

REDEFINING AMERICAN INTERESTS: ANALYZING US POLICY SHIFTS DURING THE SPACE RACE WITH CHINA (2011-2021)

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ABSTRACT. This research delves into the changing patterns of identity and anarchy culture experienced by the United States in the chronology of the space race with China from 2011 to 2021. Utilizing Alexander Wendt's constructivist theory, this study explores the transformation in US space policy as a response to China's growing presence in space exploration. The qualitative methodology employed involves thematic analysis of secondary data sources, including congressional minutes, official statements, media coverage, and public speeches. The findings reveal a dynamic shift in the US's identity, influenced by its interactions on the international stage. During the Cold War, the US's identity, shaped by a Hobbesian culture of anarchy, was marked by rivalry with the Soviet Union. Post-Cold War, the focus shifted to demonstrating leadership through international cooperation, reflecting a Kantian logic. However, with the emergence of China as a formidable competitor, the US identity has once again transformed, now characterized by a Lockean culture of competition rather than direct conflict. This shift has led to significant policy reformulations, including strategic partnerships and renewed emphasis on self-reliance in space missions, such as the Artemis program and collaboration with private sector companies like SpaceX. These results highlight the intricate relationship between national identity, perceived threats, and policy responses, underscoring the fluid nature of US space policy in the context of global space contestation.

Keywords: Space Contestation; Constructivism; identity; national interest; space race

MENDEFINISIKAN ULANG KEPENTINGAN AMERIKA: ANALISIS PERUBAHAN KEBIJAKAN AS DALAM MENANGGAPI PERLOMBAAN ANTARIKSA DENGAN TIONGKOK (2011-2021)

ABSTRAK. Penelitian ini menggali pola perubahan identitas dan budaya anarki yang dialami oleh Amerika Serikat dalam kronologi perlombaan luar angkasa dengan Cina dari tahun 2011 hingga 2021. Dengan menggunakan teori konstruktivis Alexander Wendt, studi ini mengeksplorasi transformasi dalam kebijakan luar angkasa AS sebagai respons terhadap kehadiran Cina yang semakin meningkat dalam eksplorasi luar angkasa. Metodologi kualitatif yang digunakan melibatkan analisis tematik dari sumber data sekunder, termasuk risalah kongres, pernyataan resmi, liputan media, dan pidato publik. Temuan mengungkapkan pergeseran dinamis dalam identitas AS, dipengaruhi oleh interaksi mereka di panggung internasional. Selama Perang Dingin, identitas AS, yang dibentuk oleh budaya anarki Hobbesian, ditandai dengan persaingan dengan Uni Soviet. Pasca-Perang Dingin, fokus bergeser ke demonstrasi kepemimpinan melalui kerjasama internasional, mencerminkan logika Kantian. Namun, dengan munculnya Cina sebagai pesaing yang tangguh, identitas AS sekali lagi berubah, kini ditandai dengan budaya kompetisi Lockean daripada konflik langsung. Perubahan ini telah mengarah pada reformulasi kebijakan yang signifikan, termasuk kemitraan strategis dan penekanan baru pada kemandirian dalam misi luar angkasa, seperti program Artemis dan kolaborasi dengan perusahaan sektor swasta seperti SpaceX. Hasil ini menyoroti hubungan antara identitas nasional, ancaman yang dirasakan, dan respons kebijakan, menekankan sifat dinamis dari kebijakan luar angkasa AS dalam konteks kontestasi luar angkasa global.

Kata kunci: Kontestasi Antariksa; konstruktivisme; identitas; kepentingan nasional; perlombaan antariksa

INTRODUCTION

Space exploration and utilization have become pivotal areas in international relations, deeply connected to national defense, security, economic, and socio-political interests. As nations strive to maximize their interests in space, a complex mix of competition and cooperation unfolds, shaping the global politics of space (Oberge, 1999). This dynamic, initially centered on military-focused security, has evolved to include broader technological and scientific competition, exemplified by the Cold War space race between the United States (US) and the

Soviet Union (USSR), and now involves new players like China (Moltz, 2019; Nasu, 2011).

The US-USSR rivalry in space during the Cold War, highlighted by milestones such as the Soviet Union's early space achievements and the US's 1969 moon landing, set the stage for future space competition (Hanes, 2012; Sudjarmiko, 2011). The post-Cold War era, however, brought new challenges, especially with China's rapid advancement in space technology, necessitating a reevaluation of US space policy (Logsdon, 2015; Petroni & Bianchi, 2016).

This shifting geopolitical landscape requires an exploration of state behavior and policy formulation

through a theoretical lens, for which Alexander Wendt's constructivist theory in International Relations is apt. Wendt argues that states' identities and interests are socially constructed through their interactions and the meanings they derive from these interactions (Wendt, 1992, 1999). This theory illuminates that US space policies and actions are shaped not just by material capabilities or threats but by its perceived identity and relationships with other states, especially China.

In applying constructivism, this study examines the US's evolving identity as a space-faring nation in response to China's space capabilities growth. It investigates how the US's self-perception and its role in the international space community influence its policy choices. The US's identity shift from a dominant space power during the Cold War, characterized by competition with the USSR, to a cooperative stance in the post-Cold War era is notable. However, with China's emergence as a key space power, the US is revising its space identity and policy approach, perceiving China's advancements as a challenge to its leadership and responding with policy reformulations to maintain its status and interests in space.

Wendt's concept of anarchy cultures – Hobbesian, Lockean, and Kantian – further provides a framework to understand the US's interactions with other space powers. The US's Cold War relationship with the USSR was marked by a Hobbesian culture of rivalry, while the post-Cold War period leaned towards a Kantian culture of cooperation. Currently, the US-China space dynamics suggest a shift towards a Lockean culture, where competition is prevalent but not necessarily aggressive or conflict-oriented (Wendt, 1999).

Wendt also discusses four types of identity – personal/corporate identity, type identity, role identity, and collective identity. The identity of a nation, whether personal or corporate, is intrinsic and owned solely by the nation. Countries may also be classified based on certain groups, such as "Muslim countries," representing type identity. In a group system, collective identity forms, and role identification becomes crucial in binding several countries to a single identity. Countries' interactions shape role identities, making others' views significant for self-identification (Wendt, 1999).

This study utilizes Wendt's theory to analyze the identity variables used by the US, focusing on the dominant types of identity and the target audience. It also examines US responses, understanding the historical context of the Cold War and the ensuing competition, allowing for observation of the transformation from contestation with the USSR to the current competition with China.

In summary, this study aims to explore the US's evolving identity and anarchy culture in space, particularly in response to China's rise. It seeks to understand how these perceived changes in identity and international relationships have driven the US to reformulate its space policies, moving from partnerships and cooperation to a more competitive and self-reliant approach in projects like the Artemis program. By applying Wendt's constructivist theory, the research provides a nuanced understanding of the factors shaping US space policy in an era of growing global space contestation.

METHOD

Using qualitative methods, this study examined the descriptions of social properties that emerge as a result of interactions between individuals and the researcher's subjective interpretation of the world (Bryman, 2012). The methodology centers around the analysis of secondary data sources, which includes an array of materials such as meeting or congressional minutes, statements by government officials, mass media coverage, official state speeches, interview responses, and public discussions. The use of these sources provides a comprehensive view of the subject matter, allowing for a multifaceted understanding of the policy shifts.

Crucial to this research is an extensive collection of documents and speeches pertinent to space policy and activities, covering a period from 1957 to 2021. This compilation encapsulates significant historical events, such as President John F. Kennedy's influential 1962 Moon Speech, and traces the development of national space policies under various U.S. Presidents, including Ronald Reagan, George H. W. Bush, and Donald Trump. Additionally, it incorporates reports from vital governmental entities, notably the Department of Defense and the National Science Board. This diverse array of sources presents a rich tapestry of perspectives, encompassing high-level executive statements and in-depth congressional and departmental reports. These documents collectively highlight the multifaceted and evolving nature of space policy over more than six decades. Central themes identified in this collection include the strategic importance of space exploration, budgetary considerations for NASA programs, and escalating concerns regarding space security, particularly in relation to U.S.-China dynamics. The broad spectrum of sources, ranging from presidential speeches to comprehensive white papers and budgetary analyses, emphasizes the complexity and layered understanding necessary for grasping and influencing space policy.

This method of qualitative data collection benefits the authors by allowing easy access to

information that will not interfere with the course of the research, representing the data of concern, and providing written evidence, all of which will greatly facilitate the research in terms of time, effort, and cost. The disadvantages of this type of data collection include difficulty in gaining access to confidential documents and difficulty in ensuring the accuracy of documents (Creswell & Creswell, 2014).

Cross-referencing and corroboration serve as key components of the data validation strategy. Information obtained from one source is verified against other independent sources for consistency and accuracy. This method of cross-verification is crucial in ensuring that the research findings are not based on isolated data points but are supported by a pattern of evidence.

The thematic analysis technique is employed to analyze the collected information. This approach is instrumental in identifying, analyzing, and reporting patterns within the data, ensuring that the interpretations and conclusions drawn are grounded in repeated evidence throughout the various sources.

Additionally, the study ensures contextual consistency by examining the data against the backdrop of historical events and geopolitical dynamics, particularly focusing on the US-China space race. This approach ensures that the data is relevant and plausible within the known historical and political framework.

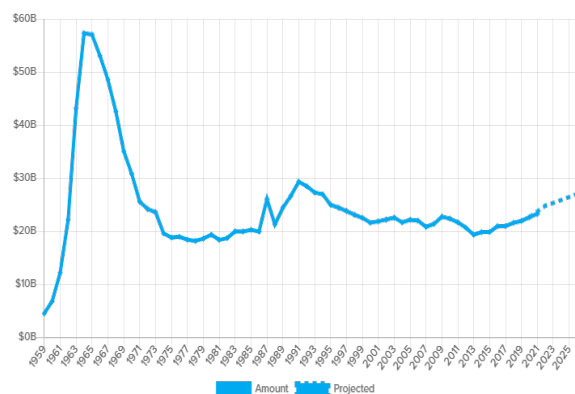
Lastly, the data is validated through its alignment with the theoretical framework of the study, which is based on Wendt's constructivist theory in International Relations. This theory, which emphasizes the social construction of identity and anarchy in international relations, provides a critical lens for interpreting the data. The coherence of the data with this theoretical perspective further reinforces its validity.

RESULTS AND DISCUSSION

According to Wendt (1992, 1999), identity is an independent variable or a factor that explains a state's actions; however, identity is also socially constructed rather than merely occurring, so it is also treated as a dependent variable. Identity is an attribute that allows the actor to be identified by distinguishing his characteristics from those of other parties. Actors have identities that are not singular in nature and that depend on the social context that surrounds them. Identity motivates actors to act (Wendt, 1999). This action becomes meaningful because the actor is aware that taking it will have consequences, including national interests (Rosyidin, 2015).

Three periods were used to examine the changing identities that underpin US actions.

These three time periods are based on a chart of congressional budget data provided to NASA on a regular basis, from the start of the space race with the Soviet Union to the present. The first event occurred during the Cold War and was the impetus for space race. At the time, the United States focused on defeating the Soviet Union, which made numerous technological advances and space innovations. The second period began after the Cold War victory in the United States. During this time, the United States focused on demonstrating its leadership in the space sector by forming partnerships with other countries to develop innovations and maximize space potential. Finally, the third period is still in effect. The rise of China during this period prompted the United States to maintain its leadership position in space.



Source: Planetary.org (n.d.)

Figure 1. NASA Budget from 1959 to 2025: Historical Data and Projections

The Cold War's Impact on the US Identity and Policy Development (1958-1991)

During the Cold War, the United States and the Soviet Union engaged in a fierce competition for global dominance, particularly in space exploration (Alvaretta, 2019). This period, known as the space race, saw the Soviet Union taking early leads with significant achievements, such as launching Yuri Gagarin, the first man into space (Dawson, 2021) and Valentina Tereshkova, the first woman on a spacewalk (Bridger, 2004). They also achieved milestones like lunar probes and Venus missions (Hanes, 2012; Sharp, 2018). These successes posed a challenge to the United States' aspirations as a superpower. Political tensions were further heightened by events like the Cuban Missile Crisis and the Bay of Pigs invasion, intensifying the ideological battle between the two superpowers (Gainor, 2021).

In response to the Soviet Union's advancements, US President John F. Kennedy declared a moon mission as an urgent national need in 1961, aiming to reassert US dominance in space. This led to the historic Apollo 11 mission in 1969, when astronauts Neil Armstrong, Michael Collins, and Edwin E. Aldrin Jr. successfully landed on the moon, a milestone that

symbolized the United States regaining its competitive edge in space exploration. Kennedy's declaration and the moon landing marked a significant shift in the space race, reflecting the United States' determination to lead in space technology and exploration (Kennedy, 1961; NASA, 2019).

During the Cold War, the US-USSR rivalry in space science and technology was a key aspect of their contentious relationship. The Soviet Union initially outperformed the US in space achievements, but the US later emerged as a leader in this field following its successful moon mission. This competition was about more than just technological prowess; it reflected the nations' identities. The US's role identity as a space sector leader and its type identity as a democratic country were at stake (National Security Council Planning Board, 1958; O'Toole, 1982).

The National Security Council (NSC) in 1958 expressed concerns about the Soviet Union's space successes, highlighting the potential impact on US leadership perception worldwide. This sentiment was echoed by Senate Majority Leader Lyndon B. Johnson, who acknowledged that the USSR's achievements were a wake-up call for the US. These statements underscored the US's perception of a threatened leadership position in space and concerns about the Soviet Union's authoritarian approach (National Security Council Planning Board, 1958; O'Toole, 1982).

President Kennedy, addressing the nation, emphasized the importance of advancing US space efforts to maintain its global stature. He framed the space race as more than just competition, underlining the US's commitment to freedom and participation in global endeavors. Kennedy's words highlighted the US's dual identity as a liberal nation and a space sector leader (Kennedy, 1961).

In response to the Soviet Union's space dominance, the US adopted aggressive policies to maintain a free space environment, in line with its democratic values. This period was characterized by a Hobbesian culture of anarchy in international relations. The US established NASA in 1958 and increased space exploration budgets, reflecting its determination to lead in space technology. The National Defense Education Act of the same year aimed to bolster science and technology education, further emphasizing the US's commitment to regaining its position in the space race (Cornec, 2019; U.S. Department of State, n.d.).

A critical step in reclaiming space leadership was President Kennedy's 1961 declaration to land a man on the moon, a goal achieved in 1969 with the Apollo 11 mission. This achievement not only marked a technological triumph but also represented a strategic move to counter the USSR's space

innovations and assert US dominance in space exploration (McDougall, 1985; NASA, 2019).

Moreover, NASA's funding allocation has increased annually since its inception (see Table 1), indicating the need to force the USSR out of space. In his 1961 Annual Budget Message to Congress, President Eisenhower stated that the budget increase was carried out to fund non-military space projects managed by NASA in an effort to develop systematic innovations in scientific exploration that were critical for conquering space (Eisenhower, 1960). The Kennedy administration used funding to build infrastructure to land humans on the moon, particularly from 1961 to 1965. The funding allocation slowly decreased in 1966 after NASA built all the necessary means to send three astronauts to the Moon in 1969 (Johnson, 1966; NASA, 2019). In practice, the US won the contestation after the successful attempt at its Moon Landing Program. There was no significant "retaliation" by the USSR against the US.

Table 1. NASA's Allocated Funding 1959-1970

Year	Allocation	Expense	Annual Growth
1959	\$331	\$146	-
1960	\$523	\$401	58,0%
1961	\$964	\$744	84,3%
1962	\$1.825	\$1.257	89,3%
1963	\$3.674	\$2.552	101,3%
1964	\$5.100	\$4.171	38,8%
1965	\$5.250	\$5.092	2,9%
1966	\$5.175	\$5.933	-1,4%
1967	\$4.968	\$5.425	-4,0%
1968	\$4.589	\$4.722	-7,6%
1969	\$3.995	\$4.251	-12,9%
1970	\$3.749	\$3.752	-6,2%

Source: Planetary.org (n.d.)

As the Cold War entered its final phase, shifts in identity behavior patterns and changes in the culture of anarchy became more noticeable. The absence of the enemy and the eventual victory of the United States elevated it to the forefront of global political competition and the space sector. The difference in the United States' interpretation of the changing international environment encourages a reinterpretation of identity and a different interpretation of the anarchy culture.

The Interplay Between Identity and Policy: Examining Post-Cold War US Formulation (1991-2011)

The victory of the United States in landing a man on the Moon marked the end of the Space Race with the Soviet Union. However, as stated in The White House's fact sheet national space policy in 1996, the United States continues to maintain its leadership in space exploration and exploitation, which it has

done for three decades (The White House National Science and Technology Council, 1996).

The end of the Cold War significantly impacted the space sector's civilian and national defense activities under the auspices of NASA and the Department of Defense (DoD). During the Cold War, rival parties forced the US to focus on defending and combating these threats, which became the primary policy at the time. However, as danger has passed, attention to the former has waned, and funding for program development has become more limited (Holland & Burns, 2018; Logsdon, 2015).

On the other hand, Russia, as the USSR's largest fractional country that inherited the most advanced space technology and innovation, experienced an economic shock following its dissolution. As a result, the budget was cut by up to 20%, weapons and technology were decommissioned, and funds for research and space exploration were severely cut (Cornec, 2019).

As a result of this shift, the United States must reconsider its identity and interests in the space sector. The response of US policymakers to this changing situation will reveal the pattern of identity that emerged in the post-Cold War era. The two space ruler countries struggle and rely on one another. Relationships marked by rivalry were transformed into those marked by cooperation and mutual strength. White House's 1996 national space policy fact sheet report (1996) also stated that the US would pursue a higher level of partnership in space activities and long-term cooperation for peaceful space exploration.

The US-led cooperative effort was also a coordinated strategy to demonstrate leadership and influence the space sector. Being influential entails figuring out how to improve national security more broadly while gaining political and economic advantages (Vice President's Space Policy Advisory Board, 1992).

In this sense, maintaining leadership in the space sector was designated as one of the US's national interests, particularly in the space exploration area (Assistant to the President for Science and Technology, 1994). President Clinton (1993) stated this: "I want to tell the American people that we must maintain our leadership in science and technology, as well as in space. We will be able to attract more people to come and invest with us, but we will have to make some difficult management decisions at NASA to do so." This statement demonstrates the identity of the US role, which is obligated to shape policy as a leader in the space sector for all parties involved. Hence, cooperating with Russia was essential for the US to pursue benefits and fulfill its role as a democracy. The significance of this leadership role

and the importance of cooperation with Russia were underscored during the 1992 U.S.-Russia summit. In this landmark meeting, President Clinton and Russian President Yeltsin established a new era of peace, friendship, and partnership, envisioning a safer, more stable world. Clinton stressed the unwavering U.S. support for Russia, linking its success to the security of every American and advocating for the swift passage of the "Freedom Support Act" to aid Russia during a crucial period of transition. This conference marked a pivotal moment in U.S.-Russia relations, signaling a shift from rivalry to cooperation in space and beyond (U.S. Government Publishing Office, 1992).

The International Space Station (ISS) exemplifies the United States' approach to cooperative space strategy. Regarded as "the most significant international cooperative program in the history of spaceflight" (Smithsonian National Air and Space Museum, 2010), the ISS was a collaborative effort involving the United States, Russia, Japan, Canada, and Europe. Initiated with Russia's Zarya module and the US's space shuttle for material transport, the ISS was built under US leadership with Russia as a key partner, showcasing their expertise in space technology (NASA, 2020, 2018).

The ISS project marked a shift from Hobbesian to Kantian dynamics in US-Russia relations. This transition, from conflictual to cooperative interactions, was driven by shared interests and collective identity patterns in the space sector (Wendt, 1999). The collaboration helped the United States address funding challenges, as noted by NASA Administrator Daniel Goldin in 1995, emphasizing the ISS's role in future space exploration and its importance in easing budget constraints through international partnerships (Cornec, 2019; Goldin, 1995).

However, the US's reliance on Russia persisted post-Cold War, particularly for astronaut transportation to the ISS using Russian Soyuz spacecraft (Ocampo & Klaus, 2013). This dependence arose following the discontinuation of the US space shuttle program in 2011, a decision influenced by the 2003 Columbia disaster and budgetary concerns, as explained by NASA's chief historian, Bill Barry, and former NASA Jet Propulsion Laboratory engineer, Mark Adler (Georgiu, 2020).

Furthermore, the emergence of new space-faring nations, particularly China, began to reshape the US's perception of its role in space. The US's response to China's growing space capabilities indicated a nuanced approach, balancing cooperation and competition. This evolving landscape required the US to not only reassess its identity as a space leader but also to navigate a new set of relationships and challenges in the international arena.

In conclusion, the post-Cold War era for the US in space was marked by a significant transformation in its policy and identity. From a fierce competitor against the Soviet Union, the US shifted to a cooperative leader, working alongside former rivals and new partners. However, this transition also brought forth new challenges and dependencies, illustrating the complexities of international relations in space. As the space sector continues to evolve, the US's approach and identity will likely continue to adapt in response to these changing dynamics.

A Changing Landscape: China's Influence on US Identity and Policy Formulation (2011-2021)

Other countries have emerged as new players in the space sector to maximize their potential to fulfill their national interests amidst the stagnant development of the US space sector. To date, few countries have matched NASA's achievements in various space-related fields. Even so, competition between countries in the space sector does not have the same intensity as that during the Cold War. Competition has also shifted from fulfilling political, security, and prestigious interests to fulfilling economic aspects to becoming a leader.

China is one of the countries involved in maximizing the potential for space. China has devised plans to develop space-related innovations during the Cold War by sending satellites (Hickman, 2019). Despite making advancements since its early years, China's space sector lacked ambition until the 1990s when the country's leader, Deng Xiaoping, initiated new programs that led to rapid progress (Alvaretta, 2019).

China has invested heavily in the exploration and development of innovation and space technology for civilian and military purposes, amounting to \$8.9 billion in 2020, according to the programs and plans issued by the Chinese government in China's Space Activity White Paper. This places China second only to the United States in space program funding (Azarova, 2021). According to a White Paper document titled "China Space Program: A 2021 Perspective," released in 2021, the space sector industry is essential for fulfilling China's national strategy. The country will independently develop science and innovation in the space sector and continue to use it for peaceful purposes (The State Council Information Office of the People's Republic of China, 2022).

China's ambitions create dynamics in relation to the United States, which is dominated by competition. The 114th Congress of the House of Representatives for Science, Space, and Technology, titled "Are We Losing the Space Race to China?"

was held in 2016. Congress discussed US concerns about China's development, which were seen as undermining US leadership in space. Hon. Brian Babin also emphasized that tensions between the two countries' relations occurred in various areas, including issues in the South China Sea, threats to US national cyber security, and even the implementation of anti-satellite tests, which demonstrated China's irresponsible behavior (U.S. Government Publishing Office, 2016). Although it has not been officially stated that the US and China are in a space race, as was previously the case with the USSR, the US must immediately form a strategic plan because China's rise in the civilian space sector cannot be separated from its military space activities, which must be anticipated. In agreement with Babin, Representative Donna Edwards states in the same forum:

If the United States fails to reassert its leadership, China's rise may undermine U.S. plans to transfer low-Earth orbit habitation and human spaceflight from governmental activity to sustainable economic activity undertaken by the private sector. China stands to fill another void left by this Administration's disinterest in maintaining leadership in exploration. (U.S. Government Publishing Office, 2016)

In the White Paper (2022), President Xi Jinping underscores the space industry's centrality to China's national strategy. The document highlights China's space achievements from 2016 onwards, including the Chang'e-4 and Chang'e-5 lunar missions and Mars rover deployment. It outlines China's ambitious future goals, such as lunar and Martian sample returns and Jupiter exploration, alongside plans for international Moon Research Stations collaboration.

During the Trump and Pence administrations, the United States identified China's space advancements as a challenge to its space leadership. President Trump and Vice President Pence expressed concerns about China's growing dominance and its militarization of space, emphasizing the need for the US to maintain its leadership and peaceful approach in space (Pence, 2018; Trump, 2018; Wang, 2017). Reports by the Defense Intelligence Agency and the Director of National Intelligence highlight China's capabilities in space, seen as a potential threat to US military and strategic interests (Garamone, 2019; Office of the Director of National Intelligence, 2021).

The US perceives China's space developments as competitive and threatening. NASA Administrator Bill Nelson's 2021 statement, "I believe we are in a space race with China," encapsulates this sentiment (ABP News Bureau, 2022). However, the current US-China space interaction, unlike the Cold War's Hobbesian dynamic, reflects a Lockean culture

of competition without direct conflict, influenced by significant economic interdependence between the two nations (Office of the United States Trade Representative, 2020).

The US, upholding its role identity as a space leader and democratic nation, views China's technological advances as a challenge to its space sector dominance. The US's commitment to keeping space a domain for peaceful purposes contrasts with regimes perceived as authoritarian. This stance shapes the US's international political interests and space policy responses, as it seeks to maintain its leadership in the face of China's growing space capabilities.

The United States has been actively responding to China's advancements in space technology, guided by its internalized identity patterns and leadership aspirations. Concerns over China's space program ambitions have led the US to reinforce its capabilities and international collaborations in space sector innovation. The Wolf Amendment, enacted through Public Law 112–10 in 2011, exemplifies this approach, prohibiting NASA from bilateral cooperation with China due to fears of technology theft by Chinese armed forces and concerns over human rights violations, thus maintaining the US's regulatory role in space (Pence, 2020; Trump, 2018).

To strengthen its space policy and leadership, the US re-established the National Space Council (NSpC) during President Donald Trump's administration. Guided by the National Aeronautics and Space Administration Authorization Act of 1989, NSpC's mission involves assisting in the development of comprehensive space strategies. The Trump administration's Space Policy Directives, formulated from NSpC recommendations, emphasized human space exploration, commercial space regulation, national space traffic policy, and the creation of a space force (The White House, n.d.).

NASA's Artemis program, initiated in 2019, aims to land the first woman and person of color on the Moon, with plans for lunar bases and Mars exploration. The program relies primarily on US resources and domestic private sector support, as seen in NASA's collaboration with SpaceX. SpaceX, contracted to provide spacecraft and launch systems, received significant funding for astronaut transportation to the moon, underscoring a shift towards reducing dependence on Russia's Soyuz spacecraft (Chang, 2021; Davenport, 2022; Etkind & McGuinness, 2022). The successful launch of American astronauts from US soil, as celebrated by NASA Administrator Jim Bridenstine, marks a step towards regaining US self-sufficiency in space missions (Hull, 2020).

The 2019 establishment of the US Space Force (USSF) represents another strategic move, aiming to

protect US interests in an increasingly competitive space domain. Collaborations between the USSF, NASA, commercial partners, and the Department of Defense are focused on enhancing space technologies and military strategy. Concurrently, NASA's budget growth since 2013 and projected future allocations reflect the US's commitment to maintaining its space sector leadership in response to China's emerging capabilities.

Table 2. Historical Nasa Budget Data and its Projection (2013-2027)

Year	Allocation	Expense	Growth	Projection
2013	\$16,865	\$16,975	-	-
2014	\$17,646	\$17,095	4.6%	-
2015	\$18,010	\$18,268	2.1%	-
2016	\$19,285	\$18,828	7.1%	-
2017	\$19,653	\$18,699	1.9%	-
2018	\$20,736	\$19,754	5.5%	-
2019	\$21,500	\$20,179	3.7%	-
2020	\$22,629	\$21,526	5.3%	-
2021	\$23,271	\$23,552	2.8%	-
2022	\$24,041	-	3.3%	-
2023	\$25,974	-	-	-
2024	-	-	-	\$26,493.4
2025	-	-	-	\$27,023.3
2026	-	-	-	\$27,563.7
2027	-	-	-	\$28,114.8

Source: (*The Planetary Society, n.d.*)

During President Joseph Biden's administration, the US maintained its leadership role in the space sector. At the 2021 NSpC meeting, Vice President Kamala Harris was welcomed as the new NSpC leader and reiterated the US's commitment to innovation, technology development programs, and space exploration. President Biden's leadership is expected to enhance the space sector by promoting multilateral communication, accessibility for everyone, safety and sustainability, implementing international policy standards, and using outer space for scientific development, innovation, and technological discovery (Office of the Spokeperson, 2021). This interest has been internalized and manifested in action, including an increased budget, allowing NASA to develop and expand its research and exploration. As a result, NASA received more funding than 2021, with a 3.3% increase from the previous year's budget of \$23,271 to \$ 24,041 (Etkind & McGuinness, 2021).

President Biden continued to support and commit to the Artemis program. However, unlike previous administrations, President Biden prioritized international partner collaboration to ensure the program's success. The Artemis program serves to strengthen international cooperation and affirm US activity (Riordan et al., 2023). This strategic shift aligns with the principles of the 1967 Outer Space

Treaty, which aims to prevent unilateral claims of sovereignty in outer space. The Artemis program not only aims to strengthen international cooperation in space exploration but also reflects the United States' commitment to diversity and justice, as demonstrated by the inclusion of people of color and women in the program's team composition (U.S. Mission Italy, 2021).

This commitment to space exploration leadership is evident in the US's recent achievements, such as the successful landing of the Perseverance rover and the deployment of the Mars Ingenuity Helicopter. These missions contribute significantly to the search for signs of life on Mars and reinforce the US's role in advancing space exploration. In parallel, China's successful landing of the Zhurong rover on Mars signifies the growing competitiveness in space exploration, further emphasizing the importance of the United States maintaining its leadership position (Uri, 2022).

Furthermore, President Biden has implemented policies to support private commercial entities in space, recognizing the critical role these activities play in technological advancement, economic growth, and job creation. By fostering a competitive and fair market environment, these policies not only support the US space industry but also encourage cooperative relations with other countries, enhancing the United States' status as a leader in space innovation and exploration (The White House, 2021).

In the broader context, the ascendancy of China as a formidable competitor in space exploration has precipitated a significant recalibration of US space policy. The burgeoning capabilities and aspirations of China, exemplified by the Chang'e lunar missions and the development of a Chinese space station, have been interpreted by the US as a direct challenge to its long-standing preeminence in space. This perception has elicited a strategic response from key US policymakers, including President Trump and Vice President Pence, who have articulated a clear intent to reassert and perpetuate US dominance in this domain.

The establishment of the US Space Force, the focused investment in the Artemis program, and the augmented budgetary provisions for NASA are indicative of a rejuvenated competitive posture by the US. However, this renewed emphasis on competition operates within a Lockean framework, characterized by a mutual recognition of sovereignty and a form of respectful rivalry. This approach of the US towards China in the space sector is emblematic of a sophisticated and multifaceted understanding. It acknowledges that, while China represents a significant competitive force, the intricate interdependencies of contemporary global politics

and economics demand a more complex and nuanced interaction than the outright adversarial dynamics of the Cold War era.

CONCLUSION

The study of US space policy through a constructivist lens reveals a dynamic evolution shaped by national identity and international relationships. During the Cold War, the space race against the Soviet Union was a manifestation of ideological and technological competition, with the US asserting its global leadership through landmark achievements like the Apollo moon landing. This period was characterized by an intense focus on technological superiority and the projection of democratic values in space exploration.

In contrast, the post-Cold War era marked a significant shift towards cooperation, particularly with Russia, as exemplified by the collaborative International Space Station project. This change illustrated a move from confrontation to collaboration, reflecting a new identity in international space relations. However, the recent rise of China as a key player in space has prompted the US to reassess and adapt its space policy. Initiatives like the Artemis program and the Space Force, along with increased investment in NASA, indicate a strategic response to maintain US leadership. These developments highlight the fluid nature of US space policy, constantly evolving in response to changing international dynamics and perceptions of national identity.

REFERENCES

- ABP News Bureau. (2022). *NASA Head Bill Nelson Accuses China Of Stealing Space Technology*. News.Abplive.Com. <https://news.abplive.com/news/world/nasa-head-bill-nelson-accuses-china-of-stealing-space-technology-1533308>
- Alvaretta, S. (2019). *Astropolitik Amerika Serikat Sebagai Respon Pengembangan Senjata Antariksa Cina* [PhD Thesis, Bosowa University]. In *Hubungan Internasional*. <https://repository.unibos.ac.id/xmlui/handle/123456789/81>
- Assistant to the President for Science and Technology. (1994). *Science in the National Interest*. In *U.S. House of Representatives* (p. 2). President of the United States. <https://doi.org/10.1126/science.8146650>
- Azarova, N. (2021). *In the New Space Race, Will Russia and China Triumph Over America?* In *Carnegie Endowment for International*

- Peace*. [https://carnegiemoscow.org/commentary/86094#:~:text=Accurate data on China's \(civil,States in terms of budget](https://carnegiemoscow.org/commentary/86094#:~:text=Accurate data on China's (civil,States in terms of budget)
- Bridger, S. (2004). The Cold War and the Cosmos: Valentina Tereshkova and the First Woman's Space Flight. In M. Ilić, S. E. Reid, & L. Attwood (Eds.), *Women in the Khrushchev Era* (pp. 222–237). Palgrave Macmillan UK. https://doi.org/10.1057/9780230523432_12
- Chang, K. (2021). *SpaceX Wins NASA \$2.9 Billion Contract to Build Moon Lander*. *Nytimes.Com*. <https://www.nytimes.com/2021/04/16/science/spacex-moon-nasa.html#:~:text=NASA announced on Friday that,and robotic explorers to space.>
- Clinton, W. J. (1993). *Presidential News Conference*. C-Span.Org. <https://www.c-span.org/video/?43210-1/presidential-news-conference>
- Cornec, C. (2019). *The Post-Cold War Issues of the Space Conquest: Thoughts on the Future of an Increasingly Attractive Space*. UCLA: Library. <https://escholarship.org/uc/item/0kj1q52j#main>
- Davenport, C. (2022). *Despite Ukraine invasion, NASA continues its space station partnership with Russia*. *Washingtonpost.Com*. <https://www.washingtonpost.com/technology/2022/03/01/space-station-nasa-russia/>
- Dawson, L. (2021). Politics and the Space Race. In L. Dawson (Ed.), *The Politics and Perils of Space Exploration: Who Will Compete, Who Will Dominate?* (pp. 151–174). Springer International Publishing. https://doi.org/10.1007/978-3-030-56835-1_8
- Eisenhower, D. D. (1960). *Annual Budget Message to the Congress: Fiscal Year 1961*. Presidency. Ucsb.Edu. <https://www.presidency.ucsb.edu/documents/annual-budget-message-the-congress-fiscal-year-1961>
- Etkind, M., & McGuinness, J. (2021). *Biden-Harris Administration Shows Strong Support for NASA in First 100 Days*. *Nasa.Gov*. <https://www.nasa.gov/press-release/biden-harris-administration-shows-strong-support-for-nasa-in-first-100-days>
- Etkind, M., & McGuinness, J. (2022). *One Year into the Biden Administration, NASA Looks to Future*. *Nasa.Gov*. <https://www.nasa.gov/press-release/one-year-into-the-biden-administration-nasa-looks-to-future>
- Gainor, C. (2021). The Nuclear Roots of the Space Race. In A. C. T. Geppert, D. Brandau, & T. Siebeneichner (Eds.), *Militarizing Outer Space: Astroculture, Dystopia and the Cold War* (pp. 69–91). Palgrave Macmillan UK. https://doi.org/10.1057/978-1-349-95851-1_3
- Garamone, J. (2019). *DIA Report Details Threats to America's Space-Based World*. *Defense.Gov*. <https://www.defense.gov/News/News-Stories/Article/Article/1754509/dia-report-details-threats-to-americas-space-based-world/>
- Georgiu, A. (2020). Why Did the Space Shuttle Program End? In *Newsweek*. <https://www.newsweek.com/why-space-shuttle-program-end-1505594#:~:text=%22The bottom line answer is,virtue of the system's reusability.%22>
- Goldin, D. (1995). *Statement of Daniel S. Goldin*. NASA. <https://clintonwhitehouse5.archives.gov/WH/EOP/OSTP/other/tsnasa.html>
- Hanes, E. (2012). *From Sputnik to Spacewalking: 7 Soviet Space Firsts*. *History.Com*. <https://www.history.com/news/from-sputnik-to-spacewalking-7-soviet-space-firsts>
- Hickman, J. (2019). Research Viewpoint: International Relations and the Second Space Race Between the United States and China. *Astropolitics*, 17(3), 178–190. <https://doi.org/10.1080/14777622.2019.1672507>
- Holland, D., & Burns, J. O. (2018). The American Space Exploration Narrative from the Cold War Through the Obama Administration. *Space Policy*, 46, 9–17. <https://doi.org/10.1016/j.spacepol.2018.03.007>
- Hull, D. (2020). *NASA Announces Date for the First Crewed American Space Launch in Nearly a Decade*. *Time.Com*. <https://time.com/5823461/return-to-flight-date/>
- Johnson, L. B. (1966). Annual Budget Message to the Congress, Fiscal Year 1966. In *The American Presidency Project*. <https://www.presidency.ucsb.edu/documents/annual-budget-message-the-congress-fiscal-year-1966>
- Kennedy, J. F. (1961). *Special Message to The Congress On Urgent National Needs 1961*. Jfklibrary.Org. <https://www.jfklibrary.org/asset-viewer/archives/JFKPOF/034/JFKPOF-034-030>
- Logsdon, J. M. (2015). Space in the Post–Cold War Environment. *Nasa History*, November, 89–102.
- McDougall, W. A. (1985). Sputnik, the space race, and the Cold War. *Bulletin of the Atomic*

- Scientists*, 41(5), 20–25. <https://doi.org/10.1080/00963402.1985.11455962>
- Moltz, J. C. (2019). The Changing Dynamics of Twenty-First-Century Space Power. *Journal of Strategic Security*, 12(1), 15–43.
- NASA. (2020). Space Station 20th: Historical Origins of ISS. In NASA. <https://www.nasa.gov/feature/space-station-20th-historical-origins-of-iss>
- NASA. (2018). *20 Years Ago: Station Partners Sign Intergovernmental Agreement (IGA)*. 20 Years Ago: Station Partners Sign Intergovernmental Agreement (IGA). <https://www.nasa.gov/feature/20-years-ago-station-partners-sign-intergovernmental-agreement-iga>
- NASA. (2019). *July 20, 1969: One Giant Leap For Mankind*. Nasa.Gov. https://www.nasa.gov/mission_pages/apollo/apollo11.html
- Nasu, H. (2011). The Expanded Conception of Security and International Law: Challenges to the Un Collective Security System. *Amsterdam Law Forum*, 3(3), 15. <https://doi.org/10.37974/alf.190>
- National Security Council Planning Board. (1958). *Preliminary Statement of U.S. Policy on Outer Space* (NSC 5814/1). Marshall Institute: National Security Space Project. <https://aerospace.csis.org/wp-content/uploads/2019/02/NSC-5814-Preliminary-US-Policy-on-Outer-Space.pdf>
- Ocampo, R. P., & Klaus, D. M. (2013). A Review of Spacecraft Safety: From Vostok to the International Space Station. *New Space*, 1(2), 73–80. <https://doi.org/10.1089/space.2013.0015>
- Office of the Director of National Intelligence. (2021). *Annual Threat Assessment of the US Intelligence Community*. Office of the Director of National Intelligence.
- Office of the Spokeperson. (2021). *Vice President Harris' First National Space Council Meeting* [Media Notes]. State.Gov. <https://www.state.gov/vice-president-harris-first-national-space-council-meeting/>
- Office of the United States Trade Representative. (2020). *The People's Republic of China: U.S.-China Trade Facts*. Ustr.Gov. <https://ustr.gov/countries-regions/china-mongolia-taiwan/peoples-republic-china#:~:text=Trade Balance&text=The United States has a,down 37.3 percent from 2019.>
- O'Toole, T. (1982). *When Sputnik Shocked Us*. Washingtonpost.Com. <https://www.washingtonpost.com/archive/politics/1982/10/04/when-sputnik-shocked-us/3822712e-3afb-4452-990b-2f78d67b38b4/>
- Pence, M. (2020). *Remarks by Vice President Pence at the Fifth Meeting of the National Space Council*. White House. <https://www.whitehouse.gov/briefings-statements/remarks-vice-president-pence-fifth-meeting-national-space-council-huntsville-al/>
- Pence, M. (2018). *Remarks by Vice President Pence on the Future of the U.S. Military in Space*. Trumpwhitehouse.Archives.Gov. <https://trumpwhitehouse.archives.gov/briefings-statements/remarks-vice-president-pence-future-u-s-military-space/>
- Petroni, G., & Bianchi, D. G. (2016). New patterns of space policy in the post-Cold War world. *Space Policy*, 37, 12–19. <https://doi.org/10.1016/j.spacepol.2016.10.002>
- Riordan, N., Machoň, M., & Csajková, L. (2023). Space Diplomacy and the Artemis Accords. *The Hague Journal of Diplomacy*, 18(2–3), 380–408. <https://doi.org/10.1163/1871191x-bja10151>
- Rosyidin, M. (2015). *The Power of ideas: Konstruktivisme Dalam Studi Hubungan Internasional*. Tiara Wacana.
- Sharp, T. (2018). *Valentina Tereshkova: First Woman in Space*. Space.Com. <https://www.space.com/21571-valentina-tereshkova.html>
- Smithsonian National Air and Space Museum. (2010). Reflections on Post-Cold War Issues for International Space Cooperation. In *Museum, Smithsonian National Air and Space*. <https://airandspace.si.edu/stories/editorial/reflections-post-cold-war-issues-international-space-cooperation#:~:text=The International Space Station is,in the history of spaceflight.>
- The Planetary Society. (n.d.). *Your Guide to NASA's Budget*. Www.Planetary.Org. Retrieved July 13, 2023, from <https://www.planetary.org/space-policy/nasa-budget>
- The State Council Information Office of the People's Republic of China. (2022). *China's Space Program: A 2021 Perspective* (pp. 1–20). The State Council Information Office of the People's Republic of China.
- The White House. (n.d.). *National Space Council*. Whitehouse.Ov. Retrieved July 10, 2022, from <https://www.whitehouse.gov/spacecouncil/>

- The White House. (2021). *United States Space Priorities Framework*. The White House. <https://www.whitehouse.gov/wp-content/uploads/2021/12/United-States-Space-Priorities-Framework--December-1-2021.pdf>
- The White House National Science and Technology Council. (1996). *Fact Sheet—National Space Policy 1996* (4; Vol. 2). <https://clintonwhitehouse4.archives.gov/WH/EOP/OSTP/NSTC/html/fs/fs-5.html>
- Trump, D. (2018). Remarks by President Trump at a Meeting with the National Space Council and Signing of Space Policy Directive-3. In *Trump White House*. White House. <https://www.whitehouse.gov/briefings-statements/remarks-president-trump-meeting-national-space-council-signing-space-policy-directive-3/>
- Uri, J. (2022). *50 Years Ago: President Nixon Directs NASA to Build the Space Shuttle*. Nasa.Gov. <https://www.nasa.gov/feature/50-years-ago-president-nixon-directs-nasa-to-build-the-space-shuttle>
- U.S. Department of State. (n.d.). *Sputnik , 1957*. History.State.Gov. <https://history.state.gov/milestones/1953-1960/sputnik>
- U.S. Government Publishing Office. (2016). *Are We Losing the Space Race to China?* (114 Congress). U.S. Government Publishing Office. <https://docs.house.gov/meetings/SY/SY16/20160927/105387/HHRG-114-SY16-Wstate-SheaD-20160927.pdf>
- U.S. Government Publishing Office. (1992). *Public Papers of the Presidents of the United States: George H. W. Bush (1992, Book I)—The President's News Conference With President Boris Yeltsin of Russia*. <https://www.govinfo.gov/content/pkg/PPP-1992-book1/html/PPP-1992-book1-doc-pg953.htm>
- U.S. Mission Italy. (2021). *Biden is committed to NASA's Artemis program for the moon and beyond*. It.UsEmbassy.Gov. <https://it.usembassy.gov/biden-is-committed-to-nasas-artemis-program-for-the-moon-and-beyond/>
- Vice President's Space Policy Advisory Board. (1992). *A Post Cold War Assessment of U.S. Space Policy* (1; Vol. 1, pp. 1–40). The White House.
- Wang, J. R. (2017). *New Space Policy Directive Calls for Human Expansion Across Solar System*. Nasa.Gov. <https://www.nasa.gov/press-release/new-space-policy-directive-calls-for-human-expansion-across-solar-system>
- Wendt, A. (1992). Anarchy is what States Make of it: The Social Construction of Power Politics. *International Organization*, 46(2), 391–425. <https://doi.org/10.2307/2706858>
- Wendt, A. (1999). Social theory of international politics. *Review of International Studies*, 26(1), 123–124. <https://doi.org/10.1017/S0260210500001236>