

HIPE, HIPE, HOORAY!

Stephan Ott (Herschel Science Centre, ESTEC) on behalf of the Herschel Science Ground Segment Consortium
<http://herschel.esac.esa.int/DpHiPeContributors.shtml>

Herschel Data Processing overview

- The Herschel Data Processing system combines data retrieval, pipeline execution, product quality assessment and interactive scientific analysis in one single environment
- All tools for data reduction and analysis, e.g. also the expert applications for instrument calibration are part of the Herschel Interactive Processing Environment HIPE. Therefore the community has access to the same system as the instrument specialists
- The Herschel Data Processing software is coded in Java/Jython to be license free and portable for different operating systems. Currently Linux, MacOS X ("Leopard and Snow Leopard") and Windows ("XP, Vista and Windows 7") are supported
- The Herschel Data Processing software is available under the GNU lesser general public license for reuse
- The Herschel Science Centre (ESA), the Instrument Control Centres (HIFI, PACS and SPIRE) and the NASA Herschel Science Center jointly manage and contribute to the Herschel Data Processing System

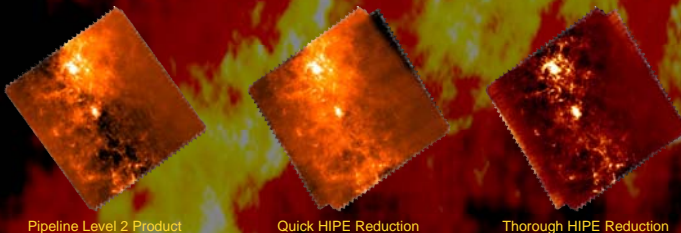
Current status of Herschel Data Processing

- HIPE 4.2 was released to the scientific community September 2010. HIPE 4.5 is the current operational version
- HIPE 5 is undergoing its final validation stage, with mid November 2010 as release target
- HIPE 6 is the current development version with February 2011 as release target
- Currently a cycle of four releases per year is planned to accommodate the fast evolution of the instrumental knowledge and data processing algorithms in the early phase of the mission

Examples of the capabilities of the Herschel Data Processing System

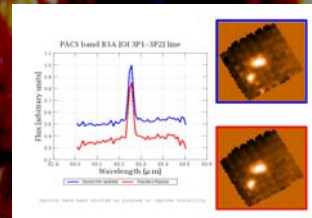
SPIRE Parallel Mode

Observations of the Milky Way at 30° galactic latitude. Public data taken from Hi-GAL proposal (PI: S. Molinari).
 Credits D. Coia and L. Conversi

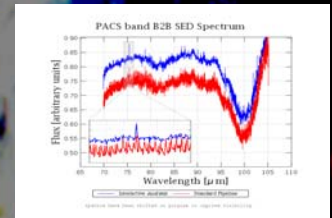


PACS Spectroscopy

Line Spectroscopy observation of NGC 4214.
 Credits E. Sturm, R. Vavrek, B. Gonzalez and SHINING Consortium

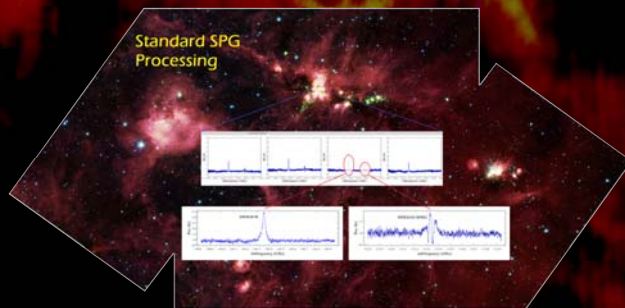


Range Spectroscopy calibration observation of Neptune. Credits R. Vavrek and B. Gonzalez



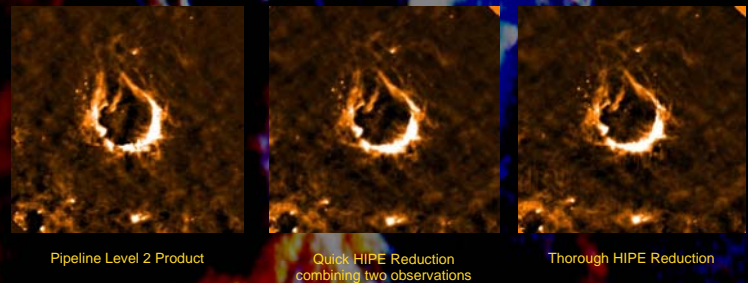
HIFI Mapping Dual Beam Switch Raster

Fast chopping observation of DR21. Credits F. Helmich, F. van der Tak, M. Marseille, A. Abreu and HIFI Consortium



PACS Photometer Scan Mapping

Observation of RCW 120. Credits F. Motte, A. Zavagno, B. Gonzalez and HOBYS Consortium



How to download, learn more, provide suggestions and contribute to HIPE

- Download HIPE from http://herschel.esac.esa.int/HiPE_download.shtml
- Learn more about Herschel Data Processing in http://herschel.esac.esa.int/Data_Processing.shtml
- Join the Herschel Data Processing Interest lists
 - PACS Photometry (point source)
 - SPIRE Photometry (point source and small maps)
 - Large maps and point source extraction for PACS and SPIRE
 - PACS Spectroscopy
 - SPIRE Spectroscopy
 - Spectral maps for PACS, SPIRE and HIFI
 - HIFI Point sources and spectral scan
 - HIPE General
 - HIPE Contribution

Planned Improvements

- Refinement of data reduction algorithms, instrument calibration and product quality assessment criteria
- Improving the user friendliness of HIPE
- Facilitating contributions via plug-in mechanism
- Switch to Jython 2.5
- Performance and stability enhancements

Background: Rosette cloud, credits ESA/PACS & SPIRE Consortium/HOBYS Key Programme Consortia

