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First crew of space station recovering well

Shenzhou XII astronauts now under observation ahead of return to training

By ZHANG YANGFEI
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The three astronauts involved in the Shenzhou XII mission have recovered well after their 3-month spaceflight and will return to regular training once related health assessments are completed.

Major General Jing Haipeng, another astronaut, said on Tuesday the post-spaceflight recovery period has three phases: isolation, convalescence and observation.

The three Shenzhou XII astronauts — Major General Nie Haisheng, Major General Liu Bingming and Senior Colonel Tang Hongbo — have completed the convalescence phase. They are emotionally stable and in good psychological condition. Their weight has been maintained at the level before the spaceflight and their muscle strength, endurance and cardiopulmonary level have recovered well and achieved expected results.

"At present, we are carrying out special medical examinations and experimental data collection according to plan," Jing said, adding that the crew had entered the last recovery phase.

The Shenzhou XII crew, commanded by Nie, spent 92 days in space after the spacecraft was launched on June 17 on a Long March 2F carrier rocket, setting a new national record for the longest human spaceflight.

They performed two spacewalks during their stay in the Tiangong — Heavenly Palace — space station, as well as a number of scientific experiments and technological tests, before returning to Earth on Sept 17.

Nie and his crew members were



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Jing Haipeng, Chinese astronaut

the first inhabitants of China's new space station.

They were followed by the three-astronaut crew of Shenzhou XIII, which was launched in October.

Shenzhou XII was China's seventh manned space mission.

The space station currently comprises the Tianhe core module, which was launched in April. Two more modules and two more manned missions are scheduled to dock with the Tiangong station next year.

Nie has flown in three manned missions and is the first Chinese astronaut to have stayed in space for more than 100 days.

He said each of the three missions brought him a new experience and he has experienced increasing comfort and reliability, more space for activities and a wider variety of food during each stay in space.

"This all thanks to the hard work of all space science and technology workers," he said.

Nie said the three crew members had started to perform some technical recovery training to prepare for future missions and will continue to learn more about the space station in case they have the chance to visit it again.

Milestone mission for private rocket

By ZHAO LEI
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Galactic Energy, a carrier rocket maker in Beijing, has become the first private enterprise in China to have conducted two orbital missions that placed satellites in outer space.

The company's CERES 1 Y2 rocket, the second of its kind, blasted off at 12:12 pm Tuesday at the Jiuquan Satellite Launch Center in Northwest China's Gobi Desert and flew for about 14 minutes before deploying five small satellites into sun-synchronous orbits about 500 kilometers above the Earth, the private startup said in a statement.

The payloads lifted by the rocket are two scientific experimental satellites, two remote-sensing satellites and an infrared Earth-observation satellite.

The mission marked the first time a privately built Chinese rocket has successfully completed two orbital launches. The SQX 1 rocket developed by i-Space, another Beijing-based private rocket company, previously failed in its second orbital launch attempt.

Tuesday's launch was also the first successful launch by the country's private space sector this year.

An orbital mission is a spaceflight by a carrier rocket that deploys payloads into an orbit in outer space. In addition to i-Space and Galactic Energy, other Chinese private enterprises have also attempted orbital missions, a threshold for any serious newcomer in the global space sector that was first crossed by the United States' SpaceX.

CERES 1 made its debut flight in November last year from the Jiuquan center, becoming the second privately developed Chinese carrier rocket to successfully realize an orbital mission, after i-Space's SQX 1.

A CERES 1 is about 20 meters tall, has a diameter of 1.4 meters and is mainly propelled by solid propellant. With a liftoff weight of 33 metric tons, it is capable of sending a 300-kilogram satellite, or several satellites with a combined weight of 300 kg, to a 500-km sun synchronous orbit, or 350-kg payloads to a low-Earth orbit at an altitude of 200 km.

The rocket is ideal for domestic and foreign clients seeking a small, cost-efficient launch vehicle to deploy mini satellites, designers said. Galactic Energy was established in February 2018 by some engineers from State-owned space conglomerates.

Its engineers are now designing the Pallas 1, a larger liquid-propellant rocket model that can be reused, Xia Dongkun, a vice-president of Galactic Energy, said.

He said design of the new rocket's engine has been finalized and ground tests will soon start.

"We plan to complete the development of Pallas 1 and perform its maiden flight in the first half of 2023," he said at the company's Beijing headquarters after Tuesday's launch.

"In 2022, we will strive to carry out five to six commercial launches of the CERES 1."

Wu Peixin, an industry observer in Beijing, said Tuesday's successful launch will inject momentum and confidence into China's private space sector and will see private space companies attract more attention and resources.