The Widening Panorama of India's Space Diplomacy

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Space diplomacy is an acme of modern technology-profuse international relations. Nations use it as an ace up the sleeve on bilateral and multilateral fronts. They closely guard their space capabilities and practitioners. With the guards up, space diplomacy plays out when nations are willing to share some of their most protected assets in order to enhance strategic interests or troubleshoot looming geopolitical tensions. With rapid developments occurring in the global space domain, space diplomacy is about to grow in scope and prominence. The growth calls India to make the much necessary multidimensional preparedness in times to come.

More than twenty nations have established space agencies in the last twenty years, each with varying capabilities and techno-economic goals. With more nations joining in, many assumed this would lead to the democratization of outer space. However, increased access and international footprint in space are not amounting to democratization, as anticipated. It instead is creating geopolitical bloc-equivalents in space that can be called astropolitical blocs.

Space capabilities culminate from a national leadership's ability to attain holistic - social, economic, technological, and political - goals. These capabilities are usually an outcome of the national leadership's ability to invest in this resource-intensive long-gestation domain, regularly derive dividends from it while upkeeping a conducive political, economic and social environment domestically and in its foreign affairs. Such variables are challenging to manage. Whenever these variables have become too difficult to control, space programs have been compromised. For this reason, nations that have diligently sustained their space programs, come what may decade after decade, will continue to have the upper hand in space exploration over the new entrants.

United States, Russia, Europe (assuming the competence of the intergovernmental European Space Agency) and China currently possess high-end capabilities from human spaceflight to planetary surface exploration to space-based astronomy. Hence, they fit into the category of echelon-1 space-faring nations. China being the recent entrant. The echelon-2 constitutes India, Japan, Germany and France. The new and expanding category of echelon-3 constitutes United Arab Emirates, Canada, Nigeria, Australia, New Zealand, South Korea and Israel among others. The echelon-1 countries also are members of the United Nations Security Council and are the most impassioned nations globally. Therefore, each of them wants to accommodate a band of echelon-2 and echelon-3 nations under their respective astropolitical blocs.

The most ostensible bloc currently in the works is the one signatory to the Artemis Accords. The signatories of this US-led international cooperation agreement are aiming to return humans to the Moon by 2024 and make a more significant footprint in deep space. The bloc now accommodates Canada, United Kingdom, Italy, Luxembourg, Ukraine, United Arab Emirates, Japan, Australia, New Zealand, South Korea as signatory parties. These countries have fastened their return-on-investment from the Artemis goals, if not wholly, with each other.

For the first time, so many nations have joined hands for the enterprise of deep space exploration, not for amorous aspirations but with an ambition for high-risk-high-reward business gains through collaborative diplomatic spirit. Of course, with the US being at the helm of this international group's affairs. Such collaborative spirit and identification of shared interests are becoming the backbone of astropolitical blocs.

The coming together of so many economically advanced nations quickly activated a competitor for the Artemis Accords. There is no exact counter to the Artemis Accords yet. Nonetheless, it has prompted Russia and China to formulate their respective strategies, including a strategy that makes Moscow and Beijing collaborate to build infrastructure on and around the Moon. The Sino-Russian International Lunar Research Station (ILRS) could become a robotic and human habitat infrastructure network on the lunar surface and in lunar orbit. Regardless of its nascent cooperation with Moscow, Beijing has realised a potential to the tune of 10 trillion USD return on investments by 2050 from its ambitious Earth-Moon Special Economic Zone megaproject. Where Artemis Accords has attracted substantial participation of economically and technologically well-equipped nations, China is yet to gain such partnerships. However, that should not be considered a shortcoming for Beijing.

Conversely, it may entice swathes of developing economies from the Global South. This astropolitical duopoly is much larger in size, scope, and ambition than the one seen during the US and Soviet Union Space Race. It will only deepen schisms between the three of the four echelon-1 nations. Europe will maintain a delicate balance between Russia and China. So would India and France, who will refrain from associating with any of the rapidly-forming astropolitical blocs.

Historically, India has been among the very few nations with the unique ability to engage in space diplomacy with Europe, Russia, and the USA, all echelon-1 nations. However, there is trepidation in making overtures to China. That space diplomatic radio silence will continue for the foreseeable future. The radio silence is mainly due to Beijing's inability to undertake confidence-building steps, its blow hot and cold attitude towards bilateral diplomacy, and its quite vivid strategic encirclement of India through the use of proxies through the Belt and Road Initiative. Such radio silence is not desirable as space diplomacy, regardless of echelons, will not entirely depend on government-to-government track-1 interaction. Thus, the non-governmental entities across all categorized echelons are becoming irreplaceable parties to space diplomacy.

With ambitious plans to raise connectivity between the Earth-Moon, and Moon-Mars systems are not devoid of large stakes by non-government entities. The private space industry, especially those based out of echelon-1 and echelon-2 nations, is expected to do the heavy-lifting of production, operations, and services in the coming years. With such responsibilities, the industry will be an essential constituent of track 2 business-to-business and track 1.5 business-to-government space diplomacy. The diplomatic heft of such companies will be directly proportional to their market capitalization, their product's quality, efficiency to deliver, liaisons with their national governments, and international influence. Therefore, India needs to create innovation and manufacturing ecosystems equally, with entities geared to take India's space diplomatic cause.

Apart from private companies, the role of venture capital and other financing firms, especially those that fund innovation and innovative manufacturing in the space and allied domains, should be taken as

a vital cog of futuristic space diplomacy. This consideration is important because, despite the growing participation of the private sector, the space domain is of national strategic significance. It needs protection from cross-border offensive and aggressive investors. The financial might of echelon-1 nations, combined with their ability to curate top-notch space technologies, gives them the rare ability to invest in overseas innovation companies and startups strategically. Although such foreign direct investments are desirable, they also need to be vetted, monitored, and their ultimate beneficiaries tracked. India's cause to endure its strategic autonomy will only succeed if it enhances its space competencies, piggy-backing largely on domestic investors.

Space diplomacy is no more a government-to-government interface. The entry of private sector and private capital in a big way and the deployment of ample government resources for megaprojects on the Moon and Mars are not eccentric endeavours. Market estimates suggest that a whopping revenue of 42 billion USD could be made only from the few currently planned robotic missions to the Moon in the decade of 2020s. This revenue will only increase with business germinating from the Artemis Accords and similar European, Russian, and Chinese astropolitical blocs. The revenue-generation aspect of space exploration is a new phenomenon. Once realized by all participating nations, space diplomacy will acquire never-before-seen importance across echelons. This newfound significance calls for an entirely new paradigm of space diplomacy.

Space diplomacy in the coming years will be a quest where scientific strategy meets economic strategy. It will be a play of both hard and soft power. With the culmination of these distant aspects and the immense possibilities that space exploration brings to those with stakes, space diplomacy will be a contrivance of necessity and not a choice. Those private entities pursuing this technically demanding tact must be identified and groomed from the formal selection processes and unconventional revolving door lateral entry processes. They must come from the sciences, engineering, commerce, arts, law, agriculture, philosophy, and numerous other domains. The more diverse faculties populate space diplomacy, the greater the chances that it will attain holistic objectives. India's ability to uphold its strategic autonomy will depend on its ability to master space diplomacy. It must begin to prepare for mastery.