SI Science International

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NASA'S Mission to Asteroid 16 Psyche

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Asteroids are considered time capsules by space scientists because they are largely untouched by space weathering. Thanks to their distance from the sun, they are out there in the cold vacuum of space. There is the main asteroid belt between Mars and Jupiter, which is considered vital for studying the Solar System.

Astronomers divide asteroids into three categories, Carbonaceous or C-type asteroids (the commonest), Silicaceous or S-type asteroids, and Metal or M-type asteroids (rarest). The M-type asteroids are rich in iron and are expected to be the source of iron meteorites that fall to Earth.

Psyche (16 Psyche) aka the dwarf planet is an M-type asteroid. The planet is known as 16 Psyche because it was discovered as the 16th minor planet. NASA is sending a mission to investigate the Psyche. Researchers created a map of Psyche's surface based on observations from an array of telescopes before that mission. Visual images of Psyche aren't very informative. There was no detail revealed in the pictures taken by the VLT of the European Southern Observatory.

There are different hypotheses about the psyche's history. Some suggest that it was an exposed iron core of a much larger body and by powerful collision or series of collisions stripped away the psyche's crust and mantle. while evidence showed that it wasn't dense enough to be solid iron and is likely porous. Psyche might have been disrupted and then re-accreted as a mix of metals and silicates, according to some researchers. Psyche's origins are most exotically explained by the ferro-volcanic theory. Psyche may have once been a molten blob according to a 2019 study. A buoyant molten core is formed when the outer layers cool and form stress cracks.

A visit to Psyche is the only way to find out for sure what it is. NASA is doing that.

The Psyche mission was approved in 2017 and was scheduled to launch on a SpaceX Falcon Heavy in August 2022. NASA delayed the mission on June 24, 2022. The flight software and testing equipment for the spacecraft were delivered too late, according to NASA. The identity of Psyche as a protoplanet and other details about its composition and structure may finally be revealed when that happens.

KEYWORDS

asteroids, missions, space exploration, 16 Psyche, m-type asteroid, NASA, psyche, psyche mission