

# Herschel Mission Overview and Key Programmes

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**Abstract** — This short paper provides an overview of the Herschel mission and the accepted Key Programmes, and importantly, provides references and links to more complete descriptions and to information on the internet which is constantly being updated as appropriate.

## I. HERSCHEL OVERVIEW

The Herschel Space Observatory is the next observatory mission [1] in the European Space Agency (ESA) science programme. It will perform imaging photometry and spectroscopy in the far infrared and submillimetre part of the spectrum, covering approximately the 55-672 micron range. Herschel will carry a 3.5 metre diameter passively cooled telescope. The science payload complement - two cameras/medium resolution spectrometers (PACS [2] and SPIRE [3]) and a very high resolution heterodyne spectrometer (HIFI [4]) - will be housed in a superfluid helium cryostat. The HIFI instrument is using superconducting SIS and HEB mixers, and both AOS and auto-correlator spectrometers. The ground segment will be jointly developed by the ESA, the three instrument teams, and NASA/IPAC.

## II. SCIENCE OPERATIONS

Once operational in orbit around L2 after a launch in early 2009 and followed by an early operations period of 6 months, Herschel will offer a minimum of 3 years of routine science observations. The key science objectives emphasize current questions connected to the formation and evolution of galaxies, stars and stellar systems, including our own planetary system. Nominally ~20,000 hours will be available for astronomy, 32% is guaranteed time and the remainder is open to the general astronomical community through a standard competitive proposal procedure. The Key Programme (KP) AO process was concluded in early 2008. In total 42 programmes have been awarded observing time.

## III. MORE INFORMATION

The Herschel Science Centre (HSC) maintains a website [5] aimed at the Herschel user community. Refs [1]-[4], descriptions of the KP programmes, observers' manuals, tools, latest news, helpdesk, and links to additional Herschel-related websites are provided. Welcome!

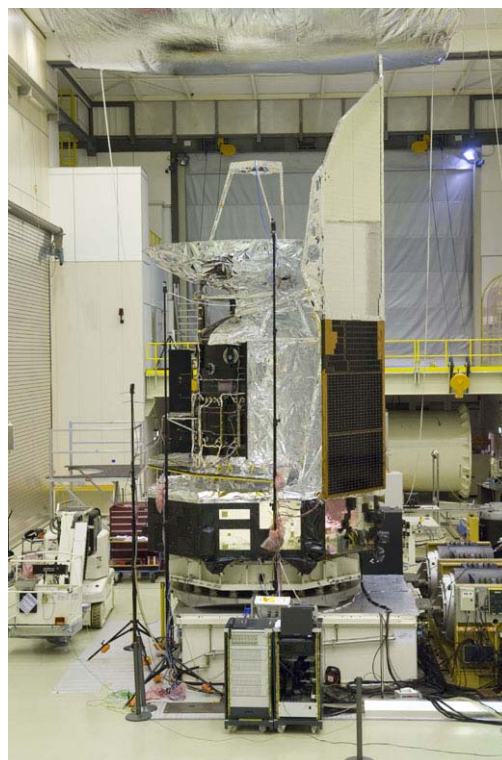


Fig. 1 Herschel on the shaker in the ESTEC Test Centre on 26 June 2008.

## ACKNOWLEDGMENT

Herschel would not exist without the combined effort of a large number of people in ESA, industry, and academia.

## REFERENCES

- [1] G.L. Pilbratt, *Herschel Mission Overview and Key Programmes*, Proc. SPIE 7010, 2008, in press.
- [2] A. Poglitsch et al., *The Photodetector Array Camera and Spectrometer (PACS) for the Herschel Space Observatory*, Proc. SPIE 7010, 2008, in press.
- [3] M.J. Griffin et al., *Herschel-SPIRE: Design, Ground Tests, and Predicted Performance*, Proc. SPIE 7010, 2008, in press.
- [4] M.W.M. de Graauw et al., *The Herschel-Heterodyne Instrument for the Far-Infrared (HIFI): Instrument and Pre-launch Testing*, Proc. SPIE 7010, 2008, in press.
- [5] Herschel Science Centre (HSC) website: <http://herschel.esac.esa.int/>