

**THE REALITY OF SPACEX IN THE US SPACE POLICY FROM AN  
ASTROPOLITICAL PERSPECTIVE**  
ASTROPOLİTİK BİR PERSPEKTİFTEN ABD UZAY POLİTİKASINDA SPACEX'İN  
GERÇEKLİĞİ

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**Abstract**

In recent years, several nations, including China, India, Japan, and developing countries like Iran, have made significant advancements in their space research sectors. Only Russia and the United States consider themselves the foremost space powers, allocating billions annually to sustain their equipment and information dominance. However, in less than ten years, space and its mineral and energy resources seem to be the focus of massive competitions between great powers, creating new intersections between corporations and governments, and, of course, between corporations and governments. A new breed of astropolitical competitions will result from this. Consequently, geopolitical certainty on Earth and the strategic equations of the space realm can be reinterpreted. On the other hand, the United States dedicates a significant portion of its military and research budget to the United States Space Research Organization, or NASA, for this astropolitical conflict. NASA, the world's largest space research agency, with years of experience of outer cosmos exploration and high-quality personnel, albeit 21<sup>st</sup> century introduced private actors that nowadays actively participate in astropolitics. Therefore, this study assesses the emerging geopolitical competition that lies behind the growing international interest in space by analyzing the role of SpaceX in astropolitics, which represents a new dimension of private enterprise activity.

**Keywords:** Geopolitics, Space, Cosmos, Competition, Astropolitics, USA, SpaceX.

**Özet**

Son yıllarda Çin, Hindistan, Japonya ve İran gibi gelişmekte olan ülkeler de dahil olmak üzere birçok ülke, uzay araştırmaları sektörlerinde önemli ilerlemeler kaydetti. Sadece Rusya ve Amerika Birleşik Devletleri kendilerini en önde gelen uzay güçleri olarak görüyor ve ekipman ve bilgi üstünlüklerini sürdürmek için yıllık milyarlarca dolar ayırıyor. Ancak, on yıldan kısa bir süre içinde, uzay ve mineral ve enerji kaynakları, büyük güçler arasında büyük bir rekabetin odağı haline gelecek ve şirketler ile hükümetler arasında, elbette şirketler ile hükümetler arasında yeni kesişim noktaları yaratacaktır. Bunun sonucunda yeni bir tür astropolitik rekabet ortaya çıkacaktır. Sonuç olarak, Dünya'daki jeopolitik kesinlik ve uzay alanının stratejik denklemleri yeniden yorumlanabilir. Öte yandan, Amerika Birleşik Devletleri, bu astropolitik çatışma için askeri ve araştırma bütçesinin önemli bir bölümünü Amerika Birleşik Devletleri Uzay Araştırma Örgütü'ne (NASA) ayırıyor. Dünyanın en büyük uzay araştırma ajansı olan NASA, yıllarca süren dış kozmos keşif deneyimine ve yüksek kaliteli personele sahip olsa da, günümüzde astropolitikte aktif olarak yer alan 21. yüzyılda ortaya çıkan özel aktörlerle de karşı karşıya. Bu nedenle, bu çalışma, özel girişim faaliyetinin yeni bir boyutunu temsil eden astropolitik alanda SpaceX'in rolünü analiz ederek, uzaya yönelik artan uluslararası ilginin ardında yatan ortaya çıkan jeopolitik rekabeti değerlendirmektedir.

**Anahtar Kelimeler:** Jeopolitika, Uzay, Kozmos, Rekabet, Astropolitika, ABD, SpaceX.

## Introduction

Since the dawn of agricultural civilization eminent scholars from Babylon to Beijing have looked to the stars to find meaning. This would manifest in our species as an evolving curiosity not just to observe the stars in the sky, but to also explore that void beyond. In 1865 Jules Verne imagined shooting astronauts to the Moon, in 1901 H.G. Wells wrote of his own Moon landing—perhaps portentously, Wells envisages the two pioneer astronauts as a businessman and a scientist. The popular imagination has since exploded with ambitions and dreams of space travel appearing in popular media, such as Star Wars and Interstellar (James, 2018: 1).

The middle of the 20th century brought up for mankind new geopolitical frontiers as the Outer space. Despite “*Geopolitics*” as a term is usually understood as a study connected to the physical geography of the State and how it “*commits its business*” within or/and without its physical boundaries (Merriam-Webster, 2025). Within the evolution of theorising the concept of “*Geopolitics*”, from fathers of Geopolitics like Halford Mackinder “*Heartlands*” theory (Mackinder, 1904) or Friedrich Ratzel “*organic state*” concept to modern day scholars, geopolitics as a study begins to add more and more fields in which it operates. Active space exploration and colonization initiatives (e.g. Artemis program or SpaceX plans to colonize Mars) may be explained, for example, by Ratzel’s Organic State theory or Lebensraum “*Living Space*” concept (Ratzel, 2018).

Outer space is like a sea whose strategic corridors and positions will eventually be crucial for military, logistical, and commercial purposes, a reality that will unavoidably attract the interests of the great powers. In the long run, as the Earth’s resources are depleted, the heavens will represent mankind’s future Lebensraum, especially for the frontiers man willing and able to conquer it. Progress in the long march towards the stars will entail a great deal of national pride for the peoples whose efforts turn out to be successful. The Solar System will be up for grabs for spacefaring empires (Alonso-Trabanco, 2019).

Discovering the USA approach to its Space program, since Cold War US has actively participated in outer space exploration and periodically reevaluated its approach to outer space exploration. USA operates two main agencies that operate USA’s business in outer space, they are NASA (National Aeronautics and Space Administration) and USSF (United States Space Force). Both of the agencies operate in the same domain (The outer space) and have similar and different objectives.

Mentioning non-governmental or private actors in the issue of outer space activities, due to such phenomenon as “*American Space Dream*” (a term commonly used in western

mass media, based on the concept of “*American Dream*”) refers to an idea where humankind masters space travel and is present on nearest celestial bodies as Moon and Mars. This dream initiated the commercialisation of outer space and emergence of private companies who do not only develop technologies used in space exploration but also commit their own missions and launches. In this article we will discuss unique features of “Space Industry” in USA, especially discovering SpaceX’s role in USA’s astropolitics.

This study is aimed to highlight the role of private business, in face of SpaceX in USA’s astropolitics throughout the prism geopolitics. Continuing this research primary and secondary sources were used, as for example, articles, books, websites, official public statements, official publications of institutions and organisations. Considering the aspect of study, almost all sources overviewed during this research are relatively recent and relevant.

### **Theoretical Framework**

#### ***Geopolitics and Astropolitics***

The understanding of geopolitics as a science evolutionised throughout the time of its invention as a field of research. Geopolitics tends to provide us a view of the world from perspectives of maps and other ways of infographics, albeit it’s almost impossible to outline a clear definition of geopolitics, still two main approaches of understanding this term may be outlined (Dodds, 2019). Firstly, geopolitics introduces us to an ability to define any groups (countries, nations, nationalities and etc.) using geographical terms or sometimes metaphors, e.g. “*iron curtain*”, “*Global south*” or “*Global North*”, “*Washington*” or “*Moscow*” and etc. The second approach, rather than using simplified labeling, questions the etymology of this metaphors, basically asking the question why certain metaphors occurred. Generally, classical geopolitics evolutionised from focusing on geographical objects (Mackinder’s Heartland’s theory) and continued to add “to consideration” over physical and geographical objects like air space and sea, emphasising their importance as entities for gaining control (Lee, 2017).

The contemporary approach to classical geopolitics, emphasizing importance of outer space was made by Everett Dolman in his article “*Geostrategy in the Space Age: An astropolitical Analysis*” [Dolman, 1999]. Dolman argues that, despite the fact that geopolitics originally developed its dogmas and principles for Earth, still work for outer space and development of new cosmic technologies is only a tool for the nonstop process of evolution of geopolitical theory. Even despite moving from classical topographic elements, new crucial elements as mass of a celestial body (this fact dramatically shapes the gravitation), orbit and different outer space phenomena (e.g. black holes, physics laws and etc.) are introduced by astropolitics (Dolman, 1999). “*Astropolitics*” is herein defined as the political study of stars,

celestial bodies, and activities in outer space. Space activities include those officially acknowledged by national space programs and military forces of different nations through official media releases (Salla, 2014: 96). Astropolitics considers outer space full of geopolitical significance. This means that the state that can best reflect its power in occupying important positions and using resources in space, becomes the ruler of this new “*space*”. Based on this assumption, the competition for dominance of outer space (interms of the relative efficiency of technology to achieve the allocation of outer space resources) is not only the key to achieving a power that ensures its survival in the space age, but it is also considered its central dynamic; to be transatlantic astronomy (Wang, 2009; Seyedi Asl, 2024).

In the spirit of Mackinder’s theory Dolman also introduces the “*Four regions of space*”. It consists of 4 main parts. Firstly, it’s our planet and all elements up to the unpowered orbit, or so known Karman line (approximately 100-120 kilometers above sea level), so called coastal area as all operations are impossible to execute without Terra and without passing the Karman line. Secondly, the Terran or the Earth space, is up to 36 thousand kilometres from Earth surface (up to geostationary altitude), a crucial frontier for humanity as in this range the speed of the bodies orbit and Earths rotations are the same, what is important for civil and military satellites (GPS system, e.g. Starlink system, military surveillance, etc.). Thirdly, the Lunar space, space between the geostationary orbit to Moon orbit, not so actively used in day-to-day space activities, but has a potential as the Moon is the closest and only visible from Earth space body (Dolman, 1999).

Moon has potential for resource extraction and even nowadays Humanity possesses such technologies, the only question is cost effectiveness of such activities. Struggles of nations of control over areas will appear not only in the skies but also on Earth’s surface. In order to commit an effective and successful launch into the outer space, the rocket site should be located as close as possible to the equator. Not all Nations who tend to reach outer space have access to some territory near the equator.

Limited access to the ability of a state to commit space activities may lead to a series of threats towards sovereignty of a state. For example, rich infrastructure in outer space allows to build complex systems of satellite communications, e.g. in March 2025 a conflict between Elon Musk (owner of Starlink) and AFU (Armed Forces of Ukraine, Ukraine’s state military, currently engaged in armed conflict with Russia) threatened to shut down work of its system for the Ukrainian troops (Looker, and Abdurasulov, 2025). Ukrainians used Starlink as one of the premier communication system within its troops and HQ’s, the shutdown of this system would cause dramatic consequences on the frontline of the Russian-Ukrainian conflict,

Ukraine as a state has no direct access to outer space and has no abilities to build a similar system in order to fully maintain as a sovereign state and ignore any limitations of third-parties. Not mentioning other aspects of military objects in outer space such as surveillance, nuclear strikes early warning systems etc.

States with no active space programs in future will also struggle for access to outer space, the situation is similar with the colonial model of the world in 15th - 20th century. While Global Super powers as England and Spain gained control over *Mundus novus* and extracted resources, they fortified their positions on new territories. States that lacked of colonies had struggles with development of their economies and resources, e.g. German Empire that struggled without any colonies and went to World War in order to potentially gain rich colonial territories. There is a high risk that after Earths resources become highly depleted, States will see outer space as *Terra nova* with potential for resource extraction. From this perspective Ratzel's (Ratzel, 2018) *Lebensraum* explains that states, like a living organism, will grow and expand, and considering that all territories on the Globe are no longer "vacant" the next lands to conquer are in the skies. The only question is when humanity will outgrow its "cradle".

After the bipolar model of Space race ended in the face of dissolution of Soviet Union in 1991, more and more actors started to appear on the global Space race arena. Previously, list of Space Nations, Nations which actively participated in research of outer space and its exploration, consisted only out of USSR (Russia as a successor) and USA. Nowadays, new Space Nations emerged, as for example China, India and the European Space Agency (ESA) which represents European states as a whole entity, leading to 5 (USA, Russia, India, China and ESA) active participants of the Second Space Race.

More and more states become "Emerging Space Nations", meaning that they begin to develop their Space doctrine, as an example Brazil. Brazil has a few launch sites that are commercially used by third-parties, for example Virgin Orbit or Hyperion. Or Brazil launched a few satellites, e.g. Amazonia 1, which was launched on January 28, 2021 by the Indian Space Research Organisation (ISRO), basically outsourcing the launch to the orbit (Brazilian Space Agency, 2022). And Brazil is not the only example of such emerging Space Nations, albeit this is worth another discussion and thus will not be considered in this work.

The USA has a complex system of outer space exploration. It consists of three main entities: military presence (here the main actor is Department of Defense (DoD) in face of Space forces, main activities are connected with surveillance, secure channels of communications via satellites and early warning systems for nuclear strikes), civil activities

(is committed by NASA, main activities are focused around scientific research, commitment of cosmos exploration operations, etc.) and commercial sector (private companies that do their business in outer space exploration, e.g. development and construction of satellites, rovers or others e.g. Boeing or Lockheed Martin, and companies like SpaceX who develop their own space programs).

The uniqueness of American astropolitics is formed by high level of presence of private companies not only as contractors who produce or engineer technologies, but also business that commits the full spectrum of outer space activities (development of technology, its testing, its launch, planning and execution of space travel missions). Nowadays 29 company-operators (e.g. SpaceX, ABL Space Systems, Lockheed Martin and etc.) are licensed to commit space launches with more than 800 committed launches from 1989 to present days (Commercial Space Data, 2025). Mentioning the role of Elon Musks SpaceX, SpaceX committed 501 launches, what represents 56.1% of all launches registered by FAA (Ibid).

## **Research Findings**

### ***USA Space Program and competition in space***

Soviet Union and United States initially where the only states who started the Space Race and for almost half a century were the only players on the cosmos geopolitical arena. One of the reasons for that is the high entry threshold for nations in order to participate in such activities. For comparison, according to NASA, The Apollo program (NASA's program, what's main goal was to safely deliver American astronauts on the Moon surface and back on Earth) costed for American tax payers 23 billion US dollars (National Aeronautics and Space Administration, 1968). While in previous century, Space Race was just another "battlefield" for the Cold War, the modern astropolitics arena became a more complex environment. US government operates two main agencies that commit USA's business in outer space, they are NASA (National Aeronautics and Space Administration) and USSF (United States Space Force). Both of the agencies operate in the same domain (the outer space) and have similar and different objectives.

Within the establishment of the Space Force in December 2019 by Donald's Trump first administration (United States Department of Defense, 2019), NASA and USSF signed the "***Memorandum of Understanding***" (MOU) (National Aeronautics and Space Administration, 2020) within two agencies in 2020. This memorandum outlines such principles as: NASA and Space force share a long-term interest in outer space in civil and defensive roles respectively. USSF is a military branch, its main goals is to implement US

interest in outer space, “*provide space capabilities*” and lead the development of military space systems (e.g. management of surveillance satellites) (Ibid).

NASA in contrast is a civil agency and its main goals are concentrated within outer space exploration and scientific work in broad perspective. Still, it is important to mention that despite being a civil agency NASA plays an important role in enhancing US National Security, as under The George E. Brown, Jr. Near-Earth Object Survey Act (2005) (United States Congress, 2005) NASA is to track any celestial bodies that may threaten The Earth’s safety. This aspect is a field of tight cooperation between these two agencies. NASA and DoD (Department of Defence) including USSF share information which can enhance the successfulness of NASA missions e.g. new technologies, intelligence data.

Exploring the aspect of US Space Doctrine, NASA in contrast to USSF does not have a unified document that regulates all aspects of its missions, while USSF published Space Force Doctrine Document–1 (SFDD–1) (Saltzman, 2025). According to SFDD-1 outer space is seen as a full domain for warfighting and “*not a collection of supporting activities*”. Secondly, space is seen as an entity that is critically important for US national security, the goal of the Space Force is to defend and expand National interests in this domain. The document sees space activities as an opportunity for increasing reputation among other World Nations, to add US being a “*Space Power*” or we may call it “*Space Nation*”, actively participating in outer space activities plays its role as part in global deterrence and power projection. USSF tempts to provide for its Nation “*Space superiority*” in order to maintain USA’s status of the world’s “*Super Power*”. It is important to remember that the Space Force is a very young entity (meaning that it was founded as a separate entity) and there are, yet, little missions committed for performance evaluation of its missions (Saltzman, 2025).

Moving back to NASA, as mentioned, NASA being a civil agency does not have a unified doctrine which it will use a one whole universal guideline. Instead, it has a group of documents, which combined together, may be called as a “**Doctrine**”. This “*Doctrine*” consists of the following types of documents: documents issued by NASA itself (e.g. NASA strategic plans), US government National policies (e.g. presidents executive orders or Space Policy Directives) and Acts issued by the US Congress. NASA issued its “*Strategic Plan*” documents from 1998 to 2022 (National Aeronautics and Space Administration, 2025). Despite the change of language throughout the years in this documents, main themes of strategic goals continue to be the four similar domains: “*Discover*” (focus on enhancing humanities knowledge about Earth, and outer space), “*Explore*” (focus on presence of Humanity in outer space including Moon and Mars), “*Innovate*” (focus on technological

advantage and effectiveness) and “*Advance*” (focus on continuous development of existing technologies and other aspects e.g., human capital).

While NASA Strategic Plan’s documents are more about general goals of NASA, the US Government gives more concrete directives. *National Aeronautics and Space Administration Authorization Act of 2022*, passed as part of: *CHIPS and Science Act (Public Law No: 117-167)* (United States Congress, 2022) covers the following objectives: NASA should develop exploration programs towards Moon and Mars including the Artemis program, should continue the operation of the International Space station (ISS) at least until 2030 financial year, should continue and foster the commercial space sector. Elaborating on the Artemis program, Artemis campaign represents a long existing “*dream*” of the US government to return back to the Moon and go to Mars, this campaign, stated by ex-president George Bush in “*Vision for Space exploration*” (National Aeronautics and Space Administration, 2004) in 2004 and later by Trump (during his first administration) in Space Policy Directive 1 (SPD-1) (United States. Executive Office of the President, 2017). The program has short- and long-term objectives, delivering humans back to the Moon and afterwards committing a crew flight to Mars. Originally planning to commit the short-term goal in 2024, albeit the date is moved to 2027. It is important to mention that this programme fully demonstrates the cooperation between NASA and commercial business, for instance, in April 16 2021 NASA publicly announced that SpaceX was chosen as a primary contractor for development of the human lander, estimated award for SpaceX is around 2.9 billion US dollars (National Aeronautics and Space Administration, 2021). The Artemis campaigns aim to land at Moon’s South pole as this region has potential as it may locate an ice glacier which may be used for establishing life supporting systems for permanent bases on the lunar surface. Unique conditions of the Lunar South Pole e.g. always shadowed craters and nearby ridges allow future outposts to both extract water from ice and gain solar power.

Several nations for the last few decades fight for this *Terra nova*, e.g. in 2023 Russian space agency Roscosmos launched *Luna 25* aiming the south pole crashed and lost contact with Earth (Russia's State Space Corporation, 2023). India also aimed its spacecraft for the lunar pole, in 2019 Chandrayaan-2 was also lost in low lunar orbit approach (Kumar, 2019). Later in 2023, ISRO launched Chandrayaan-3 and successfully landed on the lunar surface (Indian Space Research Organisation, 2023). China also lately committed few successful launches to the Moon. Chang’e-4 in 2019 was the first spacecraft to land on the far side of the Moon, in 2020 Chang’e-5 (China National Space Administration, 2021) was the first successfully returned space craft with Moon terrain samples since soviet Luna-24

(RussianSpaceWeb.com, 2025). All this illustrates high interest rates of the Space race “combatants” in developing their own infrastructure not relying on USA’s “goodwill” in future to share its space outposts with other world nations.

In 2021 Memorandum of Understanding between the Government of the People’s Republic of China and the Government of the Russian Federation Regarding Cooperation for the Construction of the International Lunar Research Station (People’s Republic of China; Russian Federation, 2021) was signed.

Thereby, The World has two main international blocks who tend to establish lunar surface outposts, as both the Artemis accords (e.g. Canadian Space Agency (CSA), European Space Agency (ESA), Japan Aerospace Exploration Agency (JAXA) and Mohammed Bin Rashid Space Centre of the United Arab Emirates play significant role in this programme (National Aeronautics and Space Administration, 2025) not mentioning numerous private entities from all the Globe) and ILRS (nowadays, this project was joined by Senegal, Venezuela, Belarus, Pakistan, Azerbaijan, South Africa, Egypt, Nicaragua, Thailand, Serbia and Kazakhstan) rely on international cooperation of numerous states and private entities. India meanwhile stands a complex position, while it never signed MOU on the ILRS project, India showed interest (Power Technology, 2024) in participating in the project within the ILRS led by Rosatom (Russia’s state nuclear energy corporation, responsible for nuclear power generation, and exports of nuclear technology) who tends to develop a nuclear reactor for the Lunar base. Albeit India in 2023 India became the 27th participant of the Artemis Accords (National Aeronautics and Space Administration, 2023). It is important to understand that *The Artemis Accords* (National Aeronautics and Space Administration, 2020) is nothing more than a collection of “gentlemen rules” for space exploration, emphasizing the importance of peaceful and civil exploration of outer space and celestial bodies and does not represent a strictly political union as NATO or EU with their own ideology.

While ILRS mostly consists of nations of the *Global South* and *BRICS+ block*, Artemis Accords mostly consists of the *Western block* and US partners. It is a controversial topic if participation of a state, e.g. India, in one project, limits their participation in others block projects. India demonstrates in this case a flexible approach, having a dialogue with both “camps” or “blocks”, demonstrating a Neoclassical realism approach, where the state chooses not to “balance” between parties, but attempts to strategically regulate its own National interests.

***Space X and USA Space aims in Space***

As mentioned previously, commercialisation of space is a high trend in the USA astropolitics. We can say that a new “*reform*” or “*evolution*” of US astropolitics is seen nowadays, as NASA shifts its role from full-service agency (from engineering spacecrafts to launching them to space) to a customer-like organisation, outsourcing different projects to private companies, despite previously it did everything by its own resources.

SpaceX, as NASA’s contractor, participates in few partnership projects (Commercial Crew program, Commercial Resupply program, Landing lunar module for Artemis III). Commercial Crew Program is a program whose goal is to outsource the delivery of astronauts to the ISS. Recently, SpaceX demonstrated its high level of readiness and reliability in contrast to other contractors, e.g. Boeing’s Starliner crew craft launched in June 2024 Butch Willmore and Suni Williams (referred as Crew-9) to the ISS for a week-long mission. Due to potential risk of crucial technical failure (National Aeronautics and Space Administration, 2024) NASA decided to retrieve Boeing’s capsule home uncrewed, this decision extended Crew-9 to February 2025 when it was safely brought home by SpaceX’s Crew Dragon spacecraft. To note, first successful launch and return of Crew Dragon to ISS was committed in November 2020 (Space Exploration Technologies Corp. Crew 1 Launch (SpaceX), 2020).

One of the competitive advantages of SpaceX is its reusable rockets (e.g. Falcon 9). Usage of reusable rockets is approximately 65% cheaper and have x30 lower cost overrun (Stockley, 2023), while estimated launch in 2023 for Crew Dragon costs 65 million US dollars per seat, commercial launch of Falcon heavy priced around vary from 100 to 160 million us dollars, Falcon 9 launches vary from 67 to 45 millions US dollars (Kuhr and Islam, 2024). SpaceX is able to provide low launch prices due to frequent launches, following the principle “*more launches you have - the cheaper rockets you get*”, with this principle the main customer of SpaceX is actually SpaceX with its Mega satellite constellation project - Starlink. According to astronomer and astrophysicist Jonathan McDowell’s site, on 30 Jul 2025, Starlink constellation consists of 9317 “*stars*” (McDowell, 2025), while according to ESA on 23 Jul 2025, from the beginning of Space Race about 22 740 satellites were delivered to Earth’s orbit, while only about 12 thousands are still operational (European Space Agency, 2025).

Continuous expansion of the Starlink constellation provided an upgrowing demand for launches, which allowed SpaceX to keep prices for other clients low and in parallel allowed it to enhance the technology of reusable rockets. Considering aspects mentioned above, for NASA and American taxpayers it becomes more beneficial to outsource rockets, rather than build their own.

Albeit, in 2023 NASA Office of Inspector General issued a document that shows the audit results of transition of Space Launch System (SLS) to a Commercial Space Contract. Document mainly focuses on the cost of the Artemis Programme, NASA, in goal of cost reduction, under the Exploration production and Operations Contract (EPOC) outsourced the manufacture of the SLS (heavy booster rocket) by executing sole-sourced service contract to the Boeing Company and Northrop Grumman Systems Corporation. Initially, the cost of SLS development by NASA, for 2012-2025 fiscal years was estimated around 23.8 billion US dollars, which was 26% of the whole Artemis programme budget. By outsourcing production and operation of heavy booster rockets, NASA hoped to reduce costs by 50% (NASA's Transition of the Space Launch System to a Commercial Services Contract (IG-24-001). 2023).

The Inspector General audit found such estimations "*cost savings of 50 percent is highly unrealistic*", though finding the idea of outsourcing such projects a potentially profitable strategy. First 10 SLS's produced under the EPOC will cost around 2 - 2.5 billion US dollars, and these numbers do not meet NASA's optimistic prognosis. Mainly, this audit draws next highlights: outsourcing production and operation of spacecrafts has a long-term potential, albeit it is also important to increase the demand for such products (find clients outside NASA) in order to lower the production cost and shift to cost-reimbursable to a combined commercial services contract and introduce long-term fixed prices (NASA's Transition of the Space Launch System to a Commercial Services Contract (IG-24-001). 2023).

Thus, main problems of cost reduction and commercial technology outsource - small quantity production, limited demand and low competitive environment (e.g. nowadays active contractors of this market are Boeing and SpaceX). Albeit, giving the privilege of an oligopoly to SpaceX and a few other companies, may cause unwanted changes in pricing or quality of produce, not mentioning other downsides of a typical oligopoly.

Thus, NASA attempts to distribute the contracts as it attempted to do with the Commercial Crew program, which we already discussed above, despite having lost over 1.6 billion US dollars (Fernholz, 2024), was not closed by NASA and Boeing still continues to work on its product. NASA from this perspective reached a neoclassical realistic approach, or it can be said "*pragmatic approach*", attempting to redistribute its own risks, especially after adopting the "*safety over schedule*" principle after the Columbia's shuttle catastrophe. Contemporary American astropolitics attempt to form a market of all products and services possible which contribute to outer space activities and form conditions for fair competition in

order to maintain fair pricing and good quality. NASA shifts its role and becomes more of a strategist (where executing entities are private companies), who leads and guides, rather than “*fights in the frontlines*”.

### **Conclusion**

Today, all aspects of life are increasingly influenced by space-related technologies. Various satellites have eliminated time and distance barriers for information exchange. At the same time, fierce competition has emerged in the space sector, and the astropolitics has taken on new dimensions in military rivalries. Of course, this competition began during the Cold War, with the space race between the United States and the Soviet Union being an example of the geopolitical competition in space during that era. Although these two superpowers competed with each other in all regions and in all fields. With the end of the Cold War, it seemed for a long time that the space race would give way to space collaborations aimed at improving humanity’s collective living capabilities, including investment in telecommunications projects, facilitating wave transmissions via satellites, and so on. In the years following the Cold War, Russia and the United States organized international collaborations to support civilian space activities, with the International Space Station being one of its most important symbols.

However, in recent years, especially with the emergence of discussions about geopolitical competition among major powers in the national security documents of the United States, Russia, China, and the Europeans, cosmos and outer space has gradually regained its strategic position in this new competition. This competition has intensified, especially with Trump becoming the President of the United States. Evidence suggests that the Trump administration has defined space alongside land, sea, and air as a new “*battlefield*” for itself. It appears the US is preparing itself for the next generation of conflicts in space or other different celestial bodies, which could ultimately lead to further militarization of space and a reduction in activities related to economic-industrial and research sectors. In the meantime, the role of the public and private sectors is rapidly changing, with governments paving the way for private companies to build large, coordinated satellite systems. These changes are exacerbated by major technological advancements, policy shifts, and increased private funding from wealthy individuals.

During the Trump presidency, new equations are expected to be written with the effective role played by Elon Musk in the fields of technology, military, and especially space science. Musk, the founder of SpaceX, is also heavily focused on projects related to traveling

to Mars, with his goal being to send humans to Mars and establish a human colony on the planet. By developing the Starship rocket, SpaceX aims to reduce the cost of space travel and make human missions to Mars possible. Beyond the scientific and technological approach of projects such as living on Mars and the development of the US Space Force, taking these actions and outlining such strategies is also of great importance from a political and power perspective.

On the other hand, the role of Elon Musk could change the way government actors interact, the role and power of non-governmental actors, and solidify the position of the American company SpaceX as the dominant global space actor. According to theorists and observers, this places space policy as an essential political component in US domestic and foreign politics, elevating the status of non-governmental actor SpaceX. Therefore, a future in which astropolitics, led by Musk, has found a new dimension promises a contemporary vision for conquering space, such as the exploitation and colonization of celestial bodies like Mars and Europa. Musk's stated reasons for entering the political arena also include justifications such as "*the fate of Western civilization*", which places the astropolitics within the competition between space nations powers, the United States, Russia, India, EU and China. *In any case, it seems that space and mineral and energy resources in space will be the center of major competitions among great powers in the coming decades, which means the formation of new intersections between governments, as well as between companies, and of course, between governments and companies.*

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