

A STRONG CASE FOR A BHARATIYA 'TERTIA OPTIO' CISLUNAR STRATEGY

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Abstract

Activities in the Earth-Moon (cislunar) space were solely under the purview of civilian space agencies, and its commercialisation began some 15 years ago. The US-led Artemis Program and the China-led International Lunar Research Station are commercial cislunar megaprojects. Laying out of commercial assets may not lead to cislunar 'weaponisation' or 'militarisation' but to 'cislunar securitisation' where both US- and China-led astropolitical blocs block-chain their respective public and private cislunar assets, isolate these assets into un-interoperable systems with different sets of space standards, and raise independent cislunar C4ISR systems that help maintain a code of conduct as desired by them with the existing international space treaty system becomes subservient or ineffective. This article aims to illustrate a position for New Delhi, where it operates in cislunar space with its strategic autonomy and exercises a 'tertia optio' when space diplomacy between the two contesting blocs fails and cislunar conflicts remain inadvisable.

INTRODUCTION

The Western economy, which leads the Bretton Woods system, is currently at the outermost extremity of a 'super bubble'.¹ The term is synonymous

with the peaking of the profit-to-earning ratio, an outcome of a long-duration bull run at the market, and with only one eventuality, a big stock market crash. Such bear and bull runs happen cyclically, and the pursuit of establishing a human and robotic presence in the Earth-Moon (cislunar) space will span many such cycles. This means the long-duration economic stability of nations, stability of their innovation ecosystems, domestic politics, cultural integrity, and secured progress of strategically crucial public and private entities are of the utmost consequence to any nation's sustained excellence in space capabilities.² But excellence is not an end goal; it is a means to achieve accountable leadership or unaccountable hegemony. The accountability-driven leadership aims to lead the cislunar activities through consensus and upholding global order.

There are advantages of being both accountable and unaccountable. Accountable space leadership will drive consensus on the code of conduct in outer space, forge natural business partnerships, have strategic economic interests secured through international cooperation, and have a sway over the narrative that human space activities are the world's heritage.

The unaccountable space leadership will lead through force; it would be the sole progenitor of novel space capabilities, including those that permit it to carry out covert space operations; it would be a rule-setter and a rule-breaker simultaneously, setting rules for other players and breaking the rules when it deems fit.

This has been the endgame of superpowers in space - full-spectrum dominance, ability to singularly set rules through control over intergovernmental organisations, and bending of codes while actively achieving short-term goals at regular intervals. Seven decades is a long enough period to analyse that all superpowers since the 1940s, be it the United States, the Soviet Union, or the People's Republic of China, followed this same modus operandi. However, there are limits to the sporadic growth that these superpowers have seen. The redundancies in the economic and political system set the limits. However, these limits can be triumphed. For

India to do so, it will have to come up with a strategy unique to its own and one that is not stuck in the Orient-Occident, Conservatism-Liberalism, Dove-Hawk, or Capitalism-Communism dichotomies.

OPENING A NEW AND PERPLEXING FRONT

At the 15th BRICS Summit, held in Johannesburg, South Africa, the Indian Prime Minister Narendra Modi made a startling bid. In his formal address, he said, "We are already working on the BRICS satellite constellation, but to move a step further, we should think about establishing a BRICS space exploration consortium."³ The announcement was startling because India did not hesitate even a bit, as it was just two months prior to the summit that it had signed the US-led Artemis Accords, becoming the 27th country to do so.⁴

India signed the Artemis Accords but is not part of the US Artemis program that aims to go. India proposes the BRICS space exploration consortium but is not part of the China-Russia-led International Lunar Research Station. This atypical position of strength gives India access to deliberations on both the contesting projects, yet it is neither a participant. There are multiple reasons to these:

- India does not want to be a junior partner on projects that it has not conceived or are not its initiative.
- India wants to refrain from committing its national lunar and planetary exploration program or its commercial space ecosystem to either of the two projects exclusively.
- India intends to engage in deliberations on the principles of space activities and determine the codes of conduct with mature space-faring nations. Still, it necessarily needs to abide by the diktats they laid out.
- India intends to plug its space-sector non-governmental private entities across all space ecosystems, and these liaisons will be based on business potential.
- India does not believe in an over-arching space umbrella (akin to a nuclear umbrella), where a leading mature space-faring nation is the aggregator

of financial, technical and human resources instrumental in carrying out space activities.

In April 2023, India and Russia discussed the technology transfer of RD-191 semi-cryogenic rocket engines. Any rocket that will use the RD-191 would be likely to serve the Indian commercial cislunar market.⁵ Likewise, with the success of Chandrayaan-3 and India hosting the G20 Summit in September 2023, the US extended an overture by discussing the 'modalities, capacity building, and training for mounting a joint effort to the International Space Station in 2024.'⁶ During the Strategic Space Dialogue between India and France in 2023, both countries identified space situational awareness and human spaceflight as two of the few major areas of bilateral space collaboration.⁷

Apart from India, UAE and France have begun to engage both the Artemis and ILRS proponents. In October 2023, UAE's University of Sharjah signed a cooperation agreement with China's Deep Space Exploration Laboratory to work on ILRS projects.⁸ The university is likely to develop small exploration platforms that could be piggy-backed on the scheduled Russia- and China-led ILRS missions. A Russia-France partnership may not be vivid at present, but the countries have certainly not closed their doors to each other. France's investment, before the beginning of the Russia-Ukraine conflict, has been five times the other way, standing at USD 15 billion. The relationship has seen a downward spiral, but Russian LNG supplies to France grew 41 percent year-on-year between January and September 2023 despite the conflict.⁹ France may currently be unable to cross the NATO line, but it does prefer its strategic autonomy. During the China-France Strategic Dialogue held in Paris in February 2024, both countries reiterated the significance of European autonomy, which France espouses strongly. Also, they discussed the importance of preventing bloc confrontation and major power rivalry. Cislunar activities could become the detenté for France with Russia, as their relationship has not been strained as much as the US-Russia or US-China relations. In 2021, French and other European space experts

from Italy, Netherlands, Germany, and the European Space Agency were present in a closed-door workshop on ILRS organised by China National Space Administration and Roscosmos.¹⁰ In a turn of events in Europe, this Franco-Russian space cooperation could be revived.

Where UAE, France and many other nations are in a strife between the US-led and the China-led astrodiplomatic options for their respective geo-economic reasons, India definitely is the harbinger of a third option, one that can be geopolitically and geoeconomically attractive, competitive yet non-confrontational, and alleviating the existing hegemonic aspirations. India's strong economic forecast for at least the next 2-3 decades is not going to close the window of opportunity anytime soon. Only a country that is part of both the blocs and has an unshakeable strategic autonomy would be the progenitor of the cislunar 'Tertia Optio.'

LUNASPATIAL INTELLIGENCE (LUNINT) OF PAX SINICA AND PAX AMERICANA

The cislunar system is not a domain only of scientific exploration and commercial exploitation; where both these meet, securitisation comes into play. For the foreseeable future, there are no wars to be fought in cislunar space, and diplomacy between the two major astropolitical blocs is not happening. To that end, the securitisation of cislunar activities, cislunar assets, and the creation of a cislunar command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) seems imminent.

The US space innovation ecosystem is currently working towards developing lunaspatial intelligence (LUNINT) to monitor human activities in cislunar pathways and on the lunar surface. A 3D lunaspatial situational awareness dashboard is currently being made by the US private space contractors for the Department of Defense to ensure sustained operations of the US Space Force and US Air Force during this decade, the 2020s, and beyond and ensure US dominance in space.¹¹ The US Air Force calls an element of its LUNINT architecture the Cislunar Highway Patrol System,¹²

which aims to place a long-range-narrow-field and a short-range wide-field scanning satellite that would monitor any spacecraft or object coming in close proximity to the Moon. By having a patrol system, the US intends to have a military unit that regularly monitors the civilian space. However, it still needs to be determined if the patrol system is to identify those who break the code of conduct in outer space. If yes, which are these codes, and under which treaty system do they persist? Is there a global consensus on this patrol system, if space indeed is the common heritage of humankind, irrespective of the geopolitical differences? And if none of this is true, the patrol is merely to ensure dominance over an unregulated and frontier outer space. The article in the later section discusses the concept of frontierism.

China's DSEL, during the International Astronautical Congress 2023 in Baku, Azerbaijan, presented the Queqiao cislunar navigation, communication and remote sensing satellite constellation placed in circumlunar orbits and at the Earth-Moon Lagrange point.¹³ The first-generation Queqiao satellites have already been demonstrated. They helped the Chinese space program with the lunar far-side operations of the Chang'e-4 spacecraft, and two more Queqiao satellites will be up in mid-2024 to support the Chang'e 6, 7 and 8 missions. When the second generation of Queqiao comes up, it will be ready to provide coverage of the whole Moon, and the third generation will be part of the Earth-Moon-Mars and Earth-Moon-Venus communication and navigation system.

The US and Chinese LUNINT systems are not exclusive from the Artemis program and the ILRS; in fact, it is the critical infrastructure necessary to carry out a plethora of activities varying in their economic, military and scientific criticality. Both countries are interested in leading a pack of loyal junior partners that would partake in the lesser critical operations and perform under the watchful eye of the LUNINT C4ISR that the two bloc leaders raise.

The LUNINT C4ISR has no apparent application for securing the territorial integrity of nations. It is not a tool of geopolitics that plays out in the seas,

on mountains, and plateaus. The US LUNINT is for the Americans to take their *Pax Americana* and for the Chinese to take their *Pax Sinica* into cislunar realms. The ILRS is nothing but, as the Chinese would think, part of the *Cèfēng fūzhì*, or the Chinese tributary system, where the ILRS partners engage in trade, military relations, and diplomacy, but by prostrating to the *Tianzi*, the Son of Heaven, the Chinese Emperor, and his *Tianchao*, Celestial Empire.

For the West, led by the US, dominance over the cislunar space is a version of 'Manifest Destiny', where the settlers, read as Artemis Program partners, are the settlers destined to expand to the Moon and in a way, it is a given. The way, the goddess Columbia is the personification of the US's 17th century Manifest Destiny; in the 21st century, the goddess Artemis, after whom the Artemis Accords and the Artemis Program are named, has become the allegory of the cislunar Manifest Destiny.

How many of us have read articles, essays, and books where outer space has been called the 'last' or 'next' frontier to achieve? Any individual, expert or novice, writing on outer space, once in their lives, uses these terms. Many Indians, especially English-language writers, use these words without comprehending that the word 'frontier' emerges from the European colonisation of the New Worlds (new words for them), which comprised the Americas. Frontierism is the phenomenon of winning the wilderness,¹⁴ which unfortunately also included the Native Americans and their cultures. By the 1890s, the US did not remain a frontier for Europe once the Europeans substantially saturated its expanses with its populations and established towns that were named after European towns, regions and cities. What next? It was US President John F. Kennedy, a Democrat, who revived the word 'New Frontier' when he determined to take the first Americans to the Moon.¹⁵ So when we, Indians, use the words 'new frontier' or 'last frontier,' we ignorantly invoke the Western construct of frontierism for the cislunar space.

LUNINT, which neither the Indian civilian space agency, ISRO, nor its Defence Space Agency is preparing for, is the first step towards the US and

China creating exclusive logistics and supply chain pathways to the Moon, and these pathways are agnostic. They could be used for lunar commerce, military activities, or natural scientific research. Exclusivity is a hallmark of dominance, and both these superpowers want to offer that pathway to their bloc members at a geopolitical and geoeconomic premium, which they mutually accept. The establishment of exclusive LUNINT by the US and China is not going to foster any constructive diplomacy between the two; it would rather create divisions that would get stronger by the year. Such an acrimonious impasse is detrimental and would only lead to the build-up of a larger conflict. In such circumstances, the impasse needs to be broken by creating a third option.

CONCLUSION: INDIA HAS A TERTIA OPTIO ROLE IN CISLUNAR SPACE

On 27th February 2024, the Indian government publicly announced the first batch of Indian astronaut-designates, all from the Indian Air Force, and now preparing to fly on two missions, a flight to the International Space Station, and on the Gaganyaan capsule before the end of the 2030s. By 2035, India would have its modular space station, Bharatiya Antariksha Station, and during the Amrit Kaal, by 2047, India would have landed its astronauts on the surface of the Moon.¹⁶ These are the milestones that New Delhi has identified, and irrespective of the fact that these are spectacular milestones, there is a need for evolving comprehension of a Bharatiya Cislunar Strategy. This paper makes the following two suggestions for stake holders to take an early decision:

- **The Chandrayaan Series must now evolve into a Bharatiya Cislunar Program.** India now has strong lunar credentials among the second-generation space-faring nations. It will emerge as the third largest economy on the planet, giving it the never-before ability to make substantial investments to progress from the Chandrayaan series of missions. For India to have its astronauts on the Moon by 2047, it must now create a Bharatiya Cislunar Program.

The first arm of the Bharatiya Cislunar Program after the split proposed here should be of Chandrayaan. Chandrayaan should continue to be the 'brand' for surface exploration and non-exploration activities. The Chandrayaan series of missions should be commercialised with contributions coming in from Indian robotics, precision instrumentations, traditional medicine and pharmaceuticals, biotechnology, automotive, materials, defence, and allied industries and innovation labs. By bringing in commercial enterprises in the Chandrayaan fold, the next missions after the currently contemplated Indo-Japanese Lunar Polar Exploration (LUPEX) could be expedited and yield a quicker return on investment.

The second arm would be to develop the cislunar human spaceflight and long-duration lunar presence technologies. These missions would encompass crew-rated cislunar transportation, heavy-tonnage logistics and replenishments through the Next Generation Launch Vehicle, crew-rated lunar habitats and life-support systems, and lunar surface transportation technologies. As an outcome of the space reforms, ISRO has been unburdened from numerous tasks, which are now delegated to newer institutions of the Department of Space, particularly IN-SPACe and NSIL. ISRO can now be in charge of developing these technologies with industry partners.

The third arm should be a series of cislunar C4ISR projects tasked with the Defence Space Agency. These C4ISR installations could be placed along the cislunar pathways at the Earth-Moon Lagrangian Point and in circumlunar orbits, offering positioning, navigating, cislunar situational awareness, and communication capabilities. Just like the Hindu Lunar God is called *Dikpala*, the 'guardian of the directions', this C4ISR would be crucial for setting the next-generation Chandrayaan-driven surface infrastructure on the Moon, long-duration operations of robotic spacecraft on the lunar surface and ensuring incessant connectivity (deep space communication) and security for astronauts and logistics missions, taking into account all contingencies. It goes without saying that the Indian private space ecosystem would play a major role in constructing the C4ISR spacecraft, components, subsystems and systems as per DSA's specifications.

- **India must have a Bharatiya Comprehensive Cislunar Strategy.** It is evident from the actions of the US and China that both these countries are following a comprehensive cislunar stratagem, taking into tow all the arms of their governments. Similarly, and in a non-reactive manner, India must contemplate that for its growing global stature. This well-structured all-of-a-nation cislunar strategy must be in tune with India's global geoeconomic and geopolitical goals.

The remarkable attribute of this strategy is that it does not fall for the systemic ideologies that the US and China espouse. This strategy would not arm-twist countries to join the Bharatiya cislunar plans on exclusivity. The leverage for joining would be equitable stakes, maintaining a code of conduct, and ensuring equal accountability and respect for the true global order, one that is based on respect for the natural well-being of the planet and the cislunar space.

India's cislunar ambitions are developing in an era where the global geopolitical order established in the middle of the 20th century is in flux; the global economic institutions are reshaping to accommodate global multipolarity. The treaties for outer space established in the 20th century are appearing increasingly outdated. To that end, India, true to its potential and growing heft, must develop its cislunar strategy in this grey zone. The grey zone may not necessarily be a challenge but an opportunity to establish an order that has a strong Bharatiya imprint. India will only lose if it falters in not executing a cislunar strategy in this small window of time, which coincides with our Amrit Kaal.

India will remain a strong economy; it will remain an enormous and young population and a country that has woken up after a long period of geopolitical disorientation. These are reasons enough for India to carve out its identity as a non-hegemon and a junior partner to none. India will soon be not only the third largest economy on the planet but also the Tertia Optio, which comes into play when diplomacy fails and when war between two impasse-ridden superpowers is difficult. That is why the Prime Minister says, "This is not the Era for War."

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NOTES

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