

THE INTERNATIONAL LEGALITY OF MILITARY OPERATIONS IN OUTER SPACE AND AVAILABLE METHODS TO RESPOND TO SPACE-BASED AGGRESSION

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INTRODUCTION	516
II. BACKGROUND	517
A. <i>The Outer Space Treaty</i>	517
B. <i>The Rescue and Return Agreement of 1968</i>	518
C. <i>The Convention on International Liability for Damaged Caused by Space Objects</i>	519
D. <i>The Convention on Registration of Objects Launched into Outer Space</i>	521
E. <i>Agreement Governing the Activities of States on the Moon and Other Celestial Bodies</i>	523
F. <i>The Artemis Accords</i>	524
G. <i>Domestic Laws Governing Space Operations in Major Space Fairing Countries</i>	525
III. ANALYSIS	529
A. <i>Withdrawing from the Outer Space Treaty under Article XVI</i>	529
B. <i>Right to Self-Defense Regardless of the Outer Space Treaty</i>	532
C. <i>Withdrawing from Other International Agreements</i>	534
D. <i>Other Options Under International Law</i>	535
E. <i>Diplomatic Options</i>	538
IV. CONCLUSION	540

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INTRODUCTION

In October 1967, the Treaty on Principles Governing the Activities of States in Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (generally known as the “Outer Space Treaty”) came into force.¹ The United States of America, the United Kingdom, and the Union of Soviet Socialist Republics (“U.S.S.R.”) were the first countries to sign the treaty.² As of October 2020, the treaty has grown to include 110 state-parties and 89 other countries that have signed and are working on ratification.³ With the Outer Space Treaty came an international agreement on a set of core principles governing humanity’s exploration and use of outer space, such as freedom for all states, a prohibition on national appropriation, and a ban on deploying military armaments or bases in outer space or on celestial bodies.⁴

This comment addresses whether countries have legal standing to perform their current military activities. If not, then this comment discusses how countries can best engage in such activities while conforming to international law. The comment will first provide the necessary background explaining the current international status quo regarding humanity’s place in space. Further detail about the Outer Space Treaty, along with other binding international agreements will be discussed in Section II. The comment primarily focuses on modern America’s rivals, China and Russia specifically, along with other competitors’ recent advancements. Finally, the comment analyzes

1. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies 206, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205, 206 n.1 [hereinafter OST]; see also *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, UNITED NATIONS OFF. FOR OUTER SPACE AFFS., <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html> (last visited Jan. 27, 2022) (providing a brief summary of the OST).

2. OST, *supra* note 1.

3. Daryl Kimball, *The Outer Space Treaty at a Glance*, ARMS CONTROL ASS’N (Oct. 2020), <https://www.armscontrol.org/factsheets/outerspace>.

4. OST, *supra* note 1, 610 U.N.T.S. at 207–08.

America's options should the need arise to force America to militarize space while still in conjunction with international law (III).

II. BACKGROUND

A. *The Outer Space Treaty*

As mentioned, the foundation of international law in outer space is the Outer Space Treaty.⁵ At the time of the treaty's formation, the world was embroiled in the Cold War and a brewing space race between the U.S.S.R. and the U.S.A.⁶ In 1957, much to Americans' panic, the Soviets successfully launched the first artificial satellite, Sputnik I, into Earth's orbit.⁷ In 1961, President John F. Kennedy announced his historic goal of putting an American on the Moon.⁸ In light of these technological advancements and worries by each party about their rival's potential, the United Nations came together to form a treaty creating a safe path forward.⁹

The treaty's core principles include the freedom to explore and use outer space for the benefit of all mankind, the prohibition on national appropriation of space or celestial bodies, and the use of outer space solely for peaceful purposes.¹⁰ Specifically, Article IV forbids parties to the treaty from deploying nuclear weapons or "other weapons of mass destruction" into Earth's orbit, in outer space, or on celestial bodies.¹¹ This provision finds its origins in

5. *Treaties*, UNITED NATIONS OFF. FOR OUTER SPACE AFFS., <https://www.unoosa.org/oosa/en/aboutus/history/treaties.html> (last visited Jan. 15, 2022).

6. See John Hickman, *Still Crazy After Four Decades: The Case for Withdrawing from the 1967 Outer Space Treaty*, SPACE REV. (Sept. 24, 2007), <https://www.thespacereview.com/article/960/1> (describing how Cold War tensions led to a race between nuclear powers to gain technological advantages over each other in outer space).

7. *The Launch of Sputnik, 1957*, U.S. DEPT. OF STATE, <https://2001-2009.state.gov/r/pa/ho/time/lw/103729.html> (last visited Jan. 15, 2022).

8. Steve Garber, *The Decision to Go to the Moon: President John F. Kennedy's May 25, 1961 Speech Before a Joint Session of Congress*, NAT'L AERONAUTICS & SPACE ADMIN. (Oct. 29, 2013), <https://history.nasa.gov/moondec.html>.

9. See Hickman, *supra* note 6 (describing Cold War tensions between the United States and the Soviet Union); OST, *supra* note 1, 610 U.N.T.S. at 206–07.

10. *Treaties*, *supra* note 5; OST, *supra* note 1, 610 U.N.T.S. at 208.

11. OST, *supra* note 1 at 208.

the Limited Test Ban Treaty of 1963, which banned nuclear weapons tests in outer space.¹² While the treaty does not define “weapons of mass destruction,” this typically includes nuclear, chemical, and biological weapons but does not encompass ballistic missiles whose trajectory takes them into outer space before reentering Earth’s atmosphere.¹³

Article IV also prohibits the establishment of military “bases, installations, and fortifications,” and the conducting of military maneuvers and testing any weapon on celestial bodies.¹⁴ Military personnel, however, are permitted so long as they are in outer space for scientific research or other peaceful purposes.¹⁵ For example, the Soviet Space program was predominantly under the Soviet military’s control.¹⁶ In fact, the first man in space, Russian cosmonaut Yuri Gagarin was an officer in the Soviet Air Force.¹⁷ Along with the Outer Space Treaty, there have been many subsequent international agreements governing the use and exploration of outer space.¹⁸

B. *The Rescue and Return Agreement of 1968*

Formed in 1968, the Rescue and Return Agreement requires signatories to aid and return other nations’ astronauts who are in distress or who have crashed, whether in outer space, a celestial body, or somewhere on Earth.¹⁹ Additionally, the Agreement

12. Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water art. I, Aug. 5, 1963, 14 U.S.T. 1313, 1316.

13. Kimball, *supra* note 3.

14. OST, *supra* note 1, 610 U.N.T.S. at 208.

15. *Id.*

16. See CIA, NIE 11-1-65, THE SOVIET SPACE PROGRAM 9 (1965) (listing the military motivations for the Soviet space program).

17. Nola Taylor Reed, *Yuri Gagarin: First Man in Space*, SPACE.COM (Oct. 12, 2018), <https://www.space.com/16159-first-man-in-space.html>.

18. See, e.g., Convention on the International Liability for Damage Caused by Space Objects, Mar. 29, 1972, 24 U.S.T. 2389, 961 U.N.T.S. 187, 189 [hereinafter *Liability Convention*]; Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, Apr. 22, 1968, 19 U.S.T. 7570, 672 U.N.T.S. 119, 120–121 [hereinafter *Rescue and Return Agreement*].

19. Charles A. Riccio, Jr., *Another Step for Mankind—the Agreement on the Rescue of Astronauts and the Return of Objects Launched into Outer Space*, 12 U.S.A.F. JAG L. REV. 142, 144 (1970).

requires signatories to swiftly return objects launched into Outer Space that land outside the territory of the State who launched it.²⁰ Objects launched into outer space include vehicles, such as space shuttles and stations, or anything else launched by a nation into outer space.²¹ This agreement potentially has military applications in the event a military operation results in the intentional downing of an adversary nation's space object or astronauts onto the aggressor nation's territory.²² Provided that both nations are signatories to the Rescue and Return Agreement, the aggressor nation would likely be bound to return the downed objects and personnel promptly.²³

C. *The Convention on International Liability for Damaged Caused by Space Objects*

Another international treaty with potential military ramifications is the Convention on International Liability for Damage Caused by Space Objects (Liability Convention). The Liability Convention furthers the rules of liability regarding space-related damages first created in Articles VI and VII of the Outer Space Treaty.²⁴ Under the Liability Convention, the State that "launches, procures the launch or from whose territory or a facility a space object is launched" shall be liable for any damage caused by such space object.²⁵ If multiple states are involved, then they all shall be jointly and severally liable.²⁶ For any damage

20. Rescue and Return Agreement, *supra* note 18, 672 U.N.T.S. at 122.

21. Riccio, Jr., *supra* note 19, at 151 (noting that space vehicles and spacecrafts are considered space objects); *see also* Rescue and Return Agreement, *supra* note 18, 672 U.N.T.S. at 122 (referring generally to "objects launched into outer space" and "their component parts"); Frans G. von der Dunk, *A Sleeping Beauty Awakens: The 1968 Rescue Agreement After Forty Years*, 34 J. SPACE L., 411, 422 (2008) (stating that "space objects" are understood to include "any man-made object launched into outer space").

22. *See generally* Louis de Gouyon Matignon, *The Rescue Agreement of 1968*, SPACE L. ISSUES (Apr. 6, 2019), <https://www.spacelegalissues.com/space-law-the-rescue-agreement-of-1968/> (analyzing the responsibilities and obligations of the Rescue and Return Agreement).

23. *See id.*

24. Andre G. DeBusschere, *Liability for Damage Caused by Space Objects*, 3 J. INT'L L. & PRAC. 97, 100 (1994); Liability Convention, *supra* note 18, 961 U.N.T.S. at 189.

25. DeBusschere, *supra* note 24, at 104.

26. *See id.* at 105 (noting that if a shuttle is launched by NASA or within U.S. territory that includes foreign nationals as crew members, all countries would be jointly

occurring on the Earth's surface caused by a space object, the responsible state will suffer absolute liability.²⁷

Only one claim has been brought under the Liability Convention since the treaty came into force in 1972.²⁸ After Cosmos 954, a nuclear-powered Soviet Satellite, crashed onto Canadian territory in 1978, Canada brought a claim jointly and separately for the cost of cleaning up the physical and radioactive debris; an amount under CAD \$7 million.²⁹ However, the U.S.S.R. and Canada reached a settlement on the claim for CAD \$3 million after Canada had worked to clean up the debris.³⁰

While the Liability Convention nowhere mentions liability for damages caused by spaced-based operations, because the Cosmos 954 incident resulted in liability for the offending country, it is conceivable that a nation could be held liable for damage resulting from its military endeavors.³¹ For example, say a signatory launched a missile into outer space that destroyed another nation's satellite. Suppose debris from that satellite were to fall on another signatory's city, causing widespread physical damage and radioactive contamination. In that case, the affected signatory could successfully bring a claim against the aggressor nation.³²

Also, if future military operations in space accidentally result in the destruction of a space vehicle, such as the International Space Station, which then causes harm to another space object or a nation's territory, both the aggressor nation and the members of the I.S.S. could potentially be held liable.³³ However, the I.S.S.

and severally liable). Notably, the Liability Convention was modified to allow indemnification agreements between jointly liable parties.

27. *Id.* at 105.

28. *Id.* at 107.

29. *Id.* at 99–100; *Settlement of Claim Between Canada and the Union of Soviet Socialist Republics for Damage Caused by "Cosmos 954"*, JAPANESE AEROSPACE EXPL. AGENCY (Apr. 2, 1981), https://www.jaxa.jp/library/space_law/chapter_3/3-2-2-1_e.html.

30. DeBusschere, *supra* note 24, at 100. *But cf. id.* (noting that the Liability Convention was specifically excluded as a basis for compensation).

31. *See* DeBusschere, *supra* note 24 at 105 (stating that the treaty places responsibility on the launching state).

32. *See id.* at 104–105 (stating that the Liability Convention mandates liability on launching states for damage caused by the space object launched).

33. *See id.* (stating that a state would be liable for injury caused by a space shuttle).

members could enter into a collective agreement and place all liability on the aggressor nation, because but for the aggressor's actions, the damage would never have occurred.³⁴

D. *The Convention on Registration of Objects Launched into Outer Space*

After the Liability Convention of 1972, the international community formed another agreement governing space activity: The Convention on Registration of Objects Launched into Outer Space (Registration Convention).³⁵ This treaty requires signatories to register all space objects and vehicles they launch into space, to establish their own registry, and to inform the Secretary-General of the United Nations of such establishment.³⁶ It also requires the Secretary-General to maintain its own register.³⁷ In the event where there is more than one launching State for one space object, the States must jointly determine which one will register the space object.³⁸

Within each registry, states must record the name of the launching state or states, a designator or registration number for the space object, the date and territory of launch, the basic orbital parameters of the object, and the space object's general function.³⁹ The Registration Convention was conceived to further the peaceful use and exploration of outer space while allowing signatories to determine the owner or operator of a space object quickly.⁴⁰

34. See *id.* at 105 (stating that the Liability Treaty allows for indemnification agreements between jointly liable parties).

35. Convention on Registration of Objects Launched into Outer Space, Jan. 14, 1975, 28 U.S.T. 695 [hereinafter Registration Convention].

36. *Id.* at 698.

37. *Id.* at 699.

38. *Id.*

39. Frans G. von der Dunk, Comment, *Beyond What? Beyond Earth Orbit? ... ! The Applicability of the Registration Convention to Private Commercial Manned Sub-Orbital Spaceflight*, 43 CAL. W. INT'L L. J. 269, 278, 296, 298, 318 (2013).

40. Sophie Goguichvili et al., *The Global Legal Landscape of Space: Who Writes the Rules on the Final Frontier*, WILSON CTR. (OCT. 1, 2020), <https://www.wilsoncenter.org/article/global-legal-landscape-space-who-writes-rules-final-frontier>.

Ideally, signatories utilize the UN and individual state registries in conjunction with the Liability Convention and Rescue and Return Agreement in order to more efficiently assign liability and communicate with launching states about the return of downed astronauts and spacecraft.⁴¹ However, despite coming into force in 1976, far fewer countries have ratified the

Registration Convention than the Outer Space Treaty; 64 to 110, respectively.⁴² Unlike the Liability Convention, the Registration Convention is much less robust.⁴³ Additionally, the Registration Convention relies on individual States to compile and submit records, so the treaty remains much harder to enforce.⁴⁴ As a result, many States ignore the treaty's terms and do not bother to register all objects they launch into space, especially those with military or intelligence objectives.⁴⁵ In fact, the United Nations Office for Outer Space Affairs (UNOOSA) has compiled a list of over 700 unregistered satellites in Earth's orbit.⁴⁶

As a result of the Registration Convention's lack of enforceability, the treaty's impact on future space-based military operations remains undeterminable. Presumably, Countries can perform aggressive actions, such as launching an unregistered missile to destroy a rival's satellite without fear of liability, barring any other evidence connecting the missile to the aggressor. Similarly, militaries could launch military satellites into orbit without countries knowing who owns and operates the object.

41. Christina Isnardi, Comment, *Problems with Enforcing International Space Law on Private Actors*, 58 COLUM. J. TRANSNAT'L L. 489, 506 (2020).

42. *Id.* at 514; Kimball, *supra* note 3.

43. Isnardi, *supra* note 41, at 514.

44. Michael J. Listner, Comment, *The Ownership and Exploitation of Outer Space: A Look at Foundational Law and Future Legal Challenges to Current Claims*, 1 REGENT J. INT'L L. 75, 85 (2003).

45. Ram S. Jakhu et al., *Critical Issues Related to Registration of Space Objects and Transparency of Space Activities*, 143 ACTA ASTRONAUTICA 406, 411 (2018).

46. *Challenges Facing the African Satellite Industry in the Registration of Space Objects*, SPACE IN AFR. (Sept. 4, 2020), <https://africanews.space/challenges-facing-the-african-satellite-industry-in-the-registration-of-space-objects/>.

E. *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*

One of the least ratified agreements concerning international space law, the “Agreement Governing the Activities of States on the Moon and Other Celestial Bodies,” elaborates on the

Outer Space Treaty.⁴⁷ The agreement provides that the natural resources of the Moon are the common heritage of mankind and forbids private ownership of them.⁴⁸ Additionally, the Agreement reinforces that the Moon and other celestial bodies must be used exclusively for peaceful purposes.⁴⁹

Along with the U.S.A., no other major space-faring nations, such as China or Russia, have signed the Moon Agreement.⁵⁰ The agreement’s main controversy lies in Article 11.⁵¹ Article 11 provides that no part of the Moon, including natural resources, can be owned by any “State, national organization or non-governmental entity, or of any natural person.”⁵² Major nations cannot agree to this article as they believe it will stifle innovation and private enterprise.⁵³ If one cannot profit from the resources he or she gathers, then why bother investing in collecting them in the first place?

47. *What Is the Moon Treaty and Is It Still Useful?*, FILLING SPACE (Jan. 17, 2020), <https://filling-space.com/2020/01/17/what-is-the-moon-treaty-and-is-it-still-useful/>; *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*, UNITED NATIONS OFF. FOR OUTER SPACE AFF., <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/intromoon-agreement.html> (last visited Feb. 22, 2022).

48. *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*, Dec. 5, 1979, 1363 U.N.T.S. 3, 25 [hereinafter *Moon Agreement*].

49. Goguichvili, *supra* note 40.

50. Christopher Newman, *Artemis Accords: Why Many Countries Are Refusing to Sign Moon Exploration Agreement*, CONVERSATION (Oct. 19, 2020, 7:45 AM), <https://theconversation.com/artemis-accords-why-many-countries-are-refusing-to-sign-moon-exploration-agreement-148134>.

51. Richard B. Bilder, Comment, *A Legal Regime for the Mining of Helium-3 on the Moon: U.S. Policy Options*, 33 FORDHAM INT’L L. J. 243, 259 (2010) (listing the thirteen countries that have ratified the Moon Agreement).

52. *Moon Agreement*, *supra* note 48.

53. Nancy L. Griffin, Comment, *Americans and the Moon Treaty*, 46 J. AIR L. & COM. 729, 752–53 (1981) (arguing that the “equitable sharing” clause of Article 11, which provides that special consideration is to be given to countries whose efforts contribute directly or indirectly to the exploration of the moon, is an inhibition on free enterprise).

Despite the agreement reinforcing the Outer Space Treaty's principle of using and exploring space for peaceful purposes only, the agreement has little bearing on international law and does not affect the major space-faring countries' potential military operations in the future.⁵⁴

F. *The Artemis Accords*

The final international agreement governing outer space is the Artemis Accords, signed in 2020.⁵⁵ The Artemis Accords ("Accords") were formed to further the principle of peaceful use and exploration of Outer Space, while also setting an international goal of putting both a man and a woman on the Moon and permitting the ownership of natural resources collected from the Moon.⁵⁶ According to NASA Administrator Jim Bridenstine, the Accords are fundamentally about "avoiding conflict" and preserving peace.⁵⁷ The Accords' principles stem from the Outer Space Treaty, and the Artemis program acts as a forcing function for signatories to adhere to the Outer Space Treaty.⁵⁸ Along with preserving outer space as a peaceful region, the Accords reinforce rules such as helping astronauts in distress,

54. See Michael Listner, *The Moon Treaty: Failed International Law or Waiting in the Shadows?*, SPACE REV. (Oct. 24, 2011), <https://www.thespacereview.com/article/1954/1> ("The United States, the Russian Federation (former Soviet Union), and the People's Republic of China have neither signed, acceded, nor ratified the Moon Treaty, which has led to the conclusion that it is a failure from the standpoint of international law."); see also Becky Ferreira, *While International Laws Attempt to Keep the Occupation of Space Peaceful, Many Countries Seek to Find Loopholes*, DOCUMENT J. (May 28, 2019), <https://www.documentjournal.com/2019/05/the-new-space-race-and-the-desperately-outdated-laws-that-govern-it/> (detailing the unwillingness of the United States, Russia, and China to give up the option to attack each other's satellites).

55. Jeff Foust, *Eight Countries Sign Artemis Accords*, SPACENEWS (Oct. 13, 2020), <https://spacenews.com/eight-countries-sign-artemis-accords/>.

56. See *The Artemis Accords*, NAT'L AERONAUTICS & SPACE ADMIN., <https://www.nasa.gov/specials/artemis-accords/index.html> (last visited Jan. 19, 2022) (discussing the Artemis Accords goal of placing the first woman and first person of color on the Moon); see also NAT'L AERONAUTICS & SPACE ADMIN., *THE ARTEMIS ACCORDS: PRINCIPLES FOR COOPERATION IN THE CIVIL EXPLORATION AND USE OF THE MOON, MARS, COMETS, AND ASTEROIDS FOR PEACEFUL PURPOSES* (2020), <https://www.nasa.gov/specials/artemis-accords/img/Artemis-Accords-signed-13Oct2020.pdf> [hereinafter *Artemis Accords*].

57. Foust, *supra* note 55.

58. See *id.*

sharing scientific data, and registering space objects.⁵⁹ The Accords are a “practical exercise of setting the ground rules for what are the basic values” for human activity in space going forward.⁶⁰

While major nations such as China and Russia have not signed the Artemis Accords, seven other nations besides America have.⁶¹ Australia, Canada, Italy, Japan, Luxembourg, the United Arab Emirates, and the United Kingdom have signed the Accords.⁶² Unfortunately, under⁶³ the “Wolf Amendment” to the Department of Defense and Full-Year Continuing Appropriations Act, NASA is forbidden from bilateral cooperation with China. As a result, the Accords’ ability to prevent warfare in space is hampered because they do not legally bind China.⁶⁴ However, countries domestic laws can also legally restrict nations from aggressive activities in space.⁶⁵

G. *Domestic Laws Governing Space Operations in Major Space Faring Countries*

In America, under the 1958 National Aeronautics and Space Act, Congress declared that America’s activities in space should be “devoted to peaceful purposes for the benefit of all mankind.”⁶⁶ This policy largely stood until the introduction of the Strategic Defense Initiative in 1983.⁶⁷ Also known as the “Star Wars” program, the Strategic Defense Initiative called for the placement of defense systems in space to provides means for rendering

59. Artemis Accords, *supra* note 56, at § 3, 6–8..

60. Foust, *supra* note 55.

61. *Id.* (stating that Australia, Canada, Japan, Luxembourg, Italy, the United Arab Emirates and the United Kingdom joined the United States in signing the Artemis Accords); Paul Stimers & Audrey Jammes, *The Artemis Accords After One Year of International Progress*, SPACE REV. (Oct. 18, 2021), <https://www.thespacereview.com/article/4267/1>.*Id.*

62. Foust, *supra* note 55.

63. *Id.*

64. Stimers & Jammes, *supra* note 61.

65. Goguichvili, *supra* note 40.

66. National Aeronautics and Space Act of 1958, Pub. L. No. 85-568, 72 Stat. 426.

67. Jon Harper, *Special Report: The Legacy of the Strategic Defense Initiative*, NAT’L DEF. MAG. (Apr. 23, 2019), <https://www.nationaldefensemagazine.org/articles/2019/4/23/special-report-the-legacy-of-the-strategic-defense-initiative>.

enemy nuclear weapons “impotent and obsolete.”⁶⁸ However, the program never took off as the Cold War ended, and the technology necessary to accomplish the program’s ambition was not yet invented.⁶⁹ The program officially ended in 1993, and the Strategic Defense Initiative Organization morphed into the Ballistic Missile Defense Organization, responsible for developing Earth-based defense systems instead of Space-based systems.⁷⁰ Ironically, despite the Strategic Defense Initiative’s end, the necessary technology to implement the program is now currently available, and the United States has tested an anti-satellite laser.⁷¹

In modern Russia and the Soviet Union, Decree No. 5663-1 of the Law of the Russian Federation governs the Russian Federation’s space activities.⁷² The Decree conforms to the Outer Space Treaty in a number of ways, including prohibiting the Russian Federation from deploying weapons of mass destruction in outer space, using space technology or celestial bodies as a tool to influence the environment for military purposes, and creating immediate threats to the safety of space activity, including space objects.⁷³

Despite this law, on July 15, 2020, Russia demonstrated a space-based system the United States Space Command referred to as a “co-orbital” anti-satellite weapon.⁷⁴ According to the United States Space Command, a new object was “injected” into

68. *Id.*

69. See Lesley Kennedy, *Why Reagan’s ‘Star Wars’ Defense Plan Remained Science Fiction*, HISTORY (Jan. 22, 2019), <https://www.history.com/news/reagan-star-wars-sdi-missile-defense> (noting that “a perfect antiballistic missile defense was beyond the reach of technology” making the Star Wars program unfeasible).

70. Harper, *supra* note 67.

71. See Kennedy, *supra* note 69; see also David A. Koplow, *The Fault Is Not in Our Stars: Avoiding an Arms Race in Outer Space*, 59 HARV. INT’L L.J. 331, 340 n.14 (2018).

72. Zakon Rossiyskoy Federatsii ot 20.08.1993 g. No. 5663-I O Kosmicheskoy Deyatel’nosti [Law of the Russian Federation of Aug. 20, 1993 No. 5663-I on Space Activities], ROSSIJSKAIA GAZETA [ROS. GAZ.], Oct. 6, 1993.

73. *Id.* art. 4; see also OST *supra* note 1, 610 U.N.T.S. at 207–08, 210.

74. Hanneke Weitering, *Russia Has Launched an Anti-Satellite Missile Test, US Space Command Says*, SPACE.COM (Dec. 16, 2020), <https://www.space.com/russia-launches-anti-satellite-missile-test-2020>.

orbit from one of Russia's satellites and "conducted a non-destructive test of a space-based anti-satellite weapon."⁷⁵ This

test was "inconsistent with [Russia's] stated mission" and is further evidence of "Russia's continuing efforts to develop and test space-based [weapons] systems."⁷⁶ Further, two Russian satellites similar to the one used to test the anti-satellite weapon in July 2020 concerningly tailed an American spy satellite in February 2020.⁷⁷ As a result, the U.S. Space Force considers these Russian actions a "threat" to International Security and American interests in Outer Space.⁷⁸

In modern China, domestic law regulating the country's space activities is severely underdeveloped relative to the law of other space-faring nations and China's current space capabilities.⁷⁹ The most recent discussion of space law in China was in the 5-year legislative plan which considered drafting legislation for Space Law and Territorial Space Development and Protection Law.⁸⁰ Instead of comprehensive and uniform national space legislation that other space-faring nations have, China has only enacted legislation addressing the registration and launching of space objects.⁸¹ While China is a party to four international space law treaties, these treaties require member states to adopt domestic legislation to execute each treaties' terms.⁸²

Resulting from China's lax domestic space law and rapid technological advancement, China has invested heavily in anti-

75. Chelsea Gohd, *Russia Has Tested an Anti-Satellite Weapon in Space, US Space Command Says*, SPACE.COM (July 23, 2020), <https://www.space.com/russia-tests-anti-satellite-weapon-in-space.html>.

76. *Id.*

77. *Id.*

78. *Id.* (highlighting that Russia's actions "hold U.S. and allied space assets at risk").

79. Xiaodan Wu, *China's Space Law: Rushing to the Finish Line of its Marathon*, 46 Space Policy 38 (2018).

80. *Id.*; see also Changhao Wei, *Covering China's National People's Congress and Its Standing Committee*, NPC OBSERVER (Sept. 7, 2018), <https://npcobserver.com/2018/09/07/translation-13th-npc-standing-committee-five-year-legislative-plan/>.

81. Fabio Tronchetti, *Space Law and China*, OXFORD RSCH. ENCYC. PLANETARY SCI. (Feb. 25, 2019), <https://oxfordre.com/planetaryscience/view/10.1093/acrefore/9780190647926.001.0001/acrefore-9780190647926-e-66>.

82. *Id.*

satellite technology, including missiles and electronic weapons.⁸³ Unlike Russia, China has yet to test a space-based anti-satellite weapon.⁸⁴ However, in 2007, China successfully launched a ballistic missile from the Xichang space facility and destroyed an aging Chinese weather satellite in low Earth Orbit.⁸⁵ China neither reported nor commented on the test, even though it produced over 1,736 trackable objects of debris, thereby causing the “worst single [space] debris event ever.”⁸⁶ China only responded after U.S. intelligence revealed the test to the international community.⁸⁷ Following the Chinese test, however, the U.S. demonstrated its anti-satellite capabilities by destroying its own out-of-control satellite.⁸⁸

Additionally, the threat of a rogue nation like North Korea, with demonstratable ballistic missile technology, also presents a space threat to America and the international community.⁸⁹ Not only is North Korea rapidly advancing its missile capabilities despite UN security council resolutions, but North Korea’s domestic space law is also underdeveloped.⁹⁰

With global tensions rising, the increasing reliance on intelligence satellites and world powers’ demonstrating their ability to conduct military operations in space, America must

83. See Sandra Erwin, *Pentagon Report: China Amassing Arsenal of Anti-Satellite Weapons*, SPACENEWS (Sept. 1, 2020), <https://spacenews.com/pentagon-report-china-amassing-arsenal-of-anti-satellite-weapons/>; see also Tronchetti, *supra* note 81 (detailing China’s space development and growth over recent years).

84. See Ashley J. Tellis, *China’s Military Space Strategy*, 49 SURVIVAL 41, 50, 54–55 (2007); see also Deganit Paikowsky, *Why Russia Tested Its Anti-Satellite Weapon*, FOREIGN POL’Y (Dec. 26, 2021, 3:00 AM), <https://foreignpolicy.com/2021/12/26/putin-russia-tested-space-asat-satellite-weapon/> (explaining Russia’s test and demonstration of an anti-satellite weapon).

85. Tellis, *supra* note 84, at 41.

86. *Id.* at 41–42.

87. *Id.* at 42.

88. BRUCE W. MACDONALD, COUNCIL ON FOREIGN RELS., SPECIAL REP. NO. 38, CHINA, SPACE WEAPONS, AND U.S. SECURITY 3 (2008).

89. Tyler Rogoway, *Just Remember North Korea Can Destroy Low Earth Orbit for Everyone on a Whim*, DRIVE (Oct. 18, 2017), <https://www.thedrive.com/the-war-zone/15270/just-remember-north-korea-can-destroy-low-earth-orbit-for-everyone-on-a-whim>.

90. *Id.*; see also *North Korea and the Outer Space Treaty*, AM. UNIV. NAT’L SEC. L. BRIEF, (Mar. 3, 2016), <https://web.archive.org/web/20190509123134/http://nationalsecuritylawbrief.com/2016/03/03/north-korea-and-the-outer-space-treaty>.

either commit to negotiating a binding agreement ensuring outer space remains a peaceful region or find a legal remedy to protect its and the international community's interests in space throughout the twenty-first century.⁹¹

III. ANALYSIS

Despite current international space law, nations are not abiding by the terms of their international agreements.⁹² This comment discusses how America remains at a significant disadvantage compared to rival countries who are actively developing their offensive space capabilities and how America can legally circumvent its problem by withdrawing from the Outer Space Treaty or through the provisions of other international agreements. The analysis will begin with the process of withdrawing from international space agreements before moving on to other potential diplomatic options.

A. *Withdrawing from the Outer Space Treaty under Article XVI*

Assuming America faces a viable, unavoidable threat to its security interests in space, America may desire to withdraw from the Outer Space Treaty to prepare for the threat while still obeying international and domestic law. Article XVI of the Treaty governs how this withdrawal process works.⁹³

Under Article XVI, any party is free to withdraw from the treaty provided it gives notice within one year of the decision.⁹⁴ While this is a simple enough process, America must first make the domestic decision to do so.⁹⁵ While the U.S. Constitution

91. See MACDONALD, *supra* note 88 (explaining the strategic landscape of outer space militarization and arguing that America must use diplomacy to strengthen America's security interests in space).

92. See e.g., Gohd, *supra* note 75; Matthew Lee, *US Hits Iran Space Agency with Sanctions over Missile Work*, AP NEWS (Sept. 3, 2019) <https://apnews.com/article/99a41d1896c94d9e967e581b3c2e2d83> (recognizing instances where both Russia and Iran have not abided by applicable international agreements in releasing weapons into space).

93. OST, *supra* note 1.

94. *Id.*

95. See STEPHAN P. MULLIGAN, CONG. RSCH. SERV., R44761, WITHDRAWAL FROM INTERNATIONAL AGREEMENTS: LEGAL FRAMEWORK, THE PARIS AGREEMENT, AND THE IRAN

establishes a procedure for forming treaties with other nations, the Constitution says nothing on terminating them.⁹⁶

On one side of the table, commenters argue that the Constitution grants the president the power to unilaterally withdraw from treaties based on Supreme Court case law.⁹⁷ However, other commenters compare the termination of treaties to the termination of federal statutes, and therefore, Congress will circumvent the president's power.⁹⁸ Under this view, only a majority vote by both houses and the president's signature may withdraw America from an international treaty.⁹⁹ Both arguments have historical precedence, leading to more confusion on the issue.¹⁰⁰

To enforce the terms of non-self-executing treaties, such as the Outer Space Treaty, Congress must implement legislation.¹⁰¹ As a result, repealing the Outer Space Treaty requires repealing federal statutes.¹⁰² Therefore, regarding the Outer Space Treaty, both houses of Congress must obtain a majority vote and the subsequent signature of the president to withdraw America from the treaty.¹⁰³

Depending on the gravity of the hypothetical threat to America's security interests in outer space, convincing Congress (in its current make-up) to withdraw from a decades-old international treaty may be an insurmountable task. Given the past four politically tumultuous years and a near evenly divided

NUCLEAR AGREEMENT 8–10 (2018) (highlighting the policy debate over whether the president can unilaterally withdraw from a treaty without Senate approval).

96. See U.S. CONST. art. II, § 2, cl. 2.

97. MULLIGAN, *supra* note 95, at 8–9.

98. *Id.* at 10.

99. *Id.* (noting that a presidential veto override is an additional method for terminating a treaty in lieu of a presidential signature).

100. *Id.*

101. *Id.* at 16.

102. *Id.* For a non-self-executing agreement, the text demonstrates an intent that the agreement is not directly enforceable in U.S. courts or in cases where the Senate conditions its consent on the understanding that the agreement is non-self-executing. CONG. RSCH. SERV., RL32528, INTERNATIONAL LAW AND AGREEMENTS: THEIR EFFECT UPON U.S. LAW 15 (2018).

103. MULLIGAN, *supra* note 95, at 16.

Congress, acquiring votes to obtain a majority may take months or could be impossible.¹⁰⁴

Further, before fully committing to withdrawal from the Outer Space Treaty, America must consider the potential short-term and long-term ramifications of such an action. Many global partners consider at least part of the Outer Space Treaty customary law.¹⁰⁵ The withdrawal of a major treaty partner may result in making the agreement mute for all other members.¹⁰⁶ Consequently, this may lead to an international space-based arms race, angry allies, or other diplomatic consequences that may make a withdrawal senseless.¹⁰⁷

Additionally, withdrawing from the Outer Space treaty will affect other non-security provisions of the treaty. For instance, withdrawing domestically and internationally without implementing a new international framework governing space activity will severely damage the international principle of outer space as a region for the use and benefit of all mankind.¹⁰⁸ If countries do not agree that space is available for everyone and,

104. See Paul Kane & Racheal Bade, *In a Divided Capitol, Lawmakers Can't Agree on Coronavirus Safety Measures – Down to the Best Kind of Thermometer*, WASH. POST (Aug. 6, 2020), https://www.washingtonpost.com/powerpost/congress-coronavirus-testing/2020/08/06/716e1ad0-d66d-11ea-aff6-220dd3a14741_story.html (examining how Congress remained divided after five months when trying to decide simple coronavirus safety measures); see also Jay Cost, *Why Congress Can't Manage to Get Anything Done*, N.Y. POST (Apr. 22, 2018, 8:48 PM), <https://nypost.com/2018/04/22/why-congress-cant-manage-to-get-anything-done/> (discussing how gridlock and partisanship make it impossible for Congress to perform even the simplest of tasks); Linton Weeks, *A Nation Divided: Can We Agree on Anything?*, NPR (Feb. 28, 2012, 10:11 AM), <https://www.npr.org/2012/02/28/147338798/disagreeable-america-can-t-we-all-just-get-along> (exploring why a vast majority of Americans, including in government, disagree with each other).

105. Wayne White, *The Legal Regime for Private Activities in Outer Space*, in SPACE: THE FREE-MARKET FRONTIER 83, 94–95 (Edward L. Hudgins ed., 2002).

106. Hickman, *supra* note 6; Koplow, *supra* note 71, at 386.

107. White, *supra* note 105, at 95–96.

108. *Reopening the American Frontier: Exploring How the Outer Space Treaty Will Impact American Commerce and Settlement in Space: Hearing Before the Subcomm. on Space, Sci., & Competitiveness of the S. Comm. on Com., Sci., & Transp.*, 115th Cong. 9–10 (2017) [hereinafter *Space Hearings*] (memorandum from Michael J. Listner, Esquire, to Senator Ted Cruz) (contemplating that withdraw or amendment to the Outer Space Treaty would undermine the foundational principle of *res communis*). But see Hickman, *supra* note 6 (contradicting the argument that withdrawing from the Outer Space Treaty will damage the principles of outer space usage).

that national appropriation is prohibited, then a new era of colonialism and the subsequent injustices from such a practice will doubtlessly occur.¹⁰⁹

Again, this depends on the gravity of the threat America faces. Congress will need to analyze the situation's circumstances to determine whether the consequences of withdrawing from the Outer Space Treaty outweigh the protection and benefits the treaty confers. Assuming Congress determines withdrawal is necessary and obtains the President's signature, then one year after providing notice to the treaty's other members, America's withdrawal will officially occur.¹¹⁰

B. *Right to Self-Defense Regardless of the Outer Space Treaty*

However, what if America does not have one year to withdraw from the Outer Space Treaty to prepare for space-based aggression? For example, assume America reasonably believed a foreign adversary was planning an imminent attack on a communications or intelligence satellite critical to America's security. How could America defend itself while staying within the confines of international law?

The U.S. believes UN Charter, Article 51 gives countries the right to defend themselves in outer space.¹¹¹ Article 51 grants countries the right to self-defense up "until the Security Council has taken measures necessary to maintain international peace and security."¹¹² Therefore, the Charter effectively places a time restraint on the right to self-defense. UN Charter Art. 51 states that

109. See *Space Hearings*, *supra* note 108 (quoting BUREAU OF ARMS CONTROL, VERIFICATION AND COMPLIANCE, DEP'T OF STATE, NARRATIVE ON THE TREATY ON PRINCIPLES GOVERNING THE ACTIVITIES OF STATES IN THE EXPLORATION AND USE OF OUTER SPACE, INCLUDING THE MOON AND OTHER CELESTIAL BODIES (1967), <https://2009-2017.state.gov/t/isn/5181.htm>) (arguing that withdrawal from the Outer Space Treaty would not result in territorial conflict). *But see* Hickman, *supra* note 6 (reasoning that the argument for Outer Space Treaty withdrawal resulting in territorial conflict is misunderstood).

110. OST, *supra* note 1, 610 U.N.T.S. at 212.

111. Paul B. Larsen, *Outer Space Arms Control: Can the USA, Russia and China Make This Happen*, 23 J. CONFLICT & SEC. L. 137, 141 (2018).

112. *Id.*

[n]othing in the present Charter shall impair the inherent right of individual or collective self-defense 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. Measures taken by Members in the exercise of this right of self-defense shall be immediately reported to the Security Council and shall not in any way affect the authority and responsibility of the Security Council under the present Charter to take at any time such action as it deems necessary in order to maintain or restore international peace and security.¹¹³

Thus, if America is attacked, then America could possibly apply UN Charter Art. 51 to justify an aggressive response in space.¹¹⁴

Depending on the situation, the Security Council's necessary measures may not be implemented quickly enough to legally permit America's response to a threat. As such, America will need another avenue to respond with military force in space without waiting a year to withdraw from the Outer Space Treaty.

Domestically, per the 2020 Defense Space Strategy, America has the capability to perform necessary outer space military activities to effectively deter foreign aggression.¹¹⁵ Additionally, because of America's modern weapon systems and international partnerships, America enjoys the luxury of being able to recruit international cooperation as a means to deter rivals and avoid military intervention.¹¹⁶ Luckily, America likely will not have to abandon the Outer Space Treaty and the benefits the treaty

113. U.N. Charter art. 51.

114. *See id.*

115. *See* U.S. DEPT OF DEF., DEFENSE SPACE STRATEGY SUMMARY 1 (2020) (discussing the possible threats foreign countries pose in space along with the prioritized lines of effort the Department will implement to address them).

116. *Id.* at 1–2; *see also* Jon Harper, *Special Report: U.S., Japan Set to Enhance Cooperation on Military R&D*, NAT'L DEF. (Dec. 8, 2021), <https://www.nationaldefensemagazine.org/articles/2021/12/8/us-japan-set-to-enhance-cooperation-on-military-rd> (considering how collaboration between the U.S. and Japan in advanced space weaponry will help respond to China's growing power in space).

grants unless a grave, imminent threat to the country's space-based security systems emerges.¹¹⁷

C. *Withdrawing from Other International Agreements*

What about potentially withdrawing from other International Space Law agreements to facilitate militarism in space? Similar to the Outer Space Treaty, most international space treaties have a withdrawal provision akin to Article XVI.¹¹⁸ Generally, all a country must do to withdraw from the various treaties is provide notice a year in advance.¹¹⁹ Likewise, for non-self-executing treaties, the decision to withdraw must be decided through a majority vote by Congress and the President's signature.¹²⁰

Like withdrawing from the Outer Space Treaty, America must consider the potential consequences of withdrawing from other space-based international treaties.¹²¹ A hasty exit from an international treaty for security reasons may lead to legal, scientific, and diplomatic problems for America in other areas.¹²²

117. See OST, *supra* note 1 (stating nonpeaceful military activity and the use of nuclear weapons are prohibited in space).

118. See Rescue and Return Agreement, *supra* note 18, at art. 9; Liability Convention, *supra* note 18, at art. 27; Registration Convention, *supra* note 35, at art. 11; Moon Agreement, *supra* note 48, at art. 20.

119. See, e.g., See Rescue and Return Agreement, *supra* note 18, at art. 9; Liability Convention, *supra* note 18, at art. 27; Registration Convention, *supra* note 35, at art. 11; Moon Agreement, *supra* note 48, at art. 20.

120. See MULLIGAN, *supra* note 95, at 15–17 (discussing how non-self-executing treaties are passed into domestic law, resulting in the need for a full legislative process for repeal to terminate the effects of the treaty); see also Julian Ku & John Yoo, *Bond, the Treaty Power, and the Overlooked Value of Non-Self-Executing Treaties*, 90 NOTRE DAME L. REV. 1607, 1628–29 (2015) (communicating the need for cooperation between the President, Senate, and House to withdraw from a non-self-executing treaty).

121. See generally Hickman, *supra* note 6 (explaining various consequences America may face by withdrawing from the 1967 Outer Space Treaty).

122. See Laurence R. Helfer, *Terminating Treaties*, in THE OXFORD GUIDE TO TREATIES 634, 640 (Duncan B. Hollis ed., 2012); see also James McBride, *The Consequences of Leaving the Paris Agreement*, COUNCIL ON FOREIGN RELS. (June 1, 2017, 8:00 AM), <https://www.cfr.org/background/consequences-leaving-paris-agreement>; Chimèna Keitner, *What Are the Consequences of the Trump Administration's Recent Treaty Withdrawals?*, JUST SECURITY (Oct. 17, 2018), <https://www.justsecurity.org/61101/consequences-trump-administrations-treaty-withdrawals/> (discussing the international destabilization that may result from U.S. treaty withdrawal as a response to adverse state actions); Hai-Bin Zhang et al., *U.S.*

For example, leaving the Rescue and Return Agreement could endanger American astronauts and space vehicles if they crash in a hostile signatory's territory as the signatory would not be required to return them nor assist them.¹²³ Even worse, if America withdrew from the Liability Convention and a situation similar to the Cosmos 954 incident, where an adversary's nuclear-powered or equally dangerous space object damaged American territory, America would have an even tougher time obtaining just compensation.¹²⁴

Beyond the foregoing of legal remedies to harms caused by international rivals from space activities, scientific and exploration collaboration between America and its partners may be hampered by exiting other space agreements.¹²⁵ While the pros and cons of withdrawal must be weighed to determine the overall impact, America may find short-term security necessary. Even so, abruptly leaving a space treaty to prepare for a potential attack would substantially tarnish

America's partnerships and the safety of American people and its territory in the long term.¹²⁶ The country should consider a different strategy to protect its short-term interests and future relations.

D. *Other Options Under International Law*

Instead of leaving an international treaty and dampening global reputation to protect America's interests in space, America may seek to prevent aggressive space activity through deterrence using collective economic pressure. Article 41 of the United Nations Charter permits the UN Security Council to enact

Withdrawal from the Paris Agreement: Reasons, Impacts, and China's Response, 8 ADVANCES IN CLIMATE CHANGE RSCH. 220, 223 (2017).

123. Rescue and Return Agreement, *supra* note 18..

124. See DeBusschere, *supra* note 24, at 99–100.

125. See International Space Station Intergovernmental Agreement art. 1, Jan. 29, 1998, T.I.A.S. 12927 (stating the objective of the international agreement behind the International Space Station is to establish international cooperation among the signatories to enhance the scientific use of outer space). If a signatory abandoned this agreement, then they would not be permitted to use the International Space Station, and, thus, the collaboration between the signatories would cease.

126. Helfer, *supra* note 122, at 640.

economic sanctions in response to threats, breaches of peace, and acts of aggression.¹²⁷ These economic sanctions include interrupting trade, communications, and severing diplomatic relations with the offending nation.¹²⁸

Assuming a nation threatens to militarize space or commence a space-based assault, despite the terms of the Outer Space Treaty and other international agreements, the Security Council can justify levying sanctions against the offender.¹²⁹ By using its global influence to convince the Security Council to agree to sanctions and with the collective economic power of the member nations of the UN, America could deter imminent space-based aggression without having to withdraw from international treaties.¹³⁰

Space operations are expensive endeavors.¹³¹ Through the use of crippling sanctions, aggressors may quickly find themselves lacking funds, resources, and the will to continue threatening any outer space aggression.¹³²

However, this method has only limited utility. While this method cannot work against major rivals such as Russia and China because they are permanent members of the Security

127. U.N. Charter arts. 39, 41.

128. *Id.* at art. 41.

129. *Id.* at arts. 39, 41.

130. See *Most Influential Countries*, U.S. NEWS (2020), <https://www.usnews.com/news/best-countries/best-international-influence> (determining that America is the most influential country); see also, e.g., *UN Security Council Toughens Sanctions on DPR Korea Over Ballistic Missile Launches*, UN NEWS (Aug. 5, 2017), <https://news.un.org/en/story/2017/08/562882-un-security-council-toughens-sanctions-dpr-korea-over-ballistic-missile> (demonstrating that the UN Security Council can use sanctions to deter a foreign nation's aggressive behavior).

131. See Jason Davis, *How Much Does Space Travel Cost?*, NBC NEWS (Oct. 15, 2018, 10:46 AM), <https://www.nbcnews.com/mach/science/how-much-does-space-travel-cost-ncna919011> (explaining the immense costs of various space operations); see also Jaime McIntyre, *Attempt to Shoot Down Spy Satellite to Cost Up to \$60 Million*, CNN (Feb. 15, 2008, 8:40 PM) <http://www.cnn.com/2008/TECH/02/15/spy.satellite/>.

132. See, e.g., Matthew Lee, *US Hits Iran Space Agency with Sanctions over Missile Work*, AP NEWS (Sept. 3, 2019), <https://apnews.com/article/99a41d1896c94d9e967e581b3c2e2d83> (discussing the sanctions imposed by the Trump administration on Iran).

Council, it could work against rogue nations and future aggressors if the members have combined interests.¹³³

Another option under international law requires invoking Article 60 of the Vienna Convention on the Law of Treaties which may be a more advantageous avenue to protect space-based interests. Under Article 60, if a party commits a material breach of a multilateral treaty, the other parties can suspend their treaty obligations through unanimous agreement in (1) relations between the parties and the offender or (2) between all the parties.¹³⁴ A “material breach” constitutes violating an essential provision of the treaty or the unsanctioned renunciation of an obligation under the treaty.¹³⁵

However, while America has signed the treaty, it has yet to ratify the Vienna Convention because of the belief that most of its provisions are already customary international law.¹³⁶ Despite this, America still may not invoke the Vienna Convention to temporarily suspend America’s or any other party’s obligations under the Outer Space Treaty to respond to foreign aggression in outer space.¹³⁷

Therefore, legislators must finally ratify the Vienna Convention, thereby permitting America to invoke Article 60 and thus temporarily suspend its obligation to engage only in peaceful endeavors in outer space. However, if legislators are unwilling to commit to this, America may still protect itself against space-based aggression through diplomatic means.

133. See *UN Security Council Toughens Sanctions on DPR Korea Over Ballistic Missile Launches*, *supra* note 130; see also U.N. Charter art. 23, ¶ 1 (listing permanent members of the Security Council as China, France, Russia, the United Kingdom, and the United States); U.N. Charter art. 27 (stating the rules and procedure of how the Security Council votes).

134. Vienna Convention on the Law of Treaties, art. 60(2)(a)(i)–(ii), Jan. 27, 1980, 1155 U.N.T.S. 331 [hereinafter Vienna Convention].

135. *Id.* art. 60(3); see Frederic L. Kirgis, Jr., *Some Lingering Questions About Article 60 of the Vienna Convention on the Law of Treaties*, 22 CORNELL INT’L L. J. 549, 555 (1989) (discussing how a “material breach” of an essential provision of a treaty does not constitute a minor breach but must be a significant violation in order to justify a party terminating its obligations).

136. *Vienna Convention on the Law of Treaties*, U.S. DEPT OF STATE, <https://2009-2017.state.gov/s/l/treaty/faqs/70139.htm> (last visited Feb. 2, 2021).

137. Vienna Convention, *supra* note 134, at art. 34.

E. *Diplomatic Options*

In lieu of ratifying the Vienna Convention, America could potentially pursue a diplomatic campaign to persuade a spacefaring partner to invoke Article 60 themselves. As evidenced by most nations joining the Outer Space Treaty, nations are interested in keeping outer space peaceful.¹³⁸ If rival nations like Russia and China continue to develop their anti-satellite weapons,¹³⁹ then America could potentially persuade its partners and regional allies to threaten to invoke Article 60. This would temporarily suspend the obligations of the Outer Space Treaty, unless rival nations agree to stop weapons development. The threat of invoking Article 60 alone may deter nations from continuing to militarize space and break the Outer Space Treaty.

One other potential diplomatic option includes engaging in negotiations concerning the European Union's proposed Code of Conduct for Outer Space Activities.¹⁴⁰ The Code of Conduct would establish essential rules governing activities in space, both civilian and military, both governmental and non-governmental.¹⁴¹

While the U.S. supports the Code of Conduct, Russia and China do not.¹⁴² Russia and China's main complaint is that the Code does not more drastically demilitarize outer space by prohibiting the region's weaponization.¹⁴³ In contrast, America aided the E.U. in redrafting the Code to incorporate language permitting the "right to self-defense in space" and believes the Code conforms with America's national interests.¹⁴⁴ Russia and

138. See Kimball, *supra* note 3 (stating that the Outer Space Treaty has 110 states-parties, with another 89 countries that have signed it, but not yet ratified); see also OST, *supra* note 1.

139. See Michael Sheetz & Amanda Macias, *China and Russia Are Militarizing Space with 'Energy Weapons' and Anti-Satellite Missiles: Pentagon*, CNBC (Feb. 13, 2019, 11:25 AM), <https://www.cnbc.com/2019/02/13/pentagon-warns-of-weaponization-of-space-by-china-russia-report.html>.

140. Larsen, *supra* note 111, at 150–53, 158.

141. *Id.* at 150–51.

142. *Id.* at 150.

143. *Id.* at 153.

144. Micah Zenko, *A Code of Conduct for Outer Space*, COUNCIL ON FOREIGN RELS. (Nov. 30, 2011), <https://www.cfr.org/report/codeconductouterspace>.

China's demand for a prohibition on weaponizing space seems acceptable, but their proposed provisions come with their own problems.¹⁴⁵

First off, China and Russia's proposed provisions do not address ground-based systems such as anti-satellite missiles, a chief concern of America and its allies.¹⁴⁶ To prohibit weaponizing space does nothing to prevent the destruction of critical satellites and space infrastructure from ground-based weapons. These are weapons China, Russia, and America already have.¹⁴⁷

Another problem with Russia and China's proposal is the lack of a verification regime.¹⁴⁸ Unlike the Open Skies Treaty and Strategic Arms Reduction Treaty, which enabled Russia and America to verify compliance through visual inspections, no such provision exists in Russia and China's proposal.¹⁴⁹

In the current global climate, neither side will likely trust the other's compliance.¹⁵⁰ For any treaty prohibiting the militarization of space to work, a provision outlining a verification regime that permits inspections, good-faith information sharing

145. *Id.*

146. *Id.*

147. See Zenko, *supra* note 144 (explaining how the weaponization of space does not include ground-based weapons); see also Amanda Macias & Michael Sheetz, *India Joined an Exclusive Club with Its Latest Anti-Satellite Missile Test — Here's What it Means for the World*, CNBC (Mar. 27, 2019, 5:55 PM), <https://www.cnbc.com/2019/03/27/india-joined-exclusive-club-with-anti-satellite-missile-test-heres-what-it-means-for-the-world.html> (listing the U.S., Russia, China, and India as nations that already have developed and tested ground-based, anti-satellite weapons).

148. Zenko, *supra* note 144.

149. See *id.* (stating how Russia and China's proposed treaty would be unverifiable); see also *Proposed Prevention of an Arms Race in Space (PAROS) Treaty*, NUCLEAR THREAT INITIATIVE (Apr. 5, 2021), <https://www.nti.org/learn/treaties-and-regimes/proposed-prevention-arms-race-space-paros-treaty/> [hereinafter PAROS Treaty] (indicating that the proposed PAROS Treaty does not mention verification through inspection and only settles disputes regarding compliance through negotiation and cooperation); Treaty on the Reduction and Limitation of Strategic Offensive Arms, U.S.-U.S.S.R., art. XI, July 31, 1991, S. TREATY DOC. No. 102-20; Treaty on Open Skies, Mar. 24, 1992, S. TREATY DOC. No. 102-37.

150. See MACDONALD, *supra* note 88, at 28 (explaining how with the increasing amount of traffic in space, nations need to gradually develop boundaries to build trust); see also PAROS Treaty, *supra* note 149 (describing how the U.S. opposed negotiation of issues relevant to PAROS with an ad hoc committee because it was a "multilateral environment" resulting in the meetings ending altogether).

between parties, transparency, and the inclusion of other confidence-building measures must be included.¹⁵¹

Further, any plan to ensure outer space remains a place of peace must involve severely scaling back ground-based weapons along with prohibiting weapons in space.¹⁵² Similar to the Cold War's numerous treaties concerning nuclear arms, a Code of Conduct for Outer Space Activities must ban weapons tests, demand limiting the number of anti-satellite weapons, and implement an effective verification and trust-building system.¹⁵³

IV. CONCLUSION

Since the turn of the century, the militarization of outer space has greatly accelerated while international law concerning space has stagnated. In light of modern technological developments and society's reliance on satellites for communication, navigation, weather, and science, current international agreements, such as the Outer Space Treaty, do not sufficiently address modern threats to peace in outer space. Threats such as anti-satellite weapons are not explicitly included in space law treaties and yet have been continually developed since the beginning of the century. To further the "common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes," either a new international treaty must be negotiated, or the Outer Space Treaty amended to reflect modern circumstances.

Despite global tension, suspicion, and geopolitical rivalry, the international community still has a chance to amend current

151. See, e.g., PAROS Treaty, *supra* note 149 (listing resolutions for outer space security adopted by the U.N. General Assembly).

152. See John Fairlamb, *The U.S. Should Negotiate a Ban on Basing Weapons in Space*, THE HILL (Feb. 4, 2021, 1:00 PM), <https://thehill.com/opinion/national-security/536774-the-us-should-negotiate-a-ban-on-basing-weapons-in-space> (advocating for a ban on weapons in space and detailing U.S. opposition to a 2008 weapons ban proposal on the grounds that it did not address ground-based space weapons).

153. See, e.g., *Nuclear Test Ban Treaty*, JOHN F. KENNEDY PRESIDENTIAL LIBR. & MUSEUM (Feb. 2, 2021), <https://www.jfklibrary.org/learn/about-jfk/jfk-in-history/nuclear-test-ban-treaty> (discussing treaties and international agreements created after the Cold War which address nuclear weapons); Daryl Kimball & Kingston Reif, *The Intermediate-Range Nuclear Forces (INF) Treaty at a Glance*, ARMS CONTROL ASS'N (Aug. 2019), <https://www.armscontrol.org/factsheets/INFtreaty> (last visited Jan. 19, 2022).

international space treaties or create new ones to address the increasing militarization of Space. America, along with Europe, must continue to demand an end to anti-satellite weapons and must continue to uphold outer space as a commons, not a region to conquer. Accomplishing a lasting demilitarization of space requires bolstering inadequate provisions in any future Code of Conduct for Outer Space Activities with an enforceable verification regime while also addressing both modern and future threats to countries' property and citizens. To ensure the exploration and use of outer space occurs for the benefit and interest of all mankind, international space law must progress swiftly.