

IN, FROM, AND TO SPACE: SAFEGUARDING THE UNITED STATES OF AMERICA AND HER INTERESTS

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*"Space: the final frontier . . . to boldly go where no man has gone before."*<sup>1</sup>

- Captain James T. Kirk

ABSTRACT

This Comment serendipitously pays homage to Professor Bin Cheng's *Studies in International Space Law*, by re-examining topics covered in his trailblazing work and by exploring how the United States Space Force may exist under current international law. Although military use of outer space is limited by international treaties and customary law, the United States of America must be prepared to protect her interests from future threats. Cue the Space Force, which will need to navigate a novel theater of war and anticipate legal consequences under space law, the law of war, and the law of the sea. Using the present legal framework is only the beginning, as only time will tell how space warfare will unfold.

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<sup>1</sup> Cyriaque Lamar, *Read the first drafts of the Star Trek opening monologue*, GIZMODO (Dec. 4, 2011, 3:15 PM), <https://io9.gizmodo.com/read-the-first-drafts-of-the-star-trek-opening-monologue-5864819> [<https://perma.cc/JK8R-GJEQ>].

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## I. INTRODUCTION

Eight years before Apollo 11 astronaut Neil Armstrong uttered his eleven mythical words that forever changed humanity's relationship with the moon,<sup>2</sup> President John F. Kennedy rallied Congress and Americans to dream of space.<sup>3</sup> On September 12, 1962, at a time when the United States appeared to be falling behind in the space race,<sup>4</sup> President Kennedy delivered a speech that noted the challenges ahead:

Whether [space] will become a force for good or ill depends on man, and *only if the United States occupies a position of pre-eminence can we help decide whether this new ocean will be a sea of peace or a new terrifying theater of war*. I do not say . . . we should or will go unprotected against the hostile misuse of space any more than we go unprotected against the hostile use of land or sea, but I do say that space can be explored and mastered without feeding the fires of war, without repeating the mistakes that man has made . . . .<sup>5</sup>

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<sup>2</sup> Olivia B. Waxman, *Lots of People Have Theories About Neil Armstrong's 'One Small Step for Man' Quote. Here's What We Really Know*, TIME (July 15, 2019, 12:39 PM EDT), <https://time.com/5621999/neil-armstrong-quote/> [<https://perma.cc/YSR8-X53W>] (“At 10:56 p.m. ET on July 20, 1969, the American astronaut Neil Armstrong put his left foot on the lunar surface and famously declared, ‘That’s one small step for man, one giant leap for mankind.’”).

<sup>3</sup> See John F. Kennedy, President, United States of America, Special Message to the Congress on Urgent National Needs (May 25, 1961) (transcript available in the John F. Kennedy Presidential Library and Museum), <https://www.jfklibrary.org/archives/other-resources/john-f-kennedy-speeches/united-states-congress-special-message-19610525> [<https://perma.cc/2ZDM-BTDH>].

On May 25, 1961, President Kennedy declared before Congress:

[I]f we are to win the battle that is now going on around the world between freedom and tyranny, the dramatic achievements in space which occurred in recent weeks should have made clear to us all, as did the Sputnik in 1957 . . . . *Now it is time to take longer strides – time for a great new American enterprise – time for this nation to take a clearly leading role in space achievement, which in many ways may hold the key to our future on earth.*

*Id.* (emphasis added).

<sup>4</sup> *The Moon Decision*, SMITHSONIAN NAT’L AIR & SPACE MUSEUM, <https://airandspace.si.edu/exhibitions/apollo-to-the-moon/online/racing-to-space/moon-decision.cfm> [<https://perma.cc/J4JA-ERUW>].

<sup>5</sup> John F. Kennedy, President, United States of America, Address at Rice University on the Nation’s Space Effort (Sept. 12, 1962) (emphasis added),

Today, except for the occasional naysayer or conspiracy theorist, most people accept the universal truth that, in the summer of 1969, two American men walked on the moon.<sup>6</sup>

An unlikely torchbearer of President Kennedy's legacy and vision for space is former President Donald J. Trump. Although, in 2017, Representatives Jim Cooper (D-TN) and Mike Rogers (R-AL) introduced the idea of a "Space Corps"<sup>7</sup> in a bipartisan House bill,<sup>8</sup> the concept went viral when President Trump shared five simple words—"Space Force all the way!"—on the social media platform Twitter.<sup>9</sup> On February 19, 2019, President Trump signed Space

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<https://er.jsc.nasa.gov/seh/ricetalk.htm> [https://perma.cc/Q63P-M36W]. President Kennedy is often quoted for the following soundbite:

We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the others, too.

*Id.*

<sup>6</sup> Elizabeth Howell, *Moon Landing Hoax Still Lives On, 50 Years After Apollo 11. But Why?*, SPACE.COM (July 19, 2019), <https://www.space.com/apollo-11-moon-landing-hoax-believers.html> [https://perma.cc/USM5-F9UD] (citing an estimate by former NASA chief historian Roger Launius, who recently reported that approximately "5% of Americans believe the Apollo moon landings were faked"); see also Olivia McKelvey, *Conspiracy theorist punched by Buzz Aldrin still insists moon landing was fake*, USA TODAY (July 20, 2019, 8:22 AM ET), <https://www.usatoday.com/story/news/nation/2019/07/20/man-punched-buzz-aldrin-still-says-moon-landing-fake/1784847001/> [https://perma.cc/4BHE-YQYV] ("Yet half a century later, despite other moon landings, moon rocks and firsthand accounts from countless members of the 400,000-strong workforce who helped achieve JFK's goal, some still believe the moon landings were staged in a Hollywood studio.").

<sup>7</sup> *Congressman Proposes A Military 'Space Corps'*, NPR (June 25, 2017, 8:06 AM ET), <https://www.npr.org/2017/06/25/534286469/congressman-proposes-a-military-space-corps> [https://perma.cc/RF3J-MX78] ("There could be a new branch of the United States military in the near future, and its mandate will be outer space. It's not called Starfleet like 'Star Trek,' sadly. It's been named Space Corps.").

<sup>8</sup> See FY18 National Defense Authorization Bill, H.R. 2810, 115th Cong. § 1601 (2017), <https://docs.house.gov/meetings/AS/AS00/20170628/106123/BILLS-115HR2810ih-STR.pdf> [https://perma.cc/V7MG-THJN].

<sup>9</sup> Brett Samuels, *Trump celebrates Pentagon proposal: 'Space Force all the way!'*, THE HILL (Aug. 9, 2018, 12:27 PM EDT), <https://thehill.com/homenews/administration/401094-trump-celebrates-pentagon-proposal-space-force-all-the-way> [https://perma.cc/6J9X-F2AX]; see also Eric Mack, *US Space Force: Everything you need to know on its first anniversary*, CNET (Dec. 20, 2020, 7:55 AM PT), <https://www.cnet.com/news/donald-trump-space->

Policy Directive—4 (SPD-4),<sup>10</sup> “centralizing all military space functions under a new Space Force, which [would] be overseen by the Department of the Air Force.”<sup>11</sup> Although the President could not unilaterally create a new military branch,<sup>12</sup> with renewed congressional support,<sup>13</sup> on December 20, 2019, President Trump signed the United States Space Force (“Space Force”) into existence, as the “first new armed service since 1947 . . . .”<sup>14</sup>

The United States Space Force Act (“the Act”) establishes the Space Force “as an armed force within the Department of the Air Force.”<sup>15</sup> The Act prioritizes the following functions and duties for the new military branch:

(c) FUNCTIONS. — The Space Force shall be organized, trained, and equipped to provide —

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force-everything-you-need-to-know/ [https://perma.cc/4JJK-3MYG] (noting that President Trump first mentioned a “Space Force” in a March 2018 speech to Marines).

<sup>10</sup> See Donald J. Trump, *Text of Space Policy Directive-4: Establishment of the United States Space Force*, WHITE HOUSE (Feb. 19, 2019), <https://trumpwhitehouse.archives.gov/presidential-actions/text-space-policy-directive-4-establishment-united-states-space-force/> [https://perma.cc/6Z4N-N5MF].

<sup>11</sup> Valerie Insinna, *Trump officially organizes the Space Force under the Air Force . . . for now*, DEFENSENEWS (Feb. 19, 2019), <https://www.defensenews.com/space/2019/02/19/trump-signs-off-on-organizing-the-space-force-under-the-air-force-for-now/> [https://perma.cc/5GGN-37MM].

<sup>12</sup> See Jim Garamone, *DOD Sends Space Force Legislation to Congress*, U.S. DEP’T OF DEF.: DOD NEWS (Mar. 1, 2019), <https://www.defense.gov/Newsroom/News/Article/Article/1771782/dod-sends-space-force-legislation-to-congress/> [https://perma.cc/95M7-4DBX] (explaining that the Space Force legislation required passage in Congress).

<sup>13</sup> Claudia Grisales, *With Congressional Blessing, Space Force is Closer to Launch*, NPR (Aug. 11, 2019, 7:00 AM ET), <https://www.npr.org/2019/08/11/743612373/with-congressional-blessing-space-force-is-closer-to-launch> [https://perma.cc/TJ9K-SDFS].

<sup>14</sup> Jim Garamone, *Trump Signs Law Establishing U.S. Space Force*, U.S. DEP’T OF DEF.: DOD NEWS (Dec. 20, 2019), <https://www.defense.gov/explore/story/Article/2046035/trump-signs-law-establishing-us-space-force/> [https://perma.cc/77B6-S228] (“Trump signed the National Defense Authorization Act . . . [and a] provision of the voluminous law created the service that will be totally focused on organizing, training and equipping Space Force . . . .”).

<sup>15</sup> National Defense Authorization Act for Fiscal Year 2020, Subtitle D – United States Space Force, S. 1790, 116th Cong. § 9081(a) (2019) [hereinafter United States Space Force Act], <https://www.congress.gov/116/bills/s1790/BILLS-116s1790enr.pdf> [https://perma.cc/8AAG-ZWEK].

- (1) freedom of operation for the United States in, from, and to space; and
- (2) prompt and sustained space operations.

(d) DUTIES. – It shall be the duty of the Space Force to –

- (1) protect the interests of the United States in space;
- (2) deter aggression in, from, and to space; and
- (3) conduct space operations.<sup>16</sup>

This new military branch will likely conduct missions involving: (1) space support,<sup>17</sup> (2) force enhancement,<sup>18</sup> (3) space control,<sup>19</sup> and (4) space force.<sup>20</sup> The Space Force will accomplish its duties by among other things, shielding America’s satellites from attacks that “could threaten our everyday lives, from our cell phones to the electric grid to the military’s ability to launch nuclear weapons.”<sup>21</sup> During his confirmation hearing, former Defense Secretary Mark Esper called space a “*warfighting domain* . . . because the Russians and Chinese are making it that way.”<sup>22</sup> More specifically, countries

<sup>16</sup> *Id.* § 9081(c)–(d).

<sup>17</sup> JEREMY RABKIN & JOHN YOO, STRIKING POWER: HOW CYBER, ROBOTS, AND SPACE WEAPONS CHANGE THE RULES FOR WAR 196 (2017) (defining “space support” as “the launching of missiles and satellites and the management of satellites in orbit”).

<sup>18</sup> *Id.* at 196–97 (describing the general aim of improving “the effectiveness of terrestrial military operations,” which includes passive surveillance and strengthened civilian and military support for terrestrial operations).

<sup>19</sup> *Id.* at 198 (characterizing the third mission type as securing “the ability to freely use space to one’s benefit while denying it to opponents”).

<sup>20</sup> *Id.* at 199 (stating missions will use “weapons systems based in orbit that can strike targets on the ground, in the air, or even in space”).

<sup>21</sup> See Grisales, *supra* note 13.

<sup>22</sup> *Id.* (emphasis added). Defense Secretary Esper’s confirmation hearing opening statement observed:

[T]he growing threats posed by great power competitors such as China and Russia warrant a re-focus to high intensity conflict across all of the Military Services. This requires us to modernize our forces and capitalize on rapid technological advancements . . . ; and with your help, establish the United States Space Force.

Mark T. Esper, Secretary of Defense Nominee, Department of Defense, Opening Statement at the Hearing to Conduct a Confirmation Hearing on the Expected Nomination of: Honorable Mark T. Esper to be Secretary of Defense Before the Committee on Armed Services 17 (July 16, 2019) (transcript available at Alderson Court Reporting in Washington, D.C.), [https://www.armed-services.senate.gov/imo/media/doc/19-59\\_07-16-19.pdf](https://www.armed-services.senate.gov/imo/media/doc/19-59_07-16-19.pdf) [<https://perma.cc/3TP9-Q4V5>].

such as Russia, China, and India are already capable of destroying their own satellites.<sup>23</sup> It follows that these same States are likewise equipped to shoot down America's satellites.<sup>24</sup> International law prohibits militarizing outer space, "but that has not stopped speculation on the usefulness of outer space as strategic military outposts and dominion of influence."<sup>25</sup> After all, World War III may be fought in space.<sup>26</sup>

This Comment investigates how the United States may form a robust Space Force under current applicable law. Part II examines, through the lens of space law, the necessary prescription for this new military branch, so it will not hinder the pacifistic objectives of international treaties. Part III explores the law of war and rules of engagement for this untested warfront. Part IV draws analogies to the law of the sea for how military operations will occur in the high tide of space. Part V advises policymaking and international cooperation as the mechanisms to develop a cohesive understanding on space warfare. This Comment concludes with additional considerations in the implementation of the Space Force.

## II. SPACE LAW ACROSS THE UNIVERSE

During his transition to the White House, President-Elect Kennedy received a January 10, 1961 Ad Hoc Committee on Space Report (the "Wiesner Report") identifying both ballistic missiles and military space systems as space activities.<sup>27</sup> The Wiesner Report

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

<sup>24</sup> Grisales, *supra* note 13.

<sup>25</sup> GBENGA ODUNTAN, *SOVEREIGNTY AND JURISDICTION IN THE AIRSPACE AND OUTER SPACE* 266 (1st ed. 2012).

<sup>26</sup> Mark R. Whittington, *Deterring World War III with Trump's Space Force*, THE HILL (July 5, 2018, 6:00 PM EDT), <https://thehill.com/opinion/technology/395705-deterring-world-war-iii-with-trumps-space-force> [<https://perma.cc/9RHJ-AT6E>] ("A United States Space Force, dedicated to defending America's assets beyond the Earth and to place those of an enemy at risk, would be an instrument for making sure that war never breaks out.").

<sup>27</sup> MATTHEW J. KLEIMAN, JENIFER K. LAMIE & MARIA-VITTORIA "GIUGI" CARMINATI, *THE LAWS OF SPACEFLIGHT: A GUIDE FOR NEW SPACE LAWYERS* 73 (2012) (noting that Professor Jerome B. Wiesner of Massachusetts Institute of Technology (MIT) led the "first-of-its-kind" transition team on space issues); *Wiesner Committee, "Report to the President-Elect of the Ad Hoc Committee on Space," January 10, 1961*, NASA [hereinafter *Wiesner Committee*], <https://www.hq.nasa.gov/office/pao/History/report61.html> [<https://perma.cc/B2UB-P7Z3>] (last updated Jan. 15, 2004).

indicates that developing space's "military systems" and "arms-limitation inspection and control systems" would contribute to national security.<sup>28</sup> Among other things, the Wiesner Report recommends the military establish "a single responsibility" to take charge of the space program's military component.<sup>29</sup> In other words, even back then, America needed a Space Force.<sup>30</sup>

However, a new space weaponization race may ignite if the laws that currently forbid it are circumvented.<sup>31</sup> To move forward without sparking such a race, the Space Force should carefully examine international space law, which exists through five United Nations (U.N.) outer space treaties from the Committee on the Peaceful Uses of Outer Space (COPUOS).<sup>32</sup> Inherent in these five treaties<sup>33</sup> is the belief that humankind shares space and must travel

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<sup>28</sup> *Wiesner Committee, supra* note 27.

<sup>29</sup> *Wiesner Committee, supra* note 27.

<sup>30</sup> *See generally Wiesner Committee, supra* note 27. The Wiesner Report postulates:

If the responsibility of all military space developments were to be assigned to one agency or military service within the Department of Defense, the Secretary of Defense would then be able to maintain control of the scope and direction of the program and the Space Council would have the responsibility for settling conflicts of interest between NASA and the Department of Defense.

*Wiesner Committee, supra* note 27.

<sup>31</sup> ODUNTAN, *supra* note 25, at 268–69 (noting that "it would be reckless for the law to proceed in a manner that allows" weaponizing space). In a faraway fictional galaxy, the severe consequences of a lack of space law principles gives rise to the weaponization of space. *See, e.g., Vader Arrives on the Death Star*, STAR WARS, <https://www.starwars.com/video/vader-arrives-on-the-death-star> [<https://perma.cc/L6GJ-ZJW4>] (last visited Feb. 20, 2021).

<sup>32</sup> *Space Law Treaties and Principles*, UNITED NATIONS OFF. FOR OUTER SPACE AFFS., <http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties.html> [<https://perma.cc/B5FB-2TUU>] (last visited Feb. 20, 2021). These treaties are: (1) the "Outer Space Treaty"; (2) the "Rescue Agreement"; (3) the "Liability Convention"; (4) the "Registration Convention"; and (5) the "Moon Agreement." *Id.* The United States is a State Party to the first four agreements, but not to the "Moon Agreement." *See* Comm. on the Peaceful Uses of Outer Space, Status of International Agreements relating to activities in outer space as at 1 January 2019, U.N. Doc. A/AC.105/C.2/2019/CRP.3 (2019) [hereinafter Status of International Agreements], [https://www.unoosa.org/documents/pdf/spacelaw/treatystatus/AC105\\_C2\\_2019\\_CRP03E.pdf](https://www.unoosa.org/documents/pdf/spacelaw/treatystatus/AC105_C2_2019_CRP03E.pdf) [<https://perma.cc/Q4TC-Y9XZ>]. Out of scope for this Comment are the "Liability Convention," the "Registration Convention," and the "Moon Agreement."

<sup>33</sup> A treaty is "an international agreement concluded between States in written form and governed by international law, whether embodied in a single instrument

there in peace.<sup>34</sup> Because the U.N. and the COPUOS will likely stay steadfast to “their very primal duties to maintain global peace,” instead of giving rise to outer space’s militarization,<sup>35</sup> it is essential to understand the current landscape of space law. More importantly, American military and civilian lawyers will need to “critically analyze international law proposals and aggressively proffer alternative views” to counteract other States’ attempts “to interpret existing international law in such a way as to limit American freedom of action in outer space.”<sup>36</sup>

*a. Outer Space Treaty (OST)*

To capture the composition of space law, refer to this quote from J.R.R. Tolkien:

One [Treaty] to rule them all,  
 One [Treaty] to find them,  
 One [Treaty] to bring them all  
 and in the darkness [of space] bind them.<sup>37</sup>

The first place to look is the Outer Space Treaty (OST), which is akin to space law’s *Magna Carta*.<sup>38</sup> On January 27, 1967, the OST “was signed at Washington, London, and Moscow” and on October

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or in two or more related instruments and whatever its particular designation . . .” Vienna Convention on the Law of Treaties art. 2, May 23, 1969, 1155 U.N.T.S. 333 (entered into force Jan. 27, 1980).

<sup>34</sup> See generally G.A. Res. 2222 (XXI), Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Jan. 27, 1967) [hereinafter Outer Space Treaty], [https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspace\\_treaty.html](https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspace_treaty.html) [<https://perma.cc/4S7U-A2BX>].

<sup>35</sup> ODUNTAN, *supra* note 25, at 267–68.

<sup>36</sup> John W. Bellflower, *The Influence of Law on Command of Space*, 65 A.F. L. REV. 107, 117 (2010). See also RICHARD K. GARDINER, INTERNATIONAL LAW 388 (2003) (emphasis in original) (“International law applies *between* states. . . . These areas are the communal parts of water (principally, the sea), and of the air, and the whole of outer space.”).

<sup>37</sup> J.R.R. TOLKIEN, *The Fellowship of the Ring*, in THE LORD OF THE RINGS 50 (Houghton Mifflin Harcourt 2004).

<sup>38</sup> Bellflower, *supra* note 36, at 121. Tolkien would likely find the OST to be the One Treaty to rule over the remaining four U.N. outer space treaties.

10, 1967 “entered into force” of law,<sup>39</sup> becoming a “supreme law” under Article VI of the Constitution.<sup>40</sup> As of January 1, 2019, the United States and another 108 States are parties to the OST, and an additional twenty-three States are signatories awaiting ratification.<sup>41</sup> Moreover, due to its widespread acceptance, the OST applies to all States—even nonparties to the treaty—because it “has risen to the level of customary international law . . . .”<sup>42</sup> Yet even with successful application of the OST, there is a trend towards the international community’s desire to restrain the United States’ “freedom of action in outer space.”<sup>43</sup>

In reality, although there is a shared aspiration to cooperate in space and a hypothetical forceful aggression would be condemned, “all spacefaring states today have military missions, goals, and contingency space-operations plans.”<sup>44</sup> In this climate, the United States must navigate under the OST because it mandates that space use and exploration are bound by “international law, including the Charter of the United Nations, in the *interest of maintaining*

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<sup>39</sup> *Beattie v. United States*, 756 F.2d 91, 99 (D.C. Cir. 1984) (“By the terms of the treaty, the United States has agreed to be internationally liable for its space objects and retain jurisdiction over its own objects and persons.”), *abrogated by* *Smith v. United States*, 507 U.S. 197 (1993).

<sup>40</sup> U.S. CONST. art. VI (acknowledging that “all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land”).

<sup>41</sup> *Status of International Agreements*, *supra* note 32.

<sup>42</sup> KLEIMAN, LAMIE & CARMINATI, *supra* note 27, at 61. *See also* *Kiobel v. Royal Dutch Petroleum Co.*, 621 F.3d 111, 118 (2d Cir. 2010) (“[C]ustomary international law includes only ‘those standards, rules or customs (a) affecting the relationship between states or between an individual and a foreign state, and (b) used by those states for their common good and/or in dealings *inter se*.’” (quoting *IIT v. Vencap, Ltd.*, 519 F.2d 1001, 1015 (2d Cir. 1975))), *aff’d*, 569 U.S. 108 (2013); WILLIAM H. BOOTHBY & WOLFF HEINTSCHEL VON HEINEGG, *THE LAW OF WAR: A DETAILED ASSESSMENT OF THE US DEPARTMENT OF DEFENSE LAW OF WAR MANUAL 3* (2018) (reminding “that it is the general practice of States supported by *opinio juris*, not the practice of an individual State, that must be demonstrated to establish a customary law rule”).

<sup>43</sup> *Bellflower*, *supra* note 36, at 117.

<sup>44</sup> *Bellflower*, *supra* note 36, at 108 (quoting EVERETT C. DOLMAN, *ASTROPOLITIK: CLASSICAL GEOPOLITICS IN THE SPACE AGE 2* (2002)).

*international peace and security . . .*"<sup>45</sup> Thus, international law applies similarly here on earth as in space.<sup>46</sup>

Additionally, under the principle of *res communes*,<sup>47</sup> exclusive ownership of space is disallowed under the OST because "[o]uter 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."<sup>48</sup> Space must be shared by all.<sup>49</sup> For example, when eight nations in 1976 attempted to expand their sovereignty into their respective geostationary orbit under the Bogotá Declaration, Article II of the OST estopped them.<sup>50</sup> The United States must not appear territorial, as if pursuing Manifest Destiny in outer space, and instead balance its interests with those of the rest of the world. But even "in the sovereign-less reaches of outer space, each state party to the treaty will retain jurisdiction over its own objects and persons."<sup>51</sup>

Under Article VI, the OST requires that States ensure their "national activities in outer space," including those "carried on by governmental agencies" such as the Space Force, comply with the treaty.<sup>52</sup> The OST, in Article VII, ensures that States receive international liability "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 or in outer space, including the

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<sup>45</sup> Outer Space Treaty, *supra* note 34, at art. III (emphasis added). Article III of the OST may incorporate the prohibition against nations' threats of using force to hinder "the territorial integrity or political independence" of other nations under Article 2(4) of the U.N. Charter. See RABKIN & YOO, *supra* note 17, at 205.

<sup>46</sup> International law includes the Law of War and the Law of the Sea, which this Comment discusses in Parts III and IV, respectively.

<sup>47</sup> KLEIMAN, LAMIE & CARMINATI, *supra* note 27, at 62. See Outer Space Treaty, *supra* note 34, at art. II. *Res communes* is defined as "things owned by no one and subject to use by all: things (as light, air, the sea, running water) incapable of entire exclusive appropriation." *Res Communes*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/res%20communes> [<https://perma.cc/76U9-LZVF>] (last visited Feb. 28, 2021).

<sup>48</sup> Outer Space Treaty, *supra* note 34, at art. II.

<sup>49</sup> Outer Space Treaty, *supra* note 34, at art. II.

<sup>50</sup> All nations receive sovereignty within their airspace. See KLEIMAN, LAMIE & CARMINATI, *supra* note 27, at 62.

<sup>51</sup> *Beattie*, 756 F.2d at 100.

<sup>52</sup> This provision also applies to "non-governmental entities," which are beyond the scope of this Comment. Outer Space Treaty, *supra* note 34, at art. VI.

moon and other celestial bodies.”<sup>53</sup> This provision would apply to the Space Force, if: (1) the United States “launches or procures the launching of an object into outer space,” and that “object” or “component part” was used to the detriment of another “State Party . . . or to its natural or juridical persons[.]” or (2) the United States was the “territory or facility [from which] an object is launched,” and created such damage.<sup>54</sup>

In addition to the potential liability the United States may face under the OST should Space Force activity appear bellicose, Article IV provides an effective framework of what it—as a State Party—and its Space Force may or may not do expressly. Please refer to Table 1 below.<sup>55</sup>

Table 1: Acceptable Versus Unacceptable Activities Under the OST

States Parties to the Treaty may:	States Parties to the Treaty may not:
<ul style="list-style-type: none"> <li>• On the moon and other celestial bodies:               <ul style="list-style-type: none"> <li>○ Use exclusively for peaceful purposes</li> <li>○ Use required facility or equipment for</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• “[P]lace in orbit<sup>56</sup> around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction [ (“WMDs”) ] . . . or station such weapons in</li> </ul>

<sup>53</sup> Outer Space Treaty, *supra* note 34, at art. VII; *see also* G.A. Res. 2777 (XXVI), Convention on International Liability for Damage Caused by Space Objects, Nov. 29, 1971, 24 U.S.T. 2389, 961 U.N.T.S. 187 [hereinafter Liability Convention] (stating that “a launching State shall be absolutely liable to pay compensation for damage caused by its space objects on the surface of the Earth or the aircraft, and liable for damage due to its faults in space. The Convention also provides for procedures for the settlement of claims for damages”). Under the Liability Convention, this liability is joint and several. *See* Liability Convention, *supra*. The United States is a State Party to the Liability Convention. *See* Status of International Agreements, *supra* note 32. This Comment will not examine the Liability Convention in further detail.

<sup>54</sup> Outer Space Treaty, *supra* note 34, at art. VII.

<sup>55</sup> Outer Space Treaty, *supra* note 34, at art. IV.

<sup>56</sup> U.S. DEP’T OF DEF., OFF. OF THE GEN. COUNSEL, DEP’T OF DEF. LAW OF WAR MANUAL ¶ 14.10.3.1 (updated Dec. 2016) (quoting Outer Space Treaty art. IV); *see also* Outer Space Treaty, *supra* note 34, at art. IV (elaborating that “[t]he prohibition on placing weapons of mass destruction ‘in orbit around the earth’ . . . does not ban the use of nuclear or other weapons of mass destruction that go into a fractional orbit or engage in suborbital flight.”).

<p style="text-align: center;">peaceful exploration</p> <ul style="list-style-type: none"> <li>• Use “military personnel for scientific research or for any other peaceful purposes”</li> </ul>	<p style="text-align: center;">outer space in any other manner.”</p> <ul style="list-style-type: none"> <li>• On celestial bodies: <ul style="list-style-type: none"> <li>○ Establish military bases, installations, and fortifications</li> <li>○ Test any weapon</li> <li>○ Install any nuclear weapon or WMD</li> <li>○ Conduct military maneuvers</li> </ul> </li> </ul>
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Read in tandem, in addition to what is allowed expressly under Article IV (*i.e.*, the chart’s left column), the Space Force is permitted impliedly in Earth’s orbit: (1) to establish a military base, installation, or fortification; (2) to test a non-nuclear or non-WMD weapon; and (3) to conduct a military maneuver.<sup>57</sup> Thus, although the Space Force is forbidden to build a military moon-base, it may build an earth-orbiting base under Article IV,<sup>58</sup> which also legally authorizes the military to exercise kinetic and non-kinetic “*self-defense* in outer space via non-nuclear weapons and non-weapons of mass destruction.”<sup>59</sup> Simply put, space law allows for “the passage of weapons through space, such as ballistic missiles, the stationing of reconnaissance satellites, or the basing of conventional weapons in orbit.”<sup>60</sup>

The United States Department of Defense (DoD), in paragraph 14.10.4 of the *DoD Law of War Manual*, recognizes acceptable military activities in space that fall within the “peaceful purposes” requirement, including use of satellites for “observation or information-gathering” and “lawful military activities in self-defense (*e.g.*, missile early warning, use of weapon systems) . . . but aggressive activities that violate the Charter of the United Nations

<sup>57</sup> See KLEIMAN, LAMIE & CARMINATI, *supra* note 27, at 62; see also U.S. DEP’T OF DEF., *supra* note 56, ¶ 14.10.3.2 (noting that “[t]hese activities are prohibited only on the moon and other celestial bodies, not in outer space itself”).

<sup>58</sup> See KLEIMAN, LAMIE & CARMINATI, *supra* note 27, at 62.

<sup>59</sup> Bellflower, *supra* note 36, at 127 (emphasis added).

<sup>60</sup> RABKIN & YOO, *supra* note 17, at 195. See also U.S. DEP’T OF DEF., *supra* note 56, ¶ 14.10.3.1 (“In addition, this rule in Article IV of the Outer Space Treaty does not establish any prohibitions with respect to weapons that are not weapons of mass destruction (*e.g.*, anti-satellite laser weapons or other conventional weapons).”).

would not be permissible.”<sup>61</sup> To justify the need for a Space Force, the United States shall hold strong to the belief that military operations in space are not incongruent with “peaceful purposes” and are for its self-defense.<sup>62</sup>

*b. Rescue Agreement*

A central premise of the OST and its progeny, the Rescue Agreement,<sup>63</sup> is that space activity is performed by “astronauts” that serve as “envoys of all mankind[,]”<sup>64</sup> and they should receive States’ protection when danger comes their way.<sup>65</sup> However, the Space Force will likely possess its own brand of astronauts. Because “astronaut”<sup>66</sup> is synonymous with the National Aeronautics and Space Administration (NASA), a *civilian* space agency that focuses on “U.S. space exploration and aeronautics research,”<sup>67</sup> this

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<sup>61</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 14.10.4.

<sup>62</sup> See RABKIN & YOO, *supra* note 17, at 205; see also U.S. DEP’T OF DEF., *supra* note 56, ¶ 14.10.4 (“The United States has interpreted use of outer space for ‘peaceful purposes’ to mean ‘non-aggressive and beneficial’ purposes consistent with the Charter of the United Nations and other international law.”).

<sup>63</sup> G.A. Res. 2345 (XXII), Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (19 Dec. 1967) [hereinafter Rescue Agreement].

<sup>64</sup> Outer Space Treaty, *supra* note 34, at art. V.

<sup>65</sup> See KLEIMAN, LAMIE & CARMINATI, *supra* note 27, at 62 (“In the interest of promoting international cooperation and collaboration in outer space, the international community sought to protect astronauts by requiring States to help those in danger. The general principle [under Article V of the OST] was later expanded in the Rescue Agreement . . .”).

<sup>66</sup> *Astronaut Biographies*, NASA, <https://www.nasa.gov/astronauts> [<https://perma.cc/68VS-YVRF>] (last visited Feb. 21, 2021) (asserting that “‘astronaut’ derives from the Greek words meaning ‘space sailor,’ and refers to all who have been launched as crew members aboard NASA spacecraft bound for orbit and beyond”).

<sup>67</sup> *What Is NASA?*, NASA (Sept. 24, 2018), <https://www.nasa.gov/audience/forstudents/5-8/features/nasa-knows/what-is-nasa-58.html> [<https://perma.cc/X5U4-JTMW>].

Comment will use the novel word “astrohoplite”<sup>68</sup> to distinguish a *military* Space Force soldier.<sup>69</sup>

The Rescue Agreement, expanding on the OST, obligates the recovery of a discovered “space object or its component parts,”<sup>70</sup> and the rescue and return of “*personnel of a spacecraft*” due “to accident, distress, emergency or unintended landing[.]”<sup>71</sup> If read broadly, “*personnel of a spacecraft*” would include astrohoplites; however, if read narrowly, it would include *only* astronauts. So, this is an ambiguous term. The Supreme Court interprets treaties by first examining “the text of the treaty and the context in which the written words are used.”<sup>72</sup> In *Water Splash, Inc. v. Menon*, the Supreme Court noted that traditional treaty interpretation tools are applied to an ambiguous treaty provision, where the Court “may look beyond the written words to the history of the treaty, the negotiations, and the practical construction adopted by the parties.”<sup>73</sup>

Nowhere within the Rescue Agreement’s ten articles is the word “astronaut.”<sup>74</sup> However, in the Preamble that provides the treaty’s brief history, the word “astronauts” appears twice when mentioning the OST’s significance and the desire “to develop and give further concrete expression” to the duties under the OST of “rendering . . . all possible assistance to *astronauts* in the event of accident, distress

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<sup>68</sup> This term roughly translates to “space soldier” in Greek. See *astro-*, ONLINE ETYMOLOGY DICTIONARY, <https://www.etymonline.com/word/astro-> [<https://perma.cc/2L89-N63U>] (last visited Feb. 21, 2021) (defining “astro” as “star or celestial body; outer space”); *hoplite*, ONLINE ETYMOLOGY DICTIONARY, <https://www.etymonline.com/search?q=hoplite> [<https://perma.cc/HEH6-CELA>] (last visited Sept. 15, 2019) (defining “hoplite” as a “heavy-armed foot soldier of ancient Greece”).

<sup>69</sup> See, e.g., Kevin M. Hymel, *First Soldiers in space*, U.S. ARMY (Nov. 24, 2009), [https://www.army.mil/article/30900/first\\_soldiers\\_in\\_space](https://www.army.mil/article/30900/first_soldiers_in_space) [<https://perma.cc/W2N5-YWZR>] (noting that even after then-Colonel Robert L. Stewart “floated through the space shuttle Challenger’s cargo bay and over to his jetpack,” he consciously said, “I am not an astronaut, I am a Soldier”).

<sup>70</sup> Rescue Agreement, *supra* note 63, at art. 5.

<sup>71</sup> Rescue Agreement, *supra* note 63, at art. 2 (emphasis added).

<sup>72</sup> *Water Splash, Inc. v. Menon*, 137 S. Ct. 1504, 1508–09 (2017) (quoting *Volkswagenwerk Aktiengesellschaft v. Schlunk*, 486 U.S. 694, 699 (1988)).

<sup>73</sup> *Water Splash*, 137 S. Ct. at 1511 (citing *Schlunk*, 486 U.S. at 700) (internal quotation marks omitted). Under international law, when the United States is a State Party to a treaty, its duties are “determined by reference to the normal rules of treaty interpretation, taking into account any relevant statements of interpretation or reservations that the United States may have submitted, and that have not been rejected by the other States party.” BOOTHBY & HEINTSCHEL VON HEINEGG, *supra* note 42, at 3.

<sup>74</sup> Rescue Agreement, *supra* note 63, at arts. 1–10.

or emergency landing, the prompt and safe return of *astronauts*, and the return of objects launched into outer space . . . .”<sup>75</sup> Unfortunately, the OST does not provide any clarification, as the term “astronaut” is not defined within its text either.<sup>76</sup>

On the other hand, the practical construction of the Rescue Agreement reasonably appears to broaden protections to those found in space. By using the ambiguous phrase “personnel of a spacecraft” as opposed to “astronauts,” the Contracting Parties allow more parties to fall into the agreement’s shelter. More importantly, the Contracting Parties knew of the term “astronaut” and even used it in the Preamble, yet chose to not use it in the Rescue Agreement’s articles.<sup>77</sup>

Finally, if this ambiguity ever becomes a conflict of laws question, the United States applying its definition of “government astronaut” may safeguard astrophilites because § 50902(4) of the United States Code, Title 51, provides that a “government astronaut”:

(A) is designated by the National Aeronautics and Space Administration under section 20113(n);

(B) is carried within a launch vehicle or reentry vehicle in the course of his or her employment, which may include performance of activities directly relating to the launch, reentry, or other operation of the launch vehicle or reentry vehicle; and

(C) is either –

(i) an employee of the United States Government, including the uniformed services, engaged in the performance of a Federal function under authority of law or an Executive act; or

(ii) an international partner astronaut.<sup>78</sup>

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<sup>75</sup> Rescue Agreement, *supra* note 63, pmbl. (emphasis added).

<sup>76</sup> Outer Space Treaty, *supra* note 34.

<sup>77</sup> See Rescue Agreement, *supra* note 63.

<sup>78</sup> 51 U.S.C. § 50902(4) (2018). The astrophilite would need to meet all three prongs of this definition, including the first prong that follows section 20113(n):

For purposes of a license issued or transferred by the Secretary of Transportation under chapter 509 [51 U.S.C. § 50901 *et seq.*] to launch a launch vehicle or to reenter a reentry vehicle carrying a government

Astrohoplites as members of the “uniformed services, [and] engaged in the performance of a Federal function under authority of law or an Executive act” would fall into this definition.<sup>79</sup> The astrohoplites that will protect America from a new host of threats may not necessarily fall neatly into the parameters of the OST and the Rescue Agreement. Accordingly, the Space Force should apply a broader reading of “personnel of a spacecraft” for other States’ astrohoplites, so that it may receive reciprocity,<sup>80</sup> unless otherwise applicable international law applies. It is important that the United States begins to form a concrete view on this issue, as preparations are being made<sup>81</sup> and the Space Force has already sworn in its first member, General John W. “Jay” Raymond, as the inaugural Chief of Space Operations.<sup>82</sup> In the near future, active duty astrohoplites will be performing activities in space because as General Raymond stated: “We no longer have the luxury of operating in a peaceful,

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astronaut (as defined in section 50902), the Administration shall designate a government astronaut in accordance with requirements prescribed by the Administration.

51 U.S.C. § 20113(n) (2018) (giving NASA discretionary authority to designate a “government astronaut”).

<sup>79</sup> *Id.* § 50902(4)(C)(i). Arguably, all Space Force defensive and peacekeeping activities would qualify as “performance of a Federal function under authority of law or an Executive act[.]” *Id.*

<sup>80</sup> *Hilton v. Guyot*, 159 U.S. 113, 163 (1895) (observing that the authority of a nation’s laws is limited to the nation’s sovereignty, and “[t]he extent to which the law of one nation, . . . shall be allowed to operate within the dominion of another nation, depends upon . . . ‘the comity of nations’”).

<sup>81</sup> See, e.g., Derek Hawkins, *Trump reveals Space Force logo, and ‘Star Trek’ fans aren’t happy*, WASH. POST (Jan. 25, 2020, 9:55 AM EST), <https://www.washingtonpost.com/national-security/2020/01/25/space-force-logo/> [<https://perma.cc/4M6W-HDPM>]. The Space Force has selected an insignia which bears some resemblance to that of *Star Trek*’s Starfleet Command. *Id.*

<sup>82</sup> *General John W. “Jay” Raymond*, U.S. AIR FORCE, <https://www.af.mil/About-Us/Biographies/Display/Article/108479/general-john-w-jay-raymond/> [<https://perma.cc/NW2E-KWDL>] (last visited Feb. 27, 2020) (noting Gen. John W. ‘Jay’ Raymond assumed the duties as the first Chief of Space Operations, United States Space Force, Dec. 20, 2019); see David Welna, *Commander Sworn in As First Member Of New Space Force*, NPR (Jan. 14, 2020, 6:12 PM ET), <https://www.npr.org/2020/01/14/796405754/commander-sworn-in-as-first-member-of-new-space-force> [<https://perma.cc/24QM-UPKB>] (“The first newly created branch of the U.S. armed forces in more than seven decades now has its first official member.”). As of April 27, 2020, there are six members in the Space Force. See Katherine Hafner, *‘It Feels Awesome’ – Meet the newly-graduated Air Force cadet who just became the sixth member of Space Force*, TASK & PURPOSE (Apr. 27, 2020), <https://taskandpurpose.com/news/how-many-people-are-in-space-force> [<https://perma.cc/YAK2-ZJ67>].

benign domain, and we no longer have the luxury of treating space superiority as a given.”<sup>83</sup>

### III. SPACEWALK THE LINE: THE LAW OF WAR AND RULES OF ENGAGEMENT IN THE ARENA OF OUTER SPACE

On April 23, 1910, President Theodore Roosevelt at the Sorbonne in Paris delivered his legendary “The Man in the Arena” speech, noting that

[t]here are well-meaning philosophers<sup>84</sup> who declaim against the unrighteousness of war . . . . *War is a dreadful thing, and unjust war is a crime against humanity. But it is such a crime because it is unjust, not because it is a war . . . .* Every honorable effort should always be made to avoid war . . . but no self-respecting individual, no self-respecting nation, can or ought to submit to wrong.<sup>85</sup>

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<sup>83</sup> Welna, *supra* note 82. In May 2020, Netflix streamed an original show sharing the same namesake as the military branch. See Mike Murphy, *These are the streaming services worth your money in May 2020*, MARKETWATCH (May 10, 2020, 8:43 PM ET), <https://www.marketwatch.com/story/heres-whats-worth-streaming-in-may-2020-space-force-homecoming-ramy-and-more-2020-04-27> [<https://perma.cc/W9VG-QQ89>].

<sup>84</sup> See, e.g., ARISTOTLE, THE POLITICS OF ARISTOTLE bk. I at xvii (B. Jowett trans., Clarendon Press 1885), <https://oll.libertyfund.org/title/jowett-the-politics-vol-1#preview> [<https://perma.cc/6PPE-KV7J>] (“Others again appeal to custom, which they identify with justice; but this is a view which cannot be consistently maintained. For a war which is justified by custom may nevertheless be an unjust war[.]”).

<sup>85</sup> Theodore Roosevelt, President, United States of America, *The Man in the Arena*, THEODORE ROOSEVELT CTR. AT DICKENSON STATE UNIV. (emphasis added), <https://www.theodorerooseveltcenter.org/Learn-About-TR/TR-Encyclopedia/Culture-and-Society/Man-in-the-Arena.aspx> [<https://perma.cc/ADS3-K8BK>] (last visited Feb. 29, 2020). President Roosevelt in the same speech noted that

[i]t is not the critic who counts; not the man who points out how the strong man stumbles or where the doer of deeds could have done them better. The credit belongs to the man who is actually *in the arena* . . . who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who neither know victory nor defeat.

*Id.* (emphasis added). With proper guidance, the Space Force may achieve victory and credit for being in the arena of space.

Just war principles continue to inform the United States and the rest of the world in their decision-making on military matters.<sup>86</sup> Because current international treaties do not “expressly address[] space *jus in bello* rules, aside from the Outer Space Treaty’s WMD ban,” the Space Force may look to applicable international laws—such as the law of war<sup>87</sup>—that “regulate the conduct of hostilities, regardless of where they are conducted, which would include the conduct of hostilities in outer space.”<sup>88</sup>

*a. Law of War*

The law of war regulates a nation’s decision to use armed forces. It is “firmly established” in treaties and customary international laws, and such, applies to the United States.<sup>89</sup> Moreover, the United States holds the duty to act according to “both the law of initiating

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<sup>86</sup> See U.S. DEP’T OF DEF., *supra* note 56, ¶ 1.6.4. Just war doctrine includes “stringent limitations on the initial resort to war, *jus ad bellum*, and by seeking humane limitations on the means by which war [is] waged, *jus in bello*.” GARY D. SOLIS, *THE LAW OF ARMED CONFLICT: INTERNATIONAL HUMANITARIAN LAW IN WAR* 19 (2nd ed. 2010).

<sup>87</sup> RABKIN & YOO, *supra* note 17, at 220 (internal citation and quotation marks omitted). Since the OST and the four other space law treaties are silent as to what happens during war, “the law of armed conflict would apply unless it was trumped by the principle of noninterference with space systems . . . None of [the four space treaties] has any specific provision that indicates whether the parties intended that the agreement apply in wartime.” U.S. DEP’T OF DEF., *supra* note 56, ¶ 14.10.2.1 n.153 (quoting U.S. Dep’t of Def., Off. of the Gen. Counsel, *An Assessment of International Legal Issues in Information Operations* (2nd ed., Nov. 1999), reprinted in 76 U.S. NAVAL WAR COLL. INT’L LAW STUDIES 459, 494 (2002)). “Certain provisions of these treaties may not be applicable as between belligerents during international armed conflict.” *Id.* The DoD does not specify which provisions the U.S. may regard as inapplicable during an international armed conflict. BOOTHBY & HEINTSCHEL VON HEINEGG, *supra* note 42, at 368.

<sup>88</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 14.10.2.2 (stating that the law of war applies to outer space like “land, sea, air, or cyber domains”).

<sup>89</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶¶ 1.3, 1.3.2.2. The DoD uses several definitions for the law of war. See U.S. DEP’T OF DEF., *supra* note 56, ¶ 1.3.1.1.

war (*jus ad bellum*)<sup>90</sup> and the law of conducting war (*jus in bello*).<sup>91</sup> Knowing what “war” means is critical because it triggers when rules related to *jus in bello* apply.<sup>92</sup> One definition for “war” might be “a State’s use of force to vindicate its rights (principally, its inherent right of self-defense) under international law.”<sup>93</sup>

Under Article 51 of the U.N. Charter,<sup>94</sup> however, war is justified when performed in self-defense to counter another State’s act of aggression.<sup>95</sup> Finding active self-defense as an exception to Article 2(4)<sup>96</sup> —a “cornerstone” of the U.N. Charter and the general prohibition on war<sup>97</sup> —“leaves a wide arena for the use of force in space.”<sup>98</sup> Because the U.N. Charter “is a living instrument” and may

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<sup>90</sup> HAROLD HONGJU KOH, *THE TRUMP ADMINISTRATION AND INTERNATIONAL LAW* 99 (2019) (citation omitted); *see also id.* at 97 (“[U]nder the international law of *jus ad bellum* . . . the doctrine of self-defense may at times be invoked to use force — based on a necessarily elongated notion of ‘imminence’ — against those senior operational leaders who present a ‘continuing and imminent threat’ of striking against the United States.”).

<sup>91</sup> *Id.* at 99 (“Under domestic law, the United States must follow the terms of both the Constitution and the various statutory authorizations for, and restrictions on, the use of military force.”). Use of force under *jus in bello* requires near perfect confidence that civilians will not be injured or killed. *Id.* at 97.

<sup>92</sup> *See* U.S. DEP’T OF DEF., *supra* note 56, ¶ 1.5.2.

<sup>93</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 1.5.1. In fact, “war” is an ambiguous term that is defined in various ways by the United States and other States under international law. U.S. DEP’T OF DEF., *supra* note 56, ¶ 1.5.2.

<sup>94</sup> U.N. Charter art. 51 (“Nothing in the present charter shall impair the inherent right of individual or collective self-defen[s]e if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security.”).

<sup>95</sup> *Id.* This Comment will focus on the role of the United States as an individual U.N. Member State responding to an armed attack. Out of scope are anticipatory self-defense, collective self-defense, and obligations with respect to the U.N. Security Council’s involvement under Article 51.

<sup>96</sup> U.N. Charter art. 2, ¶ 4 (“All Members shall refrain in their international relations from the *threat or use of force* against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.”) (emphasis added).

<sup>97</sup> *See* CHRISTIAN HENDERSON, *THE USE OF FORCE AND INTERNATIONAL LAW* 17 (2018); CHRISTINE GRAY, *INTERNATIONAL LAW AND THE USE OF FORCE* 124 (4th ed. 2018) (noting that Article 51 is a narrow exception to Article 2(4) of the U.N. Charter). Additionally, customary international law forbids the use of force, or even the threat of it. *See* *Military and Paramilitary Activities In and Against Nicaragua (Nicar. v. U.S.)*, Judgment, 1986 I.C.J. 14, ¶ 185 (June 27) (“In the present dispute, the Court, while exercising its jurisdiction only in respect of the application of the customary rules of non-use of force and non-intervention, cannot disregard the fact that the Parties are bound by these rules as a matter of treaty law and of customary international law.”).

<sup>98</sup> RABKIN & YOO, *supra* note 17, at 206.

be reinterpreted based on States' shared subsequent agreement and practice, additional excepted activities to Article 2(4) may be added under an expanding interpretation of Article 51.<sup>99</sup> Maintaining flexibility in interpreting Article 51 allows the Space Force to station astrophobites in space to protect the United States and its orbiting weapons systems capable of striking targets in, from, and to space.<sup>100</sup> The United States and its astrophobites must act righteously – and know when there is no choice other than to respond in kind, tit for tat.<sup>101</sup>

As certain terms have been left undefined by the U.N. Charter,<sup>102</sup> disagreements have sprung up. One such debate is over Article 2(4)'s use of the word "threat," which may prohibit either narrowly "threats of unlawful force" or, broadly, "threats of possible lawful force," as they may, in turn, harm international security and peace.<sup>103</sup> Additionally, Article 2(4) provides no clarity on the gravity of threat of force versus use of force, but de facto practice reveals that States tolerate threats better than use of force, "and the U.N. very rarely expresses any condemnation of the former."<sup>104</sup>

On the other hand, with respect to self-defense, all nations concur that it "must be necessary and proportionate."<sup>105</sup> In his 2009 Nobel Peace Prize acceptance speech, President Barack Obama restated just war's twin principles, noting that:

[O]ver time, as codes of law sought to control violence within groups, so did philosophers and clerics and statesmen seek to regulate the destructive power of war. The concept of a

<sup>99</sup> See HENDERSON, *supra* note 97, at 19.

<sup>100</sup> See RABKIN & YOO, *supra* note 17, at 199, 206.

<sup>101</sup> See Radiolab, *Tit for Tat*, WNYCSTUDIOS (Sept. 17, 2019), <https://www.wnycstudios.org/podcasts/radiolab/segments/104010-one-good-deed-deserves-another> [<https://perma.cc/NFL2-37UT>]; see also Leon F. Seltzer, *The Prisoner's Dilemma and the "Virtues" of Tit for Tat*, PSYCH. TODAY (July 27, 2016), <https://www.psychologytoday.com/us/blog/evolution-the-self/201607/the-prisoner-s-dilemma-and-the-virtues-tit-tat> [<https://perma.cc/5YTM-N974>] ("If, reciprocally, your partner cooperates, you continue to cooperate; if they defect, you respond in kind by immediately retaliating against them. This formula has, ironically, been characterized as 'conditional niceness,' since it advocates for a kind of provisional golden rule. And it's a constant winner.").

<sup>102</sup> For example, both "threat" and "use of force" are left undefined by the U.N. Charter. HENDERSON, *supra* note 97, at 26.

<sup>103</sup> See GRAY, *supra* note 97, at 36–37 ("There is also a growing debate as to what types of activities can amount to 'use of force' as opposed to intervention or mere law enforcement.").

<sup>104</sup> HENDERSON, *supra* note 97, at 30.

<sup>105</sup> GRAY, *supra* note 97, at 157.

“just war” emerged, suggesting that war is justified only when certain conditions were met: if it is waged as a last resort or in self-defense; if the force used is proportional; and if, whenever possible, civilians are spared from violence.<sup>106</sup>

Necessity and proportionality are fact dependent on a case-by-case basis.<sup>107</sup> Because a reprisal is typically frowned upon as unlawful, an act of self-defense “must not be retaliatory or punitive; the aim should be to halt and repel an attack.”<sup>108</sup> In reality, however, there is a gray area between what constitutes self-defense and what constitutes a reprisal.<sup>109</sup> In the Space Force, these early determinations will likely be made by the Assistant Secretary of Defense for Space Policy, as Section 955 of the Act expressly provides that the Assistant Secretary’s principal duty will be to oversee “policy of the Department of Defense for space warfighting.”<sup>110</sup> It is necessary and proper for the Space Force to begin analyzing the facts and circumstances that provide for self-defense in outer space, before policy transforms into law.<sup>111</sup>

*i. Necessity for Use of Force*

First, if the Space Force intends to act in self-defense, it must make a good faith showing of necessity, in that there is “no alternative response to an armed attack . . . .”<sup>112</sup> In other words, the Space Force when acting in self-defense must establish either the

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<sup>106</sup> Barack H. Obama, 44th President of the U.S., Nobel Lecture: A Just and Lasting Peace, (Dec. 10, 2009) (highlighting that adherence to international standards for the use of force “becomes particularly important [for accountability] when the purpose of military action extends beyond self-defense or the defense of one nation against an aggressor”).

<sup>107</sup> GRAY, *supra* note 97, at 159-60 (“In theory it is possible to draw a distinction between necessity and proportionality, and the [International Court of Justice] typically applies the two requirements separately.”).

<sup>108</sup> GRAY, *supra* note 97, at 159-60.

<sup>109</sup> GRAY, *supra* note 97, at 160; *see also* HENDERSON, *supra* note 97, at 241 (“[A]rmed reprisals are acts of forcible self-help, involving an unlawful use of force falling short of war, by one state in response to a prior violation of international law by another.”) (internal citation, quotation marks, and italics omitted).

<sup>110</sup> S. 1790, 116th Cong. § 955(a) (2019) (enacted).

<sup>111</sup> *See* KOH, *supra* note 90, at 18 (observing that “norms initially articulated as policy for political reasons affect legal rulings and over time themselves harden into law”).

<sup>112</sup> GRAY, *supra* note 97, at 159.

unavailability of “reasonable non-forcible measures” or the “reasonable expectation that recourse to such measures would be ineffective.”<sup>113</sup> A helpful fact is knowing whether the “armed attack” was an act of terrorism, because if so, the Space Force may respond to a ceased attack by invoking self-defense to prevent future harm and this response will be received more favorably by the international community.<sup>114</sup> Pivotal to the necessity analysis is the “nature of the armed attack, or threat thereof, in terms of the weapons and methods used . . . .”<sup>115</sup> There is universal agreement that a right to self-defense is invoked by an “armed attack”; however, it is unsettled what even constitutes one and how to identify it due to “the special characteristics of particular weapons.”<sup>116</sup> In short, the necessity for self-defense may hinge on certain facts, such as whether the perpetrators used or threatened to use WMDs, conventional weaponry, or cyberattacks.<sup>117</sup>

Another threshold issue is based upon the Space Force’s interpretation of Article 51 of the U.N. Charter, which may be read more inclusively or exclusively.<sup>118</sup> If reading Article 51 as an *expansionist*, then self-defense equals “a right that nothing in the Charter shall impair.”<sup>119</sup> From this viewpoint, this pre-existing “inherent” right stems from “earlier customary international law” that the U.N. Charter did not expressly strike and that recognized “the protection of nationals and anticipatory” self-defense at the time of the Charter’s implementation.<sup>120</sup> Alternatively, *restrictionists* assert that “if, and only if, an armed attack occurs and imminent threats of attack are not covered by Article 51[,]”<sup>121</sup> is self-defense tolerable as a narrow exception to Article 2(4).<sup>122</sup> Regardless of whether one is an expansionist or restrictionist—for a “one-off minor incident” or “an ongoing conflict”—central to the States’

<sup>113</sup> HENDERSON, *supra* note 97, at 230.

<sup>114</sup> HENDERSON, *supra* note 97, at 231. For example, the United States’ response to the acts of terrorism on 9/11 was “generally well received by other [S]tates.” HENDERSON, *supra* note 97, at 232.

<sup>115</sup> HENDERSON, *supra* note 97, at 233.

<sup>116</sup> GRAY, *supra* note 97, at 134–35.

<sup>117</sup> See HENDERSON, *supra* note 97, at 233.

<sup>118</sup> GRAY, *supra* note 97, at 124.

<sup>119</sup> HENDERSON, *supra* note 97, at 277–78 (internal quotation marks omitted).

<sup>120</sup> GRAY, *supra* note 97, at 124.

<sup>121</sup> HENDERSON, *supra* note 97, at 278.

<sup>122</sup> GRAY, *supra* note 97, at 124 (noting that for those who share this view, “Article 51 is clear; the right . . . arises only if an armed attack (French: *aggression armée*) occurs”).

controversy are “the questions of fact as to whether there has actually been an armed attack of the type claimed and, if so, which state was the victim.”<sup>123</sup>

ii. *Proportionality for Use of Force*

Second, for self-defense to meet the proportionality requirement, “[n]o more force or greater violence should be used to carry out a military operation than is necessary in the circumstances.”<sup>124</sup> Because proportionality is a “constraint on the scale and effects of defensive action,”<sup>125</sup> factors used to determine it are “the size, duration, and target of the response . . . .”<sup>126</sup> Although there are no underpinnings or guidelines,<sup>127</sup> proportionality is referenced by States as the “criterion for a lawful act” to justify their acts of self-defense and those of others.<sup>128</sup> Proportionality depends on the act falling under either *jus ad bellum* or *jus in bello*.<sup>129</sup> The former measures the act in its totality, but “the latter considers the force applied as against a specific military target as defined by international law at any given point during that operation.”<sup>130</sup>

Space offers a *sui generis* environment for warfare. As there are virtually no people in space—other than those boarded on the International Space Station<sup>131</sup> and on the occasional Virgin Galactic spacecraft<sup>132</sup>—States may “harm each other without directly costing

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<sup>123</sup> GRAY, *supra* note 97, at 121.

<sup>124</sup> SOLIS, *supra* note 86, at 258 (citation omitted).

<sup>125</sup> HENDERSON, *supra* note 97, at 234 (internal citation and quotation marks omitted).

<sup>126</sup> GRAY, *supra* note 97, at 159 (“[T]hese factors are also relevant to necessity.”).

<sup>127</sup> HENDERSON, *supra* note 97, at 235.

<sup>128</sup> HENDERSON, *supra* note 97, at 234.

<sup>129</sup> HENDERSON, *supra* note 97, at 234.

<sup>130</sup> HENDERSON, *supra* note 97, at 234 (quoting Dino Kritsiotis, *A Study of the Scope and Operation of the Rights of Individuals and Collective Self-Defence under International Law*, in RESEARCH HANDBOOK ON INTERNATIONAL CONFLICT AND SECURITY LAW: JUS AD BELLUM, JUS IN BELLO, AND JUS POST BELLUM (Nigel D. White & Christian Henderson eds., 2013), 170, 211–12 (internal quotation marks omitted)).

<sup>131</sup> See Doris Elin Urrutia, *Crowded Space Station: There are 9 People from 4 Different Space Agencies in Orbit Right Now*, SPACE.COM (Sept. 30, 2019), <https://www.space.com/space-station-crowded-nine-crewmembers-expedition-60.html> [<https://perma.cc/E5DX-J22N>].

<sup>132</sup> See Mike Wall, *Virgin Galactic's VSS Unity space plane arrives at New Mexico spaceport*, SPACE.COM (Feb. 14, 2020), <https://www.space.com/virgin-galactic-spaceship-two-unity-spaceport-america.html> [<https://perma.cc/8NKK-4TBP>].

the lives of combatants or civilians. Their use of force will destroy satellites that can be replaced and cause only temporary economic losses.”<sup>133</sup> So long as temporarily disabled communications and transportation networks do not cause unintended consequences, no one will need to die.<sup>134</sup>

The Space Force may deliver a reasonably calculated, temporary, and proportional response on another nation’s “space-based systems . . . without causing the death and destruction of terrestrial combat.”<sup>135</sup> If the satellites, even though civilian-based, support military functions, the Space Force may target them “under traditional approaches to the laws of war. Military use of civilian systems renders them liable to attack during armed conflict.”<sup>136</sup> Moreover, it is fair game for the Space Force to disable any military-purchased “surveillance or communications bandwidth from civilian providers[.]”<sup>137</sup> Another proposed self-defense tactic in space may be aiming “ground-based lasers to temporarily blind satellites or jam their connections with ground control stations.”<sup>138</sup> This is in the realm of possibility for a proportionate response, as the Space Force would produce a “loss” without the “death and destruction of kinetic weapons.”<sup>139</sup> This kind of warfare would be similar to a game of keep away, in that the Space Force’s goal would not be to destroy or create permanent damage to another State’s resources or satellite systems, but merely frustrate the opponent for a period of time until it acquiesces.<sup>140</sup>

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<sup>133</sup> RABKIN & YOO, *supra* note 17, at 221 (noting that loss of GPS signal or slowed down Internet data may occur, “[b]ut no one dies, no infrastructure is destroyed, and no lands or waters ruined”).

<sup>134</sup> See RABKIN & YOO, *supra* note 17, at 221.

<sup>135</sup> RABKIN & YOO, *supra* note 17, at 220.

<sup>136</sup> RABKIN & YOO, *supra* note 17, at 218. If a nation possesses no military satellite systems, then attacking its “civilian space systems” is acceptable as the least “destructive means of coercion. Disabling the space-based elements of a communication system could pressure an opponent without causing any human casualties, much in the same way as shutting down its Internet or financial markets.” RABKIN & YOO, *supra* note 17, at 219.

<sup>137</sup> RABKIN & YOO, *supra* note 17, at 218.

<sup>138</sup> RABKIN & YOO, *supra* note 17, at 219.

<sup>139</sup> RABKIN & YOO, *supra* note 17, at 219.

<sup>140</sup> RABKIN & YOO, *supra* note 17, at 219.

*b. Responding Tit for Tat – Self-Defense Matrices*

Over the next decade, “constellations” of 800 to 1,000 “small and miniaturized satellites both for imaging and communications” will launch every year.<sup>141</sup> As satellites become an even more essential part of nations’ infrastructures,<sup>142</sup> it is not a stretch to see how they may be attacked to antagonize a State—especially when communication services are “in higher demand as much of the world spends more time at home due to the coronavirus pandemic[.]”<sup>143</sup> The United States, China, and Russia already have earth-to-space “anti-satellite missiles,” and in the future, nations will possess maneuverable satellites that may collide with another State’s satellite system, simultaneously destroying it and creating debris fields.<sup>144</sup>

Tables 2a and 2b provide hypothetical uses of force by Hostile State against the United States, and how the Space Force may respond with a necessary (“Nec.”) and proportional (“Prop.”) response.

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<sup>141</sup> K.R. Sridhara Murthi & V. Gopalakrishnan, *Trends in Outer Space Activities – Legal and Policy Challenges*, in RECENT DEVELOPMENTS IN SPACE LAW 27, 31–32 (2017).

<sup>142</sup> *Id.* at 30–31 (“More than fifty nations operate satellites in space, while over 100 nations are engaged in the use of space systems and services.”).

<sup>143</sup> Eric Mack, *Elon Musk says Starlink satellite broadband to start beta testing this year*, CNET (Apr. 23, 2020, 3:16 PM PT), <https://www.cnet.com/news/elon-musk-says-starlink-satellite-broadband-beta-testing-to-start-soon/> [<https://perma.cc/6A8F-PEP7>] (noting that SpaceX’s international filings indicate plans to grow its Starlink constellation to more than 40,000 satellites for more affordable internet access worldwide).

<sup>144</sup> Dale Stephens, *Increasing Militarization of Space and Normative Responses*, in RECENT DEVELOPMENTS IN SPACE LAW 93 (2017).

Table 2a: *Self-Defense Matrix—Jus ad Bellum*

Hostile State's Action	Use of Force	Space Force's Self-Defense	Nec.	Prop.
<b>JUS AD BELLUM</b>				
Shoots down 500 satellites in constellation	Yes <sup>145</sup>	Shoots down ≤ 500 satellites in Hostile State's constellation	Likely Yes <sup>146</sup>	Yes
		Shoots down 1,000 satellites in Hostile State's constellation	Likely No	No
Electronically jams constellation / damages satellites' optic sensors	Yes <sup>147</sup>	Electronically jams <sup>148</sup> Hostile State's similarly sized constellation / damages same number of satellites' optic sensors	Likely Yes	Yes
		Shoots down satellites in Hostile State's constellation	No <sup>149</sup>	No
Clears own space debris, which harms constellation	Likely No	Notify Hostile State of damage done to constellation	Yes	Yes
		Electronically jams Hostile State's similarly sized constellation / damages same number of satellites' optic sensors	No	No

<sup>145</sup> *Id.* at 97 (“In the context of space activities, an Article 2(4) violation may be manifested where activities are initiated by a State in space or on earth that causes physical damage on target state’s terrestrial space-based infrastructure.”).

<sup>146</sup> *Id.* at 98 (“[A State’s] parallel neutralization of blocking satellites, the reciprocal ‘bumping’ and/or cyber reaction that disables a violating satellite . . . or other space object may arguably be lawful reactions depending on the circumstances, and the interests that are imperilled.”).

<sup>147</sup> *Id.* at 97 (noting that “use of lasers to damage optic sensors of passing satellites or otherwise ‘bumping’ or otherwise physically damaging satellites” are additional Article 2(4) violations).

<sup>148</sup> Dan Robitzski, *Space Force Unveils Its First Weapon, A Satellite Jammer*, FUTURISM (Apr. 23, 2020), <https://futurism.com/the-byte/space-force-first-weapon-satellite-jammer> [<https://perma.cc/XMU9-LE58>] (“The U.S. Space Force recently acquired its first offensive weaponry: a device capable of blocking satellite communications, temporarily rendering orbiting satellites useless.”).

<sup>149</sup> Stephens, *supra* note 144, at 98 (observing that a State may not use “kinetic force” under these circumstances).

Table 2b: *Self-Defense Matrix—Jus in Bello*

Hostile State's Action	Use of Force	Space Force's Self-Defense	Nec.	Prop.
<b>JUS IN BELLO<sup>150</sup></b>				
Shoots down unmanned spacecraft	Yes	Shoots down Hostile State's unmanned spacecraft	Likely Yes	Yes
		Shoots down Hostile State's manned spacecraft	No	No
Shoots down manned spacecraft with 100 astrophlites	Yes	Shoots down Hostile State's manned spacecraft ≤ 100 astrophlites	It Depends	Yes
		Shoots down Hostile State's manned spacecraft carrying prisoners of war, civilians, or wounded / attacks a hospital, school, or civilian home in Hostile State <sup>151</sup>	No	No

### c. Rules of Engagement

Rules of Engagement (ROE) are not law—international or domestic<sup>152</sup>—but share an important role in warfare because they “are the primary means of regulating the use of force in armed conflict . . . They are akin to a tether, with which senior commanders control the use of force by individual combatants.”<sup>153</sup> To guide their soldiers, nearly all States’ armed forces have a version of the ROE.<sup>154</sup> If ROE were a wooden three-legged stool, then the three legs would be “national policy, operational requirements and law.”<sup>155</sup> The

<sup>150</sup> Stephens, *supra* note 144, at 98 (“At present, there is no specific Treaty that regulates armed conflict in space.”).

<sup>151</sup> This anticipates application of law of war principles, which would provide protections over these individuals and locations.

<sup>152</sup> SOLIS, *supra* note 86, at 490 (“[Rules of Engagement] are military directives, heavy with acronyms.”).

<sup>153</sup> SOLIS, *supra* note 86, at 495. To help the individual commander employ their armed forces, the ROE are constructed with “the help of military lawyers and implemented by those who execute the military mission.” SOLIS, *supra* note 86, at 495.

<sup>154</sup> SOLIS, *supra* note 86, at 490.

<sup>155</sup> SOLIS, *supra* note 86, at 495 (internal quotation marks omitted).

stool's seat on top would be the foundational law of war and other customary international law, "along with considerations of political objectives and the military mission."<sup>156</sup> ROE may limit a commander's action for certain issues (*e.g.*, grant/denial for a certain weapon's use), but "ROE *never* limit the right and obligation of combatants to exercise self-defense."<sup>157</sup> More similar to a code of conduct, ROE do not provide instructions on executing military missions because "ROE are not tactical in nature[.]"<sup>158</sup>

The Space Force must establish a substantial ROE for astrophilites because they are essential in meeting the standards the United States must follow under the law of war "on the modern battlefield"<sup>159</sup> – and ROE "are frequently cited when . . . violations are alleged."<sup>160</sup> The Space Force should continue the tradition of any astrophilite's misconduct under ROE to be "prosecuted as violations of a lawful general order, a common Uniform Code of Military Justice offense."<sup>161</sup> In a Congressional hearing, General Creighton Abrams, Jr.<sup>162</sup> declared, "The rules [of engagement] have been forever . . . a source of frustration to many commanders. And they have had to live with them. And they have had to do their job with them."<sup>163</sup>

In 1994, the military "redesignated" ROE as the Standing Rules of Engagement ("SROE"), which underwent a January 2000 revision "to give individual self-defense increased emphasis."<sup>164</sup> Following

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<sup>156</sup> SOLIS, *supra* note 86, at 495.

<sup>157</sup> SOLIS, *supra* note 86, at 495 (emphasis in original) ("[The ROE] may [not] authorize a violation of LOAC/IHL . . .").

<sup>158</sup> SOLIS, *supra* note 86, at 495.

<sup>159</sup> SOLIS, *supra* note 86, at 491.

<sup>160</sup> SOLIS, *supra* note 86, at 490.

<sup>161</sup> SOLIS, *supra* note 86, at 490 (citation omitted).

<sup>162</sup> General Abrams was a four-star general who was "head of Military Assistance Command, Vietnam, or MACV, which oversaw all American combat forces inside South Vietnam." Brig. Gen. John D. Howard (ret.), *This general challenged the president and saved American lives*, MILITARYTIMES (Nov. 2, 2017), <https://www.militarytimes.com/military-honor/salute-veterans/2017/11/02/this-general-challenged-the-president-and-saved-american-lives/> [<https://perma.cc/A39C-WMGH>].

<sup>163</sup> SOLIS, *supra* note 86, at 493 (quoting LEWIS SORLEY, THUNDERBOLT: GENERAL CREIGHTON ABRAMS AND THE ARMY OF HIS TIMES 341 (1998)).

<sup>164</sup> SOLIS, *supra* note 86, at 494. *See also* SOLIS, *supra* note 86, at 502 ("All ROE contain a clear statement of the right to self-defense. Occasionally, ROE also describe escalation-of-force measures. Most contain other common elements addressing enemy hostile acts, enemy hostile intent, dealing with enemy forces declared hostile, and a positive identification requirement.").

current standards, the astrophlite may use “self-defense, as long as the opposing force remains a threat, it may be pursued and engaged.”<sup>165</sup> Under an objective standard for self-defense, “a soldier is not necessarily required to employ each option before escalating to the next higher force level, and when circumstances dictate, the soldier may go immediately to deadly force.”<sup>166</sup>

In June 2005, SROE added Standing Rules for the Use of Force (“SRUF”),<sup>167</sup> which “apply in domestic civil support missions and land defense missions within U.S. territory.”<sup>168</sup> The legal source behind SROE are “generally shaped by international legal obligations, such as the United Nations Charter, international treaties, and customary international law[,]” whereas the SRUF “are generally shared by domestic or host-nation legal obligations.”<sup>169</sup> In a future update of the SROE and SRUF, the Space Force’s astrophlites should be considered<sup>170</sup> because the majority of space will stay shared international territory; however, within the confines of the Space Forces’ bases and ships are potentially United States space (or waters).<sup>171</sup>

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<sup>165</sup> SOLIS, *supra* note 86, at 502 (“Unless the ROE specify otherwise, there is no requirement that a self-defense engagement be terminated when the opposing force attempts to break off contact.”).

<sup>166</sup> SOLIS, *supra* note 86, at 505 (“ROE are interpreted in a reasonable way.”).

<sup>167</sup> SOLIS, *supra* note 86, at 494.

<sup>168</sup> SOLIS, *supra* note 86, at 494.

<sup>169</sup> SOLIS, *supra* note 86, at 494 (internal quotation marks omitted).

<sup>170</sup> See, e.g., U.S. DEP’T OF DEF., *supra* note 56, ¶ 14.10.2.2 (“[L]aw of war treaties[,] the customary law of war[, the SROE, and the SRUF] are understood to regulate the conduct of hostilities, regardless of where they are conducted, which would include the conduct of hostilities in outer space.”).

<sup>171</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 14.10.1. (“Outer space may be viewed as analogous to the high seas in certain respects. For example, no State may claim sovereignty over outer space.”) (internal citations omitted); U.S. DEP’T OF DEF., *supra* note 56, ¶ 14.10.1, n.145. Arthur J. Goldberg, U.S. Ambassador to the United Nations, Treaty on Outer Space: Hearings Before the Committee on Foreign Relations, U.S. Senate, 90th Congress, First Session, 63 (Mar. 13, 1967) (“[O]nce we leave airspace, and get to outer space, however you define the limits, this is an attempt to create in outer space the closest analogy and that is the high seas.”); Outer Space Treaty art. VIII:

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. Ownership of objects launched into outer space, including objects landed or constructed on a celestial body, and of their component parts, is not affected by their presence in outer space or on a celestial body or by their return to the Earth. Such objects or component parts found beyond the

## IV. FINDING OPEN SPACE UNDER THE LAW OF THE SEA

With a Space Force, the vastest ocean yet is next. From the moment a United States Navy was created, “military use of the oceans has been associated with the seas . . . .”<sup>172</sup> The high seas are often used as “the most common analogy for space” when looking at implications on commerce and military expansion because “[i]f similar to the high seas, space would allow any nation to deploy both military and civilian craft free from interference.”<sup>173</sup> Unlike outer space, the law over how the military uses waterways is quite developed during times of war and peace.<sup>174</sup> For war time, “Hague law, the 1949 Geneva Conventions, and the Protocols have application, in addition to the distinctive international law that applies to the sea during these times, including the laws of naval warfare.”<sup>175</sup> For peacetime, the third United Nations Convention on the Law of the Sea (“UNCLOS III”) sheds some light.<sup>176</sup> The law of the sea is a proven testing ground for “international law’s ability to facilitate coexistence and interaction between states, and also between their national systems of law.”<sup>177</sup>

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limits of the State Party to the Treaty on whose registry they are carried shall be returned to that State Party, which shall, upon request, furnish identifying data prior to their return.

<sup>172</sup> DONALD R. ROTHWELL & TIM STEPHENS, *THE INTERNATIONAL LAW OF THE SEA* 259 (2010) (“[E]arly uses of the oceans were for the purpose of asserting naval power with the objective of controlling the oceans.”).

<sup>173</sup> RABKIN & YOO, *supra* note 17, at 216.

<sup>174</sup> ROTHWELL & STEPHENS, *supra* note 172, at 258 (“[T]he linkages and tensions between the law [of the sea] and naval operations became more prominent as the law consolidated and was codified throughout the twentieth century.”). The OST and the other space treaties only considered “peaceful purposes.” *See, e.g.*, Outer Space Treaty, *supra* note 34, at art. IV (“The moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes.”).

<sup>175</sup> ROTHWELL & STEPHENS, *supra* note 172, at 258 (emphasis added and internal citations omitted). These wartime laws are out of scope for this Comment because the current state of space is more closely related to the peacetime Law of the Sea. “Two dimensions of general international law have particular relevance to military operations at sea: the law of naval warfare, and UN-sanctioned naval operations.” *Id.* at 260. Unfortunately, there are no corollaries on point for space law.

<sup>176</sup> ROTHWELL & STEPHENS, *supra* note 172, at 258 (noting that UNCLOS III was “designed to bring security to the oceans, and with it an enhancement of the peaceful uses of the oceans through maritime confidence building”); United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS III].

<sup>177</sup> GARDINER, *supra* note 36, at 389.

*a. Law of the Sea*

As an initial matter, the law of the sea—comprised of treaties (e.g., UNCLOS III) and customary international law—“developed principally with peacetime situations in mind. Nothing in the law of the sea impairs a State’s inherent right of individual or collective self-defense, or rights during armed conflict.”<sup>178</sup> More specifically, the Preamble of UNCLOS III recognizes an aspiration to establish “a legal order for the seas and oceans which . . . will promote the peaceful use of the seas and oceans . . . .”<sup>179</sup> Additionally, Article 301 provides that “States Parties *shall refrain from any threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the principles of international law embodied in the Charter of the United Nations.*”<sup>180</sup>

Renowned as the “constitution” for oceans, UNCLOS III specifies in detail “practically every aspect of the use and resources of the seas and the oceans.”<sup>181</sup> As of March 8, 2020, there are 157 signatories and 168 parties to the United Nations Convention on the Law of the Sea; however, the United States remains a nonparty.<sup>182</sup> Although President Ronald Reagan, on behalf of “the United States famously declined to ratify the 1982 U.N. Convention on the Law of the Sea, [he] recognized much of it as governing U.S. practice and eventually as customary international law.”<sup>183</sup>

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<sup>178</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 13.1.1.

<sup>179</sup> UNCLOS III, *supra* note 176, pmb1.

<sup>180</sup> UNCLOS III, *supra* note 176, at art. 301 (emphasis added). This reads like Article 2(4) of the U.N. Charter.

<sup>181</sup> JAMES HARRISON, *MAKING THE LAW OF THE SEA* 48 (2011) (internal quotation marks omitted).

<sup>182</sup> See *Chapter XXI Law of the Sea, United Nations Convention on the Law of the Sea*, UNITED NATIONS TREATY COLLECTION: STATUS OF TREATIES, [https://treaties.un.org/Pages/ViewDetailsIII.aspx?src=TREATY&mtdsg\\_no=XXI-6&chapter=21&Temp=mtdsg3&clang=\\_en](https://treaties.un.org/Pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-6&chapter=21&Temp=mtdsg3&clang=_en) [<https://perma.cc/M8B7-69YD>] (last visited Apr. 13, 2021); Nat’l Oceanic & Atmospheric Admin., *What is the law of the sea?*, NAT’L OCEAN SERV., <https://oceanservice.noaa.gov/facts/lawofsea.html> [<https://perma.cc/4E99-XTJU>] (last updated Feb. 26, 2021) (“While the United States ratified the 1958 Convention, as of late 2013, it had not become a party to the 1982 Convention. The United States recognizes that the 1982 Convention reflects customary international law and complies with its provisions.”).

<sup>183</sup> KOH, *supra* note 90, at 18; see also U.S. DEP’T OF DEF., *supra* note 56, ¶ 13.1.2 (observing that the United States did not sign UNCLOS III in 1982 because of the deep seabed mining provisions, “[h]owever, in 1983, the United States announced that it was prepared to accept and act in accordance with the balance of interests . . . relating to traditional uses of the oceans”).

Notably, general international law tends to supersede the law of the sea on the question of use of force and its related limitations.<sup>184</sup> Because “the modern law of the sea” was drafted without prioritizing wartime military operations, its effect is on “military operations at sea during peacetime, particularly the movement of naval vessels through the territorial sea, international straits, and archipelagic waters of foreign states.”<sup>185</sup> Any State’s military operations or act of self-defense that are “consistent with international law,” is unaffected by “the use of the high seas for peaceful purposes . . . .”<sup>186</sup> However, these obligations to other States may become malleable during wartime, based on the military’s needs and consideration of the law of war.<sup>187</sup>

*i. Sovereignty Over Waters*

In 1983, the United States agreed to abide by the same “traditional uses of the oceans” as those under UNCLOS III for “navigation and overflight rights and freedoms . . . .”<sup>188</sup> Waters are subjected to either a State’s sovereignty (national waters) or not (international waters).<sup>189</sup> National waters may include “internal waters, territorial seas, and archipelagic waters.”<sup>190</sup> On the other hand, international waters “include contiguous zones, exclusive economic zones (EEZs), and the high seas.”<sup>191</sup> A State’s freedom in the high seas provides for warships to exercise “task force maneuvering, flight operations, military exercises, surveillance, intelligence gathering activities, and ordnance testing and firing.”<sup>192</sup>

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<sup>184</sup> See ROTHWELL & STEPHENS, *supra* note 172, at 260 (noting that Article 301 of the UNCLOS defers to Article 2(4) of the U.N. Charter, prohibiting any use of force contrary to the Charter).

<sup>185</sup> See ROTHWELL & STEPHENS, *supra* note 172, at 260. See also *id.* at 266 (stating that the law of the sea acknowledges that the “high seas are reserved for peaceful purposes”).

<sup>186</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 13.1.1 (identifying the similar interpretation of “peaceful purposes” in “use of outer space”).

<sup>187</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 13.1.1.

<sup>188</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 13.1.2.

<sup>189</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 13.2.

<sup>190</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 13.2.

<sup>191</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 13.2.3.

<sup>192</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 13.2.3.1 (observing that exercising these rights must be balanced with “the interests of other States”).

As the high seas make up the majority of the earth's waters and are not "subject to the sovereignty of any one state," a State may take claim to "only a narrow margin around" its sovereign coastline.<sup>193</sup> The United States claims a territorial sea<sup>194</sup> of twelve nautical miles, and "a contiguous zone extending [twenty-four] nautical miles" that follows international law and does not intersect another State's territorial seas,<sup>195</sup> up to twelve nautical miles.<sup>196</sup> Also, archipelagic States (*e.g.*, Indonesia, Japan, and the Philippines) claim sovereignty over "waters enclosed by archipelagic baselines drawn in accordance with" UNCLOS III.<sup>197</sup>

ii. *Innocent Passage*

Innocent passage is a right that allows foreign vessels to navigate in and through another State's territorial sea and archipelagic waters without fear of harassment.<sup>198</sup> In times of peace, all ships possess this right, but innocent passage does not apply to a belligerent State's ship in times of armed conflict.<sup>199</sup> Additionally, belligerent States may establish a maritime zone during an armed conflict that limits neutral vessels' ability to navigate their territorial seas and archipelagic waters. Meanwhile, "neutral States may regulate, and even prohibit, belligerent warships and prizes from entering their territorial seas and archipelagic waters."<sup>200</sup>

Article 19 of UNCLOS III defines what is and is not innocent passage accordingly:

1. Passage is innocent so long as it is not prejudicial to the peace, good order or security of the coastal State. Such

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<sup>193</sup> GARDINER, *supra* note 36, at 389.

<sup>194</sup> Territorial seas are adjacent to a State's coastline. U.S. DEP'T OF DEF., *supra* note 56, ¶ 13.2.2.

<sup>195</sup> U.S. DEP'T OF DEF., *supra* note 56, ¶ 13.1.2.

<sup>196</sup> U.S. DEP'T OF DEF., *supra* note 56, ¶ 13.2.2.2.

<sup>197</sup> U.S. DEP'T OF DEF., *supra* note 56, ¶ 13.2.2.3. Archipelagic States are composed in whole or in part by at least one archipelago, which is a cluster of "islands, including parts of islands, interconnecting water, and other natural features that are so closely interrelated that they form an intrinsic geographic, economic, and political entity or that historically have been regarded as such." *Id.*

<sup>198</sup> See ROTHWELL & STEPHENS, *supra* note 172, at 76; U.S. DEP'T OF DEF., *supra* note 56, ¶ 13.2.2.4.

<sup>199</sup> U.S. DEP'T OF DEF., *supra* note 56, ¶ 13.2.2.4.

<sup>200</sup> U.S. DEP'T OF DEF., *supra* note 56, ¶ 13.2.2.4.

passage shall take place in conformity with this Convention and with other rules of international law.

2. Passage of a foreign ship shall be considered to be prejudicial to the peace, good order or security of the coastal State if in the territorial sea it engages in any of the following activities:

- (a) any threat or use of force against the sovereignty, territorial integrity or political independence of the coastal State, or in any other manner in violation of the principles of international law embodied in the Charter of the United Nations;
- (b) any exercise or practice with weapons of any kind;
- (c) any act aimed at collecting information to the prejudice of the defence or security of the coastal State;
- (d) any act of propaganda aimed at affecting the defence or security of the coastal State;
- (e) the launching, landing or taking on board of any aircraft;
- (f) the launching, landing or taking on board of any military device;
- (g) the loading or unloading of any commodity, currency or person contrary to the customs, fiscal, immigration or sanitary laws and regulations of the coastal State;
- (h) any act of willful and serious pollution contrary to this Convention;
- (i) any fishing activities;
- (j) the carrying out of research or survey activities;
- (k) any act aimed at interfering with any systems of communication or any other facilities or installations of the coastal State;
- (l) any other activity not having a direct bearing on passage.<sup>201</sup>

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<sup>201</sup> UNCLOS III, *supra* note 176, at art. 19.

In sum, the express prohibitions under Article 19(2) include a mixture of military and economic activities.<sup>202</sup>

*b. Applying the Law of the Sea to Outer Space: Two Ships in the Night*

Currently, space law does not provide a corollary to the concept of innocent passage,<sup>203</sup> as no State in outer space may claim sovereignty,<sup>204</sup> which is an inherent feature of territorial seas and archipelagic waters. Within paragraph 14.10.1 of the *DoD Law of War Manual*, the military classifies outer space as being both legally distinct from airspace and “analogous to the high seas in certain respects.”<sup>205</sup> Similarities to the high seas include the proposition that “space systems of all nations have rights of passage through space without interference.”<sup>206</sup>

But it does not take much imagination to see why States should desire the same right of innocent passage there because “they could engage in military patrols and use space resources for their own benefit. Popular culture exemplified this way of thinking. Star Trek named its ship the USS *Enterprise*, made its commander a Captain, and placed it under the command of a Starfleet.”<sup>207</sup> Already, States perform data collection on each other in space, “providing an information conduit for enhanced military operations. Space also provides an environment for widespread commercial activity, from television transmissions to GPS location services.”<sup>208</sup> After all, it only may take a single misunderstanding to spark an international crisis among the stars.

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<sup>202</sup> See UNCLOS III, *supra* note 176, at art. 19(2).

<sup>203</sup> See Paul Stephen Dempsey, *The Definition and Delimitation of Outer Space*, INT'L ASS'N FOR THE ADVANCEMENT OF SPACE SAFETY 13 (Mar. 30, 2017), <https://www.unoosa.org/documents/pdf/copuos/lsc/2017/tech-05.pdf> [<https://perma.cc/GQ3D-BUM8>] (proposing that either an amendment to a current treaty or new treaty altogether could establish innocent passage for all “like the High Seas, open to peaceful use”).

<sup>204</sup> See Outer Space Treaty, *supra* note 34, at art. II.

<sup>205</sup> U.S. DEP'T OF DEF., *supra* note 56, ¶ 14.10.1.

<sup>206</sup> U.S. DEP'T OF DEF., *supra* note 56, ¶ 14.10.1 (citing Outer Space Treaty, at art. I).

<sup>207</sup> RABKIN & YOO, *supra* note 17, at 216.

<sup>208</sup> RABKIN & YOO, *supra* note 17, at 216.

For example, two spaceships—the USS *Enterprise*<sup>209</sup> and the Millennium Falcon<sup>210</sup>—passing in the night at warp speed<sup>211</sup> will need to avoid any potential collisions. Do they follow the same protocols as if at sea<sup>212</sup> and pass by each other safely, or because of an absence of rules simply hope and pray that they do not crash? Under Rule 14 of the Convention on the International Regulations for Preventing Collisions at Sea (“COLREGs”), these two spaceships “meeting on reciprocal or nearly reciprocal courses” may avoid a head-on collision by altering their “course to starboard so that each shall pass on the port side of the other.”<sup>213</sup>

Moreover, within the confines of both the USS *Enterprise* and Millennium Falcon are likely sovereign territories. When at sea, “[s]hips have for centuries had a formal link with a state, signified by flying that state’s flag. Thus even vessels in private ownership are ‘instrumentalities’ that have the flag state’s nationality.”<sup>214</sup> Here, the USS *Enterprise* would be sovereign territory of the United States as it wears that flag, and the Millennium Falcon is privately owned, so it would be an instrumentality for the appropriate jurisdiction.<sup>215</sup> If spaceships are given a flag State’s nationality, then one would be able to discern “which law can apply on board and which [S]tate can

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<sup>209</sup> *Enterprise*, STAR TREK, [https://www.startrek.com/database\\_article/enterprise](https://www.startrek.com/database_article/enterprise) [https://perma.cc/2RBS-TQAP] (last visited Apr. 13, 2021) (“The ship arguably gained its status as the most famous space-exploration vessel in history due to its historic five-year mission from 2264-2269.”).

<sup>210</sup> *Millennium Falcon*, STAR WARS, <https://www.starwars.com/databank/millennium-falcon> [https://perma.cc/JG82-YAJR] (last visited Apr. 13, 2021) (“An extensively modified Corellian light freighter, the Millennium Falcon is a legend in smuggler circles and is coveted by many for being the fastest hunk of junk in the galaxy.”).

<sup>211</sup> This hypothetical requires some suspension in belief that: (1) spaceships can travel at warp speed; (2) accident-avoidance technology exists for spaceships traveling at warp speed; (3) Starfleet descends from the United States Space Force; and (4) the USS *Enterprise* and the Millennium Falcon could be in the same universe and timeline.

<sup>212</sup> United Nations Convention on the International Regulations for Preventing Collisions at Sea, *adopted* Oct. 20, 1972, 1050 U.N.T.S. 18 [hereinafter COLREGs], <https://treaties.un.org/doc/Publication/UNTS/Volume%201050/volume-1050-I-15824-English.pdf> [https://perma.cc/HK4Q-WP68].

<sup>213</sup> *Id.* at Rule 14(a).

<sup>214</sup> GARDINER, *supra* note 36, at 389.

<sup>215</sup> *Millennium Falcon*, *supra* note 210 (noting that there have been a “succession of owners,” so research will be required to determine the sovereign jurisdiction).

assert a right of protection, that is, to assert rights under international law in respect of the instrumentality."<sup>216</sup>

Additionally, a State's fleet of spaceships may be akin to an archipelago, deserving of a territorial sea of outer space. Would the Millennium Falcon receive innocent passage if traveling between the USS *Enterprise* and other Starfleet spaceships—the archipelago—when planning to violate Article 19(2)(g) of UNCLOS III by “loading or unloading of any commodity, currency or person contrary to the customs, fiscal, immigration or sanitary laws and regulations”<sup>217</sup> of the United States? Under these facts, the Millennium Falcon will not receive innocent passage under UNCLOS III because “while vessels on the high seas are, in principle, subject to exclusive jurisdiction of their flag states, enforcement action is possible on the high seas in exceptional circumstances, for example when a ship is engaged in piracy . . . .”<sup>218</sup> Moreover, international law provides no safe harbor for pirates (even space pirates) because they are the “common enemies of all mankind.”<sup>219</sup>

Finally, if the Millennium Falcon did not fly under a state flag as a pirate spaceship, then “on the high seas and in foreign ports, particular circumstances, such as a collision, illegal use of the vessel or exploitation of the sea's resources, may lead to a [S]tate other than the flag [S]tate having an interest in the application of law on or to a ship.”<sup>220</sup> On the other hand, the USS *Enterprise* and other Starfleet spaceships, if considered “warships” at sea, would hold “complete immunity on the high seas” of space because they would “not generally [be] engaged in police functions.”<sup>221</sup> Warships' “activities are part of a sovereign [S]tate's armed capabilities. Their use of the seas, for example for naval exercises, is subject to general international law of responsibility. This includes the duty of [S]tates to warn of any hazard . . . .”<sup>222</sup> The USS *Enterprise* and other Starfleet spaceships may stop the Millennium Falcon because “pirates should

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<sup>216</sup> GARDINER, *supra* note 36, at 389.

<sup>217</sup> UNCLOS III, *supra* note 176, at art. 19.

<sup>218</sup> HENDERSON, *supra* note 97, at 71.

<sup>219</sup> RUWANTISSA I.R. ABEYRATNE, FRONTIERS OF AEROSPACE LAW 108 (2002). The definition of a pirate is quite the opposite of an astronaut.

<sup>220</sup> GARDINER, *supra* note 36, at 389. Also, “[i]f the ship enters the territorial waters of another state, or those internal to that state, legislative jurisdiction concurrent with that of the flag may arise; and, because of the ‘territorial’ position of the ship, the coastal or post state has exclusive enforcement jurisdiction.” GARDINER, *supra* note 36, at 389.

<sup>221</sup> GARDINER, *supra* note 36, at 416.

<sup>222</sup> GARDINER, *supra* note 36, at 416.

be lawfully captured on the high seas by an armed vessel of any particular [S]tate, and brought within its territorial jurisdiction for trial and punishment.”<sup>223</sup>

## V. SHAPING THE FUTURE OF SPACE WARFARE

In 1988, the United States was the only dissenting nation when the U.N. General Assembly “passed a resolution calling for general and complete disarmament under effective international control so that outer space shall be used exclusively for peaceful purposes and not become an arena for an arms race.”<sup>224</sup> On the other hand, in his 2009 Nobel Peace Prize acceptance speech, President Barack Obama acknowledged that not even “America—in fact, no nation—can insist that others follow the rules of the road if we refuse to follow them ourselves. For when we don’t, our actions appear arbitrary and undercut the legitimacy of future interventions, no matter how justified.”<sup>225</sup> The DoD recognizes that the OST “imposes restrictions on certain military operations in outer space (*i.e.*, it does not exempt military spacecraft or military space activities from its purview).”<sup>226</sup> Although it appears that in recent days, the United States has not provided legal justifications for every military action, the Space Force should “take care to offer a legal argument for [its] use of force.”<sup>227</sup>

The United States and its President remain “powerful players in the making and unmaking of international law.”<sup>228</sup> So, it is in the best interest of the Space Force that the President brings forth a

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<sup>223</sup> ABEYRATNE, *supra* note 219, at 108.

<sup>224</sup> RABKIN & YOO, *supra* note 17, at 208 (internal citation and quotation marks omitted). The vote was 154 to 1. RABKIN & YOO, *supra* note 17, at 208.

<sup>225</sup> Obama, *supra* note 106 (stating further that “this becomes particularly important when the purpose of military action extends beyond self-defense or the defense of one nation against an aggressor.”).

<sup>226</sup> U.S. DEP’T OF DEF., *supra* note 56, ¶ 14.10.2.1. The *DoD Law of War Manual* mentions that the “collective view of all departments of the US Government is not necessarily reflected in its pages, and the reader is therefore somewhat left to speculate as to its actual status and claimed authority in international law.” BOOTHBY & HEINTSCHEL VON HEINEGG, *supra* note 42, at 2.

<sup>227</sup> GRAY, *supra* note 97, at 30 (“President Trump has not to date set out legal justifications for the USA’s 2017 direct intervention in Syria at any length; he seems to be relying on doctrines developed by the previous administration to explain his escalation of the use of force.”).

<sup>228</sup> KOH, *supra* note 90, at 14.

“carefully negotiated global diplomatic solution that builds a binding legal regime firmly rooted in international law.”<sup>229</sup> But, even if “international law applies to space,” there is no clear answer as to which specific laws “supply the rules that should apply.”<sup>230</sup> As a global commons, outer space may be compared with “other environments” to answer complex legal problems that give rise to “important consequences for regulation. Some, for example, have compared space to the discovery of the New World in 1492, opened by voyages of discovery and subject to claims of sovereignty.”<sup>231</sup> Generally, factors such as an activity’s “location” or “nature” may provide the applicable “regime of international law” for a given situation.<sup>232</sup> Space Force attorneys will need to understand the effects of characterizing outer space to establish when an activity or event is governed by an applicable law.<sup>233</sup>

Richard K. Gardiner, in his book *International Law*, states the following:

International law presents two ways of defining or describing the areas under consideration. First, there are the law and procedural mechanisms which determine where the boundaries of each area are. Specific or controversial determinations of such boundaries are usually described as ‘delimitation’, particularly in the context of maritime areas. Second, there are the characteristics which identify the international regime in each area. The process of delimitation is primarily the active concern of lawyers advising states who need to establish boundaries for purposes of control, public order and responsibility, as well as defen[s]e and exploitation of resources.<sup>234</sup>

Delimitation is critical to understanding the use of space, because “although space law has been the subject of several treaties, these do not define the location of outer space, or more specifically its lower boundary.”<sup>235</sup> The difficulty is that even using the plain meaning of “outer space” as “beyond the atmosphere” remains a bit

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<sup>229</sup> KOH, *supra* note 90, at 80.

<sup>230</sup> RABKIN & YOO, *supra* note 17, at 220.

<sup>231</sup> RABKIN & YOO, *supra* note 17, at 215.

<sup>232</sup> GARDINER, *supra* note 36, at 395.

<sup>233</sup> GARDINER, *supra* note 36, at 396.

<sup>234</sup> GARDINER, *supra* note 36, at 395-96.

<sup>235</sup> GARDINER, *supra* note 36, at 400.

hazy, “because the atmosphere becomes progressively thinner without a precise line . . . .”<sup>236</sup> Accordingly, Space Force attorneys will need to tread carefully when drawing from analogies to the law of war and law of the sea, and when current space law does not provide a clear answer.

A well-delineated Space Force policy may act as a stopgap, before States come together to create treaties or develop customary international law on space warfare. Because the tools of “law and policy” have different degrees of staying power for “internaliz[ing] international norms[,]”<sup>237</sup> the Space Force may use policy to have flexibility in effectively troubleshooting military operations for peaceful purposes, as required by the OST. To make legal determinations prematurely may hinder the development of space warfare by forming fixed points that are difficult to amend once adopted.<sup>238</sup> For example, current international law allows for orbiting “conventional weapons or new, exotic weapons such as high-energy beams,” and for “nuclear warheads” to journey “through space on their way to ground targets.”<sup>239</sup> But, the future of space warfare may allow the Space Force to “escalate a conflict by destroying surveillance satellites or by temporarily jamming or blinding them with space-based weapons . . . [or even] attack a single node in an opponent’s military or government telecommunications network, which would not permanently destroy the whole network, but would degrade the system’s reliability.”<sup>240</sup> As the Space Force will be making real-time decisions, on-demand policymaking will likely be the short-term solution to make better future law.

Ultimately, international cooperation will be required to solidify “standards that govern the use of force” in space warfare.<sup>241</sup> Time and again, “disengagement from global governance” has been of little help and ineffective<sup>242</sup> because of the “transnational legal process. International law is no longer just for nation-states or

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<sup>236</sup> GARDINER, *supra* note 36, at 401.

<sup>237</sup> KOH, *supra* note 90, at 18 (“Executive branch policies usually do not bind future administrations as powerfully as do executive branch determinations about the applicability of international legal rules.”).

<sup>238</sup> See KOH, *supra* note 90, at 18.

<sup>239</sup> RABKIN & YOO, *supra* note 17, at 217.

<sup>240</sup> RABKIN & YOO, *supra* note 17, at 218.

<sup>241</sup> Obama, *supra* note 106.

<sup>242</sup> KOH, *supra* note 90, at 14 (noting that international legal norms and principles have taken hold in the United States).

national governments . . . . [It] has evolved into a hybrid body of international and domestic law developed by a large number of public and private transnational actors.”<sup>243</sup> In *The Trump Administration and International Law*, Harold Hongju Koh, a former Legal Adviser at the U.S. Department of State,<sup>244</sup> argues that “these many actors make and remake transnational law . . . by generating *interactions* that lead to *interpretations* of international law that become *internalized* into, and thereby binding under, domestic law . . . .”<sup>245</sup> These default rules become “difficult to deviate from without sustained effort.”<sup>246</sup> For example, the Space Force may use existing international law as a gap filler for any “new and unanticipated factual circumstance, . . . [with] a good-faith effort to translate from the spirit of existing rules of laws (*e.g.*, the laws of war) to new situations . . . .”<sup>247</sup> The end game for the United States should be to partner with other States to develop a new international treaty for reasonable and lawful space warfare.<sup>248</sup>

## VI. CONCLUSION

The unpredictability of the world—from widespread concerns on security, climate change, natural disasters, and “unforeseen developments caused by technological breakthroughs, extreme human actions, and outbreaks of health hazards”—make a stable Space Force indispensable.<sup>249</sup> Safeguarding space with a robust regulatory regime “will be of quintessence importance to avert dangers of serious economic imbalances or disastrous conflicts and wars.”<sup>250</sup> The Space Force will need to be ahead of the curve, and should see that with great public and private economic

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<sup>243</sup> KOH, *supra* note 90, at 6-7 (italics omitted). More specifically, “sovereign and nonsovereign actors include [the United States’] allies; state, municipalities, and localities of the United States; government bureaucracies; the media; courts; nongovernmental organizations (NGOs); intergovernmental organizations (IGOs); and committed individuals.” KOH, *supra* note 90, at 7.

<sup>244</sup> Harold Hongju Koh, YALE LAW SCHOOL, <https://law.yale.edu/harold-hongju-koh> [<https://perma.cc/TN6R-EV6Y>] (last visited Apr. 13, 2021).

<sup>245</sup> KOH, *supra* note 90, at 7 (emphasis in original).

<sup>246</sup> KOH, *supra* note 90, at 7.

<sup>247</sup> KOH, *supra* note 90, at 10.

<sup>248</sup> RABKIN & YOO, *supra* note 17, at 226-27 (providing an example of a potential ban on exotic space-to-ground weaponry).

<sup>249</sup> Murthi & Gopalakrishnan, *supra* note 141, at 29-30.

<sup>250</sup> Murthi & Gopalakrishnan, *supra* note 141, at 42.

opportunities, such as space tourism, comes great risk and responsibility.<sup>251</sup> The Space Force attorneys will have their work cut out for them, but will certainly rise to the challenge.

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<sup>251</sup> ODUNTAN, *supra* note 25, at 273–74.