

Europe's Euclid space telescope to launch on July 1

June 21 2023



The ESA's Euclid mission will chart a 3D map of the universe encompassing more than a third of the sky.

The European Space Agency said on Wednesday its space telescope Euclid is scheduled to launch on July 1, blasting off on a mission to shed

light on the mysteries of dark matter and dark energy.

The mission will launch on a SpaceX Falcon 9 rocket from Cape Canaveral in Florida, with the broadcast beginning at 1430 GMT, the ESA said in a tweet.

Euclid was originally planned to ride into space on a Russian Soyuz rocket, but last year Moscow withdrew its launchers in response to sanctions over the invasion of Ukraine.

The ESA was forced to turn to its rival SpaceX, the US company of billionaire Elon Musk, to launch the 1.4-billion-euro (\$1.5 billion) mission.

The two-ton Euclid, which is 4.7 meters (15 feet) tall and 3.5 meters (11 feet) wide, will join fellow space telescope James Webb at a stable hovering spot 1.5 million kilometers from Earth called the second Lagrangian Point.

From there, Euclid will chart a 3D [map of the universe](#) encompassing two billion galaxies across more than a third of the sky.

Euclid's gaze will stretch out to 10 billion [light years](#) away. Because of how long it takes the light from distant stars to reach Earth, that means it will peer back 10 billion years into the cosmic past.

Europe's space telescope Euclid

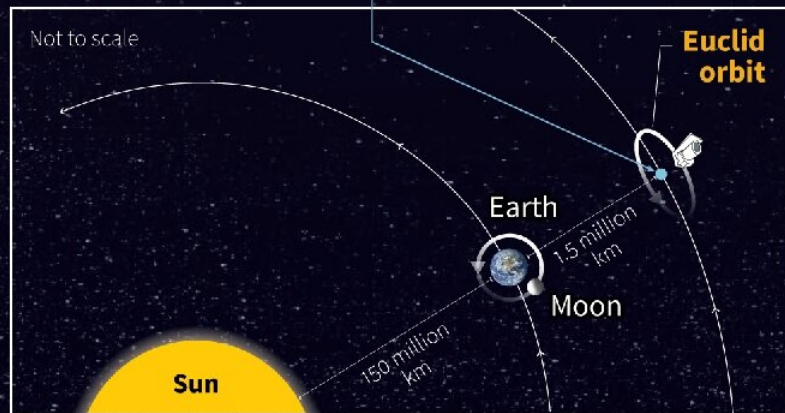
The spacecraft will be sent to explore the evolution of the dark matter and dark energy in the Universe, joining the James Webb telescope in orbit around the **second Lagrangian Point, or L2**

A **Lagrangian point** is a point where the gravitational forces of two bodies or more (eg. Sun and a planet) are in equilibrium




L2 point is ideal for observing space as it

- allows a satellite to maintain a stable distance and use solar energy
- provides a clear view of space
- avoids orbiting Earth and passing through its shadow but is close enough for good communications



Sources: ESA, Nasa, Emmanuel Trelat, Theory of control, Lagrange points and space exploration, Image CNRS, 2010

AFP 

The Euclid space telescope.

The mission will allow scientists to reconstruct the history of the 13.8-billion-year-old universe via "slices of time," astrophysicist Yannick Mellier told the Euclid consortium earlier this month.

Euclid's main objective is to better understand [dark matter](#) and [dark energy](#), which together make up 95 percent of the universe.

The existence of both remains entirely theoretical—although also

necessary for scientists to construct a working understanding of the universe.

Dark matter is invisible, its existence inferred from the motion of objects affected by its gravitational pull.

Dark energy is the name given to the unknown force causing the expansion of the universe to accelerate.

Euclid is not expected to identify the true nature of these dark mysteries, but astronomers hope its unprecedented view of the universe will shed light on how they act and evolve over time.

Euclid's first images are expected to roll in quickly once scientific operations start in October, but it will take scientists longer to sift through the massive amount of data.

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