST) provides for state responsibility for “national activities” in space in Article VI.<sup>3</sup> In Article VIII, the OST articulates that a “State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body.”<sup>4</sup> Article VII, however, does clearly articulate which states will incur liability for space activities.

Each State Party to the Treaty that launches or procures the launching of an object into outer space, including the moon and other celestial bodies, and each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such object or its component parts on the Earth, in air space or in outer space, including the moon and other celestial bodies.<sup>5</sup>

Therefore, either procuring a launch or allowing a launch from a state’s territory or facility is sufficient to incur state liability for those space activities.<sup>6</sup> I would argue that any state that can incur liability for a space activity should be classified as a spacefaring state, with particular interest in the legal regime that governs those activities.

Though the OST itself neither defines “national activity” nor delineates who may register a space object for jurisdiction and control, the Liability Convention and Registration Convention, also ratified by the United States, further support a wider defini-

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<sup>2</sup> See Elena Kamenetskaya, *The Present Developments of Legal Regulations of Space Activities in Russia and Commonwealth of Independent States*, 26 AKRON L. REV. 465, 473 (1993); Francisco Werneck Maranhão & Maria Eugenia de Araujo Vianna, *The Space Law Review: Brazil*, L. REVS. (Jan. 5, 2023), <https://thelawreviews.co.uk/title/the-space-law-review/brazil> [<https://perma.cc/J5W2-65VL>].

<sup>3</sup> Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies art. VI, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty].

<sup>4</sup> *Id.* art. VIII.

<sup>5</sup> *Id.* art. VII.

<sup>6</sup> *Id.*

tion of spacefaring states.<sup>7</sup> The Liability Convention reinforces Article VII of the OST by including states who launch, procure a launch, or launch from their facilities or territories in the definition of “launching state.”<sup>8</sup> While territory or facility requirements would at this stage only expand the list of launching states slightly, including any state that *procures* the launch of a space object significantly increases the number of spacefaring states. The Liability Convention also defines “space object” to include “component parts of a space object as well as its launch vehicle and parts thereof.”<sup>9</sup> Thus, it is clear the launch vehicle itself is *not* the only type of space object.

The Registration Convention restates the Liability Convention definitions of launching state and space object.<sup>10</sup> It creates the requirement for registration, which is tied to the definition of launching state.<sup>11</sup> Importantly, it provides that when there are multiple launching states, any one of them can be the state of registry:

Where there are two or more launching States in respect of any such space object, they shall jointly determine which one of them shall register the object in accordance with paragraph 1 of this article, bearing in mind the provisions of article VIII of the Treaty on principles governing the activities of States in the exploration and use of outer space, including the moon and other celestial bodies, and without prejudice to appropriate agreements concluded or to be concluded among the launching States on jurisdiction and control over the space object and over any personnel thereof.<sup>12</sup>

Therefore, any state that qualifies as a launching state under any *one* qualifying factor, including procurement, legally qualifies to register a space object under the Registration Convention and thus retains jurisdiction and control over said object in ac-

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<sup>7</sup> Convention on the International Liability for Damage Caused by Space Objects art. I, *opened for signature* Mar. 29, 1972, 24 U.S.T. 2389, 961 U.N.T.S. 187 [hereinafter Liability Convention]; Convention on Registration of Objects Launched into Outer Space art. I, Jan. 14, 1975, 28 U.S.T. 695, 1023 U.N.T.S. 15 [hereinafter Registration Convention]; Comm. on the Peaceful Uses of Outer Space, Legal Subcomm., Status of International Agreements Relating to Activities in Outer Space as at 1 January 2022, U.N. Doc. A/AC.105/C.2/2022/CRP.10, at 10 (2022) [hereinafter Treaty Status].

<sup>8</sup> Liability Convention, *supra* note 7, art. I(c).

<sup>9</sup> *Id.* art. I(d).

<sup>10</sup> Registration Convention, *supra* note 7, art. I(a)–(b).

<sup>11</sup> *Id.* art. II(1).

<sup>12</sup> *Id.* art. II(2).

cordance with the OST. Therefore, I argue that any state qualifying as a launching state for at least one space object would qualify as a spacefaring state.

Why is the definition of spacefaring state significant? Lee argues that “[n]on-spacefaring nations have less say in the development of law in space; they cannot physically influence, enforce, or compete in outer space, and their impact is limited to words of protest.”<sup>13</sup> He also states that non-spacefaring nations “cannot set any ‘practice’ in outer space” and reiterates his limitation of spacefaring states to the eleven previously described, thus disregarding the space activities of states that do not have native-launch capabilities.<sup>14</sup> Under my definition of spacefaring state, which is supported by international space law, a far larger number of states have the potential to provide significant contributions to the development of space law. All UNCOPUOS member states contribute to the discussion of law and norm development in that forum, which was the origin of the OST and its progeny.<sup>15</sup>

In terms of customary international law, the practice of spacefaring states can satisfy the state practice prong, though all states can contribute to the *opinio juris* prong, demonstrating that states believe a given rule to be binding in international law.<sup>16</sup> The International Court of Justice confirmed that state practice can be established through the behavior of those states engaging in the regulated activity, even if not all relevant states engage in said activity.<sup>17</sup> Thus, any attempt to limit the number of states considered spacefaring is an attempt to artificially restrict the relevant state practice. In my view, such a restriction would run counter to Article I of the OST, which provides that all states have a right to use and explore space without discrimination.<sup>18</sup> Thus, the highly U.S.-centric perspective Lee offers is not consistent with space practice or space law.

Lee likewise argues that none of the eighteen Moon Agreement parties are spacefaring, which is an absurd proposition.

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<sup>13</sup> Andrew Y. Lee, *The Future of the Law on the Moon*, 88 J. AIR L. & COM. (forthcoming May 2023) (internal citation omitted).

<sup>14</sup> *Id.*

<sup>15</sup> See *Committee on the Peaceful Uses of Outer Space*, U.N. OFF. FOR OUTER SPACE AFFS., <https://www.unoosa.org/oosa/en/ourwork/copuos/index.html> [<https://perma.cc/SNZ9-K8U2>].

<sup>16</sup> See *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, 1996 I.C.J. 226, ¶ 65 (July 8).

<sup>17</sup> See *id.* ¶¶ 67, 70.

<sup>18</sup> See Outer Space Treaty, *supra* note 3, art. I.

For example, a company headquartered in the Netherlands, Mars One, was planning to undertake a human mission to Mars.<sup>19</sup> As the Netherlands is a Moon Agreement party and the Moon Agreement applies to celestial bodies that do not have separate governing treaties, the Moon Agreement would have applied to any Martian activities undertaken by Mars One.<sup>20</sup> In addition to the Netherlands, members of the Moon Agreement include Kazakhstan (home of Baikonur Cosmodrome, as mentioned above) and Australia.<sup>21</sup> Australia is also a party to the Artemis Accords, raising interesting questions regarding the compatibility of the Accords with the Moon Agreement, which does allow “exploitation of the natural resources of the moon” but only in the context of an international regime established by Moon Agreement parties.<sup>22</sup> According to Lee’s argument, the other states cooperating in any Artemis lunar missions under the Artemis Accords would not themselves be spacefaring, unless they have their own native-launch capability.

### III. LAW, COURTS, AND THE LUNAR DEVELOPMENT TIMETABLE

Lee presents an argument that lunar industries would be in the “exclusive control” of the United States, based on the advanced development of SpaceX’s Starship.<sup>23</sup> This argument makes assumptions that other countries and companies headquartered therein will not develop and compete in a lunar economy, which is a dangerous assumption in the formulation of lunar law and for international law, particularly given that such efforts are proceeding, albeit perhaps not at the speed of Starship.

It’s indisputable that U.S. law will apply to activities conducted on a U.S. space object under Article VIII of the OST, in the absence of a specific agreement otherwise.<sup>24</sup> The quasi-territo-

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<sup>19</sup> Bill Chappell, *Mars One Fizzles into Bankruptcy After Promising a New Life in Space*, NPR (Feb. 12, 2019, 3:28 PM), <https://www.npr.org/2019/02/12/693945694/mars-one-fizzles-into-bankruptcy-after-promising-a-new-life-in-space> [<https://perma.cc/D7XB-3SKM>].

<sup>20</sup> Treaty Status, *supra* note 7, at 8; Agreement Governing the Activities of States on the Moon and Other Celestial Bodies art. 1(1), Dec. 18, 1979, 1363 U.N.T.S. 3 [hereinafter Moon Agreement].

<sup>21</sup> Treaty Status, *supra* note 7, at 5, 7; *see also supra* note 2 and accompanying text.

<sup>22</sup> Moon Agreement, *supra* note 20, art. 11(5) (contrary to Lee’s argument).

<sup>23</sup> Lee, *supra* note 13.

<sup>24</sup> *See* Outer Space Treaty, *supra* note 3, art. VIII.

rial jurisdiction over the object would control above and beyond personal jurisdiction over any individual aboard such an object. That principle would apply as much to a lunar facility as it would to a space vehicle. Cooperative ventures will need to determine which states register different facilities, or whether connected facilities are registered to one state and thus under the jurisdiction only of that state. Just because it is a cooperative venture does not mean that any partner can register; as stated above, under the Registration Convention, the state of registry must be one of the object's launching states.<sup>25</sup> A state contributing certain elements of a facility or personnel to inhabit that facility would likely not be considered launching states, and thus not be eligible to register the object.

The United States has taken significant steps to strengthen domestic law to manage space activities, including the express extension of U.S. intellectual property law and U.S. criminal law to U.S. space objects.<sup>26</sup> It is advisable that any state seeking to engage in significant space operations, lunar or otherwise, follows that example. As Lee addresses, the United States is one of four states to have enacted a space resource utilization law. Lee's interpretation of both the OST and U.S. law is problematic, as he broadly asserts that the SPACE Act interprets the OST's prohibition on national appropriation as "inapplicable to individual claims of property rights on the Moon."<sup>27</sup> The United States makes no such assertion, and U.S. case law to the contrary has been widely accepted from the only domestic case thus far to address the question, *Nemitz v. United States*.<sup>28</sup> The Act makes the distinction between an "asteroid resource or space resource obtained" (movable property) and assertion of "sovereignty or sovereign or exclusive rights or jurisdiction over, or the ownership of, any celestial body" (immovable property/real estate).<sup>29</sup> The granting of rights to an individual for immovable property on a celestial body would indeed represent an exercise of sovereignty over that celestial body.

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<sup>25</sup> See Registration Convention, *supra* note 7, art. I(c).

<sup>26</sup> 35 U.S.C. § 105; 18 U.S.C. § 7(6) (defining "special maritime and territorial jurisdiction of the United States").

<sup>27</sup> Lee, *supra* note 13.

<sup>28</sup> See *Nemitz v. United States*, No. CV-N030599-HDM, 2004 WL 3167042, at \*1 (D. Nev. Apr. 26, 2004), *aff'd sub nom.*, *Nemitz v. N.A.S.A.*, 126 F. App'x. 343 (9th Cir. 2005).

<sup>29</sup> U.S. Commercial Space Launch Competitiveness Act, Pub. L. No. 114-90, § 402-03, 129 Stat. 704, 721-22 (2015).



Despite significant developments, there are still gaps in U.S. domestic space law and regulation. While the Federal Aviation Administration does undertake payload review in order to license a launch, including any payload that would be used in a lunar context, there is a gap with regard to in-space activities, which is currently being considered by the National Space Council and Department of Commerce. Likewise, laws specifically addressing lunar-manufactured products, particularly manufactured from lunar materials, are needed. The concept of launch from the Moon or lunar orbit is another gap in both international and domestic law. I agree with Lee on all these points.

Though there remain gaps in U.S. lunar law to be addressed, there is not a need to establish a U.S. court *on* the Moon, as Lee proposes. By his own calculations, if Starship is the only U.S. human-lunar launch vehicle, and it is able to deliver 397 people to the Moon in 2030, then at most, fewer than 1,200 people will be able to go to the Moon in any three-year period.<sup>30</sup> Even assuming all of these individuals went to the Moon and did not return to Earth, the human population of the Moon would remain under 2,000 by 2033. That is not a number that warrants the significant expense of maintaining a court on the Moon, especially because there are significant questions regarding human tolerance to radiation, etc., that will need to be resolved before long-term habitation on the Moon is possible. We are not even certain at this point if humans are able to conceive and gestate in lower gravity environments, which severely limits the possibility for permanent human settlement on the Moon. When children are being born and raised on the Moon, there likely would be justification for establishing a court on the Moon, especially given that it may not be possible for such children to withstand Earth's gravity. That time is a long way off.

In addition to the practical limitations of lunar habitation, the three-second communications delay to the Moon is not an insurmountable problem, should hearings need to be performed in real time remotely from Earth. While it may be frustrating at first, such a delay would not severely hinder the ability to communicate appropriately for a courtroom setting, and the COVID-19 pandemic has proven that it is perfectly possible to conduct court business through video platforms.

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<sup>30</sup> Lee, *supra* note 13.

Though Lee argues that jury trials for criminal matters are another reason to host a court on the Moon, it is worth noting that criminal trials are sometimes moved from the site of the crime due to potential bias within the local juror pool.<sup>31</sup> With such a small population on the Moon, it would be very difficult to find sufficient jurors without bias in each case. Additionally, it is difficult to believe that a single court can maintain competence to hear the full range of cases contemplated—civil torts, family matters, criminal trials, intellectual property disputes, and so forth—even if such court could be legally granted the appropriate authorities, as Lee suggests. Access to courts with the appropriate experience and expertise is worth a three-second communications delay. In severe enough circumstances, such as criminal convictions, a trip back to Earth may be warranted regardless of the presence of a court. Establishing long-term incarceration facilities on the Moon would also be required. Such a facility would not be a reasonable use of resources under the circumstances.

Because there isn't territorial jurisdiction, the Moon is not and should not be a place of incorporation for a company, though it certainly can be a place that a commercial entity does business.<sup>32</sup> Incorporation of juridical persons in spacefaring countries confers effective personal jurisdiction for authorization and supervision of space activities in conformity with the requirements of Article VI of the OST, limiting their ability to do business on the Moon only to the extent that their home country limits that ability.<sup>33</sup> Sufficient legislative and adjudicatory jurisdiction (also known as “jurisdiction” and “jurisdiction”)<sup>34</sup> to manage these activities exists under international law.

#### IV. CHALLENGING “TECHNOPOLITICAL DOMINANCE” AS AN OBJECTIVE

American “technopolitical dominance” is a central theme of Lee’s article. Calls for such dominance are unrealistic and dangerous, both to the continued eminence of American space ef-

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<sup>31</sup> Micah Schwartzbach, *Change of Venue in a Criminal Case*, NOLO, <https://www.nolo.com/legal-encyclopedia/change-venue-criminal-case.html> [<https://perma.cc/EZ2K-FVLL>].

<sup>32</sup> See Outer Space Treaty, *supra* note 3, arts. I–II.

<sup>33</sup> See *id.* art. VI.

<sup>34</sup> See Bin Cheng, *Article VI of the 1967 Space Treaty Revisited: “International Responsibility,” “National Activities,” and “The Appropriate State,”* 26 J. SPACE L. 7, 23–24 (1998).

forts and to the stability of the international order. They also undermine the well-established international space law regime, even with a “technopolitical” qualifier. Calls for American dominance in space are common but misguided. Calls for American leadership and prominence in space should instead be the focus. The United States can and should lead the development of norms and laws for space, and should continue to be a hub of innovation, entrepreneurship, and cooperation at the leading edge of space activities. The Artemis Accords is one example of American leadership that expressly moves with other countries toward a cooperative lunar endeavor. The idea that these countries would undertake lunar activities under American leadership has the potential to inspire future generations at home and abroad. The suggestion that countries would choose to undertake these activities under American “dominance” does not have the same resonance.

The narrative of dominance feeds into the rival strategic narrative offered by competitor countries that the United States is not the law-abiding partner it purports to be. It also challenges the concepts of equal access, equity, and cooperation that are so central to the OST and the international space law regime overall that has laid a strong foundation for stability in the space domain that fosters commercial development alongside government activities. This narrative undermines international law as part of a larger trend within the United States to devalue and limit the application of international law.<sup>35</sup> This trend is contrary to the message offered by the U.S. government that a primary objective is upholding international law, especially in space.<sup>36</sup>

Arguing that the American laws and American courts should be applied as the primary mechanism of lunar governance is a violation of international law.<sup>37</sup> The article glosses over existing international law mechanisms, such as Article XII of the OST,

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<sup>35</sup> See JACK L. GOLDSMITH & ERIC A. POSNER, *THE LIMITS OF INTERNATIONAL LAW* 205–06 (2005); JENS DAVID OHLIN, *THE ASSAULT ON INTERNATIONAL LAW* 8 (2015); Kenneth W. Abbott, *International Relations Theory, International Law, and the Regime Governing Atrocities in Internal Conflicts*, 93 AM. J. INT’L L. 361, 365 (1999).

<sup>36</sup> See, e.g., Establishment of the United States Space Force 84 Fed. Reg. 6049, 6050 (Feb. 19, 2019); U.S. SPACE FORCE, *SPACE CAPSTONE PUBLICATION: SPACE-POWER* 3, 17, 43 (2020); THE WHITE HOUSE, *UNITED STATES SPACE PRIORITIES FRAMEWORK* 6 (2021).

<sup>37</sup> Lee, *supra* note 13 (“Even if Congress passes legislation extending prescriptive jurisdiction over properties and individuals on the Moon that otherwise vio-

which require permitting reciprocal visits to lunar facilities. It likewise downplays years of discussion and debate that have occurred in the space governance community. For example, safety zones as presented in the Artemis Accords are not indeed a novel concept.<sup>38</sup> Overall, while this article undertakes the laudable goal of addressing gaps in lunar governance, the approach suggested by Lee is contrary to the best interests of both the United States and the international community.

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lates international law limits on the jurisdiction, the U.S. tribunals must ignore the customary international law and apply the domestic law.”).

<sup>38</sup> See F. Kenneth Schwetje, *Protecting Space Assets: A Legal Analysis of Keep-Out Zones*, 15 J. SPACE L. 131, 131 (1987); NASA, NASA’S RECOMMENDATIONS TO SPACE-FARING ENTITIES: HOW TO PROTECT AND PRESERVE THE HISTORIC AND SCIENTIFIC VALUE OF U.S. GOVERNMENT LUNAR ARTIFACTS 9 (2011); Melissa de Zwart, *To the Moon and Beyond: The Artemis Accords and the Evolution of Space Law*, in COMMERCIAL AND MILITARY USES OF OUTER SPACE 65, 67 (Melissa de Zwart & Stacey Henderson eds., 2021); Matthew Stubbs, *The Legality of Keep-Out, Operational, and Safety Zones in Outer Space*, in WAR AND PEACE IN OUTER SPACE: LAW, POLICY, AND ETHICS 201, 228 (Cassandra Steer & Matthew Hersch eds., 2021).