

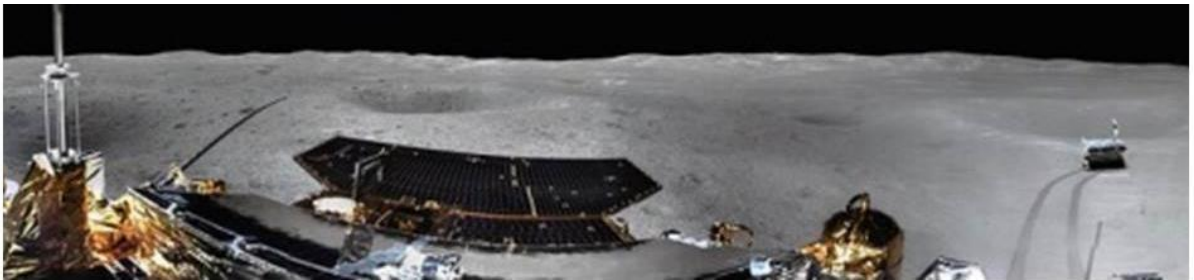
proposed at the ESA Council at Ministerial Level to ESA member states for full funding for launch in 2023-2024.

A mission like AIDA will certainly fire the imagination of young people and adults, as the science is accessible and understandable to those audiences and is associated with fascinating challenges and goals of planetary defence.

News in Brief

IAU Names Landing Site of Chinese Probe *Chang'e 4* Probe on Far Side of the Moon

(IAU release, 15 February 2019)



Panorama of the Landing Site of Chinese *Chang'e-4* Probe on Far Side of the Moon

Five sites on the far side of the Moon now have official names, including *Chang'e-4*'s landing site. The names have significance in Chinese culture, reflecting the background of the probe's team.

The IAU Working Group for Planetary System Nomenclature has approved the name Statio Tianhe for the landing site where the Chinese spacecraft *Chang'e-4* touched down on 3 January this year, in the first-ever landing on the far side of the Moon. The name Tianhe originates from the ancient Chinese name for the Milky Way, which was the sky river that separated Niulang and Zhinyu in the folk tale "The Cowherd and the Weaver Girl".

Four other names for features near the landing site have also been approved. In keeping with the theme of the above-mentioned folk tale, three small craters that form a triangle around the landing site have been named Zhinyu, Hegu,

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and Tianjin, which correspond to characters in the tale. They are also names of ancient Chinese constellations from the time of the Han dynasty. The fifth approved name is Mons Tai, assigned to the central peak of the crater Von Kármán, in which the landing occurred. Mons Tai is named for Mount Tai, a mountain in Shandong, China, and is about 46 km to the northwest of the *Chang'e-4* landing site.

NASA Selects New Mission to Explore Origins of the Universe

(NASA release, 13 February 2019)

NASA has selected a new space mission that will help astronomers understand both how our universe evolved and how common are the ingredients for life in our galaxy's planetary systems.

The *Spectro-Photometer for the History of the Universe, Epoch of Reionization and Ices Explorer (SPHEREx)* mission is a planned two-year mission funded at \$242 million (excluding launch costs) and targeted to launch in 2023.

SPHEREx will survey the sky in optical as well as near-infrared light which, though not visible to the human eye, serves as a powerful tool for answering cosmic questions. Astronomers will use the mission to gather data on more than 300 million galaxies, as well as more than 100 million stars in our own Milky Way.

"This amazing mission will be a treasure trove of unique data for astronomers," said Thomas Zurbuchen, associate administrator for NASA's Science Mission Directorate. "It will deliver an unprecedented galactic map containing 'fingerprints' from the first moments in the universe's history. And we'll have new clues to one of the greatest mysteries in science: What made the universe expand so quickly less than a nanosecond after the big bang?"

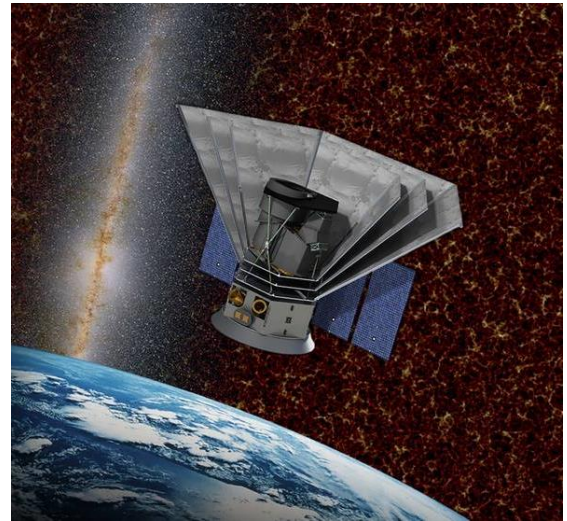
SPHEREx will survey hundreds of millions of galaxies near and far, some so distant their light has taken 10 billion years to reach Earth. In the Milky Way, the mission will search for water and organic molecules—essentials for life, as we know it—in stellar nurseries, regions where stars are born from gas and dust, as well as disks around stars where new planets could be forming.

Every six months, *SPHEREx* will survey the entire sky using technologies adapted from Earth satellites and Mars spacecraft. The mission will create a map of the entire sky in 96 different color bands, far exceeding the color resolution of previous all-sky maps. It also will identify targets for more detailed study by future missions, such as NASA's *James Webb Space Telescope* and *Wide Field Infrared Survey Telescope*.

NASA's Astrophysics Explorers Programme requested proposals for new missions in September 2016. Nine proposals were submitted, and two mission concepts were selected for further study in August 2017. After a detailed review by a panel of NASA and external scientists and

engineers, NASA determined that the *SPHEREx* concept study offered the best science potential and most feasible development plan.

The mission's principal investigator is James Bock of the California Institute of Technology (Caltech) in Pasadena, California. Caltech will work with NASA's Jet Propulsion Laboratory (JPL) to develop the mission payload. JPL will also manage the mission.



NASA's *Spectro-Photometer for the History of the Universe, Epoch of Reionization and Ices Explorer (SPHEREx)* mission is targeted to launch in 2023 and will help astronomers understand how our universe evolved and how common are the ingredients for life in our galaxy's planetary systems (Image credit: Caltech, USA)

Ball Aerospace in Broomfield, CO, will provide the *SPHEREx* spacecraft and mission integration. The Korea Astronomy & Space Science Institute in Daejeon, Republic of Korea, will contribute test equipment and science analysis.

NASA's Explorer programme, managed by the agency's Goddard Space Flight Center in Greenbelt, Maryland, is the agency's oldest continuous programme, designed to provide frequent, low-cost access to space using principal investigator-led space science investigations relevant to the Astrophysics and Heliophysics programmes in NASA's Science Mission Directorate.