



SPHEREx Mission

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[NASA](#) is set to launch [SPHEREx \(Spectro-Photometer for the History of the Universe, Epoch of Reionization, and Ices Explorer\)](#) space telescope to study the early universe, explore the universe's origins and trace the formation of life.

SPHEREx Mission

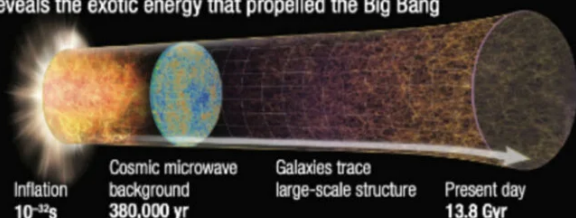
- SPHEREx will map **450 million galaxies** over 2 years, creating a **3D sky map in 102 color bands (wavelengths of light)** using **spectroscopy**.
 - **Spectroscopy** is the study of the **absorption and emission of light and other radiation** by matter.
- It will study **cosmic inflation**, the rapid expansion of the universe after the **Big Bang (13.8 billion years ago)**, and analyze **molecular clouds** to detect **water, carbon dioxide, and carbon monoxide**.
- It will measure the **collective glow of light** from intergalactic space to identify unknown cosmic phenomena.
- The [Big Bang Theory](#) explains the universe's origin as a singular, hot, and dense point that expanded around **13.8 billion years ago**, leading to its continuous expansion.

// SPHEREx Addresses NASA's Three Core Astrophysics Goals

Probe the origin and destiny of the Universe.

SPHEREx maps the large-scale three dimensional distribution of galaxies to study the inflationary birth of the Universe.

Reveals the exotic energy that propelled the Big Bang



Explore whether planets around other stars could harbor life.

SPHEREx surveys water and key ingredients for life in interstellar ices through the early stages of star and planet formation.

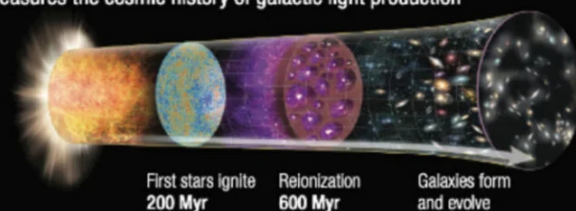
Traces organic ices in the evolution of planetary systems



Explore the origin and evolution of galaxies.

SPHEREx traces the total light emitted over cosmic time from the first stars to modern galaxies.

Measures the cosmic history of galactic light production



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PDF Reference URL: <https://www.drishtias.com/printpdf/spherex-mission>

