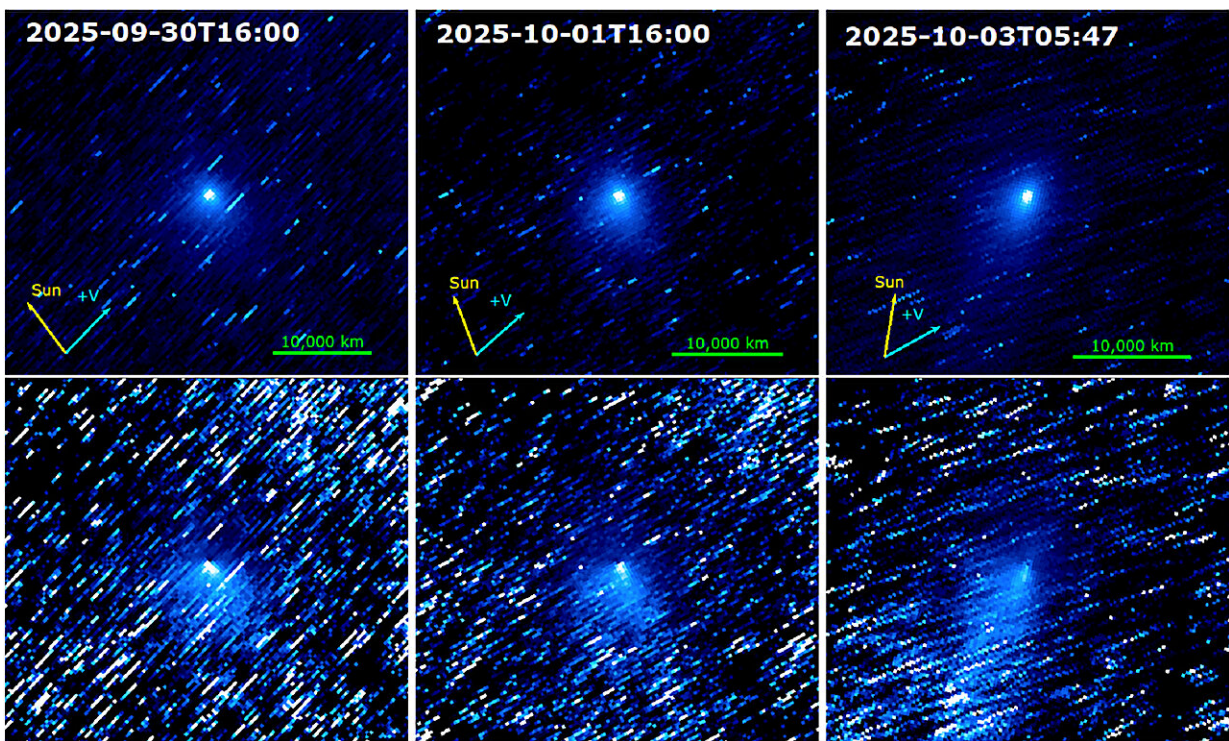




Seen from Mars, an interstellar visitor looks completely different and changes what astronomers thought they knew

May 19 2026, by Sayan Tribedi



Stacked images of 3I/ATLAS acquired by HiRIC CMOS camera on board the Tianwen-1 spacecraft (upper row) and the corresponding $1/\rho$ divided images (lower row) from the three epochs. All images are displayed north up and east to the left. The stacked images are displayed with logarithmic brightness stretch, and the enhanced images are displayed with a linear brightness stretch. The arrows in the upper panels mark the projected directions of the sun and the heliocentric velocity vector. The scale bars are 10,000 km. The bright star trails are visible in each stack due to the apparent movement of 3I in the sky

background during each 30 s observation epoch. Credit: Xin  Ren  et al, Interstellar Object 3I/ATLAS Observed from Mars by China's Tianwen-1 Spacecraft, *The Astrophysical Journal Letters* (2026). DOI: 10.3847/2041-8213/ae61b3

Last fall, a Chinese spacecraft orbiting Mars captured images of a comet from another star system, offering scientists a fresh vantage on a rare visitor.

In July 2025, telescopes spotted 3I/ATLAS—only the third interstellar object ever seen in our solar system. It behaved exactly like a comet, with a bright coma of dust and gas. Even NASA's Webb Space Telescope found its chemistry unusual: 3I/ATLAS had a much higher CO₂-to-water ratio than nearly any solar system comet. Chinese space scientists seized a rare opportunity: they turned Mars-orbiting Tianwen-1's camera toward the comet as it flew by.

In doing so, they achieved a milestone—in their words, "These observations constitute the first imaging of this object from a vantage point significantly out of its orbital plane, providing a unique constraint on dust dynamics."

Remarkably, the researchers note this was indeed China's first deep-space astronomy from orbit. The two sets of images (just days apart) highlight how the coma's shape changed as the geometry shifted.

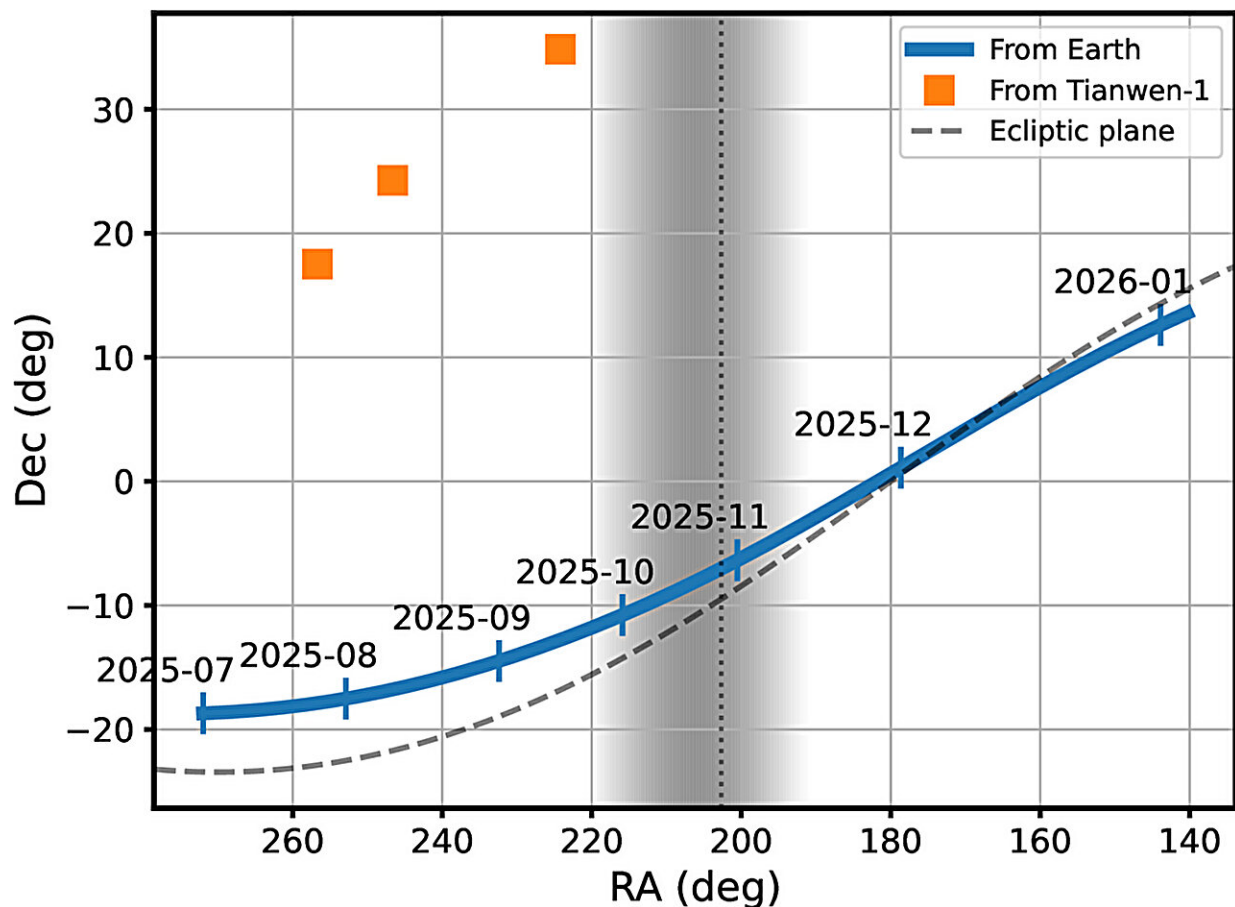
These findings are [published](#) in *The Astrophysical Journal Letters*.

A Martian view of an alien comet

Unlike nearly all previous observations (made from Earth or Earth

orbit), Tianwen-1 saw the comet from well out of its orbital plane. This unique perspective was crucial for understanding the comet's behavior.

The [HiRIC camera](#) is actually a 512×512-pixel CMOS imager (~1.94"/pixel) designed for snapping Mars, not faint comets. The team trained it carefully on 3I/ATLAS for 30-second exposures, capturing 57 frames over three epochs (Sept. 30, Oct. 1, Oct. 3). These observations spanned only a few days, but with the comet racing at ~86 km/s relative to Mars, each image showed the coma and tail in a new configuration.



The sky coordinate of 3I from Earth between 2025 July 1 and early 2026 January (blue line) and from Mars during the three epochs of Tianwen-1 observations (filled orange squares). The thin dashed curve marks the ecliptic

plane. The vertical dotted line marks the R.A. of 3I from Earth at perihelion, and the shaded area marks the range of R.A. with solar elongation

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