

Yaogan (simplified Chinese: 遥感卫星; traditional Chinese: 遙感衛星; pinyin: *Yáogǎn Wèixīng*; lit. 'Remote Sensing Satellite') is the cover name used by the People's Republic of China to refer to its military reconnaissance satellites.^{[1][2]} Yaogan satellites are largely known to primarily support the People's Liberation Army's Strategic Support Force (PLASSF), formerly the Aerospace Reconnaissance Bureau of the Second Department of the General Staff.^{[3][4][5]} Yaogan satellites are the successor program to the Fanhui Shi Weixing (FSW) recoverable reconnaissance satellite program but, unlike its predecessor, includes a variety of classes utilizing various means of remote sensing such as optical reconnaissance, synthetic-aperture radar (SAR), and electronic intelligence (ELINT) for maritime surveillance. Yaogan satellites have been launched from the Taiyuan Satellite Launch Center (TSLC) in Shanxi province, the Jiuquan Satellite Launch Center (JSLC) in Inner Mongolia Autonomous Region, and the Xichang Satellite Launch Center (XSLC) in Sichuan province.^[6]

Although individual Yaogan satellites are often referred to by their number (e.g. *Yaogan-18*), Chinese military reconnaissance satellites are typically categorized by their military *Jianbing* designation. Jianbing (尖兵) translates to "point soldier", "vanguard", or "pioneer" and entered use in satellite designations with China's very first series of reconnaissance satellites, FSW-0, as the Jianbing-1 series. The first Yaogan satellite, Yaogan 1, is one of three Jianbing-5 (JB-5) series satellites following the final FSW-3 satellites of the Jianbing-4 (JB-4) series. Because Jianbing designations are secret and only Yaogan numbers are officially used, the Jianbing designations for later classes still remains unknown to the public.

Classes

Synthetic-aperture radar

Chinese synthetic-aperture radar (SAR, Chinese: 合成孔径雷达; pinyin: *héchéng kǒngjìng léidá*) sensor development began in the late 1970s under the Electronic Research Institute of the China Academy of Sciences (CAS) resulting in the testing of the first airborne X-band mono-polarization SAR collection in 1981. By 1994, CAS had introduced its first operational, real-time airborne SAR system to monitor flooding and transmit collected data to ground stations.^[7] Preliminary research and development of China's first-generation, space-based SAR system began sometime in the 1980s with development beginning in full in 1991. High-resolution, space-based SAR collection has been ambitiously pursued by the PLA for its potential contributions to all-weather targeting of naval forces in the Taiwan Strait.^[7]

Jianbing-5 series satellites (abbreviated "JB-5") are China's first space-based synthetic-aperture radar (SAR) satellites and the first satellites in the Yaogan program. The development and production of the Jianbing-5 series of satellites have been entirely funded by the People's Liberation Army (PLA) as the ability to penetrate the seemingly constant cloud cover present in the southern provinces of Tibet, Sichuan, Yunnan, Guangxi, Guandong, and Hainan challenges traditional optical collection in those regions.^[8] The PLA also believes that in a potential war SAR collection capabilities will be vital to information dominance by mapping terrain, identifying targets through cloud cover, rain, fog, and dust, and potentially monitoring enemy submarines in shallow waters or targets in subterranean facilities.^[7] In May 1995, the finalized designs were approved and development began in earnest with the approval of the State Science & Technology Committee (SSTC) and Commission for Science, Technology, and Industry for National Defense (COSTIND).^[7] The China Academy of Science (CAS) Institute of Electronics built the SAR instruments onboard Jianbing-5 satellites, the craft itself designed by the Shanghai Academy of Spaceflight Technology (SAST) who also develops the Long March 4B launch vehicle. Other developers involved in the project are the China Academy of Space Technology (CAST or 5th Space Academy) 501st and 504th Institutes, the China Electronics Technology Group Corporation (CETC)'s Nanjing Research Institute of Electronic Technology (known also as the 14th Institute), the Southwest Institute of Electronic Equipment (SWIEE or 29th Institute), and the Beijing University of Aeronautics & Astronautics (BUAA).^[7] SAST is also the developer of the Feng Yun series of weather satellites.^[7]

Jianbing-5 satellites are built by the Shanghai Academy of Spaceflight Technology (SAST) and launched from the Taiyuan Satellite Launch Center (TSLC) and provide military analysts synthetic-radar imagery purportedly at a spatial resolution as sharp as 5 meters over the L-band (1–2 GHz).^[9] JB-5 satellites have been confirmed to have an electronic motor-powered solar panel which can be expanded and contracted by the ground control station. Jianbing-5 class satellites have a reported mass of 2,700 kilograms, orbital inclination of approximately 97° in sun-synchronous orbit, and with two operational satellites enjoys a twice daily revisit rate at a 45° viewing angle.^{[8][10]} Between April 2006 and August 2010, China launched three Jianbing-5 SAR satellites, the last two of which remain in operation from Taiyuan SLC. Yaogan 1, launched in April 2006, reportedly broke up around 4 February 2010 almost four years after its launch.^[9] Due to the small number of pieces and low orbital speeds, the breakup was likely due to an internal explosion, not a high-speed collision.^[11]

Yaogan 29, launched in November 2015 into a similar orbit, appears to be the modernized successor to the Jianbing-5 series of SAR satellites.^[8]

The Jianbing-7 class of Yaogan satellites, with military designations beginning with "JB-7", are Chinese military radar reconnaissance satellites built by SAST with an orbital period of 97 minutes and a side-looking radar system designed by the Institute of Electronics, Chinese Academy of Sciences. As of July 2022, China has launched four Jianbing-7 radar satellites with the first launched in April 2009 and the latest in November 2014 with a mass of 1,200 kilograms (2,600 pounds) from Taiyuan SLC.^{[10][12]} The third satellite of the Jianbing-7 class, launched in October 2013, had its orbit lowered from April to July 2020 and consequently underwent an uncontrolled decay reentering the atmosphere in 2021.^[13]

Yaogan

遥感卫星

Yáogǎn Wèixīng



Model of Yaogan 2

Program overview

Country

 People's Republic of China

Organization

China Academy of Space Technology (CAST)

Purpose

Reconnaissance

Status

Active

Program history

First flight

26 April 2006

Successes

123

Failures

1

Launch site(s)

TSLC · JSLC · XSLC

Vehicle information

Launch vehicle(s)

Long March 2C · Long March 2D · Long March 4B · Long March 4C

Although the Jianbing designation is still unknown for latest class of SAR reconnaissance satellites, China has launched three satellites of a modernized successor class to the Jianbing-5 and Jianbing-7 classes of SAR reconnaissance satellites. This class uses the same orbit as the Jianbing-5 class but likely has a different design according to published illustrations.^[14] The second satellite of this class, Yaogan 33, failed to reach orbit in May 2019. Its likely replacement, Yaogan 33R, was launched a year and a half later but used different launch site (Jiuquan instead of Taiyuan) and into a higher orbit (682 km × 686 km).^[14]

Electro-optical

The Jianbing-6 class of Yaogan satellites, with military designations beginning with "JB-6", provides the Chinese military optical imaging capabilities to compliment the Jianbing-5 class's SAR reconnaissance capabilities.^[15] It has been reported that satellites of the Jianbing-6 class have a resolution of 0.8 meters.^[9] Jianbing-6 satellites were developed by CAST based on the CAST2000 satellites bus originally developed by the China SpaceSat Company Ltd. Jianbing-6 satellites image the Earth with a spatial resolution of approximately 1.5 meters and transmit them via X-band receiving telemetry, tracking, and command signals over the S-band. As of July 2022, China individually launched six Yaogan satellites of the Jianbing-6 class into low Earth orbit (LEO) with the first satellite launched in May 2006 and the latest in May 2016.^[10] The Bolivian Agency for Space Activities signed a US\$140 million deal with China Great Wall Industries Co. Ltd. to launch the Venezuelan Remote-Sensing Satellite 1 (VRSS-1) in May 2011 marking China's first export of a reconnaissance satellite. VRSS-1 was based on the design of Jianbing-6 satellites and was launched on 29 September 2012 from Jiuquan SLC.^[10]

The Jianbing-9 class of Yaogan satellites, with military designations beginning with "JB-9" provides the Chinese military with optical imaging capabilities, likely as a successor to the Jianbing-6 class, though it does orbit at a much higher altitude at 1,200 km indicating that satellites of this class are lower-resolution mapping and area surveillance satellites.^{[10][16][17]} The optical payload of Yaogan satellites in the Jianbing-9 class was developed by the Changchun Institute of Optics, Fine Mechanics, and Physics.^{[17][18]} China has launched five individual Yaogan satellites of the Jianbing-9 class with the first launched in December 2009 and the latest in August 2015 from Taiyuan SLC.^[19]

The Jianbing-10 class of Yaogan satellites, with military designations beginning with "JB-10" provides the Chinese military with optical imaging capabilities.^[19] Believed to also be based on the CAST2000 satellite bus, like those of the Jianbing-6 class, three Jianbing-10-class satellites built by CAST and carrying an optical imaging system from the Xian Institute of Optics and Precision Mechanics have been individually launched with the first launched in December 2008 and the reported last of the class in September 2014 from Taiyuan SLC.^{[19][20]}

The Jianbing-11 class of Yaogan satellites, with military designations beginning with "JB-11" provides the Chinese military with optical imaging capabilities.^[21] As of May 2022, China has launched two individually launched Yaogan satellites of the Jianbing-11 class with the first launched in May 2012 and the latest in November 2015.^[21]

The Jianbing-12 class of Yaogan satellites, with military designations beginning with "JB-12", are military optical reconnaissance satellites.^[22]

Electronic intelligence

In response to Taiwanese President Lee Teng-hui's visit to the United States in 1995, the PRC initiated the Third Taiwan Strait Crisis conducting high-profile missile tests, amphibious landing drills, and troop staging in Fujian Province, across the strait from the island of Taiwan.^[23] The United States government responded to the PRC's escalation by deploying the largest American show of force since the Vietnam War including sending two American carrier battle groups which effectively forced the PRC to deescalate.^{[24][25][26][27]} Since then, the PLA has committed to design and field advanced anti-ship missile systems including the Dong Feng 21 and has deployed nearly sixty maritime surveillance satellites using electronic intelligence (ELINT) to locate, identify, and track adversarial vessels to support targeting.^{[28][29]}

The Jianbing-8 class of Yaogan satellites, with military designations beginning with "JB-8", consist of one primary satellite and two sub-satellites launched in triplets. These satellites reportedly perform an ocean or naval surveillance mission similar to those of the United States' Naval Ocean Surveillance System (NOSS or PARCAE) despite the Chinese state-media's insistence they were designed to "conduct electromagnetic environmental monitoring and related technology tests".^{[29][30]} The triplet groups likely fly in a loose formation to locate radio emitters using the difference in time of arrival of radio signals at the different satellites. Jianbing-8 satellites are based on the CAST2000 satellites bus and have a mass of 200 kilograms (440 pounds) and an orbital period of 107.10 minutes in LEO.^{[9][31][32]} As of May 2022, there have been nine launches of Jianbing-8 triplets (twenty-seven total satellites) from Jiuquan SLC with the first triplet launching in March 2010 and the latest in March 2021.



Launch of Yaogan-36 on 27 November 2022

The CX-5 or Chuangxin-5 (simplified Chinese: 创新; traditional Chinese: 創新; pinyin: *Chuàngxīn*; lit. 'Innovation') class of satellites, the only known Yaogan satellites to have been launched at Xichang SLC, are still largely shrouded in secrecy and their purpose is only speculated to be ELINT by nature of their triplet launches, similar to satellites of the Jianbing-8 class.

Satellites

Name	Military designation	Launch	Function	Orbit	Orbital Apsis	Inclination	SCN	COSPARID
Yaogan 1	JB-5-1	26 April 2006	<u>SAR</u>	<u>SSO</u>	635 km × 637 km	97.9°	29092	2006-015A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2006-015A)
Yaogan 2	JB-6-1	25 May 2007	<u>EO</u>	<u>SSO</u>	639 km × 663 km	97.9°	31490	2007-019A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2007-019A)
Yaogan 3	JB-5-2	11 November 2007	<u>SAR</u>	<u>SSO</u>	635 km × 637 km	97.8°	32289	2007-055A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2007-055A)
Yaogan 4	JB-6-2	1 December 2008	<u>EO</u>	<u>SSO</u>	642 km × 660 km	97.9°	33446	2008-061A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2008-061A)
Yaogan 5	JB-10-1	15 December 2008	<u>EO</u>	<u>SSO</u>	494 km × 501 km	97.3°	33456	2008-064A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2008-064A)
Yaogan 6	JB-7-1	22 April 2009	<u>SAR</u>	<u>SSO</u>	518 km × 519 km	97.6°	34839	2009-021A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2009-021A)
Yaogan 7	JB-6-3	9 December 2009	<u>EO</u>	<u>SSO</u>	630 km × 666 km	97.8°	36110	2009-069A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2009-069A)
Yaogan 8	JB-9-1	15 December 2009	<u>EO</u>	<u>SSO</u>	1200 km × 1212 km	100.5°	36121	2009-072A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2009-072A)
Yaogan 9A	JB-8-1A	5 March 2010	<u>ELINT</u>	<u>LEO</u>	781.2 km × 1412.8 km	63.4°	36413	2010-009A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2010-009A)
Yaogan 9B	JB-8-1B			<u>LEO</u>	781.2 km × 1412.6 km	63.4°	36414	2010-009B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2010-009B)
Yaogan 9C	JB-8-1C			<u>LEO</u>	780.6 km × 1413.2 km	63.4°	36415	2010-009C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2010-009C)
Yaogan 10	JB-5-3	9 August 2010	<u>SAR</u>	<u>SSO</u>	629 km × 627 km	97.8°	36834	2010-038A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2010-038A)
Yaogan 11	JB-6-4	22 September 2010	<u>EO</u>	<u>SSO</u>	670 km × 625 km	98.0°	37165	2010-047A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2010-047A)
Yaogan 12	JB-10-2	9 November 2011	<u>EO</u>	<u>SSO</u>	479 km × 495 km	97.3°	37875	2011-066B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2011-066B)
Yaogan 13	JB-7-2	29 November 2011	<u>SAR</u>	<u>SSO</u>	502 km × 504 km	97.4°	37941	2011-072A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2011-072A)
Yaogan 14	JB-11-1	10 May 2012	<u>EO</u>	<u>SSO</u>	471 km × 474 km	97.3°	38257	2012-021A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2012-021A)
Yaogan 15	JB-9-2	29 May 2012	<u>EO</u>	<u>SSO</u>	1198 km × 1204 km	100.2°	38354	2012-029A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2012-029A)
Yaogan 16A	JB-8-2A	25 November 2012	<u>ELINT</u>	<u>LEO</u>	855.0 km × 1338.9 Km	63.4°	39011	2012-066A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2012-066A)
Yaogan 16B	JB-8-2B			<u>LEO</u>	855.1 km × 1338.9 km	63.4°	39012	2012-066B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2012-066B)
Yaogan 16C	JB-8-2C			<u>LEO</u>	855.1 km × 1338.9 km	63.4°	39013	2012-066C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2012-066C)
Yaogan 17A	JB-8-3A	1 September 2013	<u>ELINT</u>	<u>LEO</u>	867.2 km × 1326.8 km	63.4°	39239	2013-046A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2013-046A)
Yaogan 17B	JB-8-3B			<u>LEO</u>	867.3 km × 1326.9 km	63.4°	39240	2013-046B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2013-046B)
Yaogan 17C	JB-8-3C			<u>LEO</u>	866.6 km × 63.4 km	63.4°	39241	2013-046C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2013-046C)
Yaogan 18	JB-7-3	29 October 2013	<u>SAR</u>	<u>SSO</u>	509 km × 514 km	97.5°	39363	2013-059A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2013-059A)
Yaogan 19	JB-9-3	20 November	<u>EO</u>	<u>SSO</u>	1119 km × 1204 km	100.4°	39410	2013-065A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2013-065A)

Name	Military designation	Launch	Function	Orbit	Orbital Apsis	Inclination	SCN	COSPAR ID
		2013						
Yaogan 20A	JB-8-4A	9 August 2014	<u>ELINT</u>	<u>LEO</u>	893.5 km × 1300.5 km	63.4°	40109	<u>2014-047A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2014-047A)
Yaogan 20B	JB-8-4B			<u>LEO</u>	893.5 km × 1300.5 km	63.4°	40110	<u>2014-047B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2014-047B)
Yaogan 20C	JB-8-4C			<u>LEO</u>	893.4 km × 1300.6 km	63.4°	40111	<u>2014-047C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2014-047C)
Yaogan 21	JB-10-3	8 September 2014	<u>EO</u>	<u>SSO</u>	481 km × 492 km	97.4°	40143	<u>2014-053A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2014-053A)
Yaogan 22	JB-9-4	20 October 2014	<u>EO</u>	<u>SSO</u>	1198 km × 1207 km	100.3°	40275	<u>2014-063A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2014-063A)
Yaogan 23	JB-7-4	14 November 2014	<u>SAR</u>	<u>SSO</u>	511 km × 513 km	97.3°	40305	<u>2014-071A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2014-071A)
Yaogan 24	JB 6-5	20 November 2014	<u>EO</u>	<u>SSO</u>	629 km × 654 km	97.9°	40310	<u>2014-072A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2014-072A)
Yaogan 25A	JB-8-5A	10 December 2014	<u>ELINT</u>	<u>LEO</u>	912.0 km × 1282.0 km	63.4°	40338	<u>2014-080A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2014-080A)
Yaogan 25B	JB-8-5B			<u>LEO</u>	912.0 km × 1282.0 km	63.4°	40339	<u>2014-080B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2014-080B)
Yaogan 25C	JB-8-5C			<u>LEO</u>	912.0 km × 1282.1 km	63.4°	40340	<u>2014-080C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2014-080C)
Yaogan 26	JB-12-1	27 December 2014	<u>EO</u>	<u>SSO</u>	482 km × 488 km	97.4°	40362	<u>2014-088A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2014-088A)
Yaogan 27	JB-9-5	27 August 2015	<u>EO</u>	<u>SSO</u>	1201 km × 1214 km	100.4°	40878	<u>2015-040A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2015-040A)
Yaogan 28	JB-11-2	8 November 2015	<u>EO</u>	<u>SSO</u>	476 km × 490 km	97.3°	41026	<u>2015-064A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2015-064A)
Yaogan 29	JB-?-1	26 November 2015	<u>SAR</u>	<u>SSO</u>	635 km × 636 km	97.9°	41038	<u>2015-069A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2015-069A)
Yaogan 30	JB-6-6	15 May 2016	<u>EO</u>	<u>SSO</u>	634 km × 664 km	98.0°	41473	<u>2016-029A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2016-029A)
Yaogan 30-1A	CX-5	29 September 2017	<u>ELINT</u>	<u>LEO</u>	600.9 km × 603.7 km	35.0°	42945	<u>2017-058A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2017-058A)
Yaogan 30-1B	CX-5			<u>LEO</u>	599.8 km × 604.8 km	35.0°	42946	<u>2017-058B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2017-058B)
Yaogan 30-1C	CX-5			<u>LEO</u>	598.0 km × 606.4 km	35.0°	42947	<u>2017-058C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2017-058C)
Yaogan 30-2A	CX-5	24 November 2017	<u>ELINT</u>	<u>LEO</u>	600.3 km × 604.2 km	35.0°	43028	<u>2017-075A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2017-075A)
Yaogan 30-2B	CX-5			<u>LEO</u>	598.9 km × 605.6 km	35.0°	43029	<u>2017-075B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2017-075B)
Yaogan 30-2C	CX-5			<u>LEO</u>	599.8 km × 604.9 km	35.0°	43030	<u>2017-075C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2017-075C)
Yaogan 30-3A	CX-5	25 December 2017	<u>ELINT</u>	<u>LEO</u>	599.4 km × 605.1 km	35.0°	43081	<u>2017-085A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2017-085A)
Yaogan 30-3B	CX-5			<u>LEO</u>	598.2 km × 606.0 km	35.0°	43082	<u>2017-085B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2017-085B)
Yaogan 30-3C	CX-5			<u>LEO</u>	598.6 km × 605.9 km	35.0°	43083	<u>2017-085C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2017-085C)
Yaogan 30-4A	CX-5	25 January 2018	<u>ELINT</u>	<u>LEO</u>	597.7 km × 606.9 km	35.0°	43170	<u>2018-011A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2018-011A)

Name	Military designation	Launch	Function	Orbit	Orbital Apsis	Inclination	SCN	COSPARID
Yaogan 30-4B	CX-5			<u>LEO</u>	600.3 km × 604.3 km	35.0°	43171	<u>2018-011B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2018-011B)
Yaogan 30-4C	CX-5			<u>LEO</u>	600.3 km × 604.3 km	35.0°	43172	<u>2018-011C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2018-011C)
Yaogan 31A	JB-8 6A	10 April 2018	<u>ELINT</u>	<u>LEO</u>	980.4 km × 1213.5 km	63.4°	43275	<u>2018-034A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2018-034A)
Yaogan 31B	JB-8 6B			<u>LEO</u>	980.4 km × 1213.5 km	63.4°	43276	<u>2018-034B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2018-034B)
Yaogan 31C	JB-8 6C			<u>LEO</u>	980.4 km × 1213.5 km	63.4°	43277	<u>2018-034C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2018-034C)
Yaogan 32A	Unknown	9 October 2018	<u>EO</u>	<u>SSO</u>	700.2 km × 702.3 km	98.1°	43642	<u>2018-077A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2018-077A)
Yaogan 32B	Unknown			<u>SSO</u>	700.3 km × 702.1 km	98.1°	43643	<u>2018-077B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2018-077B)
Yaogan 33	JB-?-2	22 May 2019	<u>SAR</u>	<i>(Launch Failure)</i>				
Yaogan 30-5A	CX-5	25 July 2019	<u>ELINT</u>	<u>LEO</u>	598.7 km × 606.0 km	35.0°	44449	<u>2019-045A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2019-045A)
Yaogan 30-5B	CX-5			<u>LEO</u>	595.8 km × 608.7 km	35.0°	44450	<u>2019-045B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2019-045B)
Yaogan 30-5C	CX-5			<u>LEO</u>	601.5 km × 603.1 km	35.0°	44451	<u>2019-045C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2019-045C)
Yaogan 30-6A	CX-5	24 March 2020	<u>ELINT</u>	<u>LEO</u>	598.7 km × 605.7 km	35.0°	45460	<u>2020-021A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2020-021A)
Yaogan 30-6B	CX-5			<u>LEO</u>	600.0 km × 604.6	35.0°	45461	<u>2020-021B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2020-021B)
Yaogan 30-6C	CX-5			<u>LEO</u>	601.0 km × 603.5 km	35.0°	45462	<u>2020-021C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2020-021C)
Yaogan 30-7A	CX-5	26 October 2020	<u>ELINT</u>	<u>LEO</u>	602.0 km × 602.6 km	35.0°	46807	<u>2020-076A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2020-076A)
Yaogan 30-7B	CX-5			<u>LEO</u>	600.2 km × 604.3 km	35.0°	46808	<u>2020-076B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2020-076B)
Yaogan 30-7C	CX-5			<u>LEO</u>	597.9 km × 606.6 km	35.0°	46809	<u>2020-076C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2020-076C)
Yaogan 33R	JB-?-3	27 December 2020	<u>SAR</u>	<u>SSO</u>	683 km × 686 km	98.3°	47302	<u>2020-103A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2020-103A)
Yaogan 31D	JB-8 6D	29 January 2021	<u>ELINT</u>	<u>LEO</u>	1054.6 km × 1139.3 km	63.4°	47532	<u>2021-007A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-007A)
Yaogan 31E	JB-8 6E			<u>LEO</u>	1054.4 km × 1139.6 km	63.4°	47533	<u>2021-007B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-007B)
Yaogan 31F	JB-8 6F			<u>LEO</u>	1058.4 km × 1142.6 km	63.4°	47536	<u>2021-007C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-007C)
Yaogan 31G	JB-8 6G	24 February 2021	<u>ELINT</u>	<u>LEO</u>	1053.9 km × 1140.1 km	63.4°	47691	<u>2021-014A</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-014A)
Yaogan 31H	JB-8 6H			<u>LEO</u>	1063.3 km	63.4°	47692	<u>2021-014B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-014B)
Yaogan 31J	JB-8 6J			<u>LEO</u>	1053.7 km × 1140.2 km	63.4°	47695	<u>2021-014C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-014C)
Yaogan 31K	JB-8 6K	13 March 2021	<u>ELINT</u>	<u>LEO</u>	1063.2 km × 1140.9 km	63.4°	47855	<u>2021-020B</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-020B)
Yaogan 31L	JB-8 6L			<u>LEO</u>	1063.2 km × 1140.9 km	63.4°	47855	<u>2021-020C</u> (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-020C)

Name	Military designation	Launch	Function	Orbit	Orbital Apsis	Inclination	SCN	COSPARID
Yaogan 31M	JB-8 6M			<u>LEO</u>	1055.5 km × 1138.4 km	63.4°	47857	2021-020D (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-020D)
Yaogan 34	Unknown	30 April 2021	<u>EO</u>	<u>LEO</u>	1083 km × 1105 km	63.4°	48340	2021-037A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-037A)
Yaogan 30-8A	CX-5	6 May 2021	<u>ELINT</u>	<u>LEO</u>	599.1 km × 605.5 km	35.0°	48423	2021-039A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-039A)
Yaogan 30-8B	CX-5			<u>LEO</u>	598.9 km × 605.7 km	35.0°	48424	2021-039B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-039B)
Yaogan 30-8C	CX-5			<u>LEO</u>	600.8 km × 603.8 km	35.0°	48425	2021-039C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-039C)
Yaogan 30-9A	CX-5	18 June 2021	<u>ELINT</u>	<u>LEO</u>	598.9 km × 605.6 km	35.0°	48860	2021-055A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-055A)
Yaogan 30-9B	CX-5			<u>LEO</u>	599.0 km × 605.5 km	35.0°	48861	2021-055B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-055B)
Yaogan 30-9C	CX-5			<u>LEO</u>	598.6 km × 605.9 km	35.0°	48863	2021-055D (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-055D)
Yaogan 30-10A	CX-5	19 July 2021	<u>ELINT</u>	<u>LEO</u>	598.7 km × 606.0 km	35.0°	49026	2021-065A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-065A)
Yaogan 30-10B	CX-5			<u>LEO</u>	591.8 km × 604.1 km	35.0°	49027	2021-065B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-065B)
Yaogan 30-10C	CX-5			<u>LEO</u>	601.7 km × 603.0 km	35.0°	49028	2021-065C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-065C)
Yaogan 32-2A	Unknown	3 November 2021	<u>SIGINT</u>	<u>SSO</u>	700.6 km × 702.8 km	98.1°	49383	2021-099A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-099A)
Yaogan 32-2B	Unknown			<u>SSO</u>	700.8 km × 702.7 km	98.1°	49384	2021-099B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-099B)
Yaogan 35A	Unknown	6 November 2021	Unknown	<u>LEO</u>	501.2 km × 506.4 km	35.0°	49390	2021-101A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-101A)
Yaogan 35B	Unknown			<u>LEO</u>	499.8 km × 507.8 km	35.0°	49391	2021-101B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-101B)
Yaogan 35C	Unknown			<u>LEO</u>	459.3 km × 463.5 km	35.0°	49392	2021-101C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2021-101C)
Yaogan 34-2	Unknown	17 March 2022	<u>EO</u>	<u>LEO</u>	1083 km × 1105 km	63.38°	52084	2022-027A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-027A)
Yaogan 35 02-A	Unknown	23 June 2022	<u>ELINT</u>	<u>LEO</u>	499 km × 508 km	35.0°	52907	2022-068A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-068A)
Yaogan 35 02-B	Unknown			<u>LEO</u>	498 km × 509 km	35.0°	52908	2022-068B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-068B)
Yaogan 35 02-C	Unknown			<u>LEO</u>	496 km × 506 km	35.0°	52909	2022-068C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-068C)
Yaogan 35 03-A	Unknown	29 July 2022	<u>ELINT</u>	<u>LEO</u>	499 km × 508.6 km	35.0°	53316	2022-088A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-088A)
Yaogan 35 03-B	Unknown			<u>LEO</u>	496.6 km × 511.2 km	35.0°	53317	2022-088B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-088B)
Yaogan 35 03-C	Unknown			<u>LEO</u>	497.5 km × 510.4 km	35.0°	53318	2022-088C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-088C)
Yaogan 35 04-A	Unknown	19 August 2022	<u>ELINT</u>	<u>LEO</u>	491 km × 502 km	35.0°	53522	2022-100A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-100A)
Yaogan 35 04-B	Unknown			<u>LEO</u>	490 km × 502 km	35.0°	53523	2022-100B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-100B)
Yaogan 35 04-C	Unknown			<u>LEO</u>	488 km × 500 km	35.0°	53524	2022-100C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-100C)
Yaogan 33-2	Unknown	2 September 2022	<u>SAR</u>	<u>SSO</u>	688 km × 680 km	98.18°	53698	2022-106A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-106A)
Yaogan 35 05-A	Unknown	6 September	<u>ELINT</u>	<u>LEO</u>	502 km × 491 km	35.0°	53760	2022-109A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-109A)

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Yaogan 35 05-B	Unknown	2022		LEO	501 km × 488 km	35.0°	53761	2022-109B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-109B)
Yaogan 35 05-C	Unknown			LEO	501 km × 489 km	35.0°	53762	2022-109C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-109C)
Yaogan 36A	Unknown	26 September 2022	Unknown	LEO	499 km × 486 km	35.0°	53943	2022-120A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-120A)
Yaogan 36B	Unknown			LEO	499 km × 488 km	35.0°	53946	2022-120B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-120B)
Yaogan 36C	Unknown			LEO	498 km × 485 km	35.0°	53947	2022-120C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-120C)
Yaogan 36 02-A	Unknown	14 October 2022	ELINT	LEO	499 km × 487 km	35.0°	54042	2022-133A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-133A)
Yaogan 36 02-B	Unknown			LEO	498 km × 486 km	35.0°	54043	2022-133B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-133B)
Yaogan 36 02-C	Unknown			LEO	498 km × 485 km	35.0°	54044	2022-133C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-133C)
Yaogan 34-3	Unknown	15 November 2022	Unknown	LEO	1,080.2 km × 1,103.6 km	63.4°	54249	2022-154A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-154A)
Yaogan 36 03-A	Unknown	27 November 2022	ELINT	LEO	501.3 km × 511.2 km	35.0°	54372	2022-160A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-160A)
Yaogan 36 03-B	Unknown			LEO	493.6 km × 505.5 km	35.0°	54373	2022-160B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-160B)
Yaogan 36 03-C	Unknown			LEO	500.9 km × 509.7 km	35.0°	54374	2022-160C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-160C)
Yaogan 36 04-A	Unknown	14 December 2022	ELINT	LEO	500.3 km × 511.2 km	35.0°	54746	2022-171A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-171A)
Yaogan 36 04-B	Unknown			LEO	495.8 km × 507.0 km	35.0°	54747	2022-171B (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-171B)
Yaogan 36 04-C	Unknown			LEO	502.2 km × 510.3 km	35.0°	54748	2022-171C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2022-171C)
Yaogan 37	Unknown	13 January 2023	Unknown	LEO	518.6 km × 526.3 km	43.2°	55244	2023-006C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2023-006C)
Yaogan 34-4	Unknown	31 March 2023	Unknown	LEO	1088.4 km × 105.3 km	63.4°	56157	2023-048A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2023-048A)
Yaogan 36 05-A	Unknown	26 July 2023	ELINT	LEO	508.7 km × 498.6 km	35.0°	57452	2023-106A (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2023-106A)
Yaogan 36 05-B	Unknown			LEO	508.2 km × 498.0 km	35.0°	57454	2023-106C (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2023-106C)
Yaogan 36 05-C	Unknown			LEO	507.2 km × 495.0 km	35.0°	57456	2023-106E (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=2023-106E)
Yaogan 38 01-A	Unknown	August 2023	ELINT	LEO				
Yaogan 38 01-B	Unknown			LEO				
Yaogan 38 01-C	Unknown			LEO				

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See also

 [Spaceflight portal](#)

 [China portal](#)

- USSR / Russia - [Kosmos \(satellite\)](#)
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