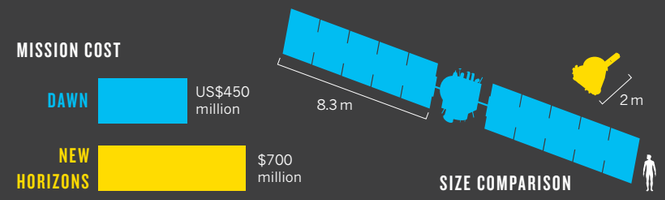
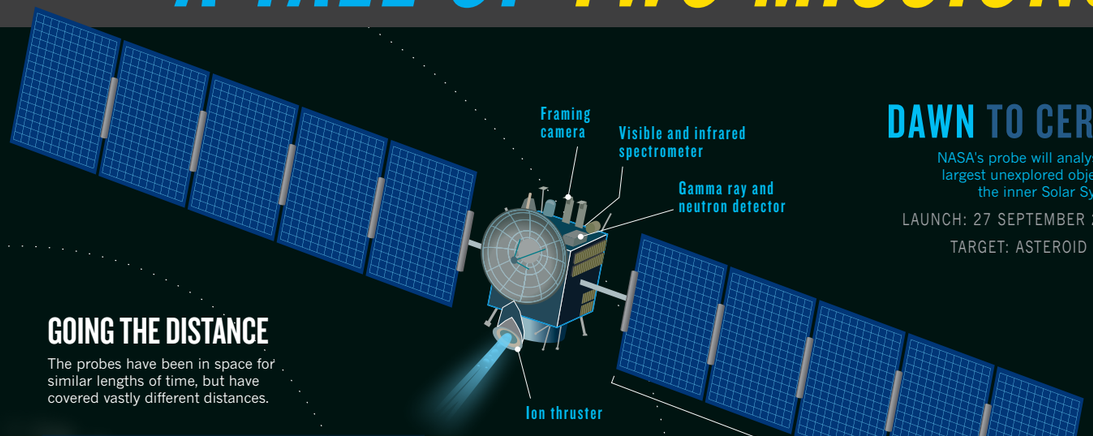
DWARF PLANETS: A TALE OF TWO MISSIONS

CALL IT THE YEAR of the dwarf planet. In 2015, scientists will get their first close-up look at two of the Solar System's biggest little rocks. The Dawn mission will fly past Ceres, in the asteroid belt between Mars and Jupiter, whereas New Horizons will encounter Pluto, the infamous ex-planet that orbits the icy reaches beyond Neptune. They promise to reveal surprises that could redefine how astronomers think of these small bodies.





DAWN TO CERES

NASA's probe will analyse the largest unexplored objects in the inner Solar System.

LAUNCH: 27 SEPTEMBER 2007

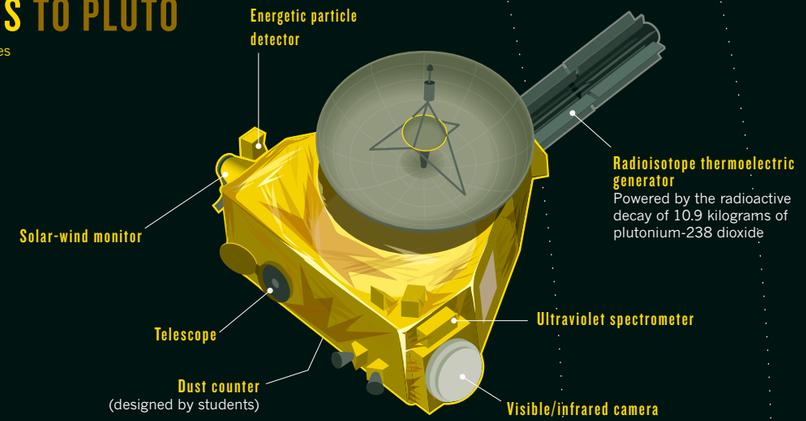
TARGET: ASTEROID BELT

NEW HORIZONS TO PLUTO

NASA's mission to the far reaches of the Solar System will gather data on a distant dwarf planet.

LAUNCH: 19 JANUARY 2006

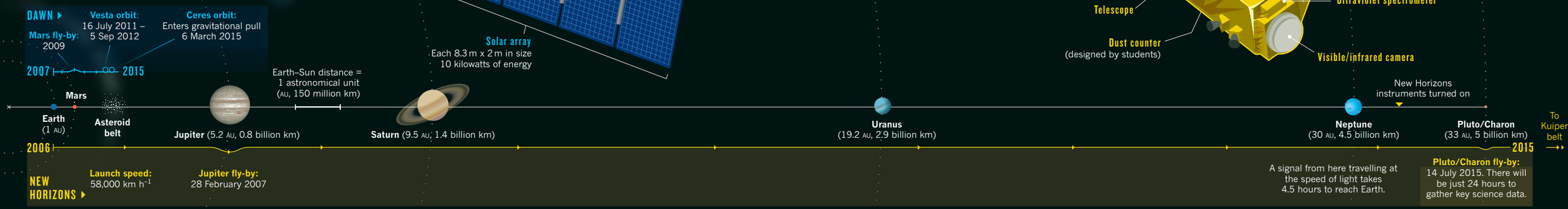
TARGET: KUIPER BELT



SOURCE: NASA/JPL/JHUAPL

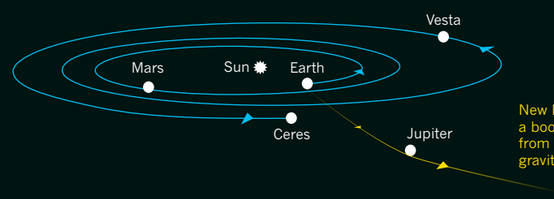
GOING THE DISTANCE

The probes have been in space for similar lengths of time, but have covered vastly different distances.



DIFFERENT JOURNEYS

Dawn travelled using a mixture of thrusting and cruising on its way to the asteroid belt, whereas New Horizons blasted nearly directly outwards to Pluto.



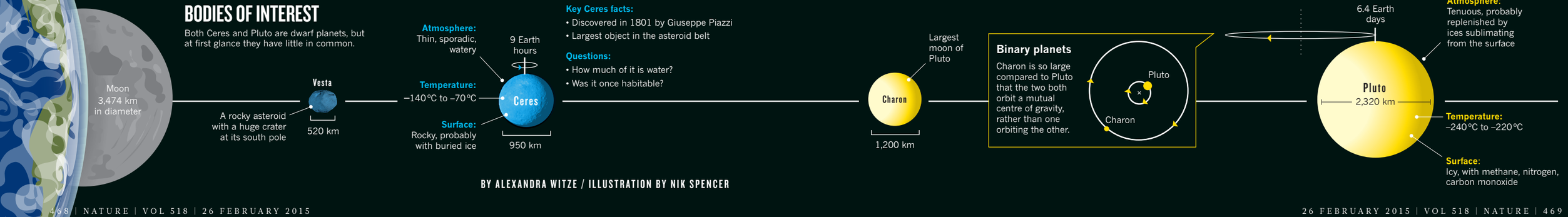
New Horizons' speed received a boost of 14,400 km h^{-1} from Jupiter to counter the gravitational pull of the Sun.

WHAT'S IN A NAME?

There is no faster way to trigger an argument among Solar System researchers than to bring up the definition of a planet. For decades, Pluto was considered the ninth planet. But in 2006, prompted by the discovery of other large Kuiper belt objects, the International Astronomical Union redefined what it means to be a planet. Pluto was declassified because it has not gravitationally cleared its orbit of other large bodies. Instead, Pluto and Ceres now belong to the newly created category of dwarf planets, which are allowed to orbit in a zone containing similar objects.

BODIES OF INTEREST

Both Ceres and Pluto are dwarf planets, but at first glance they have little in common.



Key Ceres facts:
- Discovered in 1801 by Giuseppe Piazzi
- Largest object in the asteroid belt

Questions:
- How much of it is water?
- Was it once habitable?

Key Pluto facts:
- Discovered in 1930 by Clyde Tombaugh
- First known Kuiper belt object

Questions:
- What does its icy surface look like?
- Was it ever geologically active?

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