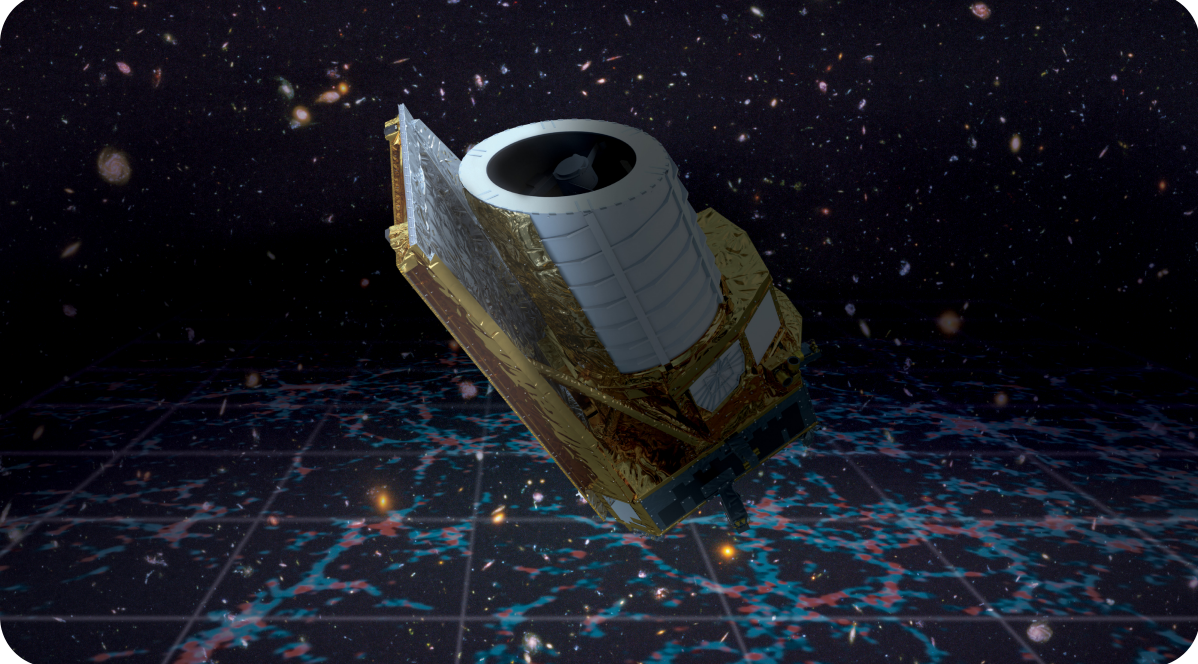


ESA’s Euclid mission will tackle some of science’s biggest mysteries



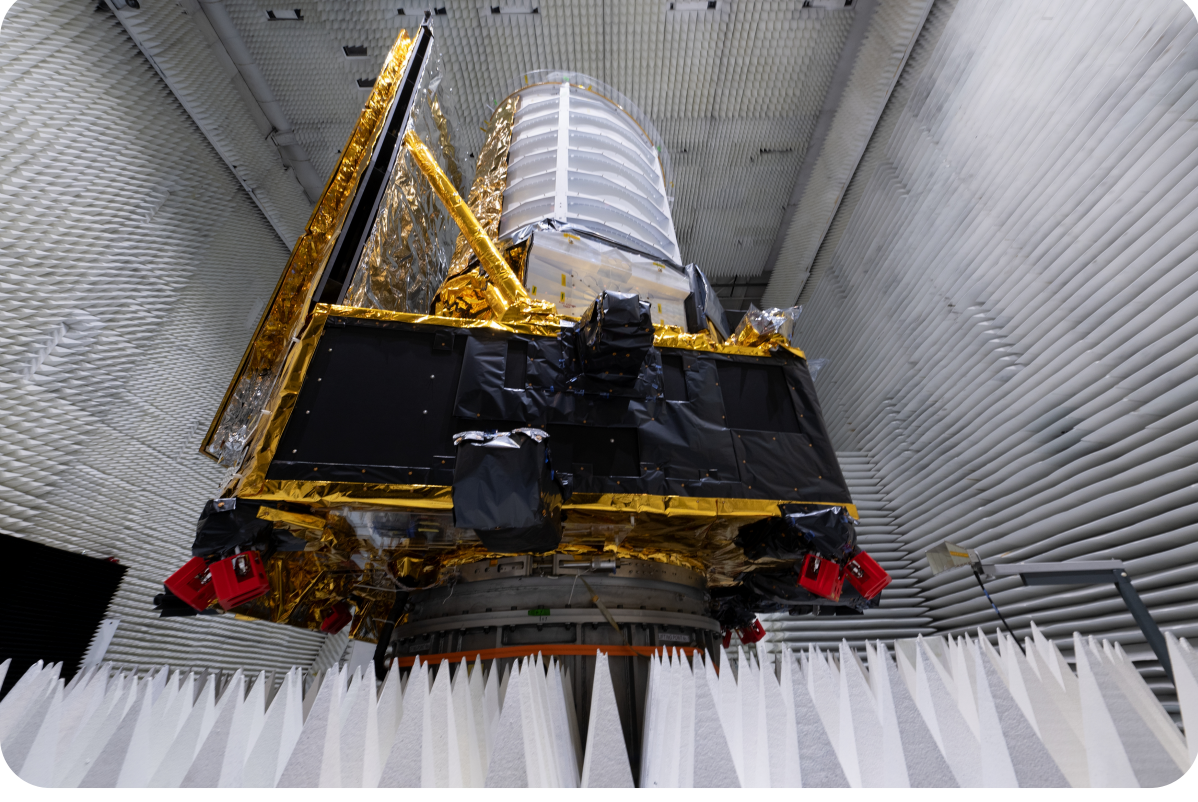
An artist has made this picture of Euclid. The white cylinder is where light will enter. The white and gold rectangle is a shield always pointing toward to the Sun. The box at the bottom is where Euclid's scientific instruments are kept. Credit: ESA/Euclid/Euclid Consortium/NASA. Background galaxies: NASA, ESA, and S. Beckwith (STScI) and the HUDF Team, CC BY-SA 3.0 IGO.

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23 June 2023

Excitement is building over the upcoming launch of ESA's Euclid mission. This special space telescope is planned to blast off on 1 July, onboard a SpaceX Falcon 9 rocket from Cape Canaveral Space Force Station in Florida, USA. After launch, it will take Euclid around four weeks to reach its destination, 1.5 million kilometres from Earth. Its instruments will then be turned on and thoroughly tested for two months, before Euclid begins its mission!

What an exciting mission it is! Euclid will help gather evidence to answer some of the biggest mysteries in astronomy today. Did you know that ordinary matter – the stuff that makes up everything we see, from stars to galaxies, planets to people – only amounts to around 5% of what is out there in the cosmos? You may wonder, what about the rest? The other 95% is known as dark matter and dark energy. They affect the movement of things we can see, like galaxies, and seem to cause the expansion of the universe to speed up. However, they are very puzzling and scientists admit they do not know much about them. Understanding dark energy and dark matter is perhaps the biggest challenge in physics today.



This real photo of Euclid shows it undergoing tests before launch into space. Credit: ESA-Manuel Pedoussaut.

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The Euclid mission is here to help! Euclid has a special sunshield to block light from the Sun, Earth, and Moon, while its telescope points towards deep space. Its sensitive instruments will survey 1/3 of the sky, creating the largest, most accurate 3D map of the Universe ever! This will include the positions of billions of galaxies not just where they are now, but incredibly, where they were in the past. This is because the further away a galaxy is, the longer its light has taken to reach us, and so the earlier in cosmic history we will see it. Euclid will create a map of space covering up to 10 billion light-years from us, charting the position and movement of galaxies over most of the Universe's history! This will allow scientists to see how the shape of the Universe has changed over time.

Using this incredible map, scientists on Earth will be able to investigate how the Universe has expanded, and how the material within it has changed over time. From this, we can make astounding discoveries about gravity, dark energy, and dark matter. With Euclid's help, perhaps we will finally solve these mysteries!

Cool fact: More than 3500 people from over 300 institutions across 21 countries have been working together to make the Euclid mission a reality.



Euclid has its own logo! Credit: ESA.

[Access the image](#)

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