

UK SPICA Science Meeting, RAS, 22 Jan. 2016

***SPICA***

***the next generation***

***Infrared Space Telescope***

**Potential UK Contributions  
to SAFARI**

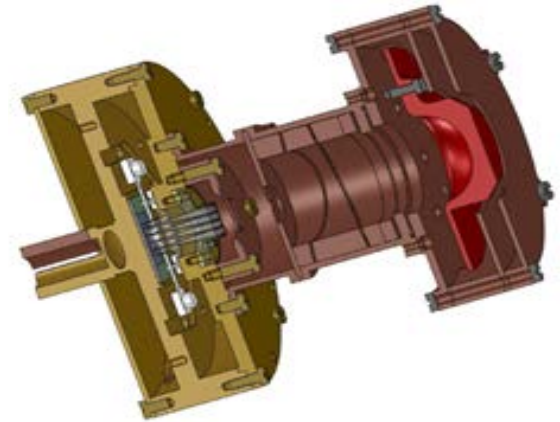
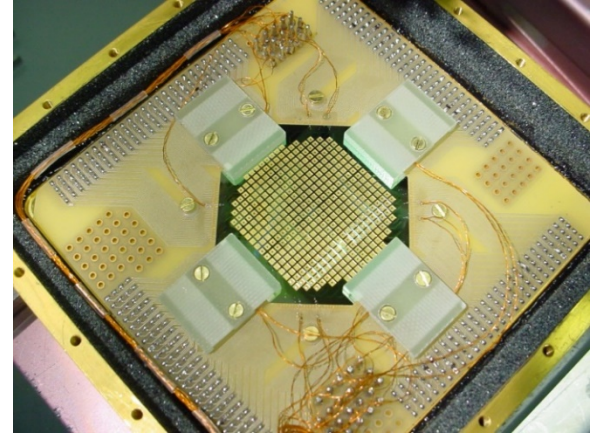
**Matt Griffin, Cardiff University**

# Potential UK Technical Participation

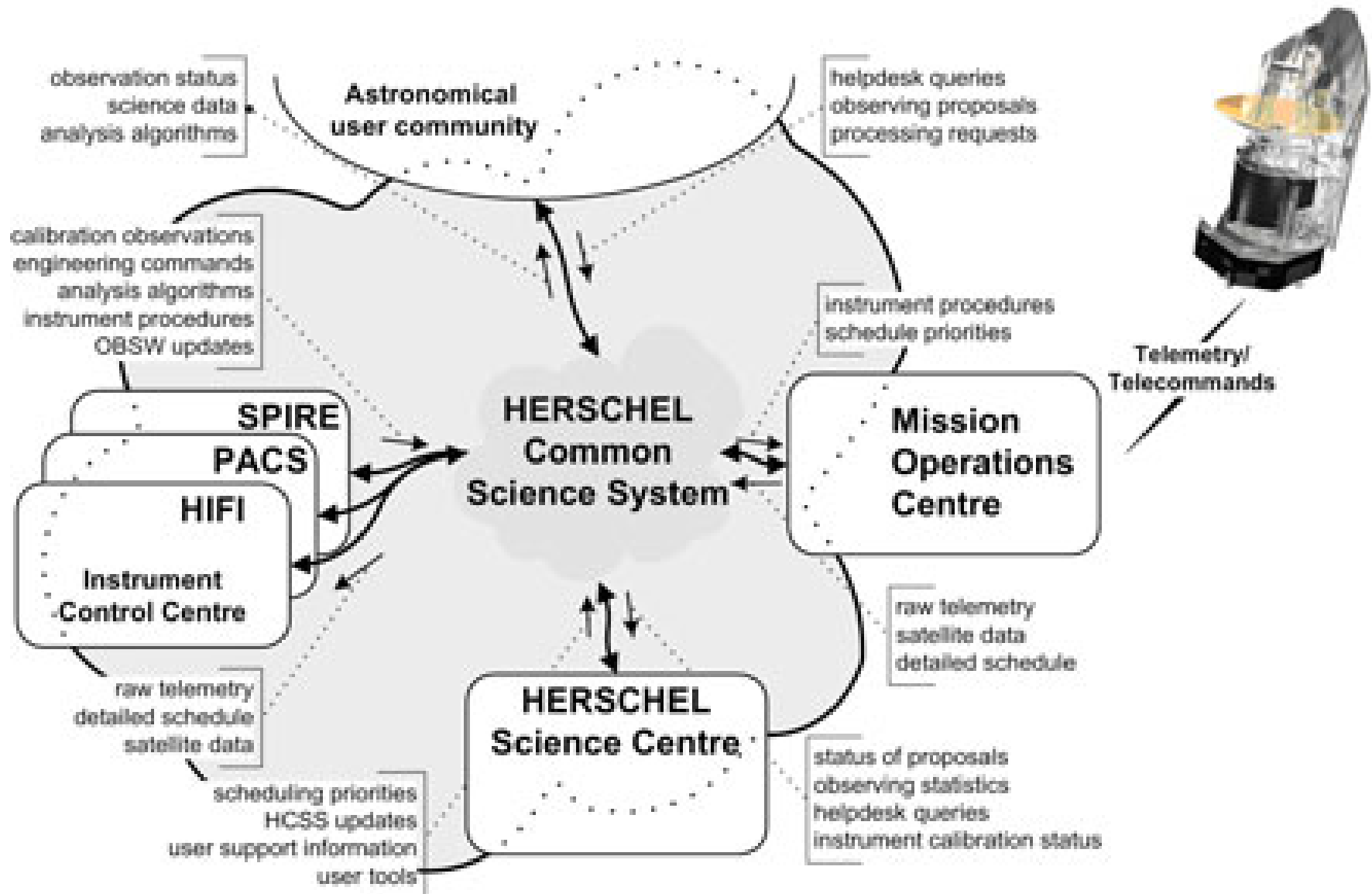
- Based on *Herschel* experience and strong detector development programmes, UK can make key Col-level contribution to SAFARI
- Following handover of PI-ship in 2009, technical participation was prioritised:
  1. Contribution to detectors
  2. Ground Segment
  3. Filters and quasi-optical components
- Change from FTS to grating spectrometer
  - No impact on priorities
  - Poses different challenges for the detectors

# Detectors

- See talk by Stafford later
- Affordability of detectors for SAFARI will require contributions from several countries
  - UK
  - USA
  - Netherlands
- Exact division of responsibilities TBC
- UK role will be major and highest priority because
  - Return on many years of STFC investment in superconducting detector development
  - High-profile contribution, unique and key to mission success
  - Conducive to strong voice and influence in the international consortium



# Ground Segment: *Herschel* Example

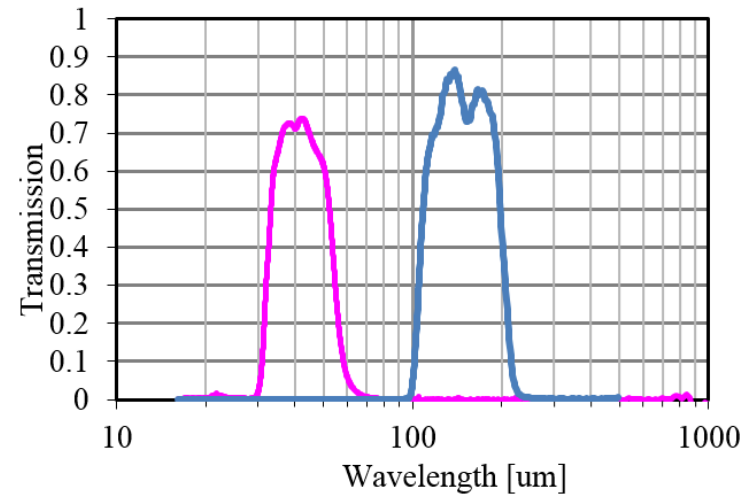
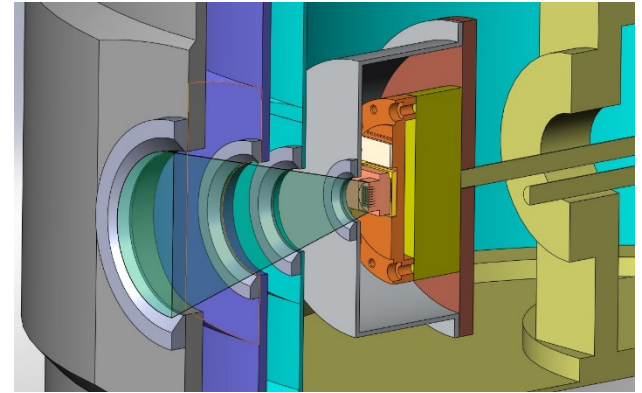


# Ground Segment

- ***Herschel* (and *Planck*) experience**
  - **Early, coordinated, sustained investment in ground segment pays dividends**
    - **High data quality → scientific productivity**
    - **Thorough national-level understanding of system and instrument behaviour promotes strong community engagement in science planning and implementation**
  - **Potential UK contributions**
    - **Detector data pipelines and calibration**
    - **Support of ground and in-orbit testing**
    - **Definition, simulation, optimisation of observing modes**
    - **High level of UK expertise in these areas from *Herschel***
- **Substantial investment in SAFARI detectors could not be fully justified without GS contribution**

# Filters and Quasi-Optical Components

- **Essential for SAFARI**
  - **Band selection**
  - **Thermal optimisation**
- **UK is effectively sole supplier through Cardiff group technology**
- **Third priority for UK funding at this stage as discussion underway with Sweden about collaborative provision**





# Guaranteed Time

- **SPICA guaranteed time arrangements still to be defined/agreed**
- **Not likely to be as high a proportion of mission time as for *Herschel***
- **Proposed UK approach to GT**
  - **Regardless of the absolute amount or the SAFARI Consortium rules for GT, the UK proportion will be opened up to all UK institutions**
  - **A UK SPICA Science Team will be formed to define and manage that process**
  - **No special rights for institutions making technical contributions to SAFARI**