

## Asteroid 16 Psyche

Discovered by an Italian astronomer, Asteroid 16 Psyche is a giant asteroid located between Mars and Jupiter. In 2020, based on their study and research, NASA has released that the asteroid is made of metal and is worth 10,000 quadrillion US dollars (approx).

### About Asteroid 16 Psyche

Given below are the key points regarding the 16 Psyche asteroid:

- It was named after the nymph, Psyche, who married Cupid but was put to death by Venus
- It was discovered by an Italian astronomer, Annibale de Gaspard in 1853
- The asteroid is located between Mars and Jupiter and is about 370 million kilometres away from Earth
- This asteroid is shaped like a potato and is believed to be a part of a planet, whose formation could not be complete
- It is said to have a diameter of approximately 140 miles
- This asteroid is made up of large and dense metallic objects which is unlikely to the regular asteroids, which are made up of rocks or ice
- The table given below mentions a few other points of importance about the 16 psyche asteroid:

Asteroid 16 Psyche - Facts	
Date of Discovery	March 17, 1852
Type of Asteroid	M-Type
Diameter of 16 Psyche	226 kilometres
Orbital Period	About five Earth years
Material of Asteroid	Metal

Aspirants for competitive exams can refer to the links below and learn more about space, evolution, and Organisations related to Space research:

<a href="#">Indian Space Research Organisation (ISRO)</a>	<a href="#">Earth - Origin &amp; Evolution</a>
<a href="#">Giant Metrewave Radiowave Telescope</a>	<a href="#">List Of Space Centres &amp; Indian Space Agencies</a>
<a href="#">List of Indian Satellites</a>	<a href="#">NASA-ISRO Synthetic Aperture Radar (NISAR) Mission</a>

## NASA's Study & Research on Asteroid 16 Psyche

The following conclusions have been drawn by scientists and researchers at the National Aeronautics and Space Administration (NASA) based on their study of 16 Psyche asteroid:

- The asteroid is made up of metallic elements
- An estimated cost of this asteroid is close to 10,000 quadrillion US dollars
- These observations have been made based on the visible and infrared wavelengths, as well as radar through the [Hubble Space Telescope](#)
- Through the images received by the telescope, it has been observed that the asteroid reflects light in a similar manner as iron reflects sunlight
- Based on NASA's research, it has also been concluded that 16 Psyche asteroid may be a part exposed to the core of an early planet

All these observations are based on the images captured by the Hubble Space Telescope which was launched into space on April 24, 1990. UPSC aspirants must also read about the [Thirty Meter Telescope](#) which is expected to be the next largest space telescope in the world.

## NASA's Mission Psyche

The National Aeronautics and Space Administration intends to launch the Mission Psyche by 2022 which will focus entirely on studying about the core elements of 16 Psyche asteroid. Given below are the key points regarding the mission:

- The mission is targeted to launch by August 2022
- Based on the current studies, the Psyche spacecraft shall land on the asteroid by early 2026
- Over 21 months in orbit, the spacecraft will map and study 16 Psyche's properties using a multispectral imager, a gamma-ray and neutron spectrometer, a magnetometer, and a radio instrument
- The main aim of this mission is to analyse if the asteroid is actually a part of a lost planet and holds similar properties and elements

A Mars gravity assist shall arrive at the asteroid by 2023, following which the Psyche spacecraft is expected to land on this metallic asteroid.

Also, read [Cosmos - New Dimensions: RSTV - In Depth](#)

## Significance of Asteroid 16 Psyche

NASA's mission to study and research about the asteroid holds great importance. The three major reasons for the same have been given below:

1. Asteroids are generally made up of rock or ice, 16 Psyche is an exception in this case. If it is made up of metallic elements like iron and nickel, its elements can be tested to study the evolution of planets
2. The Psyche mission will be the first mission to investigate a world of metal rather than of rock and ice

3. Because scientists cannot see or measure Earth's core directly, Psyche offers a unique window into the violent history of collisions and accretion that created terrestrial planets

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