



# Introduction to HIPE: basic functionality

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# Outline



- **General description of the software**
  - All in one (data retrieval, reprocessing, analysis and storage)
  - Programmed in Java and Jython (python over java)
  - Modular: interchangeable tasks
  - Dual Interactive – Console (all interactive sessions can be replayed)
  
- **HIPE Tour**
  - Start-up, views, perspectives and preferences.
  - Visualizing observation Contexts, images, cubes and spectra.
  - Running pipelines and user scripts.
  - Wrapping everything in a processing script.

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# The Herschel Data Processing software



- **Integrated framework for data retrieval, reduction and analysis of Herschel data**
  - Specifically prepared for Herschel data structures and types
  - Similar FITS database and search capabilities as ESO's 'gasgano'
  - Similar integrated GUI structure and built-in Help system as the 'IDL Development Environment' (IDLDE).
  - Actively developed and maintained by the HSC, ICCs and NHSC
- **Programmed in Java and Jython (python over java)**
  - License free and platform independent
  - The jython provides a flexible scripting language
  - The java underneath provides powerful resources for highly demanding tasks. It also has many available numerical routines online

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# The Herschel Data Processing software



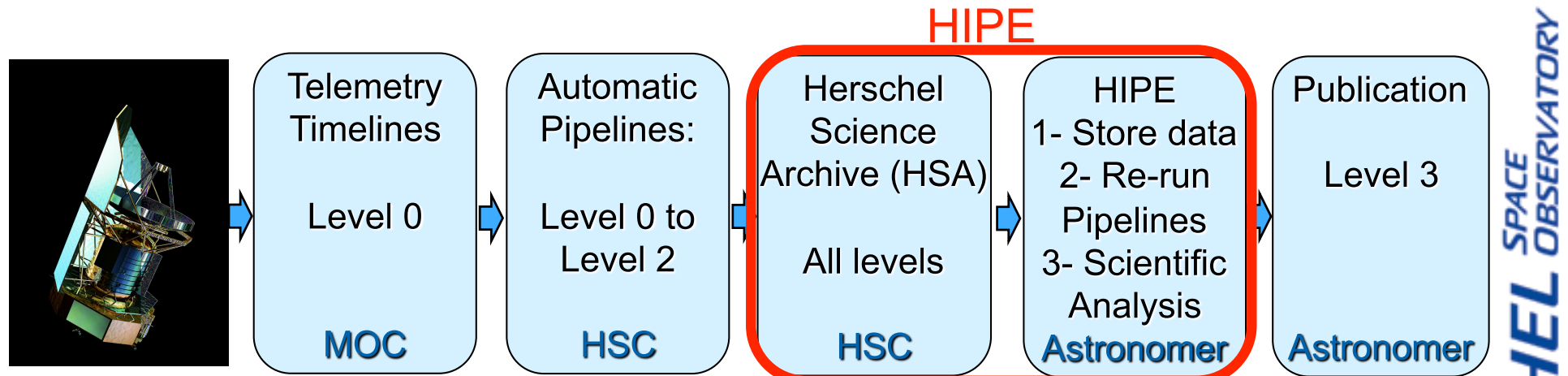
- **Highly customizable and programmable software**
  - Dual: allows interchangeable interactive (GUI) and batch-mode (script) processing. All HIPE GUI interactions echo a command line.
  - Modular: organized in individual “**Tasks**”, which are routines that operate on variables to create output variables (e.g. pipeline steps)
  - Open source: all original code is provided with the installer
  - Highly extendable: new external functions easily integrated as tasks
- **Compatible with all usual FITS-based processing softwares and integrated with the latest VO tools**
  - Capable of input/output of standard FITS files to IDL, IRAF, MIDAS, ds9 or any other FITS viewers compatible with the standard
  - Integrated with the VO tools TopCat, Aladin, VOSpec, SPLAT-VO, etc

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# What do you do with HIPE?



1. Herschel performs an observation following a user AOR
2. The spacecraft telemetry arrives at Mission Operations Control (MOC) centre packed in timelines and is sent to HSC



3. The data is run automatically through the HSC data pipelines to remove all instrumental effects to produce level-2 products
4. Raw and processed data is placed in the HSA for the users
5. Astronomers will use HIPE to download, reprocess the data and analyze it within just one single environment



# HIPE Tour

(see also D. Shupe's presentation at the NHSC DPWS)

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