

Probe to offer new views of deep space

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By Cheng Yingqi(China Daily USA)

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Chinese astronomers plan to send a low-frequency radio spectrum analyzer to the far side of the moon for the first time in history.

"Astronomers around the world have dreamed of observing low-frequency cosmic rays from the far side of the moon," lunar expert Zou Yongliao said at the Second Beijing International Forum on Lunar and Deep-Space Exploration.

"China will be the first to complete the task if it is successful," said Zou, who works in the Moon Exploration Department under the Chinese Academy of Sciences.

Government agencies ordered experts to assess the exploration plan of lunar probe Chang'e-4 for more than a year, Zou said.

"The electromagnetic environment on the far side of the moon is perfect," he said.

On Dec 14, 2013, Chang'e-3, part of the second phase of China's lunar program, landed on the moon and deployed the Lunar-Based Ultraviolet Telescope, a small robotic optical telescope that produced significant research results.

Chang'e-3 was a great achievement, "marking China as the third nation to land on the moon and the only nation currently operating on the lunar surface," said Steve Durst, founding director of the International Lunar Observatory Association, on the Galaxy Forum China 2015 on Wednesday in Beijing.

In 1972, Apollo 16 astronaut John Young had a telescope to photograph star clusters, nebulae and Earth's outermost atmosphere from the surface of the moon. His work proved that the moon's surface was ideal for making astronomical observations.

The moon is not influenced by wind and light and thus allows astronomers to see galaxies even during the day, Durst said.

The Lunar-Based Ultraviolet Telescope "has further established the effectiveness and suitability of astronomy from the moon. And the telescope with Chang'e-4 will deliver much more and different information from a different location," Durst said. The mission's launch date was not disclosed.

Chang'e-4 will be in the vanguard as "more and more astronomers go to the moon, not just China, but India, Russia, Korea, Japan, the US," he said. "Eventually, we expect to see villages of robotic telescopes on the moon."

That spacecraft follows Chang'e-1 in 2007, Chang'e-2 in 2010 and Chang'e-3, which made a lunar landing and returned to Earth, making China the third country after the Soviet Union and the US to achieve that feat.

China plans to launch the Chang'e-5 probe around 2017 as the last step of the country's moon exploration program.

Li Chunlai, one of the main designers of the lunar probe ground application system, said Chang'e-5 will achieve several breakthroughs, including automatic sampling, ascending from the moon without a launch site and completing an unmanned docking 400,000 km above the lunar surface.

Chang'e-5 will also have a new launch site and launch rockets, Li said.

Xinhua contributed to this story.

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