India’s burgeoning ambitions in space

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India’s launch of its Space Capsule Recovery Experiment (SRE-1) in January provoked a jubilant response in government and military circles. Hailed as an “impeccable success,” it demonstrated the ability of the Indian Space Research Organisation (ISRO) to send a capsule into space, safely return it to earth and retrieve it. The project is an essential step toward a manned space flight and, just as significantly, for India to play a greater role in the global satellite launch business.

The SRE-1 test is one more sign of India’s ambitions to make its mark in space. As well as holding out the prospect of lucrative commercial profits, space technology plays an increasingly crucial military role, not only in the development of missiles, but in providing sophisticated intelligence, communications and navigation. In the midst of growing great power rivalry, India is making its bid to join the US, Russia, the European Union, Japan and China in the arena of space technology.

The SRE-1 capsule was launched atop a Polar Satellite Launch Vehicle (PSLV) from the southern city of Sriharikota on January 10 and remained in orbit for 12 days. The PSLV-C7 carried four satellites aloft for the first time—two belonging to India, one from Argentina and a German-Indonesian joint venture satellite. The SRE-1 orbit was first altered to an elliptical one on January 19, then on January 22 an on-board motor was fired to commence descent. The capsule splashed down in the Indian Ocean 140 km east of Sriharikota and was recovered by the Indian Coast Guard and Navy.

As the Indian media openly acknowledged, the experiment was a calculated attempt to boost the country’s technological image after two failures last year: the launch of a heavy communications satellite and the test firing of an Indian ballistic missile. The Agni III ballistic missile, which uses the same Indian PSLV technology, was expected to be able to hit targets as far away as 3,000 km. The test fell short of the target after the second stage of the rocket reportedly failed to separate.

ISRO director Madhavan Nair declared that the successful SRE-1 test meant “a humble step towards sending an Indian into space”. An “indigenous” space craft to orbit the moon, Chandrayaan-1, is scheduled for launch within the next two years. It will accommodate instruments from other space agencies, including NASA, on a data-sharing basis. ISRO has ambitious plans for a manned moon mission by 2020.

ISRO also has more immediate, commercial aims. “The [SRE-1] recovery was a big boost to India mastering re-entry and recoverable technologies and building a reusable launch vehicle,” Nair commented. India is planning to build a reusable launch vehicle (RLV) to reduce the cost of space launches by as much as 10 percent and attract new customers. Current costs range between $12,000 and $15,000 to place a kilogram of payload in orbit.

Pierre-Eric Lys, the managing director of satellite insurance business Space Co, told *Asia Times:* “[The] Indian space industry is opening to the international market. Two recent examples of this growing cooperation are the involvement of India in the Galileo positioning system [and] the next generation of [the] Eutelsat [European Telecommunications Satellite] which will be partly manufactured and integrated in India.” Six Indian satellites are already in orbit with a wide range of instruments.

Space launches are a burgeoning business, with more than 200 scheduled this year for a variety of purposes—from telecommunications to mapping and weather forecasting. ISRO is due to conduct its first fully commercial launch next month—of the Italian scientific satellite “Agile”—for a reported price tag of $US10 million. Other contracts with German and

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Russia concerns are in the wind. The business is a boon for Indian corporations such as Tata, Larsen & Toubro, Hindustan Aeronautics Limited and Godrej, which are all involved in supplying components for the launch vehicle.

It is no secret that India's investment in space technology is related to its ambitions to become a major regional power—economically and also militarily. New Delhi certainly aims to eclipse traditional rival Pakistan, but increasingly it is in competition with China—the other rising Asian power. China's first manned space flight in 2003 acted as a spur to ISRO. As ISRO director Nair commented on New Delhi Television: "The Chinese have declared their [space] plans and in that process it is not right for India to be lagging behind."

The Indian ruling elite is preoccupied with catching up with its Chinese counterparts. India is in direct competition with China as a cheap labour platform (with Beijing attracting 10 times more foreign direct investment) and for energy resources. China's leaps in space technology have shown that India has a long way to catch up to its rival. China's advantage in the military sphere was underscored by its successful test in January of an anti-satellite missile, which destroyed one of its own aging weather satellites.

Reacting to the Chinese anti-satellite test, India's air force chief Shashi Tyagi announced that India had plans to build an aerospace defence command aimed at preventing possible attacks from space and to "protect both Indian territory and assets". He added that India was an aerospace power with "trans-oceanic reach" and it was vital it should be able to exploit space.

India is seeking assistance from the US as part of the growing "strategic partnership" between the two countries. The *Times of India* underscored the role of the joint space ventures in developing closer relations. "[I]f Chandrayan-1 were to become a flag-waving opportunity for India in space, then a US role in facilitating its mission should go down well and augment ties at the popular level too. The possibilities for future collaboration in space are immense," it declared.

At the same time, the Indian political establishment is concerned that the US is seeking to exploit India as a military counterweight against China. The Bush administration has been wooing New Delhi by sealing an unprecedented agreement that permits India to retain its nuclear arsenal, in breach of the Nuclear Non-proliferation Treaty. Nevertheless India has been careful not to put all its eggs in one basket in any arena, including space technology. Indian prime minister Manmohan Singh reaffirmed close ties with Russia during the visit last month of Russian president Vladimir Putin. The two countries have substantial economic and defence relations, including the joint construction of the supersonic cruise missile, BrahMos.

Thus the SRE-1 launch in January, while a testimony to the scientists and technicians involved, was driven by the same commercial and strategic rivalries that motivate the space program as a whole.

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