

# Science Focus

*The truth about*  
**INTERMITTENT FASTING**

*Designing a drug to*  
**DELAY MENOPAUSE**

*How to spot a*  
**COVERT NARCISSIST**

## SOMETHING IS WRONG WITH OUR MODEL OF THE UNIVERSE...

...THE CLOSER WE LOOK, THE WEIRDER IT GETS



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ASTRONOMY

# THE WORLD'S LARGEST CAMERA WILL SHOW US THE UNIVERSE IN ULTRA HIGH-DEF

The 3,200-megapixel camera could help astronomers solve the mystery of dark matter

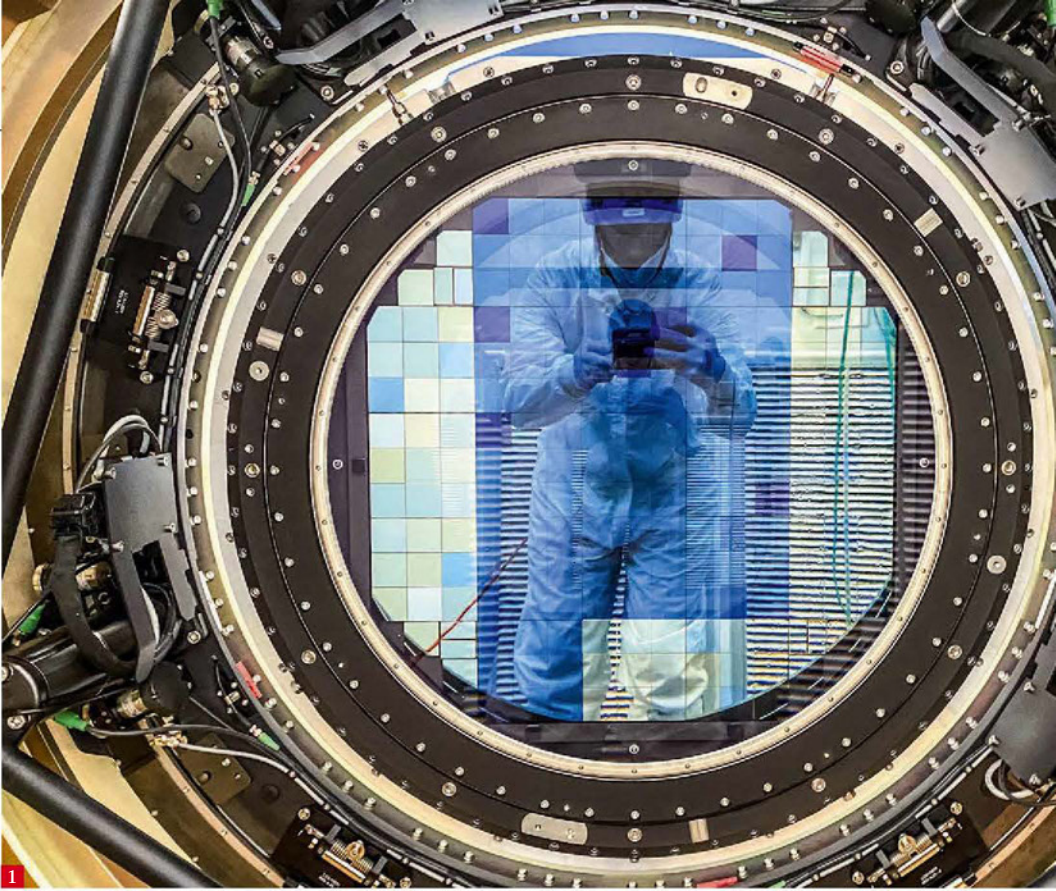
**O**n 6 April, scientists at the SLAC National Accelerator Laboratory in the US announced that work on the largest camera the world has ever seen was complete.

The 3,200-megapixel Legacy Survey of Space and Time camera (LSST) is the size of a small car and weighs around 3,000kg (6,600lbs). It'll soon be installed in the Vera C Rubín Observatory, being built in Chile, where it'll be used to produce an amazingly detailed image of the sky visible over the southern hemisphere.

"With the completion of the LSST camera at SLAC... we'll soon start producing the greatest movie of all time and the most informative map of the night sky ever assembled," said Prof Željko Ivezić, director of the Rubin Observatory construction.

The camera is so big that it'll be able to image the entirety of the southern hemisphere's sky every four nights and could discover up to 20 billion new stars and galaxies over the next decade. It would take hundreds of ultra-high-definition TV screens to show one image produced by the camera at its maximum resolution.

Scientists hope the camera will help answer questions about the Universe by building up a clearer picture of galaxy distribution. This new data could shine more light on some of the biggest mysteries facing astronomers today, such as the true nature of dark energy and dark matter.



TRAVIS LANGE, JACQUELINE RAMSEYER ORRELL / SLAC NATIONAL ACCELERATOR LABORATORY, RUBIN OBSERVATORY/NSF/AURA

**1.** The camera features a 1.5m-wide (5ft) front lens and a 3,200-megapixel sensor (seen here) that, with the help of a cryostat, will be cooled to -100°C (-148°F) to ensure clear images.

**2.** Most of the LSST camera team,

pictured in the clean room with the finished instrument. The camera they've helped build will look for galaxies that show signs of weak gravitational lensing, which will help astronomers build up a more detailed picture of the evolution of the Universe.

**3.** Now that the LSST camera is finished, it'll be transported to its new home, the Vera C Rubín Observatory. The installation will be completed in late 2024, following a careful journey up steep mountain roads to the facility in the Andes, 2,737m

(8,980ft) above sea level. The camera is expected to take its first images in 2025, with the public witnessing its capabilities by 2027.

**4.** Travis Lange, Deputy Project Manager for the LSST camera, performs one final

check. As well as dark matter, researchers also believe the camera will help them build up a more detailed map of small objects in our Solar System, which could help identify threats from asteroids and other near-Earth objects (NEOs).

