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Foreign peers laud China's feat in space

By ZHAO LEI
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Humankind's presence in outer space has tremendously increased, thanks to the deployment of three Chinese astronauts to China's space station, said a French astronaut.

"The population of humans in space grew by 43 percent this week, with China launching three astronauts to their space station," Thomas Pesquet, a European Space Agency astronaut now on board the International Space Station, wrote on his Twitter account on Friday. "All spaceflight is an incredible achievement. I imagine the trio enjoying the view of their capital city Beijing and Tianjin from Earth orbit."

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Pesquet also published several photos of night views of Beijing and its neighboring municipality of Tianjin taken from the International Space Station, writing in another post in French that he hopes his Chinese peers will have the opportunity to personally see the Chinese cities like he did.

Three crew members of the Shenzhou XII mission — Major General Nie Haisheng, Major General Liu Boming and Senior Colonel Tang Hongbo — entered the Chinese space station's core module, named Tianhe, or Harmony of Heavens, on Thursday afternoon after their Shenzhou XII spacecraft docked with the module earlier that day.

The spaceship was launched by a Long March 2F carrier rocket that blasted off on Thursday morning from the Jiuquan Satellite Launch Center in northwestern China, embarking on the nation's seventh manned spaceflight, which will last three months.

The crew members are the first occupants of the Tianhe module, the first and central component of the Chinese station, called Tiangong, or Heavenly Palace.

The Tiangong program, the latest symbol of China's grand space aspirations, aims to complete a three-section space station in a low-Earth orbit, about 400 kilometers above the ground, before the end of 2022.

Roscosmos, Russia's state space corporation, sent "sincere congratulations" to China on Thursday for the Shenzhou XII manned mission's launch to the Tianhe module.

"China has made another confident step forward," Roscosmos said, adding that Russia and China will become "lasting and reliable partners" in long-term exploration of space.

NASA Administrator Bill Nelson extended his congratulations to China on the latest mission. "I look forward to the scientific discoveries to come," he wrote in a statement Thursday on the US agency's website.

The European Space Agency and Brazilian Space Agency have also extended congratulations to Chinese space authorities for the Shenzhou XII mission to the Tianhe module.

The Brazilian organization said, "We wish China many achievements in this challenging space initiative."

The Chinese crew's planned three-month stay will offer scientists more insights into the living, work and health conditions of an astronaut in microgravity, which in turn "will be useful for future moon missions or Mars missions or further afield", Paul Francis, an astrophysicist at the Australian National University, told Xinhua News Agency on Thursday.

Designers of space station crew's shoes, clothes express pride in work

By XING YI in Shanghai
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After three astronauts entered China's space station on Thursday for a three-month stay, their clothes, food and everything they do have become of great interest for people on Earth.

While watching the live broadcast of the astronauts entering the station, Zheng Rong, a professor at Donghua University in Shanghai, had her eye on their footwear. She was the chief designer of the space shoes worn by the astronauts.

"I was so happy to see the shoes on television," she said.

"My team has worked on them for more than two years, and seeing them worn by astronauts in space made us proud."

Knitted with special textiles and thermoplastic materials, the blue-and-black shoes are breathable, extremely elastic and resist static electricity.

"We designed the shoes as if they are an extension of the feet," Zheng said.

"Hundreds of adjustments that



we made in designing the shoes were all aimed at providing comfort and support in the space environment."

Chinese characters were added on the soles of the shoes. Written in ancient Zhanan style — the seal script commonly used 2,000 years ago in China — the characters read *ju zhan kan yue*, meaning "to catch the moon in the highest sky". The words are part of a poem written by famed Tang Dynasty (618-907) poet Li Bai.

Astronaut clothing for working, training and living in the space station was also designed at Donghua University.

The clothes were dyed with different shades of blue to symbolize the journey from the sky into space, and a V-shaped strip on

their shirts represents victory, commemorating the success of the manned space mission.

Each astronaut has his name stitched on his clothes, and stars representing the number of times each has been in space can be seen under their names.

The university said some of the clothing was specially designed to alleviate the muscle atrophy the astronauts will experience in the low-gravity environment, while other clothing was made specifically to help them regulate their moods and emotions.

Li Jun, who led the university team that designed the clothing, also designed clothes for a Chinese manned space mission five years ago. Li said that since then, the team had made improvements in the materials and design to better serve the astronauts' needs.

"Donghua University has been tasked with designing astronaut clothes since the 1990s, and we are all excited to see the clothes worn by generations of Chinese astronauts, with many more to come," he said.

Taikonauts reflect pride in space missions

In their tweets to congratulate China on the launch of three astronauts on their Shenzhou XII mission to the Tianhe core space station module, both the European Space Agency and Roscosmos used the word "taikonauts".

Comprising the Greek word "naut", which means sailor, and "taiko", which comes from *taikong*, the Chinese word for space, the word specifically refers to Chinese astronauts.

Yet "taikonaut" is more than just a word. Its history mirrors that of China's space journey. The word was coined in 1998 by Chiew Lee Yih, a Chinese Malaysian, who used it first in newsgroups. However, back then few people picked up on it, as China was still relatively weak at that time and had not yet

conducted any manned space missions.

It was not until 2003, when China sent Yang Liwei, the first taikonaut into space on board Shenzhou V, that the word became widely known. In his speech at Peking University on Friday, Yang told stories about that and shared how much is required of the taikonauts to prepare them for his missions.

China has 34 trained taikonauts, each of whom has passed tests that are unimaginable to common people. According to reports, they are all selected from top pilots, engineers and scientists, and must pass rotational chair tests, psychological tests, survival tests and other tests in order to become a qualified taikonaut.

And behind these taikonauts are

hundreds of thousands of other workers that do their jobs to get the taikonauts into space and ensure their safe return. Those who have designed and manufactured the family of Long March rockets, those who have designed and constructed the Shenzhou spacecrafts, those who have designed and made the navigation parts and the life-support systems, the list is almost endless.

It is the efforts of everyone involved that has transformed "taikonaut" from just a word into an actuality, and all of them should share the honor of the taikonauts' missions. The connotations of the word will further expand and we hope more taikonauts will emerge as a result.

— ZHANG ZHOUXUANG, CHINA DAILY