

Forum: Special Political and Decolonization Committee (GA4)

Issue: Regulating the privatization of outer space exploration

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INTRODUCTION

“The Earth is the cradle of humanity, but mankind cannot stay in the cradle forever”¹. This excerpt from a text of the profound rocket scientist Konstantin Tsiolkovsky demonstrates the great need of the scientific community to explore space. The topic under discussion is of significant importance as it is being discussed since the 1980s and will continue to be of interest to humanity even more in the future. After the end of World War II and long before the first private space flight in 1982, space became one of the most appealing sectors for research. The world's leading nations began intensive space exploration seeking to tap into the great military, political and financial potential of space. However, there were great inequalities between the superpowers and the rest of the countries, as the latter had not yet established infrastructure projects regarding space exploration. So, the need for regulations to prevent an economic chasm between the two groups was arising. The interest of governments and companies in space was great. While space exploration intensified and the world had a clearer image of the expected revenue from activities, such as the extraction of minerals contained in asteroids, the private sector decided to join the “contest”. Companies, like SpaceX, started to cooperate with More Economically Developed Countries (MEDCs), constructing modern rockets and assigning missions regarding space ore extraction.

When it comes to possible outcomes, the global picture is blurred. Future revenue of trillions of USD that will be possibly brought to earth can create either a social utopia or an economic dystopia. Based on the current guidelines and regulations, there are no specifications concerning mining taxes, accurate authorized stock of extracted goods and measures to prevent the rise of neo-imperialistic parties.

¹ “Konstantin E. Tsiolkovsky.” *New Mexico Museum of Space History*, 18 Feb. 2020, www.nmspacemuseum.org/inductee/konstantin-e-tsiolkovsky/?doing_wp_cron=1594377311.3156208992004394531250.

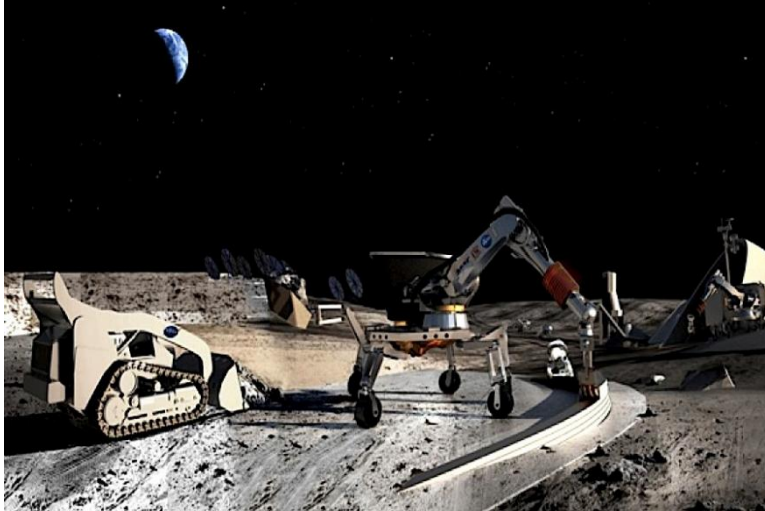


FIGURE 1 AN ARTIFICIALLY CREATED IMAGE OF ASTEROID MINING²

DEFINITION OF KEY TERMS

Outer space

“Space immediately outside the earth’s atmosphere”³

Privatization

Privatization is the takeover of a state-owned firm or property by a non-governmental party.

Boycott

A boycott is an act of voluntary and intentional abstention from using, buying, or dealing with a person, organization, or country as an expression of protest, usually for moral, social, political or environmental reasons.

Asteroid

An asteroid is a relatively small rocky celestial body which contains enormous amounts of mineral. The value of the minerals extracted from an asteroid is expected to be around 20 trillion USD.

Treaty

A treaty is a mandatory agreement between two or more parties, mostly states.

² “Water from near-Earth Asteroids Could Fuel Space Mining.” *MINING.COM*, 1 Oct. 2019, www.mining.com/water-from-near-earth-asteroids-could-fuel-space-mining/.

³ “Outer Space.” *Merriam-Webster*, Merriam-Webster, [www.merriam-webster.com/dictionary/outer space](http://www.merriam-webster.com/dictionary/outer%20space).

BACKGROUND INFORMATION

Historical background

The question of outer space exploration began to concern mankind during the Cold War. Tensions between the opposing sides, the United States of America (USA) and the Union of Soviet Socialist Republics (USSR), were constantly rising, as events, like the Korean War and the Cuban Missile Crisis, further aggravated the relations between the two countries. Even though the Cold War is mostly known for the innovations made in the field of weapons of mass destruction, equally important discoveries can be spotted in that of space exploration.

Space Race

During the 1950s and 1960s, the two superpowers were vying for superiority in space as they both feared that the enemy would gain an advantage by installing weapons in space. National security issues and the fear of losing dominance in this new battleground resulted in rapid technological advancements. Sputnik, the first man-made satellite was launched on 4 October 1957 by a Soviet missile that was able to carry nuclear warheads, a fact that urged the US to expand its secret intelligence operations to counter the USSR. Therefore, one year later, the National Aeronautics and Space Administration (NASA) was created, and the US could ultimately send an American satellite, named "Explorer I", in orbit around the earth. Furthermore, this competition race would continue for two decades by sending upgraded spaceships and satellites every year, with new missions, like the memorable Apollo 11, in which Neil Armstrong became the first man to walk on the moon, and, finally with the participation of the United Kingdom (UK), one of the US's most loyal allies. Moreover, a worth mentioning spaceship is Soyuz, which was launched in 1966 by the USSR. This spacecraft is very important as it was and still is today the global vehicle for transporting people into space until private companies decided to compete with it in the 2010s. In any case, the verdict for the winner of the race of that period was the US, as it was the only country which managed to send people to the moon.

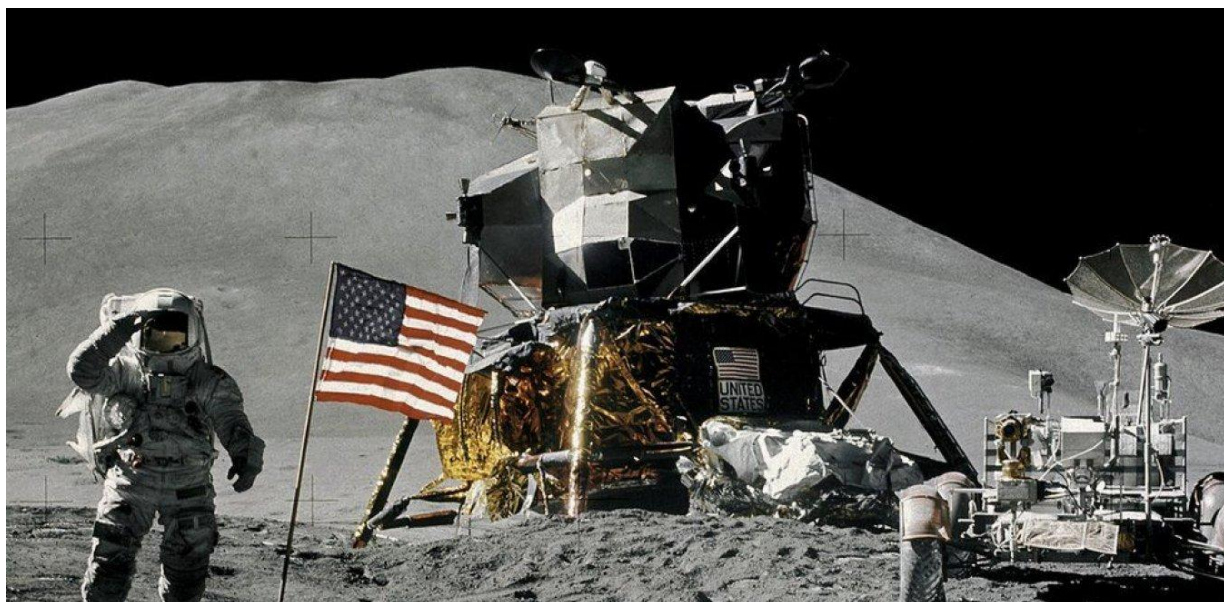


FIGURE 2 A PICTURE SHOWING THE LANDING OF THE APOLLO 11⁴

Outer Space Treaty

After the termination of the Space Race in 1967, the three parties involved decided to sign the Outer Space Treaty, a non-nuclear agreement which is currently signed by almost 100 states and forms the basis for the future space exploration and for creating specific protocols regarding spaceships and astronauts. This meant that countries were forbidden to place nuclear weapons or mass destruction weapons in outer space. But most importantly it reflected the participants' will that celestial bodies can be explored by all the countries without anyone of them being able to claim the ownership of anyone. Even though the Treaty was a stepping stone for regulating the exploration of outer space, the fact that it was drafted in the 1960s creates a series of practical issues as the capabilities humanity had at that time were extremely limited in comparison to those it has today. Therefore, establishing future agreements is essential.

The role of the Group of 77 (G-77)

As the world was observing the technological progress of the US and the USSR in the space sector, a group of seventy-seven Least Economically Developed Countries (LEDCs) decided to unite and create the G-77 in order to keep up with the superpowers. The aim of the coalition was to ensure that there will be fair distribution of the space wealth. They heavily relied on the Outer space Treaty's articles regarding the ownership of space and tried to explain how fair distribution of the space wealth could end poverty and improve the life of every human being on the planet. Furthermore, after accepting the principle of International Law as it is expressed in The Common Heritage of Mankind, which holds that defined territorial areas and elements of humanity's common heritage (cultural and natural) should be held in trust for future generations and be protected from exploitation by individual **nation states** or **corporations**. In 1973, the G-77 proposed that amendments should be made in the Treaty so as to implement the Common Heritage principle. Naturally, there were attempts by the superpowers and businessmen to block the passing of such amendments but at the end the latter were included in the Treaty. However, in 1979, the upcoming US Republican presidential candidate Ronald Reagan pushed for the cancellation of these amendments and eventually succeeded in abolishing them. As a result, the most technologically advanced countries could find aggressive ways to take advantage of the prospect to exponentially increase their space revenue, as they were no more obligated to look after the LEDCs' prosperity.

⁴ Kouleta, Athanasia. "Apollo 11 Space Mission." *Ethnos*, 21 July 2019, www.ethnos.gr/tehnologia/51249_diastimiki-apostoli-apollo-11-7-stoiheia-poy-agnooyme-gia-istoriko-bima-sto.

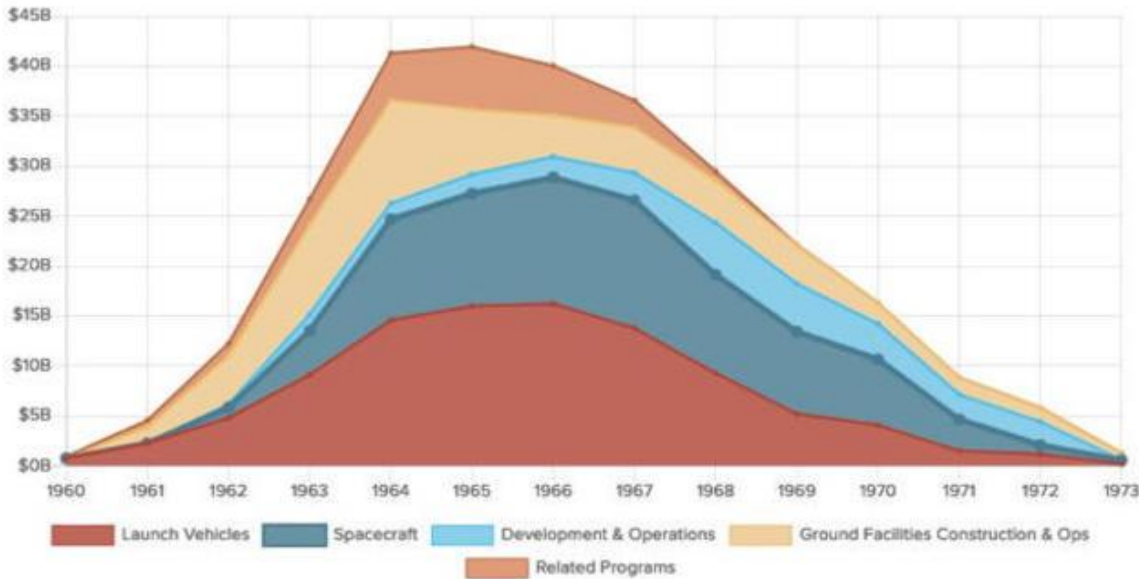


FIGURE 3 A GRAPH THAT SHOWS THE TOTAL COST OF THE USA'S SPACE MISSIONS EVERY YEAR⁵

The beginning of space privatization / "NewSpace" (1984-2004)

After the first-ever privately funded flight to space in 1982, the world started considering the possibility of commercializing space. Conestoga I, the first private rocket, was launched from an island close to the Texas Gulf and performed a successful flight reaching the outer space. The international entrepreneurial community, amazed by the private firms' willingness to spend a lot of money, started thinking of ways to capitalize on the opportunity of making a profit out of such businesses.

The Commercial Space Launch Act (C.S.L.A.)

On 8 October 1984, the then President of the United States Ronald Reagan announced the legislation of the Commercial Space Law Act, the first global law, regarding private space corporations. The Reagan administration aimed at opening this new market to entrepreneurs and private enterprises while allowing his country to benefit from it in multiple sectors. Being the only country that allowed launches of private spaceships, the US created a monopoly in which billionaires were able to develop new technologies spending astronomical amounts of money. Furthermore, research in the 1980s had shown that the lack of gravity in outer space could be beneficial to the whole of humanity. Microgravity in treating cancer and diabetes, new products for the improvement of computers and a variety of metals and crystals would be some of the benefits of space commercialization. To conclude, this law was the first of its kind and

⁵ "Apollo 11: How Much Did It Cost to Land Astronauts on the Moon?" CBS News, CBS Interactive, www.cbsnews.com/news/apollo-11-moon-landing-how-much-did-it-cost/.

due to this the need to regulate the exploration of outer space became more important than ever.

In the early 1990s, the situation was uneventful. Nothing important was happening except for the USA providing technical assistance to smaller nations to grow their space infrastructures and the creation of Roscosmos, the Russian Space Agency. Nonetheless, 1998 was one of the most important years for the space industry as an alliance of MEDCs started the assembly of the International Space Station (ISS). Russia and the US would also decide to participate in the program for the greater good, alongside China, Europe and Canada, creating the currently most important infrastructure project in outer space. The assembly of the ISS lasted for almost two decades, yet even today expansion reports are being discussed daily. The station is essentially a science laboratory that operates 400km above earth surface in an environment of zero gravity. In this way, the global science department can expand the boundaries of physics and chemistry experiments, as the water boils without creating air bubbles, a flame is more stable, etc.



FIGURE 4 THE INTERNATIONAL SPACE STATION⁶

⁶ Chang, Kenneth. "Want to Buy a Ticket to the Space Station? NASA Says Soon You Can." *The New York Times*, The New York Times, 7 June 2019, www.nytimes.com/2019/06/07/science/space-station-nasa.html.

Nevertheless, from the beginning of the 21st century to the present day, the world has made a leap to maximizing the potential of “NewSpace”. This time Russia pioneered in sending the first “space tourist” to the ISS on 28 April 2001. The millionaire Dennis Tito, backed by an American company, paid a seat and became the first non-scientist to visit the ISS. Despite the initial objections by NASA and the ESA which claimed that it is a thoughtless move to send tourists into space, that event put agencies that didn’t want to be inferior to Roscosmos on alert. Consequently, the US was the second country that allowed the next tourist trips to the ISS in 2002, a fact that provoked criticism against NASA’s moral standards. Two years later, George W. Bush proposed the Commercial Space Launch Amendments Act of 2004. This law created a clearer legal framework temporarily forbidding the Federal Aviation Administration (FAA) to allow commercial space flights. Hence, rising corporations, like the recently created SpaceX, would have the time to adapt to the new regulations and create inventive rockets, like Falcon 1, SpaceX’s first rocket to reach outer space using liquid fuel, —a project that was finalized in 2006.

In order to understand the sudden rise of private space corporations, we must first resolve the issue under consideration. Already from the beginning of their operation, national cosmos agencies’ main goals were research and science projects. Technological advancements in a microgravity environment, the exploration of Mars etc. are only a few typical examples of what we have achieved as humans. However, such projects were extremely costly and yielded no profit to the companies. Even after the start of privately-funded spaceflights, no businessman would invest in a sector that was not going to be profitable. That was until asteroid mining became popular and billionaires, like Elon Musk and Jeff Bezos, created space firms to gain 13-digit revenue assisting governments. Yet, the regulations regarding the privatization of space are still incomplete and must meet the criteria set for this new era.

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

USA (United States of America)

NASA is the oldest space agency in the world. Achievements, like the Apollo missions, the first female astronaut and many more, have inspired whole generations. As it was stated in previous parts of this study guide, the US has always been a pioneer in regulating the space sector through a series of legislative actions with the latest and most important being the Commercial Space Launch Competitiveness Act of 2015. By dint of this, the US can claim minerals extracted from outer space. Lastly, NASA has collaborated with some of the biggest space companies, like SpaceX and Sierra Nevada Corporation, in an effort to minimize the cost of spaceflights and promote asteroid research projects.

Russia

Roscosmos, even though it was founded much later than NASA, is one of the strongest space competitors. Following the steps of its Soviet predecessor, which has launched the first intercontinental missile, Roscosmos initiated the first “tourist” space flight to the ISS. Currently, the agency has been mostly inactive, with minimal missions or operations in contrast to its European, Japanese and American counterparts.

Europe

In order for the “Old Continent” to become a competitive power, the European Space Agency was created with 22 founding members. Like every other federal space organization, ESA’s role is to promote continental enterprises, focus on satellite technology, at least for the time being, and conduct scientific research to achieve development. ESA’s role will be really important in regulating “NewSpace”, since MEDCs, like Germany and the UK, which historically have been competing with the US and Russia in almost every sector, have to do the same today in the field of space.

SpaceX

SpaceX, the private company of Elon Musk, the man who also created PayPal and Tesla Motors, is one of the biggest non-governmental space firms. Since its first cooperation with NASA in 2006, SpaceX has completely changed the whole approach to space travel. With its big rockets from the Falcon 9 family, Musk’s company has been constantly innovating through missions, like the first cargo ship sent to the ISS, more affordable flights and, most recently, the first human orbital flight funded by a private company. Among SpaceX’s main plans regarding the privatization of space-traveling are the beginning of asteroid mining, a project that may yield trillions to its owner, and the habitation of Mars.

Blue Origin

Blue Origin was created on 8 September 2001 by Jeff Bezos, the CEO of Amazon. In contrast to SpaceX, Blue Origin’s business model focuses more on sustainability than on fast development. It has been the first company to create reusable spacecraft, a technology that can reduce the cost of space traveling by 50%. Like every other space company owned by a multibillionaire, Blue Origin is trying to win as many contracts as it can from the ISS in order to carry as much cargo to the station as possible. Lastly, asteroid mining will be Bezos’s next big project and, as every other corporation, Blue Origin has joined the New Space Race to be the first to achieve that.

The United Nations Committee on the Peaceful Uses of Outer Space (COPUOS)

COPUOS is the UN committee responsible for the regulation of outer space. It has two sub-committees, the legal and the scientific/technical. The main goal of this organization is to ensure peaceful operations in space and promote innovative ways to explore space through development and observation. It has implemented many programs concerning sustainability and technical assistance in order for both LEDC and MEDCs to be able to properly expand their projects. A great example is the ACCESS TO SPACE FOR ALL, a platform that enables countries with limited possibilities to advance their technology. Lastly, one of the most important bodies of the committee is Space Law, the party responsible for all the global regulations regarding outer space. Its role will be further enhanced in the future as the need to set limits on asteroid mining is going to become urgent.

TIMELINE OF EVENTS

DATE	DESCRIPTION OF EVENT
10 May 1946	The US performs the first ever space research flights.
21 August 1957	The USSR launches the first intercontinental ballistic missile.
4 October 1957	The USSR launches Sputnik 1.
31 January 1958	First American satellite, Explorer I, is launched.
29 July 1958	NASA is created.
1961	The United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) is created.
1966	The start of the Russian Soyuz transporters.
20 July 1969	First man to walk on the moon.
9 September 1982	The first privately funded spaceflight takes place.
8 October 1984	The C.S.L.A. is signed by Ronald Reagan.

25 February 1992	Roscosmos is created.
1998	The process of assembling the ISS started.
28 April 2001	First private spaceflight to the ISS.
2003-2004	George W. Bush signs the Commercial Space Launch Amendments Act of 2004.
2006	NASA provided SpaceX with 396 million USD for development program.
24 March 2006	SpaceX launches Falcon 1.
16 July 2011	NASA spacecraft enters orbit around asteroid Vesta for the first time.
21 May 2015	Barack Obama signs the US Commercial Space Launch Competitiveness Act.
30 May 2020	SpaceX becomes the first private company to launch humans into orbit.

RELEVANT UN RESOLUTIONS, TREATIES AND EVENTS

Status of International Agreements relating to activities in outer space as at 1 January 2019 Treaty/Resolution/Event 1/ A/AC.105/C.2/2019/CRP.3

On 1 January 2019, COPUOS signed the Status of International Agreements relating to activities in outer space, a resolution that can read any delegate. In this report, the UN Committee stated every signed treaty regarding the activities in outer space until 2019 and every delegate is strongly urged to conduct personal research on the resolution reconsidering the past treaties and their amendments so that they can be applicable in the future.

US Commercial Space Launch Competitiveness Act

On 21 May 2015, Barack Obama enacted the US Commercial Space Launch Competitiveness Act. This law promoted outer space explorations and enhanced the USA's ability to claim revenue through celestial bodies and meteors mining. As far as the present topic is concerned, this Act is the first document allowing asteroid mining and setting some basic guidelines.

PREVIOUS ATTEMPTS TO RESOLVE THE ISSUE

Except for the Acts mentioned in previous parts of the present study guide, as well as for the creation of COPUOS, there are no other actions that can be considered as "attempts to resolve the issue" and assist a delegate's research. As the question of the private exploration of space directly translates into the need of regulating asteroid mining, no one can predict the possible outcomes, and thus there can be no solutions for a future event. Nevertheless, it is this fact that enables world community to create a strong basis to prevent any future regulation problems.

POSSIBLE SOLUTIONS

The expected effects of asteroid mining can lead to two possible outcomes with the good one being the definitive solution of all global economic problems and the bad one, which is a more realistic scenario, being the creation of a neo-imperialistic capital dystopia. To prevent such an eventuality, it is important to regulate the privatization of outer space exploration.

Treaties and rules

Combined with the need to reconsider previous Acts, establishing new treaties that will satisfy modern needs can form a strong basis for new rules that will tackle the loopholes the past treaties had and technologically advanced measures and practices. Also, a universal asteroid mining act should be established taking into account all the reformed treaties and incorporating new guidelines and rules.

Global Welfare Programs

Undoubtedly, the LEDCs have only a small fraction of the opportunities MEDCs have regarding outer space exploration. It is important that this new sector must be governed by competition rules in order for prices to be reduced and the quality of the extracted minerals to improve. Therefore, the UN should further provide LEDCs with programs, like the ACCESS TO SPACE FOR ALL, that will allow them to catch up with the strongest competitors.

Sharing policies

In order to promote universal equality in space sector, a possible solution would be to create a profit-sharing plan. As stated in the Outer Space Treaty, space belongs to all humans. So, if all involved parties are interested in achieving the common world goals, like the UN Sustainable Development Goals, revenue from celestial body mining, which will be trillions of dollars, could be distributed, on a basis of a proportion protocol, to the United Nations and the LEDCs that are unable to achieve those goals on their own.

Business models

Lastly, it is crucial that new business models will be created to meet the future needs. Such models should be based on maximizing not only the possibilities of new technologies used in outer space exploration but also the potential revenue. Hence, the use of these funds can benefit mankind and protect our planet.

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