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CHINA – ARGENTINA SPACE ENGAGEMENT: RECONCILING SCIENCE, SOVEREIGNTY AND STRATEGIC RISK

R. Evan Ellis

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China – Argentina Space Engagement: Reconciling Science, Sovereignty and Strategic Risk

R. Evan Ellis

Summary

This work examines China - Argentine Space Collaboration, with a focus on the PRC-Operated Deep Space Radar Facility in Neuquén. It argues that in interest of national development, and in the context of hopes for benefit from Argentina's broader relationship with China, in an era of less pronounced strategic competition between the PRC and the U.S., the prior Peronist government off Cristina Fernández de Kirchner made contractual commitments that provide limited benefits to Argentina, undercut national sovereignty, and create risks of PRC use of Argentine national territory for military purposes against the West in time of war. Argentine governments have worked professionally within significant constraints of a lack of regular access to the facility, to provide technical oversight. The Center-right governments of both Mauricio Macri and Javier Milei have made heightened efforts at control, but have been impeded by the details of the contract signed by the prior Fernández government and the difficulty in making current policy decisions about possible future PRC behavior regarding the military use of PC-operated space facilities in Argentina. The case study also showcases a broader set of risks and dilemmas for other governments in the region tempted to leverage PRC interest in engagement in the space domain to further real and symbolic national technical development.

Key Words

People's Republic of China (PRC), Argentina, Space Cooperation, Deep-Space Radar, Neuquén.

Autor

R. Evan Ellis is research professor of Latin American Studies at the U.S. Army War College Strategic Studies Institute, with a focus on the region's relations with China and other non-Western actors, as well as transnational organized crime and populism in the region. He has published more than 300 works, including the following books: *China in Latin America: The What and Wherefores* (2009), *The Strategic Dimension of Chinese Engagement with Latin America* (2013), *China on the Ground in Latin America* (2014), *Transnational Organized Crime in Latin America and the Caribbean* (2018) and *China Engages Latin America: Distorting Development and Democracy* (2022). Is PhD in Political Science from Purdue University. The views expressed herein are strictly his own.

I. Introduction

In April 2024, following a visit to Argentina by the head of U.S. Southern Command General Laura Richardson, a team of Argentine government officials, scientists and other experts conducted a high-profile inspection of the People's Republic of China (PRC) Deep-Space Radar facility in the province of Neuquén. The delegation included personnel from Argentina's Science and Technology, Energy, National Strategy and Foreign ministries, Argentina's National Communications Agency (ENACOM) and National Space Agency (CONAE) (Radio Mitre, 2024). Although Argentine officials have periodically visited the facility since its inception (Infobae, 2019; Dinatale, 2019), the April 2024 inspection highlighted the continuing controversy over the PRC-operated facility, which has been a subject of debate and speculation, since the government of Cristina Fernández and her PRC counterparts signed the contract authorizing the PRC to build the facility in 2014 (Michi and Baravalle, 2023; Caro, 2024).

On the U.S. side, General Richardson and other U.S. officials have publicly expressed concern over the potential for military use of the facility (U.S. Southern Command, 2024). Such risks are increased due to its operation by the China Satellite Launch and Tracking Control General (CLTC), part of the People's Liberation Army's Strategic Support Force (Caro, 2024). The risk that the facility could be used by the Chinese for military, intelligence or other purposes not desired by the Argentine government is further increased by the lack of regular physical presence or direct supervision by Argentine authorities. Nor does the broader public have regular access to the facility (Infobae, 2019).

The controversy over the PRC Deep-Space radar in Neuquén and the potential threats it poses, must be understood in the broader contexts of a possible future U.S.-PRC war, as well as broader PRC space and other engagement with Argentina and the region. This work examines recent developments in China - Argentine space cooperation, with a focus on the PRC Deep Space Radar. A range of Argentine governments over more than three decades, have engaged with the PRC on an expanding array of space-related activities. That engagement was encouraged, in part, by a generally friendly political relationship, and hopes for benefit from a commercial relationship that was becoming increasingly important for Argentina, in the context of an international environment in which tensions and the prospect of military hostilities between the PRC and the U.S. were not as acute as they are today. In that environment, Peronist governments in particular, made contractual

commitments to the PRC in conditions of limited transparency, that provided limited benefits to Argentina, undercut national sovereignty, and created risks of PRC use of Argentine national territory for military purposes against the West in time of war. The current Argentine government of Javier Milei, like the prior Center-right government of Mauricio Macri are working against contractual, physical and other obstacles to strengthen Argentine government oversight over Chinese space activities on Argentina's national territory, and in the process, to reduce such risks.

II. The Development of PRC – Argentina Space Relations

Space collaboration between Argentina and the PRC dates back to the 1980s, including a 1989 agreement to establish the China - Argentine Observational Station at the Félix Aguilar Astronomical Observatory in the Argentine Department of San Juan (Ellis, 2024a). During the years that followed, cooperation grew between a PRC building an ever more capable space launch and satellite capability, and an Argentina whose strategic location in the Southern part of the Western hemisphere, and work to develop its own space capabilities made it of interest to China.

In November 2004, during a State Visit to Argentina by then PRC President Hu Jintao, the two governments signed an MOU on “technology cooperation in the peaceful use of outer space.” The document expressed PRC interest in providing Argentina space launch services, satellite components and other space-related technologies (Ellis 2010b). In May 2005, the two countries followed up with a more specific declaration of interest in possible PRC material and technical support to the Argentine satellite manufacturer INVAP, and some level of possible PRC participation Argentina's ARSAT satellite program (Hulse, 2007; Ellis, 2010a). That initial Chinese effort to participate in ARSAT was ultimately unsuccessful, with INVAP contracting with Astrum and Thales Alenia Space to develop the satellite, and with Arianespace of France to launch it (SpaceNews, 2010). Nonetheless, the effort on the Chinese side, and their interaction with the Argentines, laid the framework for the knowledge and the relationships that helped the PRC to later collaborate in a more extensive way with Argentina in the space domain.

In 2006, Argentina signed an agreement permitting the PRC to build a satellite laser range finding station at the Félix Aguilar Astronomical Observatory, where it had previously

allowed the Chinese to operate (National Astronomical Observatories of China, China Academy of Sciences - NAOOC, 2024).

During this period that the PRC was seeking to expand its space cooperation with Argentina, it was also providing satellite launch and space technology services and entering into space-domain relationships with various other Latin American states. These included the co-development and launch of satellites with Brazil under the China-Brazil Earth Research Satellite Program (Xinhua, 2024; Ellis, 2010b), the fabrication of satellites, ground facilities, and conduct of supporting space training for Venezuela and Bolivia (Ellis, 2010b), the operation of an observatory in Chile from 2013 (Aróstica Fernández, 2022), collaboration with Peru on space technologies and data since 2006 through the Asia-Pacific Space Cooperation Organization (APSCO) (Gadzala Tiriziu, 2023).

In the context of China's activities and establishment of space domain partnerships in the region more broadly, the \$300 million agreement that the Argentine Peronist government of Cristina Fernández signed in 2014 to permit the PRC to establish a space tracking, command, and data acquisition facility in Bajada de Agrio, a remote part of Neuquén province, could logically be interpreted as a continuation of China's expanding space engagement with the region, albeit a significant one.

Such an assessment, however, overlooks the groundbreaking character of the step for China, both in Argentina and the region. Specifically, the facility was the first of its kind to be built and operated by the PRC outside of China. The Argentine agreement to allow the CLTC, part of the Strategic Support Forces of the People's Liberation Army, to operate a facility with near sovereign authority on Argentine territory, without continuing Argentine government presence at the facility or other reliable mechanisms of constant technical oversight, was also unprecedented, and added to the controversy over the facility.

For the Argentine public, and the world beyond, the appearance of the facility conveyed threat and intrigue, with an enormous 35-meter diameter radar dish, in a large fenced-off area, towering above the surrounding desert. The Argentine government of Cristina Fernández added to the controversy by refusing to disclose details of the commitments it had made with the PRC regarding the facility, or technical aspects of its operation and supervision.

In addition to the Deep Space Radar, China - Argentine space cooperation continued to advance in other areas as well across multiple governments, including Chinese activities

at the Felix Aguilar Observatory in San Juan, to which it had been granted access in 2018. There, in late 2023, the PRC begin work on another enormous project, the 40-meter China Argentina Radio Telescope (CART) (National Astronomical Observatories of China, China Academy of Sciences, 2024).

At the same time, in Rio Gallegos, in the South of the country, the Chinese firm Emposat, with ties to China state-owned China Aerospace Science and Technology Corporation (CASC), explored plans for a facility with four antennas,¹ complimenting the capabilities of the PRC Zhongshan facility further to the south in the Inexpressible Island (rocky island of Terra Nova Bay in Antarctica), to provide capabilities for tracking, communicating with or capturing data from objects in far southern latitudes and near polar orbits (ANI, 2021; Ellis, 2024a).

In the commercial arena, the Argentine company Satellogic, sought to use the PRC to launch small satellites into orbit (Clark, 2020), although the effort was ultimately unsuccessful.

III. The Question of Economic Benefit

Argentina obtains some technical benefit and remuneration from allowing PRC use of its territory for space facilities such as those in Neuquén and San Juan, as well as benefitting from PRC launch services. China - Argentine space collaboration has, however, arguably been shaped by considerations beyond pure commercial logic particularly under the Cristina Fernández and Alberto Fernández governments, China - Argentine space collaboration was arguably driven, in part, by Argentine government efforts to maintain a positive relationship with the PRC in other domains, hoping to attract expanded investment by Chinese companies and purchases of Argentine products. It was also shaped by a strategic partnership in which friendship with the PRC helped Argentina to diversify its political relationships away from the United States, and play a stronger role as a major South American and regional actor, in the context of other left-oriented governments doing the same, from Luis Ignacio Lula da Silva in Brazil, to Hugo Chavez n Venezuela, Evo Morales in Bolivia, and Rafael Correa in Ecuador.

¹ Off-the-record interview with Argentine space expert, May 2024.

With respect to Argentina's hopes for a broader commercial partnership with China, in the two decades from 2002 to 2022, Argentine exports to the PRC grew almost eight-fold, from \$1.09 billion in 2002, just after the PRC was accepted into the World Trade Organization (WTO) to \$7.93 billion in 2022 (Direction of Trade Statistics, 2024). The expansion of Argentine exports of soybeans, beef and barley playing a particularly important role in this new commerce (OEC, 2024). During the same period, Argentine imports from the PRC grew 53-fold to \$17.5 billion in 2022 (Direction of Trade Statistics, 2024).

In parallel with the expansion of Argentine trade with the PRC, during this period, PRC-based companies were also playing increasingly important roles as investors in the country. The Mexico-based *Red China-ALC* identified 57 major Chinese investments in Argentina that occurred in the period 2000-2022, totaling \$18.2 billion (Dussel Peters, 2023). Ongoing and prospective investments by PRC companies included major projects in sectors such as petroleum, traditional mining, agrolistics, and telecommunications, as well as energy generation and transmission, and lithium (Ellis, 2024b). To facilitate the commercial relationship, Argentina and China established an \$18 billion currency swap arrangement (Guisto, 2024) which the Fernández government even used to pay part of the government's payment due to the International Monetary Fund.

In the political domain, reflecting the growing commercial and other strategic importance of the Sino - Argentine relationship, in 2004, the PRC recognized Argentina as a "Strategic Partner". In 2014, the two countries upgraded the relationship to "Comprehensive Strategic Partnership" and set up a ministerial level working group to facilitate the advance of the relationship in strategic sectors (Ellis, 2021). China also supported Argentina in its strategically important claims against Great Britain regarding ownership of the Islas Malvinas (Falkland Islands), over which it had lost a war with Great Britain in 1983 (The Guardian, 2022).

Argentina also cooperated with the PRC in security affairs, including conducting regular military educational exchanges and institutional visits, purchasing a limited number of Chinese armored vehicles and considering the acquisition of Chinese fighter aircraft and patrol vehicles (Ellis, 2021). In February 2022, with multiple multi-billion-dollar infrastructure projects committed to PRC-base companies, Argentina's President Fernández made a high-profile trip to the PRC (and to Russia) in which he talked glowingly of the relationship, billions of dollars of current and future projects, and joined China's Belt and Road initiative (BRI) (Ellis, 2022).

Although many of the major PRC-based infrastructure projects and military sales had stalled for economic and other reasons by the end of the Fernández administration in 2023 (Ellis, 2024b; Guisto, 2024), it is important to note that for the Argentine government, the growth of space cooperation with the PRC took place in the context of a significantly expanding overall relationship in which the Argentine side was moved in part by political cooperation and alignment, and the expectation of expanding financial benefit, that public assertion of greater Argentine sovereignty and demands for control over the space station might have undermined.

IV. The Strategic Risk of PRC Military Exploitation of its Space Presence in Argentina

In Argentina, as in other parts of Latin America, PRC space cooperation activities often have significant legitimate scientific and commercial purposes but can be exploited for military uses in both peacetime and wartime as well.

The location of the Félix Aguilar Observatory in the southern part of the Western hemisphere gives Chinese astronomical observation assets such as the China-Argentina Radio Telescope (CART) access to a part of the sky not available from astronomical facilities in the PRC. Similarly, Chinese space missions to the moon, Mars and beyond create a need for a global ring of communication facilities, such as the Deep Space Radar in Neuquén to maintain constant contact with facilities in space under a rotating earth, although such communications also have been, and are maintained from the sea by ship-based radars (China National Space Agency, 2016).

The 'development and launch of satellites for other countries such Argentina (as well as for Brazil, Venezuela, Bolivia and others) facilitates the development of China's commercial and scientific space program, as well as providing remuneration and supporting technology leadership in a strategic economic sector. Scientific cooperation is an internationally long-recognized vehicle for working together and solving shared problems.

Despite the legitimate justifications for China space cooperation with Argentina and other countries in the region, the same geography that makes Argentina attractive to the PRC for commercial and scientific space purposes, also makes it valuable for military ones in ways that the Argentine government may not easily be able to monitor or prevent. The

ability to locate assets in space through Chinese assets in the Western Hemisphere such as the Deep Space Radar at Neuquén, or the Laser Range-finding facility and China Argentine Radio telescope at the Félix Aguilar Observatory, can potentially be leveraged to pinpoint the location and predictable path of objects in space such as U.S. satellites, in order to target them in time of war. The radar dishes and antenna that the PRC has access to or operates in Argentina and elsewhere in the region to communicate with PRC spacecraft in time of peace, can also be used to intercept some signals of U.S. satellites passing overhead for later decryption in time of war or peace. Space assets that the PRC has access to or operates in the region can also be used to communicate with Chinese satellites, balloons, military and other space vehicles as they pass over the Western hemisphere.

This capability could allow the PRC to receive and relay data from Chinese surveillance and attack assets in a more timely or effective fashion in time of war. As an illustration, in 2021, for example, the People's Liberation Army (PLA) successfully tested a Fractional Orbital Bombardment System (FOBS) with a Hypersonic Glide Vehicle (HGV), that could theoretically be sent from the PRC over the South Pole to attack US strategic targets from an unexpected vector (Zastrow, 2021). The availability of PRC tracking, communication and command facilities in Argentina as such a vehicle passes over the South Pole would arguably facilitate the control of such a system in time of war.

V. The Question of Argentine Control of PRC Facilities

The ability to supervise and control the activities of the PRC in its national territory for Argentina, and other countries in the region, is an issue of sovereignty. In customary international law, governments are responsible for the use of territory under their control against third parties. Article VI, of the 1967 Outer Space Treaty, for example, makes states responsible for space activities conducted under their jurisdiction, even if the 2014 Argentina-PRC agreement regarding the Deep Space Radar in Neuquén purports to release Argentina from responsibility for PRC activities there (Caro, 2024).

In the case of the PRC Deep Space Radar, the root of Argentina's problem was arguably the willingness of the Cristina Fernández government to sign a contract ceding a 50-year lease to the Chinese, in the spirit of a warm political relationship and hopes for future benefit, without including adequate technical provisions for supervision consistent with Argentine sovereignty and associated international obligations, such as continuing physical presence

and technical oversight, to assure that the PRC could not use the facility in the future for military purposes. Article 1 of the agreement governing the facility, for example, gives the Chinese right to “construct, establish and operate ground tracking, command and data acquisition facilities, including a deep space antenna” at the site, without establishing the purpose governing or limiting how the PRC would use the technology and data (Watson-Lynn, 2020). Article 3 of the agreement cedes to the PRC control of all activities conducted at the station, abdicating virtually any Argentine government authority regarding what Chinese government personnel operating the facility under the administrative jurisdiction of the People’s Liberation Army, do there (Watson-Lynn, 2020).

Beyond clauses that increase the risk of use of the facility by the Chinese for purposes not desired or known by the Argentine government, other clause of the agreement establish that the Deep Radar Facility is governed by Chinese labor law, giving the PRC military operators virtually unchecked liberty to bring personnel unsupervised into and out of the facility as they wish. In the agreement, the Fernández government also gave the PRC complete tax exemption for the material brought into or out of the facility, and activities conducted there, including commercial activities generating value there, or the salaries paid to personnel for work done there (Watson-Lynn, 2020).

The previous Argentine government’s accommodation of the PRC desire not to publish or discuss substantial parts of the contract, has further complicated oversight by other parts of the Argentine government, the public, and potentially affected third parties, including helping them to identify potential vulnerabilities arising from the contract details. Such Chinese insistence on confidentiality, complicating oversight, is not unique to the Argentine-China space station. Indeed, it is a common way in which the PRC routinely secures contractual conditions to their advantage, particularly when dealing with partner bureaucracies with insufficient technical capabilities, or with interest in ceding conditions to the PRC in exchange for personal benefit (Gelpern, et. al., 2021).

Despite such challenges, Argentine governments have sought to exercise limited oversight over the facility, to the extent possible, through periodic inspections, information requests, technical means, and other mechanisms (Infobae, 2019; Dinatale, 2019). In 2015, the center-right government of Mauricio Macri, which replaced Cristina Fernández, conducted a review of the contract for the facility, and expanded oversight activities. Although it did not choose to terminate the contract, it insisted on, and in 2016 got the PRC to sign an addendum to the original contract in which it, in principle committed to limit its use

of the facility to only “peaceful” purposes (Dinatale, 2024). The ability of the Argentine government to fully verify and enforce such a commitment, however, is unclear.

Short of a breach of contract, according to experts consulted for this work, the Argentine government has been reluctant to pressure the Chinese operating the facility too heavily, or too publicly, lest the Chinese create obstacles² to the Argentine government receiving even the very limited 1 hour 40 minutes dish time per day that they are currently allowed to use the principle satellite dish at the station (Dinatale, 2024).

As noted in the introduction, the current government of Javier Milei, like the Macri government, is working to increase Argentine oversight over the Deep Space Radar (Infobae, 2019). In May 2024, as noted in the introduction, the Milei government conducted a high-profile inspection of the facility. The objective was not necessarily to find evidence of Chinese wrongdoing, but rather, to begin a process of expanded Argentine interaction with the Chinese for improved oversight over the facility (Dinatale, 2024). It also sent a public message that the Milei government would take a more active role than its predecessors had to assert Argentine sovereignty over the Chinese radar, as with other areas.

Given this purpose, the relative silence of the Argentine government about its findings following the inspection does not imply a lack of problems with the facility. Given the advance warning the PRC had of the visit to conceal incriminating equipment, personnel or activities, any discovery of significant items of concern there by the Argentine government would have reflected gross mismanagement by the Chinese in concealing them, or a deliberate decision to allow the Argentine inspectors to see them. Indeed, the inability of the Argentine inspectors to even discern which of the personnel at the PLA-operated facility were military, and which were not, was illustrated by Foreign Minister Diana Mondino’s controversial remark that it was impossible to know because “Chinese people are all the same” (Clarín, 2024).

Even if technical members of the government inspection team found technical evidence that the Chinese Space Radar had been previously used in an improper fashion, or was being prepared for such use in the future, it is unlikely that they would have publicly disclosed such evidence, so as not to advertise to the PRC what they know, or how they have learned it. Issues of protection of information, sources and methods notwithstanding, any sensitive

² Off-the-record interview with Argentine experts. May 2024.

information discovered may also have been kept private, simply to give the Milei government time to decide how best to act upon it, or non-public options to communicate it.

Beyond what the May 2024 inspection or future inspections uncovered or could reasonably uncover, the absence of evidence that the PRC is currently using the facility for military purposes does not resolve the core concern about the facility. As noted in the prior section, the principal risk of the facility is not its current use for military or other improper purposes, but rather that it could be so used in the future, particularly in the context of a war between the PRC and the West. Failing to find that equipment capable of communicating and receiving in a military-relevant spectrum is not actively being used to do so at the time of a peacetime inspection, provides no assurance that it will not be used to do so in the future. Indeed, beyond Argentina, the difficulty of guaranteeing that a facility with the technical characteristics to be used for military purposes would not be used for such purposes in time of war was also illustrated in Chile. There, the inability of the commercial operator of the Santiago Satellite Station the Swedish Space Corporation (SSC), to meet its contractual obligations to assure that the two S-Band radars operated by its Chinese tenant, CLTC, could not be used for military purposes, is driving the SSC expel CLTC when its current lease expires (Funaiolo, et. al., 2022).

VI. Conclusion

The PRC Deep Space Radar in Neuquén and other China - Argentine space engagement showcases risks and dilemmas that apply to the region as a whole in engaging with the PRC in not only space, but other arenas as well.

In the space domain, an entire series PRC initiatives give the country access to multiple facilities in Latin American partner nations, or their data, that could put those partners in the position of inadvertently collaborating with the PRC against the West in time of war. These include PRC-instrumented primary and secondary satellite tracking and control facilities in Venezuela and Bolivia, scientific facilities in Chile and Argentina, data sharing with Peru through the Asia-Pacific Space Collaboration Organization (APSCO), and collaboration with the China–Brazil Earth Resources Satellite program (CBERS) (Ellis, 2024a). China is aggressively seeking to expand space collaboration through its project to establish a manned facility on the moon, in which the anti-US populist regimes in Venezuela and Nicaragua have already signed up to participate in (Jones, 2024).

At the same time, the Argentine case, as with the others, also illustrates that counterparts in the region are manned by technically competent personnel, working professionally, to the best of their abilities to ensure that the PRC activities in their countries are consistent with sovereignty and national laws, even if their ability to do so is limited.

Beyond the space domain, the Argentine case highlights the dangers of governments, under conditions of limited transparency, entering into major projects with the PRC in the hopes of commercial, technical, and other benefits, exposing them to vulnerabilities through the “fine print” of the contracts, that they lack the technical knowledge and other capabilities to fully appreciate and mitigate, at the time of signing. When the Fernández government signed the contract with the Chinese committing Argentina to accept the Deep Space Radar in Neuquén, it probably did not fully appreciate the dilemmas the details of the legal commitment would create for future governments on issues of national sovereignty, or how difficult how difficult the “fine print” of the contract would make it for future governments to extricate itself once the implications of the contract became evident.

In Peru, the government of Dina Boluarte is wrestling with a similar dilemma, with its port authority having signed a contract with a PRC-based consortium, whose implications it did not fully understand at the time, ceding total control over port operations to the PRC-based owners, then finding it facing a costly legal process in institutions beyond the nation’s control, when it sought to correct the error (Stott, 2024). In the Bahamas, billionaire developer Sarkis Izmirlan similarly found himself trapped by the fine print of a contract he signed with PRC-based partners, ultimately losing everything, when the \$4.2 billion Baja Mar hotel project he committed to with China Construction Americas (CCA), entered into grave difficulties because of the performance of CCA that delayed its opening, with thousands of persons on the payroll (Hartnell, 2023).

Overall, the Argentine case highlights the importance of transparency and technical competence by host governments, and open partnerships with Western as well as non-Western states, in order for states in the region to realize the scientific and other benefits of space cooperation with the PRC and other states, while ensuring that such cooperation does not expose the country to unacceptable risks.

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