# NC

### 1

#### Interpretation – the aff may not defend that a certain form of appropriation of outer space is unjust.

#### Appropriation is a generic bare plural

**Nebel 20** [Jake Nebel is an assistant professor of philosophy at the University of Southern California and executive director of Victory Briefs. He writes a lot of this stuff lol – duh.] “Indefinite Singular Generics in Debate” Victory Briefs, 19 August 2020. no url AG

I agree that if “a democracy” in the resolution just meant “one or more democracy,” then a country-specific affirmative could be topical. But, as I will explain in this topic analysis, that isn’t what “a democracy” means in the resolution. To see why, we first need to back up a bit and review (or learn) the idea of generic generalizations.

The most common way of expressing a generic in English is through a *bare plural*. **A bare plural is a plural noun phrase, like “dogs” and “cats,” that lacks an overt determiner**. (A determiner is **a word that tells us which or how many**: determiners include quantifier words like “all,” “some,” and “most,” demonstratives like “this” and “those,” posses- sives like “mine” and “its,” and so on.) LD resolutions often contain bare plurals, and **that is the most common clue to their genericity**.

We have already seen some examples of generics that are not bare plurals: “A whale is a mammal,” “A beaver builds dams,” and “The woolly mammoth is extinct.” The first two examples use indefinite singulars—singular nouns preceded by the indefinite article “a”—and the third is a definite singular since it is preceded by the definite article “the.” Generics can also be expressed with bare singulars (“Syrup is viscous”) and even verbs (as we’ll see later on). The resolution’s “a democracy” is an indefinite singular, and so it very well might be—and, as we’ll soon see, is—generic.

But it is also important to keep in mind that, just as not all generics are bare plurals, not all bare plurals are generic. “Dogs are barking” is true as long as some dogs are barking. Bare plurals can be used in particular ways to express existential statements. The key question for any given debate resolution that contains a bare plural is whether that occurrence of the bare plural is generic or existential.

The same is true of indefinite singulars. As debaters will be quick to point out, some uses of the indefinite singular really do mean “some” or “one or more”: “A cat is on the mat” is clearly not a generic generalization about cats; it’s true as long as some cat is on the mat. The question is whether the indefinite singular “a democracy” is existential or generic in the resolution.

Now, my own view is that, if we understand the difference between existential and generic statements, and if we approach the question impartially, without any invest- ment in one side of the debate, we can almost always just tell which reading is correct just by thinking about it. **It is clear that “In a democracy, voting ought to be compul- sory” doesn’t mean “There is one or more democracy in which voting ought to be com- pulsory.”** I don’t think a fancy argument should be required to show this any more than a fancy argument should be required to show that “A duck doesn’t lay eggs” is a generic—a false one because ducks do lay eggs, even though some ducks (namely males) don’t. And if a debater contests this by insisting that “a democracy” is existen- tial, the judge should be willing to resolve competing claims by, well, judging—that is, by using her judgment. Contesting a claim by insisting on its negation or demanding justification doesn’t put any obligation on the judge to be neutral about it. (Otherwise the negative could make every debate irresolvable by just insisting on the negation of every statement in the affirmative speeches.) Even if the insistence is backed by some sort of argument, we can reasonably reject an argument if we know its conclusion to be false, even if we are not in a position to know exactly where the argument goes wrong. Particularly in matters of logic and language, speakers have more direct knowledge of particular cases (e.g., that some specific inference is invalid or some specific sentence is infelicitious) than of the underlying explanations.

But that is just my view, and not every judge agrees with me, so it will be helpful to consider some arguments for the conclusion that we already know to be true: that, even if the United States is a democracy and ought to have compulsory voting, that doesn’t suffice to show that, in a democracy, voting ought to be compulsory—in other words, that “a democracy” in the resolution is generic, not existential.

Second, **existential uses of the indefinite, such as “A cat is on the mat,” are upward- entailing.3 This means that if you replace the noun with a more general one, such as “An animal is on the mat,” the sentence will still be true. So let’s do that with “a democracy.” Does the resolution entail “In a society, voting ought to be compulsory”? Intuitively no**t, because you could think that voting ought to be compulsory in democracies but not in other sorts of societies. This suggests that “**a democracy” in the resolution is not existential**.

#### It applies to this topic – a] appropriation is an existential bare plural bc it has no determiner b] The sentence “The appropriation of outer space by private entities is unjust” does not imply “the usage of outer space by private entities is unjust”

#### Violation – they spec large satellite constellations

#### Standards

#### 1] Limits – they can spec infinite different types of appropriation like LEO sats, moon, asteroids etc, etc.. - that’s supercharged by the ability to spec combinations of types of entities. This takes out functional limits – it’s impossible for me to research every possible combination of entities, governments, and appropriation.

#### 2] TVA solves – just read your aff as an advantage to a whole rez aff – we don’t stop them from reading new FWs, mechanisms or advantages. PICs aren’t aff offense – a] it’s ridiculous to say that neg potential abuse justifies the aff being non-T b] There’s only a small number of pics on this topic c] PICs incentivize them to write better affs that can generate solvency deficits to PICs

CI

Comes before

No rvi

fairness

### 2

#### Cyber-attacks on critical infrastructure are coming now.

Underwood 20 [Kimberly Underwood, 6-24-2020, "China is Retooling, and Russia Seeks Harm to Critical Infrastructure," SIGNAL Magazine, <https://www.afcea.org/content/china-retooling-and-russia-seeks-harm-critical-infrastructure>] [pT]

Intelligence leader warns of the mounting threats of cyber espionage, digital attacks and influence operations from adversaries.

U.S. adversaries are trying to take control of cyberspace as a medium, resulting in implications to our freedom of maneuver and access in cyberspace, says Brig. Gen. Gregory Gagnon, USAF, director of Intelligence (A2), Headquarters Air Combat Command (ACC), Joint Base Langley-Eustis. Increasing cyberspace activity is coming from China, Russia, Iran and North Korea.

“We are seeing it not just in volume, but we are seeing an expansion in the ways that they use cyberspace, whether it is to steal information, whether it is to directly influence our citizens or whether it is to disrupt critical infrastructure,” Gen. Gagnon reports. The general spoke at the AFCEA Tidewater chapter’s recent monthly virtual luncheon.

China and Russia continue to pose the greatest espionage and cyber attack threats to the United States, but the intelligence leader anticipates that other adversaries and strategic competitors will also build and integrate cyber espionage, cyber attacks and influence operations into how they conduct business.

“Our strategic competitors will increasingly use cyber space capabilities including cyber espionage, cyber attack and continued influence operations to seek political, economic and military advantage over the United States, our allies and our partners,” he said. “This is not an ‘if,’ it is a yes. They are doing it and they will continue.”

Gen. Gagnon warned that China in particular is using cyber espionage to collect intelligence, target critical infrastructure and steal intellectual property. It is all part of China’s plan to move from being a regional actor to being seen as a global power. The shift also means a greater role for the adversary’s military. The Chinese military is in the process of transitioning from a defensive, inflexible ground-based force charged with domestic and peripheral security to a joint, highly agile, expeditionary and power projecting arm of Chinese foreign policy, he noted.

“What is going on in China is a dynamic revectoring of the objectives and goals of the People's Liberation Army,” Gen. Gagnon said. “This is not a small change. This is a major change in course and direction. They're doing it to be a power projection arm of a Chinese foreign policy that engages both in military diplomacy and operations around the globe, but also in predatory economic activity.”

Moreover, China’s military spending in 2018 exceeded $200 billion, an increase of about 300% since 2002, the general stated. And while it is not the $750 billion that the United States government spends every year on military defense, the Chinese funding does not reflect the same level of investment in manpower or healthcare.

A good portion of their $200 billion directly funds technology and capabilities. “A big chunk of our budget is not buying kit,” Gen. Gagnon explained. “If you're the CCP [Chinese Communist Party], you don't have the same extensive retirement programs that you have to pay for,” he said. “You don't have this extensive healthcare which you have to provide. So, when you think about $200 billion, think about that buying kit and buying operations. That is significant.”

#### Mega constellations function as critical infrastructure that increase resiliency and protect against cyberattacks.

Hallex and Cottom 20 [Matthew A. Hallex is a Research Staff Member at the Institute for Defense Analyses. Travis S. Cottom is a Research Associate at the Institute for Defense Analyses. “Proliferated Commercial Satellite Constellations: Implications for National Security.” 2020. <https://ndupress.ndu.edu/Portals/68/Documents/jfq/jfq-97/jfq-97_20-29_Hallex-Cottom.pdf?ver=2020-03-31-130614-940>] [pT]

While potentially threatening the sustainability of safe orbital operations, new proliferated constellations also offer opportunities for the United States to increase the resilience of its national security space architectures. Increasing the resilience of U.S. national security space architectures has strategic implications beyond the space domain. Adversaries such as China and Russia see U.S. dependence on space as a key vulnerability to exploit during a conflict. Resilient, proliferated satellite constellations support deterrence by denying adversaries the space superiority they believe is necessary to initiate and win a war against the United States.28 Should deterrence fail, these constellations could provide assured space support to U.S. forces in the face of adversary counterspace threats while imposing costs on competitors by rendering their investments in counterspace systems irrelevant. Proliferated constellations can support these goals in four main ways.

First, the extreme degree of disaggregation inherent in government and commercial proliferated constellations could make them more resilient to attacks by many adversary counterspace systems. A constellation composed of hundreds or thousands of satellites could withstand losing a relatively large number of them before losing significant capability. Conducting such an attack with kinetic antisatellite weapons—like those China and Russia are developing—would require hundreds of costly weapons to destroy satellites that would be relatively inexpensive to replace.

Second, proliferated constellations would be more resilient to adversary electronic warfare. Satellites in LEO can emit signals 1,280 times more powerful than signals from satellites in GEO.29 They also are faster in the sky than satellites in more distant orbits, which, combined with the planned use of small spot beams for communications proliferated constellations, would shrink the geographic area in which an adversary ground-based jammer could effectively operate, making jammers less effective and easier to geolocate and eliminate.30

Third, even if the United States chooses not to deploy national security proliferated constellations during peacetime, industrial capacity for mass-producing proliferated constellation satellites could be repurposed during a conflict. Just as Ford production lines shifted from automobiles to tanks and aircraft during World War II, one can easily imagine commercial satellite factories building military reconnaissance or communications satellites during a conflict.

Fourth, deploying and maintaining constellations of hundreds or thousands of satellites will drive the development of low-cost launches to a much higher rate than is available today. Inexpensive, high-cadence space launch could provide a commercial solution to operationally responsive launch needs of the U.S. Government. In a future where space launches occur weekly or less, the launch capacity needed to augment national security space systems during a crisis or to replace systems lost during a conflict in space would be readily available.31

#### Cyberattacks cause extinction – false warnings, stealing nukes, and introducing vulnerability.

**Moniz et al. 18** [Ernest J. Moniz, Sam Nunn, and Des Browne, September 2018, “Nuclear Weapons in the New Cyber Age,” <https://media.nti.org/documents/Cyber_report_finalsmall.pdf>] [pT]

Cyber-based threats target all sectors of society—from the financial sector to the entertainment industry, from department stores to insurance companies. Governments face an even more critical challenge when it comes to cyberattacks on their most critical systems. Attacks on critical infrastructure could have extraordinary consequences, but a successful cyberattack on a nuclear weapon or related system—a nuclear weapon, a delivery system, or the related Nuclear Command, Control, and Communications (NC3) systems—could have existential consequences. Cyberattacks could lead to false warnings of attack, interrupt critical communications or access to information, compromise nuclear planning or delivery systems, or even allow an adversary to take control of a nuclear weapon.

Given the level of digitization of U.S. systems and the pace of the evolving cyber threat, one cannot assume that systems with digital components—including nuclear weapons systems—are not or will not be compromised. Among the reasons: nuclear weapons and delivery systems are periodically upgraded, which may include the incorporation of new digital systems or components. Malware could be introduced into digital systems during fabrication, much of which is not performed in secure foundries. In addition, there are a range of external dependencies, such as connections to the electric grid, that are outside the control of defense officials but directly affect nuclear systems. Finally, the possibility always exists that an insider, either purposefully or accidentally, could enable a cybersecurity lapse by introducing malware into a critical system.

Increased use of digital systems may also adversely affect the survivability of nuclear systems. New technologies can enhance reliability and performance, but they can also lead to new vulnerabilities in traditionally survivable systems, such as submarines or mobile missile launchers.4

### 3

#### Xi is consolidating unprecedented political power – that’s only possible with strong PLA support

Chang 21 [Gordon G. Chang, 1-14-2021, "China is becoming a military state," Newsweek, https://www.newsweek.com/china-becoming-military-state-opinion-1561300]

At this moment, the Communist Party is taking back power from all others in society, including the State Council, and the military is gaining influence inside Party circles.

Why is the People's Liberation Army making a comeback? The answer lies in succession politics.

Xi Jinping was selected the top leader because he was not identified with any of the main factional groupings—like the Communist Youth League of Hu Jintao or the Shanghai Gang of Jiang—that dominated Party politics. Xi, in short, was the least unacceptable choice to the Party's squabbling factional elders.

Xi, once chosen, apparently decided that in order to rule, he needed a base, so he made certain officers the core of his support. As longtime China watcher Willy Lam told Reuters in 2013, Xi Jinping's faction is the military.

And with the help of the military, Xi has accumulated almost unprecedented political power, ending the Party's two-decade-old consensus-driven system and replacing it with one-man rule.

As Wang, a professor at the Georgia Institute of Technology, notes, Xi, with the amendments to the National Defense Law, is demonstrating his power of "leading everything and everyone." He is wrapping that effort in a "rule by law" move that is formalizing his perch at the top of the Chinese political system.

How is Xi using his newfound power? There is a hint in the National Defense Law amendments. These changes, Fisher tells us, "increase the powers of the CMC to mobilize the civilian sector for wartime and to better authorize the CMC to engage in foreign military exercises to defend China's 'development interests.'" As such, the changes "point to China's ambition to achieve 'whole nation' levels of military mobilization to fight wars, and give the CMC formal power to control the future Chinese capabilities for global military intervention."

"The revised National Defense Law also embodies the concept that everyone should be involved in national defense," reports the Communist Party's Global Times, summarizing the words of an unnamed CMC official. "All national organizations, armed forces, political parties, civil groups, enterprises, social organizations and other organizations should support and take part in the development of national defense, fulfill national defense duties and carry out national defense missions according to the law."

That sounds like Xi is getting ready to pick even more fights with neighbors—and perhaps the United States. On January 5, he ordered People's Liberation Army generals and admirals to be prepared to "act at any second."

Why would Xi want to start a war? "This is really indicative of there being instability in China, and Mr. Xi seeking to consolidate power around himself. ...The new National Defense Law essentially removes the alternative power base of the premier of the State Council, in this case Li Keqiang, from interfering with Mr. Xi's own power ambitions," said Charles Burton of the Ottawa-based Macdonald-Laurier Institute to John Batchelor, the radio host, earlier this month. As Burton noted, the amendments to the National Defense Law undermine Premier Li Keqiang, the head of the State Council and long-standing rival to Xi.

"I think this really gives the green light for him to dispatch the military on any pretext that he feels is necessary to defend his power," Burton says. "China is becoming a military state."

#### The plan alienates the PLA – they view satellite constellations as the linchpin of China’s legitimacy – specifically, public-private tech development is key

Economic Times 20 [The Economic Times, 8-31-2020, "China attempting to militarise space as it seeks to modernise its military power," Economic Times, https://economictimes.indiatimes.com/news/defence/china-attempting-to-militarise-space-as-it-seeks-to-modernise-its-military-power/articleshow/77851406.cms?from=mdr]

The Jamestown Foundation, a US think-tank, hosted a webinar on August 19 entitled "China's Space Ambitions: Emerging Dimensions of Competition." One presenter, Dean Cheng, Senior Research Fellow at The Heritage Foundation, noted that Beijing's space programme is linked to China's central concept of comprehensive national power. "This is basically how the Chinese think about how they rack and stack, how they compare with other countries."

China recognises that military power is important, but it is not the only factor in being a great power. Cheng drew a parallel with the former USSR, where military power alone did not ensure survival of that communist state. Other comprehensive national power factors are political unity, economic power, diplomatic strength, science and technology, and even culture. "Space touches every one of these aspects in comprehensive national power, and that is a part of why Chinese see space as so important."

Indeed, a strong space industrial complex will generate benefits that ripple through the rest of China's economy. Furthermore, he said space achievements "promote pride within China, especially for the Chinese Communist Party (CCP) ... It's symbolic of how far China has come," he said, and "it gives the CCP legitimacy".

China is pushing into space services, including satellite launches, satellite applications and Earth observation/satellite imagery for others. Satellite customers include Belarus, Laos, Pakistan and Venezuela, for example, attracting hard currency and influence. Cheng said most underestimate the impact this has, as such countries grow almost totally dependent on Chinese equipment, assets and training over time. Incidentally, China could have manufactured back doors into these systems for foreigners to allow it access.

Mark Stokes, Executive Director at the US-based Project 2049 Institute think-tank, said in the same webinar that PLA requirements have always been fundamental to development of Chinese space capabilities. Potential PLA space missions in support of joint warfighting in a crisis include targeting (battlefield surveillance, electronic reconnaissance and ocean surveillance), communications, PNT services (obtaining target data, navigation information, navigation support and timing services), space jamming (encompassing space communications, radar, electro-optical and PNT) and space protection.

Stokes said the end of 2015 was "significant" for Chinese space efforts because consolidation of end-users under the PLA's Strategic Support Force (PLASSF) occurred, specifically within the Space Systems Department. In terms of developing and meeting requirements, the PLASSF is now "much more efficient," the American analyst posited.

Indeed, China created its space force in 2015, just a few months after Russia. After formally establishing its Space Force in December 2019, the US is still getting its equivalent off the ground. Cheng said both China and Russia have been pushing to militarise space, even though such a term is probably meaningless given that 95 per cent of space technology has dual applications for both military and civilian use. Certainly, outer space can no longer be viewed as a sanctuary.

Stokes said that "not much has changed really in terms of the space launch infrastructure and the launch, tracking and control of space ... but they are now integrated with end-users, and that is going to have an effect on making the whole system more efficient."

China has freedom of action in space, and the creation of the PLASSF and consolidation of space/counter-space research, development and acquisition, as well as training and operations, have benefitted from a single integrated command. The PLA's ability to interfere with American military operations in places like Taiwan will continue to grow yearly.

Cheng said, "The Chinese see future war as revolving around joint operations, which are not just land, air and sea forces." They also include the outer space and electronic warfare domains, which are necessary for information dominance." China, therefore, wishes to deny an adversary like the US the use of space, plus it needs to give the Chinese military every advantage.

China has therefore developed the ability to target hostile space-based assets (from the ground or space) and their all-important data-links. Indeed, jamming and electronic warfare complement anti-satellite weapons (which China has already tested), any of which can achieve effective mission kills against US and allied satellites. Stokes has not yet ascertained which agency is responsible for satellite kinetic kills, but it could well be the PLA Rocket Force, which is traditionally very tightly controlled by the Central Military Commission.

A detailed report entitled China's Space and Counter-space Capabilities and Activities, prepared for the US-China Economic and Security Review Commission, was published on March 30. Its authors, Mark Stokes, Gabriel Alvarado, Emily Weinstein and Ian Easton, summarised China's counter-space capabilities as follows.

"China has an operational counter-space capability that will evolve through 2020 and out to 2035. These capabilities include anti-satellite kinetic kill vehicles (KKV) and space electronic countermeasures ... On the non-kinetic side, the PLA has an operational ground-based satellite electronic countermeasures capability designed to disrupt adversary use of satellite communications, navigation, search and rescue, missile early warning and other satellites through use of jamming."

China obtained its first ground-based satellite jammers from Ukraine in the late 1990s, but it has developed its own solutions since then. "The PLA is capable of carrying out electronic countermeasures to disrupt, deny, deceive or degrade space services. Jamming prevents users from receiving intended signals and can be accomplished by attacking uplinks and downlinks.

The PLA and defence industry are developing and deploying jammers capable of targeting satellite communications over a large range of frequencies, including dedicated military communication bands. The PLASSF also has advanced cyber capabilities that could be applied in parallel with counter-space operations."

Nonetheless, the report asserted that the US still assumed a technological lead in space.

"China also is carrying out research, development and testing on potential space-based counter-space systems. The PLASSF and defense industry have carried out advanced satellite maneuvers and are likely testing orbital technologies that could be applied to counter-space operations." The PLASSF Network Systems Department probably oversees satellite jamming operations.

#### That factionalizes the CCP and emboldens challenges to Xi – the PLA is increasingly powerful and not unconditionally subservient

Simpson 16 [Kurtis Simpson, 12-21-2016, “China’s Re-Emergence: Assessing Civilian-Military Relations In Contemporary Era – Analysis”, Eurasia Review]

Paralleling divided loyalties between Chinese Party, military and government bodies, one must also recognize that within each, factions exist, based upon generational, personal, professional, geographic, or institutional allegiances.19 These minor fault lines are most pronounced during crises, and they continue independent of professionalization.20 As was demonstrated by the civil-military dynamics of the Chinese government’s suppression of student demonstrators, both divisions and allegiances of interests emerged with respect to how to contain this situation and factional interests largely determined which troops would carry out the orders, who commanded them, what civilian Party leaders supported the actions, and who would be sanctioned following the mêlée. A consequence of factionalism within the PLA is that the Party’s control mechanisms (particularly because rule of law and constitutional restraints on the military are weak) needs to be robust to control not only a single military chain of command but (particularly during crises) perhaps more than one. This is not likely the case. A review of the evidence indicates the military’s influence, on the whole, is increasing, and the Party’s control decreasing.

On one level, the Party clearly controls the military as the Central Military Commission or CMC (the highest military oversight body in the PRC) is chaired by a civilian, President Xi Jinping. Moreover, the PLAs representation on formal political decision-making bodies (such as the Politburo Standing Committee, the Politburo, the Central Committee, and the NPC) has decreased over the years, but this does not necessary equate to a reduced level of influence. For example, the two Vice-Chairman of the CMC are now military generals, as are the remaining other eight members. Irrespective of institutional membership, military leaders retain considerable say. Personal interactions and informal meetings with senior party elites provide venues to sway decisions. They do, also, hold important places on leading small groups dedicated to issues like Taiwan and other security questions, such as the South China Seas.21

In a similar vein, other methods of Party influence, as exercised through political commissars, party committees, and discipline inspection commissions are no longer empowered to enforce the ideological dictates of a paramount leader. In the face of diffuse reporting chains, competing allegiances, and often effective socialization by the military units they are supposed to be watching over, most do not provide the Party guardian and guidance function once so pervasive.

While perhaps overstated, Paltiel’s observation that “…China’s energies over the past century and half have given the military a prominent and even dominant role in the state, preempting civilian control and inhibiting the exercise of constitutional authority” is likely now truer than ever before in history.22 While still loyal to the party as an institution, the PLA is not unconditionally subservient to a particular leader and retains the resources to enter the political arena if (at the highest levels) a decision is made to do so.

The civilian-military trend lines evident in China since the end of the Cultural Revolution affirm that the symbiotic nature of the Party-PLA relationship has morphed in important respects since the late 1960s. The promotion of professionalism, a reduced role for ideological indoctrination, an increasing bifurcation of civil-military elites, and growing state powers (complete with divided loyalties and continued factionalism) has complicated the political landscape informing how the CCP interacts with the PLA. If, as postulated, we have moved from a fused, ‘dual role elite’ model to one of ‘conditional compliance’ in which the military actually holds a preponderance of the power capabilities and where its interests are satisfied through concessions, bargaining, and pay-offs, empirical evidence should reflect this. A review of China’s three major leadership changes since the transition from the revolutionary ‘Old Guard’ to the modern technocrats confirms this.

Formally anointed and legitimized by Deng in 1989, Jiang assumed leadership without military credentials and few allies, viewed by many as a ‘caretaker’ Party Secretary in the wake of the Tiananmen Massacre. Despite his limitations, Jiang was well versed in the vicissitudes of palace politics. Informed by a high political acumen, he immediately promoted an image as an involved Commander-in-Chief, personally visiting all seven military regions, a sign of commitment not made by either the likes of Mao or Deng. Symbolic gestures like this were bolstered by his providing incentives to the PLA, such as: consistent raises in the defence budget; funds for military modernization; as well as equipment, logistics, and augmented R&D.23

Referred to as the ‘silk-wrapped needle,’ Jiang marshalled Party resources to not only reward, but to punish.24 His institutional authority over appointments enabled him to manipulate factions, dismiss those who opposed him, enforce new rigid retirement standards, and promote loyalists. A delicate equilibrium was established during the early-1990s until his semi-retirement in 2004,25 where Jiang guaranteed military priorities such as supporting ‘mechanization’ and an ‘information-based military’ (promoting the concept of RMA with Chinese characteristics) in exchange for the PLA backing of his legacy contributions to Marxist Leninist Mao Zedong thought with the enshrinement of his “Three Represents” doctrine.

Like Jiang, Hu Jintao’s succession was the product of negotiation, compromise, and concessions. While neither opposed by the PLA, nor supported by the military ‘brass,’ Hu was a known commodity, having served as Vice-President (1998) and CMC Vice-Chairman since 1999. He was deemed acceptable until proven otherwise. In the shadow of Jiang (who retained the position of CMC Chair until 2004), Hu did not exert the same kind of influence in, nor engender the same kind of deference from, China’s military, but equally proved capable of fostering a pragmatic relationship with the army which ensured its interests, and in so doing, legitimized his leadership position.

Ceding much of the military planning and operational decisions to the PLA directly, Hu played to his strengths and focused upon national security issues (such as the successful resolution of SARs in China), which bolstered his credibility as a populist leader among the masses, indirectly increasing his power within both the military and the Party. Additionally, he focused upon foreign military security affairs (most notably, North Korea-US negotiations), which enabled him to link his personal political agenda with the military’s latest ambitions.

In according the military a distinct place in China’s national development plan, supporting China’s rise, and ensuring its vital interests, Hu recognized the military’s evolving requirement to ‘go global’ and its worldwide interests in non-combat operations, such as peacekeeping and disaster relief, as well as stakes in the open seas, outer space, and cyberspace as interest frontiers with no geographic boundaries.26 Under the slogan of ‘China’s historical mission in the new phase of the new century’ and his acquiescence to the PLA’s stated requirements ‘to win local wars under modern conditions’ by funding new technology acquisition, Hu received the army’s formal recognition for his contributions to military thought based upon “scientific development” which informed a “strategic guiding theory,” resulting in a new operational orientation for China’s military. Emulating his predecessor, Hu won ‘conditional compliance’ from the PLA by successfully bartering military needs and wants for the army’s support and endorsement of his political tenure. This was not done outside of self-interest. Hu, as did Jiang, skillfully coopted, fired, and promoted select Generals to serve his greater ends, and he did this through varied means. Ultimately, however, it was done in a manner acceptable to the military.

Xi Jinping’s rise to power in 2012, while replicating the ‘horse-trading’ of Jiang and Hu, marks a fundamental departure in leadership style. Often described as a transformative leader, Xi is openly critical of his predecessors and rails against earlier periods where reform stalled and corruption grew.27 An advocate of ‘top-level design,’ incrementalism is being supplanted by a massive attempt to centralize all aspects of the CCP’s power, which includes a major restructuring of the economy, government, administration, and military.

Nicknamed “the gun and the knife” as a slight for his attempts to simultaneously control the army, police, spies, and the ‘graft busters,’ Xi’s power appears uncontested at present. Nevertheless, he is also viewed as ‘pushing the envelope too far’ and endangering the equilibrium which has been established between the Party and PLA over the past 25 years. For example, only two years into his mandate, he fostered a Cult of Personality, “the Spirit of Xi Jinping” which was officially elevated to the same standing as that of Mao and Deng, by comparison, foundational figures in Chinese history. His open attacks of political ‘enemies’ (most notably Zhou Yongkang, a Politburo Standing Committee member and former security czar) breeds fear among almost every senior official, all of whom are vulnerable on some point. Equally true, an unprecedented anti-corruption campaign is inciting comrades to turn on comrades, not unlike a massive game of prisoner’s dilemma.

Nowhere is the pressure for reform greater than in the PLA. Xi advocates administering the army with strictness and austerity, promoting frugality and obedience. At his direction, “mass-line educational campaigns” designed to “rectify work style” through criticism and self-criticism are being implemented.28 Ideological and political building is now equated with army building, as a means of ensuring the Party’s uncontested grip over the troops ideologically, politically, and organizationally. Select military regions (those opposite Taiwan and adjacent to the South China Seas) and commanders from those regions are witnessing favoritism and promotion at the expense of others. Moreover, a new “CMC Chairmanship Responsibility System” has been instituted, which directly calls into question the support of some of Xi’s senior-most generals.

A ‘hardliner’ by nature, Xi recognizes that he must earn the support of the PLA. New military priorities he supports include: accelerating modernization; Joint Command and C4ISR; training; talent management, as well as equipment and force modernization. That said, his goal of achieving the Chinese dream of building a “wealthy, powerful, democratic, civilized, and harmonious socialist modernized nation” by 2021, the 100th anniversary of the founding of the CCP, is exceptionally ambitious. It will require endless commitments to competing interests in a period of economic stagnation and global economic downturn. Should the PLA come to believe they are not first in line for government largess, support for Xi could erode very quickly.29

#### Extinction.

**Perkinson 12** [Jessica Perkinson, 2012-06-14 “The Potential for Instability in the PRC: How the Doomsday Theory Misses the Mark”, American University]

Should the CCP undergo some sort of dramatic transformation – whether that be significant reform or complete collapse, as some radical China scholars predict2 – the implications for international and US national security are vast. Not only does China and the stability of the CCP play a significant role in the maintenance of peace in the East Asian region, but China is also relied upon by many members of the international community for foreign direct investment, economic stability and trade. China plays a key role in maintaining stability on the Korean Peninsula as one of North Korea’s only allies, and it is argued that instability within the Chinese government could also lead to instability in the already sensitive military and political situation across the Taiwan Strait. For the United States, the effect of instability within the CCP would be widespread and dramatic. As the United States’ largest holder of US treasury securities, instability or collapse of the CCP could threaten the stability of the already volatile economic situation in the US. In addition, China is the largest trading partner of a number of countries, including the US, and the US is reliant upon its market of inexpensive goods to feed demand within the US.

It is with this in mind that China scholars within the United States and around the world should be studying this phenomenon, because the potential for reform, instability or even collapse of the CCP is of critical importance to the stability of the international order as a whole. For the United States specifically, the potential - or lack thereof - forreform of the CCP should dictate its foreign policy toward China. If the body of knowledge on the stability of the Chinese government reveals that the Chinese market is not a stable one, it is in the best interests of the United States to look for investors and trade markets elsewhere to lessen its serious dependence on China for its economic stability, particularly in a time of such uncertain economic conditions within the US.

### 4

#### Space colonization only happens because of market demand from Starship – and our ev indicates the field is booming but on the brink

Maidenberg, 21, 12/28/21, WSJ, “SpaceX’s Future Depends on a Gigantic Rocket and 42,000 Internet Satellites”, He reports on longtime and newer space companies, as well as issues tied to the safe operation of commercial planes and other aircraft. As part of his work, he focuses on government agencies such as the National Aeronautics and Space Administration (NASA) and the Federal Aviation Administration (FAA). Prior to his current role, Micah worked as a breaking news reporter for the Journal and the Dow Jones Newswires. He began writing about business and economic issues for Crain’s Chicago Business, where he reported on real estate, manufacturing and transportation beats. He also completed an investigative-reporting fellowship at the Columbia University School of Journalism, where he earned a Master's degree. URL: <https://www.wsj.com/articles/spacexs-future-depends-on-a-gigantic-rocket-and-42-000-internet-satellites-11640687404>, KR

SpaceX wants to use its Starship rocket for the kind of voyages to Mars and beyond that Elon Musk has long dreamed of pursuing.

Starship also forms an important foundation of the future business strategy at his space company, which wants to use the vehicle in part to build out Starlink, the satellite-internet service many investors believe could eventually form the bulk of the company’s revenue.

Space Exploration Technologies Corp., the formal name for the company Mr. Musk founded almost two decades ago, faces steep challenges in engineering Starship into a reusable rocket that would sharply drive down launch costs. Mr. Musk recently said the ship takes up more of his time than any other single initiative, and warned the vehicle, along with the internet service, are creating significant challenges for the company.

“Starship is a hard, hard, hard, hard project,” he said at a December event hosted by The Wall Street Journal. “This is the biggest rocket ever made.”

Starship, which would be blasted to orbit on a booster dubbed Super Heavy, stands 160 feet tall and has a diameter of 30 feet, creating room to send hundreds of Starlink satellites to orbit at once, more than the several dozen it is able to deploy right now on one of its Falcon 9 rockets. More than half of the launches tracked by U.S. flight-safety regulators that the company has conducted the past two years have been Starlink deployments. The company plans to rapidly boost the pace of satellite launches in the years ahead. SpaceX, in a July presentation to the Federal Communications Commission, said it had so far launched around 1,800 Starlink satellites and was active in more than 20 countries. The FCC has authorized SpaceX to launch around 12,000 satellites, but the company wants to add at least around 30,000 more, according to commission filings. Mr. Musk said at an industry conference this summer that SpaceX is likely to invest at least $5 billion and perhaps as much as $10 billion in Starlink before it fully starts generating cash, with ongoing investments after that. In a November tweet, Mr. Musk said if severe global recession cut into the availability of capital and liquidity while SpaceX was losing billions on Starship and Starlink, then bankruptcy “while still unlikely, is not impossible.” Over the past two years, the company began equity sales that raised at least $3.8 billion, according to filings that some private companies like SpaceX may have to disclose under Securities and Exchange Commission rules. SpaceX doesn’t release financial statements. A spokesman for the company pointed to a recent statement posted to SpaceX’s website that said in part the company’s year ahead would include a potential first orbital mission for Starship and expanding Starlink. Mr. Musk unveiled Starlink in 2015, aiming to develop a network of smaller satellites in a low orbit around Earth that could provide high-speed internet access around the world. SpaceX set out aggressive targets for Starlink, projecting that year more than 40 million subscribers by 2025, The Wall Street Journal previously reported. SpaceX said this summer that it had around 140,000 Starlink customers. Starlink lists costs for the service at $99 a month, with a $499 charge for an internet terminal—or roughly half the amount it costs the company to make it, Mr. Musk said over the summer. Other companies, such as London-based OneWeb, are also creating networks of internet satellites, and an Amazon.com Inc. unit plans to do so in the future. Around 3.7 billion people globally remain unconnected to the internet, according to a recent report from two agencies at the United Nations, while U.S. officials have worked for years to improve access to high-speed internet in underserved areas. “There’s a need for connectivity in places that don’t have it right now,” or where connections are very limited or expensive, Mr. Musk said this summer. In addition to consumers, Mr. Musk has indicated Starlink could offer services to other businesses, recently saying in a tweet that fliers should ask airlines for Starlink.

The internet service creates a source of demand for Starship, said Matt Weinzierl, a Harvard Business School professor who has studied the space economy.

Historically, those behind big rockets without a clear use for them have faced challenges: “If we don’t know why we built them, it can be a real losing proposition,” Mr. Weinzierl said, adding he thinks the company will identify other uses for the rocket.

Starship, meanwhile, has at least one confirmed customer in place: the National Aeronautics and Space Administration, which in April awarded SpaceX a $2.9 billion contract to develop a Starship to take astronauts back to the surface of the moon.

As it works to develop Starship and Starlink, SpaceX has built out a business based on government customers such as NASA and on commercial-satellite operators.

The value of its contracts with public-sector clients amounted to $2.2 billion for the federal government’s 2021 fiscal year, up from $195 million a decade earlier, according to a contracts database. SpaceX typically charges private clients $60 million to $65 million for Falcon 9 launches, according to people familiar with the matter.

The company’s valuation has soared as it proved its spacecraft like Falcon 9 could work as intended and as it started constructing its fleet of Starlink satellites. SpaceX was valued at $100 billion in October, more than double its valuation in the summer of 2020, according to PitchBook. The latest figure rests heavily on prospects for Starlink because the potential demand for the high-speed internet service globally is much larger than the size of the launch market, investors say.

#### Specifically, Starship from spaceX is the most prominent solution

O’Callaghan, 21, 12/7/21, MIT Review, “How SpaceX’s massive Starship rocket might unlock the solar system—and beyond”, Jonathan O'Callaghan is a freelance space journalist based in London, UK who covers commercial spaceflight, astrophysics, and space exploration. URL: <https://www.technologyreview.com/2021/12/07/1041420/spacex-starship-rocket-solar-system-exploration/>, KR

Much has already been made of Starship’s human spaceflight capabilities. But the rocket could also revolutionize what we know about our neighboring planets and moons. “Starship would totally change the way that we can do solar system exploration,” says Ali Bramson, a planetary scientist from Purdue University. “Planetary science will just explode.”

If it lives up to its billing, scientists are already talking about sending missions to Neptune and its largest moon in the outer solar system, bringing back huge quantities of space rock from Earth’s moon and Mars, and even developing innovative ways to protect Earth from incoming asteroids.

Starship—which is being built at a Texas site dubbed “Starbase”—consists of a giant spaceship on top of a large booster, known as Super Heavy. Both can land back on Earth so they can be reused, reducing costs. The entire vehicle will be capable of lifting 100 metric tons (220,000 pounds) of cargo and people into space on regular low-cost missions. The volume of usable space within Starship is a whopping 1,000 cubic meters—big enough to fit the entire Eiffel Tower, disassembled. And that’s got scientists excited.

“Starship is, like, wow,” says James Head, a planetary scientist from Brown University.

In mid-November, speaking in a publicly accessible virtual meeting about Starship hosted by the US National Academies of Sciences, Engineering, and Medicine, Musk discussed the project’s scientific potential. “It’s extremely important that we try to become a multiplanet species as quickly as possible,” he said. “Along the way, we will learn a great deal about the nature of the universe.” Starship could carry “a lot of scientific instrumentation” on flights, said Musk—far more than is currently possible. “We’d learn a tremendous amount, compared to having to send fairly small vehicles with limited scientific instrumentation, which is what we currently do,” he said.

“You could get a 100-ton object to the surface of Europa,” said Musk.

Cheap and reusable

Central to many of these ideas is that Starship is designed to be not just large but cheap to launch. Whereas agencies like NASA and ESA must carefully choose a smattering of missions to fund, with launch costs in the tens or hundreds of millions of dollars, Starship’s affordability could open the door to many more. “The low cost of access has the potential to really change the game for science research,” says Andrew Westphal, a lecturer in physics at the University of California, Berkeley, with flights potentially as low as $2 million per launch. “You can imagine privately financed missions and consortia of citizens who get together to fly things.”

NASA has selected SpaceX’s Starship as the lander to take astronauts to the moon

When the first astronauts in over 50 years set foot on the moon, they’ll be riding to the surface aboard Starship.

What’s more, Starship has a key advantage over other super-heavy-lift rockets in development, such as NASA’s much-delayed Space Launch System and Blue Origin’s New Glenn rocket. The upper half of the rocket is designed to be refueled in Earth orbit by other Starships, so more of its lifting capability can be handed over to scientific equipment rather than fuel. Taking humans to the moon, for example, might require eight separate launches, with each consecutive “tanker Starship” bringing up fuel to the “lunar Starship” that then makes its way to the moon with scientific equipment and crew.

Scientists are now starting to dream of what Starship might let them do. Earlier this year, a paper published by Jennifer Heldmann of NASA Ames Research Center explored some of the scientific opportunities that might be opened by Starship missions to the moon and Mars. One great benefit is that Starship could carry full-sized equipment from Earth—no need to miniaturize it to fit in a smaller vehicle, as was required for the Apollo missions to the moon. For example, “you could bring a drilling rig,” says Heldmann. “You could drill down a kilometer, like we do on Earth.” That would afford unprecedented access to the interior of the moon and Mars, where ice and other useful resources are thought to be present. Before, such an idea have been “a little bit insane,” says Heldmann. But with Starship, “you could do it, and still have room to spare,” she adds. “What else do you want to bring?”

Because Starship can land back on Earth, it will also—theoretically—be able to bring back vast amounts of samples. The sheer volume that could be returned, from a variety of different locations, would give scientists on Earth unprecedented access to extraterrestrial material. That could shed light on a myriad of mysteries, such as the volcanic history of the moon or “the question of life and astrobiology” on Mars, says Heldmann.

Starship could also enable more extravagant missions to other locations, either via a direct launch from Earth or perhaps by using the moon and Mars as refueling stations, an ambitious future envisioned by Musk.

#### Space exploration solves extinction and endless resource wars.

Collins 10 [Patrick Collins, professor of economics at Azabu University in Japan, and a Collaborating Researcher with the Institute for Space & Astronautical Science, as well as adviser to a number of companies, Adriano V. Autino is President of the Space Renaissance International; Manager, CEO/CTO, Systems Engineering Consultant / Trainer at Andromeda Systems Engineering LLC; and Supplier of methodological tools and consultancy at Intermarine S.p.A, Acta Astronautica, Volume 66, Issues 11–12, June–July 2010, “What the growth of a space tourism industry could contribute to employment, economic growth, environmental protection, education, culture and world peace”, Pages 1553–1562]

7. World peace and preservation of human civilisation

The major source of social friction, including international friction, has surely always been unequal access to resources. People fight to control the valuable resources on and under the land, and in and under the sea. The natural resources of Earth are limited in quantity, and economically accessible resources even more so. As the population grows, and demand grows for a higher material standard of living, industrial activity grows exponentially. The threat of resources becoming scarce has led to the concept of “Resource Wars”. Having begun long ago with wars to control the gold and diamonds of Africa and South America, and oil in the Middle East, the current phase is at centre stage of world events today [37]. A particular danger of “resource wars” is that, if the general public can be persuaded to support them, they may become impossible to stop as resources become increasingly scarce. Many commentators have noted the similarity of the language of US and UK government advocates of “war on terror” to the language of the novel “1984” which describes a dystopian future of endless, fraudulent war in which citizens are reduced to slaves.

7.1. Expansion into near-Earth space is the only alternative to endless “resource wars”

As an alternative to the “resource wars” already devastating many countries today, opening access to the unlimited resources of near-Earth space could clearly facilitate world peace and security. The US National Security Space Office, at the start of its report on the potential of space-based solar power (SSP) published in early 2007, stated: “Expanding human populations and declining natural resources are potential sources of local and strategic conflict in the 21st Century, and many see energy as the foremost threat to national security” [38]. The report ended by encouraging urgent research on the feasibility of SSP: “Considering the timescales that are involved, and the exponential growth of population and resource pressures within that same strategic period, it is imperative that this work for “drilling up” vs. drilling down for energy security begins immediately” [38].

Although the use of extra-terrestrial resources on a substantial scale may still be some decades away, it is important to recognise that simply acknowledging its feasibility using known technology is the surest way of ending the threat of resource wars. That is, if it is assumed that the resources available for human use are limited to those on Earth, then it can be argued that resource wars are inescapable [22] and [37]. If, by contrast, it is assumed that the resources of space are economically accessible, this not only eliminates the need for resource wars, it can also preserve the benefits of civilisation which are being eroded today by “resource war-mongers”, most notably the governments of the “Anglo-Saxon” countries and their “neo-con” advisers. It is also worth noting that the $1 trillion that these have already committed to wars in the Middle-East in the 21st century is orders of magnitude more than the public investment needed to aid companies sufficiently to start the commercial use of space resources.

Industrial and financial groups which profit from monopolistic control of terrestrial supplies of various natural resources, like those which profit from wars, have an economic interest in protecting their profitable situation. However, these groups’ continuing profits are justified neither by capitalism nor by democracy: they could be preserved only by maintaining the pretence that use of space resources is not feasible, and by preventing the development of low-cost space travel. Once the feasibility of low-cost space travel is understood, “resource wars” are clearly foolish as well as tragic. A visiting extra-terrestrial would be pityingly amused at the foolish antics of homo sapiens using long-range rockets to fight each other over dwindling terrestrial resources—rather than using the same rockets to travel in space and have the use of all the resources they need!

7.2. High return in safety from extra-terrestrial settlement

Investment in low-cost orbital access and other space infrastructure will facilitate the establishment of settlements on the Moon, Mars, asteroids and in man[/woman]-made space structures. In the first phase, development of new regulatory infrastructure in various Earth orbits, including property/usufruct rights, real estate, mortgage financing and insurance, traffic management, pilotage, policing and other services will enable the population living in Earth orbits to grow very large. Such activities aimed at making near-Earth space habitable are the logical extension of humans’ historical spread over the surface of the Earth. As trade spreads through near-Earth space, settlements are likely to follow, of which the inhabitants will add to the wealth of different cultures which humans have created in the many different environments in which they live.

Success of such extra-terrestrial settlements will have the additional benefit of reducing the danger of human extinction due to planet-wide or cosmic accidents [27]. These horrors include both man-made disasters such as nuclear war, plagues or growing pollution, and natural disasters such as super-volcanoes or asteroid impact. It is hard to think of any objective that is more important than preserving peace. Weapons developed in recent decades are so destructive, and have such horrific, long-term side-effects that their use should be discouraged as strongly as possible by the international community. Hence, reducing the incentive to use these weapons by rapidly developing the ability to use space-based resources on a large scale is surely equally important [11] and [16]. The achievement of this depends on low space travel costs which, at the present time, appear to be achievable only through the development of a vigorous space tourism industry.

### 5

#### States should:

#### establish a national space policy declaring disputes over international space law and policy should be resolved via compulsory and binding arbitration through the Permanent Court of Arbitration (PCA).

#### Submit private entities ought not appropriate outer space via large satellite constellations in lower earth orbit for binding arbitration through the PCA pursuant to the Optional Rules for the Arbitration of Disputes Relating to Outer Space Activities.

#### not shirk full compliance with the tribunal’s rulings on matters relating to outer space activities.

#### That establishes compulsory jurisdiction over the plan via the PCA, using the new Optional Space Rules—this is especially beneficial when relating to private agents.

Kilgore 18 – Experienced international law & dispute mediation attorney, writing for the trade publication of the Federal Bar Susan Cone Kilgore, Attorney advising clients on international law issues & dispute mediation with the Leeser Law Firm PLLC, Former adjunct professor of law with the University of Houston Law Center, over 30 years of legal experience, primarily in various federal government positions including trying numerous federal cases and serving as Assistant United States Attorney for the Western District of Texas, former General Counsel for a telecommunications provider, former FBA vice president for the Fourth Circuit, Arbitration Rules for Disputes Arising from Outer Space Activity, The Federal Lawyer - Federal Bar Association, March 2018, <http://www.fedbar.org/Resources_1/Federal-Lawyer-Magazine/2018/March/Features/Arbitration-Rules-for-Disputes-Arising-from-Outer-Space-Activity.aspx?FT=.pdf> recut 2-15-2022 amrita

The Optional Rules state that the secretary general of the PCA has the authority to “govern” PCA arbitrations.19 Jurisdiction is established by Article 1, paragraph 1: Where **parties have agreed that disputes between them** … whether contractual or not, shall be referred to arbitration under [these rules]…. The characterization of the dispute as relating to outer space is not necessary for jurisdiction where parties have agreed to settle a specific dispute under these rules.20 This is a broad statement of jurisdiction—as it should be—for a voluntary resolution process. The advisory group considered a subject matter jurisdiction test, but because the advisory group wanted to serve the greater intent to use arbitration as a dispute resolution mechanism, they did not included any test or limitation.21 The **rules allow the parties to determine whether to apply the rules**, whether to modify the rules, and do not require the dispute to be characterized as relating to outer space. Jurisdiction is further expanded in Article 3, paragraph 1: The party or parties initiating recourse to arbitration … shall communicate to … the International Bureau a notice of arbitration. And Article 3, paragraph 3(d): The notice of arbitration shall include … identification of any rule, decision, agreement, contract, convention, treaty, constituent instrument of an organization or agency, or relationship out of, or in relation to which, the dispute arises.22 This **language is more expansive than the UNCITRAL** rules.23 The Optional Rules, by these provisions, recognize and **account for** the **various constituents—from states to private actors**—**and the various sources of law that affect space activities**.24

#### Solves and establishes effective PCA arbitration for space—they’ll agree with the plan, which solves the aff, but allow the effectiveness of PCA arbitration to be established for outer space.

Goh 7 – Associate Prof of Law-Nat’l U of Singapore Dr. Gérardine Meishan Goh, Adjunct Associate Professor, Faculty of Law- National University of Singapore, *Dispute Settlement in International Space Law: A Multi-Door Courthouse for Outer Space*, Martinus Nijhoff Publishers, 2007, book accessible at <https://openaccess.leidenuniv.nl/bitstream/handle/1887/11860/Thesis.pdf?sequence=10> recut 12-15-2022 amrita

The Enforcement of the Rule of Law in Outer Space International law may be flawed and deficient in some aspects, but it is more often observed than violated. This is certainly the case as well with international space law. Further, it is submitted that a permanent, compulsory dispute settlement mechanism will make a substantial contribution to the development of the corpus juris gentium. As such it will improve international space law and enhance the role of dispute settlement in space activities.156 In resolving disputes within the legal framework, the dispute settlement mechanism will interpret the law through its application. Each dispute settled is a step in the evolution of international space law.157 Probably the most important reason for the establishment of a sectorialized dispute settlement mechanism for space disputes that is permanent and compulsory is for the enforcement of the rule of law in outer space. This mechanism would provide a viable alternative to any extra-legal and illegal methods of redress or conflict resolution. This mechanism would perform three tasks in this regard: 1. Establish international space law as a special sector of international law through the declaration of the law; 2. Increase the political attractiveness of accepting international legal norms in space activities with a built-in system for reform and review; and 3. Maintain outer space for exclusively peaceful purposes by ensuring that conflicts are settled peacefully rather than through the use or threat of the use of force. This section will deal with these three factors in sequence. One of the most important reasons for establishing a permanent, compulsory dispute settlement mechanism is that it allows for the development of international space law as a specialized branch of international law. This dispute settlement mechanism will allow for the declaration of the law through its application. As more disputes arising from space activities are settled through legal means, this allows the corpus of international space law to be gradually built up. The declaration of the law is essential for its progressive evolution, in particular in young fields such as international space law. The formulation of the law in this regard allows for its growth and enforcement in practical matters. The second factor is that a compulsory, permanent dispute settlement mechanism will increase the political appeal of accepting international legal rules governing space activities. The existence of a dispute settlement mechanism implies a solid framework within which the law can be reviewed and reformulated as necessary. This allows the law to progressively develop together with changes in social and technological innovations. With a built-in system for such review and changes, actors will likely be more disposed to accept international space law as the governing framework for space activities. This furthers the cause of the enforcement of the rule of law in outer space activities. The most urgent and important reason for the adoption of a permanent, compulsory dispute settlement mechanism to ensure the enforcement of the rule of law is that it maintains outer space for exclusively peaceful purposes. Such a dispute settlement mechanism ensures that disputes are settled peacefully within the legal framework, rather than through the use or threat of use of force. This is a crucial argument as to the reason for the establishment of such a mechanism. The international legal order is essential to the maintenance of international peace and security. Explicitly or implicitly, international law establishes and enforces the general jus cogens principles that all disputes should be settled peacefully.158 This crystallizes each actor’s interest in the maintenance of international order, and international peace and security. Dispute settlement within the international legal framework also more expressly establishes norms, procedures and institutions that facilitate conflict avoidance and dispute settlement. In the latter case especially, international law provides relevant regulations and legal norms that influence actors’ perceptions of legitimacy.

This guides their efforts in reaching settlement of any potential dispute. Further, to the extent that relevant legal obligations are clear, actors are less likely to pursue a course of action that might give rise to disputes. Should any such disputes nonetheless arise, parties will be able to settle them more straightforwardly based on clear relevant laws. Even if parties elect to settle disputes through non-legal, non-binding forms of dispute settlement, such as negotiation, they typically bargain in the shadow of the law. The rule of law in the international order also provides a framework by which actors can commit themselves to the principle of peaceful settlement of disputes. It also allows them to institute detailed dispute settlement methodologies. This allows the enforcement of the rule of law through the compromise on reaching a legal settlement. The maintenance of international peace and security in outer space is at a particularly crucial juncture. The legal regime that governs military, commercial and scientific activities in outer space presently lacks coherence. It is increasingly insufficient to deal with the challenges raised by the disparate actors involved in space activities. Without a concentrated endeavor to establish a workable dispute settlement mechanism and a comprehensive legal order for outer space, there is a real possibility that the lacuna will be filled with military competition instead. This will doubtless have immense destabilizing consequences for international peace and security. To avoid a military confrontation or an actual conflict in outer space, actors on the international plane must be subject to the rule of law. In this regard, the establishment of a dispute settlement mechanism would be in the interests of the global military, commercial, political and scientific constituencies. The dispute settlement mechanism will ensure that the future of space activities will be presided over by the long-term interests of law rather than the short-term interests of the balance of power. The predominant concern would be to manage space activities while highlighting the crucial role of international space law in the preservation of outer space for exclusively peaceful purposes. The dispute settlement mechanism showcases the benefits of multilateral cooperation within a legal regime as the best path towards the protection of various interests in space. This ensures that no single power dominates the space industry, and threatens the freedom of access to space by other actors. The dispute settlement mechanism will ensure that any power-play will be restrained by recourse to legal rules. Any interests in outer space would then be pursued solely in the context of an evolved, expressed legal framework on the basis of mutual benefit and reciprocity. The dearth of a proper dispute settlement mechanism in international space law could lead to two potentially disastrous scenarios. The first is military dominance by a space-faring power, and the second is a fragmented unilateral interpretation of the law by various parties. The first scenario envisages the unilateral imposition of one party’s perspectives through power politics and military dominance. This was the model of the initial two decades of space exploration, where the two superpowers of the United States and the former Soviet Union, the only space-faring States at the time, held sway over the development of international space law through their actions. Without a proper dispute settlement mechanism to articulate the framework of international space law, there is a clear and present danger of a powerful party taking advantage of the immensely unbalanced distribution of power and influence in the space field. This party could then enforce its own hegemonic order that promotes only its own interests and defends only its own actions. This will inevitably lead to a monopoly on the use and exploration of outer space, and the denial of access to space to other parties. It is clear that such a scenario will not take any heed of international treaties and international law. In fact, any existing restraint imposed by the law would likely be swept away as an undesirable restriction on that party’s assertion of power and sovereignty in outer space.159 The second scenario envisages the continuation of the status quo ante, without the development of any mechanism for the settlement of disputes. The existing practice of laboring under disparate elucidations of ostensibly mutual but imprecisely specified principles is the norm. Parties pay lip-service to whatever current regulations there are, and seek to modify the legal framework incrementally whenever possible. International space law would be shaped by unilateral interpretations of general principles and self-determining policies. Any normcreation would proceed in an ad hoc, piecemeal fashion. Neither one of the scenarios is sustainable for the further progressive evolution of international space law. They encompass two miasmas for the development of international law: the threat of the use of force, as well as the fragmentation of the international legal system. It is submitted that a more detailed normative system may provide the solution needed. An established dispute settlement mechanism would ensure that commercial, political, security and scientific interests in outer space are protected. This mechanism would accentuate pan-party cooperation, with widespread involvement by all stakeholders in decision-making and norm-creation regarding space activities. The establishment of a sectorialized dispute settlement mechanism that is compulsory and permanent would enforce the rule of law also in other beneficial ways. It would reduce the resort to unjustified countermeasures on the part of allegedly injured parties. The establishment of such a dispute settlement mechanism would, by the fairest means possible, restrict the facult´e of parties to resort to illegal countermeasures. Also, an effective dispute settlement mechanism would reduce friction between stakeholders, and bring about a more balanced and equitable allocation of benefits and settlement of disputes. This would work to prevent against any unjustified countermeasures and counterreprisals and the intensification of unilateral measures that would serve only to ignite further friction between the parties. The result on the whole would be based on the rule of law and would thus likely be more just than those attained by resort to unilateral coercion. The upshot is that such a dispute settlement mechanism is that it reduces the need for actors to rely exclusively upon their own ability to resort to effective unilateral reaction, which in space activities is likely to prove costly and uncertain to produce the desired results. Parties would have the opportunity to better defend themselves before an effective dispute settlement mechanism rather than being coerced to accept the unilateral determinations of a potentially more powerful opponent. Considering the high degree of economic risk and technical interdependence of parties in space activities, this would be a great motivating factor for actors to accept the enforcement of the rule of law in outer space activities through the establishment of such a dispute settlement mechanism.160 Thus, a generally established dispute settlement mechanism in space law matters would not only benefit the international community by reducing tension between the various actors, but is also a requisite condition for augmenting the dependability and efficacy of this new field of international law. Improved confidence in the system of international regulation of space activities would moreover boost the readiness of actors to extend space law regulation to specific fields not yet included. There is now a substantial body of positive international space law comprising substantive law regarding the rights and obligations of actors in space activities. However, there needs to be a framework of procedural rules for the implementation and enforcement of these rules of substantive law in cases of dispute. This procedural framework for dispute settlement is still missing in international space law today. This lacuna gives great reason for concern today as to the actual usefulness of space law. Presently, the practical application of space activities confronts the international legal framework with a great risk of potential disputes. These arise both in the application of international space law principles, as well as in the disparate fields of applied space activities. The commercialization of outer space, the potential benefits to be derived there from, and the proliferation of activities in outer space has increased the urgency for the establishment of a proper dispute settlement mechanism. This urgent need if ignored would lead only to the detriment of the efficacy, relevance and evolution of the framework of international space law.

#### Strong arbitration framework solves war.

Sievert & Norris 18 – Professors of International Affairs & Chinese Foreign Policy at the Bush School-Texas A&M Ronald Sievert, Associate Professor of the Practice and Director of the Certificate in Advanced International Affairs Program in the Bush School of Government & Public Service at Texas A&M University, and William Norris, associate professor of Chinese foreign and security policy at the Bush School and former associate focused on US-China escalation risks with the Nuclear Policy Program at the Carnegie Endowment for International Peace, ed. by Catesby Holmes, Global Affairs Editor—The Conversation, Arbitration as a way out of the North Korean crisis, 2018, https://theconversation.com/arbitration-as-a-way-out-of-the-north-korean-crisis-91899

According to latest polls, a majority of Americans see North Korea as the greatest immediate threat to the U.S. with as many as 73 percent concerned about Kim Jung Un’s use of nuclear weapons. The world lives in fear that one more provocation in the form of a North Korean missile or nuclear test could lead to major war on the Korean Peninsula. It is true that tensions have lessened recently with North and South Korea holding talks and, on March 8, President Trump accepting an invitation to meet with North Korean leader Kim Jung-Un “by May.” But past efforts to engage the North have often left participants unsatisfied and disappointed. If these talks fail or lead to frustration, the temptation to resort to military force could ratchet up quickly. And if such direct engagement efforts fall short of expectations, international arbitration might provide – as it has in the past – an alternative to conflict. As scholars who study international law and Asian politics, our question is: Could arbitration help resolve the present crisis with North Korea? We have been here before In 1904, war between Russia and the United Kingdom appeared imminent after the Russian Baltic fleet fired on and severely damaged six English fishing boats, killing two fisherman and wounding six others, on Dogger Bank, just a few miles off the coast of England. The British press demanded that the “wretched Baltic fleet” be destroyed, and the Royal Navy eagerly maneuvered to do just that. War was avoided at the last minute when the foreign ministers of both countries agreed to arbitration presided over by commissioners from Britain, Russia, the United States, France and Austria. The result was a four-month interval that allowed time for tempers to cool as well as a complete inquiry and an analysis of the incident. Ultimately Russia paid damages for the incident on Dogger Bank, and the U.K. and Russian governments were both able to step away from war while saving face with their public. A positive track record The United States, too, has been party to disputes settled by arbitration. The most prominent of these are the “Alabama claims” in which the U.S. – after the Civil War – demanded reparations from the U.K. for having supplied and armed Confederate ships such as the CSS Alabama, despite being ostensibly neutral. These “Confederate raiders” had caused millions in damages to American shipping. Such was the tension between the two countries that some American politicians suggested that the U.S. annex Canada, which was then under British rule. Instead, diplomacy prevailed and the U.S. and the U.K. finally agreed in 1871 to an arbitration panel – composed of Switzerland, Italy, Brazil, U.S. and the U.K. – that awarded US$15 million to Washington and, critically, also set the stage for a lasting peace between the two countries. After this arbitration, politicians, including Ulysses S. Grant, thought the world could be entering an “epoch when a court recognized by all nations will settle international differences” so as to avoid major military conflict. Indeed, such a court was created in 1899 at the Convention on Pacific Settlement of International Disputes and still exists with the Permanent Court of Arbitration in The Hague, which has been actively involved in settling current disputes in India, Malta, Italy, Timor, Australia and South Africa. Given this positive historical track record, could arbitration help avoid war on the Korean Peninsula today? Why it could work This is not far-fetched. It is impossible to underestimate the enmity between Russia and the U.K. in 1904 or England and the U.S. in the mid-19th century, but arbitration still took place. All three of these countries were also extremely nationalistic in an age of great power expansion. Their concept of individual sovereignty was not unlike that which kept the U.S. in the 20th century from signing on to international conventions such as the U.N. Law of the Sea [LOST] and the International Criminal Court. What it took to get to arbitration, in the case of Dogger Bank, was a third party like France concerned about being dragged into a larger conflict – think China today – and individual government officials who were willing to honestly seek peace. So, assuming that there would be willingness on the American and Korean sides to this, how might it work? How it could work One advantage of such a commission is that it could make relatively objective, logical and practical decisions that politicians could never agree to if they wanted to keep their popular base and their defense establishments happy. For example, it is likely that President Donald Trump could not, at present, agree to let North Korea keep nuclear weapons. At the same time, despite what Kim Jong Un has told the South Koreans, his generals would probably not be happy with a unilateral promise to cease testing in the Pacific. Supporting an international arbitration mechanism would certainly offer China a tempting opportunity to restore its international legal image following its rejection of the 2016 U.N. ruling against it and its claims in the South China Sea. So who would sit on this arbitration panel? We believe it would make sense to decide this on the basis of the U.N. Security Council’s permanent members and the leading countries in the region: China, Russia, France, the U.K. and Japan. The next question is, what would such an arbitration court decide? A possible outcome There are many possible scenarios, but we believe the following would be realistic, fair and effective. Many countries – from France, the U.K and the U.S. to India, Israel and Pakistan – have nuclear weapons. Their primary motive is not aggression but self-preservation. It seems reasonable that this is North Korea’s main motivation too. All nations today are also acutely aware of what happened in Libya to Gaddafi and in Iraq when Saddam did not have weapons to defend against invasion. North Korea, therefore, could make a case to keep its present stock of nuclear weapons. Although South Koreans have reported a willingness on Pyongyang’s part to give them up, this remains one of the most contentious elements of any resolution. North Korea would freeze its intercontinental ballistic missile program (those missiles with minimum range of 3,400 miles or 5,500 km) and promise not to further test nuclear weapons or to fire their missiles toward or over any other nations. China would promise to come to the aid of North Korea if invaded – after all, it has come to its aid before, in 1950, during the Korean War.. But, critically, the Chinese would also promise that if North Korea acted unilaterally or distributed its nuclear weapons to third parties, then China would back the elimination of the present regime. This last promise would be heralded as a serious shift in China’s strategy and would send an unambiguous message to the North Koreans while simultaneously signaling China’s constructive engagement in favor of stability on the Korean Peninsula. The point is that North Korea does not want China as an enemy. China, for its part, is loathe to see a nuclear-armed North Korea. For a number of years, China has felt that it has lost a good deal of influence and control over its North Korean ally. This sort of declaration from China would help restore China’s influence while simultaneously reining in the Kim regime. Protecting the US President Trump’s desire to put America first seeks to avoid getting bogged down in unnecessary foreign entanglements such as a significant war on the Korean Peninsula. At the same time, the president has an obligation to protect and defend the United States from a potential nuclear threat. Although the arbitration route could be vulnerable to domestic political critiques of “outsourcing sovereignty” it might, nonetheless, offer a way out of the current menu of unpalatable options. It is certainly far better than a disastrous war.

## Case

### Top level

#### Big problem with the aff is that “large satellite constellations” isn’t a term of art and can be circumvented with a slightly less satellite constellation-- **Their solvency ev concedes this - we read blue**

1AC Takaya et al 18 “The Principle of Non-Appropriation and the Exclusive Uses of LEO by Large Satellite Constellations” Yuri Takaya-Umehara [Visiting researcher at the University of Tokyo since April 2017. She was affiliated to the Kobe University to provide a course on space law to post-graduate students (2011-2017). She chairs a working group on the formulation of global norms in space law organized by the Keio University since 2018. She obtained her Ph.D. degree at the IDEST of Paris XI University in France, LL.M. at the Leiden University in the Netherlands.] Quentin Verspieren [Ph.D. in public policy @ The University of Tokyo, Assistant Professor of Space Policy @UTokyo, General Manager, Global Strategy @ArkEdge Space Inc., Associate Research Fellow @ESPI] Goutham Karthikeyan [The University of Tokyo & Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (ISAS-JAXA)] 2018 https://www.researchgate.net/publication/328094878\_The\_Principle\_of\_Non-Appropriation\_and\_the\_Exclusive\_Use\_of\_LEO\_by\_Large\_Satellite\_Constellations SM

* LSC = large satellite constellations
* Outlines “L”SC thresholds

By investigating expected large satellite constellation projects and by reviewing existing interpretations of international space law, this paper argues that the exclusive use of specific LEO orbits by a large constellation of satellite could constitute a violation of the non-appropriation principle by means of occupation and by means of use, drawing a parallel between orbits as resources and the exploitation of tangible mineral resources in space. Based on this, the important question to be raised is what constitutes an exclusive use of a specific orbit. In other words, an important hurdle in the concrete evaluation of whether a planned or established constellation potentially violates the non-appropriation principle through an exclusive use of LEO resides in the lack of clear definition on what can be considered an exclusive use. While the authors claim that legal issue can be clearly solved in abstracto, it naturally shifts towards a regulatory challenge.

This regulatory challenge consists in first defining qualitatively what is the exclusive use of an orbit before translating this definition into measurable, technical rules. In this paper, the authors define an exclusive use of an orbit by a state40 as any use that would prevent/hinder the usage of the same orbit by any other state. Translating this definition into an applicable regulation could consist in defining a threshold of orbital collision risk or a threshold of density of satellites along an orbit based on its altitude, shape, relative velocity of neighbouring objects, etc. It is however not the purpose of this space law paper. What is more appropriate here is to think about which organization or forum would be in charge of elaborating this technical definition. Serious candidates could be the ITU, with excellent track-record in dealing with the use of the GEO region but which would have to review its “first come, first served” principle, or the UNCOPUOS, aiming for the widespread adoption of a new piece of international law. Moreover, even if its rules suffer from a low implementation rates, the IADC would be an appropriate discussion platform thanks to its very deep technical focus.6. Conclusion

The various announced projects of LSC, also called mega-constellations, push existing regulations and practices to their limit, forcing researchers and practitioners around the world to rethink the applicability of existing space law principles to this new trend. In this paper, the authors, after providing background information on current LSC plans as well as recalling the legal status of the LEO region, investigate whether the deployment of an LSC having an exclusive use of an orbit constitutes a violation of the nonappropriation principle as stated in OST Article II. This paper concludes that:

♣ The exclusive use of an orbit by an LSC constitutes a violation of the non-appropriation principle by means of occupation due to the innate nature of orbit being a specific location in space that can be occupied, but most notably by means of use, considering orbits as “limited natural resources” and invoking parallels with the exploitation of natural resources in outer space;

♣ ITU’s “first come, first served” principle is reaching its limits with current LSC projects and should be re-evaluated;

♣ The main challenge ahead is not legal but technical and regulatory and consists in defining precisely what can constitute an exclusive use of an orbit and in translating such definition into a clear regulation or code of conduct.

#### Private companies use and have historically used legal ambiguities to appropiate outer space

Stockwell 20 Legal ‘Black Holes’ in Outer Space: The Regulation of Private Space Companies Written by Samuel Stockwell This PDF is auto-generated for reference only. As such, it may contain some conversion errors and/or missing information. For all formal use please refer to the official version on the website, as linked below. Legal ‘Black Holes’ in Outer Space: The Regulation of Private Space Companies https://www.e-ir.info/2020/07/20/legal-black-holes-in-outer-space-the-regulation-of-private-space-companies/ SAMUEL STOCKWELL, JUL 20 2020

Lunar rock samples from the Apollo missions containing rare Earth resources, such as Helium-3 which produces more power and less waste than traditional nuclear reactors on Earth, have since fuelled incentives for extraterrestrial resource mining (Brearley, 2006: 44-46). This was further facilitated by suggestions that near-earth objects (NEOs) like the so-called ‘Anteros asteroid’ could comprise of over five trillion dollars’ worth of magnesium silicate and aluminium (Kramer, 2017: 131). Envisaging appropriation concerns that might arise from the future extraction of space assets by spacefaring nations, Article II of the UN OST declared that: “Outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means” (UN, 1967). The emphasis on claims of national sovereignty were intimately tied to the Cold War context at the time, where space activities were under the exclusive monopoly of governmental agencies and initiated for goals of military dominance or national prestige (Sachdeva, 2017: 210). However, the privatisation of the space industry that has occurred since the 1980s has meant that the legislation leaves an enormous amount of legal ambiguity and interpretation regarding the regulation of private resource mining in space. As Shaer (2016) demonstrates, the Article II provision fails to address either the exploitation of space for financial gain or the property claims of commercial enterprises (Shaer, 2016: 47). Nevertheless, Article VI of the UN OST asserts that: “States shall be responsible for national space activities whether carried out by governmental or non-governmental entities” (UN, 1967; own emphasis). Some scholars have suggested that this clause significantly restrains the activities of private space corporations by incentivising states to regulate their domestic organisations for fear of liability concerns (Abeyratne, 1998: 168). However, the US government recently enacted a piece of legislation which exploited this clause, in order to circumvent its own restrictions and strengthen US economic influence in space. The passage of the 2015 SPACE Act enabled US citizens to privately “possess, own, transport, use, and sell the resources” they obtain in outer space, whilst making careful consideration to deny national sovereign claims over such materials (Leon, 2018: 500). Yet, regardless of whether it is an American private company or public venture, the US is still satisfying its geopolitical interests; by exclusively siphoning off extra-terrestrial resources for American gain, the nation’s soft power is thereby extended at the expense of spacefaring adversaries such as China (Basu & Kurlekar, 2016: 65). Indeed NewSpace actors cleverly played on these strategic concerns prior to the bill’s passage, with billionaire space entrepreneur Robert Bigelow asserting that the biggest danger wasn’t private enterprises on the Moon, but that “America is asleep and does nothing, while China comes along… surveying and laying claim [to the Moon]” (Klinger, 2017: 222). The US government’s support for private space companies is also likely to lead to the reinforcement of Earth-bound wealth inequalities in space. Many NewSpace actors frame their long-term ambitions in space with strong anthropogenic undertones, by offering the salvation of the human race from impending extinction through off-world colonial developments (Kearnes & Dooren: 2017: 182). Yet, this type of discourse disguises the highly exclusive nature of these missions. Whilst they seem to suggest that there is a stake for ordinary citizens in the vast space frontier, the reality is that these self-described space pioneers are a member of a narrow ‘cosmic elite’ – “founders of Amazon.com, Microsoft, Pay Pal… and a smattering of games designers and hotel magnates” (Parker, 2009: 91).

#### Plan flaw – their plantext says lower Earth orbit which isn’t a term of art – voting issue for precision or worse case a reason they cant solve

NASA 21 (National Aerospace Agency) 11/17/2021 https://www.nasa.gov/leo-economy/faqs

What is LEO (Low-Earth Orbit)?

Low-Earth orbit (often known as LEO) encompasses Earth-centered orbits with an altitude of 2,000 km (1,200 mi) or less. For the purposes of the Commercial Use Policy, low-Earth orbit is considered the area in Earth orbit near enough to Earth for convenient transportation, communication, observation and resupply. This is the area where the International Space Station currently orbits and where many proposed future platforms will be located.

### Collisions

#### **Military space satellites have already been broken up by space debris – their escalation scenario is absurd**

Wall 21’ Home News Spaceflight Space collision: Chinese satellite got whacked by hunk of Russian rocket in March By Mike Wall published August 17, 2021 We may see more and more of these orbital smashups in the coming years. //RD Debatedrills

Yunhai 1-02's wounds are not self-inflicted. In March, the U.S. Space Force's 18th Space Control Squadron (18SPCS) reported the breakup of Yunhai 1-02, a Chinese military satellite that launched in September 2019. It was unclear at the time whether the spacecraft had suffered some sort of failure — an explosion in its propulsion system, perhaps — or if it had collided with something in orbit. We now know that the latter explanation is correct, thanks to some sleuthing by astrophysicist and satellite tracker Jonathan McDowell, who's based at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts. Sponsored Links Cupertino: Startup Is Changing the Way People Retire SmartAsset Related: The worst space debris events of all time Click here for more Space.com videos... CLOSE On Saturday (Aug. 14), McDowell spotted an update in the Space-Track.org catalog, which the 18SPCS makes available to registered users. The update included "a note for object 48078, 1996-051Q: 'Collided with satellite.' This is a new kind of comment entry — haven't seen such a comment for any other satellites before," McDowell tweeted on Saturday. He dove into the tracking data to learn more. McDowell found that Object 48078 is a small piece of space junk — likely a piece of debris between 4 inches and 20 inches wide (10 to 50 centimeters) — from the Zenit-2 rocket that launched Russia's Tselina-2 spy satellite in September 1996. Eight pieces of debris originating from that rocket have been tracked over the years, he said, but Object 48078 has just a single set of orbital data, which was collected in March of this year. "I conclude that they probably only spotted it in the data after it collided with something, and that's why there's only one set of orbital data. So the collision probably happened shortly after the epoch of the orbit. What did it hit?" McDowell wrote in another Saturday tweet. Yunhai 1-02, which broke up on March 18, was "the obvious candidate," he added — and the data showed that it was indeed the victim. Yunhai 1-02 and Object 48078 passed within 0.6 miles (1 kilometer) of each other — within the margin of error of the tracking system — at 3:41 a.m. EDT (0741 GMT) on March 18, "exactly when 18SPCS reports Yunhai broke up," McDowell wrote in another tweet. Thirty-seven debris objects spawned by the smashup have been detected to date, and there are likely others that remain untracked, he added. Despite the damage, Yunhai 1-02 apparently survived the violent encounter, which occurred at an altitude of 485 miles (780 kilometers). Amateur radio trackers have continued to detect signals from the satellite, McDowell said, though it's unclear if Yunhai 1-02 can still do the job it was built to perform (whatever that may be). Space Junk Clean Up: 7 Wild Ways to Destroy Orbital Debris Click here for more Space.com videos... McDowell described the incident as the first major confirmed orbital collision since February 2009, when the defunct Russian military spacecraft Kosmos-2251 slammed into Iridium 33, an operational communications satellite. That smashup generated a whopping 1,800 pieces of trackable debris by the following October. However, we may be entering an era of increasingly frequent space collisions — especially smashups like the Yunhai incident, in which a relatively small piece of debris wounds but doesn't kill a satellite. Humanity keeps launching more and more spacecraft, after all, at an ever-increasing pace. "Collisions are proportional to the square of the number of things in orbit," McDowell told Space.com. "That is to say, if you have 10 times as many satellites, you're going to get 100 times as many collisions. So, as the traffic density goes up, collisions are going to go from being a minor constituent of the space junk problem to being the major constituent. That's just math." We may reach that point in just a few years, he added. The nightmare scenario that satellite operators and exploration advocates want to avoid is the Kessler syndrome — a cascading series of collisions that could clutter Earth orbit with so much debris that our use of, and travel through, the final frontier is significantly hampered. RELATED STORIES — Who's going to fix the space junk problem? — Space junk removal is not going smoothly — The world needs space junk standards, G7 nations agree Our current space junk problem is not that severe, but the Yunhai event could be a warning sign of sorts. It's possible, McDowell said, that Object 48078 was knocked off the Zenit-2 rocket by a collision, so the March smashup may be part of a cascade. "That's all very worrying and is an additional reason why you want to remove these big objects from orbit,"

#### No Kessler Syndrome –

**1] Probability – 0.1% chance of a collision.**

**Salter 16** [(Alexander William, Economics Professor at Texas Tech) “SPACE DEBRIS: A LAW AND ECONOMICS ANALYSIS OF THE ORBITAL COMMONS” 19 STAN. TECH. L. REV. 221 \*numbers replaced with English words] TDI

The probability of a collision is currently low. Bradley and Wein estimate that the maximum probability in LEO of a collision over the lifetime of a spacecraft remains below one in one thousand, conditional on continued compliance with NASA’s deorbiting guidelines.3 However, the possibility of a future “snowballing” effect, whereby debris collides with other objects, further congesting orbit space, remains a significant concern.4 Levin and Carroll estimate the average immediate destruction of wealth created by a collision to be approximately $30 million, with an additional $200 million in damages to all currently existing space assets from the debris created by the initial collision.5 The expected value of destroyed wealth because of collisions, currently small because of the low probability of a collision, can quickly become significant if future collisions result in runaway debris growth.

**2] Time frame – Kessler effect 200 years away**

**Stubbe 17** [(Peter, PhD in law @ Johann Wolfgang Goethe University Frankfurt) “State Accountability for Space Debris: A Legal Study of Responsibility for Polluting the Space Environment and Liability for Damage Caused by Space Debris,” Koninklijke Brill Publishing, ISBN 978-90-04-31407-8, p. 27-31] TDI

The prediction of possible scenarios of the future evolution of the debris p o p ulation involves many uncertainties. Long-term forecasting means the prediction of the evolution of the future debris environment in time periods of decades or even centuries. Predictions are based on models84 that work with certain assumptions, and altering these parameters significantly influences the outcomes of the predictions. Assumptions on the future space traffic and on the initial object environment are particularly critical to the results of modeling efforts.85 A well-known pattern for the evolution of the debris population is the so-called Kessler effect’, which assumes that there is a certain collision probability among space objects because many satellites operate in similar orbital regions. These collisions create fragments, and thus additional objects in the respective orbits, which in turn enhances the risk of further collisions. Consequently, the num ber of objects and collisions increases exponentially and eventually results in the formation of a self-sustaining debris belt aroundthe Earth. While it has long been assumed that such a process of collisional cascading is likely to occur only in a very long-term perspective (meaning a time 1 n of several hundred years),87 a consensus has evolved in recent years that an uncontrolled growth of the debris population in certain altitudes could become reality much sooner.88 In fact, a recent cooperative study undertaken by various space agencies in the scope of i a d c shows that the current l e o debris population is unstable, even if current mitigation measures are applied. The study concludes:

Even with a 90% implementation of the commonly-adopted mitigation measures [...] the l e o debris population is expected to increase by an average of 30% in the next 200 years. The population growth is primarily driven by catastrophic collisions between 700 and 1000 km altitudes and such collisions are likely to occur every 5 to 9 years.89

#### 3] Public sector mining thumps

NASA 19 [“NASA Invests in Tech Concepts Aimed at Exploring Lunar Craters, Mining Asteroids,” NASA, June 11, 2019, <https://www.nasa.gov/press-release/nasa-invests-in-tech-concepts-aimed-at-exploring-lunar-craters-mining-asteroids>] TDI

NASA Invests in Tech Concepts Aimed at Exploring Lunar Craters, Mining Asteroids

Robotically surveying lunar craters in record time and mining resources in space could help NASA establish a sustained human presence at the Moon – part of the agency’s broader [Moon to Mars exploration](https://www.nasa.gov/specials/moon2mars/) approach. Two mission concepts to explore these capabilities have been selected as the first-ever Phase III studies within the [NASA Innovative Advanced Concepts](https://www.nasa.gov/niac) (NIAC) program.

“We are pursuing new technologies across our development portfolio that could help make deep space exploration more Earth-independent by utilizing resources on the Moon and beyond,” said Jim Reuter, associate administrator of NASA’s Space Technology Mission Directorate. “These NIAC Phase III selections are a component of that forward-looking research and we hope new insights will help us achieve more firsts in space.”

The Phase III proposals outline an aerospace architecture, including a mission concept, that is innovative and could change what’s possible in space. Each selection will receive as much as $2 million. Over the course of two years, researchers will refine the concept design and explore aspects of implementing the new technology. The inaugural Phase III selections are:

Robotic Technologies Enabling the Exploration of Lunar Pits

William Whittaker, Carnegie Mellon University, Pittsburgh

This mission concept, called Skylight, proposes technologies to rapidly survey and model lunar craters. This mission would use high-resolution images to create 3D model of craters. The data would be used to determine whether a crater can be explored by human or robotic missions. The information could also be used to characterize ice on the Moon, a crucial capability for the sustained surface operations of NASA’s Artemis program. On Earth, the technology could be used to autonomously monitor mines and quarries.

[Mini Bee Prototype to Demonstrate the Apis Mission Architecture and Optical Mining Technology](https://www.nasa.gov/directorates/spacetech/niac/2019_Phase_I_Phase_II/Mini_Bee_Prototype)

Joel Sercel, TransAstra Corporation, Lake View Terrace, California

This flight demonstration mission concept proposes a method of asteroid resource harvesting called optical mining.

Optical mining is an approach for excavating an asteroid and extracting water and other volatiles into an inflatable bag. Called Mini Bee, the mission concept aims to prove optical mining, in conjunction with other innovative spacecraft systems, can be used to obtain propellant in space. The proposed architecture includes resource prospecting, extraction and delivery.

#### No impact scenario – vaguely talks about countries like North Korea, South Korea, Japan and china but has 0 escalation scenario – who uses first, what weapons, who responds, draw in, etc. – also def doesn’t rise to the level of the nuclear war assumed by Edwards

#### No impact to hacking – this evidence lists past examples from 2008 and 2018 that didn’t escalate and states like Iran have tried and failed which prove it is difficult and unlikely – also massively increases the severity of the hacking they need to win happens

### Astronomy

#### 1] No asteroid threat – most recent evidence

Bartels 21 Meghan Bartels, 11-22-2021, "Just how many threatening asteroids are there? It's complicated.," Space, <https://www.space.com/how-many-asteroids-threaten-earth> DD AG

So you've heard that an asteroid could slam into Earth wreaking all sorts of havoc, but just how many space rocks out there actually threaten our planet?

It's complicated, because the answer depends on what you mean by threaten.

Let's start with the most important takeaway: NASA knows of zero asteroids large enough to do meaningful damage on Earth and currently on track to collide with our planet in the foreseeable future. But large asteroids hanging around Earth? We've spotted plenty of those, and scientists are discovering new near-Earth asteroids practically daily, with more than 27,000 identified to date.

We're racking up the numbers for these populations, but at the same time, there is no known threat right now to Earth," Kelly Fast, who is a near-Earth object observations program manager at NASA's Planetary Defense Coordination Office, told Space.com. "There's nothing, there's no asteroid that we know of that poses a significant threat to Earth."

And while it may seem paradoxical, the constant rise in near-Earth asteroid tallies turns out to be the best news possible if you're worried about a potential asteroid impact.

#### **2] Grush evidence is awful – their evidence is not about large constellations or how they prevent asteroid preparedness – super powertagged and just says maybe asteroid threat increases a little bit**

#### 3] Grush doesn’t say anything about asteroid threat even increasing it just says that asteroid threat exists – nothing about constellations

### Sino India

#### 1] No backlash – China has just said no to starlink which is fine – theyre wrong

#### 2] GOODWINS IS SO POWERTAGGED – it literally just says it will have impacts on political dimensions – not a damn thing about escalation this advantage is a joke and literally just says the word war once with no warrant of why we get to a legit war that might escalate

#### 3] Alt solvency – SpaceX can just avoid having Starlink fly over China

#### 4] Alt solvency – China can’t jam satellites that are just flying over – that’s the CIL about flyovers that was established back in the 60s and hasn’t been challenged since then