China's FAST telescope detects over 500 new pulsars

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Aerial photo taken on March 28, 2021 shows China's Five-hundred-meter Aperture Spherical Radio Telescope (FAST) under maintenance in southwest China's Guizhou Province. (Xinhua/Ou Dongqu)

GUIYANG, Dec. 15 (Xinhua) -- Using the Five-hundred-meter Aperture Spherical Radio Telescope (FAST), also dubbed as the "China Sky Eye," scientists have identified over 500 new pulsars since October 2017.

Pulsars, or fast-spinning neutron stars, originate from the imploded cores of massive dying stars through supernova explosions. With their high density and fast rotation, they are an ideal laboratory for studying the laws of physics in extreme environments.

Using FAST, scientists also detected a total of 1,652 independent bursts from a single repeating fast radio burst (FRB) source, code-named FRB121102, said Li Di, chief scientist of the telescope and a researcher with the National Astronomical Observatories under the Chinese Academy of Sciences.

It is the largest set of FRB events ever detected in history, Li said, adding that these results were published in the journal Nature in October.

Scientists believe it may help clarify the origins of the so-called "mysterious signals from deep space."

Li said they had received around 200 observation applications from 16 countries since March when FAST officially opened to the world.

Located in a naturally deep and round karst depression in southwest China's Guizhou Province, FAST started formal operation in January 2020. It is believed to be the world's most sensitive radio telescope. ■