

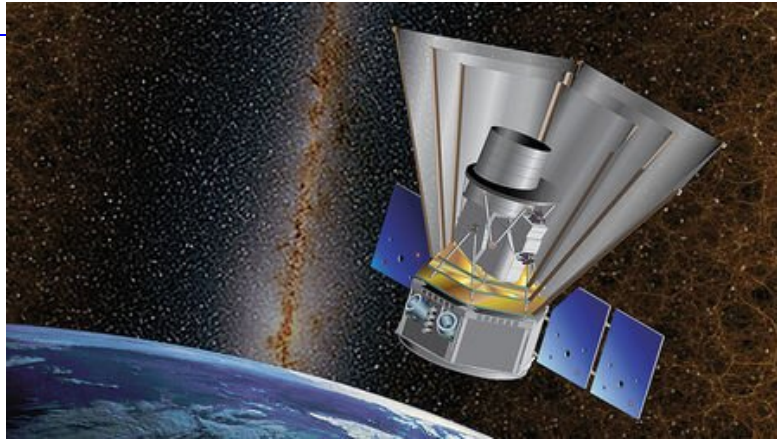


## Telescope to Explore Origins of Universe: SPHEREx

NASA will launch a new space telescope mission **Spectro-Photometer for the History of the Universe, Epoch of Reionization and Ices Explorer (SPHEREx)** in 2023.

- The launch could help astronomers **understand how the Universe evolved in the first place** and how common the **ingredients for life** are within it.

### Missions' Objective [//](#)



- SPHEREx will **survey the sky in optical as well as near-infrared light**.
- Astronomers will use the mission to **gather data on more than 300 million galaxies**, as well as more than **100 million stars in Milky Way**.
- The mission will create a **map of the entire sky in 96 different colour bands**.

### Significance

- SPHEREx's main goal is **to search for the fundamentals of life — water and organic matter** within the Milky Way.
- Beyond Milky Way, it will also be **looking at the wider regions of the universe, where stars are born**.
  - This will give scientists targets for more detailed study in future missions, like **NASA's James Webb Space Telescope** and **Wide-Field Infrared Survey Telescope**.
- It will deliver an unprecedented **galactic map containing 'fingerprints' from the first moments in the universe's history**.
- It will provide **new clues** to one of the greatest mysteries in science that **what made the universe expand so quickly less than a nanosecond after the Big Bang**.

### James Webb Space Telescope

- The James Webb Space Telescope (also called JWST or Webb) will be a **large infrared telescope** with a 6.5-meter primary mirror. The telescope will be launched on an Ariane 5 rocket from French Guiana in **2021**.
- It will **study every phase in the history of our Universe**, ranging from the first luminous glows after the **Big Bang**, to the **formation of solar systems** capable of supporting life on planets like

Earth, to the evolution of our own Solar System.

- Webb is an **international collaboration** between **NASA**, the **European Space Agency** (ESA), and the **Canadian Space Agency** (CSA).

### **Wide Field Infrared Survey Telescope (WFIRST)**

- WFIRST is a NASA mission designed to **study dark energy, perform galactic and extragalactic surveys**, and **explore exoplanets**.

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