

The Legitimacy of the U.S. Space Force under the Outer Space Treaty

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Abstract

The U.S. Space Force will keep the U.S. lead in the growing militarization of space. However, the creation of the new military force received considerable criticism condemning it as a threat to the future of peaceful space exploration as required by international law. Indeed, the legality of the new military branch and its activities in space depends on whether it complies with the Outer Space Treaty of 1967. Specifically, Article IV of the Treaty, which delineates the allowed military activity in space. There are two main interpretations of ambiguous terms contained in the Treaty, such as “in orbit”, “install”, “station”, and “peaceful purposes”, which either restrain or broaden the activity of the U.S. Space Force in space. This article argues that the U.S. Space Force can legally expand its capabilities by appealing to the right to self-defense, which derives from one of the interpretations of peaceful purposes.

1. Introduction

On June 18, 2018, President Donald Trump directed the Pentagon to plan for a U.S. Space Force.¹ On December 20, 2019, President Trump officially signed the creation of the U.S. Space Force into law as part of the 2020 National Defense Authorization Act.² The U.S. Space Force became the sixth independent U.S. military service branch, tasked with missions and operations in the rapidly evolving space domain.³ The mission of the new

1 Remarks by President Trump at a Meeting with the National Space Council and Signing of Space Policy Directive-3, White House (June 18, 2018 12:15 PM) <https://www.whitehouse.gov/briefings-statements/remarks-president-trump-meeting-national-space-council-signing-space-policy-directive-3/>.

2 National Defense Authorization Act for Fiscal Year 2020, Pub. L. No: 116-92, 133 Stat. 1198.

3 *United States Space Force*, Military, <https://www.military.com/space-force>, (last visited 30 November 2020).

military service contains two broad goals: defend the colossal U.S. satellite fleet and develop a unified space warfighting philosophy.⁴

However, President Donald Trump's proposal for the creation of a Space Force received considerable criticism.⁵ Opponents fear that a Space Force will undermine America's position in space and threaten the future of peaceful space exploration as required by international law.⁶ But, space was militarized since the beginning of space exploration.⁷ Current domestic and international laws, treaties, and obligations refer to "militarization" as physical military installations and military maneuvers.⁸ World powers are indiscriminately expanding their military space activity, inevitably leading to an arms race.⁹ The U.S. Space Force is necessary to maintain the U.S. as the leader in this growing militarization to protect the country's and its allies' interests in space.¹⁰

Nevertheless, the legality of the new military branch and its activities in space depends on whether it complies with the Outer Space Treaty of 1967.¹¹ The drafters of the Outer Space Treaty sought to avoid an armed conflict in space and ensure its use was for the benefit of humankind.¹² Specifically, Article IV of the Treaty delineates the allowed military activity in space. Generally, it prohibits the placement of nuclear weapons or weapons of mass destruction and the establishment of military bases.¹³ Like most regulatory instruments, Article IV of the Outer Space Treaty is subject to language interpretations.¹⁴

4 Reid Barbier, *The Purpose and Mission of the Space Force*, Am. U.: Security, Technology, Innovation (23 July 2020), <https://www.american.edu/sis/centers/security-technology/the-purpose-and-mission-of-the-space-force.cfm>.

5 See Linda Billings, *A US Space Force? A Very Bad Idea!*, 16 *Theology and Sci.* 4 (2018).

6 Bryan Nakayama, *3 Reasons Trump's New Space Force Would be a Disaster*, *fortune* (June 21, 2018 12:46 PM), <https://fortune.com/2018/06/21/trump-space-force-bad-idea/><https://fortune.com/2018/06/21/trump-space-force-bad-idea/>.

7 William J. Broad & David E. Sanger, *China Tests Anti-Satellite Weapon, Unnerving U.S.*, *N.Y. Times* (18 January 2007), <https://www.nytimes.com/2007/01/18/world/asia/18cnd-china.html>.

8 Dr. Craig J. Wiener, Et Al., *Military In Space: The Next Frontier*, 13 (Nat'l Security Inst., September 2020).

9 Benjamin Silverstein, Et Al., *Alternative Approaches And Indicators For The Prevention Of An Arms Race In Outer Space*, (UNIDIR May 2020)

10 Remarks by Vice President Pence on the Future of the U.S. Military in Space, White House (Aug. 9, 2018), <https://www.whitehouse.gov/briefings-statements/remarks-vice-president-pence-future-u-s-military-space/>

11 See Lindsay Bernsen Wardlaw, *Can the U.S. Create a Space Force and Keep Its Commitments Under the Outer Space Treaty?*, *Michigan J. Of Int'l L.* (Oct. 24, 2018) (evaluating the legality of the U.S. Space Force based on the two different interpretations of Article IV of the Outer Space Treaty, namely, the contextual and textual interpretations).

12 See U.N. GAOR, Res. 1472 (XIV), at 5 (Dec. 12, 1959).

13 Outer Space Treaty, at Art. IV.

14 See Wardlaw, *supra* n. 11.

While one interpretation of these terms severely restrains the U.S. Space Force's space activity, an alternate interpretation broadens it. Ultimately, the U.S. Space Force could legally expand its capabilities by appealing to the right to self-defense, which would derive from one of the interpretations of peaceful purposes.¹⁵

This paper will examine the legal limitations of the U.S. Space Force as outlined in the Outer Space Treaty, specifically, Article IV. Part II will introduce the U.S. Space Force, its mission, and its currently available space capabilities. Part III will discuss the language interpretations of Article IV of the Treaty. Part IV will evaluate whether the U.S. Space Force's mission and current space capabilities are within the parameters of the Outer Space Treaty based on the different interpretations of Article IV. Part V will briefly conclude.

2. The United States Space Force

2.1. A Brief History of the U.S. Military Space Systems

Since the 1950s, the U.S. has been committed to space security, creating several space organizations ranging from the National Aeronautics and Space Administration (NASA) in 1961 and the U.S. Space Command (USSPACECOM) in 1985.¹⁶ The U.S. Space Force history began in 1991 but has suffered disproportionate attention when the war against terrorism began. The U.S. allocated more money to fighting terrorism than to developing its space capabilities.¹⁷ Those who opposed a Space Force argued that a lack of leadership, doctrine, technology and funding made creating a Space Force cumbersome.¹⁸

Before the U.S. Space Force, the U.S. Air Force contained all of the U.S. space systems.¹⁹ The Air Force established the Air Force Space Command in 1982, which conducted space operations focused on missile warning, launch operations, satellite control, space surveillance, and command and control for

15 The U.S. can also do this under Art. 51 of the UN Charter, which the Outer Space Treaty directly refers to in Article III: "States Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international co-operation and understanding."

16 Michael C. Whittington, *A Separate Space Force: An 80-Year-Old Argument*, in Maxwell Papers 20 (2000).

17 *Id.*

18 *Id.*

19 See generally, Symposium, *The U.S. Air Force in Space 1945 to the Twenty-first Century*, (R. Cargill Hall & Jacob Neufeld, eds. 1998).

national leadership.²⁰ In 1991, the Space Command's support to warfighters through satellite-based global positioning systems (GPS) proved the value of space-based capabilities.²¹ Unfortunately, space operations were de-emphasized in 2002. The USSPACECOM was deactivated due to national security reorganizing following the September 11 terrorist attacks.²²

2.2. Mission and Space Warfighting Capabilities

The mission of the U.S. Space Force is to foment peace and stability across the globe.²³ The armed force has three overarching duties: protect the United States' interests in space, deter aggression in, from, and to space, and conduct space operations.²⁴ The Space Force will protect the United States' assets in space by deterring aggression in, from, and to space and conducting space operations.²⁵ Deterrence of space aggressions and attacks is the top priority of the Space Force.²⁶ Deterrence capabilities involve displaying their resources and response attacks, which would reduce the adversaries' advantages through protective measures and resilient space capabilities.²⁷ If deterrence fails, the Department of Defense will transition from competition to conflict to achieve space superiority with the world's premier joint space warfighters.²⁸

The U.S. Space Force uses four space operations functions for global joint operations: space situational awareness (SSA), counterspace operations, space support to operations and, space service support.²⁹ Counterspace operations (categorized as offensive or defensive) impact or directly utilize space-based

20 United States Space Force, <https://www.spaceforce.mil/About-Us/About-Space-Force/History/> (last visited 27 November 2020).

21 Larry Greenemeier, *GPS and the World's First "Space War"*, *Scientific Am.*, (8 February 2016), <https://www.scientificamerican.com/article/gps-and-the-world-s-first-space-war/>.

22 Whittington, *supra* n. 16.

23 Space Policy Directive-4: Establishment of the United States Space Force, white house, (19 February 2019), <https://www.whitehouse.gov/presidential-actions/text-space-policy-directive-4-establishment-unitedstates-space-force/>; Micheal Spirtas, et al., *A Separate Space: Creating a Military Service for Space*, rand corporation 19 (2020); Department Of Defense, Final Report On Organizational And Management Structure For The National Security Space Components Of The Department Of Defense, 5 (9 August 2018).

24 Department Of The Air Force, Comprehensive Plan For The Organizational Structure Of The U.S. Space Force, 6 (February 2020).

25 Joint Chiefs of Staff, space operations joint publication 3-14 i-2 (10 April 2018).

26 Department Of Defense, Defense Space Strategy Summary 8 (June 2020)

27 Joint Chiefs Of Staff, *supra* n. 25.

28 Usspacecom, <https://www.spacecom.mil/Mission/>, (last visited Nov. 27, 2020).

29 Air Force, Curtis E. Lemay Center, Annex 3-14 Counterspace Operations, 2 (27 August 2018), https://www.doctrine.af.mil/Portals/61/documents/Annex_3-14/3-14-D05-SPACE-Counterspace-Ops.pdf.

assets to enhance the potential of the U.S. and multinational partners.³⁰ The Department of Defense deems the availability of these capabilities to be fundamental to advancing global security and economic prosperity.³¹ Offensive operations involve measures to deceive, disrupt, degrade, deny, or destroy an adversary's space systems or services.³² These measures range from causing no physical damage to the target to temporarily impairing or permanently eliminating an adversary's use of the targeted space infrastructure.³³ Defensive operations are active and passive measures to protect space capabilities from attack, interference, or unintentional hazards.³⁴ Defensive operations involve neutralizing or reducing hostile actions against the U.S., allied, and partner space systems.³⁵ The method of carrying out these operations are the same. Both, offensive and defensive operations, may be performed via missile launches to reduce the likelihood of an enemy's successful attack, disrupting a threat's system, maneuvering on-orbit assets to confuse and overwhelm an enemy's targeting system, and active measures to deceive, degrade or destroy targeting systems.³⁶

3. The Outer Space Treaty

Whether it has changed its character to a warfighting domain, the Outer Space Treaty of 1967 continues to govern all space activity. Amid the achievements regarding space exploration, in 1963, several States engaged in dialogue at the United Nations for space safeguard.³⁷ The U.N. General Assembly approved two resolutions that subsequently became the basis for the Outer Space Treaty. U.N. Resolution 1884³⁸ and U.N. Resolution 1962³⁹ limit the use of weapons in space and guarantee the right to explore and use space freely. On October 10, 1967, the Outer Space Treaty entered into force; 110 state-parties have ratified it.

Consisting of seventeen articles, the Outer Space Treaty emphasizes essential concepts, such as, open access, State responsibility and liability, the placement of nuclear weapons and weapons of mass destruction in space, the treatment of astronauts in distress, and the prohibition of non-appropriation

30 Joint Chiefs Of Staff, *supra* n. 25, at I-2.

31 Department Of Defense, *supra* n. 26, at 1.

32 Joint Chiefs Of Staff, *supra* n. 25, at II-2.

33 *Id.* at II-2.

34 *Id.* at GL-5.

35 *Id.*

36 *Id.* at II-6.

37 Christopher D. Johnson, *The Outer Space Treaty at 50*, Space Review (23 January 2017), <https://thespacereview.com/article/3155/1>.

38 G.A. Res. 1884 (XVIII), at 13 (17 October 1963).

39 G.A. Res. 1962 (XVIII), at 15 (13 December 1963).

of celestial bodies.⁴⁰ However, the Treaty is not comprehensive in addressing and regulating every possible scenario. Its major flaw is being a multilateral treaty and a regulatory tool subject to various interpretations, substantially affecting its restrictive scope.

Despite several multilateral treaties implemented by the United Nations General Assembly to regulate outer space activities, the Outer Space Treaty is the fundamental charter of space law.⁴¹ The entirety of the Outer Space Treaty consists of seventeen articles. The first four are the main governing articles. Article I encompasses the overall goal of the Treaty to ensure the use of space was open to all states, exclusively for peaceful purposes and the benefit and interest of all humankind.⁴² Article II, commonly referred to as the non-appropriation clause, mandates that space, including celestial bodies and the Moon, not be subject to national appropriation.⁴³ Article III is the exploration clause, which extends the applicability of international law to outer space.⁴⁴ Article IV concerns the use of weapons in space. In evaluating the legitimacy of military activity in outer space, Article IV is the most relevant provision of the Outer Space Treaty.⁴⁵

3.1. Interpreting Article IV

Article IV includes several ambiguous terms. The vagueness of these terms has resulted in a language interpretation debate, which is crucial in evaluating whether military activity complies with the Treaty.

The first paragraph constitutes two parts. First, it restricts the type of weaponry allowed in space. Second, it restricts the location of these weapons. Regarding the type of weapons it prohibits, the first paragraph of Article IV clearly and explicitly singles out “nuclear weapons” and “weapons of mass destruction.” While nuclear weapons are widely accepted to include weapons that use atomic energy,⁴⁶ weapons of mass destruction are generally considered to be nuclear, chemical, and biological weapons, which result in the indiscriminate killing of many people in a large area.⁴⁷ The Outer Space Treaty, however, does not set a minimum number of people affected for a weapon to constitute a weapon of mass destruction, which further

40 Outer Space Treaty.

41 United Nations Office For Outer Space Affairs, <https://www.unoosa.org/oosa/en/aboutus/history/treaties.html>, (last visited 27 November 2020).

42 Outer Space Treaty.

43 *Id.* at art. II.

44 *Id.* at art. III.

45 *Id.* at art. IV.

46 Milton L. Smith, *Legal Implications of a Space-Based Ballistic Missile Defense*, 15 Cal. W. Int'l L.J. 52, 70 (1985).

47 *Id.*

complicates the analysis.⁴⁸ But, at a minimum, the explicit exclusion of these types of weapons implies the broad and unrestricted use of conventional weaponry in space.⁴⁹

Insofar as location, the second part of the first paragraph further complicates the Article's scope as there is no concrete definition of the terms "in orbit", "install", or "station." Inarguably, Article IV strictly prohibits nuclear weapons and weapons of mass destruction from being placed in orbit around the Earth. The widely accepted approach is that the phrase "in orbit" refers to the full orbit rather than a fractional orbit or suborbital flight.⁵⁰ However, the Article further bans States from (1) installing such weapons on celestial bodies and (2) stationing such weapons in outer space in any other manner. Two characterizations dominate the discussion regarding these ambiguous terms, a broad and a narrow interpretation.

The broad interpretation is that "installation" and "station" require presence, permanency, and the infrastructure to be grounded on the celestial body.⁵¹ The broad approach would allow nuclear weapons and weapons of mass destruction in orbit around celestial bodies, possibly even including the Moon, as long as the weapons are not on their surface. Alternatively, a narrow definition of "station" is "the placing of a weapon in a relatively fixed orbit in relation to the underlying celestial body, such that the speed of the orbiting object would coincide with the speed of rotation of the celestial body."⁵² This narrow definition would ban nuclear weapons and weapons of mass destruction entirely from orbiting or being placed on any celestial body. Next, the second paragraph of Article IV requires the Moon and other celestial bodies to be used "exclusively for peaceful purposes." The term "peaceful purposes" raises two concerns. First, whether the requirement of peaceful purposes applies only to activity on the Moon and other celestial bodies, or whether it also applies to the empty space in between. Second, the ambiguity of the term "peaceful purposes" itself does not define which activity falls within that category.

48 Andrea Harrington, *National and International Security in Space: International Law Implications of Space Force and Planetary Defense*, 48 Ga. J. Int'l & Comp. L. 767-770-771 (2020). "There's an argument that nuclear explosives are not really weapons if deployed to defend the earth against potential Near Earth Objects, although very unlikely, a big enough asteroid hitting the earth. However, the U.S. is a party to the Limited Test Ban Treaty which explicitly prohibits nuclear explosions in space."

49 Stephen Gorove, *Arms Control Provisions in The Outer Space Treaty: A Scrutinizing Reappraisal*, 3 Ga. J. Int'l & Comp. L. 114, 116 (1973).

50 Justin Della, et al., *A Three-Pronged Analysis of the Proposal for a United States Space Force*, 1 Int'l J. of Security Studies Art. 4 (2018), <https://digitalcommons.northgeorgia.edu/ijoss/vol1/iss1/4>.

51 Gorove, *supra* n. 49, at N.8.

52 Gorove, *supra* n. 49, at 116.

Regarding the first concern, two possible interpretations are the literal reading and the contextual analysis.⁵³ The literal reading suggests that adherence to peaceful purposes is required *only for activities on the Moon and other celestial bodies*. The contextual analysis proposes that Article IV be interpreted with the remainder of the Outer Space Treaty, which would extend the requirement of peaceful purposes to the entirety of space, regardless of whether the activity occurs in Earth's orbit, the Moon, or other celestial body.⁵⁴ The contextual analysis is the most persuasive interpretation because it is supported by most States' practice, including the leading space powers, who have opined that space and celestial bodies should be used only for peaceful purposes and the common benefit of humankind.⁵⁵ This interpretation also echoes the original intentions of the drafters of the Treaty. The second controversial element of paragraph two is the meaning of the phrase "peaceful purposes." One suggestion is that it means "non-military", which bans military presence in space, except for scientific research or necessary for peaceful exploration of the Moon and other celestial bodies.⁵⁶ Alternatively, in many nations (including the U.S.), the term has become synonymous with the term "non-aggressive", thereby implying that "all military uses are lawful as long as they remain 'non-aggressive' as permitted under international law, including Article 2(4) of the UN Charter, which prohibits the threat or use of force.⁵⁷ As an activity inherently not constituting the threat or use of force, the right to self-defense is also embedded in this interpretation.⁵⁸

Space powers have determined that military support activities such as observation, surveillance, communications, and the detection of nuclear explosions on Earth are "passive" and thus fall under the umbrella of "peaceful purposes."⁵⁹ The fact that the Outer Space Treaty permits the use of military personnel in space for scientific research further suggests that the interpretation of peaceful purposes does not mean "non-military" but rather "non-aggressive." Lastly, the second sentence in the second paragraph prohibits the establishment of military bases, installations, and fortifications.

53 See generally, Wardlaw, *supra* n. 11.

54 *Id.*

55 Bin Cheng, *The Legal Status of Outer Space and Relevant Issues: Delimitation of Outer Space and Definition of Peaceful Use*, 11 J. Space L. 89 (1983).

56 Gorove, *supra* n. 49, at 119.

57 Andrew T. Park, *Incremental Steps for Achieving Space Security: The Need for a New Way of Thinking to Enhance the Legal Regime for Space*, 28 Hous. J. Int'l L. 871, 883 (2006).

58 Central Intelligence Agency, *Cia-Rdp66r00638r000100160004-2, Definition Of Peaceful Uses Of Outer Space*, (2001). The U.S. has interpreted the phrase as "non-aggressive." The U.S. takes the position that "peaceful purposes" refer to activities consistent with international law, including the United Nations Charter. (i.e., activities which do not constitute the threat or use of force against any state, and the State's right to self-defense.)

59 Park, *supra* n. 57, at 884.

Per the widely accepted interpretation of peaceful purposes, military bases, installations, and fortifications are legal only if they are “non-aggressive.”

Assuming the broad interpretation is adopted and because military activity, including military bases, installations, and fortifications, is permitted as long as it is non-aggressive as permitted under Articles 2(4) and 51 of the U.N. Charter, it follows that nuclear weapons and weapons of mass destruction placed in orbit around celestial bodies (possibly including the Moon) should be lawful insofar as they are used for peaceful purposes.

Next, Part IV will assess whether the U.S. Space Force’s mission and its currently available space capabilities are within the parameters of Article IV of the Outer Space Treaty.

4. Assessing The U.S. Space Force’s Compliance With The Outer Space Treaty

The first paragraph of Article IV explicitly prohibits the Space Force from placing nuclear weapons and weapons of mass destruction in Earth’s orbit. At the outset, the U.S. Space Force is legally allowed to conduct most of its defensive and deterrence activities in space and can lawfully deploy an array of conventional weapons anywhere in space. For example, the Space Force can continue to provide support to operations capabilities, including intelligence, surveillance and reconnaissance (ISR), launch detection, missile tracking, environmental monitoring, satellite communications, and positioning, navigation, and timing. Missile tracking, environmental monitoring, and satellite communications are conducted in space and do not constitute prohibited weapons or activities in space per Article IV. Likewise, space-based positioning, navigation, and timing (PNT) are not banned by the Outer Space Treaty.⁶⁰

The scope of the Space Force’s offensive operations depends on which definition of the terms “installation” and “station” is adopted. The broad definition hypothetically allows the Space Force to keep its nuclear weapons or weapons of mass destruction (WMD) aboard space stations in the orbit of celestial bodies other than Earth or on parked space planes in space.⁶¹ The narrow view completely prohibits positioning nuclear weapons or WMD anywhere in space. Consequently, whether the Space Force is banned from deploying electromagnetic pulse weapons (EMP), a nuclear weapon, depends on the interpretation of the terms “installation” and “station.” The U.S. Space Force may legally enforce offensive space operations by deploying electronic warfare weapons, including directed energy weapons, anti-satellite weapons, electromagnetic jammers, and anti-radiation missiles.⁶²

60 Air Force, *supra* n. 29, at 12.

61 Adam Irish, *The Legality of a U.S. Space Force*, *Opiniojuris* (13 September 2018).

62 Air Force, *supra* n. 29, at 30.

The second paragraph of Article IV, per the contextual analysis, requires all space activities to be for peaceful purposes. The Space Force conforms to this principle as the U.S. has been committed and declared as its policy that activities in space should be devoted to peaceful purposes for the benefit of humanity.⁶³ The space policy of the U.S. recognizes Article 51's applicability in space.⁶⁴ States have agreed in the UN Charter to act "peacefully" by suppressing acts of aggression, not threatening to use force, saving in the common interest, or acting in self-defense.⁶⁵

Furthermore, the Vienna Convention on the Law of Treaties provides that a later treaty, such as the Outer Space Treaty, prevails over an earlier treaty, such as the United Nations Charter.⁶⁶ The prohibitions contained in Article IV of the Outer Space Treaty would prevail over any other treaty, except for any obligation arising under the Charter of the United Nations.⁶⁷ Then, the lawful use of force as allowed per Article 51 of the UN Charter would not be bound by the limitations contained in Article IV of the Outer Space Treaty, particularly concerning the deployment of nuclear weapons and weapons of mass destruction and the partial demilitarization of the Moon and other celestial bodies.⁶⁸ Article 51 grants States, in pertinent part, the inherent right of self-defense if an armed attack occurs.⁶⁹ By implication, the Space Force may deploy nuclear weapons and weapons of mass destruction in self-defense if an armed attack occurs. However, the definition of an armed attack and whether the right to self-defense extends to outer space remain controversial and out of the scope of this paper.

Despite some countries' fear that the right to self-defense will be a loophole exploited by States to weaponize space,⁷⁰ the right to self-defense in space has received support. The 2014 European Union Code of Conduct for outer space activities suggested that "the allowable justifications are for safety (particularly if human life is involved), the prevention of new space debris, and self-defense. Similarly, Russia and China, in their 2014 draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or

63 Cheng, *supra* n. 55, at 85.

64 Major Christopher M. Petras, "Space Force Alpha": *Military Use of the International Space Station and the Concept of "Peaceful Purposes"*, 53 A.F. L. Rev. 135 (2002).

65 *Id.* at 170.

66 Vienna Convention on the Law of Treaties [hereinafter Vienna Convention] Art. 30, 23 May 1969, 1155 U.N.T.S. 331.

67 Michael Bourbonnière & Ricky J. Lee, *Legality of the Deployment of Conventional Weapons in Earth Orbit: Balancing Space Law and the Law of Armed Conflict*, 18 Eur. J. Of Int'l L. No 5 873, 878 (2008).

68 *Id.* at 880.

69 *Supra* n. 15.

70 Mitchell Ford, *War on the Final Frontier: Can Twentieth-Century Space Combat Twenty-First-Century Warfare*, 39 Hous. J. Of Int'l l. 237, 257 (2017).

Use of Force against Outer Space Objects (PPWT), supported the retention of a right to self-defense in space.⁷¹

Some scholars believe the States' right to self-defense is triggered after another State has waged an armed attack.⁷² Other scholars hold that the phrase within Article 51, specifying "the inherent right of self-defense", indicates that customary international law grants the right to engage in anticipatory self-defense.⁷³ "If the concept of self-defense [...] expands from anticipatory to preventive uses of force, nations will be able to use weapons in space more often. [...] nations are already following a practice of preventive armed conflict even as scholars and governments argue over its legality."⁷⁴ If accepted, the right to engage in anticipatory self-defense will greatly expand the space warfighting capabilities of the U.S. Space Force by allowing it to deploy space-based weapons without the need to wait for an attack.

Alternatively, a right to self-defense triggered by an attack still poses some questions, such as whether the right is triggered only when space-based assets are attacked or upon attacks to ground-based space assets. Since space assets depend on ground-based infrastructures, an attack on ground-based infrastructures should trigger a State's right to self-defense. Opposing this view, other States hold that self-defense in space is triggered only upon attacks to space-based assets, and the response should be limited to space.⁷⁵

The U.S. declared that "purposeful interference with U.S. space systems, including their supporting infrastructure, will be considered an infringement of U.S. rights."⁷⁶ Such interference, or interference with other space systems upon which the U.S. relies, is irresponsible in peacetime and may be escalatory during a crisis. The U.S. will retain the capabilities to respond at the time and place of its choosing, meaning the U.S. considers attacks to ground-based supporting space infrastructure as enabling its right to self-defense and claims a right to respond in any manner of its choosing.

Lastly, the second paragraph of Article IV of the Outer Space Treaty prohibits the establishment of military bases, installations, and fortifications. Per the widely accepted interpretation of peaceful purposes, military bases, installations, and fortifications are legal only if they are "non-aggressive." In a Memorandum, NASA and the U.S. Space Force affirmed their partnership

71 Michael Listner & Rajeswari Pillai Rajagopalan, *The 2014 PPWT: a new draft but with the same and different problems*, *The Space Review* (11 August 2014).

72 LaToya Tate, *The Status of the Outer Space Treaty at International Law during War and Those Measures Short of War*, 32 *J. Space L.* 177, 186 (2006).

73 *Id.*

74 Joan Johnson-Freese, *Heavenly Ambitions* 77, 78 (2013).

75 Joint Chief Of Staff, *supra* n. 25, at vii.

76 Department Of Defense, *Space Policy Directive 3100.10 1* (18 October 2012).

and collaboration in space activities, including civil and defense endeavors.⁷⁷ With the establishment of the U.S. Space Force and NASA's Artemis Program underway, new collaborations will be vital to operating safely and securely in space.⁷⁸ The Artemis program seeks to land the first woman and next man on the Moon by 2024 to give astronauts a place to live and work on the Moon. To do this, NASA plans to build the Artemis Base Camp, which includes a modern lunar cabin, a rover, and even a mobile home.⁷⁹

Although NASA is working closely with the U.S. Space Force, the Artemis Base Camp is civil and non-aggressive by virtue of being undertaken by NASA and involving global partners.⁸⁰ Its purpose is to increase human lunar enterprise by establishing the infrastructure, systems, and robotic missions to enable a sustained lunar surface presence.⁸¹ Accordingly, the Artemis Base Camp is generally legal. However, the Memorandum emphasizes that the limitations of the U.S. Space Force have been in near-Earth. It suggests that with the extension into cislunar space provided by NASA, the reach of the Space Force's sphere of interest will extend to 272,000 miles and beyond.⁸² By inference, the U.S. Space Force will most likely utilize the Artemis Base Camp to further its space missions in the future. The U.S. Space Force's planned operations on the Moon are classified; hence, all that can be said is that as long as the U.S. Space Force conducts only non-aggressive space operations in accordance with the discussion above regarding the meaning of "peaceful purposes", the U.S. Space Force's presence in Artemis Base Camp will be legal. Similarly, even if the U.S. Space Force were to build its own military base on the Moon, it will be subject to the same standard.

5. Conclusion

The extent to which the Outer Space Treaty restricts the U.S. Space Force depends on the interpretation of the Outer Space Treaty itself. Amid a lack of definitions and controversial language interpretations of the various term within Article IV of the Treaty, a significant amount of the Space Force's current military capabilities is legal. The possibility of broadening such military activity stems from a contextual analysis of Article IV. Under this analysis, the Space Force can deploy weapons in space under a claim of self-defense, weapons which otherwise would be illegal.

77 Nasa & U.S. Space Force, Memorandum Of Understanding Between The National Aeronautics And Space Administration And The United States Space Force 2 (September 2020).

78 *Id.*

79 See Nasa, *Lunar Living: NASA's Artemis Base Camp Concept*, Nasa: Artemis.

80 Nasa, *Nasa's Lunar Exploration Program Overview* (2020).

81 *Id.* at 26.

82 Vienna Convention, *supra* n. 66.