

Herschel/Planck Mission - Overview

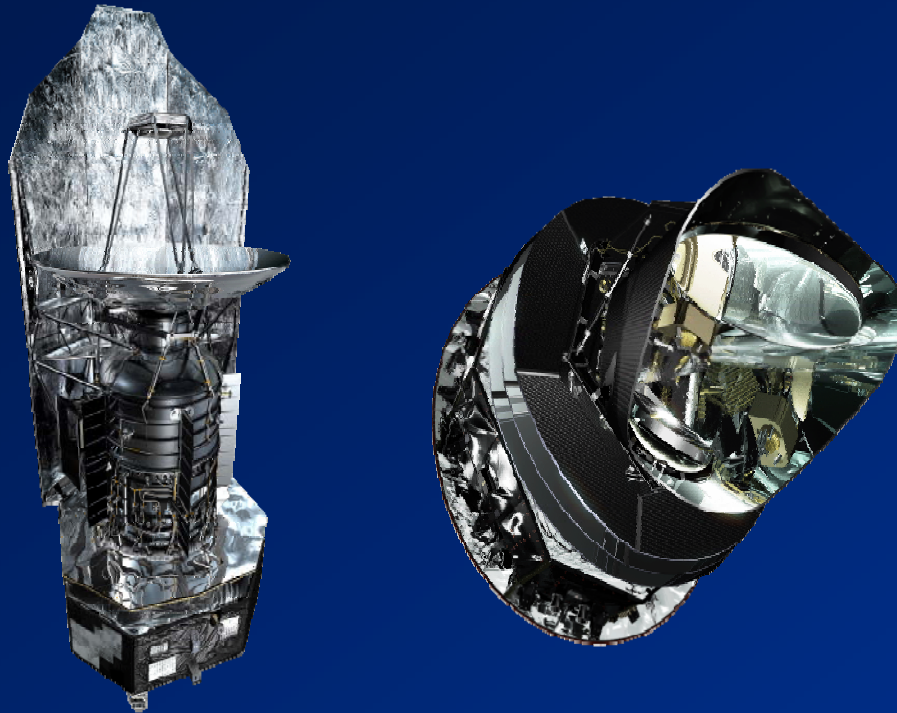


Thomas Passvogel

ESA

Herschel/Planck Programme Manager

Herschel and Planck - Two missions, One programme



- **Two Missions**

Herschel, Space Observatory discovering the universe in unexplored wavelength regime

Planck, Survey Mission to measure the Cosmic Microwave Background Radiation

- **Two Spacecraft**

Herschel, a three axis stabilised, pointing satellite

Planck, a low spin sky scanning satellite

- **Two Cryogenic Payloads**

Herschel, a He II cryostat with temperatures down to 1.7 K, instrument coolers down to 0.3 K

Planck, passive cooling to 60 K and instrument coolers down to 0.1 K

- **One Orbit**

First ESA mission to orbit 2nd Lagrangian point

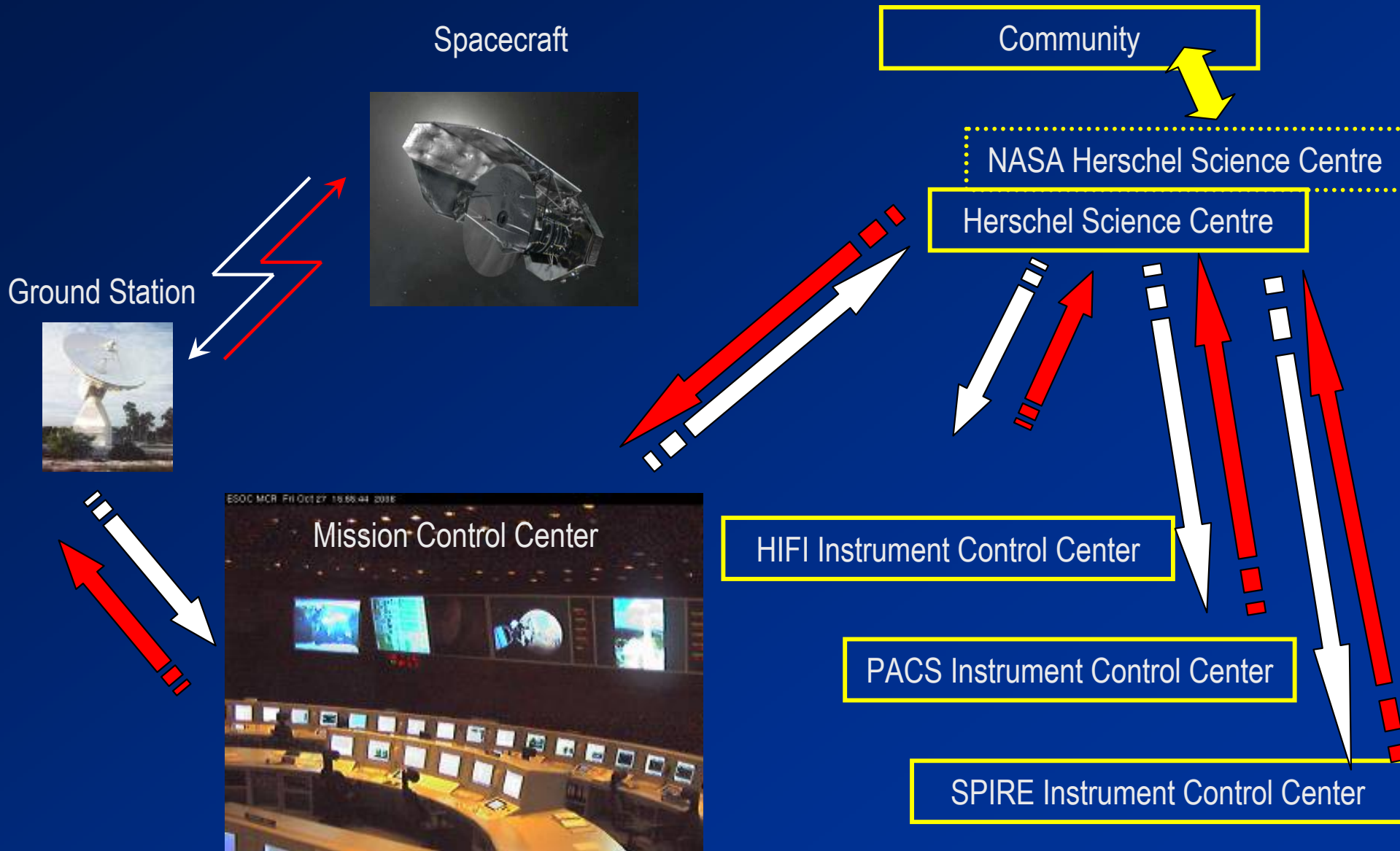
- **One Launcher**

ARIANE V with single launch for both Spacecraft

- **One Programme**

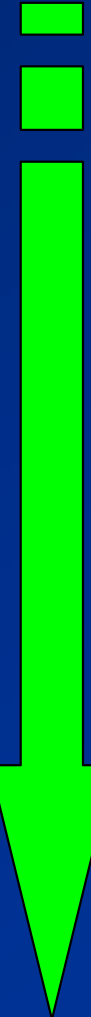
One ESA project team, One industrial architect, One development concept

The Herschel Mission - Main elements



Herschel and Planck - From Conception to Flight

- Cornerstone in ESA longterm Programme Horizon 2000 - 1984
- Technical Feasibility of mission (several studies) - 1986...
- Selection as fourth Cornerstone (Rosetta CS3) - 1993
- Selection of payloads - 1999
- Start Spacecraft Design - 2001
- Start Qualification - 2004
- Completion of Flight Satellite Assembly - 2007
- Completion of Flight Verification - 2008
- Launch from Kourou - 31.07.2008



The Herschel Mission - a multi national effort

ESA/ESTEC

- Overall Responsible for Mission

Industry

- Development of spacecraft - lead by Thales Alenia Space (F, Cannes)

ESA/ESOC

- Mission Operations

Principal Investigators

- Instrument development and science ground segment development
 - **HIFI** - Principal Investigator T. de Graauw (NL, Groningen)
 - **PACS** - Principal Investigator A. Poglitsch (D, Garching)
 - **SPIRE** - Principal Investigator M. Griffin (UK, Cardiff)

The Herschel Mission - Engineering highlights

Herschel Telescope

- Infrared and submillimetre telescope at cryogenic temperature
 - biggest telescope for space (3.5 m)
 - unique and novel material - Silicon Carbide
 - highly dimensionally stable - ambient to cryogenic

Cryogenics Design and Validation

- Sophisticated Cooling system to extreme temperatures
 - Bolometers down to 0.3 K
- Cooling with at sequential stages
 - use full cooling power



The Herschel Mission

