## 1

#### Private companies are set to mine in space – new tech and profit motives make space lucrative

Gilbert 21, (Alex Gilbert is a complex systems researcher and PhD student in Space Resources at the Colorado School of Mines, “Mining in Space is Coming”), 4-26-21, Milken Institute Review, https://www.milkenreview.org/articles/mining-in-space-is-coming // MNHS NL

Space exploration is back. after decades of disappointment, a combination of better technology, falling costs and a rush of competitive energy from the private sector has put space travel front and center. indeed, many analysts (even some with their feet on the ground) believe that commercial developments in the space industry may be on the cusp of starting the largest resource rush in history: mining on the Moon, Mars and asteroids. While this may sound fantastical, some baby steps toward the goal have already been taken. Last year, NASA awarded contracts to four companies to extract small amounts of lunar regolith by 2024, effectively beginning the [era of commercial space mining](https://payneinstitute.mines.edu/wp-content/uploads/sites/149/2020/09/Payne-Institute-Commentary-The-Era-of-Commercial-Space-Mining-Begins.pdf). Whether this proves to be the dawn of a gigantic adjunct to mining on earth — and more immediately, a key to unlocking cost-effective space travel — will turn on the answers to a host of questions ranging from what resources can be efficiently. As every fan of science fiction knows, the resources of the solar system appear virtually unlimited compared to those on Earth. There are whole other planets, dozens of moons, thousands of massive asteroids and millions of small ones that doubtless contain humungous quantities of materials that are scarce and very valuable (back on Earth). Visionaries including Jeff Bezos [imagine heavy industry moving to space](https://www.fastcompany.com/90347364/jeff-bezos-wants-to-save-earth-by-moving-industry-to-space) and Earth becoming a residential area. However, as entrepreneurs look to harness the riches beyond the atmosphere, access to space resources remains tangled in the realities of economics and governance. Start with the fact that space belongs to no country, complicating traditional methods of resource allocation, property rights and trade. With limited demand for materials in space itself and the need for huge amounts of energy to return materials to Earth, creating a viable industry will turn on major advances in technology, finance and business models. That said, there’s no grass growing under potential pioneers’ feet. Potential economic, scientific and even security benefits underlie an emerging geopolitical competition to pursue space mining. The United States is rapidly emerging as a front-runner, in part due to its ambitious Artemis Program to lead a multinational consortium back to the Moon. But it is also a leader in creating a legal infrastructure for mineral exploitation. The United States has adopted the world’s first spaceresources law, recognizing the property rights of private companies and individuals to materials gathered in space. However, the United States is hardly alone. Luxembourg and the United Arab Emirates (you read those right) are racing to codify space-resources laws of their own, hoping to attract investment to their entrepot nations with business-friendly legal frameworks. China reportedly views space-resource development as a national priority, part of a strategy to challenge U.S. economic and security primacy in space. Meanwhile, Russia, Japan, India and the European Space Agency all harbor space-mining ambitions of their own. Governing these emerging interests is an outdated treaty framework from the Cold War. Sooner rather than later, we’ll need [new agreements](https://issues.org/new-policies-needed-to-advance-space-mining/) to facilitate private investment and ensure international cooperation.

Back up for a moment. For the record, space is already being heavily exploited, because space resources include non-material assets such as orbital locations and abundant sunlight that enable satellites to provide services to Earth. Indeed, satellite-based telecommunications and global positioning systems have become indispensable infrastructure underpinning the modern economy. Mining space for materials, of course, is another matter. In the past several decades, planetary science has confirmed what has long been suspected: celestial bodies are potential sources for dozens of natural materials that, in the right time and place, are incredibly valuabl**e**. Of these, water may be the most attractive in the near-term, because — with assistance from solar energy or nuclear fission — H2O can be split into hydrogen and oxygen to make rocket propellant, facilitating in-space refueling. So-called “rare earth” metals are also potential targets of asteroid miners intending to service Earth markets. Consisting of 17 elements, including lanthanum, neodymium, and yttrium, these critical materials (most of which are today mined in China at great environmental cost) are required for electronics. And they loom as bottlenecks in making the transition from fossil fuels to renewables backed up by battery storage. The Moon is a prime space mining target. Boosted by NASA’s mining solicitation, it is likely the first location for commercial mining. The Moon has several advantages. It is relatively close, requiring a journey of only several days by rocket and creating communication lags of only a couple seconds — a delay small enough to allow remote operation of robots from Earth. Its low gravity implies that relatively little energy expenditure will be needed to deliver mined resources to Earth orbit. The Moon may look parched — and by comparison to Earth, it is. But recent probes have confirmed substantial amounts of water ice lurking in [permanently shadowed craters](http://lroc.sese.asu.edu/posts/1105) at the lunar poles. Further, it seems that solar winds have implanted significant deposits of helium-3 (a light stable isotope of helium) across the equatorial regions of the Moon. Helium-3 is a potential fuel source for second and third-generation fusion reactors that one hopes will be in service later in the century. The isotope is packed with energy (admittedly hard to unleash in a controlled manner) that might augment sunlight as a source of clean, safe energy on Earth or to power fast spaceships in this century. Between its water and helium-3 deposits, the Moon could be the resource stepping-stone for further solar system exploration. Asteroids are another near-term [mining target](https://foreignpolicy.com/2016/04/28/the-asteroid-miners-guide-to-the-galaxy-space-race-mining-asteroids-planetary-research-deep-space-industries/). There are all sorts of space rocks hurtling through the solar system, with varying amounts of water, rare earth metals and other materials on board. The asteroid belt between the orbits of Mars and Jupiter contains most of them, many of which are greater than a kilometer in diameter. Although the potential water and mineral wealth of the asteroid belt is vast, the long distance from Earth and requisite travel times and energy consumption rule them out as targets in the near term. The prospects for space mining are being driven by technological advances across the space industry. The rise of reusable rocket components and the now-widespread use of off-the-shelf parts are lowering both launch and operations costs. Once limited to government contract missions and the delivery of telecom satellites to orbit, private firms are now emerging as leaders in developing “NewSpace” activities — a catch-all term for endeavors including orbital tourism, orbital manufacturing and mini-satellites providing specialized services. The space sector, with a market capitalization of $400 billion, could grow to as much as $1 trillion by 2040 as private investment soars.

#### The private sector is the key internal link to space exploration and colonization.

**Sharma 9/7** [Maanas Sharma, 9-7-2021, "The Space Review: The privatized frontier: the ethical implications and role of private companies in space exploration," The Space Review, https://www.thespacereview.com/article/4238/1]//DDPT

In recent years, private companies have taken on a larger role in the space exploration system. With lower costs and faster production times, they have displaced some functions of government space agencies. Though many have levied criticism against privatized space exploration, it also allows room for more altruistic actions by government space agencies and the benefits from increased space exploration as a whole. Thus, we should encourage this development, as the process is net ethical in the end. Especially if performed in conjunction with adequate government action on the topic, private space exploration can overcome possible shortcomings in its risky and capitalistic nature and ensure a positive contribution to the general public on Earth.

The implications of commercial space exploration have been thrust into the limelight with the successes and failures of billionaire Elon Musk’s company SpaceX. While private companies are not new to space exploration, their prominence in American space exploration efforts has increased rapidly in recent years, fueled by technological innovations, reductions in cost, and readily available funding from government and private sources.[1] In May 2020, SpaceX brought American astronauts to space from American soil for the first time in almost 10 years.[2] Recognizing the greatly reduced costs of space exploration in private companies, NASA’s budget has shifted to significantly relying on private companies.[3] However, private space companies are unique from government space agencies in the way they experience unique sets of market pressures that influence their decision-making process. Hence, the expansion of private control in the space sector turns into a multifaceted contestation of its ethicality.

The most obvious ethical concern is the loss of human life. Critics contend that companies must answer to their shareholders and justify their profits. This contributes to a larger overall psyche that prioritizes cost and speed above all else, resulting in significantly increased risks.[4] However, the possible increase in mishaps is largely overstated. Companies recognize the need for safety aboard their expeditions themselves.[5] After all, the potential backlash from a mishap could destroy the company’s reputation and significantly harm their prospects. According to Dr. Nayef Al-Rodhan, Head of the Geneva Centre for Security Policy’s Geopolitics and Global Futures Programme, “because there were no alternatives to government space programs, accidents were seen to some degree as par for the course… By comparison, private companies actually have a far more difficult set of issues to face in the case of a mishap. In a worst case scenario, a private company could make an easy scapegoat.” [6]

Another large ethical concern is the prominence capitalism may have in the future of private space exploration and the impacts thereof. The growth of private space companies in recent years has been closely intertwined with capitalism. Companies have largely focused on the most profitable projects, such as space travel and the business of space.[7] Many companies are funded by individual billionaires, such as dearMoon, SpaceX’s upcoming mission to the Moon.[8] Congress has also passed multiple acts for the purpose of reducing regulations on private space companies and securing private access to space. From this, many immediately jump to the conclusion that capitalism in space will recreate the same conditions in outer space that plague Earth today, especially with the increasing push to create a “space-for-space” economy, such as space tourism and new technologies to mine the Moon and asteroids. Critics, such as Jordan Pearson of VICE, believe that promises of “virtually unlimited resources” are only for the rich, and will perpetuate the growing wealth inequality that plagues the world today.[9]

However, others contend that just because private space exploration has some capitalist elements, it is by no means an embodiment of unrestricted capitalism. A healthy balance of restricted capitalism—for example, private space companies working through contracts with government agencies or independently under monitoring and regulation by national and international agreements—will avoid the pitfalls that capitalist colonialism faced down here on Earth. Even those who are generally against excessive government regulation should see the benefits of them in space. Lacking any consensus on definitions and rights in space will create undue competition between corporations as well as governments that will harm everyone rather than helping anyone. To create a conducive environment for new space-for-space exploration, one without confrontation but with protection for corporate astronauts, infrastructure, and other interests, governments must create key policies such as a framework for property rights on asteroids, the Moon, and Mars.[7,10]

Another key matter to note is restricted capitalism in space “could also be our salvation.”[11] Private space exploration could reap increased access to resources and other benefits that can be used to solve the very problems on Earth that critics of capitalism identify. Since governments offset some of their projects to private companies, government agencies can focus on altruistic projects that otherwise would not fit in the budget before and do not have the immediate commercial use that private companies look for. Scott Hubbard, an adjunct professor of aeronautics and astronautics at Stanford University, discusses how “this strategy allows the space agency to continue ‘exploring the fringe where there really is no business case’” but still has important impacts on people down on Earth.[12]

Indeed, this idea is a particularly powerful one when considering the ideal future of private companies in space exploration. Though there is no one set way governments will interact with companies, the consensus is that they must radically reimagine their main purpose as the role of private space exploration continues to grow. As governments utilize services from private space companies, “[i]nstead of being bogged down by the routine application of old research, NASA can prioritize their limited budget to work more on research of other unknowns and development of new long-term space travel technologies.”[13] According to the Council on Foreign Relations, such technologies have far-reaching benefits on Earth as well. Past developments obviously include communications satellites, by themselves a massive benefit to society, but also “refinements in artificial hearts; improved mammograms; and laser eye surgery… thermoelectric coolers for microchips; high-temperature lubricants; and a means for mass-producing carbon nanotubes, a material with significant engineering potential; [and h]ousehold products.”[2] Agencies like NASA are the only actors able to pursue the next game-changing missions, “where the profit motive is not as evident and where the barriers to entry are still too high for the private sector to really make a compelling business case.”[8] These technologies have revolutionized millions, if not billions, of lives, demonstrating the remarkable benefits of space exploration. It follows then that it is net ethical to prioritize these benefits.

This report concludes that the private sector, indeed, has a prominent role to play in the future of space exploration. Further, though private space exploration does bring the potential of increased danger and the colonization of space, these concerns can be effectively mitigated. Namely, strong government frameworks—particularly international ones—will minimize possible sources of ethical violations and ensure an optimal private sector role in space. This also allows government agencies to complete significantly more difficult, innovative projects which have transformative benefits for life on Earth.

#### Space mining is the only way to solve climate change

Duran 21, (Paloma Duran is a journalist and industry analyst at Mexico Business News, “Is Space Mining the Best Option to Face Climate Change?”), 11-03-21, Mexico Business News, https://mexicobusiness.news/mining/news/space-mining-best-option-face-climate-change // MNHS NL

Going to net zero means that more mining is needed. Experts have said that the current supply cannot support the necessary metals demand for the green transition. As a result, new mining alternatives have gained greater relevance, among them is space mining. Several countries, including Mexico, have shown their interest in this alternative, creating a new space race. “The solar system can support a billion times greater industry than we have on Earth. When you go to vastly larger scales of civilization, beyond the scale that a planet can support, then the types of things that civilization can do are incomprehensible to us … We would be able to promote healthy societies all over the world at the same time that we would be reducing the environmental burden on the Earth,” said Dr. Phil Metzger, Planetary Scientist at the University of Central Florida. Currently, there are several attempts to address global warming and transition to a net zero carbon economy. There has been an increasing interest in renewable energy and infrastructure, which has increased demand for various minerals, especially lithium, cobalt, nickel, copper and rare earth elements. However, according to experts, the world is close to entering a metals supercycle, where demand will exceed available supply, causing prices to skyrocket. Consequently, the mining industry has sought alternatives to achieve the required supply. Options include recycling and improved mine waste management, sea mining and space mining. The latter is considered one of the alternatives with the greatest potential. However, a regulatory framework is still lacking and there is almost no experience in this regard. Despite the lack of knowledge regarding space mining, it has become a very attractive option since the planet is running out of resources. While some people believe that land-based mining is cheaper than space mining, experts believe this may change in the long term. Furthermore, within the solar system there are countless bodies rich in minerals, ores and elements that will accelerate the fight against climate change. “There will come a point when there is nothing left to mine on the surface, prompting mines to reach even further below. But even those resources are destined to run out and so we will aim toward ocean mining, which already has specific technologies that are being developed. Nevertheless, even those mines are limited as well. The mine of the future, which today may seem unlikely, will no longer be on our planet. There will be a time when space mining will be as common as an open leach mine,” Eder Lugo, Minerals Head at Siemens, told MBN. More than 150 million asteroids measuring approximately 100m are believed to be in the inner solar system alone. In addition, astronomers have also identified abundant minerals near the Earth’s space and the Main Asteroid Belt. There are three main groups into which asteroids are divided: C- type, S- type, and M- type. The last two groups are the most abundant in minerals such as gold, platinum, cobalt, zinc, tin, lead, indium, silver, copper and rare earth metals. "Energy is limited here. Within just a few hundred years, you will have to cover all of the landmass of Earth in solar cells. So, what are you going to do? Well, what I think you are going to do is you are going to move out in space … all of our heavy industry will be moved off-planet and Earth will be zoned residential and light-industrial,” said Jeff Bezos, Founder of Amazon and the Space Launch Provider Blue Origin.

#### warming causes extinction --- mitigation efforts now are key

Griffin, 2015 (David, Professor of Philosophy at Claremont, “The climate is ruined. So can civilization even survive?”, CNN, 4/14/2015, <http://www.cnn.com/2015/01/14/opinion/co2-crisis-griffin/> )

Although most of us worry about other things, climate scientists have become increasingly worried about the survival of civilization. For example, Lonnie Thompson, who received the U.S. National Medal of Science in 2010, said that virtually all climatologists "are now convinced that global warming poses a clear and present danger to civilization." Informed journalists share this concern. The climate crisis "threatens the survival of our civilization," said Pulitzer Prize-winner Ross Gelbspan. Mark Hertsgaard agrees, saying that the continuation of global warming "would create planetary conditions all but certain to end civilization as we know it." These scientists and journalists, moreover, are worried not only about the distant future but about the condition of the planet for their own children and grandchildren. James Hansen, often considered the world's leading climate scientist, entitled his book "Storms of My Grandchildren." The threat to civilization comes primarily from the increase of the level of carbon dioxide (CO2) in the atmosphere, due largely to the burning of fossil fuels. Before the rise of the industrial age, CO2 constituted only 275 ppm (parts per million) of the atmosphere. But it is now above 400 and rising about 2.5 ppm per year. Because of the CO2 increase, the planet's average temperature has increased 0.85 degrees Celsius (1.5 degrees Fahrenheit). Although this increase may not seem much, it has already brought about serious changes. The idea that we will be safe from "dangerous climate change" if we do not exceed a temperature rise of 2C (3.6F) has been widely accepted. But many informed people have rejected this assumption. In the opinion of journalist-turned-activist Bill McKibben, "the one degree we've raised the temperature already has melted the Arctic, so we're fools to find out what two will do." His warning is supported by James Hansen, who declared that "a target of two degrees (Celsius) is actually a prescription for long-term disaster." The burning of coal, oil, and natural gas has made the planet warmer than it had been since the rise of civilization 10,000 years ago. Civilization was made possible by the emergence about 12,000 years ago of the "Holocene" epoch, which turned out to be the Goldilocks zone - not too hot, not too cold. But now, says physicist Stefan Rahmstorf, "We are catapulting ourselves way out of the Holocene." This catapult is dangerous, because we have no evidence civilization can long survive with significantly higher temperatures. And yet, the world is on a trajectory that would lead to an increase of 4C (7F) in this century. In the opinion of many scientists and the World Bank, this could happen as early as the 2060s. What would "a 4C world" be like? According to Kevin Anderson of the Tyndall Centre for Climate Change Research (at the University of East Anglia), "during New York's summer heat waves the warmest days would be around 10-12C (18-21.6F) hotter [than today's]." Moreover, he has said, above an increase of 4C only about 10% of the human population will survive. Believe it or not, some scientists consider Anderson overly optimistic. The main reason for pessimism is the fear that the planet's temperature may be close to a tipping point that would initiate a "low-end runaway greenhouse," involving "out-of-control amplifying feedbacks." This condition would result, says Hansen, if all fossil fuels are burned (which is the intention of all fossil-fuel corporations and many governments). This result "would make most of the planet uninhabitable by humans." Moreover, many scientists believe that runaway global warming could occur much more quickly, because the rising temperature caused by CO2 could release massive amounts of methane (CH4), which is, during its first 20 years, 86 times more powerful than CO2. Warmer weather induces this release from carbon that has been stored in methane hydrates, in which enormous amounts of carbon -- four times as much as that emitted from fossil fuels since 1850 -- has been frozen in the Arctic's permafrost. And yet now the Arctic's temperature is warmer than it had been for 120,000 years -- in other words, more than 10 times longer than civilization has existed. According to Joe Romm, a physicist who created the Climate Progress website, methane release from thawing permafrost in the Arctic "is the most dangerous amplifying feedback in the entire carbon cycle." The amplifying feedback works like this: The warmer temperature releases millions of tons of methane, which then further raise the temperature, which in turn releases more methane. The resulting threat of runaway global warming may not be merely theoretical. Scientists have long been convinced that methane was central to the fastest period of global warming in geological history, which occurred 55 million years ago. Now a group of scientists have accumulated evidence that methane was also central to the greatest extinction of life thus far: the end-Permian extinction about 252 million years ago. Worse yet, whereas it was previously thought that significant amounts of permafrost would not melt, releasing its methane, until the planet's temperature has risen several degrees Celsius, recent studies indicate that a rise of 1.5 degrees would be enough to start the melting. What can be done then? Given the failure of political leaders to deal with the CO2 problem, it is now too late to prevent terrible developments. But it may -- just may -- be possible to keep global warming from bringing about the destruction of civilization. To have a chance, we must, as Hansen says, do everything possible to "keep climate close to the Holocene range" -- which means, mobilize the whole world to replace dirty energy with clean as soon as possible.

## 2

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

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

V. MITIGATION VS. REMOVAL

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

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

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

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

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

#### Russia will demand concessions over Ukraine – it’s their top priority and violates Ukraine’s sovereignty.

Maynes 1/24 – NPR Moscow correspondent, reporting in Russia for over a decade

Charles Maynes, last updated at time of cutting: 1-24-2022, “4 things Russia wants right now,” *NPR*, https://www.npr.org/2022/01/12/1072413634/russia-nato-ukraine DD

MOSCOW — First U.S. and Russian diplomats faced off in Geneva. Then NATO received a Russian delegation in Brussels. The Organization for Security and Cooperation in Europe sponsored talks in Vienna. And finally, the U.S. and Russian chief diplomats met, again in Geneva, last week.

Russia courted all this attention by massing some 100,000 troops and military equipment near Ukraine, raising fears of a Russian invasion. Analysts read Russia's buildup as an attempt to pressure the U.S. and its European allies into concessions on a series of far-reaching "security guarantees" sought by Moscow.

1. Russia wants a guarantee Ukraine can never join NATO

Russia's main demand is a commitment from NATO to end its further expansion into former Soviet republics — especially Ukraine. Russia wants NATO to rescind a 2008 promise that Ukraine could someday join the defense alliance. Many observers see it as a distant prospect that Ukraine could join NATO because it doesn't meet membership requirements. But Moscow doesn't see it that way. "We don't trust the other side," Russia's chief negotiator, Deputy Foreign Minister Sergei Ryabkov, said after bilateral talks with the U.S. finished. "We need ironclad, waterproof, bulletproof, legally binding guarantees. Not assurances. Not safeguards. Guarantees. With all the words — 'shall, must' — everything that should be put in."

Russia's reasoning: President Vladimir Putin views Ukraine as an extension of what he calls "historical Russia" — a part of the Russian Empire and Soviet Union, and within Moscow's "sphere of influence" today. The threat of Ukraine's westward turn after a street revolution ousted the country's pro-Russian president in 2014 was the driving force behind Russia's annexation of Crimea later that year. Ukraine's desire to join the Western alliance also led to Russia's sponsorship of separatists in the country's eastern Donbas region — in effect sabotaging its path to membership by fueling a civil war.

NATO's counter: The U.S. argues that countries have a right to choose their own alliances and NATO has a long-standing "open door policy" for potential membership. "NATO has never expanded through force or coercion or subversion. It is countries' sovereign choice to choose to come to NATO and say they want to join," Deputy Secretary of State Wendy Sherman said after a meeting between Russian and NATO officials in Brussels earlier this month. Russia's actions are making the idea of NATO membership more appealing to Ukrainians, according to opinion polls. It is unlikely, however, that Ukraine will meet the requirements anytime soon.

#### Concessions on sovereignty spark global allied prolif.

Gawthorpe 14 – teaching fellow at the Defence Academy of the United Kingdom

Andrew Gawthorpe, 3-14-2014, “Could Ukraine Drive Nuclear Proliferation in Asia?” *The Diplomat*, https://thediplomat.com/2014/03/could-ukraine-drive-nuclear-proliferation-in-asia/ DD

Recent events in Eastern Europe raise the issue not only of Russia’s future actions but also the lessons that will be drawn regarding other revisionist states. In East Asia, a China that is nurturing territorial ambitions of its own and has recently become less shy about asserting them will watch to see how the West reacts to Vladimir Putin’s expansionism. So will China’s East Asian neighbors, who fear they may become the next Ukraine.

One of the most potentially disturbing effects of the situation in Ukraine is the possibility it may drive nuclear proliferation. The present crisis in that country could well have been a nuclear nightmare. When the USSR was unraveling in the early 1990s, a sizeable portion of its strategic forces, along with tactical nuclear weapons, were deployed in Ukraine. Had the new Ukrainian government in Kiev taken control of these weapons upon becoming independent, it would have been the third-largest nuclear power in the world. behind only the U.S. and the Russia.

Concerned about nuclear proliferation throughout Europe if new nuclear powers were created by the Soviet Union’s demise, the U.S. pressured Ukraine to denuclearize and to return its nuclear forces to Russia. Basking in a post-independence glow and seeking U.S. support on other issues, Kiev went along. This was the origin of the so-called Budapest Memorandum of 1994, in which Ukraine promised to give up its nuclear weapons in return for Russia, Britain and the U.S. guaranteeing its sovereignty and territorial integrity. With the wholesale invasion of Crimea by Russian forces in recent days, Kiev can be forgiven for asking if the agreement is any longer worth the paper it’s written on.

Since Russia’s occupation of Crimea, a former Ukrainian foreign minister has called for his country to restock its nuclear arsenal and some Western analysts have questioned whether Putin would have acted so boldly if Ukraine still had its nuclear deterrent. The question can be expected to occur to leaders of other countries who are concerned about the territorial ambitions of their neighbors or the sincerity of Western security assurances.

The issue is of particular salience in East Asia, where China has recently been flexing its muscles in a range of territorial disputes. Regional powers such as Japan and Taiwan must be watching America’s unwillingness to forcefully confront a nuclear-armed Russia and wondering how much backbone the exhausted and drained superpower would have if China made similar moves. This is especially the case since the Obama administration’s so-called “pivot” to the Asia-Pacific seems to be much more an excuse for disengaging from the Middle East than it is a real exercise in strengthening the American alliance system in the Asia-Pacific.

Any such moves towards proliferation would be unwise. Acquiring nuclear weapons may appear to provide an effective way for countries worried about their neighbors’ territorial ambitions to deter them, but the truth is not so simple. While nuclear weapons provide an effective deterrent against an all-out attack, they are not necessarily effective in deterring lower-level conflict. Just as it is implausible to imagine that Ukraine would have responded to the appearance of balaclaved soldiers in Crimea with a first strike, so it is equally implausible to imagine any country responding to the Chinese declaration of an Air Defense Identification Zone in the same manner.

Revisionist powers are adept at nibbling away at international norms and agreements slowly and avoiding big, sweeping gestures. Countries responding to such a nibble with nuclear brinksmanship risk making their adversaries look reasonable by comparison, giving nuclear weapons questionable utility in territorial disputes. And if their use is indeed threatened and taken seriously, the result can be a dangerous cycle of escalation.

#### East Asian prolif breaks deterrence and escalates.

Cimbala 15 – Stephen J., Distinguished Professor of Political Science at Pennsylvania State University Brandywine, “New Nuclear Disorder: Challenges to Deterrence and Strategy” Ashgate Publishing Ltd

Failure to contain proliferation in Pyongyang could spread nuclear fever throughout Asia. Japan and South Korea might seek nuclear weapons and missile defenses. A pentagonal configuration of nuclear powers in the Pacific basin (Russia, China, Japan, and the two Koreas—not including the United States, with its own Pacific interests) could put deterrence at risk and create enormous temptation toward nuclear preemption. Apart from actual use or threat of use. North Korea could exploit the mere existence of an assumed nuclear capability in order to support its coercive diplomacy.1'' A five-sided nuclear competition in the Pacific would be linked, in geopolitical deterrence and proliferation space, to the existing nuclear deterrents of India and Pakistan, and to the emerging nuclear weapons status of Iran. An arc of nuclear instability from Tehran to Tokyo could place US proliferation strategies into the ash heap of history and call for more drastic military options, not excluding preemptive war, defenses and counter-deterrent special operations. In addition, an unrestricted nuclear arms race in Asia would increase the likelihood of accidental or inadvertent nuclear war. It would do so because: (1) some of these states already have histories of protracted conflict; (2) states may have politically unreliable or immature command and control systems, especially during a crisis involving a decision for nuclear first strike or retaliation; unreliable or immature systems might permit a technical malfunction that caused an unintended launch, or a deliberate, but unauthorized, launch by rogue commanders; and (3) faulty intelligence and warning systems might cause one side to misinterpret the other's defensive moves to forestall attack as offensive preparations for attack, thus triggering a mistaken preemption.

#### Nuclear war causes extinction.

Starr ’17 (Steven; director of the University of Missouri’s Clinical Laboratory Science Program, senior scientist at the Physicians for Social Responsibility, Associate member of the Nuclear Age Peace Foundation, expert in the environmental consequences of nuclear war; 1/9/17; “Turning a Blind Eye Towards Armageddon — U.S. Leaders Reject Nuclear Winter Studies”; <https://fas.org/2017/01/turning-a-blind-eye-towards-armageddon-u-s-leaders-reject-nuclear-winter-studies/>; Federation of American Scientists; accessed 11/24/18; TV) [AV]

The detonation of an atomic bomb with this explosive power will **instantly ignite fires** over a surface area of three to five square miles. In the recent studies, the scientists calculated that the **blast**, **fire**, and **radiation** from a war fought with 100 atomic bombs could produce **direct fatalities** comparable to all of those worldwide in World War II, or to those once estimated for a “**counterforce**” **nuclear war** between the superpowers. However, the **long-term environmental effects** of the war **could** significantly disrupt the global weather for at least a decade, which would likely **result in** a vast **global famine**. The scientists predicted that **nuclear firestorms** in the burning cities would cause at least five million tons of **black carbon smoke** to quickly rise above cloud level into the stratosphere, where it could not be rained out. The smoke would circle the Earth in **less than two weeks** and would form **a** global **stratospheric smoke layer** that **would remain for** more than **a decade**. The smoke would absorb warming sunlight, which would **heat the smoke** to temperatures near the boiling point of water, producing **ozone losses of** 20 to **50 percent** over populated areas. This would almost double the amount of UV-B reaching the most populated regions of the mid-latitudes, and it would create UV-B indices unprecedented in human history. In North America and Central Europe, the time required to get a painful sunburn at mid-day in June could decrease to as little as six minutes for fair-skinned individuals. As the smoke layer blocked warming sunlight from reaching the Earth’s surface, it would produce the **coldest** average **surface temperatures** in the last 1,000 years. The scientists calculated that global **food production would decrease** by 20 to **40 percent** during a five-year period following such a war. Medical experts have predicted that the shortening of growing seasons and corresponding decreases in agricultural production could cause up to **two billion** people to perish from **famine**. The climatologists also investigated the effects of a nuclear war fought with the vastly more powerful modern **thermonuclear** weapons possessed by the United States, Russia, China, France, and England. Some of the thermonuclear weapons constructed during the 1950s and 1960s were 1,000 times more powerful than an atomic bomb. During the last 30 years, the average size of thermonuclear or “strategic” nuclear weapons has decreased. Yet today, each of the approximately 3,540 strategic weapons deployed by the United States and Russia is seven to **80 times** more powerful than the atomic bombs modeled in the India-Pakistan study. The smallest strategic nuclear weapon has an explosive power of **100,000 tons of TNT**, compared to an atomic bomb with an average explosive power of 15,000 tons of TNT. Strategic nuclear weapons produce much larger nuclear firestorms than do atomic bombs. For example, a standard Russian 800-kiloton warhead, on an average day, will ignite fires covering a surface area

of 90 to 152 square miles. A **war** fought with hundreds or thousands of U.S. and Russian strategic nuclear weapons would **ignite immense** **nuclear firestorms** covering land surface areas of many thousands or **tens of thousands** of square miles. The scientists calculated that these fires would produce up to **180 million tons** of black carbon soot and **smoke**, which would form a dense, **global stratospheric smoke layer**. The smoke would remain in the stratosphere for 10 to **20 years**, and it **would block** as much as **70 percent of sunlight** from reaching the surface of the Northern Hemisphere and 35 percent from the Southern Hemisphere. So much sunlight would be blocked by the smoke that the noonday sun would resemble a full moon at midnight. Under such conditions, it would only require a matter of days or weeks for daily minimum **temperatures** to **fall below freezing** in the largest agricultural areas of the Northern Hemisphere, where freezing temperatures would occur every day for a period of between one to more than two years. Average surface temperatures would become colder than those experienced 18,000 years ago at the height of the last Ice Age, and the prolonged cold would cause average rainfall to decrease by up to 90%. Growing seasons would be completely eliminated for more than a decade; it would be **too cold and dark** to grow food crops, **which would doom the** majority of the **human population.** NUCLEAR WINTER IN BRIEF The profound cold and darkness following nuclear war became known as nuclear winter and was first predicted in 1983 by a group of NASA scientists led by Carl Sagan. During the mid-1980s, a large body of research was done by such groups as the Scientific Committee on Problems of the Environment (SCOPE), the World Meteorological Organization, and the U.S. National Research Council of the U.S. National Academy of Sciences; their work essentially supported the initial findings of the 1983 studies. The idea of nuclear winter, published and supported by prominent scientists, generated extensive public alarm and put political pressure on the United States and Soviet Union to reverse a runaway nuclear arms race, which, by 1986, had created a global nuclear arsenal of more than 65,000 nuclear weapons. Unfortunately, this created a backlash among many powerful military and industrial interests, who undertook an extensive media campaign to brand nuclear winter as “bad science” and the scientists who discovered it as “irresponsible.” Critics used various uncertainties in the studies and the first climate models (which are primitive by today’s standards) as a basis to criticize and reject the concept of nuclear winter. In 1986, the Council on Foreign Relations published an article by scientists from the National Center for Atmospheric Research, who predicted drops in global cooling about half as large as those first predicted by the 1983 studies and described this as a “nuclear autumn.”

## Case

### private

NU – private follows the regulations of the public and wants their support

Chaben 20’ Chaben, Jack B.. "Extending Humanity’s Reach: A Public-Private Framework for Space Exploration." Journal of Strategic Security 13, no. 3 (2020) : 75-98. DOI: https://doi.org/10.5038/1944-0472.13.3.1811 Available at: <https://scholarcommons.usf.edu/jss/vol13/iss3/4> //RD Debatedrills

Predicated upon tightly integrated international cooperation and agreements with the commercial space sector, NASA can follow the GER and United States space policy to extend the reach of humanity. When paired with the push for collaboration among national space agencies by current United States space policy, however, the international nature of the GER reinforces the characterization of space as a place for nation-states. While this nation-based cast remains consistent with the terms of the OST, it consequently questions the legitimacy of private companies acting in space. Article IX of the OST holds that actors in space should “conduct all their activities in outer space… with due regard to the corresponding interests of all other states.” 52 Some states party to the agreement may neglect to recognize private entities as legal actors in space, thereby threatening the practicability of conducting progressively complex and expensive missions on behalf of national space agencies. The commercial space industry will necessarily seek dedicated support from sponsoring governments, as it prepares to launch missions deeper into space, to ensure protection for its activities from states less receptive to the growing role of private companies. By establishing a pattern of public proof-of-concept missions followed by a shift to the private sector to sustain an extended human presence in space, public-private partnerships enable companies to gain the experience necessary for progressively complex missions. This cooperative succession will progressively construct the sense of confidence sought by space companies as they interact in a traditionally state-dominated environment. By conducting the first missions beyond LEO and eventually to Mars, public space agencies may dilute some of the uncertainty with which the commercial space industry would have to cope as it attempts to transition into its leading role.53 The reinforcing relationship between public space agencies and private space companies, furthered by the cooperation between such agencies along the GER, will confirm the commercial space industry’s integrity as it works to extend humanity throughout the solar system. By signaling the importance of international collaboration on the journey to Mars, the GER can serve as a stable foundation of the confidence the commercial space industry seeks before dedicating its resources All use subject to http 93 sustaining a human presence in space. Public-private partnerships will further support the efforts of the space sector, as space agencies become a liaison for private companies operating in the traditionally state-run environment. The tight integration between the commercial space industry and NASA, for example, will enable companies to act on behalf of the United States as a proxy for the efforts of the agency. States can increase the efficiency of their activities, private companies can protect their profits, and humans will explore unprecedented distances because of this cooperation. Ultimately, public-private partnerships through new SAAs allow private companies to become an extension of the state. Through the innovative technologies of the commercial space industry that increase the efficiency of space travel, these partnerships will enable sponsoring state agencies to further the internationally shared goal of creating a sustained human presence in deep space.

#### Space colonization isn't feasible and intervening actors solve

Weinberg 13

Steven Weinberg is a theoretical physicist at the University of Texas at Austin, Nobel Prize in Physics, 1979, Space Policy, November 16, 2013, 29, "Response: Against manned space flight programs", Science Direct

6. Human survival

It is argued that “The most pertinent long-term reason for human spaceflight is survival as a species”. I don’t disagree with this, but it is a task for the distant future. In order to give humanity a chance to survive a global catastrophe such as a large meteor strike or an all-out nuclear war, an extraterrestrial colony would have to be permanently self-supporting. The colony would have to possess the industrial capacity to replace its equipment -- solar panels, air synthesizers, water mining machinery, hydroponics, etc. -- when it wears out. We do not now have the capability to establish such a permanently self-supporting colony on Antarctica, a far more benign environment than Mars or an asteroid. This is the real challenge: not to get people to Mars, but to free them from the need of support from Earth. Perhaps we should start with Antarctica.

#### Privatization is key to sustainable rocket launches – reliance on public entities is bad because they are too limited, expensive, and undo critical strides being made right now

**Kapoor & Todi 21**[Khushi Kapoor and Keshav Todi On March 20, 2021, 3-20-2021, "The Privatisation of Space Exploration – Finance and Investment Cell, SRCC," Finance and Investment Cell Shri Ram College of Commerce is a student-driven initiative to facilitate knowledge sharing on matters of finance, geopolitics and economy, at Shri Ram College of Commerce and at the university level. The cell aims to provide a stimulus to develop financial instincts among young minds through regular workshops, events and continued collaboration with the industry, to bridge the gap between pedagogy and practice. A small step, that will hopefully yield some great dividends. [https://ficsrcc.com/the-privatisation-of-space-exploration/]//DebateDrills](https://ficsrcc.com/the-privatisation-of-space-exploration/%5D//DebateDrills) ww

**Privatisation** of space exploration has had many benefits for the space industry in the 21st century. Private companies have a greater degree of autonomy in making decisions, which **enables** them to take up **new projects** while taxpayer-funded institutions are accountable to **the Government** and hence, have to often **limit themselves**. Moreover, there is quick decision making in **private companies** while the same process in a public enterprise would have to pass through a number of stages. This advantage has allowed companies like SpaceX, Blue Origin, etc. to cut their costs substantially and perform operations like **launch**ing a rocket to ISS **at** merely **$57 million per seat** as compared to **$80 million per seat** if aboard a Russian shuttle**, and $450 million** each mission before NASA ended its space shuttle program. Moreover, **making reusable landing rocket launchers, improvements in assembly lines and other** such **operations** further ensure lower costs. Due to the well- known success of the top few **p**rivate **s**pace **c**ompanies, many new small companies such as Firefly systems and Vector launch have been able to raise substantial private capital as well. The growth in the space industry also provides employment to millions all over the world, and the rise in the number of private space companies promotes competition amongst them and encourages constant improvements and advancements. Lastly, the publicity of their operations, like live streaming launches, has sparked widespread interest in space exploration among the general public.

## China war

1] alt cause of space race – Prazak 21 cites military utility in space

2] no link – how does private appropriation of space affect SCS deterrence

3] no link and alt cause: zhen is about ASAT weapons – those on on ground or satellites which are not appropriation

4] no link – china companies are primarily government owned, aff does not stop those public companies

#### Turn – a space race between private companies is preferable to a space race between countries – it increases innovation without the threat of an actual war since private companies do not have armies.

#### No SCS war

Brendan Taylor 14, Head of the Strategic and Defence Studies Centre at the Australian and PhD – National Australian University, “The South China Sea is Not a Flashpoint,” The Washington Quarterly, Spring 2014, Volume 34, Issue 1, Taylor & Francis

Unlike its recent behavior in the East China Sea, Beijing’s approach toward the South China Sea disputes has traditionally been one of conflict deescalation. Beijing’s clear preference has been to manage such tensions **bilaterally**. Following a period where an increase in Chinese maritime patrols led to a rise in the number of clashes with Vietnamese (and Philippine) vessels, for instance, Beijing and Hanoi reached agreement in October 2011 on principles for **settling maritime disputes**. Likewise in June 2013, China and Vietnam agreed to establish new hotlines to assist with managing incidents at sea and dealing with fishing disputes.32 Beijing has also shown some **willingness to take the multilateral route**. Most famously, China signed a non-binding “Declaration on Conduct of Parties in the South China Sea” with ASEAN in November 2002. While protracted progress continues, the official position of both China and ASEAN remains to establish **a legally binding code of conduct** in the South China Sea intended to incorporate mechanisms for **avoiding incidents at sea, crisis management, confidence building measures, and joint development**.33 Beijing has certainly not shown similar flexibility in relation to any of its other publicly-declared “core interests.” At China’s insistence, for example, discussion of Taiwan is strictly off limits in Asia’s multilateral forums.

#### China’s not revisionist --- rise will be peaceful

Heer 19

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But this policy mantra has two fundamental problems: it mischaracterizes China’s strategic intentions in the region, and it is based on a U.S. strategic objective that is probably no longer achievable. First, China is pursuing hegemony in East Asia, but not an exclusive hostile hegemony. It is not trying to extrude the United States from the region or deny American access there. The Chinese have long recognized the utility—and the benefits to China itself—of U.S. engagement with the region, and they have indicated receptivity to peaceful coexistence and overlapping spheres of influence with the United States there. Moreover, China is not trying to impose its political or economic system on its neighbors, and it does not seek to obstruct commercial freedom of navigation in the region (because no country is more dependent on freedom of the seas than China itself). In short, Beijing wants to extend its power and influence within East Asia, but not as part of a “winner-take-all” contest. China does have unsettled and vexing sovereignty claims over Taiwan, most of the islands and other features in the East and South China Seas, and their adjacent waters. Although Beijing has demonstrated a willingness to use force in defense or pursuit of these claims, it is not looking for excuses to do so. Whether these disputes can be managed or resolved in a way that is mutually acceptable to the relevant parties and consistent with U.S. interests in the region is an open, long-term question. But that possibility should not be ruled out on the basis of—or made more difficult by—false assumptions of irreconcilable interests. On the contrary, it should be pursued on the basis of a recognition that all the parties want to avoid conflict—and that the sovereignty disputes in the region ultimately are not military problems requiring military solutions. And since Washington has never been opposed in principle to reunification between China and Taiwan as long as it is peaceful, and similarly takes no position on the ultimate sovereignty of the other disputed features, their long-term disposition need not be the litmus test of either U.S. or Chinese hegemony in the region. Of course, China would prefer not to have forward-deployed U.S. military forces in the Western Pacific that could be used against it, but Beijing has long tolerated and arguably could indefinitely tolerate an American military presence in the region—unless that presence is clearly and exclusively aimed at coercing or containing China. It is also true that Beijing disagrees with American principles of military freedom of navigation in the region; and this constitutes a significant challenge in waters where China claims territorial jurisdiction in violation of the UN Commission on the Law of the Sea. But this should not be conflated with a Chinese desire or intention to exclusively “control” all the waters within the first island chain in the Western Pacific. The Chinese almost certainly recognize that exclusive control or “domination” of the neighborhood is not achievable at any reasonable cost, and that pursuing it would be counterproductive by inviting pushback and challenges that would negate the objective. So what would Chinese “hegemony” in East Asia mean or look like? Beijing probably thinks in terms of something much like American primacy in the Western Hemisphere: a model in which China is generally recognized and acknowledged as the de facto central or primary power in the region, but has little need or incentive for militarily adventurism because the mutual benefits of economic interdependence prevail and the neighbors have no reason—and inherent disincentives—to challenge China’s vital interests or security. And as a parallel to China’s economic and diplomatic engagement in Latin America, Beijing would neither exclude nor be hostile to continued U.S. engagement in East Asia. A standard counterargument to this relatively benign scenario is that Beijing would not be content with it for long because China’s strategic ambitions will expand as its capabilities grow. This is a valid hypothesis, but it usually overlooks the greater possibility that China’s external ambitions will expand not because its inherent capabilities have grown, but because Beijing sees the need to be more assertive in response to external challenges to Chinese interests or security. Indeed, much of China’s “assertiveness” within East Asia over the past decade—when Beijing probably would prefer to focus on domestic priorities—has been a reaction to such perceived challenges. Accordingly, Beijing’s willingness to settle for a narrowly-defined, peaceable version of regional preeminence will depend heavily on whether it perceives other countries—especially the United States—as trying to deny China this option and instead obstruct Chinese interests or security in the region.

#### Aff is different from the squo

Tronchetti 7[Fabio Tronchetti is a professor at the International Institute of Air and Space Law, Leiden University, The Netherlands, 2007, <https://iislweb.org/docs/Diederiks2007.pdf>, 12-15-2021 amrita]

ARTICLE II OF THE OUTER SPACE TREATY: A MATTER OF DEBATE The legal content of Article II of the Outer Space Treaty is one of the most debated and analysed topic in the field of space law. Indeed, several interpretations have been put forward to explain the meaning of its provisions. Article II states that: “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 any other means”. **The text of Article II represents** the final point of a process, formally initiated with Resolution 1721, aimed at conferring to outer space the status of res communis omnium, namely a thing open for the **free exploration** and use by all States **without the possibility of being appropriated**. By prohibiting the possibility of making territorial claims over outer space or any part thereof based on use or occupation, Article II **makes clear that** the customary procedures of **i**nternational **law allowing** subjects to obtain **sovereignty rights over un-owed lands**, namely discovery, occupatio and effective possession, **do not apply to** outer **space.** This prohibition was considered by the drafters of the Outer Space Treaty the best guarantee for preserving outer space for peaceful activities only and for stimulating the exploration and use of the space environment in the name of all mankind. What has been the object of controversy among legal scholars is the question of whether both States and private individuals are subjected to the provisions of Article II. Indeed, **while Article II forbids** expressis verbis the national **appropriation by** claims of **sovereignty**, by means of use and occupation or other means of outer space, **it does not** make **a**ny explicit **mention** **to** its **private** appropriation. Relying on this consideration, some authors have argued that the private appropriation of outer space and celestial bodies is allowed. For instance, in 1968 Gorove wrote: “Thus, at present an individual acting on his own behalf or on behalf of another individual or private association or an international organisation could lawfully appropriate any parts of outer space…”6 . The same argument is used today by the enterprises selling extraterrestrial acres. They base their claim to the Moon and other celestial bodies on the consideration that Article II does not explicitly forbid private individuals and enterprises to claim, exploit or appropriate the celestial bodies for profit7 . However, it must be said, that nowadays there is a general consensus on the fact that **both national appropriation and private** property rights **are denied** under the Outer Space Treaty. Several way of reasoning have been advanced to support this view. Sters and Tennen affirm that the argument that Article II does not apply to private entities since they are not expressly mentioned fails for the reason that they do not need to be explicitly listed in Article II to be fully subject to the non-appropriation principle8 . **Private entities are allowed to carry out** space **activities but**, according to Article VI of the Outer Space Treaty, they **must be authorized** to conduct such activities **by the** appropriate **State** of nationality. But if the State is prohibited from engaging in certain conduct, then it lacks the authority to license its nationals or other entities subject to its jurisdiction to engage in that prohibited activity. Jenks argues that “States bear international responsibility for national activities in space; it follows that what is forbidden to a State is not permitted to a chartered company created by a State or to one of its nationals acting as a private adventurer”9 . It has been also suggested that **the prohibition of national** appropriation **implies prohibition of private** appropriation because the latter cannot exist independently from the former10. In order to exist, indeed, private property requires a superior authority to enforce it, be in the form of a State or some other recognised entity. In outer space, however, this practice of State endorsement is forbidden. Should a State recognise or protect the territorial acquisitions of any of its subjects, this would constitute a form of national appropriation in violation of Article II. Moreover, it is possible to use some historical elements to support the argument that both the acquisition of State sovereignty and the creation of private property rights are forbidden by the words of Article II. During the negotiations of the Outer Space Treaty, the Delegate of Belgium affirmed that his delegation “had taken note of the interpretation of the non-appropriation advanced by several delegations-apparently without contradiction-as covering both the establishment of sovereignty and the creation of titles to property in private law”11. The French Delegate stated that: “…there was reason to be satisfied that three basic principles were affirmed, namely: the prohibition of any claim of sovereignty or property rights in space…”12. The fact that the accessions to the Outer Space Treaty were not accompanied by reservations or interpretations of the meaning of Article II, it is an evidence of the fact that this issue was considered to be settled during the negotiation phase. Thus, summing up, we may say that **prohibition of appropriation of outer space** and its parts is a rule which **is valid for both private and public entity**. The theory that private operators are not subject to this rule represents a myth that is not supported by any valid legal argument. Moreover, it can be also added that if any subject was allowed to appropriate parts of outer space, the basic aim of the drafters of the Treaty, namely to prevent a colonial competition in outer space and to create the conditions and premises for an exploration and use of outer space carried out for the benefit of all States, would be betrayed. Therefore, **the need to protect the non-appropriative nature o**f outer **space emerges** in all its relevance.