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Tianzhou 7 robotic spaceship launched

By ZHAO LEI
zhaolei@chinadaily.com.cn

The Tianzhou 7 robotic cargo spaceship, tasked to deliver propellants, science payloads and necessities for the Shenzhou XVII astronauts, was launched on Wednesday night, making it the first spacecraft to visit the Tiangong space station this year.

A Long March 7 rocket carrying the cargo ship blasted off from the Wenchang Space Launch Center in Hainan province at 10:27 pm, according to the China Manned Space Agency.

After a short flight, the rocket placed Tianzhou 7 into its preset low-Earth orbit and the solar wings on the cargo spaceship unfolded, marking the successful completion of the launch mission, the agency said in a news release.

The cargo ship is scheduled to dock with the space station's Tianhe core module within three hours of the launch.

Tianzhou 7, which was designed and built by the China Academy of Space Technology in Beijing, is the 12th spacecraft to visit Tiangong. It has the largest carrying capacity and the highest transportation



A Long March 7 rocket carrying the Tianzhou 7 robotic cargo spaceship blasts off from the Wenchang Space Launch Center in Hainan province on Wednesday. YUAN CHEN / FOR CHINA DAILY

efficiency in its category in the world, according to mission planners.

The spaceship is carrying more than 260 packages with a combined weight of nearly 5.6 metric tons, including several items of scientific apparatus, each of which weighs more than 100 kilograms, mission planners said.

It is also carrying 2.4 tons of food comprising fresh vegetables, fruits and Chinese New Year treats for the Shenzhou XVII astronauts, who have been in orbit for nearly three months.

Liu Wei, chief designer at the

Technology and Engineering Center for Space Utilization of the Chinese Academy of Sciences, said that 61 sets of scientific equipment and materials for experiments are onboard Tianzhou 7, and their combined weight is 473 kg.

"They have been put together by 18 domestic universities and institutes, and will be used in 33 experiments involving life and material sciences, microgravity fluid physics and combustion research," said Liu, who is responsible for the science payload system of Tianzhou 7.

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Launch: Cargo to facilitate experiments at Tiangong

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Shang Peng, a professor at North-western Polytechnical University's School of Life Sciences, said that Tianzhou 7 is carrying to Tiangong an experiment device made by his team.

"It contains human bone cells, which will be observed and analyzed for changes in the microgravity environment in space," he said.

The results will help scientists better understand conditions such as bone density loss and muscle atrophy, and work out solutions to improve the health of astronauts in space as well as people on

Earth, Shang added.

Meanwhile, the Tianzhou 6 spaceship — the predecessor of Tianzhou 7 — undocked from the space station on Friday and started a period of solo flight.

Most of the spaceship will burn up when reentering the Earth's atmosphere, and a small amount of debris is expected to fall in secure areas in the South Pacific Ocean, according to the space agency.

Orbiting about 400 kilometers above Earth, the Tiangong space station has three permanent parts — a core module and two science capsules — and is frequently visited by crew and cargo spacecraft.