



# Users' feedback in Data Processing

## Status report for HUG#4 meeting

Bruno Merín, on behalf of the Data Processing Users' Group

- Updates on Data Processing Interest/Working Lists
  - Currently on-going DP Telecons and HIPE community page
  - Potential future workshops/tiger teams
- Actions/recommendations from HUG#2/3
  - Helpdesk traffic control to search for trending topics
  - Science-driven prioritization
  - DPUG web page (pending)
  - Direct contact with KP experts in working groups
- Updates on the DP Questionnaire results
  - Now we have 58 answers (2 more than at HUG#3, so no updates on this). The link was added to the HSC page.

# DATA PROCESSING INTEREST LISTS



Group	# Members HUG3 -> 4 (change)	Chair
PACS photometry	57 -> 77 (+35 %)	P. Riviere (CAB, ES)
PACS spectroscopy	57 -> 65 (+12 %)	R. Oonk (U. Leiden, NL)
SPIRE photometry	42 -> 50 (+19 %)	J. M. Castro Cerón (HSC)
SPIRE spectroscopy	29 -> 36 (+24 %)	Vacant
HIFI	37 -> 42 (+13 %)	S. Bottinelli (IRAP, FR)
Large maps and source extraction	42 -> 55 (+30 %)	V. Könyves (Saclay, FR)
Spectral mapping	36 -> 46 (+27 %)	Vacant
HIPE	38 -> 40 (+5 %)	M. Groenewegen (OB, BE)
HIPE contributors	34 -> 34 (+0 %)	C. Martin (Oberlin, USA)

So far, some activity in the lists after the telecons. Some chairs give good feedback to the DPUG on user-related discussions.

# A NEW HIPE USER COMMUNITY PORTAL



- To host the DP telecon minutes and enable easy collaboration, we have created the HIPE community user portal:

**<http://hipecommunity.wikispaces.com>**

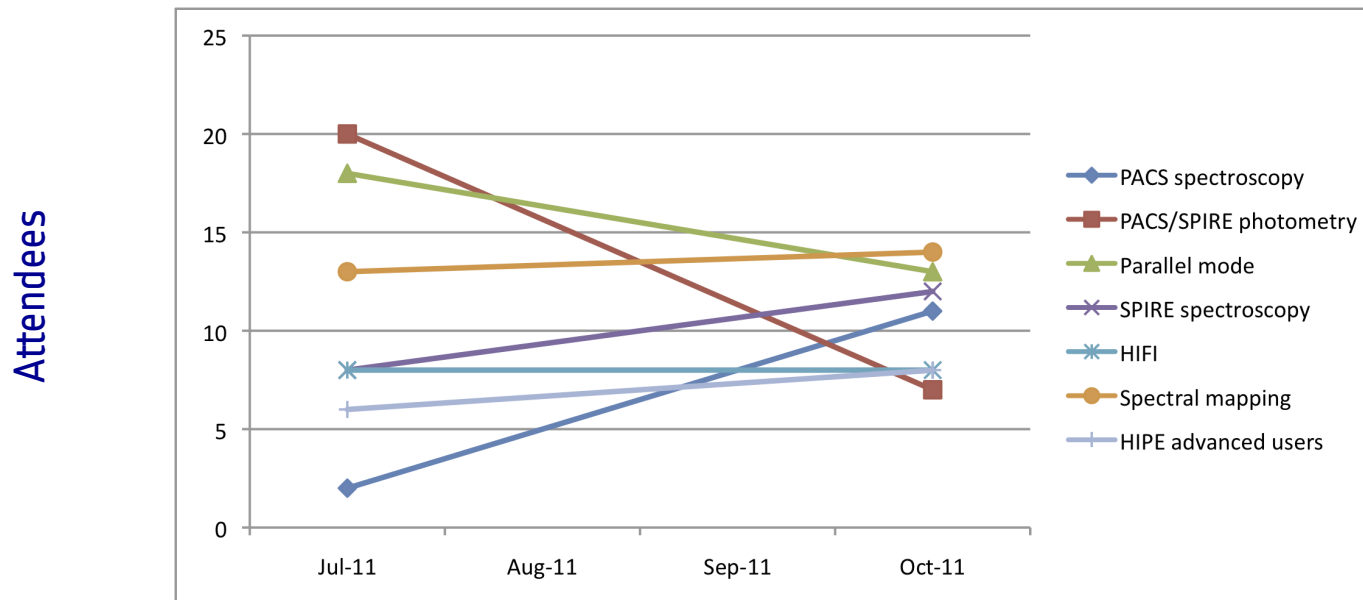
The screenshot shows the homepage of the HIPE community wiki. The browser address bar displays <http://hipecommunity.wikispaces.com/home>. The page features a green header with the "HIPE COMMUNITY" logo and navigation tabs: "home", "PAGE", "DISCUSSION", "HISTORY", "NOTIFY ME", and "EDIT". A sidebar on the left contains links for "Wiki Home", "New Page", "Recent Changes", "Manage Wiki", and a "Search Wiki" box. Below these is a "Contents" section with a list of topics including HOME, Parallel mode data reduction, PACS and SPIRE photometry, PACS spectroscopy data reduction, SPIRE FTS data reduction, HIFI data reduction, Herschel spectral mapping data reduction, and Advanced usage of HIPE. The main content area is titled "Welcome to the HIPE community wiki!" and includes a description: "A place for open discussion and knowledge exchange about Herschel data reduction and the HIPE software suite." It lists "Data Reduction telecons" with dates and times, and "Past telecons" with a list of specific events and links to minutes. A "Table of Contents" box on the right lists links for "Welcome to the HIPE community wiki!", "Data Reduction telecons", "Past telecons", "Documentation sprints", and "Other resources". The page footer includes a "Thank you in advance for your help!" message and a link to the official Herschel TWiki.

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# DP TOPICAL TELECONS



- Since HUG#3, two series of topical DP telecons have been organized (July and October 2011) with a healthy attendance.



- Everyone seems to find them useful and there are interesting discussions. Minutes are on-line at the HIPE community page. European Space Agency

# PARALLEL MODE DP INTEREST LIST



- Chair: Vera Könyves (Saclay, Gould's Belt KP)
- Telecon participants:
  - Vera Könyves, Edo Ibar, Robbie Auld, Bruno Altieri, Luca Conversi, Herve Ausel, Babar Ali, Elena Puga, Katrina Exter, Veli-Matti Pelkonen, Julia Roman-Duval, Chad Engelbracht, David Shupe, Helene Roussel, Martin Henneman, Matthew Smith, Jacopo Fritz, Helene Roussel, Roberta Paladini, Anthony Smith, David Ardila, Pedro Palmeirim, Hervé Aussel, Bruno Merín
- Discussion subjects:
  - Differences in algorithms (photProject, madmap, scanamorphos, romagal, sanepic and tamasis). Benchmarking being planned.
  - Accuracy in point-source photometry for PACS and SPIRE.
  - PACS correlated noise / error maps.
  - Strong glitches and how to deal with them.
  - Off-sets between PACS and SPIRE astrometry.
- Minutes: <http://hipecommunity.wikispaces.com/Parallel+mode+data+reduction>

# PACS SPECTROSCOPY DP INTEREST LIST



- Chair: Raymond Oonk (Leiden Obs., KPOT\_aedge\_1)
- Telecon participants:
  - Raymond Oonk, Alessandra Contursi, Roland Vavrek, Greg Herczeg, Jeroen de Jong, Katrina Exter, Kevin Croxall, Miguel Requena, Vianni Lebouteiller, Elena Puga, Bruno Merín
- Discussion subjects:
  - Impact of the new Calibration Block on overall PACS spectroscopy calibration (30 to 10%?)
  - Impact of FlatFielding in HIPE 8 w.r.t. previous versions.
  - Pointing offsets and impact on the absolute flux calibration. Recommendations on the addition of 3x3 or 5x5 spaxels to recover flux calibration.
  - Convolution of spectral images and images of different beams.
  - How to calculate the intrinsic spectral resolution at any give wavelength
  - Calibration of spectral leakage regions
  - How to run a pipeline for all segments instead of by pieces.
- Minutes: <http://hipecommunity.wikispaces.com/PACS+spectroscopy+data+reduction>

- Chairs: Pablo Riviere (PACS, GASPS OTKP), José María Castro Cerón (SPIRE, GT1, HSC)
- Telecon participants:
  - Anthony Smith, Paul Harvey, Grant Kenedy, Thorsten Ratzka, Daniela Coia, Will Fisher, Luca Conversi, Hervé Ausel, Markus Nielbock, Bruno Altieri, Pablo Riviere, Tom Megeath, David Ardila, Chris Pearson, Ros Hopwood, Ivan Valtchanov, Alvaro Ribas, Natalia Larrea, Vera Könyes, Marcio Melendez, David Shupe, Roberta Paladini, Alcione Mora, Bruno Merín
- Discussion subjects:
  - Effect of the high-pass filter widths and output pixel size on the sensitivity and on the errors on point-source photometry.
  - Differences between aperture and PSF-fitting photometry on PACS/SPIRE data.
  - Correlated noise, covariance matrix and the error maps in the PACS images. Strategies from cosmological programs to estimate error maps.
  - Documentation for doing photometry with PACS and SPIRE data that includes all necessary information like EEF, aperture correction, changes with calTree, ..
- Minutes: <http://hipecommunity.wikispaces.com/PACS+spectroscopy+data+reduction>



# SPIRE FTS DP INTEREST LIST



- Chairs: vacant
- Telecon participants:
  - Ed Polehampton (EP), Gibion, Ivan Valtchanov, Peter Imhof, Trevor Fulton, Catherine Espaillat, Maximilien Schirm, Ros Hopwood, Peter Imhof, Emilie Habart, Anne-Laure Mealier, Dominique Benielli, Kate Isaak, Jing-Hua Yuan
- Discussion subjects:
  - Optimal usage of the dark background subtraction in interactive processing.
  - Problems to fit lines with sinc profiles in HIPE and outside of it.
  - Cross-correlation between the spectrometer and the photometry integrated fluxes.
  - Flux calibration of detectors other than the central ones for off-centre targets.
- Minutes: <http://hipecommunity.wikispaces.com/SPIRE+FTS+data+reduction>

# HIFI DP INTEREST LIST



- Chair: Sandrine Bottinelli (CEST, Toulouse France, CHESS KP)
- Telecon participants:
  - Carolyn McCoey, David Teyssier, Mihkel Kama, Massimo da Luca, Max Avruch, Kirill Tchernyshyov, Velusamy, Jorge Pineda, Russ Shipman, Elena Puga, Bruno Merín
- Discussion subjects:
  - Retrieval/handling/saving of data, getObservation for HIFI.
  - calTree, how to know which one was used, and how to get the new one
  - Flags, how to set them and how to use them for reprocessing
  - Averaging, how to use KP scripts to do efficient averaging/data cleaning.
  - Fitter GUI, problems and potential use in spectral cubes.
  - CASSIS (external tool/HIPE plugin for analysis): issues with memory and RMS calculations
  - Channel weights in the spectral deconvolution.
  - LO frequency, how to find it out and/or calculate it.
  - Current matching technique, status of prototype, results so far and foreseeable future.
- Minutes: <http://hipecommunity.wikispaces.com/HIFI+data+reduction>

# SPECTRAL MAPPING DP INTEREST LIST



- Chair: Vacant
- Telecon participants:
  - Ed Polehampton, Roland Vavrek, Ivan Valtchanov, Carolyn McCoe, Max Avruch, Maximilien Schirm, Dominique Benielli, Kevin Croxall, David Teyssier, David Ardila, Jeroen de Jong, Beatriz González, Pat Morris, Bruno Merín
- Discussion subjects:
  - Identification of On and Off observations in an observation context (SPIRE: easy, PACS: new option in user pipelines in 8, HIFI: user script from a KP).
  - Zig-zag issue seen in some HIFI spectral mapping of bright regions. It could do with out-of-sync between pointing product and instrument telemetry. Not apparent neither in PACS nor in SPIRE data.
  - Improvements in basic calibration of the spectra as the only needed improvements to be able to make spectroscopic mapping science with Herschel data.
  - Video tutorial available on how to make on-off corrections for HIFI.
  - PACS observers should use HIPE 8 for spectral mapping. Things have not changed that much for SPIRE and HIFI observers.
- Minutes: <http://hipecommunity.wikispaces.com/Herschel+spectral+mapping+data+reduction>

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# HIPE ADVANCED USAGE INTEREST LIST



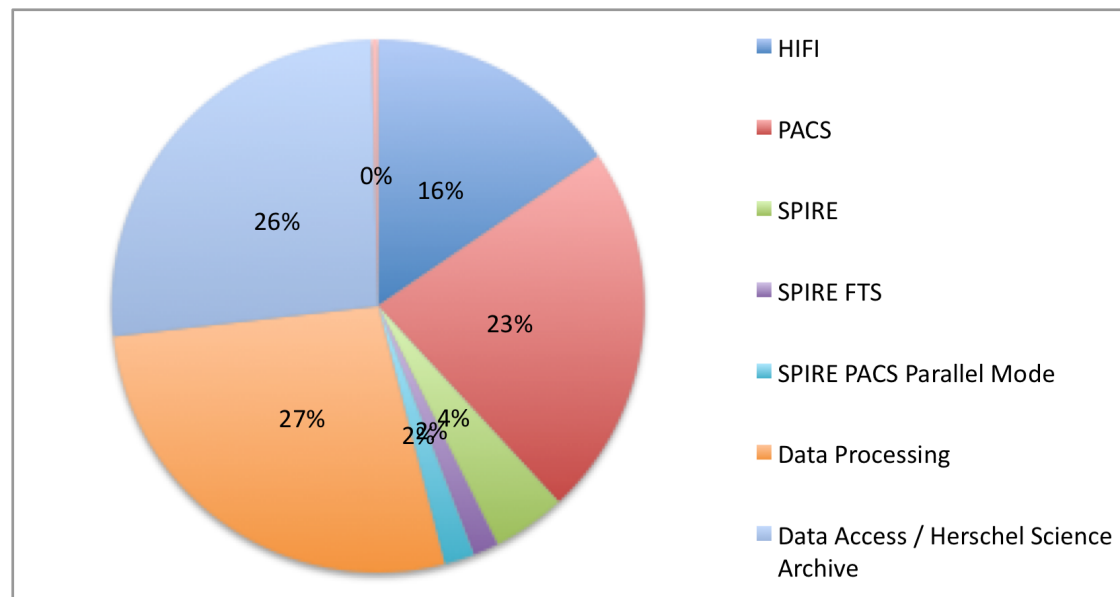
- Chair: Paul Balm (HIPE developer, HSC)
- Telecon participants:
  - Carolyn McCoey, Mark Taylor, Mihkel Kama, Elena Puga, Javier Diaz-Soto, Paul Balm, David Ardila, Jeroen de Jong, Carolyn McCoey, Yi Mei, Bruno Merín, Stephan Ott, Davide Rizzo, David Shupe
- Discussion subjects:
  - Means to simplify the usage of tasks (e.g. pipeline steps) and the HIPE infrastructure to users.
  - Linkages to useful libraries and code like numpy, scipy, TopCat, JySTILTS and other python-based astronomical tools.
  - Video tutorial on how to make a simple HIPE plugin
  - Coding in HIPE: documentation improvements, syntax complexity and java difficult for astronomers.
  - Upgrade from Jython 2.1 to 2.5 in HIPE 8 and effects in users scripts.
- Minutes: <http://hipecommunity.wikispaces.com/Advanced+usage+of+HIPE>

# TRACKING OF HELPDESK TICKETS



- The DPUG now monitors the helpdesk tickets but so far it has not found any topic particularly relevant. This information is then also used to organize the priority lists for the CCBs.

Helpdesk tickets by department since start of mission (1033 tickets)

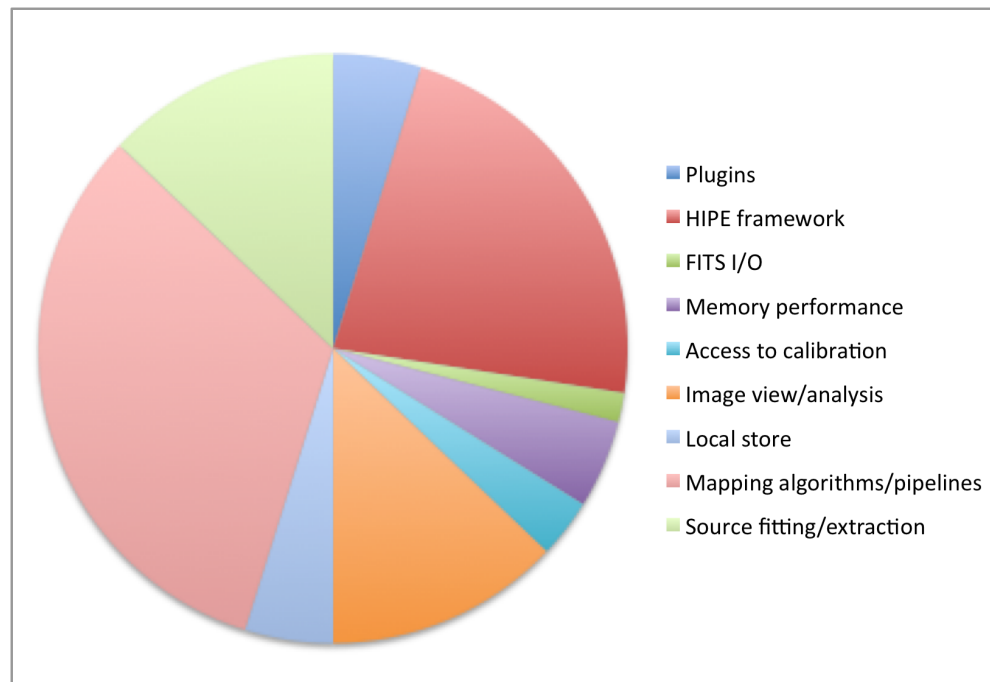


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# TRACKING OF HELPDESK TICKETS



Recent helpdesk tickets on data processing dept. by topic (May – Sept 2011, 62)  
The number of tickets is in general going down slowly with time.



## MORE SCIENCE-DRIVEN PRIORITIZATION



- Members of the DPUG have started to join the Configuration Control Board (CCB) ~weekly meetings, where the implementations of different software tickets are discussed and planned.
- The DPUG has prepared a master list of user issues for the framework and all three instruments and routinely communicates it now to the CCBs as guide for their prioritization.
- A DPUG page is being prepared to be added to the HSC web to allow to collect direct input via e-mail.

## WORKING GROUPS WITH KP EXPERTS



- All KP PI's were contacted on May 17<sup>th</sup> 2011 to request contact information of their data reduction experts.
  - Out of 42 KP, 18 responded with the profiles of each individual member related to the data reduction.
  - All these people and the PI's were invited to join the DP Interest Lists and DP Telecons and many of them attended.
- No further interaction with these experts was articulated with the hope that the telecons should allow enough communication.





**Thank you**

*Any questions?*

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