## T – Extra T

#### Interpretation – the affirmative may not defend anything beyond the scope of the topic. To be clear, the affirmative may not defend that a specific type of appropriation of outer space is unjust.

#### appropriation means taking possession of something. Affs based around usage of resources are nontopical

Dictionary ND, Dictionary.com, “appropriation”, <https://www.dictionary.com/browse/appropriation>, DD AG

the act of appropriating or taking possession of something, often without permission or consent.

Insert standards

#### Standards

#### Limits: Specing allows them to have an inf amount of affs that the neg cannot account for. Makes it impossible to negate and destroys fairness and education.

#### Voters

#### It’s drop the debater

#### Prefer competing interps over reasonability. There is now way to be reasonably topic. They either are topical or they are not.

#### No RVIs

## DA

#### The plan requires clarifying international space law---causes strategic bargaining to extract concessions

Alexander William Salter 16, Assistant Professor of Economics, Rawls College of Business, Texas Tech University, "SPACE DEBRIS: A LAW AND ECONOMICS ANALYSIS OF THE ORBITAL COMMONS", 19 STAN. TECH. L. REV. 221 (2016), https://law.stanford.edu/wp-content/uploads/2017/11/19-2-2-salter-final\_0.pdf

V. MITIGATION VS. REMOVAL

Relying on international law to create an environment conducive to space debris removal initially seems promising. The Virginia school of political economy has convincingly shown the importance of political-legal institutions in creating the incentives that determine whether those who act within those institutions behave cooperatively or predatorily.47 In the context of space debris, the role of nation-states, or their space agencies, would be to create an international legal framework that clearly specifies the rules that will govern space debris removal and the interactions in space more generally. The certainty afforded by clear and nondiscriminatory48 rules would enable the parties of the space debris “social contract” to use efficient strategies for coping with space debris. However, this ideal result is, in practice, far from certain. To borrow a concept from Buchanan and Tullock’s framework,49 the costs of amending the rules in the case of international space law are exceptionally high. Although a social contract is beneficial in that it prevents stronger nation-states from imposing their will on weaker nation-states, it also creates incentives for the main spacefaring nations to block reforms that are overall welfare-enhancing but that do not sufficiently or directly benefit the stronger nations.

The 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (more commonly known as the Outer Space Treaty) is the foundation for current international space law.50 All major spacefaring nations are signatories. Article VIII of this treaty is the largest legal barrier to space debris removal efforts. This article stipulates that parties to the treaty retain jurisdiction over objects they launch into space, whether in orbit or on a celestial body such as the Moon. This article means that American organizations, whether private firms or the government, cannot remove pieces of Chinese or Russian debris without the permission of their respective governments. Perhaps contrary to intuition, consent will probably not be easy to secure.

A major difficulty lies in the realization that much debris is valuable scrap material that is already in orbit. A significant fraction of the costs associated with putting spacecraft in orbit comes from escaping Earth’s gravity well. The presence of valuable material already in space can justifiably be claimed as a valuable resource for repairs to current spacecraft and eventual manufacturing in space. As an example, approximately 1,000 tons of aluminum orbit as debris from the upper stages of launch vehicles alone. Launching those materials into orbit could cost between $5 billion and $10 billion and would take several years.51 Another difficulty lies in the fact that no definition of space debris is currently accepted internationally. This could prove problematic for removal efforts, if there is disagreement as to whether a given object is useless space junk, or a potentially useful space asset. Although this ambiguity may appear purely semantic, resolving it does pose some legal difficulties. Doing so would require consensus among the spacefaring nations. The negotiation process for obtaining consent would be costly.

Less obvious, but still important, is the 1972 Convention on International Liability for Damage Caused by Space Objects, normally referred to as the Liability Convention. The Liability Convention expanded on the issue of liability in Article VII of the Outer Space Treaty. Under the Liability Convention, any government “shall be absolutely liable to pay compensation for damage caused by its space objects on the surface of the Earth or to aircraft, and liable for damage due to its faults in space.”52 In other words, if a US party attempts to remove debris and accidentally damages another nation’s space objects, the US government would be liable for damages. More generally, because launching states would bear costs associated with accidents during debris removal, those states may be unwilling to participate in or permit such efforts. In theory, insurance can partly remediate the costs, but that remediation would still make debris removal engagement less appealing.

A global effort to remediate debris would, by necessity, involve the three major spacefaring nations: the United States, Russia, and China.53 However, any effort would also require—at a minimum—a significant clarification and—at most —a complete overhaul of existing space law.54 One cannot assume that parties to the necessary political bargains would limit parleying to space-related issues. Agreements between sovereign nation-states must be self-enforcing.55 To secure consent, various parties to the change in the international legal-institutional framework may bargain strategically and may hold out for unrelated concessions as a way of maximizing private surplus. The costs, especially the decision-making costs, of changing the legal framework to secure a global response to a global commons problem are potentially quite high.

#### Russia uses negotiations to push the PPWT---erodes US space dominance---unilat solves

Michael Listner 18, JD, Regent University School of Law, the founder and principal of the legal and policy think-tank/consultation firm Space Law and Policy Solutions, Sept 17 2018, "The art of lawfare and the real war in outer space", The Space Review, www.thespacereview.com/article/3571/1

A battle for primacy in outer space took place on August 14, 2018, among the Russian Federation, the United States, and, indirectly, the People’s Republic of China. This battle did not involve the exotic technology of science fiction, antisatellite weapons (ASATs), or the incapacitation of satellites; it was not part of a hot war and did not even occur in outer space. Rather, it took place in the halls of the Conference of Disarmament in Geneva, Switzerland, and concerned the interdiction of the hypothetical deployment of instrumentalities of a hot war in outer space. The carefully orchestrated arena for this battle by the proponents of banning so-called space weapons involved methodologies, institutions, and agents of international law but was undermined by a vigorous counterattack by the United States using the same forum and suite of instruments so skillfully levied against it.1 This battle, of course, is not a single instance but the latest skirmish of a much larger conflict involving real war in space.

There’s been significant attention—and overstatem­ent— about the effect of a proposed Space Force by the United States, including an arms race and dominance as articulated by the United States,2 yet little attention has been given to the contest that continues to be fought over outer space using the tools of international law and policy, both of which are instruments of “lawfare.” Maj. General Charles N. Dunlap, Jr. (retired)3 first defined lawfare in the paper “Law and Military Interventions: Preserving Humanitarian Values in 21st Conflicts,” as “a method of warfare where law is used as a means of realizing a military objective.”4 This definition can be expanded to the use of hard law, soft law, and non-governmental organizations and institutions within the international arena to achieve a national objective and geopolitical end that would otherwise require the use of hard power. As observed by General Dunlap, lawfare imputes the teachings of Sun Tzu in particular this teaching: “The supreme art of war is to subdue the enemy without fighting.”5

Lawfare is not a new concept and has been used in many domains, but the tools brought to bear have become more prolific, and the domain of outer space has been and continues to be a theater where it is applied. The earliest example of lawfare (even though the term was not yet coined) in outer space occurred pre-Sputnik with Soviet Union attempting to use customary law to make claims of sovereignty extending beyond the atmosphere to the space above its territory. This claim was preempted by the launch of Sputnik 1 and the act of the satellite flying over the territory of other nations.6 The Eisenhower Administration saw this as an opportunity to meet a national space policy goal and likewise used customary law as an implement of lawfare and successfully created the principle of free access to outer space, which it utilized for photoreconnaissance activities in lieu of overflights of another nation’s sovereign airspace.7 The Soviet Union unsuccessfully attempted to defeat this move using lawfare in the United Nations through a proposal that would have prohibited the use of outer space for the purpose of intelligence gathering.8

Since that setback, the art of lawfare in outer space has settled on the objective ascribed to another teaching of Sun Tzu:

“With regard to precipitous heights, if you proceed your adversary, occupy the raised and sunny spots, and there wait for him to come up. Remember, if the enemy has occupied precipitous heights before you, do not follow him, but retreat and try to entice him away.”9

The second part of this teaching exemplifies the role of lawfare in the present war in outer space: to employ the tools and institutions of international law as a means to legally corner an adversary and gain geopolitical advantage in soft power, with the aim of slowing and eroding the advantage that adversary has attained through preeminence in the domain of outer space, and replace it with their own. This objective is accomplished by two general means: legally-binding measures, most commonly in the form of treaties, and so-called non-binding measures couched as sustainability.

Lawfare in space continued in the intervening years between Sputnik-1 and the signature and ratification of the Outer Space Treaty and afterward. The weapon of choice: disarmament proposals for outer space. Provisions for banning so-called space weapons in the Outer Space Treaty were rejected by the Soviet Union in favor of separate arms control measures.10 These measures included proposals, some of which related to the proscription of ASATs, designed to not only gain an advantage in outer space but to gauge political intent and resolve.11

The lawfare offensive escalated after the proposed Strategic Defense Initiative with an effort curtail space-based missile defense technology through a ban on so-called space weapons and a proverbial arms race in outer space. The Prevention of an Arms Race in Outer Space (PAROS), introduced in 1985, continues to seek a legally binding measure to place any weapon in outer space, including those designed for self-defense. It spawned measures such as the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (PPWT), co-sponsored by Russia and China. This and other measures have met resistance as unverifiable and certainly are not likely to gain the advice and consent of the US Senate for ratification. The end game of the use of lawfare in the form of efforts like PAROS—the latest attempt at which was defeated in Geneva—is to propose legally binding measures that proponents would ignore to their advantage in any event. The sponsors and advocates of these hard-law measures recognize they will not come to fruition but, in the process of promoting them, will enhance their soft power and moral authority, which can be applied to entice their adversary down.

Non-binding resolutions and measures in the form of political agreements and guidelines are being used concurrently in the lawfare engagement in outer space, where proposals for legally binding measures alone fall short of the goal of creating hard law and challenging dominance in outer space. These resolutions and measures, which emphasize sustainability, are designed to perform an end run around the formalities of a treaty to entice agreement on issues that would otherwise be unacceptable in a hard-law agreement. These measures have the dual effect to create soft-power support on the one hand and hard law on the other. This tool of lawfare, which uses clichés of cooperation and sustainability, is a ploy that applies the ambiguous nature of customary international law to achieve what cannot be done through treaties: to “entice the adversary away” and create legal and political constraints to bind and degrade its use of outer space or prevent it from maintaining its superiority, all the while allowing others to play catchup and replace one form of dominance with another. While lawfare is by nature asymmetric, this indirect approach could be considered a subset an irregular tactic of lawfare, as opposed to the use of formal treaties in lawfare.

The crux is that, like space objects used in outer space, international law and its implements are dual-use in that they can be used for proactive ends or weaponized, with those using the appliances of lawfare to encourage cession of the high ground choosing the latter rather than the former. The decision to weaponize international law and its institutions to prosecute this war in space brings into question the efficacy of new rules or norms. Indeed, the idea of expanding the jurisprudence of outer space through custom, as being suggested by the United States, and more recently gap-filling rules being suggested by academia that could become custom, presents the real chance that, rather than the creation of the ploughshare of sustainability, new and more effective swords for lawfare will be forged.

To paraphrase Sun Tzu, “all war is deception.” In the case of outer space, the pretext in the current war in space is that an arms race and a hot war in outer space is inevitable, and can only be avoided by formal rules or international governance. Conversely, a hot war can be prevented in no small part by using lawfare to engage in the contemporary war in space using the tools of, and the abundant resources found in, the experience of attorneys and litigators in particular to supplement and support diplomats to extend the velvet glove when applicable, and bare knuckles when necessary. If the August 14 statement in Geneva is any indicator, the United States may have just done that and begun the shift from light-touch diplomacy to bringing its legal warriors to bear in full-contact lawfare to engage and win the current war in outer space and help deter a more serious hot war from occurring without sacrificing the superiority it possesses in outer space.

#### The PPWT prohibits space-based missile defense

Jack M. Beard 16, Associate Professor of Law at the University of Nebraska College of Law, Feb 15 2016, "Soft Law ’s Failure on the Horizon: The International Code of Conduct for Outer Space Activities", University of Pennsylvania Journal of International Law, Vol. 38, No. 2, 2016, <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1086&context=spacelaw>

B. Avoid Arms Control Traps in Space

Any successful effort to achieve legally binding restrictions on military activities or weapons in space must focus on specific, definable, and limited objectives or run afoul of issues that have historically ensured deadlock among suspicious and insecure adversaries.306 Some seemingly desirable goals, however, are likely to ensure failure.

The first such problematic goal involves attempting to use arms control agreements or other instruments to comprehensively ensure peace in space. Unfortunately, the integration of modern military systems on earth, sea, air and space guarantees that at some point states seeking to disrupt or deny the ability of an adversary (such as the United States) to project power will find space capabilities to be a particularly appealing target, especially in the early stages of a crisis or conflict.307 The presence of so many things of military value in space thus makes actions by an adversary to neutralize, disrupt or destroy these things likely during a major conflict on earth.308

The second problematic arms control goal in space that seems certain to ensure stalemate involves attempting to define and prohibit military technologies with a view to broadly prevent the weaponization of space. Clearly defining a space weapon for purposes of any legally binding arms control agreement is a daunting task, one which is made particularly challenging by the “essentially military nature of space technology.”309 As noted, space technologies are routinely viewed as dual-use in nature, meaning that they can be readily employed for both civilian and military uses. Determining the ultimate purpose of many space technologies may thus depend on discerning the intentions of states, a process perhaps better suited for psychological than legal evaluation. 310

Further complicating the classification of space military technologies is the inherent difficulty in distinguishing most space weapons on the basis of their offensive and defensive roles or even their specific missions.311 For example, this problem lies at the heart of debates over the status and future of ballistic missile defense (BMD) programs, since the technology underlying BMD systems and offensive ASAT weapons is often indistinguishable.312 Vague and broad soft law instruments do not resolve this problem, but create instead their own confusion and insecurity. Vague and broad provisions in legally binding agreements that do not or cannot distinguish between these missions are similarly problematic.

These issues, particularly difficulties in distinguishing ASAT and BMD systems, have figured prominently in complicating negotiations on space weapons over previous decades.313 Similarly, these concerns were a significant factor in initial U.S. opposition to the arms control measure proposed by China and Russia (the PPWT) since it prohibits states from placing any type of weapon in outer space (regardless of its military mission), thus effectively prohibiting the deployment of ballistic missile defense systems. 314 Furthermore, even if clear legal restrictions could be developed, verifying compliance with respect to technology in orbit around Earth would be very difficult (a point conceded even by China with respect to its own proposed PPWT).315

#### Causes rogue state missile threats---that escalates

Patrick M. Shanahan 19, Acting Secretary of Defense from January to June 2019, previously vice president and general manager of Boeing Missile Defense Systems, Jan 2019, "2019 MISSILE DEFENSE REVIEW", US Department of Defense, https://media.defense.gov/2019/Jan/17/2002080666/-1/-1/1/2019-MISSILE-DEFENSE-REVIEW.PDF

U.S. Homeland Missile Defense will Stay Ahead of Rogue States’ Missile Threats

Technology trends point to the possibility of increasing rogue state missile threats to the U.S. homeland. Vulnerability to rogue state missile threats would endanger the American people and infrastructure, undermine the U.S. diplomatic position of strength, and could lead potential adversaries to mistakenly perceive the United States as susceptible to coercive escalation threats intended to preclude U.S. resolve to resist aggression abroad. Such misperceptions risk undermining our deterrence posture and messaging, and could lead adversaries to dangerous miscalculations regarding our commitment and resolve.

It is therefore imperative that U.S. missile defense capabilities provide effective protection against rogue state missile threats to the homeland now and into the future. The United States is technically capable of doing so and has adopted an active missile defense force-sizing measure for protection of the homeland. DoD will develop, acquire, and maintain the U.S. homeland missile defense capabilities necessary to effectively protect against possible missile attacks on the homeland posed by the long-range missile arsenals of rogue states, defined today as North Korea and Iran, and to support the other missile defense roles identified in this MDR.

This force-sizing measure for active U.S. missile defense is fully consistent with the 2018 NPR, and in order to keep pace with the threat, DoD will utilize existing defense systems and an increasing mix of advanced technologies, such as kinetic or directed-energy boost-phase defenses, and other advanced systems. It is technically challenging but feasible over time, affordable, and a strategic imperative. It will require the examination and possible fielding of advanced technologies to provide greater efficiencies for U.S. active missile defense capabilities, including space-based sensors and boost-phase defense capabilities. Further, because the related requirements will evolve as the long-range threat posed by rogue states evolves, it does not allow a static U.S. homeland defense architecture. Rather, it calls for a missile defense architecture that can adapt to emerging and unanticipated threats, including by adding capacity and the capability to surge missile defense as necessary in times of crisis or conflict.

In coming years, rogue state missile threats to the U.S. homeland will likely expand in numbers and complexity. There are and will remain inherent uncertainties regarding the potential pace and scope of that expansion. Consequently, the United States will not accept any limitation or constraint on the development or deployment of missile defense capabilities needed to protect the homeland against rogue missile threats. Accepting limits now could constrain or preclude missile defense technologies and options necessary in the future to effectively protect the American people.

As U.S. active defenses for the homeland continue to improve to stay ahead of rogue states’ missile threats, they could also provide a measure of protection against accidental or unauthorized missile launches. This defensive capability could be significant in the event of destabilizing domestic developments in any potential adversary armed with strategic weapons, and as long-range missile capabilities proliferate in coming years.

U.S. missile defense capabilities will be sized to provide continuing effective protection of the U.S. homeland against rogue states’ offensive missile threats. The United States relies on nuclear deterrence to address the large and more sophisticated Russian and Chinese intercontinental ballistic missile capabilities, as well as to deter attacks from any source consistent with long-standing U.S. declaratory policy as re-affirmed in the 2018 NPR.

## Case

#### The concede that they continue mining in the world of the aff just through a regulatory f/w. This means that debris can still be formulated, so we still see collisions through clustering. They can’t solve for this.

#### They don’t point out a specific interal link for how this mining actually leads to space war. There is no scenario that is explained. Don’t let them extract a scenario in the 2ar.

### Mining

#### No tech ever—USFG expert report from November

USCC 19 – Permanent commission of 13 experts on US-China policy, in end-of-year report to Congress

US-China Economic and Security Review Commission, Chaired by Carolyn Bartholomew, worked at senior levels in the U.S. Congress, serving as counsel, legislative director, and chief of staff to Nancy Pelosi with particular expertise on US-China relations and WMD prolif, with 12 other expert members, REPORT TO CONGRESS of the U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION ONE HUNDRED SIXTEENTH CONGRESS FIRST SESSION, NOVEMBER 2019, https://www.uscc.gov/sites/default/files/2019-11/Chapter%204%20Section%203%20-%20China%E2%80%99s%20Ambitions%20in%20Space%20-%20Contesting%20the%20Final%20Frontier.pdf

China has set plans for other technologically ambitious milestones, such as mining of near-earth asteroids, which if successful could generate both significant national prestige and wealth.31 For example, based on 1997 estimates by U.S. planetary scientist John Lewis that one known near-earth asteroid could contain precious metals worth approximately $20 trillion, Li Mingtao, a scientist at the National Space Center under the Chinese Academy of Sciences, has asserted capturing asteroids and sending them to Earth to be mined may become “a new engine for the global economy.”32 Tech-nology to make this type of mining possible does not yet exist, according to testimony from two witnesses at the Commission’s April 25 hearing, and it would be extremely difficult to implement. Two U.S. companies have already gone out of business after failing to create a sustainable business model around this concept.33 Nevertheless, given Li Mingtao’s dual affiliation both with the Chinese Academy of Sciences and as part of a specialized team at the Qian Xuesen Laboratory working on a plan to detect, capture, and mine very small near-earth asteroids, Beijing appears to be serious about trying to overcome these technical challenges.34

#### Too many obstacles makes progress impossible

Scoles 17

(Sarah Scoles, space writer for Wired, cites DSI CEO. “ASTEROID MINING SOUNDS HARD, RIGHT? YOU DON’T KNOW THE HALF OF IT”, <https://www.wired.com/2017/01/asteroid-mining-sounds-hard-right-dont-know-half/>, SRatakonda)

THE COMMERCIAL SPACE industry pushes a particular brand of optimism. Its urge to inspire manifests as soaring soundtracks to three-minute mission-promo videos, press releases with words like “humanity,” and slick graphics of spacecraft that don’t exist yet but could any day now. In the particular case of asteroid mining, business leaders are selling a future in which materials plucked from space rocks make up for Earth’s shortfalls and support a thriving civilization. Everyone is rich, all are happy, and no one wants for anything. O pioneers! We are them! OK, fine, that’s an exaggeration. But the toned-down version of asteroid mining’s prospects is still hyperreal. "Our vision is to catalyze humanity's growth, both on and off the Earth," says Peter Diamandis, co-founder of mining company Planetary Resources, in a PR video. A graphical spacecraft, presumably future-theirs, flies away from our planet while he speaks. "At the end, the entire human race will be the beneficiary, as we expand our reach beyond the Earth, into the solar system," he continues. But traveling the road to space-based industry will require giant leaps. Like picking the most lucrative asteroids—the ones with lots of water and precious metals—from far afield. And negotiating spacecraft near their complicated gravitational fields. To do that, companies will have to leave the comfy confines of Earth's orbit, where they currently do all their experimenting. In May, Planetary Resources raised $21 million of venture capital for an Earth-observation program called Ceres. Ten small satellites will fly low around the planet, taking twice-daily images of Earth in wavelengths ranging from mid-infrared to visible—images that will “benefit multiple industries including agriculture, oil & gas, water quality, financial intelligence and forestry.” These satellites will, essentially, be prospecting Earth, using the same sensors Planetary Resources has developed to prospect asteroids. The utility, says president and CEO Chris Lewicki, is dual. “We are taking pictures of the Earth and using them not only to understand how our technology works but also to understand more about our planet,” he says. True enough, but it's also about the balance sheet: Earth-facing spacecraft, as all that venture capital suggests, are big money. Which is important for a company that has to continue existing until it can actually mine asteroids. TRENDING NOW Movies & TV Machine Gun Kelly Answers the Web's Most Searched Questions The other big name in the industry, Deep Space Industries, is also in the Earth-observation business, kind of: It sells its spacecraft technologies to other companies, some of whom want to use them to peer down at our planet. Like HawkEye 360, a company that plans to monitor and map radio-wave broadcasts in near real-time. Deep Space Industries is the prime contractor developing and making the satellites that will become HawkEye's Pathfinder prototype. “Earth observation is kind of the hot thing in space right now,” says Meagan Crawford, Deep Space Industries' chief operating officer. “It’s where most of the value is being created.” But unlike Planetary Resources, Deep Space Industries isn’t planning its own world-watching missions, even if they plan to profit from others’. Their personal path to an asteroid is straighter: They hope to launch the prototype Prospector-X this year to see how its propulsion performs, how its avionics stand up to space radiation, and how its optical navigation system fares against obstacles. It will be in Earth orbit, but it’s not on the Earth-observation beat. It’s meant to show that the follow-on Prospector-1 will work—hopefully going to an asteroid by the end of the decade, the same timescale on which Deep Space is also working. “We think the best way to determine what these asteroids are really like is to go touch and feel and interact with one,” Crawford says. Spacecraft shortfalls Becoming a prime prospector of Earth doesn’t quite translate to asteroids, as the two space-body types are quite different. For one, Earth is, like, right here. Asteroids are way out there, moving very fast. And that makes getting to know them hard. The companies need to know about a specific rock's composition before embarking on a mining mission—something they can't accomplish with the same sensors they are deploying in Earth orbit, the same ones they hope to use to get detailed information once they are actually close to an asteroid. Scientific missions specced to learn more about what asteroids are made of, like NASA's newly funded Lucy and Psyche, will help the companies get the knowledge they need to get power. But Crawford admits that "the biggest missing piece for asteroid mining is scientific knowledge of target asteroids." Asteroids’ specifics are still fuzzy. That’s why space agencies keep sending missions like Lucy and Psyche, as well as the already-launched OSIRIS-REx, Dawn, and Hayabusa to them: because we don’t know a super lot about their details, beyond predictive models based on broad categories. “We don’t have a lot of experience with the real characteristics of asteroids,” says Zoe Szajnfarber, who studies the dynamics of technological innovation at George Washington University. What if a company chose a target asteroid based on predictions, only to find, upon arrival, that it holds much less water and platinum than checkbooks and customers hoped? Too bad, so sad. “If you make the choice to go to the one asteroid, that’s where you’re going,” says Szajnfarber. “It’s almost impossible to have enough fuel to change your mind and go to a different one.” Then, once you get there, there’s the problem of gravity. The companies' craft may master constellation- or formation-flying around our planet. But Earth, as globes have suggested for centuries, is basically a sphere. And its mass is pretty evenly distributed. Gravity is basically the same everywhere in a spacecraft’s orbit. Keeping spacecraft in line in such a boring gravitational field is “easy.” But have you seen pictures of asteroids? Those pockmarked potato colonies with weird peaks and valleys have complicated gravity and composition. The companies will have to climb over both these early obstacles before they get to even bigger ones: that part where they have to build robots that can mine and spacecraft that can bring the haul back into humanity’s reach. They can’t do any of it by planetary navel-gazing alone. But they are going to do planetary navel-gazing, whether under their own flags or customers’. That globe-centric system will at least make the companies money, which means they may be able to survive long enough to figure out how to do what they really want to do.

#### Squo legislation solves the Aff—But preserves US leadership and control of the emerging market

Myers 16 – JD-San Diego Law

John Myers, JD-University of San Diego School of Law, Extraterrestrial Property Rights: Utilizing the Resources of the Final Frontier, 18 San Diego Int'l L.J. 77, <https://digital.sandiego.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1014&context=ilj>

The U.S. Commercial Space Launch Competitiveness Act provides a practicable framework for property rights in space. It prevents both over-utilization and under-utilization of asteroid resources while anticipating international mutual-recognition of property rights in space. As a result, the Act will minimize conflicts over resources in space. V. CONCLUSION AND RECOMMENDATION Space exploration offers three important opportunities for the United States. First, space exploration promotes scientific progress and international cooperation. Second, space exploration will drive the world economy by creating new jobs and introducing exploited space resources into the markets. Third, space exploration will reverse the decline of the United States in math and science by inspiring children to be interested in STEM fields. All three opportunities hinge on the exploitation of space resources. Today, corporations play an expanded role in space exploration; therefore, it is imperative that these corporations be able to generate a return on investment. This presents a legal question: Will these corporations have a legal right to the resources extracted from space? In response to this question, the U.S. government enacted the U.S. Commercial Space Launch Competitiveness Act, which grants property rights to U.S. citizens who are engaged in the commercial recovery of asteroid resources. An analysis of international treaty obligations and international customary law, together with a review of international property law indicates that the Act is fully consistent with international law. When President Kennedy delivered his speech at Rice University on September 12, 1962, there were only two countries involved in the space race. Today, the number of countries active in space exploration is increasing, as is the number of private corporations in space. In the United States, after the retirement of the Space Shuttle, private corporations are beginning to assume the role of government agencies and are preparing to make outer space open to the general public.339 However, as Planetary Resources and other space exploration corporations have made clear, it is too risky for private investors to invest large sums of money when property rights in space are not recognized and guaranteed. In order to grant property rights to asteroid resources in space, the United States government must look to both international and national law and customs governing human activities in space.340 The history of the Outer Space Treaty shows that it was intended to prevent the militarization of space and to prevent a country from obtaining national sovereignty over space. Furthermore, the language in Article I dealing with space exploration being carried out for the benefit and in the interest of all mankind, is largely aspirational as it contains no specific duties for signatories to the Treaty. This conclusion is reinforced by both the debate in the UNCOPUOS Legal Subcommittee and the hearing before the Committee on Foreign Relations of the U.S. Senate. The history of the Moon Treaty offers an even more compelling glimpse into the intentions of the United States with respect to property rights in space. The Moon Treaty expressly states that resources located on celestial bodies cannot become the property of any state, governmental entity or organization, non-governmental entity or organization, or any natural person. Moreover, the Moon Treaty calls for the formation of an international regime to govern the exploitation of space resources and provides for the equitable sharing among states party to the agreement. As of January 1, 2015, only sixteen countries have ratified the Moon Treaty, none of which are space-faring nations. The space-faring nations, by ratifying the Outer Space Treaty, demonstrated a willingness to forego national appropriation of outer space; however, by rejecting the Moon Treaty, the space-faring nations made clear that they were unwilling to give up property rights in outer space resources. Even if the United States were to concede that the Outer Space Treaty did preclude the government recognizing property rights in space, there is a strong argument that the Outer Space Treaty is obsolete because of subsequent developments in customary law. In order to further strengthen this argument, the subsequent conduct would be more compelling if it is a new peremptory norm of general international law. In other words, the United States' position would benefit from other nations enacting similar legislation. The main argument levied against the U.S. Commercial Space Launch Competitiveness Act is that the United States government is unable to grant property rights in outer space because property rights can only be granted by a sovereign, and the United States cannot claim sovereignty in space because that violates the Outer Space Treaty. This argument relies on a centuries'-old concept of acquisition—the doctrine of discovery. The doctrine of discovery is a "top-down" approach to the acquisition of property: sovereignty and property are inherently intertwined. The top- down view of property traces its roots to the 1648 Peace of Westphalia; however, there is a strong tradition in Western scholarship and law that property law is grown and developed from the bottom up. For example, in Roman law, the Institutes of Justinian advanced the idea of ownership through occupancy. In addition, John Locke in England promoted the labor theory that allows ownership to be earned by the "sweat of your brow." Most importantly, property today is largely viewed as a bundle of rights that include the rights to possess, use, exclude, and transfer. This bundle of rights is subject to reconfiguration depending on the form of property. Property rights in space are novel and therefore require a new configuration in the bundle of rights associated with that property. Moreover, the grant of property rights in space will prevent both the Tragedy of the Commons and the Tragedy of the Anticommons. In the first case, if property rights are not granted in space, it is foreseeable that conflicts will arise because multiple corporations could land on the same asteroid. Hypothetically, if a particularly resource-rich asteroid that would be easy to land on and mine is discovered, both an American corporation and a Chinese corporation could land on it and this would result in issues both in space and on Earth. In the second case, if property rights are not granted in space, it is as likely foreseeable that corporations will not invest in space and the resources of space will go underexploited. Currently there are analogous situations on Earth that the recognition of property rights in space will either avoid or emulate. In the case of African land grabs, there is virtually no government oversight and therefore resources are being overexploited. On the other hand, in the East and South China Seas, there are several governments claiming a number of islands and island groups leading to under-utilization of resources. Space offers an opportunity for a blank slate, provided the rights and obligations of nations are clear from the beginning. The deep seabed is perhaps the most closely analogous situation on Earth. Like outer space, the deep seabed is considered the "Common Heritage of Mankind." The UNCLOS was intended to create an agreement to regulate the use and exploitation of the resources in the deep seabed. The United States, along with Japan, West Germany, and the United Kingdom, did not sign the convention, and instead created national legislation and other schemes to explore and exploit the deep seabed. The United States legislature enacted the DSHMRA that authorizes U.S. citizens to explore and exploit deep seabed resources. This Act further asserts that the United States is not exerting sovereignty over the deep seabed and recognizes the rights of other nations to engage in the same activities. Most importantly, the United States currently has bilateral and multilateral agreements with almost every nation capable of exploiting the deep seabed. Finally, the Antarctic Treaty System is largely viewed as a success because it has prevented conflicts over sovereignty, militarization, and land grabs on that continent. However, unlike space, Antarctica is not rich in resources. A more analogous situation to space would be the resource-rich Arctic. With global warming granting further access to the seabed under the North Pole, it appears that each Arctic nation will have an interest in naming the North Pole as its own. President Kennedy said, "[N]o nation which expects to be the leader of other nations can expect to stay behind in the race for space."341 It seems that both Congress and President Barack Obama have the same vision for the future of American space exploration as President Kennedy had half a century ago. Thomas Kalil, Deputy Director for Policy for the White House Office of Science and Technology Policy, stated in a Google Hangout with the Commercial Space Flight Federation, "[The] President was delighted to sign the bill and it was consistent with his overall policy of promoting commercial activities in space."342 The U.S. Commercial Space Launch Competitiveness Act does not violate any of the United States' international obligations. The United States is able to recognize a corporation's property rights in space without simultaneously claiming sovereignty over the property. The bundle of rights is configured differently in this situation, with the government holding the stick that grants the right to transfer, while the corporation holds the sticks that grant the right to possess, use, and exclude. With the passing of this Act, the United States is again poised to be a leader in outer space exploration. It is essential that the United States actively works with Luxembourg to reach an agreement that allows for the mutual recognition of property rights in space. In addition, the United States government must earnestly promote and encourage other spacefaring nations into enacting similar legislation. In this manner, the United States and other spacefaring nations will create customary international law consistent with their interpretation of the Outer Space Treaty.

### Circumvention

#### Outer Space Laws are unclear – private corporations are still capable of escaping due to loopholes in the plan.

Green and Stark 17 [Christopher and Eda, “Outer Space Treaty and Beyond: Do Existing Space Laws Put an Astronomical Barrier to Private IP Rights in Space?”, JDSUPRA. 8 September 2020 https://www.jdsupra.com/legalnews/outer-space-treaty-beyond-do-existing-44028/] //DebateDrills LC

Our limited body of space law provides little guidance. The first international treaty, the “Outer Space Treaty,” was signed by the U.S., Russia, and the U.K. in 1967, quickly followed by the Rescue Agreement. Over the next two decades, three other treaties—the Liability Convention, the Registration Convention, and the Moon Agreement—were also signed by these nations, with most countries following in their footsteps.[3] But after that rapid succession of international treaties, there have since been few others. These five documents form the basis of the international space law we have today, but none address the issue of [intellectual property rights in space](https://www.fr.com/fish-litigation/ip-rights-outer-space/). Rather, upon inspection, it appears that the stated purpose of these treaties may be antithetical to intellectual property protection.

The “Outer Space Treaty” espouses communal themes in characterizing space as the “province of all mankind,” the “common heritage of mankind” and to the “benefit of all countries.”[4] Unsurprisingly, Article II of the Outer Space Treaty prohibits any appropriation of areas in space, keeping in line with its principle of communal property.[5] On the other hand, patents are fundamentally territorial and grant monopoly rights for a period of time. Applied to space, it is unclear just what is open for patent protections.

For example, can private companies patent orbital patterns of satellites? Currently, companies may patent the technology or design of satellites that stay in a particular orbit, even if not the orbital pattern itself.[6] The practical implications of this are significant, especially with the advent of satellite constellations. If particular satellite technologies, and, indirectly, their orbital patterns, are patentable, then a significant portion of space may be occupied by one satellite constellation, i.e. one company alone.[7] Does this private apportionment of space run counter to our notions of sharing space? Some argue that the Outer Space Treaty only bans sovereign appropriation and does not limit private entities from exerting claims. Others counter that private property rights flow from sovereign property claims, so the former is meaningless without the latter.[8] So the question remains, can the stated goals of sharing outer space be reconciled with the proprietary nature of patents?

Our current corpus of space treaties comes from a period of history when space exploration was undertaken primarily by governments rather than private actors. The cooperative goals were likely a reaction to the time, as the world was coming out of a charged space race. The silence of these space treaties on intellectual property rights presents an opportunity for modern-day agreements to provide patent protections for private companies. Without robust international agreement on patents for space, we may even see less international cooperation as companies refuse to divulge their discoveries.[9] Now, as more and more private companies enter space exploration and carry the torch of innovation, it is more important than ever to strike a balance between sharing our “common heritage” and providing patent protections that incentivize invention.[10]

#### The affirmative has no enforcement mechanism – private corporations can just circumvent since they have the funding to launch rockets on their own.

Sheetz 21 [Michael, “Elon Musk’s SpaceX raised about $850 million, jumping valuation to about $74 billion”, CNBC. 16 February 2021. https://www.cnbc.com/2021/02/16/elon-musks-spacex-raised-850-million-at-419point99-a-share.html] //DebateDrills LC

SpaceX completed another monster equity funding round of $850 million last week, people familiar with the financing told CNBC, sending the company’s valuation skyrocketing to about $74 billion.

The company raised the new funds at $419.99 a share, those people said — or just 1 cent below the $420 price that [Elon Musk](https://www.cnbc.com/elon-musk/) [made infamous in 2018](https://www.cnbc.com/2018/09/28/sec-says-elon-musk-at-tesla-chose-420-price-as-pot-reference.html) when he declared he had “funding secured” to take [Tesla](https://www.cnbc.com/quotes/TSLA) private at that price.

The latest round also represents a jump of about 60% in the company’s valuation from its previous round in August, when [SpaceX raised near $2 billion at a $46 billion valuation](https://www.cnbc.com/2020/10/14/tesla-investor-ron-baron-spacex-has-a-chance-to-be-just-as-large.html).

SpaceX did not immediately respond to CNBC’s request for comment. In addition to SpaceX further building a war chest for its ambitious plans, company insiders and existing investors were able to sell $750 million in a secondary transaction, one of the people said.

The people spoke on condition of anonymity because SpaceX is not a publicly traded company and the fundraising talks were private. SpaceX raised only a portion of the funding available in the marketplace, with one person telling CNBC that the company received “insane demand” of about $6 billion in offers over the course of just three days.

### Space Wars

#### Space wars are impossible and can’t escalate --- debris, high monetary costs, and lack of lift capabilities

Handberg, 17 – Faculty and Research, School of Politics, Security, and International Affairs, UCF Roger Handberg, “Is space war imminent? Exploring the possibility,” Comparative Strategy. 2017. <https://www.tandfonline.com/doi/pdf/10.1080/01495933.2017.1379832?needAccess=true>

--Space wars were discounted in 1960s – things haven’t changed now – environment still hostile – moreso now bc debris is worse

--Costs a ton to send stuff up there

--Lift capabilities are weak which means war can’t be sustained

--Replacements are slow so war has to be ended

Why now?

Recently, there has been an ongoing resurgence of interest in the possibilities for actual combat in outer space, effectively war in a new domain. Why this would become plausible now is interesting, since the physical realities present in the early days of space activity have not changed. Spacecraft remain vulnerable to attack from the ground by anti-satellite (ASAT) weapons, while the debris issue grows exponentially worse now, given the proliferation of such objects in space as part of the normal operations in outer space: used boosters, dead satellites, pieces of broken spacecraft and satellites, and small particles with deadly impact on other spacecraft. The space shuttles routinely returned to Earth with dings and scars from space debris, while the International Space Station (ISS) several times has been lifted out of harm’s way due to oncoming debris. More critically for assessing space-war possibilities, the sheer cost of conducting such operations remains extremely high, while the possibilities for sustaining combat in space are suspect due to lack of lift capability. The difficulty in orbiting replacement satellites to restore functionality remains, assuming the environment is not too hostile due to expanding debris fields. Replacement satellites or other space hardware are still slow-production items, although that in principle could be placed on more of an assembly-line basis, as was done with the Iridium satellite flotilla of 66 comsats plus multiple spares.19 Or, smaller cube satellites with more limited functionality could be orbited as gap fillers while larger, more functional satellites are built and flown if time exists to do so.

#### Kinetic space targeting requires huge resources that make it infeasible, but cyber attacks are an alt cause they don’t solve

Handberg, 17 – Faculty and Research, School of Politics, Security, and International Affairs, UCF Roger Handberg, “Is space war imminent? Exploring the possibility,” Comparative Strategy. 2017. <https://www.tandfonline.com/doi/pdf/10.1080/01495933.2017.1379832?needAccess=true>

Third, the most obvious initial attack of space-based assets will most likely come from cyber attacks, given that such actions do not necessarily require the scale of resources necessary for other modalities such as kinetic weapons, or even lasers or other energy-type weapons. One will have to position the weapons plus the infrastructure to permit rapid recycling of the weapons for the next attack. Firing off interceptors will likely be a one-off, meaning extremely precise targeting will be required if the attack is to be successful. Note that none of these systems require that individuals be placed in Earth orbit, despite the imagery describing such operations in fictional universes.

#### No space wars --- orbital bombardment fails, and people can’t be sent to space to fight, which caps escalation

--No space wars – people can’t be placed there because they’re too fragile – mostly just engineer nerds not marines

--0 uq – space has been militarized for awhile and we’ve had a space force under the purview of Air Force Strategic Command

--Physics – objects in orbit move fast, so orbital bombardment is literally impossible and would require huge amountns of weapons

Crane, 18 Leah Crane, Writes for New Scientist, BA in Physics/Astronomy, “The arms race in space,” New Scientist. Vol. 238. April 14, 2018. <https://www.sciencedirect.com/science/article/pii/S0262407918306559>

The US is making noises about beefing up its military presence off planet.

WAR in space is a hot topic in the US government. Last year, Congress considered and rejected a proposal to create a standalone "space force" to deal with threats in orbit, and in March, President Donald Trump brought it up again.

"Space is a war-fighting domain, just like the land, air and sea," Trump said at Marine Corps Air Station Miramar in San Diego. "We should have a new force called the space force. It's like the army and the navy, but for space, because we're spending a lot of money on space."

"We should have a new force called the space force. It's like the army and the navy, but for space"

The Trump administration's position was further detailed last month with the announcement of its national space strategy. It states that US "competitors and adversaries have turned space into a warfighting domain" and promises that any attacks on US space assets will be met with a deliberate response.

They sound like fighting words. But any space war won't be like Star Wars - no humans will zoom around in slick spaceships, death will not rain from the skies and it is unlikely that anything will be blown up.

"It's not fighter jocks, it's not marines, it's not special-operations guys," says Todd Harrison at the Center for Strategic and International Studies in Washington DC. "It's a bunch of engineers sitting in a control centre and sitting in labs. The space domain is going to be dominated by nerds."

We know this, because the US space force already exists. The Air Force Space Command has been around since 1982 and employs more than double the number of people at NASA, the US civilian space agency, to operate and protect military satellites. The space force proposal for Congress wasn't really about creating a new branch of the military, but part of a long-running push to move the space command out from under air force leadership, making space a higher priority.

Plus, sending a human to fight a war in space is simply not efficient. "Humans are fragile and sustaining them in space takes a lot of support," says Laura Grego at the Union of Concerned Scientists in Cambridge, Massachusetts. "The Chinese and the Russians aren't going to send marines to space either, because they know physics too."

Physics also rules out orbital bombardment. Objects in orbit move at high speeds, so aren't over a single spot on the planet for long. That means attacking a specific area at short notice would require placing hundreds of weapons in orbit to ensure one is overhead at the right moment. An aircraft carrier loaded with bombers or ballistic missiles would be much more effective.

#### Deterrence in space solves even if we’re more vulnerable ---

#### 1] Countries know we value our space assets and are willing to practice brinkmanship or escalate horizontally

Harrison, 9 – Director, Eisenhower Center for Space and Defense Studies Ambassador Roger G. Harrison, “Space Deterrence: The Delicate Balance of Risk,” Space and Defense, Volume 3, No. 1. Summer 2009. <http://www.usafa.edu/app/uploads/Space_and_Defense_3_1.pdf>

There are, however, potential mitigating factors. First, an adversary could not be certain that retaliation would be limited to space. Although the threat of escalation is often portrayed as inhibiting rather than empowering U.S. decision makers, that threat would also have to be taken seriously by an adversary. U.S. declaratory policy has always emphasized that retaliation for attacks on vital assets will be of a magnitude and by means of our choosing.38 No rational adversary could rule out a disproportionate response or so called “horizontal escalation” (for example in the cyber domain), especially if his conclusion was the same as ours: that limiting ourselves to space-for-space retaliation would leave the U.S. at a disadvantage. He would also have to take into account the possibility of a less than rational response to his action, perhaps leading to an even more rapid escalation.

The Cold War analogy is brinksmanship, the willingness to escalate unpredictably when vital strategic interests are threatened.

#### 2] No shot of a disarming strike --- we’d maintain BMD and be able to retaliate --- that makes our threats credible

Harrison, 9 – Director, Eisenhower Center for Space and Defense Studies Ambassador Roger G. Harrison, “Space Deterrence: The Delicate Balance of Risk,” Space and Defense, Volume 3, No. 1. Summer 2009. <http://www.usafa.edu/app/uploads/Space_and_Defense_3_1.pdf>

The second mitigating factor is that even in the absence of dedicated ASAT systems, a potential attacker is not likely to perceive the U.S. lacks capability to retaliate against the space assets of an adversary. Many nations perceive existing U.S. ballistic missile defense systems as having a dual-use nature, including potential anti-satellite capability. The U.S. reportedly has an active and acknowledged program of “negation” designed to deny an adversary the use of his space assets as force multipliers in the case of hostilities within the atmosphere. We may safely assume that other nations are pursuing similar programs. In our judgment, the most likely scenario for future space conflict is a “war of negation,” i.e. an attempt by each side to preserve the product of its space assets while denying those space services to the opponent. To win such a contest requires technological superiority, which the U.S. should make every effort to maintain and which, in this area as in others, is a vital element in maintaining space deterrence.

We conclude that the threat of retaliation can remain a credible element of our overall space deterrence. The attribution of attack is not an insuperable obstacle, and that questions of resolve will ultimately depend on the perceptions of a potential attacker in the circumstances existing when his decision to attack is being considered. A credible threat of retaliation may require willingness to escalate into other domains. It could include fielding ASAT systems if such systems are deployed by others, but the resulting arms race would not be in the interests of the United States. The U.S. should not be the first to deploy such systems and the U.S. use the full extent of its influence internationally to avoid that outcome. Ultimately, a threat of retaliation is never more credible than the leader and the government that issues it. No declaratory policy can compensate for an irresolute commander in chief, one who is misinformed or badly served by his subordinates. An opponent will tend to judge the likelihood of retaliation not according to proclamations made months or years earlier, but according to the situation pertaining at the time – as Hitler did in Europe and Saddam did in the Middle East. What a President does in the run up to and conduct of a crisis will have far more to do with an adversaries decisions than libraries full of ultimatums and guarantees. Subordinates who doubt the resolution of a commander will try to limit his or her flexibility to respond other than in ways the subordinates think appropriate. A wise commander in chief, on the other hand, will strive to maintain flexibility, to approach a particular conflict in the context of wider responsibilities, to take account of factors which were unforeseen when the doctrine or battle plan was devised – in short, to balance one risk off against others. No bureaucratic arrangement, declaratory doctrine or weapon capability will compensate when such leadership is not present.