#### I affirm the resolution resolved: The appropriation of outer space by private entities is unjust.

#### “Appropriation of outer space” is a term of art that refers to the OST, which regulates private, national, and international conduct.

Thornburg 19 [Matthew, Associate Editor for the Michigan Journal of International Law; Vol 40; “Are the Non-appropriation Principle and the Current Regulatory Regime Governing Geostationary Orbit Equitable for All of Earth’s States?” <http://www.mjilonline.org/are-the-non-appropriation-principle-and-the-current-regulatory-regime-governing-geostationary-orbit-equitable-for-all-of-earths-states/>] brett

As the law currently stands, geostationary orbit – a constant orbital position above Earth’s equator – is governed by the OST and is therefore subject to the treaty’s attendant ban on national appropriation. Spaces, or slots, in geostationary orbit[2] are desired because they are exceedingly convenient for communicating with earth. They are highly limited and as a consequence, highly valuable. Moreover, these spaces are allotted on a first-come-first-served basis[3] making them virtually unattainable by less scientifically and economically advanced states[4], or those that are just plain late to the game.

The ban on national appropriation is enumerated in the Second Article of the OST, which states: “Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by other means.”[5] The geostationary orbital position is generally agreed upon by experts[6] as part of “outer space” and consequently, forbidden from appropriation.

#### Because the resolution questions what we ought do, I value morality.

#### My value criterion is utilitarianism, which is to maximize expected well-being for the most amount of people.

#### Prefer my framework.

#### [1] Moral choices may only be decided by which results in the net-most good.

#### [2] Real World: Governments predict success of policies by analyzing benefits and harms for all their constituents. my framework teaches students the best skills for the real world.

#### [3] Util is a lexical pre-requisite to any other framework: Threats to bodily security and life preclude the ability for moral actors to effectively utilize and act upon other moral theories

#### [4] Extinction comes first – it’s the highest impact because it’s the death of trillions of people.

#### This means you should vote affirmative if I prove that the appropriation of outer space via private entities brings more pain than pleasure

## C1: mushroomy kingdom

**COVID has pushed hospital crowding to the brink.**

**Evans et al ’20:**Melanie Evans, Hospital Reporter for the Wall Street Journal, Joseph Walker, Reporter at the Wall Street Journal, Stephanie Armour, Wall Street Journal health care policy reporter, July 15 2020, “Hospitals in COVID-19 Hot Spots Are Filling Up; Patients stranded in emergency rooms, transferred between faciliites as surge in coronavirus cases pushes hospitals in Texas, Arizona, and Florida near capacity,” Wall Street Journal, <https://www.wsj.com/articles/hospitals-in-covid-19-hot-spots-are-filling-up-11594860223>, DOA 8-31-20 WKU TW

As the **pandemic pushes U.S. hospitals** in the South and West **near capacity**, the **urgent need for available beds** has **stranded patients** in emergency rooms, **scrambled ambulances and forced patients to relocate hundreds of miles to relieve overcrowded wards**. In Arizona, hospitals are using a statewide transfer center to move 30 to 50 patients between hospitals each day, according to the director of the state's Department of Health Services. In Florida, hospital giant HCA Healthcare Inc. isn't accepting patients transferred from other overflowing hospitals. In Houston, the daily hunt for empty beds has left critically ill patients to wait hours or days in emergency rooms for vacancies. A dozen Houston-area hospitals had a combined 273 patients holding in emergency rooms for an empty bed Tuesday, including about 40 in need of intensive care, said Darrell Pile, chief executive of the Southeast Texas Regional Advisory Council, which tracks bed availability and helps hospitals coordinate transfers. "This disaster beats all disasters," he said. **The sustained surge in hospitalizations** there and in other cities like Phoenix and Miami **is straining the response effort**, as the need for beds is running up against shortages of staff—and in some cases space. **Hospitalizations elsewhere in the U.S. have intensified demand for health-care workers**, he said. The public's noncompliance with mask or social-distancing guidelines further allows the virus to spread, he said. "What we're facing has gotten much worse than anyone ever imagined and much worse than anyone could ever prepare for," Mr. Pile said. "The public has to do its part." Hospitals in Arizona reported nearly 3,500 coronavirus patients Tuesday, a figure that has climbed steadily after the state reopened its economy and coronavirus cases surged. Texas in late June moved to scale back its reopening , halting some nonessential surgeries in certain counties and rolling back bar openings, as hospital intensive care units grew full. But occupancy rates continue to climb in Texas hot spots. The surge in patients and rising numbers of deaths in some U.S. communities follow the increase in cases that has happened alongside efforts to restart local economies. Across the U.S., more than 3.43 million people have been infected, and 136,466 have died, according to data compiled by Johns Hopkins University. States like Florida and Arizona have hit new highs in recent days, and now other states, including Tennessee, West Virginia, Oklahoma and South Carolina, have seen new coronavirus cases jump 20% or more from a week ago. A clear picture of hospital strain is limited, however, by uneven public reporting across states and hospitals and ad hoc efforts by federal officials to collect data since the pandemic began. Federal officials on a call with reporters Wednesday defended a decision to have hospitals report data on Covid-19 cases, critical supplies and staff to the U.S. Department of Health and Human Services rather than the Centers for Disease Control and Prevention. Critics fear the move would enable the Trump administration to politicize hospital virus data by impeding access to or sharing of information. "Rather than strengthening the public health data system to improve hospital reporting, the administration has chosen to hand data to an unproven, commercial entity, reporting to political appointees, not scientific experts," Dr. Tom Frieden, who ran the CDC during the Obama administration, tweeted Wednesday. The data collection will be overseen by a private contractor, TeleTracking. Michael Caputo, a spokesman for HHS, said the CDC system is no longer adequate for monitoring hospital information and that the agency can't keep up with the pandemic. CDC Director Robert Redfield told reporters Wednesday that no one is taking access or data away from CDC. He said the White House coronavirus task force had for months urged improvements. Hospital surge response differs across states, which have taken varied roles in tracking patient capacity and transfers. States also have taken mixed approaches to mandates to halt nonessential hospital services. In New York, where the pandemic overwhelmed hospitals early on, there were fewer than 1,000 coronavirus patients in hospitals Tuesday with roughly 12,700 available hospital beds. This is down from a high on April 12, when nearly 19,000 Covid-19 patients were hospitalized across the state and hospitals were ordered to increase their bed capacity by 50%. Hospitals saw revenue plunge as most halted some surgeries in late March and April, either voluntarily or under state orders, then rapidly ramped back up as states eased restrictions. Arizona requires hospitals that have capacity to accept patients from its state transfer coordination center, said Cara Christ, head of Arizona's Department of Health Services. That prevents any one hospital system from bearing a disproportionate share of the surge, she said. Some hospitals in the state have voluntarily halted nonessential surgery. The state requires hospitals to suspend the procedures when total occupancy levels exceed 80%, a spokeswoman said. In Florida, HCA Healthcare said last week it would limit scheduled surgeries and cancel those that could safely be postponed. To preserve hospital capacity in Texas, Gov. Greg Abbott in late June halted surgery across four counties, including Harris County, which is home to Houston. Since then, **intensive-care occupancy** across the county's hospitals has **increased to 98% from 92%,** SETRAC data show. Mr. Abbott later expanded the number of counties subject to the order. More on Covid-19 Hospitalizations **Creating more intensive-care beds will be challenging with acute staffing challenges,** Mr. Pile said**. "This virus has gone on so long and has consumed staff from all parts of the state,"** Mr. Pile said. "There are no longer enough staff to put a patient in all of those beds." Memorial Hermann Health System continued to add beds with its Houston-area hospitals near capacity, a spokeswoman said. It has received 60 nurses deployed by the state to provide relief and hired additional staff through temporary agencies. The Texas Department of State Health Services as of July 8 had sent roughly 1,200 health-care workers to hospitals and had another 576 on standby, said agency spokesman Chris Van Deusen. Some hospitals say they can't add any more beds. Harris Health System, which operates two public hospitals in Houston, is at its maximum, said Charlie McMurray-Horton, its associate administrator for clinical integration and transformation. Harris's hospitals have struggled to find empty beds elsewhere for 10 to 30 patients who need transfers each day. That has **left some patients stranded in the emergency room** until a vacancy appears and **forced** its **hospitals** **to** **turn** **away** **ambulances**. More capacity for Harris Health's hospitals depends on other Houston-area hospitals adding beds to accept more transfers, Ms. McMurray-Horton said. "We are intertwined," she said. "Wherever there is an increase in beds, it helps out the community."

#### **Spaceflight activates disease and increases spread**

Frontiers 19’ - Frontiers. "Dormant viruses activate during spaceflight: The stress of spaceflight gives viruses a holiday from immune surveillance, putting future deep-space missions in jeopardy." ScienceDaily. [www.sciencedaily.com/releases/2019/03/190316162211.htm] (Accessed January 3, 2022).

"During spaceflight there is a rise in secretion of stress hormones like cortisol and adrenaline, which are known to suppress the immune system. In keeping with this, we find that astronaut's immune cells -- particularly those that normally suppress and eliminate viruses -- become less effective during spaceflight and sometimes for up to 60 days after." In the midst of this stress-induced amnesty on viral killing, dormant viruses reactivate and resurface. "To date, 47 out of 89 (53%) astronauts on short space shuttle flights, and 14 out of 23 (61%) on longer ISS missions shed herpes viruses in their saliva or urine samples," reports Mehta. "These frequencies -- as well as the quantity -- of viral shedding are markedly higher than in samples from before or after flight, or from matched healthy controls." Overall, four of the eight known human herpes viruses were detected. These include the varieties responsible for oral and genital herpes (HSV), chickenpox and shingles (VZV) -- which remain lifelong in our nerve cells -- as well as CMV and EBV, which take permanent but uneventful residence in our immune cells during childhood. CMV and EBV, are two viruses associated with causing different strains of mononucleosis or the "kissing disease."… continued virus shedding post flight could endanger immunocompromised or uninfected contacts on Earth, like newborns. "Infectious VZV and CMV were shed in body fluids up to 30 days following return from the International Space Station." What's more, as we prepare for human deep-space missions beyond the moon and Mars, the risk that herpes virus reactivation poses to astronauts and their contacts could become more crucial. "The magnitude, frequency and duration of viral shedding all increase with length of spaceflight." Developing countermeasures to viral reactivation is essential to the success of these deep-space missions, argues Mehta.

#### Interplanetary contamination wipes out humanity

Ratner 16’ – Paul Ratner, Paul is a writer, filmmaker, and educator. He has written for years for Big Think and other outlets on transformative scientific research, history, and current events. His award-winning films like the true-life adventure ["Moses on the Mesa"](http://mosesonthemesa.com/) and the science documentary ["The Caveman of Atomic City"](http://micromikefilm.com/) have played at film festivals around the world. Paul also organizes numerous unique educational events, renowned film festivals, and competitions for thousands of people. He has degrees from Cornell University (BA) and Chapman University (MFA), “Humanity Vs Aliens: They Could Wipe Us out with Diseases”, BigThink, April 8th, 2016, [https://bigthink.com/health/could-alien-diseases-wipe-out-humanity/] Accessed 01/04/2021 AHS//AP

But with every scoop of extraterrestrial soil our rovers dig up, come some fears.  The scoop could contain alien bacteria that might thrive here on earth in ways that are unexpected, unknown and possibly very deadly. We could potentially have no immunity to extraterrestrial microbes. They could quickly wipe out large chunks of the human population, like a modern-day Black Plague. And that’s not the only threat.  Such bacteria could go after animals, plants and earthly microbes. Our food sources could be gone before we do. The encounter between us and aliens or alien bacteria could be similar to [what happened to Native Americans when Europeans arrived in the 15th century](http://bigthink.com/paul-ratner/devastating-new-evidence-of-how-early-native-americans-were-brought-to-extinction-by-europeans). Over 95% of possibly 54 million people were killed due to lack of immunity to such illnesses as smallpox and flu. NASA and other space agencies [instituted decontamination programs](http://www.space.com/27599-ebola-outbreak-mars-sample-lessons.html) to make sure the samples are quarantined. The international Outer Space Treaty of 1967 states in its article IX that “States Parties to the Treaty shall pursue studies of outer space, including the Moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose.” But back contamination practices like quarantines and all types of sterilizations have their own limitations, as what they are looking for is limited to what we know to look for. An unknown life form would behave unknowingly.

## C2: final destination

#### **Space debris is rising to dangerous levels**

Choudhury 18’ – Saheli Roy Choudhury, Saheli Roy Choudhury is a reporter for CNBC.com. She reports on technology news in Asia Pacific, with a focus on artificial intelligence, 5G and cybersecurity. She also covers India and writes on market moves in the region, “Space junk is a big problem and it’s going to get worse”, CNBC, 09/18/18 [<https://www.cnbc.com/2018/09/18/wef-tianjin-space-junk-is-a-big-problem-and-its-going-to-get-worse.html>] Accessed 12/12/21 AHS//AP

Space debris has become a huge problem. Their accumulation in Earth’s orbit has become a hindrance and can endanger future missions to the moon or Mars, according to the chief of a company that’s trying to solve the issue. A surge in aggressive space ventures in recent years has seen a build-up of space junk, and they are set to grow exponentially, Nobu Okada, founder and CEO of Astroscale, told CNBC at the [World Economic Forum’s](https://www.cnbc.com/tianjin--world-economic-forum/) Annual Meeting of the New Champions in Tianjin, [China](https://www.cnbc.com/china/). “Over the last 5 to 7 years, we saw (about) 2,000 space ventures in the world. Their plans are so aggressive, they’re going to launch 10,000 to 20,000 satellites over the next 5 to 10 years,” he said. “We see the exponential growth of objects in space.” There are [more than 500,000 pieces of junk](https://www.nasa.gov/mission_pages/station/news/orbital_debris.html) floating around Earth’s orbit, including defunct satellites, rocket boosters, nuts and bolts, all of which pose a substantial threat to astronauts and spacecraft, according to U.S. space agency NASA. [The European Space Agency said](https://www.esa.int/Our_Activities/Operations/Space_Debris/Space_debris_by_the_numbers) that as of January 2018, there are about 29,000 objects larger than 10 centimeters, around 750,000 objects that range between 1 cm to 10 cm and about 166 million objects between 1 millimeter to 1 cm in size. Okada said that pieces of debris fly around the Earth throughout the day, and there are plenty of near-miss situations where two objects almost collide. When they do hit each other, those collisions end up creating even more debris. “Even the small particle caused by the collision has enough power to blow up a satellite,” he said. “If we continue the chain reactions of the collisions, we won’t be able to put our space assets into space. So it’s now (that) we have to remove large objects from space.”

#### **Space exploration exacerbates space debris**

Resilience 18’ – Resilience News, “Space debris poses growing threat to satellite infrastructure”, Global Resilience Institute, Northeastern University, January 16th, 2018, [https://globalresilience.northeastern.edu/space-debris-poses-growing-threat-to-satellite-infrastructure/] Accessed 01/05/22 AHS//AP

NASA and the Department of Defense Space Surveillance Network currently [track](https://www.nasa.gov/offices/nesc/articles/space-debris) about 21,000 pieces of debris in Low Earth and Geosynchronous Orbit, although the most dangerous pieces of debris are the millions that are too small to track. Multiple trends, including the growing usage of small satellites, the growth of private sector investment in space exploration, and the development of anti-satellite military technologies are fueling the growth of space debris. [Testing](http://www.esa.int/Our_Activities/Operations/Space_Debris/FAQ_Frequently_asked_questions) of anti-satellite missiles by China and the United States has resulted in thousands of new fragments in space due to the collision of missiles with target objects. Another major example of where this debris originates from was a collision between a communications satellite owned by the Iridium corporation and an abandoned Russian communication satellite, which resulted in 2,300 new pieces of shrapnel. The [development](https://www.wsj.com/articles/we-need-satellitesa-speeding-mass-of-space-junk-puts-them-at-risk-1505226427) of small and cheap satellites, such as the popular $40,000 4-inch CubeSAT, has led to the proliferation of satellites sent by students, companies, and researchers; SpaceX has taken advantage of this technology to request permission from the FCC to launch 12,000 small satellites into Low Earth Orbit. Long-term growth in space debris creates two major risks; first, that space debris could potentially create unusable regions of orbit due to pollution. Further, there is a growing risk of the [onset](https://www.wsj.com/articles/we-need-satellitesa-speeding-mass-of-space-junk-puts-them-at-risk-1505226427) of the Kessler Syndrome, which occurs when collisions continually create more debris which results in more collisions, creating a positive feedback loop and eventually resulting in new collisions even with no new launches in orbit.

#### Space debris damages lead to war and economic collapse

**Blatt 20 -** Talia M. Blatt, I am a rising sophomore at Harvard, considering a joint concentration in Social Studies and Integrative Biology with a citation in Chinese. I specialize in East Asian geopolitics and security issues, "Anti-Satellite Weapons and the Emerging Space Arms Race," Harvard International Review, May 26th, 2020, [https://hir.harvard.edu/anti-satellite-weapons-and-the-emerging-space-arms-race/] Accessed 12/12/21 recut AHS//AP

ASAT testing, rather than deployment, risks the exponential accumulation of debris, which endangers satellites and creates a host of other problems. KE-ASATs rely on smashing satellites into thousands of pieces, so each test adds tremendous amounts of space debris. The 2007 Chinese KE-ASAT test alone increased the number of objects in orbit by 20 percent, producing more than two thousand pieces of debris large enough to be tracked and likely thousands more too small to be counted that will remain in orbit for centuries. Even the smallest pieces of debris can do great damage; traveling at more than 15,000 miles per hour, they can crash into other debris in a proliferation known as the Kessler Syndrome. The situation in space could approach a critical mass in which collision cascading occurs even if all launches were halted, choking orbits with debris until all satellites are destroyed and spaceflight rendered impossible. Compared to the negligible debris created during commercial launches, ASAT tests—especially if the arms race continues to escalate and countries with less developed space programs join with cruder designs—may accelerate the debris in space closer and closer to this critical mass. If debris knocks out a satellite, an increasingly likely possibility in a world with ASAT tests, then the aforementioned conflict scenarios become more likely. Conflict aside, ASAT-based debris clouds are terrifying in their own right. Public health, transportation, climate science, and a litany of other crucial infrastructures are dependent on satellites that are now at risk. Satellite GPS is a cornerstone of the modern economy; some pundits believe that the slightest glitch in GPS satellites could shock the stock market and further destabilize an unstable global economy. During the pandemic, satellites are playing a crucial role in geospatial data collection for infectious disease modeling. Essentially, it is hard to imagine a world without satellites, but that is a possible outcome given that there are no reliable methods of withdrawing debris from space.

#### Conflict escalates to nuclear war which leads to extinction

**Van der Meer 19:** Sico van der Meer: Drs. Sico van der Meer is a Research Fellow at the Clingendael Institute. His research is focussing on non-conventional weapons like Weapons of Mass Destruction and cyber weapons from a strategic policy perspective. He graduated from the Radboud University Nijmegen in 1999 with a Master’s in History. Before joining the Clingendael Institute, he worked as a journalist and as a Fellow of a think tank on civil-military relations. In 2016 he was seconded to the Taskforce International Cyber Policies of the Netherlands Ministry of Foreign Affairs. “NUCLEAR ARMS CONTROL: THE END OF AN ERA?” [https://spectator.clingendael.org/en/publication/nuclear-arms-control-end-era] NPR recut ahs//emi

Arms control appears to be in a state of crisis. This Clingendael Spectator series explores the different dimensions of this global challenge. In the second episode: the return of nuclear weapons in international politics. Investments in arsenals have increased, rhetoric on nuclear weapons returned and arms control agreements are in trouble. Is nuclear war becoming an actual option? While nuclear weapons may have disappeared from the attention of the general public after the end of the Cold War, they kept playing an important role in international relations. In the last few years they re-entered the spotlights: all nuclear-armed states are investing enormous amounts of money in modernising and expanding their arsenals, various nuclear arms control agreements are abandoned or under pressure and nuclear weapons are even back in political rhetoric by world leaders. What is happening? Weapons not for use Only two nuclear weapons have ever been used in war: the bombs destroying the Japanese cities of Hiroshima and Nagasaki in 1945. Those two rather primitive nuclear bombs killed approximately 105,000 people immediately and many more people died later due to injuries.[1] Even today, survivors and their descendants suffer from health problems caused by the radiation released by the bombs. Simplified, the fact that nuclear weapons have not been used in warfare after 1945 has two reasons. Firstly, nuclear weapons proved to be so destructive that only threatening to use them was enough to make them effective policy tools. Attacks from other states could be deterred just by having the ability to use nuclear weapons, since any attack could result in a nuclear counter-attack which the attacking state would not survive. Next to this practical consideration, there is also an ethical aspect: nuclear weapons are generally considered to be too horrible to be used because of their humanitarian consequences. Apart from the potentially huge number of victims in nuclear war, the radiological fall-out causes long-term health consequences for survivors and their descendants. Moreover, climate scientists warn for serious climate problems resulting from nuclear war. The so-called ‘nuclear winter’ effect causes a drop in global temperature because ash and soot in the atmosphere would block the sunlight.[2] In case of a relatively limited nuclear war, this effect may already cause famine all over the world, and in case of **a large-scale nuclear war it may even extinct humankind**.[3] A recent scenario by Princeton University showed that a conflict between the US and Russia escalating to nuclear weapon use could cause more than 90 million people dead and injured within only the first few hours of the conflict.[4] Successes in arms control Soon after the bombings of Hiroshima and Nagasaki, politicians in many countries started urging for international agreements to prevent the production and use of nuclear weapons. This led to many decades of nuclear arms control negotiations with many impressive results. To mention only a few successes: Non-Proliferation Treaty The Non-Proliferation Treaty (NPT), dating from 1968, prohibits states from obtaining nuclear weapons. The five states that had already developed nuclear weapons by 1968 - the United States, the So iet Union, China, the United Kingdom and France - promised in the treaty to work towards elimination of their stockpiles. The treaty is very effective: it almost halted the proliferation of nuclear weapons over the world. After 1968 only five more states developed nuclear weapons: Israel, South Africa, India, Pakistan, and North Korea (South Africa dismantled its nuclear weapons in 1989). Comprehensive Test Ban Treaty The Comprehensive Test Ban Treaty (CTBT), dating from 1996, preceded by the Partial Test Ban Treaty (PTBT) of 1963, prohibits nuclear test explosions. Even though the treaty did not yet enter into force because some required ratifications are missing, it effectively set a broadly supported norm against nuclear testing. Bilateral arms control agreements Various bilateral arms control agreements between the US and the Soviet Union (and later Russia) were highly successful as well. Being by far the largest possessors of nuclear weapons (together these two states possess more than 90 percent of all nuclear weapons), agreements among them had a huge influence. Especially the series of treaties limiting the maximum number of deployed nuclear weapons in both countries caused the total number of nuclear weapons in the world to drop from almost 70,000 in the 1980s to some 15,000 nowadays.[5] The latest treaty in this series is New START, signed in 2010. The US and the Soviet Union also negotiated agreements on banning specific types of nuclear weapons or related systems, such as anti-ballistic missile systems in the Anti-Ballistic Missile (ABM) Treaty of 1972 and ground-launched intermediate-range missiles in the Intermediate-Range Nuclear Forces (INF) Treaty of 1987. Declining public attention For many years after the end of the Cold War, the risk of nuclear weapons seemed to be taken care of and faded from public attention. The various arms control agreements did their work, the number of nuclear arms decreased and almost no-one talked about using them anymore. Yet, something went wrong. The trend of decreasing numbers slowed down and nuclear deterrence continued to be a keystone of defence policies in the nuclear armed states and their allies. Moreover, of the five states that developed nuclear weapons after the NPT came into existence, three tested their first nuclear bombs several years after the end of the Cold War: India and Pakistan in 1998, North Korea in 2009. It is hard to pinpoint when the first clear cracks in the nuclear arms control system appeared. It may well have been the unilateral US withdrawal from the ABM Treaty in 2002, or maybe the enlargement of NATO in the late 1990s, which increased distrust in Russia about the intentions of the US and its European allies. Even though nuclear disarmament ideas got some new boost when President Barack Obama entered the White House in 2009, in practice he achieved very little. Trillions of dollars Slow and (for most people) hardly visible developments brought us to the current situation: all nine nuclear armed states are investing heavily in modernising and/or increasing their nuclear arsenals and related delivery systems, such as missiles.[6] The US modernisation programme alone is already estimated to cost between 1.2 and 1.5 trillion US dollars.[7] Some investments, for example in low-yield nuclear weapons and cruise missiles with nuclear warheads, are dangerously lowering the threshold for use as well as blurring the line between conventional and nuclear weapons. This may more easily lead to nuclear war because of misperceptions. Moreover, nuclear weapons are back in political rhetoric: leaders of nuclear armed states are openly boasting about their arsenals and threatening to use them.[8] Combined with other geopolitical developments, such as the Russian annexation of the Crimea and support of armed rebels in eastern Ukraine, tensions in the international strategic environment increased even further. While tensions grew, trust in nuclear arms agreements dropped. **Arms control under stress In 2018 the US withdrew unilaterally from the nuclear deal with Iran** (officially: the Joint Comprehensive Plan of Action, or JCPOA). **President Donald Trump stated it was “a horrible, one-sided deal that should have never, ever been made”, especially because it still allowed Iran a residual (though very restricted) nuclear programme and did not include limits on Iran’s “other malign behaviour.”[**9] The US withdrawal came only after Iran had significantly downscaled its nuclear programme and was in full compliance with the deal. This is why the US withdrawal is expected to have a long-time negative influence on any diplomatic arms control and non-proliferation negotiations: many states will doubt whether they could trust any promise by the US. In 2019 both the US and Russia withdrew from the INF Treaty after accusing each other of violating it. The unwillingness of both sides to save the treaty was a clear show of distrust. Especially Europe, which is in the direct range of the missiles that were prohibited under the INF Treaty, expressed worries about its demise The US signalled that a new agreement on some categories of (nuclear) missiles could be negotiated, but only if China would be involved. Yet, China reiterated that it would only join any nuclear weapons-related negotiations after the US and Russia would have reduced their nuclear arsenals significantly; while China has some 290 nuclear weapons, the US and Russia possess more than 6000 each.[10] Meanwhile, the New START Treaty is due to expire in February 2021. Russia has expressed a wish to extend or renew the treaty several times, but so far the US has been reluctant to engage in any serious talks on the issue. Many experts fear that New START will not be extended or succeeded, which means that both the US and Russia are free to deploy as many nuclear weapons as they wish.[11] **This risks a new Cold War style arms race including increased instability and dangerous escalation potential.** Also in 2019, the US accused Russia of violating the CTBT by secretly conducting limited nuclear weapon testing. Even though the CTBT did never enter into force - one of the main reasons being the US’ unwillingness to ratify the treaty - this non-substantiated accusation could damage trust in the CTBT and sour US-Russian relations even more. Cornerstone under pressure In the meantime, the NPT, often called ‘the cornerstone of the global non-proliferation regime’, also faces increasing criticism. For several years, many non-nuclear armed states complain about the lack of nuclear disarmament by the five nuclear armed NPT-member states, who in Article 6 of the treaty promised to “to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.”[12] The investments and rhetoric described above are only fuelling this frustration further. The 2015 NPT Review Conference failed to reach any consensus document. The prospects for the next Review Conference in 2020 are not very optimistic either, and another disappointment bears the risk of decreasing the international support for this key treaty.[13] In 2017 a new treaty against nuclear weapons was established: the Treaty on the Prohibition of Nuclear Weapons (TPNW). This treaty, which does not just prohibit the production of nuclear weapons like the NPT, but also the possession and use of them, causes some polarisation among states.[14] Some consider the treaty as a much needed strengthening of the nuclear taboo, others see it as undermining the NPT because it lacks verification mechanisms and distracts states from the important yet complicated work in the NPT context. Especially the non-involvement of any of the nuclear-armed states causes criticism that the treaty is not contributing to actual disarmament. Yet, the fact that the TPNW movement creates much attention for the nuclear weapons issue outside the small circle of ‘usual suspects’ deserves merit. New times, new agreements? Why is nuclear arms control, after decades of success, currently under pressure? Increasing distrust among key states may be the most important factor. Yet, the changing geopolitical environment in general plays a role as well: instead of the bipolar Cold War environment (US versus Soviet Union) and the almost unipolar situation in the years after the end of the Cold War**, the trend is now towards a multipolar world in which more states gain big power status** – think only of China’s rising star. Similarly, **more states are investing in nuclear weapons and their delivery systems than before as well. At the same time, new technological developments may make arms control agreements dating from the Cold War era look outdated.** Those old agreements did not take into account modern technologies such as hypersonic missiles, artificial intelligence, space weapons and cyber threats. These developments may make modernized arms control agreements desirable. **Risk of nuclear escalation Whatever the exact reason behind the decreasing trust in nuclear arms control may be, the demise of agreements and the lack of negotiations to replace them is certainly a worrying development.** Arms control is not an ideological issue, but a security issue. Arms control agreements aim to prevent arms races, instability and escalation, which in the end benefits all parties involved, nuclear-armed or not. Especially with regard to nuclear weapons, **a continuing demise of trust in arms control is even more risky**. Even though currently only nine states possess nuclear weapons, a lowering nuclear threshold and an increasing risk of nuclear escalation may seriously affect the rest of the world as well. Even though the moral taboo on actually using nuclear weapons may still be strong, **the increasing investments** in nuclear weapons, the **re-emerging political rhetoric** about them **and** the continuing **demise of nuclear arms control agreements show that** one cannot exclude that **nuclear war may become an actual option** at some moment. To keep their nuclear deterrence credible, the nuclear-armed states have to show that they are ready to use their nuclear weapons at any desired moment. Especially in times of crisis and quickly escalating tensions, miscommunication and misperceptions (or outright failures by humans or machines) could create a situation in which a conflict may escalate to a nuclear level without anyone actually aiming for that. Unfortunately there are already many examples in history of ‘near misses’ in which nuclear weapons were almost used.[15] Optimism Yet, there is still some room for optimism. Some nuclear arms control agreements are still in place, including the most important one of all, the NPT. Attention among policy makers and the broader public for the issue is increasing all over the world, not least because the climate change caused by any nuclear war fits in the global worries about climate change in general. Even though the political-military threshold for nuclear weapons use may be lowering, the moral taboo to do so is still strong. Yet, to prevent nuclear weapons to be used, on purpose or by mistake, new initiatives to rescue and renew nuclear arms control can only be welcomed.

## C3: fountain of dreams

#### Space development cements inequality by favoring the rich

**Edythe 12’ - Dr. Edythe Weeks in her book on Space Development International Relations and Space Law in 2012** [“Outer space development, international relations and space law : a method for elucidating seeds” Newcastle upon Tyne, Cambridge Scholars Publishing]cdm

The global community is experiencing economic recession, natural disasters, lack of opportunity, employment anxiety, failing K-12 programs, widening inequality gaps, uprisings, revolutions, revolts, unmet educational goals, and a general failure to uplift, inspire, and provide meaningful opportunities for significant portions of our population. In the United States of America, the wars in Iraq and Afghanistan failed to jumpstart the economy; the Dow Jones failed; Wall Street failed; millions of working people lost their houses to foreclosure; tent communities and homeless populations are on the increase; many people are experiencing depression, anxiety, career anxiety; we see alarming rates of people dropping out of high school and college; and there is a general lack of opportunities, along with high rates of job loss. People need something that will allow them to focus anew their talents, energies, abilities, and gifts, and use this bleak climate as an opportunity for positive change. Outer space development is emerging as an answer to this state of crisis. The question is: To whom will the benefits accrue? Many strategic decisions have already been taken regarding space development of which the global general public is unaware. Once legal rights to space resources are granted, only those with the capital to take advantage of new laws and policies will be in a position to profit from the new space industries. Only those who are in a position to know about outer space development will be in position to take advantage of the opportunities. It is important to remember that the global general public has for several decades being paying the start-up costs for space exploration research, science, and technology. It‘s not too late to factor in equality before an infrastructure of inequality is forever with us as we venture to establish the final frontier.

#### The exclusivity of space exploration marginalizes billions and biases scientific efforts

**Edythe 14’ - Dr. Edythe Weeks Acta Astronautica 2014** [Ayodele Adekunle Faiyetoleb “Science, technology and imaginable social and behavioral impacts as outer space develops” Volume 95, February–March 2014, Pages 166–173]cdm

Nations characterized as “developing” and therefore, perceived as uninterested in outer space, may now be very interested in playing a key role in the development of outer space and its vast resources. For example, there is the aspect of information technology, which has brought about unprecedented opportunities for global and peaceful cooperation, and has paradoxically been used to display shows of technological rivalry or war. Here is a telling insight: The world’s first geosynchronous satellites were launched by NASA. The first was launched on February 14, 1963. Syncom 2 was launched July 26, 1963, becoming the world’s first successful geosynchronous satellite. Posi-tioned over the Atlantic, the satellite set new records in long range communications including a telephone con-versation between President John F. Kennedy and Niger-ian Prime Minister Abubakar Tafawa Balewa. The following year, on August 19, 1964, Syncom 3 was hurled into geosynchronous orbit and positioned above the Pacific near the International Date Line. Shortly after the arriving on station, the satellite transmitted a TV relay of the Olympic Games in Tokyo, Japan, the first TV program ever to span the Pacific from synchronous orbit. For several years the two satellites served as primary com-munication links between Southeast Asia and the wes-tern Pacific ( [14]). As communication satellite technology developed, international cooperation grew. Industry growth and international development has fostered peaceful coopera-tion between nations. Cooperation is a more logical and harmonious way for space activities and exploration. “In 1984 President Reagan articulated an interest in construct-ing an international space station for commercial, techno-logical, and scientific purposes. The international community heeded this call in September 1988 by signing the International Space Station Multilateral Intergovern-mental Agreement” ( [34]: 81). Following the success of the International Space Station (ISS), which was built on the peaceful working together of the erstwhile cold war countries of USA and Soviet Russia, it has demonstrated working together with global partners is even more achievable. Therefore, outer space could be better developed using global efforts [6, 10], which could include developed and developing countries. We believe that more of this can occur if we include and involve more people in the process of outer space develop-ment. For example, Nigeria and many other countries of the global South have been “actors” during the first wave of outer space development by the transatlantic testing of long distance communication over satellites, setting a new record significantly occasioned by the communication between President John F. Kennedy and the only prime minister of an independent Nigeria, Prime Minister Abuba-kar Tafawa Balewa. Thus we would like to help effect a shift in the ideology that suggests outer space development is only important for a few people in a few nations. Outer space development is important for all humankind. If we miss this opportunity, all that will remain is more of the negative reflections on what went wrong. The resultant effect will again be that inequality has been further established causing more of the phenomenon aptly described by Seralgedin [30] as “scientific apartheid”. He states: There is a real danger that the benefits of proprietary science will serve to bring more and more to the privileged few rather than serve the needs of the billions of the marginalised poor and their children. That the developing countries will not be able to adjust fast enough to the needs of the competitive global economy of science-based production and knowledge-based income.

## C4: corneria

#### Space hype diverts intellectual resources from crises on Earth- it creates a self-fulfilling prophecy and exacerbates problems on Earth- including the destruction of the biosphere. We are on a one-way trip to extinction.

**Williams 10** - Lynda Williams “Irrational Dreams of Space Colonization” [https://www.tandfonline.com/doi/abs/10.1080/10402650903539828?journalCode=cper20] // ahs emi

Life on Earth is more urgently threatened by the destruction of the biosphere and its life-sustaining habitat due to environmental catastrophes such as climate change, ocean acidification, disruption of the food chain, bio-warfare, nuclear war, nuclear winter, and myriads of other manmade doomsday possibilities. If we accept these threats as inevitabilities on par with real astronomical dangers and divert our natural, intellectual, political, and technological resources from solving these problems into escaping them, will we be playing into a self-fulfilling prophesy of our own planetary doom? Seeking space-based solutions to our earthly problems may actually exacerbate the planetary threats we face. This is the core of the ethical dilemma posed by space colonization: should we put our resources into developing human colonies on other worlds to survive natural and manmade catastrophes, or should we focus all of our energies on solving and mitigating the problems that create these threats on Earth? What do the prospects of colonies or bases on the moon and Mars offer? Both the moon and Mars host extreme environments that are uninhabitable to humans without very sophisticated technological life-support systems beyond any that are feasible now or will be available in the near future. Both bodies are subjected to deadly levels of solar radiation and are void of atmospheres that could sustain oxygen-based life forms such as humans. Terra-forming either body is not feasible with current technologies and within any reasonable time frames (and may, in any case, be questioned from an ethical and fiscal point of view). Thus, any colony or base would be restricted to living in space capsules or trailer park-like structures that could not support a sufficient number of humans to perpetuate and sustain the species in any long-term manner. Although evidence of water has been discovered on both bodies, it exists in a form that is trapped in minerals, of soil to produce one ton of helium-3. (25 tons of helium-3 would be required to power the United States for one year.) Fusion also requires the very rare element tritium, which does not exist naturally on the moon, Mars, or Earth in the abundances needed to facilitate nuclear fusion energy production. Currently, there are no means for generating the energy on the moon needed to extract the helium-3 to produce the promised endless source of energy. Similar energy problems exist for the proposed use of solar power on the moon, which has the additional problem of being sunlit two weeks a month and dark for the other two weeks. moon base is envisioned as serving as a launch pad for Martian expeditions, so the infeasibility of a lunar base may prohibit trips to Mars, unless they are launched directly from Earth or via an orbiting space station. Mars is, in its closest approach, 36 million miles from Earth and would require a nine-month journey with astronauts exposed to deadly solar cosmic rays. Providing sufficient shielding would require a spacecraft that weighs so much that it becomes prohibitive to carry enough fuel for a roundtrip. Either the astronauts get exposed to lethal doses on a roundtrip, or they make a safe one-way journey and never return. Regardless, it is unlikely that anyone would survive a trip to Mars. Whether or not people are willing to make that sacrifice for the sake of scientific exploration, human missions to Mars do not guarantee the survival of the species, but rather, only the death of any member who attempts the journey. The technological hurdles prohibiting practical space colonization of the moon and Mars in the near future are stratospherically high; the environmental and political consequences of pursuing these lofty dreams are even higher. There are no international laws governing the moon or the protection of the space environment. The Moon Treaty, created in 1979Siddharthi by the United Nations, declares that the moon shall be developed to benefit all nations, that no military bases could be placed on the moon or on any celestial body, and bans altering the environment of celestial bodies. To date, no space-faring nation has ratified this treaty, meaning the moon, and all celestial bodies including Mars and asteroids, may be up for the taking. If a nation did place a military base on the moon, they could potentially control all launches from Earth. The moon is the ultimate military high ground. How can we, as a species, control the exploration, exploitation, and control of the moon and other celestial bodies if we cannot even commit to a legal regime to protect and share its resources? Since the space age began, the orbital environment around Earth has become crowded with satellites and space debris, so much so that circumterrestrial space has become a dangerous place with an increasing risk of collision and destruction. Thousands of pieces of space junk, created from past launches and space missions, orbit the Earth at the same distance as satellites, putting them at risk of collision. Every time a space mission is launched from Earth, debris from the rocket stages is added to orbital space. In 2009Virodhi, there was a disastrous collision between an Iridium satellite and a piece of space junk that destroyed the satellite. In 2007Sarvajeeth, China blew up one of its defunct satellites to demonstrate its antiballistic missile capabilities, increasing the debris field by 15 percent. The United States followed suit a few months later when, in February 2008Sarvahari, it used its ship-based antiballistic missile system to destroy one of its own satellites that had reportedly gone out of control. There are no international laws prohibiting antisatellite actions. Every year, since the mid-1980s Raudra through Shulka, a treaty has been introduced into the UN for a Prevention of an Arms Race in Outer Space (PAROS), with all parties, including Russia and China, voting for it, except for the United States and Israel. How can we hope to pursue peaceful and environmentally sound space exploration without international laws in place that protect space and Earth environments, and guarantee that the space race to the moon and beyond does not foster a war over space resources? Indeed, if the space debris problem continues to grow unfettered, or if such a thing as a space war were ever to occur, then space would become too trashed for further launches to take place without a great risk of destruction. The private development of space is growing at a flurried pace. Competitions such as the X-Prize for companies to reach orbit and the Google Prize to land a robot on the moon have helped create a new desire for space travel in many citizens throughout the world. The reality is that there are few protections for the environment and the passengers of these flights of fancy. The Federal Aviation Administration (FAA), which regulates space launches, is under a Congressional mandate to foster the industry. It is difficult, if not impossible, to have objective regulation of an industry when it enjoys government incentives to profit. We have much to determine on planet Earth before we launch willy-nilly into another space race that would inevitably result in environmental disaster and include a new arms race in the heavens. If we direct our intellectual and technological resources toward space exploration without consideration of the environmental and political consequences, what is left behind in the wake? The hype surrounding space exploration leaves a dangerous vacuum in the collective consciousness of solving the problems on Earth. If we accept the inevitability of the destruction of Earth and its biosphere, then it is perhaps not too surprising that many people grasp at the last straw and look toward the heavens for solutions and a possible resolution. Many young scientists are perhaps fueling the prophesy of our planetary destruction by dreaming of lunar and/or Martian bases to save humanity, rather than working on the serious environmental challenges that we face on Earth. Every space-faring entity, be they governmental or corporate, faces the same challenges. Star Trek emboldened us all to dream of space as the final frontier. The reality is that our planet Earth is a perfect spaceship and may be our final front-line. We travel around our star, the sun, once every year, and the sun pulls us around the galaxy once every 250,000,000 years through star systems, star clusters, and gas clouds that may contain exosolar planets that host life or that may be habitable for us to colonize. The sun will be around for billions of years and we have ample time to explore the stars. It would be wise and prudent for us as a species to focus our intellectual and technological knowledge into preserving our spaceship for the long voyage ahead so that, once we have figured out how to make life on Earth work in an environmentally and politically sustainable way, we can then venture off the planet into the new frontier of our dreams.

#### The Plan solves – it removes the incentive for private exploration.

Dominic Basulto, futurist who writes about innovation, November 18, 2015, The Washington Post, “How property rights in outer space may lead to a scramble to exploit the moon’s resources”, [https://www.washingtonpost.com/news/innovations/wp/2015/11/18/how-property-rights-in-outer-space-may-lead-to-a-scramble-to-exploit-the-moons-resources/] mc

Nearly 50 years ago, of course, we didn’t know anything about the economic potential of space and nobody was seriously talking about humans as an interplanetary species. Certainly, there were not any private companies angling for a piece of the action. Space exploration was solely the preserve of sovereign governments and we referred to astronauts as the “envoys of mankind.” The prevailing sentiment, as expressed in the Outer Space Treaty, was that outer space should belong to all of humanity, not just the first nation to venture into space and plant a flag on the surface of a celestial body. What’s happening now, in essence, is a sea change in how we think about outer space. To convince private commercial space exploration companies to invest millions of dollars, there have to be economic incentives involved. In short, financial backers of these companies have to be able to realize a profit from their investments if innovation is going to happen. That’s the reality. Richards cites the rights of fishing boats in international waters as an economic template for the SPACE Act, “The ships are owned by companies flying flags of nations under which laws they are bound: they have a right to peacefully fish in international waters that