# SPICA/SAFARI Fact Sheet

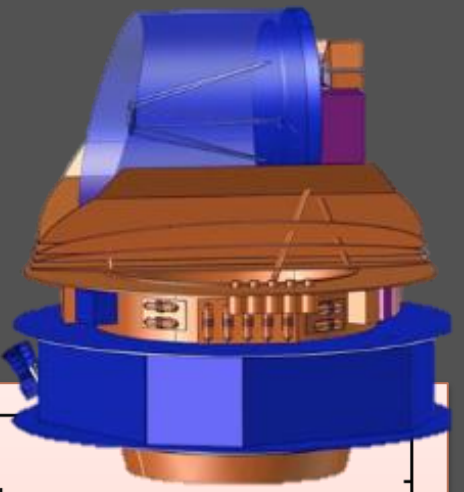
## SAFARI Overview

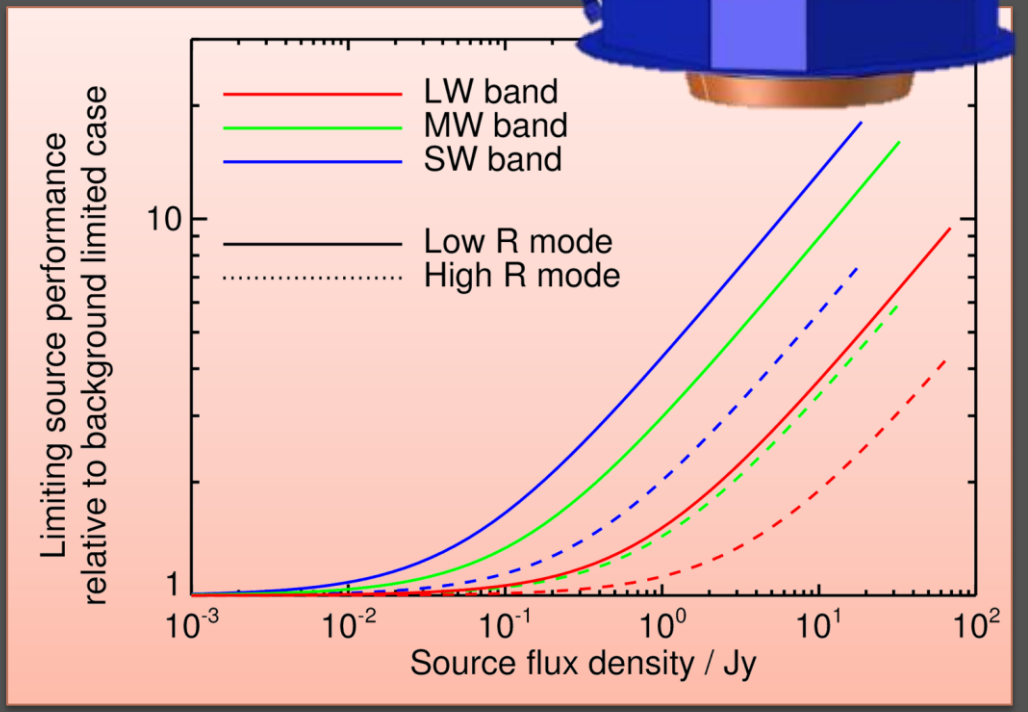
- Three band ***grating spectrometer***
- Continuous spectroscopic capability from 34-210 μm

| Parameter | | Waveband SW | MW | LW |
|---|---|---|---|---|
| **Band centre** / μm | | 47 | 85 | 160 |
| **Wavelength range** / μm | | 34-60 | 60-110 | 110-210 |
| **Band centre beam FWHM** | | 4.7″ | 8.6″ | 16″ |
| **Point source spectroscopy (5σ-1hr)** | | | | |
| R~300* | **Limiting flux** / x10$^{-20}$ Wm$^{-2}$ | 5.3 | 4.5 | 6.5 |
| | **Limiting flux density** / mJy | 0.25 | 0.36 | 0.92 |
| R~3000* | **Limiting flux** / x10$^{-20}$ Wm$^{-2}$ | 25 | 24 | 29 |
| | **Limiting flux density** / mJy | 12 | 20 | 41 |
| **Mapping spectroscopy** (5σ-1hr)** | | | | |
| R~300* | **Limiting flux** / x10$^{-20}$ Wm$^{-2}$ | 59 | 28 | 22 |
| | **Limiting flux density** / mJy | 2.8 | 2.3 | 3.0 |
| R~3000* | **Limiting flux** / x10$^{-20}$ Wm$^{-2}$ | 340 | 190 | 120 |
| | **Limiting flux density** / mJy | 170 | 150 | 170 |
| **Photometric mapping** (5σ-1hr)** | | | | |
| **Limiting flux density** / mJy | | 0.15 | 0.12 | 0.16 |

## SPICA Mission

- ESA/JAXA collaboration
- Telescope effective area 5 m$^2$
- Primary mirror temperature 8K
- Goal mission lifetime – 5 years






- Change in system performance, as a function of target flux density, relative to the background limited case.
- The decrease in sensitivity is a result of the increased photon noise from the target source
- Data given up to the instrument saturation limits for each band (22, 37 and 73 Jy for the SW, MW and LW bands respectively.

* Resolving powers are all calculated at band centre
** Mapping performance is for a reference area of 1 arcmin$^2$