

CENTRE FOR JOINT WARFARE STUDIES



CENJOWS

SPACE TECHNOLOGY – CHINESE REMOTE SENSING

1. **China has Launched Three more Yaogan 31 Reconnaissance Satellites to Orbit.** According to media reports, on 23 Feb 21, China successfully sent three reconnaissance satellites into orbit. A Long March 4C rocket carrying the Yaogan-31 satellites flew into space from Jiuquan Satellite Launch Center in the Gobi Desert at 9:22 p.m. EST (0222 GMT) as per the China's state news provider CCTV. In its short report, CCTV added that, "Having entered their planned orbits, the satellites will be used for electromagnetic environment surveys and other related technology tests".



A Chinese Long March 4C rocket lifts off from the Jiuquan Satellite Launch Center in the Gobi Desert, carrying three Yaogan 31 Group 3 satellites to orbit. (Image credit: CASG)

2. As per the Western defense analysts the People's Liberation Army uses the Yaogan series of satellites for tasks such as surveillance, intelligence or reconnaissance. The satellites may carry asynthetic aperture radar for day and night and all-weather observation and could even carry electronic intelligence payloads.

3. Past Yaogan satellite launches indicate that these satellites maintain orbits of roughly 680 miles (1,100 kilometers) in altitude and inclined by 63 degrees, passing over maritime regions such as the South Shetland Islands.

4. This is the second batch of Yaogan31 satellites launched from China. The second group went to space just a few weeks ago, on Jan. 28, according to the contractor, China Aerospace Science and Technology Corp.¹

5. **Comments.** The Yaogan satellites are remote sensing satellites. The Yaogan satellites are being launched since 2006. As per the Chinese media, these satellites are meant for scientific experiments and innocuous civil tasks such as land survey, crop yield assessment, and disaster monitoring but, the western defence analysts suspect that Yaogan constellations are also being used for the military purpose. Three constellations of Yaogan satellites have been launched in quick succession in three months, first on 27 Dec 20, next of 29 Jan 21 and the third on 23 Feb 21 which speaks highly of their capacity to build and launch satellites.

6. Yaogan 31 series is the next generation remote sensing satellites. The first constellation of Yaogan 31 comprising three satellites was launched 29 Jan 21. This was followed by the second batch of three satellites on 24 Feb 21. These are expected to boost Chinese ISR and their military capability by keeping a given area under constant surveillance. As per a NIAS publication, China already has an operational Yaogan satellite constellation comprising ELINT, SAR and EO satellites that provide it with large area surveillance capabilities especially over the Pacific Ocean. With ISR capabilities to detect adversaries at distances far away from its coastline enables China to pursue their anti access and area denial strategy.

7. It is estimated that all areas of security concern viz Taiwan strait, the Korean peninsula, the southern islands and shores of Japan, Guam, the South and East China Seas and the various access routes from the Indian to the Pacific Oceans all fall within this coverage region of the Yaogan satellites.² One could also expect East Ladakh and other areas on LAC with India to be under constant surveillance. This serves as a pointer for India to ramp up its own space observation capability if needed.

¹<https://www.space.com/china-launches-yaogan-31-03-military-satellites>

² NIAS publication