BBC

WHAT THE WORLD'S BIGGEST CAMERA WILL CAPTURE

#231 AUGUST 2024

# Sky at Night

THE UK'S BEST-SELLING ASTRONOMY MAGAZINE

# FLYING OVER TITAN

**The first mission to fly on another world gets the green light**

## HAS THE JWST BROKEN MODERN COSMOLOGY?

## DISCOVER THE NEW ERA OF HUMAN SPACEFLIGHT

WATCH THE MOON COVER RINGED PLANET SATURN

WHY THE MILKY WAY IS LACKING ANCIENT STARS

ON TEST: UNISTELLAR'S ODYSSEY PRO SMART SCOPE

Mars's Olympus Mons is subject to morning frosts, contrary to scientists' expectations

# Mars's morning frost dusts Solar System's highest peak

## No spacecraft had been looking in the right place at the right time until now

**A light dusting** of early morning frost has been spotted on top of Mars's Olympus Mons, the tallest mountain in the Solar System, for the first time.

The frost is only visible for a short time in the early hours of the morning during the colder months. It forms when moist air becomes trapped in the large hollow at the volcano's summit, known as a caldera. The frost is only around the thickness of a human hair but covers such a large area that around 150,000 tonnes (60 Olympic swimming pools' worth) of water are deposited on Olympus Mons and other nearby mountains.

"We thought it was impossible for frost to form around Mars's equator, as the mix of sunshine and thin atmosphere keeps temperatures relatively high at both surface and mountaintop – unlike what we see on Earth, where you might expect to see frosty peaks," says Adomas Valantinas, who made the discovery while at the University of Bern, Switzerland, using images taken by ESA's ExoMars Trace Gas Orbiter. "Its existence here is exciting, and hints that there are exceptional processes at play which are allowing frost to form."

**www.esa.int**