

Russian-Chinese Space Reciprocity

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Abstract

The Cold War gave birth to two of the three most developed space programs today. As the Soviet communist ideology had to compete with the democratic USA, the USSR made incredible progress towards outer space and supported the initial growth of the first Chinese space technology. The two space programs have been intertwined since the first Sino-Soviet relations in the 1950s seeking to establish a balance of power and counter American ambitions for hegemony. The Russian and Chinese regimes have had an altering liaison from allies to opponents and consecutively partners in a struggle for power and influence within the space sector. Examining the two space programs allows the reader to comprehend the complex relations between two superpowers in a geopolitical struggle going beyond Earth's boundaries.

Using the problem-chronological and comparative method this article seeks to explore the intricate relationship between the Soviet Union/Russia and the People's Republic of China, analysing the genesis of their relationship, differences, similarities and accomplished progress in the space sector until present day. The complex relationship formed between Russia and China in the last three decades has morphed into a close economic, military and space partnership, looking to counter current American space dominance and challenge the status quo.

Space geopolitics is a relatively new field to the school of international relations and so far only a handful of political scientists have focused on activities conducted within the space environment, as crucial actions to the overall setting of the international scene. As our world continues its progress, space becomes an integral part of our daily lives, and any endeavors associated with space need to be considered, discussed and explained.

Keywords: China, Russia, space program, technology, geopolitics

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Introduction

Traditionally China and Russia have had a predominantly approachable relationship, with a few setbacks in the last seventy years. Communist ideology brought together the two nation-states – once it asserted itself in China in 1949, under Mao. The Chinese leader revered Stalin as a true ideological leader of the communist bloc, whilst also knowing that China could gain tremendous technological knowledge from cooperation and diplomacy. Dwelling on ideological similarities, both nation-states recognized US dominance after World War II and sought to alter the balance of power through mutual assurances and collaborations with each other.

During the Cold War, the bipolar world was divided between the USSR at the helm of the communist states and the United States leading the democratic ones. Although during the Cold War China was not yet seen as an international world power, the country beheld the potential to become one. In looking to secure further national interests during the Cold War, China also formed partnerships with other nation states from the Soviet bloc such as Bulgaria, Romania, Czechoslovakia and others (Tien, 2014). Before the Sino-Soviet split, the PRC was seen as a crucial member of the communist faction, bringing about a balance of power in an ideological sense. Further to that, for China, an international recognition from other nation-states, allowed for individual power accumulation, in the pursuit of securing a top spot among the strong nation-states and countering US power projection across the international stage.

For the Soviet Union, an alliance with the Asian nation portrayed its own political influence around the world and helped effectively challenge the United States during the Cold War. The procurement of the Chinese space program, with Russian efforts, can be seen as a strategic move by Moscow to ensure the technological progress of the People's Republic of China (PRC) and pose threat to the United States across the Pacific Ocean. Soviet aid in developing Chinese rocketry became instrumental in allowing China to manufacture their own missile technology, which later transformed into space technology and an independent capability to conduct a self-sufficient space program. Despite fallout in the relationship between the Soviet Union and China during the 1960's, a phase of renewed cooperation began after the Cold War. Both superpowers recognized American hegemony in outer space and their continued dominance in international affairs.

The article seeks to illustrate the Russian-Chinese relationship and portrays their efforts at space cooperation against their common adversary, the United States. The first part explores the genesis of the partnership between the two superpowers until the end of the Cold War. The second part reviews space-related developments between Russia and China over the last thirty years. The last part considers the overall present status of this relationship, with a focus on the current national leaders, recognizing the necessity for collaboration.

The conclusions drawn from the study demonstrate a successful partnership in the development of the space programs between the Russian Federation and the People's

Republic of China from the Cold War until present day. Additionally, the article demonstrates an evident challenge to the contemporary balance of power with a focus on outer space. Finally, the article contemplates on the use of power as a primary tool to altering the status quo on the international stage. The rationale of this study looks to scientifically contribute to an evolving field in international relations and explore the synergy between Russia and China in the space domain.

Lastly, space geopolitics, politics of outer space or simply put, Astropolitics, is a fairly new concept of research within the academic subject of international relations. The study of space geopolitics focuses on ratified space treaties, national legislation regarding outer space, international conflict and cooperation within the space sector, as well as the economic consequences of exploring the space domain. Astropolitics finds its groundwork within traditional geopolitics, whereby it focuses on space as the principal aspect, which generates new dynamics amongst nation-states. Researching space relations between space nations, allows for a greater comprehension of national interests, objectives and their overall progress to the aforementioned.

The subject of space geopolitics to date has not yet been researched thoroughly, with many issues demanding solutions and plenty of questions requiring answers. Presently information about space geopolitics is scarce. Nevertheless as the importance of the space domain increases, there will be growth in both the amount of sources and the literature on the subject. The continuous addition of literature on the topic will help understand how international relations evolve around the space domain and how significant space is becoming to the acquisition of national power. The literature review of the article is varied in nature containing peer-reviewed journals, books, news articles and inter-governmental publications presenting and supporting the postulated hypothesis. The gathered materials allow for a detailed approach, exploring a new field in international relations and expanding the scientific literature basis.

An ideological alliance/split

Joseph Stalin and Mao Zedong signed an ideological pact in aspiration to last for thirty years, the Sino-Soviet Treaty of Friendship, Alliance, and Mutual Assistance in 1950 (Kuisong, 2005). The treaty is the beginning of a crucial transfer of information and expertise, jumpstarting the Chinese industrial sector, educating specialists, and laying the cornerstones for the competitive industry China developed decades later (McDougall, 2020). The arrangement was facilitated through both countries agreeing to an exchange of experts between them: Russian engineers and experts travelled to China to help set up new factories, industrial plants and introduce Chinese counterparts to the most modern technologies at this time, whilst scientists from China travelled to Moscow, to be trained and educated how to operate this new technology.

Supplementing industrial projects and technical assistance, the two countries established a Science and Technology Commission, responsible for managing and coordinating the

newly established affairs between the two countries. The most important tasks of the Commission were the transfer of technical data and documentation for smelting factories, power plants, and machine tool factories (Zhang et al., 2006: 115). The industrial base set by the Soviet Union, allowed Chinese scientists and engineers to study and later begin manufacturing their own ballistic missiles and launching capability, without Soviet assistance (Ibid.: 131). The most important proficiency transferred from the Soviet Union to the People's Republic of China was tactical ballistic missiles.

The first Dong Fang rocket designs for short-range, medium-range, and intermediate-range ballistics were all based on the Russian R-series rockets. The DF-1 is a copy of the soviet SRBM R-2 and uses Glushko's RD-101 engine, with a range of 550 kms and a payload of up to half a ton. The DF-2 is a medium-range ballistic missile based on the R-5 Pobeda, which has a range of up to 1250 kms and can carry payloads of up to 1.5 tons. The third Dongfeng missile was also largely derived from the Soviet IRBM R-14 Chusovaya and is the last Chinese missile which directly originates from an already existing Soviet one (Lewis and Di, 1992: 9).

By 1960, besides missiles and other defence mechanisms, Soviet experts had helped establish research centres in computing technology, electronics, semiconductors, nuclear energy, precision machinery, optics, and dynamics (Zhang et al., 2006: 131). Computing technology and the invention of the first Chinese computer is a critical step in aiding future scientific work. Concurring with the Chinese scholar Zhang, it can be asserted that "Chinese experts successfully manufactured the first Chinese computer in August 1958, the 103-mini-type electronic computer, based on specifications from the first-generation Soviet M-3 computer" (Ibid.: 133) The latter statement further confirms Soviet help in developing overall Chinese scientific capability. Such technological modernizations later give rise to China's robust economy and leading position in the global industrial market. In spite of the openness of the communist relationship, the USSR did not share key knowledge and expertise on satellite manufacturing, forcing China to develop their own satellite, the Dong Fang Hong I in 1970 (Paikowsky, 2017: 65).

There was a gradual reluctance of technological exchange and eventual doctrinal divergences based upon different interpretations of communism leading to the Sino-Soviet split, marked officially by the withdrawal of Soviet experts from China in 1960 (Liu and Murthy, 2017: 166). Mao saw Khrushchev's denouncement of Stalin as an attempt to reform communism and use ideological Marxism to justify the criticism of the new Soviet revisionism and foreign policy. Mao did not recognize the Soviet state anymore, as the true communist core state and denounced Soviet communism completely. The years that followed were marked by a strain in the affiliation between the two communist states. The USSR steadily withdrew its support and technical assistance from China and technology ceased to be imported from the USSR. Experts were also withdrawn and any military treaties that the two nations had, remained only on paper. The relationship between the two superpowers deteriorated to the extent that it ceased to exist, which was formally

marked by Mao's refusal to send delegates to the Twenty Third Soviet Party Congress in 1966 (Luthi, 2012: 193).

The Great Cultural Revolution of 1966 only reaffirmed the future clash of Maoism vs. Marxism and allowed for a greater ideological dissolution of Sino-Soviet relations. Regardless of the events in 1966, the technology required for further progress was already in place and helped China develop and launch its own nuclear weapons, guided missiles, and satellites. Under Maoist interpretations, the international events of that time also began to affirm a tri-polar world of politics, with China taking a more central role in the international balance of power.

The beginning of the reconciliation between the two communist states came only twenty years later, when Gorbachev reached out to China and agreed to make concessions in East Russia, Afghanistan, and Mongolia. Additionally, in 1986, the two countries opened each a consulate as a sign of good-natured intentions in Leningrad and Shanghai (Vamos, 2010: 95). Only with new leaders at the head of both communist states, was a change possible and came about in 1989, with the Sino-Soviet Summit. Gorbachev's visit to Beijing marked the restoration of the Russian-Chinese relationship with him and Deng Xiaoping confirming the return to normalized state-to-state affairs, as well as party-to-party relations (Garver, 1989: 1136).

Renewed cooperation in space

The restart of space cooperation between China and Russia came in September 1992, with the Beijing Aerospace University sending a delegation to the Russian Mission Control Centre. The purpose of the trip was to familiarize Chinese scientists with Russian software programs, used to design space technology and missions. The visit signalled a restoration of Chinese-Russian cooperation in space, and also displayed the intensification of the technical and industrial cooperation between the newly established Russian Federation and the People's Republic of China (Perfilyev, 2010: 19). Later that same year, Boris Yeltsin visited China and ratified a Joint Declaration on the Fundamentals of Relations between the Russian Federation and the Peoples Republic of China. Additionally, a Memorandum of Understanding was signed between the Governments of the Russian Federation and the Peoples Republic of China on the issues of mutual reduction of armed forces and confidence-building in the military field in the border regions. Finally, the Intergovernmental Agreement on Cooperation in the Field of Research and Use of Outer Space with a peaceful purpose was also signed during that visit (RIA, 2007). The agreements and declarations ratified by both countries instigated space cooperation, commenced forty years ago.

The end of the Cold War also signalled an inevitable change in the world map, as the USA overcame USSR ideologically. For the Russian Federation a renewal of the old partnership with China was essential to maintaining a certain balance of power on the geopolitical map. During the visit of the Chinese President Jiang Zemin to the Russian Federation, in March 1994, the two countries signed further an interagency agreement assisting the cooperation

between Roscosmos and CNSA. With the necessary organization for cooperation in place, the Russian space industry, suffering from the collapse of the USSR, was ready to provide for any government or commercial request put forth to them. The following year, Chinese space experts visited Russia once again with the intention of purchasing equipment for human space missions, environmental control systems, as well as docking and emergency systems (Ibid.: 22). As a result of negotiations, the Chinese delegation brought back an entire spacecraft life support system, a Kurs rendezvous system, and a docking system. It can be argued that they basically obtained a full Soyuz capsule, taken apart, without any electronics or supporting equipment (Harvey, 2004: 248). This technology served as the basis upon which Chinese future space equipment was developed. Following up on the newly established space relations, two Chinese trainees – Li Qinglong and Wu Jie – were selected in 1996 to become China’s first “instructor astronauts”. The space-training course took place at the *Zvezdny Gorodok* and involved three months of physical training, technical familiarization of space missions, and learning the Russian language (Perfilyev, 2010: 24). The space training was a step for the Chinese towards a better understanding of how manned missions operate and laid the groundwork for China’s incredible space progress in the last twenty years.

In addition to astronaut training and space technology, China and Russia agreed to work on the development of a space station. Russia’s Deputy Prime Minister, Ilya Klebanov, confirmed in March 2001, that China was looking for Russia’s assistance in sending a space station into the Low-Earth Orbit. Brian Harvey writes extensively on this subject and posits that although Russia will be helping China, the space station would be Chinese-made. At the same time, the Russians offered the use of Mir for about six hundred million Euros, for up to 3-4 years, since it would be more cost-effective than developing their own, however China declined. Amidst this renewed partnership with Russia, China was still distrusted by the US government, and denied cooperation on-board the International Space Station. Therefore, the PRC decided to create its own orbital space station. Nikita Perfilyev sums it up nicely “...China proceeded with the development of its own space station with significant Russian assistance. Russia agreed to provide technical assistance on an ongoing basis in designing the Chinese space station, building a limited number of components for the space station, training astronauts, and ground controllers, and transferring specific areas of space station technology” (Perfilyev, 2010: 25).

In 2000, a further entanglement of the spatial relations between the Russian Federation and the PRC saw the creation of a joint sub-committee on space cooperation. The committee held annual meetings on a prime minister level and has issued several agreements on future cooperation. The first agreement, the 2001-2006 program includes: trade in the space sector, conducting science experiments, work on environment and communication satellites, as well as Lunar and Martian exploration, “...plans for cooperation on the Moon and Mars missions were announced, in particular, for the Russian mission Phobos-Grunt (with a Chinese Lander on-board), as well as deep space exploration missions with the Russian missions Spektr-UF and Radioastron” (Mathieu, 2010: 358). These space

agreements led later to further joint-declarations and supporting documentation, bringing the two nations closer in their cooperative space policy.

Further facilitating the space collaboration in 2008, Roscosmos opened a representative office in Beijing, and the CNSA established an office in Moscow (Ibid.: 20). Likewise, Russia and China, were not cooperating only on a bilateral level, they were rather building a strategic partnership to challenge traditional US space dominance. The scholar Joseph Nye mentions the relationship between the two and its development: "In 1992, the two countries declared that they were pursuing a "constructive partnership"; in 1996, they progressed toward a "strategic partnership"; and in 2001, they signed a Treaty of friendship and cooperation" (Nye, 2015). The Treaty of Good-Neighbourliness and Friendly Cooperation looked to establish new economic ties between the two superpowers, countering American hegemony and competing effectively with the USA, the EU and Japan in terms of labour force (Timmerman, 2001).

The economic relationship formed between Russia and China was essential to the execution of national strategy. While China sought to modernize its military assets and obtain much-needed gas and petroleum for its rapidly growing economy, Russia looked for fresh capital and a strategic partner in a newly transformed world order. This bilateral collusion in 2004 led to both countries submitting two "non-papers" on the "Verification Aspects of PAROS" and "Existing International Legal Instruments and Prevention of the Weaponization outer Space", to the Conference of Disarmament. In February 2006, the two countries again presented at the conference a second revised compilation of comments and suggestions on the treaty. According to an IR scholar: "Submission of a draft *Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects* (PPWT) in February 2008 was the culmination of Chinese-Russian bilateral cooperation on PAROS" (Mizin, 2007: 91). As an attempt to limit US advantage in space, the documentation aimed to emphasize the peaceful exploration of outer space and avert a danger to international peace. In the last ten years, we note the closer collaboration across many areas of interest in the pursuit of balancing American interests. The heads of states Xi Jinping and Vladimir Putin recognize the benefits of an alliance against the United States and take strategic decisions to defend their own national interests.

Current relations

Undeniably the leaders of the two countries influence greatly the current Sino-Russian relationship, promoting international collaboration and an alternative to the US-established world order. The 18th national congress of the Chinese Communist Party asserted Xi Jinping as the head of the CCP in 2012 and brought many changes in power delegation and the transformation from collective leadership to paramount leadership, resembling Mao's and Deng Xiaoping's era (Tien, 2013: 125). Besides international cooperation, Xi and Putin have fostered a personal friendship, leading to numerous state visits to each other's countries and further improving the partnership. In 2013, eight days after his appointment as

a president, President Xi Jinping visited Moscow to assert the future of the Sino-Russo relationship. A joint declaration was released, focusing on strategic cooperation, military coordination, and an exchange of financial assets for natural resources (Herzenhorn and Buckley, 2013). Such agreements affirm Sino-Russian cooperation, and pose an alternative to the traditional US hegemony. Besides regular state visits, both Vladimir Putin and Xi Jinping tirelessly promote to their own people the benefits the other nation can offer. Popularizing each other's national culture aims to consolidate the public opinion of both countries.

In 2018, after Xi Jinping managed to fully consolidate power in China, he visited Moscow again and in a bilateral meeting, the two countries signed thirty intergovernmental and commercial contracts worth billions, strengthening their trade output. They also vowed to continue supporting each other politically on the world scene and the UN. As a token of gratitude and friendship, Xi Jinping brought two pandas as a gift to the Moscow Zoo (SCMP, 2018). The practice, known as "Panda Diplomacy", has been long used by China, namely to gift furry ambassadors to friendly states (McGeown, 2005).

The contemporary Sino-Russian dynamics postulate a desire to revise the current balance of power in international relations. In a further entanglement of state affairs both superpowers, recognize their trailing position to the United States and seek to empower each other through various bilateral treaties and accords. On an international level, at the United Nations security council, the PRC and the Russian Federation also portray cohesive efforts. Those are done either by supporting each other's resolutions or abstaining from voting, when foreign declarations are unfavourable to them. Such recent example is the resolution put forth in the Security Council, urging countries not to recognize the referendum results in the Crimea region. During the voting, the Russian Federation rejected the resolution and the People's Republic of China abstained from voting, leading to failure of the motion (UN News, 2014).

Additionally, the most recent events in the United Nations regarding the conflict in Ukraine, support claims for a Russian-Chinese alliance. Initially, on February 26, China abstained from voting on a UN resolution demanding Russia to immediately cease the Ukraine invasion (UN News, 2022/a). Following that vote, came another one on April 7 in the UN General Assembly demanding Russia to be suspended from the Human Rights Council, where the People's Republic of China voted against the motion (UN News, 2022/b). Although the vote was passed with two-thirds majority, it clearly portrays the ongoing political collaboration between the two superpowers on the highest level of international politics. The final example of a joint political effort is a recent UN vote about applying new sanctions against North Korea on May 19 (Beech, 2022). Both Russia and China vetoed the resolutions further displaying their collaborative resolve in opposing US ambitions. All the above examples are clear signs of a political alliance seeking to alter the balance of power in their favour.

Politically and economically through other forums such as BRICS, the relations between the two countries have been flourishing. Formed in 2010, the symposium seeks to further

coordinate matters between the two superpowers, challenge the traditional dollar-oil system in addition to creating more channels for communication and collaboration (Halpin, 2009). Since 2013, business between the two countries has been thriving, resulting in trade volumes worth \$107 billion in 2019 and expecting to double by 2024 (Ellyatt, 2019). In 2022, Reuters reports a record high trade between the two superpowers amounting to “\$146.9 billion according to Chinese customs data, with Russia serving as a major source of oil, gas, coal and agricultural commodities” (Reuters, 2022). While the Russian Federation provides China with much needed natural resources, the PRC exports back mechanical products, machinery and transport equipment, mobile phones, cars and consumer products. The growing trade between the two nations will result in a closer partnership supported by their strategic plans to overpower the United States economically, politically and militarily. The economic and industrial cooperation will serve as a crucial prerequisite to continuing space exploration and developing space technology.

The Belt and Road Initiative (BRI) formed in 2013 is also a major project for China contributing to the economic development and interregional connectivity from Far East Asia to Eastern Europe. The expert in Chinese studies Mariana Tien outlines the BRI project as the most important foreign policy investment project undertaken by China in this century. Announced in 2013, the Belt and Road Initiative looks to substitute the ancient Silk Road and help the PRC foster cooperation across the Eurasian territory (Tien, 2021: 320). Moreover, this kind of economic partnership will bolster the further development of space technology, allowing both the Russian Federation and the People’s Republic of China to make use of the already existing mechanisms in their attempt at countering traditional American hegemony within the space domain.

Besides the political and economic cooperation, there has been a steady rise in national defence collaboration. An example of international military cooperation including Russia and China, is the Agreement between the Russian Federation, the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan and the People’s Republic of China on confidence building in the military field in the border area proposed at the United Nations General Assembly in 1996 (United Nations, 1996). The treaty seeks to secure the territorial integrity of the participants, whilst promoting good neighbourly relations and exchange of information about all military activities. In terms of bilateral military cooperation, both nations have held joint-military exercises since Peace Mission 2005 (Andrew, 2005). The co-exercise became the first of many the two nations conducted in the following years strengthening military cooperation and strategically projecting power. Both superpowers still aspire independently to hegemony in the balance of power, but recognize the need for cooperation against American interests.

Contemporary space progress

Besides the prosperous state relationship, both Russia and China have had a tremendous progress with the contemporary development of their space programs and

their current cooperation within the space sector. Events such as the Chinese exclusion from the International Space Station (ISS) have triggered close cooperation in the space sector between Moscow and Beijing. In 2011, a Chinese ban on the ISS was decreed by the US Congress out of fear that China might take advantage of their presence on the ISS, and utilize it as an opportunity for intellectual property theft (Department of Defence, 2011). The ban transposes the CNSA to begin working closely with the European Space Agency and ROSCOSMOS (Aliberti, 2015). The old Cold War rivalry between China and Russia turned into a newly found space cooperation based on technical and economic necessity by both countries.

In 2015, another agreement was codified between the Russian Federation and the People's Republic of China, concerning the usage of modern technologies, such as the use of GLONASS, nanotechnology and a creation of a new data processing centre (SputnikNews, 2015). Continuing this strategic alliance in the space sector, the two countries signed two further documents in 2018. The first, released in March, states that "CNSA and ROSCOSMOS will team up together for the launch of the Luna-26 polar orbiter and coordinate the implementation of the Chinese space mission to the Moon's South Pole planned for 2023" (Hajiyeva, 2018). The second is the "Agreement on cooperation on space debris monitoring and practical use of gathered data" (CNSA, 2018). In addition to the two above, further documentation outlining joint exploration mission details to the Moon was signed in 2019, St. Petersburg. The documents planned out the creation of lunar and deep space data centres, a lunar orbiter, and a process of the landing missions (Jones, 2019). Setting the institutional legislation for closer cooperation in space and the Moon, signals the fact that both Russia and China allow for a combined force to counter US power in space.

As American spending on space dwarfs both China and Russia, naturally the latter two need to combine efforts of leveraging the status quo by projecting combined power through mutual space capability. The Moon is Earth's natural satellite and would be logically the first area of interest beyond Earth. There are several aspects due to which the Moon is lucrative to the space actors. Firstly, the moon possesses rare materials and an abundance of Helium-3, a possible source of energy for rockets (Hickman, 2019). Second, the presence on the moon ensures a strategic advantage by holding the high ground over the adversaries. Third, setting a lunar base allows for easier exploration of outer space, due to the low gravity on the moon, and lesser energy needed for launches. With those factors into consideration and aiming to counter the current US Moon project named the Artemis program, China and Russia signed in 2021 a Memorandum of Understanding on Lunar Research Cooperation and more specifically the construction of an International Lunar Research Station (ILRS). As per the CNSA's official website, "CNSA and ROSCOSMOS will adhere to the principle of 'co consultation, joint construction, and shared benefits', facilitate extensive cooperation in the ILRS, open to all interested countries and international partners, strengthen scientific research exchanges, and promote humanity's exploration and use of outer space for peaceful purpose" (CNSA, 2021).

Through the use of soft power, Moscow seeks the extension of political ties to Beijing, promoting a mutual approach in outer space affairs and possible future collaboration in other sectors. Politically Russia manages to balance US power projection in space by aligning with China, whilst still being diplomatically involved with their competitors, the USA, in projects such as the ISS. Ensuring space competitiveness through diplomatic power, becomes a prerequisite to sustaining current Russian space interests.

According to statistics from 2020, the Russian Federation spends \$3.8 billion on its space program, China spends \$8.8 billion and the USA dwarfs them with \$48 billion allocated between NASA and American military space programs (Seminari, 2021). Another conclusion drawn from the data, is the gradual rise in expenditure towards space programs for both the United States and the People's Republic of China for the period 2014-2020 (Statista, 2020). In the same data chart, the budget for the Russian space program, shows both rises and declines due to variable economic situation within the Russian Federation for that same timeframe. During 2021, national funds allocated to space exploration continued to increase, resulting in increased national space budgets for all space programmes (Statista, 2021). The data portrayed clearly indicates an expanding interest towards the space domain, as well as an interest in the utilization of space as a catalyst for the expansion of national power and GDP. Although China and Russia spend far less than the United States on the space sector, there is a general trend of economic resource allocation towards space and space-based activities. Moreover, with increased space budgets, the latter two countries seek alteration of the current status quo in space, where the USA is still perceived as the hegemon. Overall, total governmental expenditure related to space activities grows, depicting the importance of the space domain for the various countries and their diverse national interests.

The increase in the space budgets of both China and Russia has allowed for new projects, missions and technologies to be developed. Nowadays both countries have commenced various projects and portrayed their willingness to expand their influence in outer space. Firstly, the Russian Federation began the construction of their newest space port, the Vostochny Cosmodrome, more than ten years ago, in 2011. Presently, there are several operational launch pads launching Angara and Souyz spacecraft. However the main ones, supposed to support the Yenisei and Amur rockets, are still in the process of development, with an uncertain final date of completion (Bodner, 2019). Regarding the two new types of rockets Russia is developing, Amur is supposed to be the first Russian reusable methalox spacecraft (TASS, 2020) and Yenisei will serve as the next Russian super-heavy spacecraft, meant for long-distance space journeys, such as the Moon or Mars (RIA, 2020). Russia's next generation rockets will serve the purpose of boosting Russian competitiveness within the space sector, matching contemporary developments achieved by their American counterparts and possibly exceeding them. The creation of a reusable rocket and a long distance space ship such as the Yenisei, will allow the Russian Federation to directly challenge US hegemony in outer space and facilitate Russian expansion to other celestial objects enabling them to expand their national interests and project power across

the international scene. Last but not least, there is the recent ROSCOSMOS announcement from August 2022, concerning a new planned Russian-built space station (Osborn, 2022). Due to ongoing events in Ukraine, there has been a strained relationship between the Russian Federation and the West on-board the International Space Station. As early as last year, Russia hinted at a possible withdrawal from the major international space project, but did not confirm definitely, until the end of July 2022, that 2024 would be their final year of participation in the international project. Along with the withdrawal of the ISS, the Russian Federation plans on the construction of an independent space station, maintaining Russian presence in the lower Earth orbit and countering foreign interests. The development of such a space station will safeguard Russian interests, allowing them to establish their own comprehensive space infrastructure ensuring a continuous access to the space realm. The aforementioned aspects, are all indicators of the rising Russian interest towards the acquisition of the space realm as a domain of interest and demonstrating their national space capabilities for the achievement of this goal.

Similar to the Russian Federation, the People's Republic of China has shown tremendous aspirations towards outer space and its acquisition. Space has started to play an integral part in China's national security program, and is perceived naturally as the next and final frontier for contest of power in the international scene. During the last decade China has grown exponentially from a country with a handful of satellites, to a nation developing a comprehensive space program, including a various range of spaceships and satellites, an independent navigation system, own space station as well as numerous planned space missions meant to enhance both the technological expertise as well as their international stance among the rest of the space nations (Wall, 2022).

Currently the PRC operates a wide range of various space crafts for diverse purposes, allowing the Chinese to execute their space projects and extend their influence above Earth. China's rocket fleet is named the Long March (LM), after the Chinese Red Army's long march in 1934-1935. The launch vehicles range from small-carriers used for satellite launches, to super-heavy carriers serving the deployment of the current Chinese Space Station (CSS). The current space fleet has been developed extensively in the last sixty years, and portrays both Russian ingenuity from the Cold War and Chinese progress especially during the last three decades. China's most powerful rocket is the Long March 5B which has so far performed a Lunar mission in 2020, a mission to Mars also in 2020, as well as the launch of two of the modules of the current Chinese Space Station in 2021 and 2022 (Clark, 2022). The longest service and the most successful space rocket in the Chinese space fleet is the Long March 2c, first launched in 1982, still used today to launch smaller objects such as satellites to the Lower-Earth orbit and the Sun-synchronous orbit (Jones, 2022).

In addition, China's rocket fleet is supplemented by the newly established space station serving as a power equalizer to the already existing International Space Station. The CSS, first launched in 2021, allows China, to conduct their own space experiments, maintain Low-Earth presence and forge diplomatic ties with other nations interested in participating in that project (Anqi, 2022). In addition to the aforementioned, a space station portrays a

technological expertise where few nations can match it, let alone sustain such a massive space project. Besides all the aforementioned the CSS is seen as a direct challenge to the ISS along with the conventional American hegemony in outer space.

Finally, the People's Republic of China enormously expanded their space capability in the previous decades, to include four official spaceports, a wide array of satellite constellations for communication, navigation and surveillance, as well as a comprehensive ground infrastructure supporting their space endeavours and coordinating their efforts in outer space. One of the clearest examples is the biggest antenna in the world, manufactured by China. The Five-hundred-meter Aperture Spherical radio Telescope (FAST) – Tianyan serves to support Deep Space Tracking and facilitate Chinese lunar and interplanetary spacecraft missions (Brinks, 2020). Another essential facility supporting the Chinese space program is the Beijing Aerospace Flight Control Centre (BACCC), located in the outskirts of Beijing. Established in 1996, the space control centre is responsible for the organizing, commanding, dispatching of space flight test tasks, also undertaking the engineering TT&C and management of launch vehicles and spacecraft flight test tasks (Pike, 2020). The development of a ground-based space capability to sustain activities in outer space is a crucial prerequisite in the successful projection of power in the final frontier (Tay, 2022). The People's Republic of China identifies outer space as an important segment in international relations and looks to achieve superiority on the highest ground, should they wish to alter the present balance of power. The investment and development of space-based activities has become crucial to the overall progress of both Russia and the PRC in their quest of altering the balance of power. Their mutual cooperation allows for individual contestation of American dominance within the space sector.

In the briefly summarized aspects, it is evident that both China and Russia continue the development of space-based capabilities recognizing their decisive importance in the space domain throughout the 21st century. With the above mentioned and all the contemporary progress, space geopolitics will confidently continue to alter the balance of power on the international stage and formulate new courses of cooperation, as well as future conflicts both on Earth and as well as the space domain.

Conclusion

Ultimately, the US victory in the Cold War resulted in a unipolar world order, where no other nation-state can match American US. In the recognition of this configuration, China and the Russian Federation need to adapt to the newly configured geopolitical order and join forces to match the balance of power. Additionally, with the fall of the Soviet Union, come major geopolitical alterations, which have direct repercussions today for all three superpowers in terms of cooperation and competition. Russia's transition from a superpower to great power, was not easy and has taken around twenty years to conclude. The Russian space program suffers major setbacks due to the political and economic turmoil of the nineties. On the other hand, the new era in international relations allows

Russia and China to recommence their relations, and improve the Chinese space program. In addition to the above-mentioned the traditional phrase “The enemy of my enemy is my friend” plays an important role in the Sino-Russian alliance. Both superpowers have reviewed each other’s strained relationship with the US in recent years and look to utilize those developments to their own benefit. An example of such is the sanctions against Russia, due to Crimea, deteriorating seriously the relationship Moscow-Washington. The newly found Trump rhetoric and decision-making, in regards to a trade war with China, also instigated tensions between the PRC and USA. The consecutive intensification of Sino-Russian relations is a direct repercussion for American global politics. In an attempt to restrict the Russian Federation and the People’s Republic of China, the United States ultimately created a formidable alliance, which they might not be able to counter. It can be summarized that overall US international actions have brought the dragon and the bear closer than ever (Bhadrakumar, 2020).

The article has explored the alliance, the consecutive breakdown and the restoration of the Sino-Russian relations during the last seventy years. The investigation of this complicated partnership details the processes and dynamics required to balance the power of the United States in the international relations. Conclusively the analysis brings about three main implications. The first is connected with the functionality of the Russian and Chinese Space programs, whilst the second demonstrates the evolution in the relationship between Moscow and Beijing. The final implication portrays the importance of the space domain to the development of international relations.

In conclusion, the identification of space as a key area of interest in the 21st century and its immense potential for power growth stimulates Russia and China to explore and exploit the space sector, with a hope of enhancing their own national space capabilities and contesting American supremacy. Ultimately, space geopolitics seems to be essential in shaping international relations in the millennia, paving the way for a shift in the balance of power and a revived Space Race.

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