Unveiling mysteries

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Telescope elevates China's polar research

WUHAN — China has unveiled the "Three Gorges Antarctic Eye", a 3.2-meter aperture radio/millimeter-wave telescope, at a scientific research station in Antarctica.

Officially launched at the country's Zhongshan Station in Antarctica on April 3, the telescope, codeveloped by China Three Gorges University and Shanghai Normal University, further cemented China's advancements in Antarctic astronomy.

The Three Gorges Antarctic Eye has officially begun scientific observations of the Milky Way's neutral hydrogen and ammonia molecular spectral lines, providing vital data to help unravel the dynamics of interstellar gas and the processes of star formatious CTGU told Xinhua on Monday.

"This telescope has broken through key technical bottlenecks in Antarctic observatory construction, laying the foundation for future submillimeter-wave telescopes in Antarctica," said Zhang Yi, an associate professor at SHNU and a member of China's Antarctic expedition team currently working on the continent

He added that the device will expand observations across radio to low-frequency millimeter-wave bands, driving technological advancements for next-generation Antarctic astronomy tools.

Zeng Xiangyun, an associate professor at CTGU, noted that Antaractica is the coldest continent on Earth, and the extreme cold and strong winds pose significant challenges for the development and installation of radio telescopes.

Since 2023, CTGU has actively collaborated with SHNU to tackle the challenges of conducting astronomy in extreme environments. Over the past two years, researchers have overcome key technical hurdles, such as adapting equipment to withstand Antarctica's harsh subzero temperatures and hurricane-



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force winds, Zeng said.

He Weijun, Party chief of CTGU, emphasized the significance of the project. "The successful operation of the Three Gorges Antarctic Eye showcases our university's achievements in polar research equipment," He said.

"It reflects the spirit of Chinese scientists scaling new heights in science and technology, as well as the vital role of universities in national innovation" he added.

Once the telescope enters stable operation, CTGU plans to send researchers to Zhongshan Station for on-site scientific expeditions.

China has been steadily expanding its astronomical capabilities in Antarctica, leveraging the continent's pristine atmospheric conditions for infrared and millimeterwave observations.

The deployment of the Three Gorges Antarctic Sye builds on China's earlier initiatives, including the Antarctic Survey Telescopes AST3 and other astronomical instruments, further strengthening global efforts to study cosmic phenomena from one of Earth's most remote locations.

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