



The ESA Hera mission on its way to the binary asteroid Didymos: characterization of the asteroid and full documentation of the NASA DART impact

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The Hera mission was launched on October 7, 2024 and performed successfully a flyby of Mars on March 12, 2025, which placed the spacecraft on its trajectory to the binary asteroid Didymos. Hera will approach Didymos in October 2026 and start its close proximity operations in December 2026 for a nominal mission duration of 6 months. It will be the first mission to explore an asteroid using an architecture that includes a motherspacecraft and two CubeSats, Milani and Juventas, that will be deployed at the asteroid for close proximity operations, mineralogical measurements, dust detection and analysis, the first radar probing of the internal structure of an asteroid and landing. Once landed, the Juventas Cubesat will use a gravimeter to perform gravity field measurements. Radio Science and inter-satellite links will also be used for this purpose.

During the flyby of Mars, Hera also took images of the face opposite to Mars of the smaller moon of Mars, Deimos, using the asteroid framing cameras, the hyperspectral imager (Hyperscout-H) and the JAXA-contributed thermal infrared imager (TIRI) .

We will present the main operations achieved so far, the status of the mission and the objectives at Didymos, which will contribute to the first asteroid deflection test with the NASA DART mission, and the first full characterization of a binary asteroid, including its internal properties.