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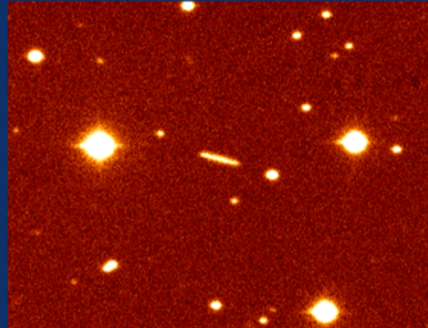


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Summary Information Sheet

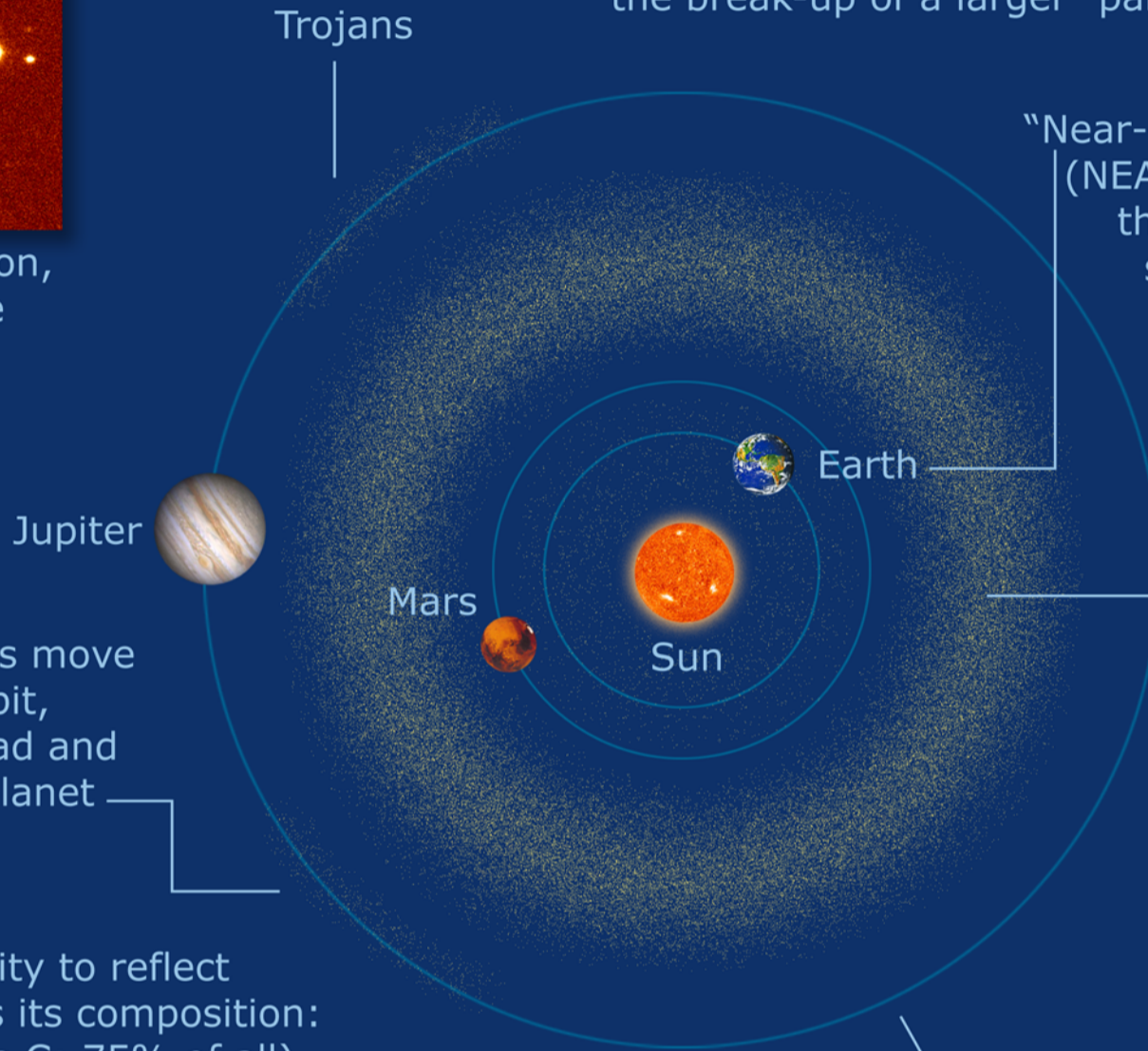
Asteroids

Asteroids – also known as “minor planets” – are small rocky bodies that orbit the Sun along with the major planets. The first asteroid, Ceres, was found in 1801 and, as most of the others, moves in the “main belt” between the orbits of Mars and Jupiter. With ~950 km diameter, it is also the largest asteroid known there.



Due to their motion, asteroids produce “trails” on long-exposure photos

Many asteroids move in similar orbits and belong to “families”. Each family probably represents the break-up of a larger “parent” body



“Trojan” asteroids move near Jupiter’s orbit, approx. 60° ahead and 60° behind the planet

“Near-Earth-Asteroids” (NEAs) approach (“cross”) the Earth’s orbit and may sometime collide with our planet. The extinction of the Dinosaurs, 65 mio yrs. ago, may be due to one or more such events

More than 100.000 asteroids are known to move in the “main belt”

An asteroid’s ability to reflect sunlight indicates its composition:

- * Very dark (Type C; 75% of all) - solar composition (without H, He)
- * Bright (Type S; 17%) - metallic Ni-Fe with Fe- and Mg-silicates
- * Very bright (Type M; ~8%) - pure Ni-Fe

Groups of mostly icy minor bodies (Centaur, Trans-Neptunian Objects) are found in the outer realms of the Solar System

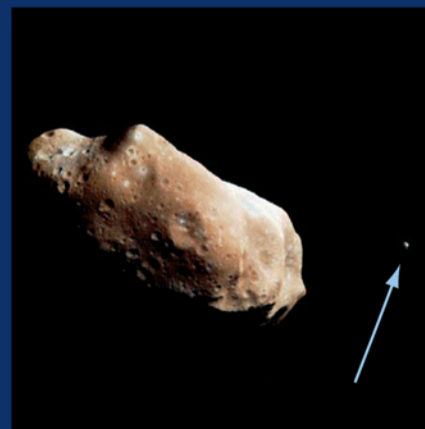
The total mass of all asteroids in the inner Solar System is about 3×10^{21} kg, or just 1/25 of that of the Earth’s Moon



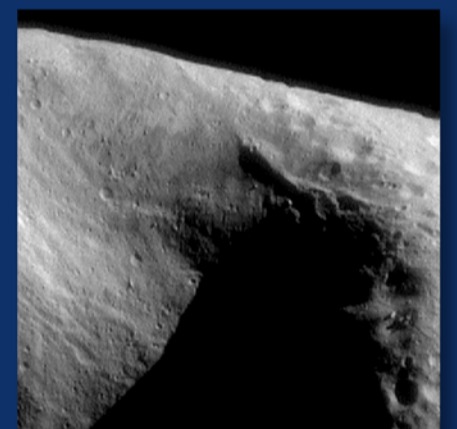
Asteroid Ceres (ground-based photo)



Asteroid Gaspra (NASA Galileo 1991)



Asteroid Ida with moon Dactyl (Galileo 1993)



Asteroid Eros (NASA NEAR 1999)

Physical Data

Property
Distance from the Sun
Rotation period
Dimensions
Mass
Density

Ceres
414 mio km
9.074 hrs
960 x 933 km
9.4×10^{20} kg
2050 kg/m ³

For comparison

Gaspra
332 mio km
3.29 years
19 x 12 x 11 km
?
?

Deimos
-
1.26 days
15 x 12 x 11 km
1.8×10^{15} kg
1700 kg/m ³

Images from ESO, ESA or NASA except otherwise stated

Concept: Bernhard Mackowiak