CENTRE FOR JOINT WARFARE STUDIES

CENJOWS

CHINA – NEW ROCKET TO LAND ASTRONAUTS ON THE MOON

1. **China is working on a New Rocket that could send Astronauts to Land on the Moon.**[1] China has not yet announced a date for a test flight or a potential lunar landing with the vehicle however, on 18 Sep 20 China unveiled a new launcher at the 2020 China Space Conference in Fuzhou which is designed for translunar injections. The new launcher is designed to send a 27.6 ton (25 metric ton) spacecraft into trans-lunar injection which is nearly triple that of China's current largest rocket, the Long March 5. The Mass at liftoff will be about 4.85 million lbs. (2,200 metric tons), and will feature three, 16.4-foot-diameter (5 meter) cores, in a style similar to two American rockets: United Launch Alliance's Delta IV Heavy and SpaceX's Falcon Heavy. The unnamed rocket will be 285 feet (87 m) long, and it is being designed at the China Academy of Launch Vehicle Technology (CALT) in Beijing.

2. China is also working on a range of new rockets to update its older models that use toxic hypergolic propellant. In addition, the country is looking to implement new capabilities, including rockets that can launch and land again, like the SpaceX Falcon 9. An emerging commercial sector also includes companies such as iSpace and Land space, which are developing their own vehicles to compete for launch contracts.

3. **Chinese space agency announced on 01 Oct 20 that it has selected a third group of astronauts for the nation's coming space station.**[2] China has chosen 18 new astronauts — 17 men and one woman which fall in three groups. Seven were chosen from the flying stream of the People's Liberation Army Air Force who will become spacecraft pilots. Another seven will become spaceflight engineers and were

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[1] ***https://www.dailymail.co.uk/news/article-8797977/Chinas-lunar-mission-China-plans-build-new-rocket-send-astronauts-moon.html***

[2] ***https://www.space.com/china-selects-new-astronauts-for-space-station***

researchers or technicians in aeronautics, astronautics and other related fields. The last four will be mission payload specialists and were selected from applicants involved in space science. Prior this new selection, China had 21 astronauts from two recruiting rounds. Among them, 11 have flown during six space missions. According to government plans, the nation will start putting together its first full-fledged crewed space station around 2021. The multi-module station, named Tiangong, or Heavenly Palace will include three components, a core module attached to two space labs, and will weigh more than 99 tons (90 metric tons), according to the China Academy of Space Technology. The space station is expected to be completed and fully operational around 2022 and is set to operate for about 15 years.

4. United States is concerned that If the People's Republic of China succeeds in its efforts to launch its first long-term space station module, it will match the U.S. nearly 40-year progression from first human spaceflight to first space station module in less than 20 years, The CCP is looking to become a space superpower is a matter of concern for the United States which has otherwise led the world in the realm of space.

5. **On 06 Nov 20, China launched a Long March 6 rocket and successfully sent 13 satellites into orbit.**[3] The Long March 6 lifted off from the Taiyuan Satellite Launch Center at 11:19 a.m. local time Friday) carrying 10 remote sensing satellites for **Satellogic,** an Argentine imagery company. Each 90-lb. Argentine satellite (41 kilograms) satellite carried multispectral and hyper spectral imaging payloads. They have been designed to operate in orbit for at least three years. **Satellogic** has signed a contract with China Great Wall Industry Corporation, an arm of China's main space contractor, for launches to deploy 90 satellites. **Satellogic** has even received funding for this from Chinese tech giant ten cent.

6. The mission also launched three Chinese satellites. One was as **Tianyan-05**, remote sensing satellite jointly developed by new Chinese commercial satellite companies **ADA space and Mino Space**. Its imagery will be used mainly for smart cities, agriculture, forestry and disaster monitoring. The satellite platform will also test communication payloads operating in the terahertz range, a potential successor to 5G communications.

7. Another payload, **Beihang SAT-1** was developed by **Spacety**, a commercial satellite maker based in Changsha, central China, in collaboration with Beihang University, an aerospace university in Beijing. The satellite will carry out in-orbit experiments including receiving and retransmitting ADS-B signals from aircraft, and exploring laser data transmission technologies. Automatic dependent surveillance–broadcast is a surveillance technology in which an aircraft determines its position via satellite navigation and periodically broadcasts it, enabling it to be tracked.

8. Beihang SAT-1 also carried a NPT30-I2 electric propulsion system developed by French start-up **ThrustMe**. The innovative system uses iodine propellant which can be stored as a solid, reducing cost and complexity compared to gas in-space propulsion.

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[3]***https://news.cgtn.com/news/2020-11-06/China-sends-13-satellites-into-orbit-with-single-rocket-Vc3lvjdjW0/index.html?fbclid=IwAR0wU7A7N4k2x8QNqDopQoqOqcBeL9x2u8AcmPPCCpu7FX9n7FvMzrkiGBA#:~:text=China%20successfully%20sent%2013%20satellites,19%20a.m.%20(Beijing%20Time).***

The system can help control the spacecraft and speed up its deorbiting after the end of the satellite's mission, reducing space debris.

9. This year so far, China has carried out 32 launches and could hit around 40 by the end of the year 2020. It led the other space powers in number of the space launches per year in 2018 and 2019 beating United States and Russia and could repeat this feat this year too.