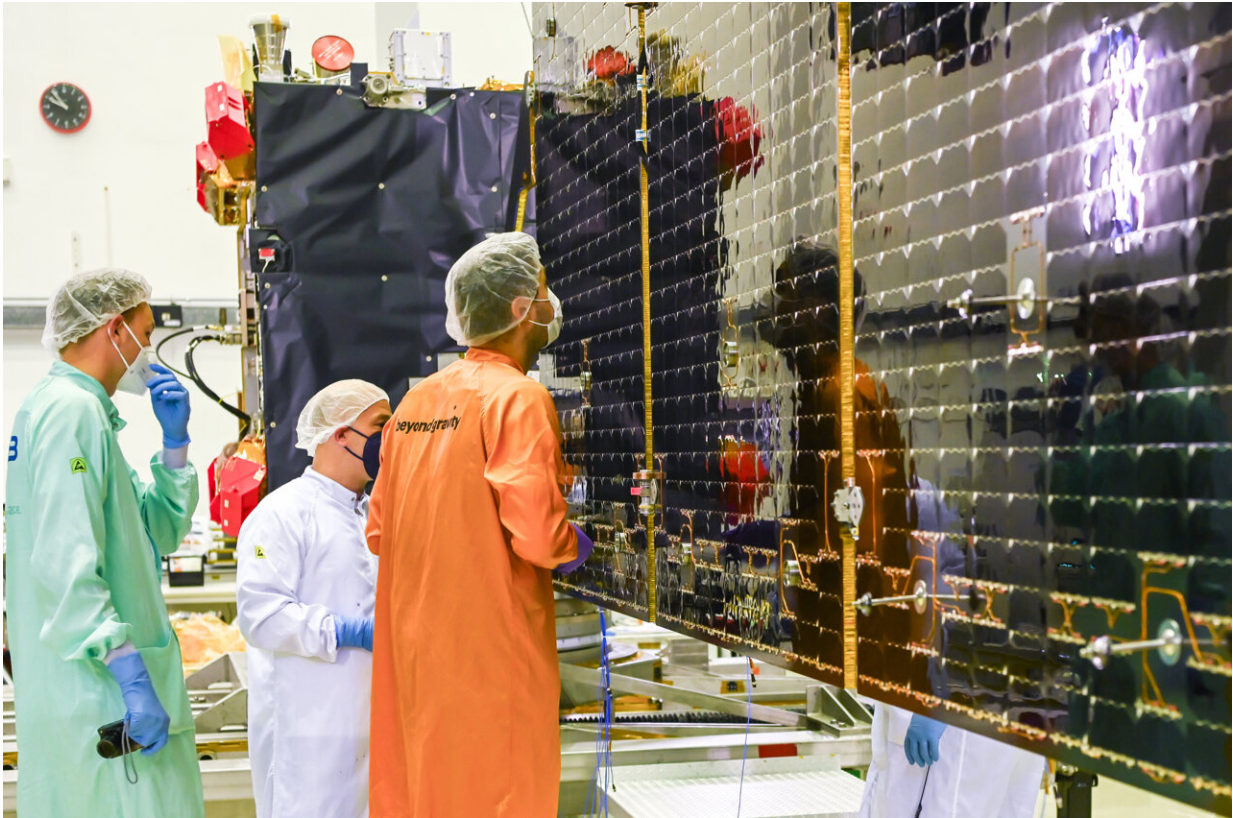


# Hera's solar wings are cleared for flight

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Credit: ESA-SJM Photography

The solar wings that will power ESA's Hera asteroid mission for planetary defense as it ventures out to meet the Dimorphos asteroid have been cleared for flight. As part of its current test campaign at ESA's ESTEC Test Center in the Netherlands, the spacecraft commanded the deployment of the wings one at a time, as it will do in space directly

after launch—known as a "hot deployment."

The van-sized spacecraft is equipped with two 5-m long wings, made up of three hinged panels each. This adds up to an overall area of approximately 14 square meters in all, with more than 1,600 [solar cells](#) in total. Azur Space in Germany manufactured the solar cells, which were then interconnected and arranged into working arrays by Leonardo in Italy onto panels provided by Beyond Gravity in Switzerland.

Designed and qualified to operate at temperatures between  $-100^{\circ}\text{C}$  and  $+140^{\circ}\text{C}$ , the panels will continue working even with the sun at its furthest distance, out beyond Mars orbit, where the spacecraft will receive only 17% of sunlight compared to a satellite orbiting Earth. In the phases of the mission in which Hera will be most distant, the [solar panels](#) will generate around 800 watts, equal to the energy needed to power a small microwave oven.

For most of the time Hera is being tested its delicate [solar wings](#) are kept folded beside its body, under protective panels. But this hot deployment test was needed to confirm the [spacecraft](#) can autonomously perform its very first task once it will be delivered into orbit: to stretch out its wings and begin harvesting power-giving sunlight. This test followed an earlier "cold deployment" in September when wing deployment was initiated by hand. Because the solar wings have been designed to operate in weightlessness they were supported by a frame during these test deployments.

Hera is Europe's contribution to an international planetary defense experiment. Following the DART mission's impact with the Dimorphos asteroid last year—modifying its [orbit](#) and sending a plume of debris thousands of kilometers out into space—Hera will return to Dimorphos to perform a close-up survey of the crater left by DART. The mission will also measure Dimorphos' mass and make-up, along with that of the

larger Didymos asteroid that Dimorphos orbits around. Hera is due for launch in October 2024.

Provided by European Space Agency

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