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## Research Viewpoint

### In Search of Global Security:

#### Everett C. Dolman's *Astropolitik* and Daniel Deudney's *Dark Skies*

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### Abstract

This essay is a conceptual and historical critique of the astro-political proposals for global security in Everett C. Dolman's *Astropolitik: Classical Geopolitics in the Space Age* (2002) and Daniel Deudney's *Dark Skies: Space Expansionism, Planetary Geopolitics, and the Ends of Humanity* (2020). It focuses on the divergent views on space weaponization and world political order presented by the two authors. It reflects on previous critique of their work, examines strengths and weaknesses in their arguments, and highlights their shared common ground. The essay places their debate in a historical context by tracing the origins of the concept of space superiority and the Outer Space Treaty, and considers their ideas in relation to U.S. space policy in the 21st century. The critique concludes that the proposals advanced by both authors are problematic. In response, it suggests a rapprochement in the form of a United Nations Space Agency and Space Guard.

Keywords: *Astropolitik*, Outer Space Treaty, Space weaponization, Space Force, Global security

### Introduction

What is space dominance? Can U.S. dominance in space make the world a safer place? This essay addresses these questions in five parts. The first part examines a proposal for space dominance by Everett C. Dolman. The second discusses Daniel Deudney's opposition to military space expansion and his proposal for global security. The third compares their views on space weaponization and world political order. The essay proceeds to evaluate their

arguments, placing the debate in a historical context. The fourth part traces the origins of the Outer Space Treaty (OST).<sup>1</sup> The fifth analyses U.S. space policy and international law in the 21st century. The essay finds both proposals problematic, but suggests a rapprochement in the form of a United Nations Space Agency and Space Guard.

### **Everett C. Dolman's *astropolitik***

*Astropolitik: Classical Geopolitics in the Space Age* is Everett C. Dolman's proposal for achieving world government and accelerating humankind's expansion into space.<sup>2</sup> *Astropolitik* proposes that the United States weaponize space before other states seize the advantage.<sup>3</sup> Dolman coined the term *astropolitik* for its connotations of *realpolitik* and *geopolitik*.<sup>4</sup> Dolman acknowledges the risks of a hyper-nationalist grand strategy, but a realist theory of international relations provides the justification: "It presumes the state that dominates space is specifically chosen by the rigors of competition as the politically and morally *superior* nation, culture, and economy."<sup>5</sup>

*Astropolitik* embraces British and North American geostrategic theory and policy. Geopolitics suggests certain geographical features of the world are vital areas of power, the control of which endows a state with commercial, military and political advantage over competing states. Drawing upon naval strategist Alfred Thayer Mahan's concept of "oceanic chokepoints", space is characterised as offering orbits, regions and launch points of geostrategic significance.<sup>6</sup> Mahan referred to oceanic "well-worn paths", which show that "controlling reasons" led men to choose certain lines of travel – called "trade routes" – rather than others.<sup>7</sup> Dolman suggests that corridors of heavy traffic will develop in space due to gravity wells and the efficiency costs of rocket-propulsion to Earth orbits.<sup>8</sup> Mahan also recommended the U.S. navy establish bases in Hawaii, the Philippines and several Caribbean

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<sup>1</sup> Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. UN General Assembly, 19 December 1966. A/RES/2222 (XXI)

<sup>2</sup> Everett C. Dolman *Astropolitik: Classical Geopolitics in the Space Age*. (London: Frank Cass Publishing, 2002)

<sup>3</sup> *Ibid.*, 157.

<sup>4</sup> *Ibid.*, 156.

<sup>5</sup> *Ibid.*, 15.

<sup>6</sup> *Ibid.*, 33-37.

<sup>7</sup> Alfred T. Mahan *The Influence of Sea Power Upon History: 1660–1783*. (Boston, MA: Little, Brown and Company, 1890): 25.

<sup>8</sup> Dolman *Astropolitik*, 39.

islands to facilitate control of Pacific trade. Dolman suggests that space bases will be utilized in a similar fashion, stockpiling fuel and life-support supplies for exploration and commercial exploitation.<sup>9</sup> The state that gains control of space chokepoints and way-stations on trade routes can expect to gain a significant advantage over other terrestrial states. Dolman claims that Low-Earth orbit (LEO) is the most important region for the projection of force, identifying this region with Halford Mackinder's Eastern Europe in his geostrategic model of the "Heartland".<sup>10</sup> Dolman suggests that control of this region provides a short-term advantage on the terrestrial battlefield and long-term control of outer reaches of space.<sup>11</sup> The state controlling this region "can ensure for itself domination of space commerce and, ultimately, terrestrial politics."<sup>12</sup>

Dolman proposes an *astropolitik* policy for the U.S. government. First, the United States should withdraw from international treaties which constrain U.S. space activities and pursue free-market sovereignty in space.<sup>13</sup> Second, the United States should establish a military Space Force and seize the "high-ground" by positioning laser and kinetic energy weapons in Earth space in order to prevent adversaries exploiting the domain.<sup>14</sup> The U.S. would thus become the gatekeeper of outer space and allow other states or non-state actors access for commercial purposes.<sup>15</sup> Dolman suggests that U.S. military space forces maintain free trade and enhance exploration, while ensuring a global business climate secure from the threat of large-scale war.<sup>16</sup>

### **Daniel Deudney's *Dark Skies***

Daniel Deudney's *Dark Skies: Space Expansionism, Planetary Geopolitics, and the Ends of Humanity* advances an astropolitical proposal in direct opposition to Dolman.<sup>17</sup> Deudney

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<sup>9</sup> *Ibid.*, 34.

<sup>10</sup> Halford J. Mackinder *Democratic Ideals and Reality [edited by and] with a new introduction by Stephen V. Mladineo*. (Washington, D.C.: National Defence University Press, 1996): 106

<sup>11</sup> Everett C. Dolman "Geostrategy in the space age: an astropolitical analysis," *Journal of Strategic Studies*. 22, no. 2-3 (1999): 93.

<sup>12</sup> Dolman *Astropolitik*, 39.

<sup>13</sup> *Ibid.*, 157.

<sup>14</sup> *Ibid.*, 157-8. Earth space is the region from the lowest viable orbit to just beyond geostationary altitude (approx. 36,000km).

<sup>15</sup> *Ibid.*, 157.

<sup>16</sup> *Ibid.*, 179. The U.S. created a Space Force as an independent branch of the Armed Forces in 2019.

<sup>17</sup> Daniel Deudney *Dark Skies. Space Expansionism, Planetary Geopolitics, & The Ends of Humanity*. (NY: Oxford University Press, 2020). I will also draw upon Daniel Deudney *Whole Earth Security: A Geopolitics of Peace*. Worldwatch Paper 55 (Washington, D.C: WorldWatch Institute, 1983).

distinguishes among three approaches to astropolitics: “habitat space expansionism”; “military space expansionism”; and “planetary security space expansionism”.<sup>18</sup> Habitat space expansionism proposes the colonization of space, habitat infrastructure and orbital energy resources to solve Earth habitability problems. Military space expansionism endorses orbital bombardment and warfighting, space control and planetary hegemony.<sup>19</sup> It promotes national security through the deployment of ballistic missiles, satellite force multipliers, anti-satellite weapons (ASATs) and satellite battle-stations to intercept missiles and attack targets on the ground.<sup>20</sup> Planetary security space expansionism promotes arms control, planetary-scale information technology and international scientific cooperation.<sup>21</sup> Deudney warns of the risks of all forms of space expansionism and advocates an “Earth-centred pro-space agenda focused on nuclear security and environmental protection.”<sup>22</sup>

Deudney proposes that cooperative space ventures can have far-reaching security benefits by defusing conflict situations and providing safeguards against the degeneration of international relations. In support of this point, Deudney discusses cooperative projects such as the International Geophysical Year (IGY) and International Space Station (ISS).<sup>23</sup> Deudney suggests an international consortium of spacefaring states develop capabilities to deflect or destroy asteroids; monitoring and diversion of asteroids is considered to be an area for significant development in the field of international cooperation.<sup>24</sup> Other projects for international cooperation include Mars missions, lunar bases and the removal of orbital debris.<sup>25</sup>

Deudney’s proposals for global security include mutually restraining arms control and restrictions on weapons innovation.<sup>26</sup> Deudney suggests a “Zero Ballistic Missiles” program to reduce first-strike fears, escalatory crisis pressures and render obsolete Ballistic Missile Defense programs.<sup>27</sup> Deudney promotes restraints on testing and deployment of ASATs,

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<sup>18</sup> Deudney *Dark Skies*, 30.

<sup>19</sup> *Ibid.*, 151.

<sup>20</sup> *Ibid.*, 313.

<sup>21</sup> *Ibid.*, 30.

<sup>22</sup> *Ibid.*, 7.

<sup>23</sup> *Ibid.*, 248.

<sup>24</sup> *Ibid.*, 252.

<sup>25</sup> *Ibid.*, 249.

<sup>26</sup> Deudney *Whole Earth Security*, 47.

<sup>27</sup> Deudney *Dark Skies*, 235.

international organizations with treaty-verification capacities and test bans to restrict weapons innovation. Finally, Deudney supports the abolition of nuclear weapons and considers their “complete containment” and “near elimination” a feasible goal.<sup>28</sup>

## Space Weaponization and International Order

Dolman and Deudney diverge sharply in many respects, but their theorizing shares several common starting points. Their differences and similarities in relation to world political order, space weaponization, international cooperation and the OST are discussed here.

First, both authors suppose the current world political order is interstate anarchy. Dolman is a realist; he thinks that states are essentially involved in a Hobbesian “war of all against all”, but proposes dominance of a single state as an exit from anarchy. Deudney proposes that the OST, arms control, protection of the environment and cooperative space activities ought to complement the system of independent territorial states without replacing it.<sup>29</sup> Deudney contends that planetary rule under a single, dominant state would be catastrophic for humanity.<sup>30</sup> On the contrary, Dolman holds that the United States form of liberal democracy can produce a benign hegemony. Dolman argues that the checks and balances of U.S. democracy “make it the least likely of all potential candidates to misuse its power.”<sup>31</sup> Nonetheless, Deudney suggests space expansionism embraces a “salvationist” ideology, which could lead to genocide.<sup>32</sup>

On space weaponization, *Astropolitik* recommends that the United States deploy missile interceptors in space. Intercepting missiles in boost-phase requires a row of satellite battle stations orbiting the Earth (‘Earth-net’). Deudney refers to this plan as “starkly utopian” and warns that it would incur opposition from rival states, which would physically disrupt it or deploy a rival infrastructure.<sup>33</sup> Dolman suspects that the weaponization of space is inevitable, and it is foolish to presume U.S. armed forces are sufficient for national security without the support of space systems.<sup>34</sup> However, Deudney warns of technological misfires, accidents and

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<sup>28</sup> *Ibid.*, 133; 329.

<sup>29</sup> Deudney *Dark Skies*, 41.

<sup>30</sup> *Ibid.*, 232.

<sup>31</sup> Dolman *Astropolitik*, 181.

<sup>32</sup> Deudney *Dark Skies*, 369.

<sup>33</sup> *Ibid.*, 314.

<sup>34</sup> Dolman *Astropolitik*, 151.

dependence on technocracy.<sup>35</sup> Deudney believes space weaponization will lead to a hierarchical world order with tendencies for totalitarian oppression. Moreover, new surveillance capabilities will create types of totalitarian rule more extensive than previously encountered.<sup>36</sup> Dolman envisages the U.S. imposing a *Pax Americana* on the world, but Deudney suggests that “promoting mutual understanding through planetary-scale information and defusing confrontation through space ventures is far more realistic than eliminating the causes of war with abundant energy.”<sup>37</sup>

Deudney holds great faith in the ability of states to cooperate effectively and believes that cooperation will create international peace. Dolman, on the other hand, suggests that cooperation is essentially a facade due to the inherent rivalry between states in an anarchic system. Dolman argues the OST is cooperation based on fear: “...the facade of cooperation predicated upon preventing any one state gaining an unexpected advantage.”<sup>38</sup> Dolman claims that United States space dominance can usher in a legal regime based on “real cooperation... a vision of mutual gain and common benefit.”<sup>39</sup> In contrast, Deudney views the OST as a solution to human problems, rather than an obstacle to progress. Deudney suggests the OST should be strengthened and extended rather than rejected or substantially modified.<sup>40</sup>

Dolman argues the OST is beset with problems, which limit exploration and accomplishment. Instead, a free market economy approach to the ownership of celestial bodies is preferred.<sup>41</sup> Dolman holds that the inclusion of references to common property and equal distribution in Article I of the OST were designed “to prevent distinct advantages going to potential enemies, rather than as an altruistically cooperative effort to transform international relations.”<sup>42</sup> Dolman argues the OST, although it explicitly endorses a spirit of cooperation, fulfilled a geostrategic imperative to deny adversaries the control of territory of strategic military significance.<sup>43</sup> Deudney also suggests Article II of the OST - the non-appropriation clause - was due to cold war circumstances. Deudney suggests that neither the Soviet Union or

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<sup>35</sup> Deudney *Dark Skies*, 126-7.

<sup>36</sup> *Ibid.*, 320.

<sup>37</sup> Deudney *Whole Earth Security*, 44.

<sup>38</sup> Dolman *Astropolitik*, 181.

<sup>39</sup> *Ibid.*

<sup>40</sup> Deudney *Dark Skies*, 243.

<sup>41</sup> Dolman *Astropolitik*, 140.

<sup>42</sup> *Ibid.*, 105.

<sup>43</sup> *Ibid.*, 130.

the United States were sure which state would reach the Moon first in 1967, so both sides consented to waive any territorial claim rather than risk being second.<sup>44</sup>

### *Evaluation*

Jonathan Havercroft and Raymond Duvall argue that *Astropolitik* contains three questionable presuppositions with undesirable consequences.<sup>45</sup> First, it assumes sustained cooperation between states is implausible as states are locked in competition for power, but it also argues that *astropolitik* would produce mutual gains and innovation. They contend that liberal and realist ideas are incompatible and their combination indicates the rationalization of imperialism.<sup>46</sup> Second, Dolman presumes U.S. hegemony will be benign, but they think this is unlikely as the vast majority of the Earth's population would be excluded from democratic decision-making. Third, space is viewed as *Terra nullius*: an empty territory ready to be colonized and exploited. They suggest that *astropolitik* is the apotheosis of "American exceptionalism": the ideology of an empire which threatens to turn sovereign entities into "bare life".<sup>47</sup>

Havercroft and Duvall also challenge Deudney's liberal-institutionalist astropolitics. They suggest Deudney's proposals for space cooperation contain an aporia: "empire as a possible mode of protection."<sup>48</sup> They argue that the United States is already a dominant spacepower because it "demands the right to be unimpeded in any of its activities in space, up to and including those that would involve weapons systems, but it reserves the right to deny other states - particularly adversaries - an equal freedom of operation."<sup>49</sup> They imagine that the evolution of a liberal-republican astropolitical order would not displace the United States from the seat of imperial space-power.<sup>50</sup>

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<sup>44</sup> Deudney *Dark Skies*, 244. Assessed in this critique below are claims that the OST was the product of a diplomatic struggle to prevent space superiority.

<sup>45</sup> Jonathan Havercroft and Raymond Duvall, "Critical Astropolitics: the geopolitics of space control and the transformation of state sovereignty," in Natalie Bormann and Michael Sheehan (eds.) *Securing Outer Space*. (London and New York: Routledge, 2009) 42-59: 45-7.

<sup>46</sup> Havercroft and Duvall *Critical Astropolitics*, 46.

<sup>47</sup> Raymond Duvall and Jonathan Havercroft "Taking Sovereignty out of this World: Space Weapons and Empire of the Future." *Review of International Studies*, 34, no. 4 (2008) 755-775: 770.

<sup>48</sup> Havercroft and Duvall *Critical Astropolitics*, 50.

<sup>49</sup> Duvall and Havercroft *Taking Sovereignty out of this World*, 755.

<sup>50</sup> Havercroft and Duvall *Critical Astropolitics*, 50.



It may be objected that Havercroft and Duvall’s worries are misplaced. In the past, the United States may have assumed the role of a “global policeman”, but underlying this was a desire to defend people who cannot defend themselves, and to defend values shared by democratic, liberal states. It may be argued that American exceptionalism has positive features and the world needs a global policeman to safeguard against breaches of the peace, uphold moral values, and liberate the oppressed. If the foreign policy of the United States advances a moral agenda - to bring freedom to oppressed people and spread values such as equality – is this symptomatic of totalitarianism?

It is conceivable that U.S. space dominance could improve international security by replacing interstate anarchy with world law. I am inclined to side with Dolman in thinking that even a “space-based U.S. empire” would lead to the spread of democratic values and practices. The U.S. Constitution’s mixed form of government was designed to prevent tyranny from taking root by a system of checks and balances. It is not perfect, but it was designed with error-correction in mind. Furthermore, we need to be very careful about dismissing any plan that promises the cessation of war. The compensation for U.S. space dominance might be the prevention of hundreds and thousands if not many more deaths of innocent men, women and children in wars. However, Dolman’s plan is not without problems and would incur new risks. Dolman envisages the United States putting an end to other states striking each other with missiles by utilizing a space-based missile defense system.<sup>51</sup> It seems over-optimistic to believe that the United States could reduce tensions without taking sides and inflaming regional conflicts. Deudney’s contention that seeking space superiority will provoke rivalry is plausible and unless it could occur in a clandestine way it is bound to jeopardize diplomatic efforts to restrain states conducting dangerous actions, such as ASAT tests.<sup>52</sup> If the United States seeks to achieve space dominance, other states are likely to pursue similar attempts or counter-action. I am not as pessimistic as Deudney, because I think that U.S. space dominance may produce a large degree of global security, but the path to achieving it could lead to the brink of war, as competing powers will increasingly reinforce their national security apparatus. In a world of nuclear weapons, seeking military dominance is an extremely perilous course of action.

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<sup>51</sup> Dolman *Astropolitik*, 165.

<sup>52</sup> Teresa Hitchens and Joan Johnson-Freese “Toward a new national security space strategy: time for a strategic rebalancing.” Atlantic Council Strategy Paper 5. Atlantic Council, June 2016.

While I find *Dark Skies* on the whole too pessimistic, the arms control proposals it contains appear over-optimistic. I have four main objections. First, it is difficult to reconcile a ban on weapons innovation and testing with the development of asteroid deflection tools. Deudney warns this technology could result in “the most powerful weapon of mass destruction ever devised.”<sup>53</sup> Deudney states that the international consortium should “provide planetary defense with minimum risk of military use”, but it seems impossible to guarantee the technology will not fall into the wrong hands or be employed in a time of crisis.<sup>54</sup> Deudney suggests that states agree no individual state will conduct similar activities without the participation of the others, but this will not guarantee against defection. Second, what if weapons innovation is neither good or bad, only the ends for which it is used? It could be argued that precision weapons will eventually benefit civilians by replacing other types of weapon, which cause indiscriminate harm. The widespread adoption of the Convention on Cluster Munitions may be viewed as a precedent to future prohibitions on the use, production, transfer and stockpiling of weapons, which are unable to distinguish between civilians and combatants.<sup>55</sup> Third, as major nuclear powers embark on expensive programs of modernization, abolition seems highly unlikely in the near future. For example, U.S. spending on nuclear weapon modernisation is estimated to be 1.7 USD trillion over the next three decades.<sup>56</sup> Fourth, curiosity and inventiveness are part of human nature, so it is reasonable to assume people will always be willing to turn their ingenuity to inventing new weapons. On the basis of these considerations I have yet to be convinced by Deudney’s arms control proposals. However, this is not to reject immediate measures for greater restraint. For instance, a simple, but potentially effective, measure would be to convince nuclear states to agree to follow a code of responsible conduct, like the one recently proposed by former United Kingdom (UK) Assistant Chief of Defence Staff, Rear Admiral John Gower.<sup>57</sup>

In concluding this section, I wish to draw attention to a rhetorical form I call the inevitability argument. Dolman and Deudney both adopt this type of argument. Deudney cautions, “...if large scale space expansion takes place, it [liberty] is almost certainly destined

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<sup>53</sup> Deudney *Dark Skies*, 250.

<sup>54</sup> *Ibid.*, 372.

<sup>55</sup> Convention on Cluster Munitions, 30 May 2008. *United Nations Treaty Series* 2688, no. 47713 (2014): 39-184.

<sup>56</sup> Congressional Budget Office. “Approaches for Managing the Costs of U.S. Nuclear Forces, 2017 to 2046.” Congress of the United States. 31 October, 2017.

<sup>57</sup> John Gower “Improving Nuclear Strategic Stability Through a Responsibility-Based Approach A Platform for 21st Century Arms Control.” *Briefer*, no. 1, 7 January 2019. Council on Strategic Risks.

for extinction.”<sup>58</sup> *Astropolitik* appeals to an inevitability argument as well: “Space as the ultimate high ground...stems from the notion that the weaponization of space is inevitable. So long as the fight is surely coming one ought to stake out and maintain the best defensive positions and be prepared for any contingency”.<sup>59</sup> In this regard, Dolman quotes U.S. Air Force General Joseph W. Ashy. “It’s politically sensitive, but it’s going to happen... we’re going to fight in space. We will engage terrestrial targets someday – ships, airplanes, land targets – from space. We will engage targets in space, from space.”<sup>60</sup> Whether the inevitability argument turns out to rest on true premises, it entails entrenched conflict; the feasibility of a dominant space power and a powerful motive to compete in a space arms race. These problems are as relevant today as they were at the beginning of the Space Age.

The next section proceeds to critically review the astropolitical proposals of Dolman and Deudney by considering the origins of the concept of space superiority and the negotiations that led to the OST.

## Space Superiority

The concept of space dominance appears to originate with Wernher von Braun.<sup>61</sup> In an article designed to gather support for America’s space program, von Braun envisaged a space station orbiting the Earth every two hours.<sup>62</sup> It was conceived as a reconnaissance outpost and battle station capable of launching nuclear missiles from outer space. This “space-sentinel” would “preserve the peace” on the principle that the Earth would be placed under constant surveillance, and no state would be able to undertake effective war preparations under its ever watchful eyes.<sup>63</sup> Wernher von Braun argued that building the space-sentinel was urgent, “If we do not, somebody else will. That somebody else very probably would be the Soviet Union.”<sup>64</sup> Of note, is that von Braun’s thoughts were expressed in 1952, which was the year of the first successful test of a thermonuclear weapon.

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<sup>58</sup> Deudney *Dark Skies*, 355.

<sup>59</sup> Dolman *Astropolitik* at 151.

<sup>60</sup> *Ibid.*

<sup>61</sup> Michael J. Neufeld “‘Space superiority’: Wernher von Braun’s campaign for a nuclear-armed space station, 1946-1956.” *Space Policy* 22 (2006): 52-62.

<sup>62</sup> Wernher von Braun “Crossing the Last Frontier” *Collier’s Weekly*, 22 March, 1952, 24-8; 72-3.

<sup>63</sup> *Ibid.*, 24.

<sup>64</sup> Wernher von Braun “Editorial: What are we Waiting for?” *Collier’s Weekly*, 22 March, 1952, 23.

In October 1957, the Soviet Union launched Sputnik 1 with an early version of the Soviet R-7 intercontinental ballistic missile (ICBM). The advanced thruster technology required to successfully launch the satellite indicated the Soviet Union was further ahead than the United States in developing long-range missiles capable of delivering nuclear explosives. At the Democratic Caucus in January 1958, then Senator Lyndon B. Johnson stated:

Control of space means control of the world, far more certainly, far more totally, than any control that has ever or could ever be achieved by weapons, or by troops of occupation. Whoever gains that ultimate position gains control, total control over the Earth, for purposes of tyranny or for the service of freedom.<sup>65</sup>

Dolman's *astropolitik* proposal is predicated upon this idea of an "ultimate position" from which to conduct military operations against terrestrial states. This corresponds to a review of the four schools of thought in space power doctrine: sanctuary, survivability, control, and high ground.<sup>66</sup> The sanctuary school holds that the stabilizing functions of space systems should be protected and outer space should not contain weapons; the survivability school argues terrestrial forces should not depend on space weapons due to their inherent vulnerabilities; the space control school emphasizes protection of space assets and capabilities to deny the use of space to adversaries in time of conflict; and the high ground school argues that space offers a superior warfighting advantage which should always be prioritized.

In 1958, when the United States started to use rockets to test nuclear explosives, it looked as though one state might be able to achieve the ultimate high ground.<sup>67</sup> In testimony before the U.S. House Armed Services Committee, General Donald L. Putt stated, "...the Moon appears to be of such significance that we should not let another nation establish a military capability there ahead of us."<sup>68</sup> In June 1959, von Braun presented classified plans to

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<sup>65</sup> Lyndon B. Johnson "Speech to a Meeting of the Democratic Conference 7 January, 1958." in *A time for action; a selection from the speeches and writings of Lyndon B. Johnson 1953-64*. (New York: Atheneum, 1964): 43-4.

<sup>66</sup> David E. Lupton *On Space Warfare: A Space Power Doctrine*. (Maxwell Air Force Base, AL: Air University Press, 1998): 33-4.

<sup>67</sup> Terrence R. Fehner and F. G. Gosling *Atmospheric Nuclear Weapons Testing: 1951-1963. Battlefield of the Cold War* Volume 1. United States Department of Energy. (U.S. Government Printing Office, 2006): 216.

<sup>68</sup> Quoted in Dwayne A. Day "Nuking the site from orbit: when the Air Force wanted a base on the Moon." *The Space Review*. 4 November, 2019. (accessed 12 June, 2020)

establish a military base on the Moon under ‘Project Horizon’.<sup>69</sup> However, it is important to recognise that world leaders endeavored to secure peaceful international relations, rather than pursuing a strategy of space dominance. In fact, in the years prior to the signing of the OST successive U.S. presidents favored the sanctuary school.

U.S. President Dwight D. Eisenhower was a proponent of the space as sanctuary doctrine.<sup>70</sup> Eisenhower’s Administration ensured that the U.S. space program was not conducted only under the auspices of the Department of Defense, but by a new civil organization.<sup>71</sup> The National Aeronautics and Space Act adopted by the U.S. Congress on 29 July 1958 decreed, “...it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind.”<sup>72</sup> Eisenhower’s Science Advisory Committee advised military uses of reconnaissance, communication and weather forecasting, but not the weaponization of space. In January 1958, Eisenhower proposed banning ICBMs in space to Soviet Premier Nikolai Bulganin.<sup>73</sup> In an address to the United Nations (UN) on 22 September 1960, Eisenhower proposed banning weapons of mass destruction in space.<sup>74</sup>

Eisenhower proposed several of the basic principles, which would eventually become incorporated in the OST. Specifically, he proposed no national appropriation of celestial bodies; no warlike activities on such bodies; no orbiting of weapons of mass destruction; UN verified launches of spacecraft; and a program of international cooperation in peaceful uses of space.<sup>75</sup> Eisenhower affirmed, “Our aim is to reach agreement on all the various measures that will bring general and complete disarmament.”<sup>76</sup> Eisenhower therefore connected the peaceful uses of space to the control of armaments on Earth. This approach was shared by leaders of the Soviet Union. In 1959, Evgeny Korovin stated the position of the Soviet Union.

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<sup>69</sup> “Project Horizon, Phase I Report, Volume I, 8 June, 1959.” United States Army. (Space Policy Institute Documentary History Collection, George Washington University).

<sup>70</sup> Sean N. Kalic. *United States presidents and the militarization of space, 1946–1967*. (Texas A&M University Press, 2012): 49, 150-1; Nicholas Michael Sambaluk “US policymakers confront aerospace doctrine, 1957-59” *Cold War History*, 14, 1 (2014): 91-107.

<sup>71</sup> Nicholas Michael Sambaluk *The Other Space Race: Eisenhower and the Quest for Aerospace Security*. (Naval Institute Press, 2015): 140.

<sup>72</sup> Section 102 (a). “National Aeronautics and Space Act of 1958” House Resolution 12575, Public Law 85-568, 72 Stat. 426. 29 July, 1958.

<sup>73</sup> “Letter from Dwight D. Eisenhower to Nikolai Bulganin.” 12 January, 1958, History and Public Policy Program Digital Archive, The Department of State Bulletin, vol. 38, 970 (27 January, 1958): 122-127.

<sup>74</sup> Address by President Dwight D. Eisenhower to the United Nations. 22 September, 1960.

<sup>75</sup> *Ibid.*

<sup>76</sup> *Ibid.*

...it is not the space rocket as such that endangers the security of mankind, but the nuclear warhead which may be delivered by a space rocket, a rocket of any possible range, a military aircraft etc. clearly the disarmament of outer space cannot be divorced from disarmament on Earth.<sup>77</sup>

Eisenhower spoke of “the horror of nuclear war” and abolition of nuclear weapons.<sup>78</sup> Indeed, growing concerns triggered several proposals, which appear extraordinary by today’s standards. On 17 September 1959, the UK proposed a plan for comprehensive disarmament including prohibitions on the manufacture of weapons of mass destruction.<sup>79</sup> On 18 September 1959, the Soviet Union proposed a program of general and complete disarmament by all states.<sup>80</sup> This entailed the renunciation of any kind of armed force apart from minimum contingents for internal security.<sup>81</sup> The Soviet Union offered to work with other states on “appropriate partial measures relating to disarmament and the strengthening of security.”<sup>82</sup> The Soviet Union Council of Ministers warned of the dangers of nuclear war.

In such a war, if it cannot be averted in time, distances would be measured in thousands and tens of thousands of kilometres, time in minutes and seconds and losses in millions, tens of millions, and hundreds of millions of human lives. It would be a war in which there would be no distinction between front and rear, between armies in the field and the civilian populations, between soldiers and children.<sup>83</sup>

The early space program coalesced around competition for prestige, but it was propelled by fear.<sup>84</sup> At the Moscow Space Policy Symposium in May 1961 Gennady Zhukov claimed, “the Mercury project is regarded in the United States as an integral part of plans for ‘control’ and even ‘domination’ over outer space.”<sup>85</sup> In August 1961, Soviet Premier Nikita Khrushchev

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<sup>77</sup> Evgeny A. Korovin. “On the Neutralization and Demilitarization of Outer Space.” *International Affairs*. (Moscow, 1959): 82-3.

<sup>78</sup> John McCone “246. Notes for the Files, Washington, 10 March, 1960.” *Foreign Relations of the United States 1958-1960*, Vol. 3 (Washington: Government Printing Office): 846-7.

<sup>79</sup> “United Kingdom declaration on comprehensive disarmament, made by her Britannic Majesty’s Principal Secretary of State for Foreign Affairs to the General Assembly at its 798th plenary meeting, on 17 September 1959.” United Nations General Assembly. A/C.1/820

<sup>80</sup> Declaration of the Soviet Government on General and Complete Disarmament (English translation). 19 September, 1959. A/4219-EN: 7.

<sup>81</sup> *Ibid.*, 14.

<sup>82</sup> *Ibid.*, 16.

<sup>83</sup> *Ibid.*, 2.

<sup>84</sup> “Recommendations for our National Space Program: Changes, Policies, Goals. Memo from NASA Administrator James E. Webb and Secretary of Defense Robert McNamara to Vice President Lyndon B. Johnson. 8 May, 1961.” In John M. Logsdon (ed.) *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program* Vol. 1. (Washington, D.C.: NASA History Office) 439-452: 444

<sup>85</sup> Evgeny A. Korovin “Space Exploration and International Relations: A Discussion.” *International Affairs*, 6 (1961): 59.

boasted that the Soviet Union could build a rocket able to deliver 100-megaton warheads to any point on the surface of the Earth.<sup>86</sup> On 30 October 1961, the Soviet Union detonated RDS-220, with a yield of 50 megatons of TNT.<sup>87</sup> In February 1962, John Glenn orbited the Earth in an Atlas rocket almost identical to rockets in the U.S. ICBM inventory. In March 1962, Khrushchev announced a new global rocket able to strike the United States from any direction.<sup>88</sup> In 1962, the United States conducted a series of high-altitude nuclear tests utilizing ICBMs.<sup>89</sup> One example was Starfish Prime, which detonated at an altitude of 400 kilometers (km) with a yield of 1.4 million tons of TNT.<sup>90</sup> In the months after the explosion, at least six satellites failed due to the effects of radiation, including the first commercial relay communication satellite Telstar and the UK's first satellite, Ariel 1.<sup>91</sup> The high-altitude tests indicated that nuclear-armed conflict in space would have deleterious consequences for *all* spacefaring states.<sup>92</sup> International agreement to prevent the spread of nuclear weapons was a matter of urgency. The next section suggests that the OST was part of a complex series of negotiations, which addressed this urgency.

### Origins of the Outer Space Treaty

A long process of negotiation laid the foundations for the OST. The first resolution on space adopted by the UN General Assembly was on 14 November 1957.<sup>93</sup> It was adopted on the basis of a proposal to the UN Disarmament Commission by Canada, France, the UK and United States to establish an international system of inspection to ensure objects launched into outer

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<sup>86</sup> The New York Times. "Khrushchev Says Monster Missile Backs Peace Aim." 10 August, 1961.

<sup>87</sup> "Tsar Bomba." Atomic Heritage Foundation. 8 August, 2013. <https://www.atomicheritage.org/history/tsar-bomba> (accessed 9 July, 2020)

<sup>88</sup> Pravda, 10 September, 1961; Pravda, 17 March, 1962. See Arnold L. Horelick "Political Uses of Outer Space" in Joseph M. Goldsen (ed.) *Outer Space in World Politics*. (Praeger, 1963): 53.

<sup>89</sup> Robert S. Norris, Thomas B. Cochran "United States nuclear tests, July 1945 to 31 December 1992 (NWD 94-1)" Nuclear Weapons Databook Working Paper (Washington, DC: Natural Resources Defense Council, 1994): 33, 35.

<sup>90</sup> Epaminondas George Stassinopoulos "The STARFISH Exo-atmospheric, High-altitude Nuclear Weapons Test." NASA/Goddard Space Flight Center (presented at the Hardened Electronics and Radiation Technology Conference, Chantilly, VA, April 22, 2015).

<sup>91</sup> Mark Wolverton *Burning the Sky – Operation Argus and the Untold Story of the Cold War Nuclear Tests in Outer Space*. (The Overlook Press, 2018): 196.

<sup>92</sup> Cassandra Steer "Global Commons, Cosmic Commons. Implications of Military and Security Uses of Outer Space." Georgetown Journal of International Affairs. 18, no. 1 (2017) 9-16: 10.

<sup>93</sup> "Regulation, Limitation and Balanced Reduction of All Armed Forces and All Armaments; Conclusion of an International Convention (Treaty) on The Reduction of Armaments and The Prohibition of Atomic, Hydrogen and other Weapons of Mass Destruction." United Nations General Assembly Resolution 1148(XII), 14 November 1957. A/RES/1148(XII): 3-4.

space “shall be exclusively for peaceful and scientific purposes.”<sup>94</sup> In 1958, the UN General Assembly debated “Questions of the Peaceful Use of Outer Space” and agreed to establish a committee to discuss international cooperation. In 1959, ambassador Koto Matsudaira, the first President of the Committee on the Peaceful Uses of Outer Space, stated “the Committee will never be permitted to act in any sense whatsoever as an instrument of the cold war.”<sup>95</sup> This is disputed by Dolman in his narrative of the origins of the OST. Dolman argues that the space legal regime facilitated by the UN was not created in a spirit of cooperation, which transcended national boundaries: “The outer-space regime, widely recognized as the acme of global cooperation, is in fact the product of Cold War competition and national rivalry.”<sup>96</sup> Dolman’s narrative gives short shrift to the notions of cooperation and disarmament.<sup>97</sup> However, international cooperation and disarmament proposals were evidently high on the agenda of U.S. leaders in the years preceding the signing of the OST.

Eisenhower’s successor was also a proponent of the sanctuary school and disarmament. On 25 September 1961, President John F. Kennedy delivered a speech to the UN General Assembly in which he discussed a new agreement between the United States and Soviet Union.<sup>98</sup> The draft *Treaty on General and Complete Disarmament in a Peaceful World* advocated the establishment of an International Disarmament Organization to supervise and verify full-scale disarmament.<sup>99</sup> The parties to the treaty were obliged to provide people and equipment for a UN Peace Force. In specific proposals on outer space it advocated pre-launch inspections and a nuclear weapons test-ban; and stipulated no placement into orbit of weapons capable of producing mass destruction.<sup>100</sup> The United States and Soviet Union eventually agreed to partial measures, rather than general and complete disarmament. Nevertheless, the signing of the OST ought to be viewed in the context of these early disarmament proposals.

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<sup>94</sup> “Western Working Paper Submitted to the Disarmament Subcommittee: Proposals for Partial Measures of Disarmament.” Fifth Report of the Sub-Committee of the Disarmament Commission. 29 August, 1957. DC/SC.1/66 *Documents on Disarmament, 1945-1959*. United States Department of State. 7008 (Washington, D.C.: Government Printing Office, 1960):868-874.

<sup>95</sup> Philip C. Jessup and Howard J. Taubenfeld. “The United Nations Ad Hoc Committee on the Peaceful uses of Outer Space.” *The American Journal of International Law*, 53, no. 4 (1959) 877-881: 877.

<sup>96</sup> Dolman *Astropolitik*, 88.

<sup>97</sup> *Ibid.*, 5, 173-4.

<sup>98</sup> Address by President Kennedy to the United Nations. 25 September, 1961.

<sup>99</sup> *Blueprint for the Peace Race: Outline of Basic Provisions of a Treaty on General and Complete Disarmament in a Peaceful World*. United States Arms Control and Disarmament Agency. (Washington, D.C.: Government Printing Office, 1962): 1-4.

<sup>100</sup> *Ibid.*, 2, 13.



The first successful partial disarmament measure was a treaty to ban nuclear weapons tests in the atmosphere, under water and outer space. It was signed on 5 August 1963 by the United Kingdom, United States, and Soviet Union.<sup>101</sup> It was the first international treaty to refer to space. On 20 September 1963, Soviet Foreign Minister Andrei Gromyko signalled that this treaty led to an important change in the negotiating position of the Soviet Union: a willingness to agree on the prohibition of placing into orbit objects carrying nuclear weapons.<sup>102</sup> On 27 January 1967, the OST was signed by the same parties to the partial test ban treaty (the only three states with deployed nuclear weapons). Article IV of the OST prohibits weapons of mass destruction in orbit around the Earth, and their placement on the Moon or other celestial bodies.<sup>103</sup> The OST thus marked the culmination of a long process of negotiation to prevent the spread of nuclear weapons to outer space. However, it should not be considered in isolation from other nuclear arms control agreements of the period.

The OST was at the center of a ‘web’ of treaties and strategic power-bargaining between states to achieve the best available conditions for security in a world of nuclear weapons. At the Vienna Summit in 1961, Kennedy and Khrushchev agreed a test ban was necessary to restrict the proliferation of nuclear weapons.<sup>104</sup> The Nuclear Non-Proliferation Treaty was eventually signed on 1 July 1968.<sup>105</sup> In 1966 the U.S. proposed bilateral Strategic Arms Limitations Talks (SALT) with the Soviet Union and discussion on a treaty to limit Anti-Ballistic Missile deployment was initiated in January 1967.<sup>106</sup> SALT developed on the back of a proposal by President Johnson for a “verified freeze” on strategic offensive and defensive arms to the Eighteen-Nation Committee on Disarmament in 1964.<sup>107</sup> SALT formally commenced in November 1969 with both sides in agreement on the need to preserve parity,

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<sup>101</sup> Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, 5 August 1963. *United Nations Treaty Series*, 480, no. 6964 (1965) 43.

<sup>102</sup> General Assembly, 18th session: 1208th plenary meeting. New York, 19 September 1963. A/PV.1208:19

<sup>103</sup> Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. 27 January, 1967. *United Nations Treaty Series* 610, no. 8843 (1970) 205

<sup>104</sup> Papers of John F. Kennedy. Presidential Papers. President's Office Files. Countries. USSR: Vienna meeting: Memos of conversation, June 1961: Drafts. 1-124: 53.

<sup>105</sup> Treaty on the Non-Proliferation of Nuclear Weapons. *United Nations Treaty Series* 729, No. 10485 (1970) 169.

<sup>106</sup> Thomas W. Wolfe *The SALT Experience*. (Cambridge, MA: Ballinger Publishing, 1972): 1-2.

<sup>107</sup> “Message from President Johnson to the Eighteen Nation Disarmament Committee, 21 January, 1964” in *Documents on Disarmament 1964*. United States Arms Control and Disarmament Agency. (Washington, D.C: Government Printing Office, 1965): 8.

mutual deterrence, and strategic stability.<sup>108</sup> SALT I was signed on 26 May 1972 in conjunction with the Anti-Ballistic Missile Treaty (ABM Treaty).<sup>109</sup>

*Dark Skies* and *Astropolitik* overemphasize conflict between the United States and the Soviet Union in the negotiations underlying the OST.<sup>110</sup> Why should we believe that world leaders were not sincere in their intentions to cooperate or pursue disarmament? Initially, fears that an adversary would achieve space superiority were of genuine concern but the emerging consensus was that nuclear war would lack a victor, therefore a “peace race” was the order of the day rather than a race to install nuclear weapons on the Moon. In a speech to the UN General Assembly on 20 September 1963 President Kennedy asked, “Why should man's first flight to the Moon be a matter of national competition?” and suggested the United States and Soviet Union undertake a “joint expedition to the Moon.”<sup>111</sup> On 12 November 1963, Kennedy directed NASA Administrator James Webb to proceed with planning for “cooperation in lunar landing programs.”<sup>112</sup> On 7 September 1964, Johnson campaigned for the presidency by appearing on a television broadcast that showed a child picking a daisy followed by footage of a nuclear explosion.<sup>113</sup> In a world divided by nuclear weapons, the evidence suggests politicians believed in the power of international law to build common ground.

*Astropolitik* interprets the motivation for the OST and ABM Treaty in terms of competition and the ‘mutual denial’ of space dominance.<sup>114</sup> However, as part of a series of international agreements, these treaties involved a complex mixture of cooperation and competition, which characterizes mutual deterrence. *Dark Skies* places the OST in the

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<sup>108</sup> Raymond L. Garthoff “Salt I: An Evaluation.” *World Politics*, 31, no. 1 (1978) 1–25: 3; ‘Strategic stability’ relates to mutual deterrence: “...strategic stability entails that strategic offensive and defensive arms should be configured so that neither side’s defenses can undermine the other’s retaliatory strike capability.” Vladimir Dvorkin “Preserving Strategic Stability Amid U.S.-Russian Confrontation.” Carnegie Foundation, Moscow. 8 February, 2019. <https://carnegie.ru/2019/02/08/preserving-strategic-stability-amid-u.s.-russian-confrontation-pub-78319> (accessed August 10, 2020).

<sup>109</sup> Interim Agreement between the United States of America and the Union of Soviet Socialist Republics on Certain Measures with respect to the Limitation of Strategic Offensive Arms. 26 May, 1972. *United Nations Treaty Series* 944, no. 13445 (1982):4-6; Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missiles Systems. 26 May, 1972. *Ibid.*, 14-7

<sup>110</sup> It is beyond the scope of this article to discuss the influence of other states. For example, the influence of the Global South in the legal sub-committee. Stephen Buono “Merely a ‘Scrap of Paper’? The Outer Space Treaty in Historical Perspective,” *Diplomacy & Statecraft*, 31, 2, (2020) 350-372: 358-60

<sup>111</sup> Address by President Kennedy to the United Nations. 20 September, 1963.

<sup>112</sup> John M. Logsdon ‘John F. Kennedy's space legacy and its lessons for today.’ *Issues in Science and Technology*, 27, no. 3 (2011): 29.

<sup>113</sup> Robert Mann *Daisy Petals and Mushroom Clouds: LBJ, Barry Goldwater, and the Ad That Changed American Politics*. (Louisiana State University Press, 2011).

<sup>114</sup> Dolman *Astropolitik*, 134.

framework of arms control but did not explore the historic implications of this connection.<sup>115</sup> Deudney's restrictive theory of arms control maintains a dichotomy of 'restraint' and 'deterrence', but these concepts seem to merge into each other.<sup>116</sup> The significance of mutual deterrence for nuclear arms control negotiations perhaps sits uneasily with suggestions to preserve and strengthen the OST.<sup>117</sup> The implication of this analysis is that considerations of strategic stability ought to be taken into account when assessing the value of the OST and ongoing negotiations which refer to the weaponization of space. In this context, global security in light of 21<sup>st</sup> century U.S. space policy and international law is discussed next.

### **U.S. Space Policy and International Law**

In January 2001, the report of a commission led by U.S. Secretary of Defense Donald Rumsfeld encouraged the government to pursue "the option to deploy weapons in space to deter threats and, if necessary, defend against attacks on U.S. interests."<sup>118</sup> This influential report advised the merging of disparate space related departments into one independent U.S. Space Force.<sup>119</sup> The commission recommended that the United States "must be cautious of agreements intended for one purpose that, when added to a larger web of treaties or regulations, may have the unintended consequences of restricting future activities in space."<sup>120</sup> It paved the way for the 2006 U.S. National Space Policy, which critics argue marked a shift toward the weaponization and dominance of space.<sup>121</sup> The 2006 policy set a tone for negotiations on international treaties suggestive of Dolman's *astropolitik* strategy.

The United States will oppose the development of new legal regimes or other restrictions that seek to prohibit or limit U.S. access to or use of space. Proposed arms control agreements or

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<sup>115</sup> Deudney *Dark Skies*, 230-5.

<sup>116</sup> Deudney views 'restraints' in terms of the reversal, regulation and relinquishment of violence-capabilities. *Ibid.*, 139, 179.

<sup>117</sup> *Ibid.*, 372.

<sup>118</sup> Report of the Commission to Assess United States National Security Space Management and Organization, (Washington, D.C.: Government Printing Office, 2001): xii.

<sup>119</sup> *Ibid.*, xxxiii.

<sup>120</sup> *Ibid.*, 38.

<sup>121</sup> Helen Caldicott and Craig Eisendrath. *War in Heaven: The Arms Race in Outer Space*. (London & NY: New Press, 2007): xvi; Joan-Johnson Freese *Space Warfare in the 21<sup>st</sup> Century*. (London & NY: Routledge, 2017): 8-16.

restrictions must not impair the rights of the United States to conduct research, development, testing, and operations or other activities in space for U.S. national interest...<sup>122</sup>

The legal regime negotiated in the 1960s places minimal restrictions on the weaponization of space. The OST specifically refers to weapons of mass destruction, but no other classes of weapon. According to the U.S. Department of Defense Law of War Manual the OST did not ban the use of fractional orbital or suborbital weapons of mass destruction and their prohibition “in orbit around the Earth” refers only to “full orbit”.<sup>123</sup> Proposals for multilateral treaties placing stricter controls on space weaponization and the use of force against space objects have been ventured but states have failed to reach consensus on a legally-binding instrument.<sup>124</sup> The United States opposed Russia and China’s latest draft *Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects* on the basis of insufficient verification methods and issues concerning the development and use of direct-ascent ASATs. U.S. legal representatives highlighted the problems of defining a space weapon and distinguishing routine servicing or other non-hostile orbital manoeuvres from ASAT capabilities.<sup>125</sup> The United States has instead supported voluntary and non-binding measures designed to increase transparency and confidence building.<sup>126</sup> However, it may be argued that aversion to legally-binding measures is a sign the U.S. continues to follow the negotiating stance outlined in the 2006 National Space Policy. As discussed above, Havercroft and Duvall suggest the Bush Administration promoted imperialist astropolitics.<sup>127</sup> Is the United States in the early stages of a grand *astropolitik* strategy?

On 13 December 2001, President George W. Bush announced the U.S. withdrawal from the ABM Treaty. The ABM Treaty constituted one of the most significant legal barriers to

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<sup>122</sup> U.S. National Space Policy. United States Office of Science and Technology Policy. 31 August 2006.

<sup>123</sup> Department of Defense Law of War Manual. General Counsel of the Department of Defense. 2015. (updated December 2016): 984.

<sup>124</sup> c.f. “Draft Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects.” CD/1985; “No first placement of weapons in outer space.” Resolution adopted by the General Assembly. 69<sup>th</sup> session. 2014. A/C.1/69/L.14

<sup>125</sup> “Whither Arms Control in Outer Space? Space Threats, Space Hypocrisy, and the Hope of Space Norms. Remarks by Dr. Christopher Ashley Ford, Assistant Secretary Bureau of International Security and Non-proliferation” (Teleconference on ‘Threats, Challenges and Opportunities in Space.’) Center for Strategic and International Studies, Washington D.C. 6 April, 2020.

<sup>126</sup> “Submission of the United States to the Conference on Disarmament: Implementing the Recommendations of the Report (A/68/189) of the Group of Governmental Experts on Transparency and Confidence-Building Measures in Outer Space Activities to Enhance Stability in Outer Space.” 16 September, 2016. CD/2078

<sup>127</sup> Havercroft and Duvall *Critical Astropolitics*, 47.

space weaponization of the 20<sup>th</sup> century.<sup>128</sup> It placed prohibitions on the development, testing and deployment of strategic ballistic missile defense, including space-based components of an anti-ballistic missile system. Bush stated, “I have concluded the ABM Treaty hinders our government’s ability to develop ways to protect our people from future terrorist or rogue state missile attacks.”<sup>129</sup> U.S. withdrawal from the ABM treaty was justified, given the threat of a terrorist attack; but insofar as parity is a pillar of mutual deterrence, this decision eroded the arms control regime constructed by the major nuclear powers in the 1960s and 1970s. Russian President Vladimir Putin stated in 2018 that both powers have been in an arms race since the demise of the ABM Treaty.<sup>130</sup> President Putin further explained in the same year that U.S. progress on global anti-ballistic missile defense will result in the devaluation of Russia’s nuclear potential.<sup>131</sup> Enhanced missile defense systems inhibit the capacity of Russia to deter the United States with a credible second-strike capability. Russia’s answer to the perceived threat has been to build a gamut of next-generation weapons.<sup>132</sup> Russia is modernizing its nuclear-armed ballistic missile defense system and designing a new ballistic missile defence interceptor.<sup>133</sup> While the United States has increased investment in ballistic missile and space defence systems, Russia and China augment their nuclear arsenal and invest in new weapons development.<sup>134</sup> The 21<sup>st</sup> century is witnessing the unravelling of treaties which have upheld strategic stability between the major nuclear powers for decades.<sup>135</sup>

In September 2016, U.S. President Trump stated, “Let there be an arms race. We will outmatch them at every pass and outlast them all.”<sup>136</sup> In May 2020, Marshall Billingslea, U.S.

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<sup>128</sup> ABM Treaty. 26 May, 1972.

<sup>129</sup> U.S. Department of State. “U.S. Withdrawal from the ABM Treaty: President Bush’s Remarks and U.S. Diplomatic Notes.” 13 December 2001.

<sup>130</sup> NBC News. “Putin denies 'new Cold War' but says new nukes are on 'combat duty'.” 2 March, 2018.

<sup>131</sup> President Vladimir Putin, Presidential Address to the Federal Assembly. 1 March, 2018.

<sup>132</sup> “Russia’s Nuclear Weapons: Doctrine, Forces, and Modernization.” Congressional Research Service, R45861. 20 July, 2020.

<sup>133</sup> “Nuclear Posture Review.” US Department of Defense. (2018): 9.

<sup>134</sup> e.g. Timothy Wright “Russia tests Tsirkon anti-ship hypersonic cruise missile.” International Institute for Strategic Studies, 9 September 2019. China’s nuclear arsenal is expected to double in size over the next decade. “Military and Security Developments Involving the People’s Republic of China -- 2020. Annual Report to Congress.” Office of the Secretary of Defense, United States. 21 August, 2020: 2, 5; “Current U.S. Missile Defense Programs at a Glance.” Arms Control Association. (Last Reviewed: August 2019) <https://www.armscontrol.org/factsheets/usmissiledefense> (accessed 20 February 2020)

<sup>135</sup> On 2 August 2019 the U.S. withdrew from the Intermediate-Range Nuclear Forces Treaty between the United States and Russia. On 21 May 2020 President Trump announced U.S. withdrawal from the ‘Open Skies’ Treaty. Daryl Kimball and Kingston Reif “The Intermediate-Range Nuclear Forces (INF) Treaty at a Glance.” Arms Control Association. August 2019; Treaty on Open Skies, 24 March, 1992. U.S. Department of State. <https://2009-2017.state.gov/t/avc/trty/102337.htm> (accessed 15 June, 2020)

<sup>136</sup> NBC News. “Donald Trump on Nukes: ‘Let It Be an Arms Race’” 22 September, 2016.

Under Secretary of State for Arms Control and International Security, stated, “we know how to win these races and we know how to spend the adversary into oblivion.”<sup>137</sup> In *Whole Earth Security*, Deudney urged, “Controls established now can prevent deployment of weapons in space and avoid the vastly more difficult task of regulating them once they are there. A ban on weapons in space would put a literal ceiling on the arms race.”<sup>138</sup> This goal seems unrealistic in the current climate of arms control. Instead, the burgeoning weaponization of space appears more likely.<sup>139</sup> For instance, the 2018 U.S. National Defense Authorization Act required the Missile Defense Agency to develop a space-based ballistic missile intercept layer with regional coverage.<sup>140</sup> In 2019, a U.S. Space Force was established as an independent department of the U.S. Armed Forces. China, Russia, Japan, France, the UK and India have also recently reorganized military structures in line with defensive space capabilities.<sup>141</sup>

United States Space Policy Directive-4 states that the U.S. Space Force will seek to “ensure unfettered access to, and freedom to operate in space, and provide vital capabilities to joint and coalition forces in peacetime and across the spectrum of conflict.”<sup>142</sup> In 2018 President Trump stated, “When it comes to defending America, it is not enough to merely have an American presence in space. We must have American dominance in space.”<sup>143</sup> Dolman is recognized as playing an important role in shaping the ideas contained in the Space Force’s first doctrinal publication.<sup>144</sup> Is the establishment of the Space Force another step forward in a grand *astropolitik* strategy? Based on the reflections in this paper it seems improbable. It is questionable that it would even be constitutional. In any case, according to SPD-4 the purpose of the Space Force is “protecting the Nation’s interests in space and the peaceful use of space for all responsible actors, consistent with applicable law, including international law.”<sup>145</sup>

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<sup>137</sup> Reuters (Washington). “U.S. prepared to spend Russia, China 'into oblivion' to win nuclear arms race: U.S. envoy.” 21 May, 2020.

<sup>138</sup> Deudney *Whole Earth Security*, 47.

<sup>139</sup> Kingston Reif “U.S. Seeks New Space-Based Capabilities.” *Arms Control Today*. Arms Control Association. April 2019

<sup>140</sup> Public Law 115-91. H.R.2810. National Defense Authorization Act for Fiscal Year 2018. Section 1688.

<sup>141</sup> Jessica West “How to Keep Outer Space Weapons Free.” *The Ploughshares Monitor*, 40, no. 4, 2019.

<sup>142</sup> Space Policy Directive-4, Establishment of the United States Space Force. White House, Washington, D.C., 19 February, 2019.

<sup>143</sup> “Remarks by President Trump at a Meeting with the National Space Council and Signing of Space Policy Directive-3.” 18 June, 2018. <https://www.whitehouse.gov/briefings-statements/remarks-president-trump-meeting-national-space-council-signing-space-policy-directive-3/> (accessed 19 November, 2018).

<sup>144</sup> “Spacepower.” United States Space Force. June 2020: 61.

[https://www.spaceforce.mil/Portals/1/Space%20Capstone%20Publication\\_10%20Aug%202020.pdf](https://www.spaceforce.mil/Portals/1/Space%20Capstone%20Publication_10%20Aug%202020.pdf) (accessed 20 June, 2020)

<sup>145</sup> Space Policy Directive-4. 19 February, 2019.

The development of new weapons by potential adversaries, increased commercial use of space and the space security ramifications of resurgent great power competition provided the rationale for the creation of a U.S. Space Force.<sup>146</sup> Cameron Hunter and Bleddyn Bowen argue that the Space Force is a harmless bureaucratic exercise for the purpose of simplifying procurement budgets.<sup>147</sup> The existence of a distinct branch of the armed forces is expected to consolidate and streamline the complex organization of space security related activities.<sup>148</sup> However, if Deudney’s prediction that space weaponization will incur opposition is correct, then the United States faces a dilemma; measures intended to achieve a greater level of security, such as building an enhanced missile defense system and a national Space Force, may foment international tensions, precipitate arms races and, as a consequence, undermine security. Is there a way beyond the impasse?

### **Alternative Futures**

*Astropolitik* and *Dark Skies* propose original solutions to the problem of global security. This section aims to revive discussion of alternative proposals from the early years of the Space Age. It will not suggest that all elements of these plans should be followed, but raises the question of whether they can be modified and renewed for the 21<sup>st</sup> century. It concludes with a proposal to unite the best aspects of *Astropolitik* and *Dark Skies*.

In 1958, the Federation of American Scientists (FAS) proposed inspections and prohibitions on nuclear weapons testing co-incident with the UN control of space research. Building upon the IGY as a model of peaceful international cooperation, the FAS called for a permanent UN agency by which, “All studies of long-range missiles, satellites, and space platforms would be open, and the results would be the common property of all mankind.”<sup>149</sup> This idea shares an affinity with Eisenhower’s proposal for the creation of a space organization

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<sup>146</sup> Todd Harrison, Kaitlyn Johnson, and Thomas G. Roberts “Space Threat Assessment 2019.” Centre for Strategic and International Studies, April 2019. <https://www.csis.org/analysis/space-threat-assessment-2019> (accessed 20 June, 2020)

<sup>147</sup> Cameron Hunter and Bleddyn Bowen ““Donald Trump’s Space Force isn’t as new or as dangerous as it seems.”” *Journal of space safety engineering*, 5, no. 3-4 (2018): 131

<sup>148</sup> Todd Harrison. “Why We Need a Space Force.” Centre for Strategic and International Studies, 3 October, 2018.

<sup>149</sup> Federation of American Scientists “Nuclear Test Ban, UN Control of Space Research, and UN Police Force—First Steps Toward Peace.” *Bulletin of the Atomic Scientists*, 14, 3 (1958): 125.

modelled on the proposed ‘International Atomic Development Authority’.<sup>150</sup> Could such an ambitious plan of knowledge-sharing be realizable in this century?

In 1962, Grenville Clark and Louis Sohn’s *World Peace through World Law* proposed a UN Outer Space Agency (OSA) as part of a comprehensive plan for disarmament and global governance. The agency would have two purposes: (1) to ensure that outer space is used for peaceful purposes only; and (2) to promote to the fullest possible extent exploration and exploitation of outer space for the benefit of all.<sup>151</sup> The OSA would possess its own rockets, satellites and spacecraft, and act as a licensing organization for all states, organisations and individuals possessing and operating space vehicles. The OSA would ensure that manned flights into outer space are conducted only by the OSA or licensed organizations. Further, it would perform research and development, and supervise the use of rockets, satellites and other spacecraft for peaceful purposes. The OSA would “take all measures necessary to prevent the use of outer space for military purposes by any nation and to keep other organisations of the United Nations informed of any violation of the prohibition against the use of outer space for military purposes.”<sup>152</sup> The authors suggested that “safeguards are established in order to provide the maximum assurance that the Outer Space Agency... shall not be dominated by any nation or group of nations.”<sup>153</sup> The OSA would prevent the realization of an *astropolitik* strategy. Is it time to revive the idea of a transnational space agency?

*Dark Skies* briefly mentions a feasibility study of an international satellite monitoring agency to provide the UN Security Council with independent information.<sup>154</sup> Deudney also observes that SALT I explicitly banned “interference with national technical means of verification,” highlighting the role played by space systems in verifying arms control treaties and crisis monitoring.<sup>155</sup> In my view, the significance of space systems for global security suggests they deserve enhanced protection. This could be provided by international legal

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<sup>150</sup> Address by President Eisenhower to the United Nations. 22 September, 1960; Report on the International Control of Atomic Energy. Prepared for the Secretary of State’s Committee on Atomic Energy. Department of State. Publication 2498. (Washington, D. C.: Government Printing Office, 1946).

<sup>151</sup> Grenville Clark and Louis Sohn *World Peace through World Law*. Second edition (revised). (Cambridge, MA: Harvard University Press, 1962): 296.

<sup>152</sup> *Ibid.*, 300.

<sup>153</sup> *Ibid.*, 299.

<sup>154</sup> Deudney *Dark Skies*, 236; United Nations Office for Disarmament Affairs “The Implications of Establishing an International Satellite Monitoring Agency” Disarmament Study Series, no.9. (New York: United Nations, 1983).

<sup>155</sup> c.f. Article V. “U.S./U.S.S.R. Limitation of Strategic Offensive Arms,” 26 May, 1972.



agreement, a dedicated UN Space Agency and a specifically-tasked UN peacekeeping Space Guard.

A civil-military Space Guard could be a genuine United Nations effort, reflecting the widespread dependence on space assets in the global economy. In conjunction with arms control measures, the establishment of a UN Space Guard would function as a safe and effective deterrent to irresponsible space activities; it could be tasked to protect early-warning systems, commercial operations and other space assets critical for daily life in the modern world.<sup>156</sup> The activities of the Space Guard would potentially range across the peacekeeping spectrum. Minimally, it could protect specific cooperative ventures, such as the ISS and the planned lunar gateway.<sup>157</sup> A maximally involved Space Guard might draw inspiration from *Astropolitik* by pre-empting the monopoly of key logistical points (e.g. lunar poles, Lagrangian points) and assets (e.g. lunar water) by any national space military forces.<sup>158</sup>

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<sup>156</sup> For a shortlist of possible functions see Cynthia A. S. McKinley “The Guardians of Space.” *Aerospace Power Journal* 44 (2000) 37-46: 43.

<sup>157</sup> Kelli Mars (ed.) “Gateway,” National Aeronautics and Space Administration. <https://www.nasa.gov/gateway> (modified 14 November, 2020; accessed November 19, 2020)

<sup>158</sup> C.f. “The Future of Space 2060 and Implications for U.S. Strategy: Report on the Space Futures Workshop.” Air Force Space Command. 5 September, 2019: 9

## *Conclusion*

In summary, this paper critically reviewed the astropolitical proposals in *Astropolitik* and *Dark Skies*. It discussed Dolman and Deudney's views on space weaponization, world political order, and international cooperation. Both authors present useful ideas for harnessing space activities to promote global security. Although the proposals are unrealistic in certain respects, they share important common features. They both start from the paradigm of interstate anarchy and seek a more peaceful, safer world. However, the authors tend to speak in terms of systems, structures and inevitabilities, perhaps under-estimating the power of individuals to bring about change in the world. Dolman and Deudney offer thought-provoking, but not completely convincing solutions, to the problem of security in a world of nuclear weapons. In response, several alternatives were suggested, drawing upon their proposals and ideas from the early years of the Space Age. The idea of a transnational Space Guard may be viewed as a rapprochement.

In conclusion, declarations of space as a warfighting domain should be a cause for concern.<sup>159</sup> It is conceivable that conventional conflict on Earth will lead to the targeting of space assets, but space conflict would be hazardous for any major spacefaring state. The potential triggers for conflict in space include escalatory crises due to accident, equipment malfunction or terrorist attack, including cyberattack.<sup>160</sup> Effective protection of space assets will require extensive cooperation and data sharing across seventy-plus spacefaring states. Achieving global security in a world of nuclear weapons will always be a technically and politically complex endeavour. Ultimately, questions of the peaceful uses of space will remain inseparable from questions of the peaceful use of Earth.

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<sup>159</sup> BBC News. "Trump: 'Space is the world's newest war-fighting domain.'" 21 December, 2019.

<sup>160</sup> Bonnie L. Triesenberg. "Deterring Space War: An Exploratory Analysis Incorporating Prospect Theory into a Game Theoretic Model of Space Warfare." (Santa Monica, CA: Rand Corporation, 2017): 32; Pawel Bernat and Elżbieta Połuszna "The Threat of Space Terrorism in the Context of Irregular Warfare Strategies." in Leyla Aydemir (ed.) *Evaluation of Social Changes and Historical Events Based on Health, Economy and Communication in a Globalizing World*. (Bursa, Turcja: Romans Dükkan, 2019): 25-37.