

# NASA space probe approaches mega-asteroid

Nearly four years after its launch, NASA's Dawn spacecraft is closing in on its first target, the massive asteroid Vesta. The probe will spend 10 months orbiting the rocky body, which has remained largely unchanged for 4.6 billion years, to gather clues about our solar system's origins

**Gamma ray and neutron detector**  
Measures chemical composition of asteroid surface

**Framing camera:** Takes images at multiple angles to generate topographical maps of Vesta

**Antenna dish**

**Solar array**

**Spectrometer:** Detects visible and infrared light to identify surface minerals

**Ion thruster:**  
Three in total, used one at a time. Ten times faster than chemical rockets

## DAWN'S TARGETS

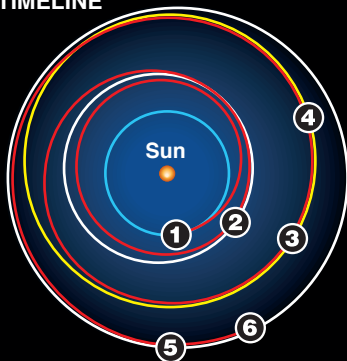
**Vesta:** Diameter 530km

Second most massive asteroid. Surface features giant crater 460km across

**Ceres:** 930km

Biggest asteroid, reclassified as "dwarf planet" in 2006. Astronomers believe water ice may be buried below surface

**MISSION TIMELINE** — Dawn trajectory



- 1 Sep 2007: Launch**
- 2 Feb 2009: Mars gravity assist**
- 3 Jul 2011: Vesta arrival**
- 4 May 2012: Vesta departure**
- 5 Feb 2015: Ceres arrival**
- 6 Jul 2015: Mission end**

**Moon to scale**

