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Not Polar Opposites

Growing Russian-PRC Alignment on the Arctic and on Space

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Introduction

Cooperation between Russia and the People's Republic of China (PRC) in the Arctic and in space has significantly advanced over the last decade, culminating in their 2023 Comprehensive Strategic Partnership of Coordination.¹ Economic drivers and both powers' desire to cultivate an international order more favorable to their governance models and national interests have played important roles in facilitating the deeper cooperation on civil-military technology and on Arctic operations and exercises. This represents a significant shift in Russia's approach to the Arctic, where the country has prioritized its sovereignty and control over its territories while opposing access for non-Arctic nations.

This paper is the first in a series analyzing Sino-Russian cooperation in the Arctic in a variety of dual-use areas. It assesses the implications of this cooperation on both powers' willingness to work more closely in the sensitive field of space to advance Arctic and high-latitude domain awareness, communication, and navigation. To assess the depth of this cooperation and its potential trajectories, this paper analyzes the countries' cooperative and aligned efforts in space and their applications to the Arctic. The analysis relies on open-source government documents and expert views, including anonymized interviews with leading experts and officials from the United States and Northern Europe.

Russia's Arctic: From Bastion Defense to Economic Development

Russia's strategy is based on security and control over, and economic development of, its vast Arctic territory stretching from the North Atlantic to the North Pacific. The country's European Arctic is home to its Northern Fleet and sea-based nuclear deterrent. Russia's Bastion defense helps protect these assets and ensures freedom of navigation for Russian naval forces to the North Atlantic and beyond.² The region is rich in natural, mineral, and protein resources, and, via the Northern Sea Route (NSR), offers a possible future alternate path for international shipping. Exploiting and protecting Russia's exclusive right to resource extraction in its exclusive economic zone (EEZ), in line with the Kremlin's interpretation of the UN Convention on the Law of the Sea (UNCLOS) and with its outer continental shelf claims, is a key national priority.³

Russia's focus on sovereignty over its Arctic territory, further emphasized in the Kremlin's 2020 Arctic strategy,⁴ reinforced its traditional hesitancy to grant the PRC observer status in the Arctic Council, which Beijing overcame in 2013. Several factors suggest that Moscow's Arctic economic development interests, however, are beginning to surpass or supplant its sovereignty concerns. Russian President Vladimir Putin, supported by political elites, is personally driving new efforts to attract investment from the PRC and other BRICS nations to help develop the resource-rich Yamal region (with reportedly the world's largest natural gas resources) and the NSR.⁵ The Kremlin's March 2023 amendments to its Arctic strategy further emphasize this growing focus on bilateral cooperation with these nations in lieu of multilateral cooperation via the Arctic Council.⁶ The Arctic region is a prestige project for Putin, and his personal engagement with Chinese President Xi Jinping seeks to cultivate closer relations, including on military cooperation.⁷ Russian opinion polls, such as they are, follow this policy shift and indicate that views

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toward the PRC and the Chinese people are growing more positive and that Russian society increasingly perceives the PRC as a “great power”.⁸

China’s “Polar Silk Road” and its Military Implications

Russia’s acceptance of greater PRC engagement in the Arctic is even more striking because many of Beijing’s interests and objectives in the region compete with Moscow’s. As a self-proclaimed “near-Arctic state”⁹ (which could be true if one observes a 15th-century map that precedes the eastern expansion of the Russian empire and, therefore, contradicts Putin’s concept of “historical Russia”), the PRC seeks unfettered international access and has sought to portray the Arctic Ocean and region as a “global commons”¹⁰ that is critical for addressing climate change. The PRC views the Arctic through the lens of its broader Belt and Road Initiative (BRI) and as one of three critical economic passages that are important to its ambitions of being a great power.¹¹ The People’s Liberation Army (PLA) has cast the polar region as a “strategic new frontier”, along with “the deep sea, outer space, and cyberspace based on their perceived importance as new domains for great power competition.”¹² The PRC portrays sovereignty over these domains as unresolved or not sufficiently settled, providing an opening for new governance structures that it is eager to exploit by exercising its cultural soft power.¹³

Xi announced the PRC’s ambition of becoming a “polar great power” to facilitate its goal of becoming a “maritime great power” in 2014, less than two years after he attained the presidency.¹⁴ In 2021, the Chinese Communist Party’s (CCP) 14th Five-Year Plan reemphasized Arctic engagement through the “Polar Silk Road”.¹⁵ The PRC’s Arctic interests include scientific exploration, Arctic governance, and economic diversification, and they encompass free navigation on Arctic shipping routes (the NSR in Russia’s EEZ and, once ice free, the Transpolar Sea Route through international waters), resource (oil, gas, minerals, and fish) extraction, and tourism. These wide-ranging priorities, along with the PRC’s strategy of military-civil fusion and focus on dual-use technologies, also provide an opening for Beijing to advance its civil-military presence, collect intelligence on other Arctic powers’ military technology and systems, and gain technical and operational expertise.¹⁶

An Evolving Mutually Beneficial Relationship

While Russia and the PRC have gradually strengthened their ties after finding common ground, in the 1990s, on opposing US hegemony, their cooperation on the Arctic has materialized slowly due to the Kremlin’s focus on control and sovereignty. The PRC has sought to diversify its engagement in the region by cooperating with all Arctic powers, rather than relying solely on a partnership with Russia. But necessity and opportunity have driven decisions on both sides. Bilateral cooperation accelerated following Russia’s 2014 annexation of Crimea and incursion into Ukraine, and again after the 2022 full-scale invasion. The Kremlin’s subsequent political and economic isolation compelled it to prioritize economic relations with the PRC. For Beijing, cooperation with Moscow in the Arctic has become more attractive as other Arctic powers, reacting to Beijing’s economic coercion and national security imperatives, have begun to limit PRC investment.¹⁷ Russia’s increasing self-isolation and

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departure from international treaties and organizations combined with the PRC's stated desire to develop alternative regional governance mechanisms could soon begin to coalesce, especially in the absence of an active Arctic Council.¹⁸

The PRC is Russia's biggest trade partner and their evolving, albeit asymmetric, economic relationship helps insulate the Kremlin from Western sanctions. Russia hopes that PRC investment in the Yamal region will be a catalyst for the NSR to become a more widely used sea route, especially as Moscow wants Asian markets to offset halted gas flows through the Yamal-Europe pipeline. The Sino-Russian Arctic economic partnership is the basis on which the two countries' civil-military cooperation, joint military exercises, and efforts to enable situational awareness and maritime law enforcement grows. The partnership also centers around the development of the NSR and remains, for now, mutually beneficial. Regional cooperation has evolved more slowly than the broader strategic relationship, as Moscow has gradually subordinated its deep-seated distrust of Beijing's Arctic ambitions to achieve limited goals.

Russia and PRC's Evolving Cooperation and Capabilities in Space

A 2023 CNA study for the China Aerospace Studies Institute finds that "China-Russian space cooperation is driven by the same forces that drive the overall strategic relationship. While the two countries do not share completely overlapping security concerns, they do share a strong desire to counter U.S. leadership, including in outer space."¹⁹ Sino-Russian cooperation in space has been part of a broader effort to "balance against U.S. dominance" and "facilitate multipolarization".²⁰ This alignment is strategic and enhances mutual interests in military, diplomatic, economic, and technological realms.²¹ It covers space diplomacy, deep-space exploration, space-debris monitoring, satellite navigation, remote sensing, rocket technology, and ballistic missile defense.

Joint efforts in space diplomacy between the two powers took off in the 1990s. But cooperation on capability development increased after the imposition of Western economic sanctions and export controls on Russia in 2014 and 2022. These gave Moscow incentives to look at Beijing as an alternative supplier for electronic components and data. Reduced US space cooperation with Russia after 2014 also "created an opening for China, which the United States had excluded from the ISS [International Space Station] and from other joint civil space activity."²²

Overall, the PRC's space capabilities now exceed Russia's, but Beijing has looked to capitalize on Moscow's long-standing technical expertise in a few specific areas including deep-space exploration, human space flight, rocket technology, and missile defense. In 2019, Putin announced that Russia would help the PRC build a missile attack warning system. A \$60 million contract for software development was signed,²³ but there have been no further public reports suggesting progress. PRC companies also have helped provide satellite data that aids Russian military operations in Ukraine in the absence of access to Western platforms.²⁴

According to the US intelligence community, "By 2030, China probably will achieve world-class status in all but a few space technology areas."²⁵ Although Russia's space sector is facing budget and production issues, its new wartime economy will likely ensure that the country "will remain a key space competitor."²⁶ Recent leaked reports about a potential nuclear-armed anti-satellite (ASAT) weapon²⁷ call attention to Russia's focus on counterspace capabilities to reduce Western intelligence, surveillance, and reconnaissance (ISR) capabilities and on efforts

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to “[expand] its arsenal of jamming systems, directed energy weapons, on-orbit counterspace capabilities, and ground-based ASAT missiles that are designed to target U.S. and allied satellites.”²⁸

The importance to Russia and the PRC of denying adversaries’ space-based information gathering and of disabling military enablers in future conflicts has been in evidence throughout the war in Ukraine. There is no public indication that the countries are collaborating in these areas, but counterspace systems and operations are expected to play a growing role in both powers’ military arsenals and pose a clear threat to the defense and commercial sectors of the United States and its NATO allies. Such systems and operations are central to the PLA’s ambition to win “informatized warfare”²⁹ and to its concept of “systems confrontation and system destruction warfare”³⁰ as the key to winning modern wars, an idea that has informed Beijing’s strategic thinking over the last two decades.³¹

The PRC and Russia are already fielding a broad arsenal of counterspace weapons and have each conducted direct-ascent ASAT tests that have resulted in dangerous space debris. They are also conducting non-kinetic operations against space-enabled systems, including through electronic warfare. Russian officials have confirmed that “commercial space assets may be considered legitimate military targets and thus attacked.”³² In fact, Viasat’s and SpaceX’s Starlink satellite internet and communications systems have been the target of “cyber-attacks and electronic warfare with reversible or temporary effects.”³³ Russia’s Northern Fleet reportedly has “several electronic warfare units”³⁴ near the border with Norway and Finland, and GPS jamming operations targeting commercial aviation have significantly increased since 2022.³⁵

Implications of Russia-PRC Space Cooperation for the Arctic

While most Russia-PRC cooperative efforts in space are not exclusive to the Arctic, they hold specific functions that align with Russia’s and China’s general interests in the region. Rosatom’s 2023 announcement that it would use Chinese satellite data to facilitate navigation and ice forecasts along the NSR, for example,³⁶ indicates that Russia has turned to Chinese providers as it seeks to replace dataflows blocked by Western sanctions (like it does to bolster its operations in Ukraine). Production delays have plagued Russia’s satellite systems, reinforcing the need for alternative approaches.

Based on open-source data, bilateral space-related cooperation is most robust in the area of satellite navigation. Russia and the PRC each have their own global navigation satellite system (GNSS) that provides positioning, navigation, and timing (PNT). The PRC’s BeiDou GNSS, which was developed to reduce the PLA’s dependence on US GPS and enhance Beijing’s strategic autonomy, is far superior to Russia’s outdated GLONASS, which is “optimized to cover northern latitudes.”³⁷ BeiDou also boasts a larger number of satellites and ground stations, especially in the southern hemisphere, which helps it provide, for many regions, greater accuracy than GPS.³⁸ This helps the PRC promote BeiDou civilian applications globally as part of its “Digital Silk Road.”³⁹ A 2023 report by Harvard University’s Belfer Center, however, finds that beyond creating technological dependencies, BeiDou also poses “specific security risks via technical manipulation or surveillance—including through [its] two-way messaging capability.”⁴⁰ This enables communication outside the range of cellular coverage and facilitates location tracking, including for commercial customers.⁴¹

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Russia and the PRC have signed since 2011 multiple agreements to advance their space cooperation.⁴² One established, in 2015, a Russia-PRC Committee on Major Strategic Cooperation Projects in Satellite Navigation whose working groups focus on ensuring compatibility, interoperability, and augmentation.⁴³ As part of this agreement, each country has installed ground stations on the other's territory.⁴⁴ Russia continues to invest in developing GLONASS but increasingly looks to BeiDou to supplement coverage. The latter GNSS provides advanced technology and a backup navigation system for the former. Additional BeiDou ground stations in Russia's Arctic territories could improve its regional coverage. The PRC already announced in 2023 that it would open a ground station in Petropavlovsk-Kamchatsky on Avacha Bay, home to a large Russian submarine base and an access point to the NSR, which will extend Beijing's independent tracking and monitoring capabilities into the Arctic.⁴⁵ Russia and the PRC have also undertaken efforts to increase GNSS interoperability, but their systems are not fully integrated and remain only complementary. There is no public indication that the two countries are pursuing full integration of their systems.

Conclusion

The PRC's growing Arctic presence and support for Russia could pose unique challenges to the United States and NATO. These challenges include:

- potential further cooperation on or creation of an integrated missile defense system
- a proliferation of Russian and PRC dual-use aerial and space assets in the Arctic that could allow both powers to gather intelligence on US and allied systems and pose an advantage in other theaters, including the South China Sea
- more advanced satellite data sharing that could help create redundancies and provide both countries an edge in space-enabled operations (closer integration of BeiDou and GLONASS could also help deter western ASAT challenges or lead to accidental escalation)
- an effort by Russia and the PRC to seek alternative governing structures in the Arctic that could challenge UNCLOS and have implications for the international seabed and extended outer continental shelf claims

While both the Arctic and space are highly strategic and unique theaters for Russia and the PRC, their cooperation on high-latitude domain awareness and navigation is embedded in their broader economic and strategic partnership.

As this paper asserts, Russia's war against Ukraine has caused the Kremlin to reallocate budgets and shift production lines. The conflict has also increased Moscow's political isolation and dependence on PRC investment, currency, and supply chains, and accelerated efforts to redirect the Russian energy market toward Asia, with the country's Arctic and sub-Arctic regions, and the NSR, all playing critical roles. These factors likely account for the Kremlin's willingness to accelerate, beyond analysts' expectations, its bilateral Arctic cooperation with Beijing. For the PRC,

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its long-standing priority of global resource diversification, interest in exporting infrastructure and technology to capitalize on under-tapped markets and, most recently, desire to export its overcapacity, have enhanced the country's Arctic focus.

Since Russia and the PRC view the US-led international order as a primary challenge to their economic, political, and military power, they seek to alter that order, mimic the US alliance system (with the Eurasian Union, the Collective Security Treaty Organization, BRICS, BRI Forum), and develop alternative Arctic- and space-governance models to shape a new order more aligned to their policy preferences. The two countries value publicizing their growing association to signal their combined strength to domestic and international audiences and to undermine the United States and its allies.

As of March 2024, there are reasons to remain optimistic that Russia-PRC cooperation in the Arctic may remain on a slower development trajectory than other priority areas. Russia and the PRC have given no indication so far that they seek to fully integrate technological and space-based systems. This may be due, on both sides, to bureaucratic skepticism or concerns about military vulnerability. Public announcements and posturing, including on missile defense and maritime law enforcement, have not yet translated into significant, new capabilities, interoperability, or integration of forces and assets. Based on open-source accounts, military exercises and maritime law enforcement efforts in the Arctic retain a performative character. According to the US Intelligence Community's 2023 China Military Power Report, Sino-Russian military exercises and maneuvers "typically are scripted and parallel rather than integrated, suggesting that both countries are not capable of operational or tactical interoperability".⁴⁶ Should there be discernible efforts to pursue interoperability and integration, including in missile defense and military command and control, they would signal a new, more concerning alignment, one bordering on an alliance.

Another reason for muted optimism is that Russia and the PRC's growing collaboration has not yet fully displaced their divergent "strategic cultures".⁴⁷ Russia strives to maintain its great-power status, and Moscow's "no limits" partnership⁴⁸ with the PRC represents an important element in the Kremlin's efforts to preserve and elevate its position in the global order. However, Russia's asymmetric trade relationship and the PRC's technological strength underscore the former's economic weakness and will eventually undermine its sovereignty. To this point, the PRC has been careful not to highlight these vulnerabilities. For Beijing, public alignment with Putin's Russia undercuts its efforts to portray itself as a responsible and inclusive global leader, thereby impacting its international position. This limits what Beijing will actually do. Its initial hesitancy to publicly support Russia following the full-scale invasion of Ukraine reflects caution. Moreover, PRC investment in the NSR has reportedly fallen short of Russian hopes. Beijing continues instead to diversify its energy supplies and address an economic slowdown. Collaboration in space may also lose its appeal as Russia falls further behind technologically. Kremlin statements about its nuclear counterspace capabilities may also raise PRC concerns about a Russian threat to Beijing's growing presence and commercial power in space.

Putin and Xi will meet again in May in Beijing.⁴⁹ This will be the Russian leader's first overseas visit since securing another six-year term. Close scrutiny of any announcements related to Arctic collaboration will be important, as will any progress noted on previous agreements. The lessons that both countries are taking away from the war in Ukraine, and the ongoing response from the United States and its allies, will shape future Sino-Russian actions in the Arctic and elsewhere.

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