

The ESA Hera mission: rendezvous with a binary asteroid and planetary defense

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The Hera mission has been approved for development and launch in 2024 in the new ESA Space Safety Programme by the ESA Council at Ministerial Level, Space19+, in November 2019.

Hera will contribute to the first deflection test of an asteroid, in the framework of the international NASA- and ESA supported Asteroid Impact and Deflection Assessment (AIDA) collaboration.

Hera will rendezvous for the first time with a binary asteroid, (65803) Didymos, and in particular its secondary, of only 160 m in diameter. So far, no mission has visited such a small rock in space. Moreover, for the first time, internal and subsurface properties will be directly measured.

As a crucial contribution to planetary defense, Hera will perform the measurements necessary to understand the effect of the NASA DART impact on Didymos' secondary in 2022, in particular its mass, its internal structure, the direct determination of the momentum transfer and the detailed characterization of the crater left by DART. These measurements will also provide unique information on many current issues in asteroid science.

The scientific legacy of the Hera mission will extend far beyond the core aims of planetary defense. Hera is thus the European contribution to the international asteroid exploration era.

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