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Nation sends tallest rocket into space

Newest Long March 5 places remote sensing satellite in intended orbit

By ZHAO LEI
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China conducted on Friday evening the sixth launch mission of the Long March 5 carrier rocket to deploy a remote-sensing satellite into space, according to the State-owned conglomerate China Aerospace Science and Technology Corp, the nation's dominant space contractor.

The company said in a news release that the rocket blasted off at 9:41 pm from a coastal service tower in the Wenchang Space Launch Center in Hainan province and soon roared into cloudy night skies.

After flying a while, the rocket successfully placed the Yaogan 41 satellite in its intended orbit, the company said.

It had been more than three years since the last flight of the Long March 5 model, which took place in November 2020 at the Wenchang center to send the Chang'e 5 lunar probe on its moonward journey.

Compared with its predecessors, the latest Long March 5 had an extended fairing — the top structure on a rocket that contains satellites or other payloads — that was 18.5 meters tall.

The fairings on previous Long March 5 rockets were about 12.3 meters tall.

The new fairing gave the sixth Long March 5 an overall height of 63.2 meters, making it the tallest-ever rocket in China.

Before it, the tallest Chinese rocket was the 60.1-meter Long March 7A.

One of the world's most powerful operational rockets, the Long March 5 model was designed by the China Academy of Launch Vehicle Technology in Beijing, the nation's major rocket maker and a subsidiary of China Aerospace Science and Technology Corp.

The rocket's baseline configuration has a liftoff weight of 869 metric tons, and is capable of ferrying spacecraft weighing up to 25 tons

— the combined weight of 16 mid-size cars — to a low-Earth orbit, or 14 tons to a geosynchronous transfer orbit.

The rocket was first flown in November 2016. The second mission took place in July 2017 and failed due to technical abnormalities, leading the type to suspend its operation for overhaul. It took almost two and a half years for designers and engineers to fix the critical defect.

It resumed flight in December 2019 and transported a large satellite into orbit.

The fourth launch, in July 2020, lifted China's first Mars mission, and the fifth in November that year sent the Chang'e 5 to the moon.

Yaogan 41 is the newest in China's fleet of remote-sensing satellites, and will be used to obtain data for land resources surveying, agricultural yield forecasting, environmental monitoring, and disaster prevention and relief.

China has so far sent more than 300 civilian remote-sensing satellites into orbit. The Yaogan family is the largest fleet of remote-sensing spacecraft in the country, and their data has been widely used by governments, public service sectors and businesses.



A Long March 5 rocket blasts off from Hainan province on Friday evening. [OU XINXUN / XINHUA](#)

Reusable spacecraft launched to orbit

By ZHAO LEI

China launched a Long March 2F carrier rocket late on Thursday from the Jiuquan Satellite Launch Center in Northwest China's Gobi Desert, sending a reusable experimental spacecraft into orbit, the launch center said.

The center said in a news release on Thursday night that the test vehicle is scheduled to stay in orbit for a certain period of time and then return to its preset landing site in China.

During the orbital flight, it has been tasked with verifying reusable technologies and performing space science experiments, which will both be used as technical support for the peaceful use of space, the release said.

It did not elaborate on the details of the mission and the spacecraft, such as launch time and specific plans, or publish pictures of the rocket's liftoff or scenes inside the ground control hall.

The mission is the third that China has made public related to reusable experimental spacecraft.

The country's first orbital test of a trial vehicle took place in September 2020, and the craft was in orbit for just under two days.

The second test started in August 2022 and the spaceplane stayed in the Earth's orbit for 276 days before landing in May 2023.

The second test's success marked a major breakthrough in China's reusable spacecraft technology, which is aimed at providing a con-

venient and affordable way to travel between Earth and outer space, the Jiuquan center said after the experimental spaceplane's landing.

Both spacecraft in the previous two tests — it is not known whether they were of the same type — were launched by a Long March 2F rocket from the Jiuquan center.

Currently, only China and the United States have reusable spacecraft, which were first initiated by the US in the 1970s.

The pioneer of this concept — the US space shuttle — operated for three decades before its retirement in 2011 due to technical and budgeting difficulties.

In recent years, advances in science and technology have reignited the space industry's enthusiasm for reusable spaceships, especially robotic spaceplanes such as the Boeing X-37B that are smaller, cheaper, and less sophisticated in their design, production and operation.

According to experts, reusable spacecraft will have a wide range of applications, including space tours for civilians, transporting astronauts, resupplying space stations, and placing satellites into orbit at a lower cost than through traditional methods.

Thursday's launch was the 22nd flight of the Long March 2F rocket model, which is usually used to launch China's Shenzhou crewed spaceships. The rocket has a carrying capacity of just over 8 metric tons for delivery into low Earth orbit.