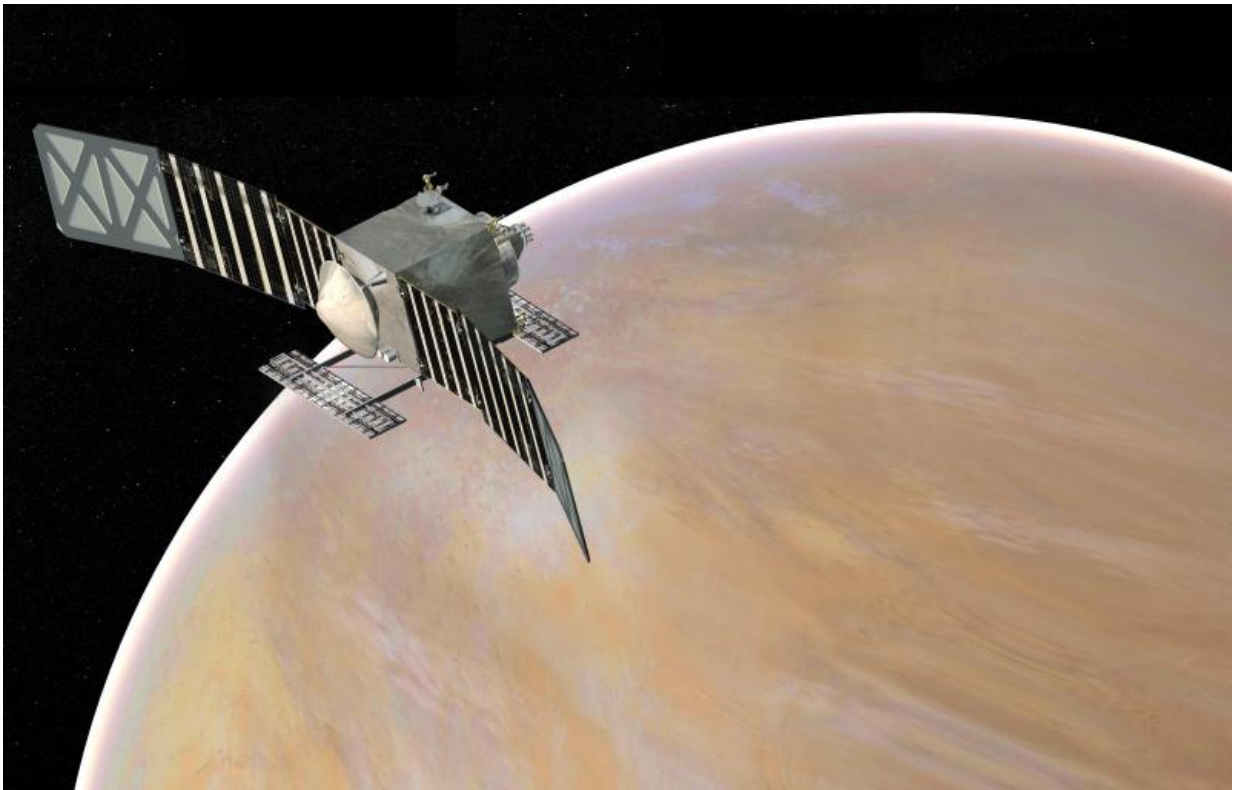


# NASA selects investigations for future key planetary mission

October 1 2015, by Dc Agle

---



Artist's concept of the Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy (Veritas) spacecraft, a proposed mission for NASA's Discovery program. Credit: NASA/JPL-Caltech

NASA has selected five science investigations for refinement during the next year as a first step in choosing one or two missions for flight

opportunities as early as 2020. Three of those chosen have ties to NASA's Jet Propulsion Laboratory in Pasadena, California. The submitted proposals would study Venus, near-Earth objects and a variety of asteroids.

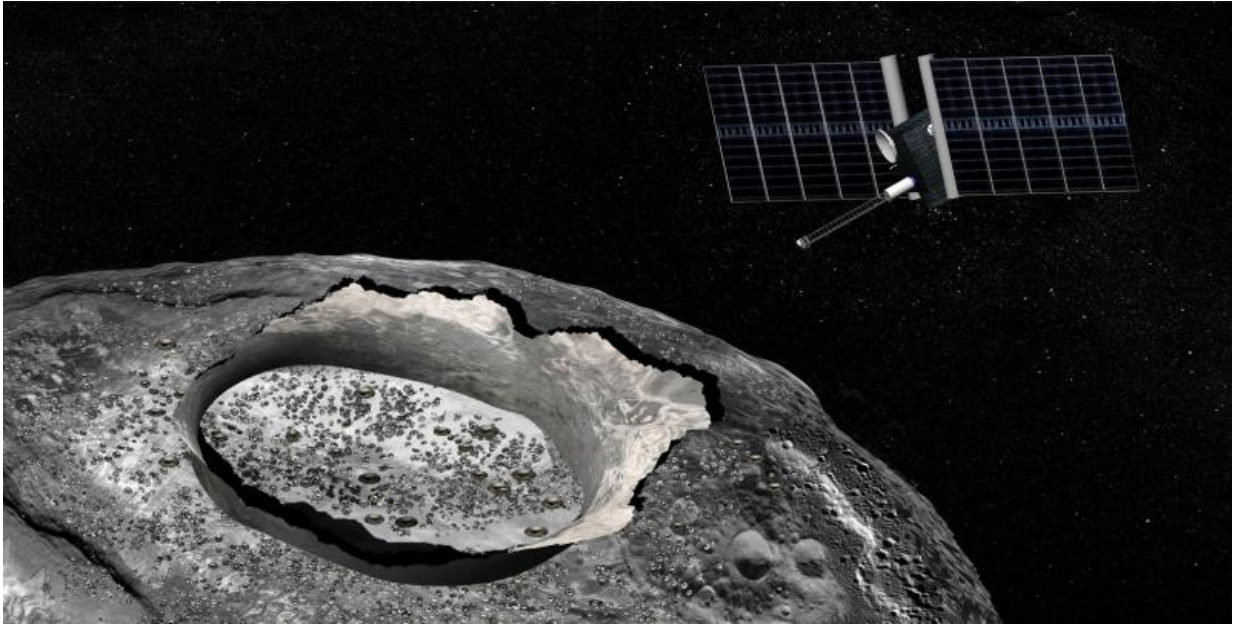
Each investigation team will receive \$3 million to conduct concept design studies and analyses. After a detailed review and evaluation of the concept studies, NASA will make the final selections by September 2016 for continued development leading up to launch. Any selected mission will cost approximately \$500 million, not including launch vehicle funding or the cost of post-launch operations.

"The selected investigations have the potential to reveal much about the formation of our solar system and its dynamic processes," said John Grunsfeld, astronaut and associate administrator for NASA's Science Mission Directorate in Washington. "Dynamic and exciting missions like these hold promise to unravel the mysteries of our solar system and inspire future generations of explorers. It's an incredible time for science, and NASA is leading the way."

NASA's Discovery Program requested proposals for spaceflight investigations in November 2014. A panel of NASA and other scientists and engineers reviewed 27 submissions.

The planetary missions associated with JPL that were selected to pursue concept design studies are:

**The Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy mission (VERITAS)**



Artist's concept of the Psyche spacecraft, a proposed mission for NASA's Discovery program that would conduct a direct exploration of an object thought to be a stripped planetary core. Credit: NASA/JPL-Caltech

VERITAS would produce global, high-resolution topography and imaging of Venus' surface and produce the first maps of deformation and global surface composition. Suzanne Smrekar of NASA's Jet Propulsion Laboratory in Pasadena, California, is the principal investigator. JPL would manage the project.

## Psyche

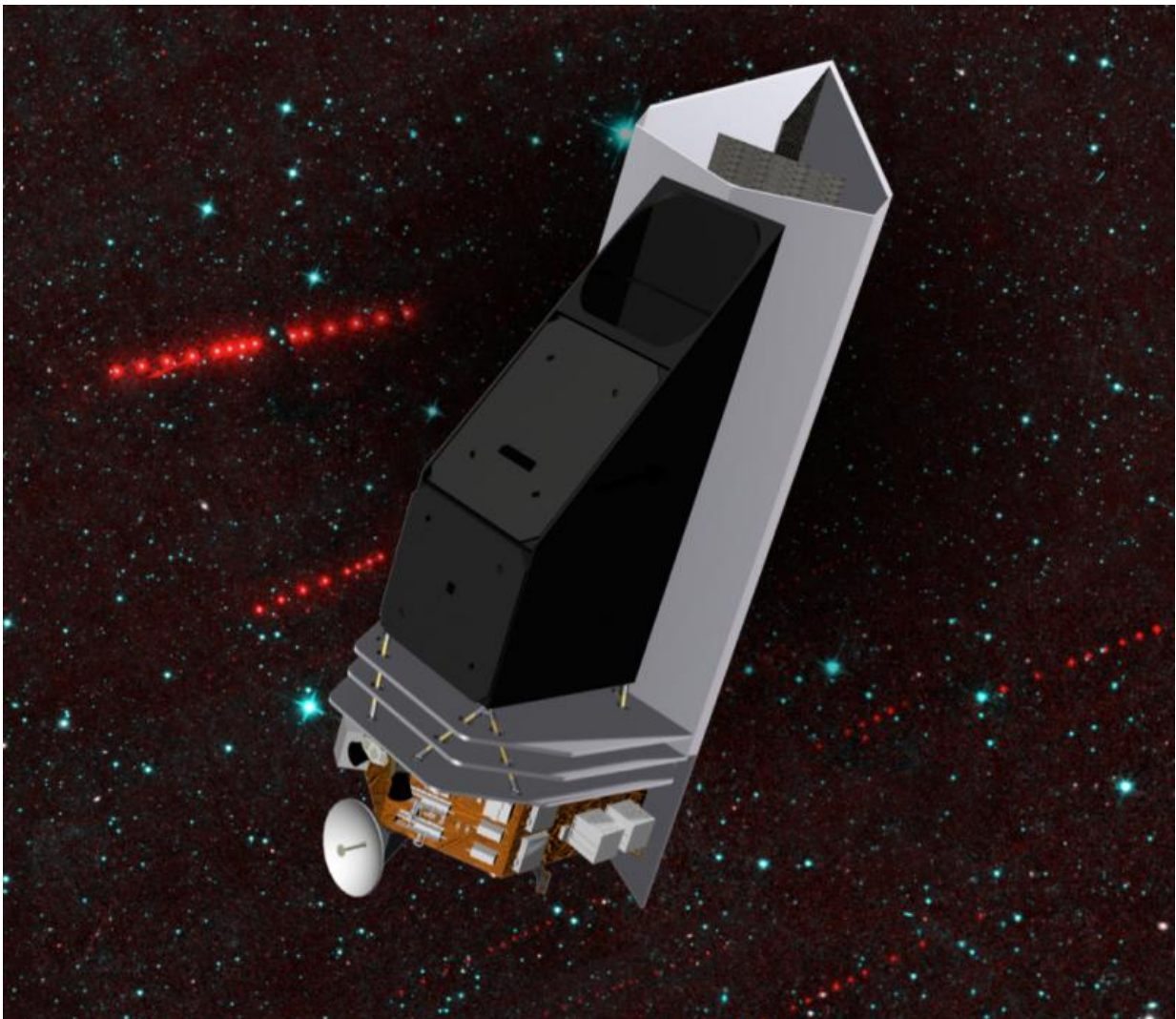
Psyche would explore the origin of planetary cores by studying the metallic asteroid Psyche. This asteroid is likely the survivor of a violent hit-and-run with another object that stripped off the outer, rocky layers of a protoplanet. Linda Elkins-Tanton of Arizona State University in Tempe, Arizona, is the principal investigator. JPL would manage the

project.

## Near Earth Object Camera (NEOCam)

NEOCAM would discover 10 times more near-Earth objects than all NEOs discovered to date. It would also begin to characterize them. Amy Mainzer of JPL is the principal investigator, and JPL would manage the project.

The two other selections are:



Artist's concept of the NEOCam spacecraft, a proposed mission for NASA's Discovery program that would conduct an extensive survey for potentially hazardous near-Earth asteroids. Credit: NASA/JPL-Caltech

## **Deep Atmosphere Venus Investigation of Noble gases, Chemistry, and Imaging (DAVINCI)**

DAVINCI would study the chemical composition of Venus' atmosphere during a 63-minute descent. It would answer scientific questions that have been considered high priorities for many years, such as whether there are volcanoes active today on the surface of Venus and how the surface interacts with the atmosphere of the planet. Lori Glaze of NASA's Goddard Space Flight Center in Greenbelt, Maryland, is the principal investigator. Goddard would manage the project.

## **Lucy**

Lucy would perform the first reconnaissance of the Jupiter Trojan asteroids, objects thought to hold vital clues to deciphering the history of the solar system. Harold Levison of the Southwest Research Institute in Boulder, Colorado is the principal investigator. Goddard would manage the project.

Created in 1992, the Discovery Program sponsors frequent, cost-capped [solar system](#) exploration missions with highly focused scientific goals. The program has funded and developed 12 missions to date, including MESSENGER, Dawn, Stardust, Deep Impact, Genesis and GRAIL, and is currently completing development of InSight.

**More information:** For more information about NASA's Discovery Program, visit [discovery.nasa.gov](https://discovery.nasa.gov)

Provided by Jet Propulsion Laboratory

Citation: NASA selects investigations for future key planetary mission (2015, October 1)  
retrieved 24 April 2024 from  
<https://phys.org/news/2015-10-nasa-future-key-planetary-mission.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.