

**Abstract for 11th Low Cost Planetary Missions Conference
June 9-11, 2015, Berlin, Germany**

AIDA/DART: Double Asteroid Redirection Test

Cheng, A., JHU/APL; Michel, P., University of NICE, CNRS; Rivkin, A., JHU/APL; Ulamec, S., DLR; Reed, C., JHU/APL; Carnelli, I., ESA

The Asteroid Impact & Deflection Assessment (AIDA) mission will be the first full-scale demonstration of an asteroid impact hazard mitigation technique, using a spacecraft kinetic impactor to deflect an asteroid. AIDA is an international cooperation between NASA and ESA with two mission elements, the NASA Double Asteroid Redirection Test (DART) kinetic impactor spacecraft and the ESA Asteroid Impact Mission (AIM) rendezvous. Parallel NASA Phase A and ESA Phase A/B1 studies are planned for DART and AIM respectively in 2015. The primary goals of AIDA are (i) to test our ability to perform a spacecraft impact on a potentially hazardous near-Earth asteroid and (ii) to measure and characterize the deflection caused by the impact. The AIDA target will be the secondary member of the binary asteroid 65803 Didymos, with the deflection experiment to occur in October, 2022. The DART impact at ~6 km/s will alter the binary orbit period, which can be measured by Earth-based observatories using optical and radar techniques. DART will carry a high resolution imager for autonomous targeting of the impact and for accurate determination of the impact location and its geologic context. AIM will rendezvous with the target asteroid before the DART impact to study it in detail, both beforehand and afterwards, to make extremely precise measurements of the deflection and to understand the results of the hypervelocity impact.