A Vital Artery or a Stent Needing Replacement? A Global Space Governance System without the Outer Space Treaty?

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Abstract

The 1967 Outer Space Treaty is the foundational framework of international space law that has succeeded in effectively governing outer space. However, it is becoming increasingly possible that a major space power, or a group of States, may consider withdrawing from the Outer Space Treaty, particularly in view of the current trend towards nationalistic political populism and isolationistic foreign policies to selectively withdraw from certain key international institutions and treaties. The Outer Space Treaty could be one such treaty, especially in relation to the exclusive national exploitation of space-based natural resources by private entities, and threats to national security. Such withdrawals would likely have serious implications for global space governance, which is essentially based on this Treaty. This paper critically addresses some of the most serious legal issues related to the void that such withdrawal might create in the prevailing international governance regime for outer space.

1. Introduction

The year 2017 marked the fiftieth anniversary of the 1967 Outer Space Treaty.[1] This instrument, a foundational framework, has succeeded thus far in governing outer space. However, it is becoming increasingly possible that a

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1 *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, 27 January 1967, 610 UNTS 205, (entered into force on 10 October 1967) [hereinafter referred to as the Outer Space Treaty]. As of 1 April 2018, there are 107 ratifications and 23 signatures; See: A/AC.105/C.2/2018/CRP.3 (9 April 2018).

major space power, or a group of States, may consider withdrawing from the Outer Space Treaty under Article XVI,[2] particularly in view of the current trend towards nationalistic political populism as we are witnessing in the UK, the US and other countries.[3] One foreign policy strategy of isolationistic governments generally is to selectively withdraw from certain key international institutions and treaties. To the extent that it might be perceived as compromising national interests in space, the Outer Space Treaty could be one such treaty, especially in relation to the exclusive national exploitation of space-based natural resources by private entities, and threats to national security. While some companies and legal scholars favour the retention of the Outer Space Treaty without any change,[4] others have started calling for withdrawal from this agreement,[5] primarily asserting that it has become outdated.[6] The current international legal regime governing space activities is essentially based on this treaty and such withdrawal would therefore have serious implications for global space governance.

In this paper, we briefly analyse some of the most serious legal issues related to the void that any such withdrawal might create in the prevailing international space law governing: (1) the (non-) appropriation of outer space; (2) the weaponization and military uses of outer space including celestial bodies; (3) State responsibility and liability; (4) respect for the freedom of exploration and use in the benefit and interest of all countries as a province of all mankind; and (5) the impact on the functioning of the four other UN space treaties that are linked to, and aligned with, the Outer Space Treaty.

It should be noted, at the outset, that some of the provisions of the Outer Space Treaty that we are discussing here are considered to have become norms of customary international law. In accordance with fundamental principles of international law they would therefore continue to be valid and applicable to all States irrespective of the withdrawal from the treaty by any

2 Jayson Maclean, "Will Donald Trump break the fifty year-old Outer Space Treaty?," 31 January 2017. Available at: https://www.cantechletter.com/2017/01/will-donald-trump-break-fifty-year-old-outer-space-treaty/ (accessed: 20 August 2018).

3 Perhaps one of the most significant and unexpected recent events occurring due to emerging nationalistic political populism is the so-called "Brexit" declaration by the United Kingdom of its withdrawal from the 1992 Maastricht Treaty, which established the European Union, effective on 29 March 2019.

4 Jeff Foust, "Companies, lawyers argue against changing Outer Space Treaty," 26 May 2017. See <https://spacenews.com/companies-lawyers-argue-against-changing-outer-space-treaty/> (accessed: 20 August 2018).

5 John Hickman, "Still crazy after four decades: The case for withdrawing from the 1967 Outer Space Treaty," 24 September 2007, <*http://www.thespacereview.com/article/960/1*> (accessed: 20 August 2018).

6 Jeff Foust, "Is it time to update the Outer Space Treaty?," 5 June 2017. See <*http://www.thespacereview.com/article/3256/1*> (accessed: 20 August 2018).

State(s).[7] However, in practice, irrefutably proving the existence of an international custom is usually a highly complex and challenging proposition, especially if and when the treaty has been abandoned by a major space-faring State(s). One may witness the emergence of forceful voices advocating the non-applicability of legal principles (even though they may have become customary international law) to the States that have withdrawn from the treaty.

2. The (Non-)Appropriation of Outer Space

From the beginning of the space age in 1957, the international community made concerted efforts, and unequivocally decided, not to allow a new form of colonisation, thus prohibiting national sovereignty over, or appropriation of, outer space. This decision is reflected in Article II of the Outer Space Treaty,[8] the provisions of which were intentionally drafted to have a broad scope, thereby prohibiting appropriation by all means and by any person or entity, whether governmental, public, private or otherwise, so that conflict-free exploration and use of outer space including all celestial bodies is maintained.[9]

Although Article II is considered to have become a principle of customary international law,[10] some States have recently taken unilateral national legislative initiatives that purport to allow their entities to acquire private ownership rights over the natural resources of asteroids, the Moon and other celestial bodies.[11] Such national actions are being 'justified' on the basis that Article II prohibits national appropriation only of outer space and the surfaces of celestial bodies, but not of their natural resources.

Such justifications are questioned by several legal scholars and States. For example, the Russian Federation opposes what it calls the "ascendancy of

7 Ram Jakhu and Steven Freeland, "The Sources of International Space Law," in 2013 *Proceedings of the International Institute of Space Law*, IISL, Beijing, 2014, pp. 461-478; Ram Jakhu and Steven Freeland, "The Relationship between the Outer Space Treaty and Customary International Law," in *Proceedings of the International Institute of Space Law*, 2016, pp. 183-199.

8 Outer Space Treaty, Art II: "*Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.*" (Emphasis added)

9 Steven Freeland and Ram Jakhu, "Commentary on Article II of the Outer Space Treaty" in Stephan Hobe et al (eds.), *Cologne Institute of Air and Space Law Commentary on Space Law*, 2008, pp. 44-63.

10 *Ibid.*

11 For example, the US *Space Resource Exploration and Utilization Act of 2015* (US Pub L. 114-90, Title IV) and the Luxembourg's 2017 Law on the Exploration and Use of Space Resources (Loi du 20 juillet 2017 sur l'exploration et l'utilisation des ressources de l'espace, <http://legilux.public.lu/eli/etat/leg/loi/2017/07/20/a674/jo>) (accessed: 20 August 2018).

unilateralism" and asserts that a 'new' interpretation of Article II of the Outer Space Treaty to the effect that it supposedly "does not affect the resources since it is not established *expressis verbis* ... is entirely wrong."[12] Similarly, Belgium sees no "point in differentiating celestial bodies from their natural resources for the purpose of their regulation."[13] It asserts that such interpretation of Article II "does not seem to be in good faith or in accordance with" Article 31 (1) of the Vienna Convention on the Law of Treaties.[14] Belgium also expressed its concern that advancement of national objectives or interests or national legislation "may result in growing misunderstandings and ambiguities that would increase, rather than mitigate, the potential for conflict."[15]

On the proposal by Belgium, the UNCOPUOS agreed to a new agenda item entitled "General exchange of views on potential legal models for activities in the exploration, exploitation and utilization of space resources." Given the seemingly diagonally opposing positions of various States, as well as the difficulties in reaching consensus in the UNCOPUOS on various important legal issues, the resolution of the thorny issue of (non-)appropriation of space-based natural resources cannot be expected to be achieved in a speedy manner in order to meet the expectations and requirements of private investors and their respective States that are actively seeking to pursue their space mining endeavours.

If some States believe that Article II is a major barrier in (or constraint upon) their allegedly highly lucrative space mining ventures, it is not unreasonable to expect that they may be tempted to respond to industry lobbying and ultimately consider withdrawing from the Outer Space Treaty with the effect that the space mining operations of those States would be internationally governed only by general international law, without any precise and specific conditions on the freedom of States. This would, of course, result in legal uncertainty, political disputes and possibly even armed conflicts, as humanity had witnessed during the period of terrestrial colonization. In this regard, it may be recalled that one of the main purposes for the adoption of the 1979

12 *Working paper submitted by the Russian Federation,* UN Document: A/AC.105/C.1/2016/CRP.15 (16 February 2016), p. 6. The Russian Federation also asserted that national "legislative actions undertaken under some jurisdictions regarding space resources cannot but create a major legal ambiguity by presenting a de facto new reading of the fundamental norm prohibiting national appropriation of outer space, including the celestial bodies." *Working paper submitted by the Russian Federation;* UN Document: A/AC.105/2018/CRP.17 (21 June 2018), p. 22.

13 *Contribution from Belgium to the discussion under UNCOPUOS Legal Subcommittee on item "General exchange of views on potential legal models for activities in exploration, exploitation and utilization of space resources"*, UN Document: A/AC.105/C.2/2017/CRP.19 (28 March 2017)

14 *Ibid.*

15 *Ibid.*

Moon Agreement [and many preceding resolutions and treaties] was the desire of the United Nations General Assembly "to prevent the moon [and other celestial bodies] from becoming an area of international conflict."[16] Peter Korzun asserts that "it's an open secret that the space exploration and defence policy are intertwined."[17] States might prepare for, if considered necessary, the use of force in space in order to protect their space mining operations and or/prevent others from 'planet grabbing.'

3. The Weaponization and Military Uses of Outer Space, Including Celestial Bodies

Although the space age began during the Cold War, the overwhelming aspiration of the international community, including the then two super powers (the US and the USSR), was to keep this new environment for *exclusively* peaceful purposes and not to spread national conflicts into outer space.[18] At that time, the term 'peaceful purpose' was generally understood to mean 'non-military purpose'. Notwithstanding the fact that the geopolitical realism in the world during the period 1959-1967 had somewhat attenuated the original aspiration for keeping outer space for *exclusively* peaceful purposes, the Outer Space Treaty recognizes "the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes"[19] (although not for *exclusively* peaceful purposes).
The provisions of the Treaty, [20] which of course impose binding obligations on States Parties, have been discussed and analysed extensively at the academic and governmental levels. Generally, they envisage that States can use outer space for peaceful and non-aggressive military purposes, while the Moon and other celestial bodies must be used "exclusively for peaceful purposes," (i.e. non-military activities), particularly by not undertaking those military activities that have been prohibited by Article IV (2) of the treaty. Nuclear weapons and other kinds of weapons of mass destruction are prohibited to be placed in Earth's orbit, stationed in outer space or installed on celestial bodies. The Outer Space Treaty does not prohibit the military uses of outer space *per se*. Neither does it ban anti-satellite (ASAT) or space-

16 *Agreement governing the Activities of States on the Moon and Other Celestial Bodies*, 5 December 1979, 1363 UNTS 3 (entered into force II July 1984) [hereinafter referred to as the Moon Agreement] (as of 1 January 2018, there are 18 ratifications and 4 signatures), preamble.
17 Peter Korzun, "President Trump Launches New Space Policy", 15 December 2017, <Https://Www.Strategic-Culture.Org/News/2017/12/15/President-Trump-Launches-New-Space-Policy.Html> (accessed: 20 August 2018).
18 *Question of the Peaceful Use of Outer Space,* UNGA Res 1348(XIII), UNGAOR, 13th Session, UN Doc A/RES/13/1348(XIII) (1958), preamble, paras. 1-4.
19 The Outer Space Treaty, preamble.
20 For example, the Outer Space Treaty, Arts. III, IV (para. 1) and IV (para. 2).

based ballistic missile defence (BMD) systems, provided they do not carry nuclear weapons or weapons of mass destruction. Nor there is any prohibition of weapons, including those that are nuclear and WMD, if they do *not* make an orbit around the Earth; for example, Fractional Orbital Bombardment Systems.

Due to these gaps and weaknesses of the Treaty and a perception that the inherent right of self-defence under Article 51 of the United Nations Charter always remains, there have emerged various trends:

- more States using or planning to use space for military purposes;
- more aggressive efforts towards space militarization of outer space;
- more use of civilian satellites for military purposes; i.e. an increasing "dual use" aspect to space;
- from space militarization to space weaponization; and
- from a perceived need to move from space military leadership to "dominance" in space.

These trends are evident from various activities of those States that are promulgating and pursuing national politico-militaristic policies, slogans, *mantras* and doctrines, some of which include: 'space is a contested, congested and competitive domain',[21] 'space is a warfighting domain, just like the land, air and sea',[22] 'war in space is inevitable', etc. These are, in our opinion, provocative and ultimately, perhaps, even self-fulling and self-defeating.[23] War in space would have catastrophic implications for space

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21 US Department of Defence and the Director of National Intelligence, *National Security Space Strategy Unclassified Summary,* February 2011, <http://archive.defense.gov/home/features/2011/0111_nsss/> (accessed: 20 August 2018). Facts Sheet: The National Security Space Strategy, at <http://archive.defense.gov/home/features/2011/0111_nsss/docs/2011_01_19_NSSS_Fact_Sheet_FINAL.pdf> (accessed: 20 August 2018).

22 Jeremy B. White, "Donald Trump tells troops he wants to launch a 'space force' because it is a 'warfighting domain'", San Francisco, 14 March 2018, <https://www.independent.co.uk/news/world/americas/us-politics/donald-trump-marines-california-outer-space-force-warfighting-domain-a8254776.html> (accessed: 20 August 2018); Anthony Capaccio, "U.S. Air Force Space Chief Sees Final Frontier as Battleground," 17 October 2017, <https://www.bloomberg.com/news/articles/2017-10-17/u-s-air-force-space-chief-sees-final-frontier-as-battleground> (accessed: 20 August 2018)

23 Steven Freeland, "Donald Trump is wrong: Space shouldn't be a 'war-fighting domain'", 19 June 2018, <http://www.abc.net.au/news/2018-06-20/donald-trump-space-force/9887200> (accessed: 20 August 2018); Joseph Pelton and Ram Jakhu, "Space Safety and Sustainability and the Creation of 'Space Forces'", *Space Safety Magazine*, 6 July 2018, <http://www.spacesafetymagazine.com/space-on-earth/space-policy/space-safety-sustainability-creation-space-forces/> (accessed: 20 August 2018).

systems, especially for those countries (like the US, Russia, China) that heavily depend upon space assets, as well as the world in general.[24] However, these policies are used to serve as the basis for national preparations for war in space,[25] which include various manifestations of a so-called 'space force'.

To enhance its stated purpose to 'have American dominance in space', the Trump Administration in the US has recently decided to establish a 'Space Force', which will be separate but on par with the other American armed forces.[26] Though the official and final creation of this sixth unit of the US Armed Forces would require the approval of the Congress,[27] which has not

24 Garrett Graff recently expressed a very stern warning that:
"if space is indeed becoming a war-fighting domain, it's important to understand the stakes, not just for America's strategic standing but for the species. A Russo-Sino-American space war could very well end with a crippled global economy, inoperable infrastructure, and a planet shrouded by the orbiting fragments of pulverized satellites—which, by the way, could hinder us all on Earth until we figured out a way of cleaning them up. In the aftermath of such a conflict, it might be years before we could restore new constellations of satellites to orbit. Preparing for orbital war has fast become a priority of the US military, but the more urgent priority is figuring out how to prevent it."
Garrett M. Graff, "The New Arms Race Threatening to Explode in Space," 26 June 2018, <https://www.wired.com/story/new-arms-race-threatening-to-explode-in-space/> (accessed: 20 August 2018).

25 Dave Majumdar, "Russia and China Have a Sneaky Way to Crush America if World War III Goes Down", *The National Interest* (21 September 2017), <nationalinterest.org/blog/the-buzz/russia-china-have-sneaky-way-crush-america-if-world-war-iii-22420>; Alfred McCoy, "The Pentagon's Next Frontier for War Might be Space", *The Nation* (11 September 2017 <www.thenation.com/article/the-pentagons-next-frontier-for-war-might-be-space/>; Bill Gertz, "China's Great Leap in space warfare creates huge new threat", *Asia Times* (13 September 2017), <www.atimes.com/chinas-great-leap-space-warfare-creates-huge-new-threat/>; Dan Lamothe, "Space warfare with Russia and China? Pentagon urged to prepare for it", Washington Post (27 January 2016), <www.washingtonpost.com/news/checkpoint/wp/2016/01/27/space-warfare-with-russia-and-china-pentagon-urged-to-prepare-for-it/> (accessed: 20 August 2018).

26 "Remarks by Vice President Pence on the Future of the U.S. Military in Space," 9 August 2018, <https://www.whitehouse.gov/briefings-statements/remarks-vice-president-pence-future-u-s-military-space/> (accessed: 20 August 2018); "Donald Trump sets goal to create US military Space Force by 2020," 9 August 2018, <http://www.abc.net.au/news/2018-08-10/trump-sets-goal-to-create-us-military-space-force-by-2020/10103876> (accessed: 20 August 2018).

27 Congressional Research Service, *Toward the Creation of a U.S. "Space Force"*, 16 August 2018. <https://www.documentcloud.org/documents/4806569-Toward-the-Creation-of-a-U-S-Space-Force-Aug-16.html?embed=true&responsive=false&sidebar=false>(accessed: 20 August 2018).

yet been received,[28] the process for instituting a Space Force has already been started.[29]

The creation of US Space Force, especially with the intention of American dominance in space, would have domino effect of encouraging other nations to further develop their own already existing 'Space Forces' as well as acquiring space weapons for use by them.[30] This in itself gives rise to the further preparation for war in space – a vicious cycle. It is not difficult to postulate that this might ultimately result in expanded and aggressive space militarisation, more active space weaponization, stationing of armed forces in outer space or on celestial bodies, testing and placing in outer space and on celestial bodies of all kinds of weapons, the use of the Moon and celestial bodies for military purposes,[31] the declaration of 'safe or security zones' surrounding military assets or stations in outer space and on celestial bodies, etc.

These, and other similar activities, would be in violation of the letter and spirit of the Outer Space Treaty and, indeed, of its object and purpose, as well as that of the international regime for space more generally. In the belief that such activities and policies are vital to national interests of some States, they would perhaps be more disposed to withdrawing from the Treaty. Such withdrawal will be a *carte blanche* for all forms of militarisation and weaponization of outer space and celestial bodies, an even greater arms race in outer space,[32] thus, creating political controversies, and threating international peace and security.

28 Marina Koren, "How Exactly Do You Establish a Space Force?," 18 June 2018, <https://www.theatlantic.com/science/archive/2018/06/trump-space-force-national-space-council/563042/> (accessed: 20 August 2018).

29 Marcus Weisgerber, "Pentagon To Start Creating Space Force — Even Before Congress Approves It," 31 July 2018, <https://www.defenseone.com/politics/2018/07/pentagon-create-space-force/150157/> (accessed: 20 August 2018).

30 Liu Meiwu and Jun Lan, "Should China follow the US to build "Space Force"?," 3 July 2018, <http://english.chinamil.com.cn/view/2018-07/03/content_8077573.htm> (accessed: 20 August 2018).

31 David S. F. Portree, "Strategic Defense: Military Uses of the Moon & Asteroids," 22 February 2015, <https://www.wired.com/2015/02/strategic-defense-military-uses-moon-asteroid-resources-1983/> (accessed: 20 August 2018); Joe Pappalardo, "Should We Worry About a War in Space With China?," 20 January 2011, <https://www.popularmechanics.com/space/moon-mars/a6545/china-moon-military-war-in-space/> (accessed: 20 August 2018).

32 Ramin Skibba, "How Trump's 'Space Force' Could Set Off a Dangerous Arms Race," 22 June 2018, <https://www.politico.com/magazine/story/2018/06/22/how-trumps-space-force-could-set-off-a-dangerous-arms-race-218888> (accessed: 20 August 2018).

4. State Responsibility and Liability

During the time that the Outer Space Treaty was being negotiated, space activities were considered to be highly *hazardous and were being undertaken mainly by the US and the USSR. All other States were very much concerned about the possibility of very serious and unpredictable risks posed by rockets and satellites flying over their territories. In order to address these concerns, the UN General Assembly adopted* international legal principles relating to State responsibility and liability that were different from those under general international law prevailing at that time. The new principles, as incorporated in Articles VI and VII of the Outer Space Treaty, specify that:

- States are internationally responsible for all national space activities of their public or non-governmental entities (private companies). In addition, they are obliged to assure that such activities are in conformity with the provisions of the Treaty and the activities of non-governmental entities require authorization and continuing supervision by the appropriate State;
- the launching State (as defined in Article VII) shall be internationally liable for damage caused by a space object of its public or private entity to another State Party to the Treaty or to its natural or juridical persons.

On the other hand, under general international law, a State can be held internationally responsible/liable only when an action or omission (a) is attributable to the State; and (b) constitutes a breach of an international obligation of the State.[33] Ian Brownlie asserts that, under general international law, "it is often said that the responsibility only arises when the act or omission complained of is imputable to a state."[34] Moreover, to hold a State responsible and/or liable, the State must, according to the International Court of Justice, have 'effective control'[35] (but note the 'overall control'[36] criteria espoused by the International Criminal Tribunal for the Former Yugoslavia) over the action or omission of a private entity due to which

33 International Law Commission, *Articles on Responsibility of States for Internationally Wrongful Acts*, (53rd Session-2001), art. 2. These Articles are generally believed to be "legally binding statements of customary international law." See Legal Committee Delegates Differ On Applying Rules For State Responsibility: Convention Needed, Or Customary Law Adequate? http://www.un.org/News/Press/docs/2010/gal3395.doc.htm (accessed: 20 August 2018).

34 Ian Brownlie, *Principles of Public International Law*, 2nd. Edition, 1973, p. 421:

35 *Military and Paramilitary Activities in und against Nicaragua (Nicaragua* v. *United States of America). Merits, Judgment. I.C.J. Reports 1986, p. 14, at 65.*

36 *Prosecutor v. Tadic,* Judgement, ICTY Appeals Chamber {Case No. IT-94-1-A}, 15 July 1999, para 120, p. 49.

damage was caused. The heavy burden of proof of such 'imputability' and 'control' falls upon the victim/claimant for compensation. However, the Outer Space Treaty adds an addional *sui generis* form of responsibility in the case of space activities.[37]

Currently, there is a strong trend towards lowering regulatory requirements for private companies. This is leading to 'new' interpretations of Article VI of the Outer Space Treaty. On 23 March 2018, the US unveiled its National Space Strategy, which "ensures that international agreements put the interests of American people, workers, and businesses first … [and] prioritizes regulatory reforms that will unshackle American industry."[38] Similarly, on 7 May 2018, the US House of Representatives passed the *American Space Commerce Free Enterprise Act of 2017* (H.R. 2809, the Bill), in order to support American space enterprises with minimum regulatory constraints. This is based on the US Policy, as specified in the Bill, that US "citizens and entities are free to explore and use space, including the utilization of outer space and resources contained therein, without conditions or limitations; (2) this freedom is only to be limited when necessary to assure United States national security interests are met."[39]

The Bill, which (at the time of writing this paper) is yet to be passed in the US Senate and signed by the President, has been criticized as creating: (a) a regulatory system "as 'light touch' as you could possibly get, almost to the point of being 'no touch,'" and (b) "some unfavorable interpretation of international law—and set a bad example for other nations who are enacting private space activities."[40]

Nevertheless, if Article VI is considered to be cumbersome for the commercial space sector, the US might further consider withdrawing from the Outer Space Treaty. If this were to happen, there would be significantly less oversight or supervision of, and imposition of space safety requirements upon private American companies. It should be kept in mind that private

37 Manfred Lachs, *The Law of Outer Space: An Experience in Contemporary Law-Making*, 1972, at p. 122.

38 President Donald J. Trump is Unveiling an America First National Space Strategy, 23 March 2018, <https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-unveiling-america-first-national-space-strategy/> (accessed: 20 August 2018).

39 Section 2 (b), (1 and 2), *American Space Commerce Free Enterprise Act of 2017,* H. R. 2809,115TH CONGRESS, 2D, 25 April 2018. Also see, American *Space Commerce Free Enterprise Act Of 2017*, House of Representatives, 115th Congress Report, *2d Session,* Report 115–649, [To Accompany H.R. 2809], April 24, 2018. <https://www.congress.gov/bill/115th-congress/house-bill/2809/text> (accessed: 20 August 2018).

40 Caroline Haskins, "Private space companies no longer have to follow the law: The Space Commerce Free Enterprise Bill says private companies don't have to abide by a foundational half-century-old space treaty," 8 May 2018. < https://theoutline.com/post/4469/outer-space-treaty-commerce-free-enterprise-bill-spacex-blue-origin-boeing-lockheed-martin > (accessed: 20 August 2018).

companies in all States cannot be expected to be more responsible and law-abiding in their space operations than in their other earthly activities. It is believed that, thus far, safety standards for space activities have been high mainly due to the application of international responsibility (particularly, the requirements of 'authorization and continuous supervision') under Article VI and possibility of international liability under VII of the Outer Space Treaty. The consequences of less rigorous safety requirements for space operations could be serious for other States, especially when States could possibly be held not liable for the damage caused by the space objects of their private companies.

In the absence of the applicability of Liability Convention[41] and the Outer Space Treaty, liability claims will be governed by the principles of general international law and the applicable domestic law. Victims/claimants would have to bear a heavy burden of proof and make their claims at the international level and/or in domestic courts pursuant to the relevant national law. In the case where the private company whose space activity causes the damage becomes bankrupt or ceases to exist, the victims/claimants might be left with no effective remedy. More importantly, it should be kept in mind that the foreign States whose private space companies cause the damage in a State may also not be held liable.

5. Respect for the Freedom of Exploration and Use in the Benefit and Interest of All Countries as a Province of AllMmankind

Since the start of the space age, the international community recognised the "common interest of all mankind in the progress of the exploration and use of outer space".[42] The Outer Space Treaty stipulates under that: (a) exploration and use of outer space, including the Moon and other celestial bodies must be for the benefit and in the interests of all countries, and such activities shall be the province of all mankind;[43] (b) all States are free to explore and use outer space, including the Moon and other celestial bodies, without discrimination of any kind and on a basis of equality;[44] and (c) there is a prohibition of national appropriation of outer space, including the Moon and other celestial bodies, by any means.[45]

41 *Convention on International Liability for Damage Caused by Space Objects*, adopted by the UN General Assembly: 29 November 1971 (Resolution: 2777 (XXVI)); opened for signature: 29 March 1972; entered into force: 1 September 1972; 961 UNTS 187. (Hereinafter referred to as the Liability Convention). As of 1 April 2018, there are 95 ratifications, 19 signatures and 3 declarations of acceptance of rights and obligations; See: /AC.105/C.2/2018/CRP.3 (9 April 2018).

42 The Outer Space Treaty, preamble.

43 The Outer Space Treaty, Art. I.

44 *Ibid.*

45 The Outer Space Treaty, Art. II.

In addition, States Parties to the Treaty are obliged to: (a) carry on their space activities in the interest of maintaining international peace and security and promoting international co-operation and understanding,[46] and with due regard to the corresponding interests of all other States Parties; [47] (b) inform the United Nations, the general public and the international scientific community, of the nature, conduct, locations and results of such activities;[48] and (c) open all their stations, installations, equipment and space vehicles on the Moon and other celestial bodies to representatives of other States Parties.[49]

It is widely considered, both at the international and national levels, that these provisions establish that outer space, including the Moon and other celestial, is a global commons,[50] the exploration and use of which should be for the common interest of all countries and is the province of all mankind (i.e. not under the jurisdiction of any State). However, the status of outer space as a global commons has started to be questioned.[51] If the Outer Space Treaty is believed not to provide the foundation for the principle that outer space is global commons, withdrawal from the Treaty by a major space-faring State or a groups of States will most likely usher increased unilateralism in the exploration and use of outer space and celestial bodies.

6. The Impact on the Functioning of the Other Four UN Space Treaties

As mentioned earlier, the Outer Space Treaty has been a foundational treaty governing outer space and space activities. Some of its key provisions had been the basis for four other UN Space Treaties: the Rescue and Return Agreement (1968),[52] the Liability Convention (1972),[53] the Registration

46 The Outer Space Treaty, Art. III.
47 The Outer Space Treaty, Art. IX.
48 The Outer Space Treaty, Art. XI.
49 The Outer Space Treaty, Art. XII.
50 There is no universally agreed upon legal definition of the term 'global commons' but is generally accepted that it comprises of those areas and their natural resources that are beyond the sovereignty or jurisdiction of any State, and in which all States have common interest. It is commonly believed that high seas, the Antarctic, international airspace, outer space, and now cyberspace are global commons.
51 Tim Fernholz, "Space is not a 'global commons,' top Trump space official says," 19 December 2017, available at: https://qz.com/1159540/space-is-not-a-global-commons-top-trump-space-official-says/ (accessed: 20 August 2018).
52 *Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched Into Outer Space,* adopted by the UN General Assembly: 19 December 1967 (Resolution: 2345 (XXII)); opened for signature: 22 April 1968; entered into force: 3 December 1968; 672 UNTS 119 (hereinafter referred to as the Rescue and Return Agreement) . As of 1 April 2018, there are 96 ratifications, 23 signatures and 2 declarations of acceptance of rights and obligations; See: A/AC.105/C.2/2018/CRP.3 (9 April 2018).

Convention (1975),[54] and the Moon Agreement (1979).[55] These treaties, in general, are independent – standalone – treaties, and withdrawal from the Outer Space Treaty by some States would not, under the principles of general international law, affect their application among States Parties to those treaties. However, there could arise some confusion/difficulties by the void created by a State(s)' withdrawal from the Outer Space Treaty. The followings are some such situations:

- International intergovernmental organizations may join the Rescue and Return Agreement,[56] the Liability Convention,[57] the Registration Convention[58] and the Moon Agreement[59] only if a majority of the States members of that organization are Parties to the Outer Space Treaty;
- The Liability Convention does not allow for exoneration to a launching State from absolute liability in cases where the damage has resulted from its activities which are not in conformity with the Outer Space Treaty;[60]
- States Parties to the Moon Agreement are required to adopt all practicable measures to safeguard the life and health of persons on the Moon. Such persons are to be regarded as an astronaut within the meaning of Article V of the Outer Space Treaty;[61]
- Where there are two or more launching States in respect of a space object, they are obliged to jointly determine which one of them would register the object in its national registry of space objects, bearing in mind the provisions of Article VIII of the Outer Space Treaty.[62]

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53 The Liability Convention, *supra* note 48.

54 *Convention on Registration of Objects Launched Into Outer Space*, adopted by the UN General Assembly on 2 November 1974 (Resolution: 3235 (XXIX)), opened for signature: 14 January 1975, entered into force: 15 September 1976, 1023 UNTS 15. (Hereinafter Registration Convention). As of 1 April 2018, there are 67 ratifications, 3 signatures and 3 declarations of acceptance of rights and obligations; See: A/AC.105/C.2/2018/CRP.3 (9 April 2018).

55 The Moon Agreement, *supra* note 18.

56 The Rescue and Return Agreement, Art. 6.

57 The Liability Convention, Art. XXII.

58 The Registration Convention, Art. VII.

59 The Moon Agreement, Art. 16.

60 The Liability Convention, Art. VI. Article V of the Outer Space Treaty specifies that "States Parties to the Treaty shall regard astronauts as envoys of mankind in outer space and shall render to them all possible assistance in the event of accident, distress, or emergency landing on the territory of another State Party or on the high seas."

61 The Moon Agreement, Art. 10.

62 The Registration Convention, Art. II (2).Article VIII of the Outer Space Treaty specifies that a "State Party to the Treaty on whose registry an object launched into outer

7. Concluding Remarks

We believe that there will be serious implications, both in terms of geopolitics and commercial operations, if a major space power, or a group of States, decides to withdraw from the Outer Space Treaty, which is the foundation upon which the current global space governance regime has been built. The possibility of such withdrawal is an urgent and highly important matter for the whole international community, which must be addressed at all levels and relevant forums, particularly at the UN.

While we acknowledge that space is competitive, complex and challenging, it also has many other notable attributes. It is cooperative, collaborative, collective, and commercial and so far, quite peaceful. These are equally important strategic considerations for the whole of humanity. They demand a cooperative multilateral approach to the exploration and use of space, based on fundamental treaty principles that have served us well. Assertions about the inevitability of war in space, and the efforts to undertake unilateral acts outside of these principles risk becoming self-fulling and self-defeating prophecies. They represent an increasingly loud voice that threatens to drown out other, more rational ones. They ignore the uniqueness of the space domain and the peaceful purposes and common interest doctrines that underpin it.

To ignore this and simply trying to argue that the legal framework supports tendencies of 'unilateralism' outside of the legal regime relies on an overly simplistic assertion that what is not expressly prohibited (by the treaties and international law) is permitted. Instead, it is crucial that the underlying principles of space law and the practice of States in interpreting those principles continue to apply to preserve space for the "benefit and in the interests of all countries". This is specified in the Outer Space Treaty, to which virtually all space-faring nations, including the major powers, are bound.

The international rules that govern space dictate responsible behaviour, freedom of access but not lawlessness, and an adherence to well-established international principles and norms of behaviour that serve us well. Properly respected, these allow for and encourage inspiration and optimism, innovation and development, commerce and science, notwithstanding the pressures of increasing commercialisation. A more unilateral view of space threatens the existing legal regime and can thwart opportunities for all.

In the end, we must not lose sight of the humanity of space and the need to use it for peaceful purposes that underpins our very future. The existing rules recognise and reinforce these imperatives. Every effort must be made by all

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. Ownership of objects launched into outer space, is not affected by their presence in outer space or on a celestial body or by their return to the Earth."

sectors of society to recalibrate the conversations towards a clear recognition of these needs. There are so many positive aspects to how space should be viewed, and this is supported by law and practice.
We therefore call on the broader space law 'community' to make every effort to ensure that their respective Governments understand and adhere to the true values and principles encapsulated in the international space law regime, in particular in what is sometimes referred to as the 'Magna Carta' of space law, the Outer Space Treaty. This is an important part of our role to ensure safe stewardship of the Earth, the solar system and all of the wonders that space can provide to the entirety of humanity.

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