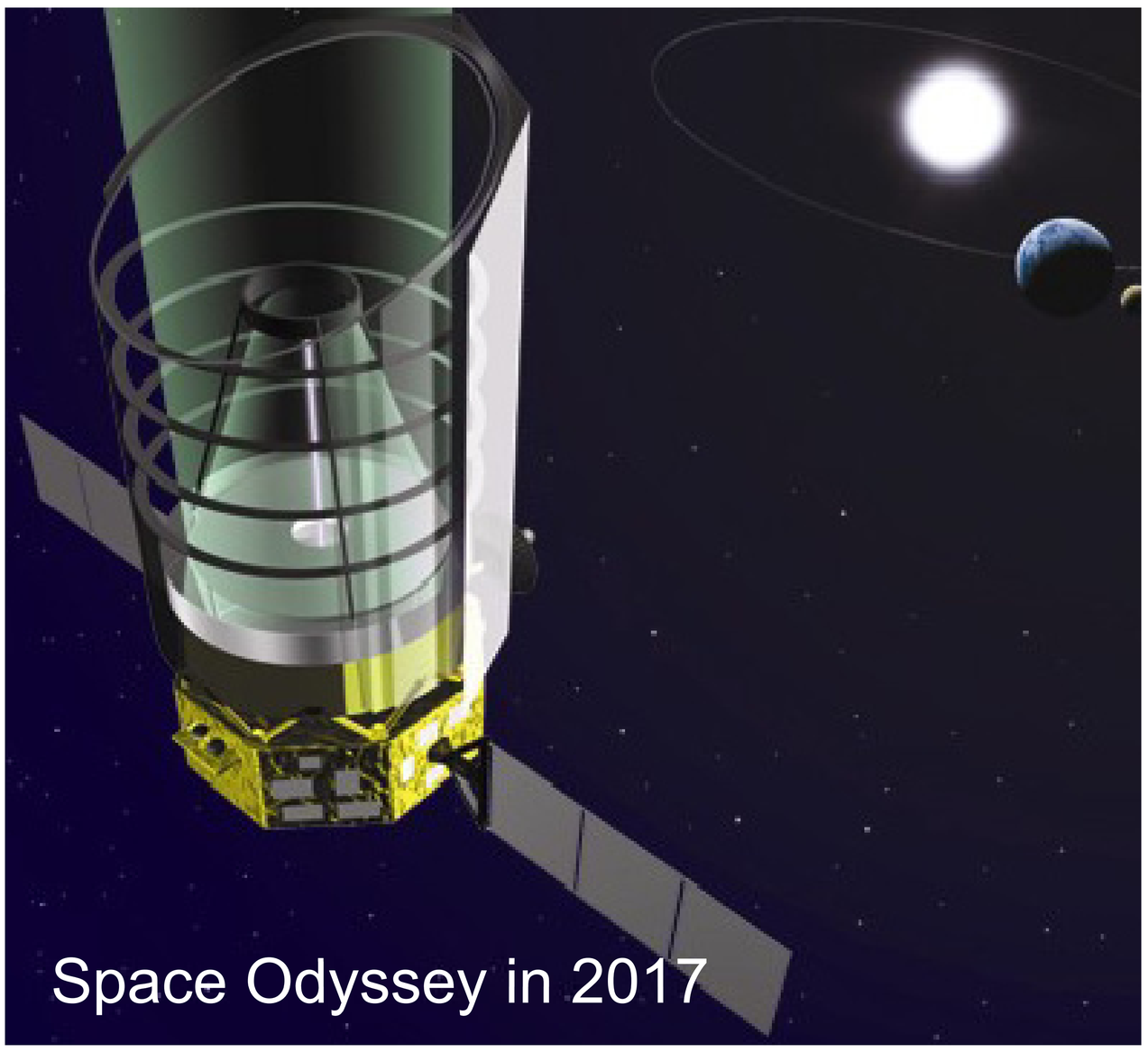
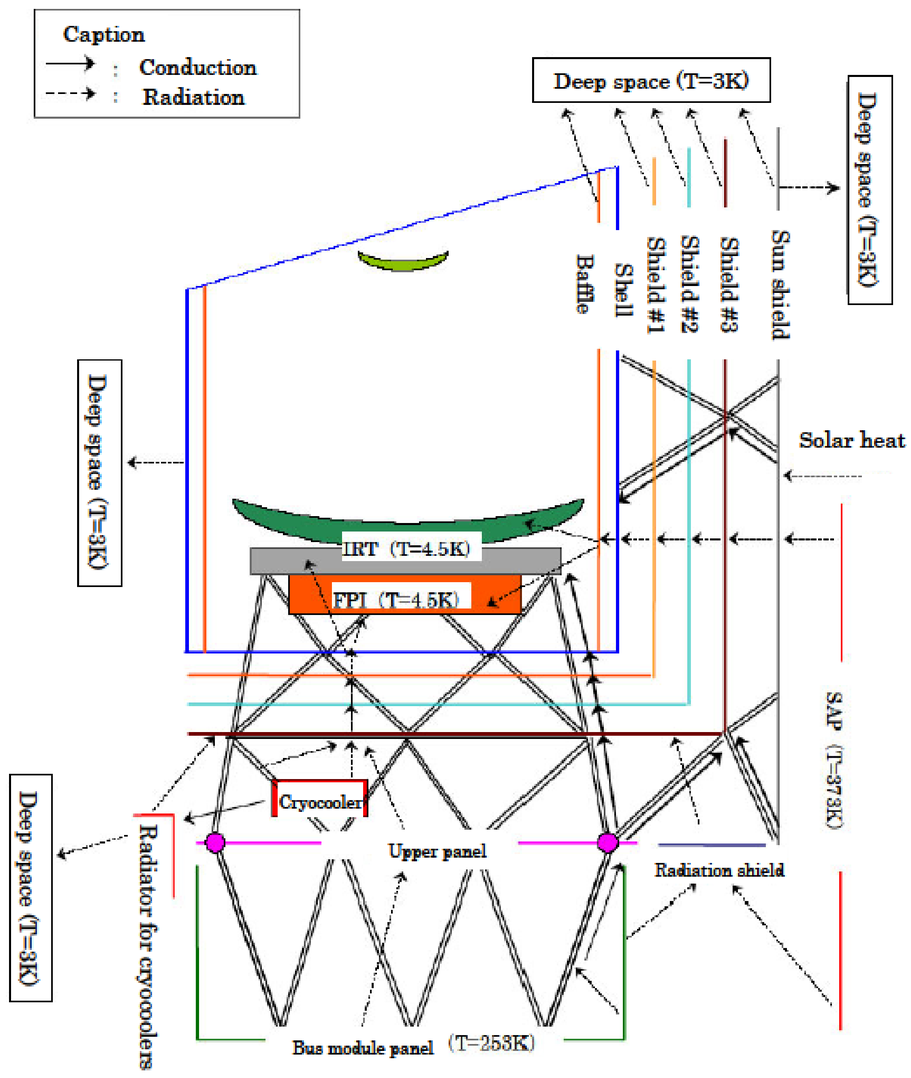
SPICA: *The World's First Large, Cryogenic Far-IR Space Telescope*

http://www.ir.isas.jaxa.jp/SPICA/





Warm launch, cooling in orbit by cryocoolers

SPICA Key Facts

Lead Agency: **ISAS / JAXA,** WG centered at ISAS, NAOJ, Japanese Universities PI: T. Nakagawa)
Aperture: 3.5 m, telescope potentially provided by ESA, likely based on Akari / Herschel SiC technology.
Temperature: 4.5 K, via careful design with radiative cooling and closed-cycle coolers (no liquid cryogens)
-> JAXA / Sumitomo cryocoolers world-leading.
Orbit: Earth-Sun L2 halo, a thermally-favorable location
Lifetime: 5 years, not limited by cryogens
Programmatic Style: Great Observatory with key projects, legacy science teams, international participation.
Timescale: Phase A ~ 2008--2010, Instrument selection ~ 2010--2011, **Launch ~ 2017 (this decade!!)**

SPICA Proposed Instrument Suite

Mid-IR Imager / Spectrometer (Japan / Korea)
- Imaging and R~200 grism spectroscopy w/ 180-280 arc second field of view.
- Long-slit R=3000 spectroscopy at 4-38 μm
- R=30,000 spectroscopy at 5-18 μm.

Mid-IR Coronagraph (Japan / Korea)
- 5-27 μm core range with contrast > 10^6.
- Inner working angle 2-5 λ/D, outer working angle 10-30 λ/D.

SAFARI (European Consortium)
- baselined as 30-210 μm imaging Fourier-transform spectrometer (IFTS), 2 x 2 arcmin FOV.
- R variable from 10 to a few 1000.
- Detectors TBD; Ge photoconductors or bolometers.

Potential US Instrument (see page 2)