

The Next-Generation Infrared Astronomy Mission

SPICA

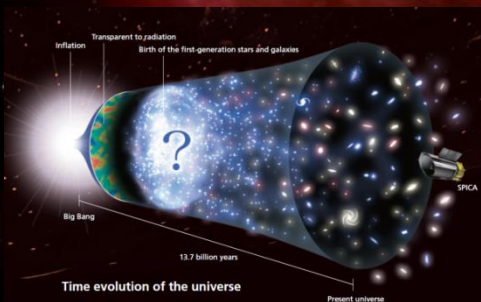
Space Infrared Telescope for Cosmology and Astrophysics

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A Space Observatory, 1.5 million kilometers away



The recipe for planetary systems



Revealing the origins of planets and galaxies

SPICA Specifications

- Mission Goals Revealing the origins of planets and galaxies with observation of high sensitivity and resolution in mid- to far-infrared regions
- Telescope dia. 3-m class (3.5m in the current design)
- Telescope temp. <6K (−268°C)
- Total mass ~4t
- Orbit Halo orbit around libration point S-E L₂
- Launch year 2018 (target)

SPICA Telescope

SPICA is a next-generation infrared astronomy mission. With its cooled (<6K) large (3-m class) telescope, SPICA will be able to achieve superior sensitivity and high spatial resolution.

SPICA, a Cool Mission !

Warm telescopes (≥ 20 K) on other missions emit infrared radiation much stronger than astronomical diffuse radiation. This self-emitted infrared radiation hinders high-sensitivity infrared observations .

With a cryogenically-cooled (< 6K), large (3-m class) telescope on SPICA, self-emitted infrared radiation is reduced by a factor of a million, and SPICA is expected to achieve superior sensitivity (2 orders of magnitude of improvement). SPICA employs a completely new cooling system, which

Europe-Japan Collaborative Mission

SPICA is planned based on the scientific heritage of previous infrared missions. It is a JAXA-led mission with essential contributions from ESA and a European consortium. Other international collaborations are also under discussion.

Recent Progress

- Since SPICA pre-project team was officially established in July, 2008, technical reviews and development for the mission have been underway.

- European participation in SPICA under the framework of ESA Cosmic Vision was proposed in June 2007, and SPICA was selected as a future candidate mission in October, 2007. Following this, European team has been conducting full assessment study.

- The communit-based SPICA Task Force was organized in 2008 in the aim of incorporating opinions of the Japanese communities into the project. Since then STF has been a forum for active discussions on the project, mainly on science matter.

