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SNAPSHOT

PROBE PEERS UNDER VENUS' ATMOSPHERE

NASA mission gets an unexpectedly revealing view of our neighboring planet.

The Parker Solar Probe is on a seven-year journey to get up close and personal with the Sun. On its way, it's making regular flybys of Venus, using the planet's gravity to direct the probe's orbit closer to our star. Its wide-field camera captured this view of Venus' nightside during its third flyby, in July 2020, at a mere 7,700 miles (12,400 kilometers) from the planet.

From its position above the thick venusian clouds, the NASA craft detected a fluorescent rim around the edge of Venus. But the team was stunned to see that the image also captured a surface feature: a prominent dark area in the center of the planet, known as Aphrodite Terra.

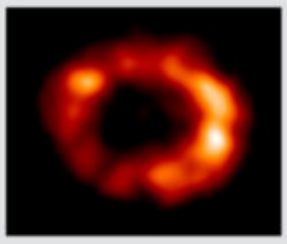
The Wide-field Imager for Parker Solar Probe (WISPR) is designed to image the Sun's corona and inner heliosphere in visible light. That's why the team was surprised the camera was able to peer straight to Venus' surface rather than imaging just its cloudy atmosphere. This may be a sign that WISPR is more sensitive to near-infrared light than predicted. If so, the instrument could be used to study dust around the inner solar system and Sun. Alternatively, the imager may instead have discovered a "window" in Venus' atmosphere through which light can escape. –CAITLYN BUONGIORNO

NASA/JOHNS HOPKINS APL/NAVAL RESEARCH LABORATORY/GUILLERMO STENBORG AND BRENDAN GALLAGHER. BOTTOM FROM LEFT: NOIRLAB/NSF/AURA/J. DA SILVA; CHANDRA (X-RAY): NASA/CXC/UNIV. DI PALERMO/E. GRECO, NUSTAR (X-RAY): NASA/JPL-CALTECH; DESY, SCIENCE COMMUNICATION LAB

HOT BYTES

APTLY NAMED

Astronomers have confirmed the orbit of 2018 AG37, the most distant object ever observed in the solar system. Nicknamed "Farfarout," the 250-mile-wide (400 kilometers) planetoid is currently at 132 times the Earth-Sun distance, or nearly four times farther from the Sun than Pluto.



NEWBORN PULSE

Energetic X-rays emerging from the remnant of supernova SN 1987A suggest that a pulsar — a rapidly spinning neutron star emitting beams of radio waves — lies hidden in the debris. If confirmed, it would be the youngest pulsar ever found.

LAST GASP

The IceCube neutrino detector at the South Pole has captured a neutrino — a tiny, chargeless particle — emitted when a star was ripped apart and swallowed by a supermassive black hole 700 million light-years away. It's the first neutrino observed from such an event.