HSA Report

HUG#9 18-19 June 2015

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SRE-OAH

- HSA 6.0:

- The HSA DB was populated with the new metadata required for the New Instruments Advanced Query Panel
- Standalone Browse Products were changed to JScanam for PACS Phot and level2.5 products served for SPIRE Parallel Mode

- HSA 6.1:

- Implementation of the Instruments Advanced Query Panel which allows to perform more refined queries by instrument-specific observational parameters like band, wavelength…
- New Pipeline Processing Query Panel (SPG version, processing level, QC Status)

- HSA 6.2:

- Modification of the DB model to improve the performance
- Two new servers for HSA operational and HSA integration: modern machines, much faster, SSDs…
- Preparation for the bulk reprocessing exercise with HCSS 13.0 (new standalone browse products, new metadata to be extracted from products…)

Current HSA version (6.2.1)

- **New H/W:**
  - More stable
  - More reliable
  - Faster
  - Less outliers

- **New S/W:**
  - Faster
  - No serious wait times
  - Queues quickly emptied

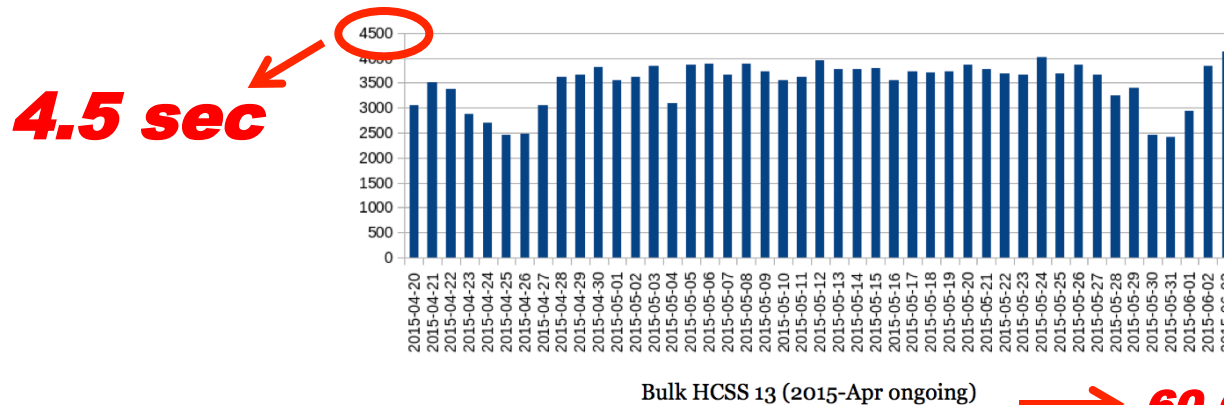User query performance

HSA 5.x
HSA 6.2
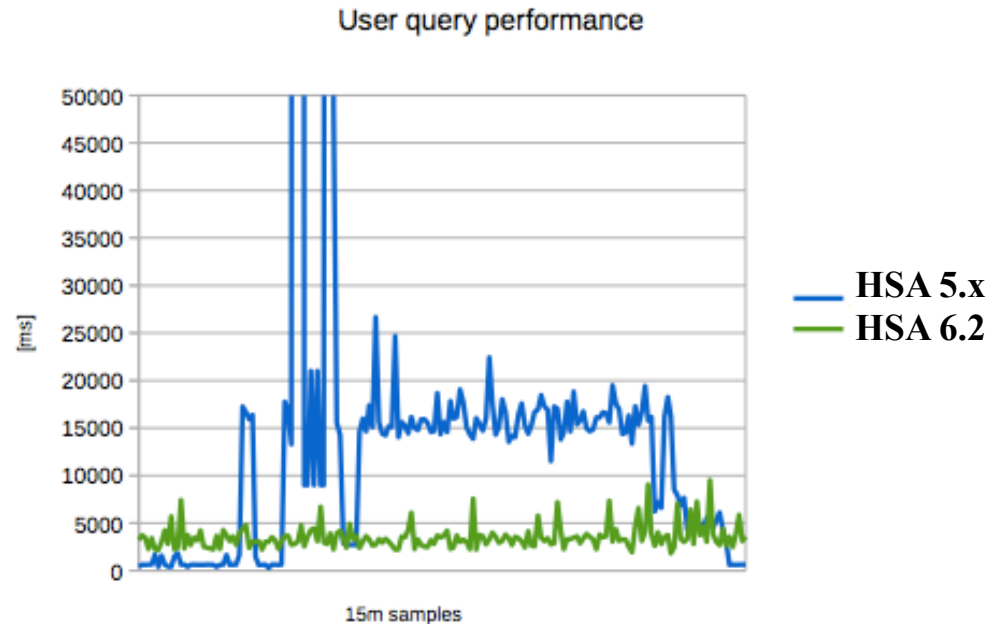
- **Improved performance:** 3.3 sec of median for queries in 5 metadata
- **Bulk reprocessing with HCSS 13.0:** ~ 60 ODs/day
- **HUI:** Instruments Advanced Query Panel + Standalone Browse Products + UPDPs

Standard query responses times average per day during HCSS 11, 12 and 13 bulk reprocessing exercises

Bulk HCSS 11 (2013-Dec to 2014-Mar)

Bulk HCSS 12 (2014-Jun to 2014-Dec)

160 sec

140 sec

6 months!!!

4.5 sec

Flat response

Bulk HCSS 13 (2015-Apr ongoing)
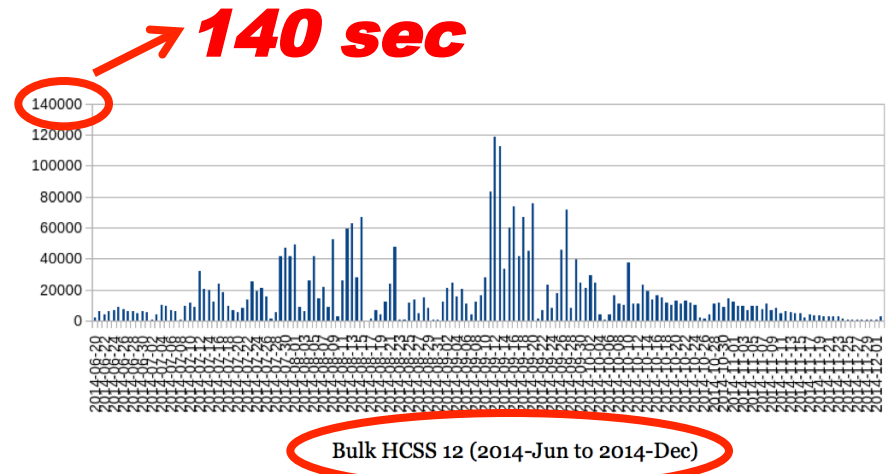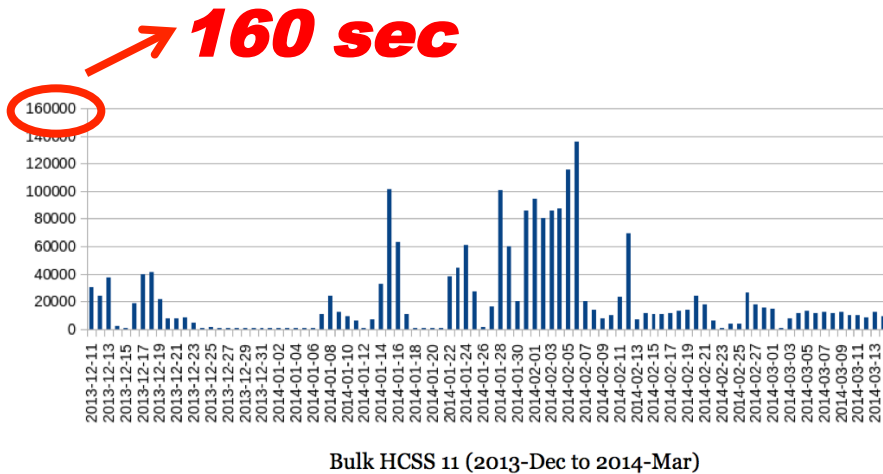
60 ODs/day and no failures

Following HUG recommendations:

- Queries by list of targets or coordinates

Improvement of HSA functionalities

Following HUG recommendations:

- New Instruments Advanced Query Panel (see next slide) which allows to perform more refined queries by instrument-specific observational parameters like band, wavelength…

- New Pipeline Processing Query Panel (SPG version, processing level, QC Status)

HSA Science Archive v6.1

File | View | Windows | Account | Tools | Help

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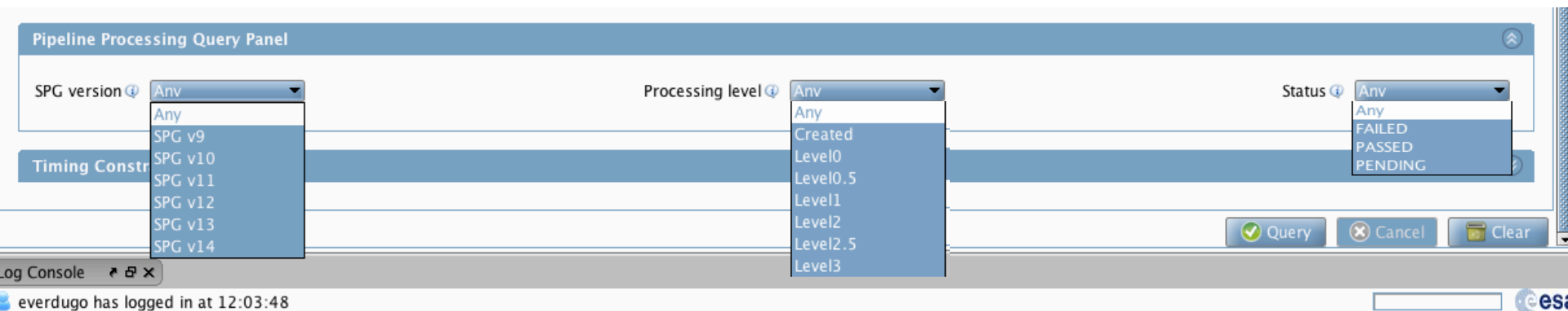
Search

Instruments Query Panel

Instrument ⓘ   Obs. Type: ⓘ   ☑ Standard Data

Instrument:
- All
- HIFI
- PACS
- SPIRE
- SPIREPACS

HIFI
- Single Point
- Mapping
- Spectral Scan

PACS
- Pacs Photometer
- Range Spectroscopy
- Line Spectroscopy

SPIRE
- Photometer
- Spectrometer

SPIREPACS
- Parallel Mode

Instruments Advanced Query Panel

Hifi Standard \ Pacs Photometry \ Pacs Spectroscopy \ Spire Photometry \ Spire Spectroscopy \

Observing Mode ⓘ
- Any
- Single Pointing
- Raster

Processed Resolution ⓘ
- Any
- Low (L)
- High (H)
- High + Low (H+L)

Image Sampling ⓘ
- Any
- Sparse
- Intermediate
- Full

Bias Mode ⓘ
- Any
- Nominal
- Bright

Commanded Resolution ⓘ
- Any
- Calibration (C)
- Low (L)
- Medium (M)
- High (H)
- High + Low (H+L)

Number of Repetitions ⓘ [   ]

Position Angle (deg) ⓘ [   ]

Map length (arcmin) ⓘ [   ]   Map height (arcmin) ⓘ [   ]   Number of Raster points ⓘ [   ]

Log Console

Not Logged In

· esa

The currently offered 'Standalone Browse Products' are the following FITS products generated by the standard Herschel data processing pipelines:

HIFI The Level 2.5 products for all HIFI observations.

PACS The Level 2.5 products for PACS photometric observations (including SPIRE/PACS parallel mode observations) when available (produced with Madmap and PhotProject for observations processed with HCSS 11.1, and those produced with Scanmorphos when processed with HCSS 12.1 or 13.0); or the Level 2 products otherwise.
For PACS spectroscopic observations, a FITS table with the rebinned spectra at all spaxels for all raster pointings, plus the drizzled, projected or interpolated cube, depending on the observing mode (mapping, pointed, line scan, range scan) with an equidistant wavelength grid.
Note, however, that PACS spectroscopic standalone browse products are only available for those observations processed with version 13.0 of the standard Herschel data-processing pipelines.
Chapter 5 of the 'PACS Products Explained' document (available via the HIPE documentation) is about these standalone browse products.

SPIRE The level 2 products processed with the version of the pipeline for extended sources for SPIRE photometric observations. For the SPIRE component of SPIRE/PACS parallel mode observations, the level 2.5 products processed with the version of the pipeline for extended sources.
For SPIRE spectroscopic observations, the unapodised level 2 products.

For further information on Herschel products, see the Instrument Data Reduction Guides listed below:

\# HIFI Data Reduction Guide
(http://herschel.esac.esa.int/hcss-doc-13.0/print/hifi_um/hifi_um.pdf)

\# PACS Data Reduction Guide: Photometry
(http://herschel.esac.esa.int/hcss-doc-13.0/print/pacs_phot/pacs_phot.pdf)

\# PACS Data Reduction Guide: Spectroscopy
(http://herschel.esac.esa.int/hcss-doc-13.0/print/pacs_spec/pacs_spec.pdf)

\# SPIRE Data Reduction Guide
(http://herschel.esac.esa.int/hcss-doc-13.0/print/spire_drg/spire_drg.pdf)

User Provided Data Products Panel (UPDP)

UPDP | Search UPDP

ⓘ	*2013-09-09* ☐	ACMC: The Auriga-California Molecular Cloud – PACS and SPIRE Data Atlas
ⓘ	*2013-10-10* ☐	COLDCORES: Galactic Cold Cores: A Herschel survey of the source p opulations revealed by Planck
ⓘ	*2013-10-10* ☐	DUNES: PACS and SPIRE Observations of Cold Disks around Nearby Stars
ⓘ	*2014-07-10* ☐	GOODS: PACS and SPIRE images of the GOODS fields and associated source catalogs
ⓘ	*2014-05-07* ☐	GOT_CPlus: Galactic Observations of Terahertz CII
ⓘ	*2015-04-21* ☐	HELGA: The Herschel Exploitation of Local Galaxy Andromeda
ⓘ	*2015-04-21* ☐	HERITAGE: PACS and SPIRE images of the Magellanic Clouds and associated source catalogues
ⓘ	*2014-10-08* ☐	HerM33es: PACS and SPIRE maps of M33
ⓘ	*2014-07-11* ☐	HerMES: Herschel Multi-tiered Extragalactic Survey
ⓘ	*2015-04-28* ☐	HEXOS_HIFI: HIFI observations of EXtra-Ordinary Sources: The Orion and Sgr B2 Star-Forming Regions
ⓘ	*2013-09-09* ☐	HIFISTARS: HIFI spectroscopy of molecular lines in evolved stars
ⓘ	*2013-10-10* ☐	HOP: Herschel Oxygen Project
ⓘ	*2014-07-16* ☐	KINGFISH: Key Insights on Nearby Galaxies: a Far Infrared Survey with Herschel
ⓘ	*2015-04-21* ☐	MESS_PPHOT: PACS images of the circumstellar environment of 107 post-main-sequence objects
ⓘ	*2013-09-18* ☐	PEP_PACS: PACS images of six cosmological blank fields, ten lensing clusters and two z~1 clusters and associated source catalogues
ⓘ	*2013-09-18* ☐	PEP_SPIRE: SPIRE images of the clusters MS1054 and RXJ0152 and associated source catalogues
ⓘ	*2014-10-29* ☐	PPDISKS: SPIRE spectroscopy of protoplanetary disks
ⓘ	*2013-10-10* ☐	VNGS_PACS: PACS photometric maps of 13 very nearby galaxies
ⓘ	*2015-04-21* ☐	VNGS_PACS_SPEC: PACS spectroscopic maps of 9 very nearby galaxies
ⓘ	*2013-10-10* ☐	VNGS_SPIRE: SPIRE photometric maps of 13 very nearby galaxies

Now we will concentrate our efforts on collecting UPDPs for spectroscopic observations

Now that the BKRP with HCSS 13.0 is about to finish and until the BKRP with HCSS 14.0 we will concentrate our efforts on the QC activity which was stopped around July 2014 due to all the performance problems in the HSA and with the ESAC infrastructures. Last status report on QC activities was:
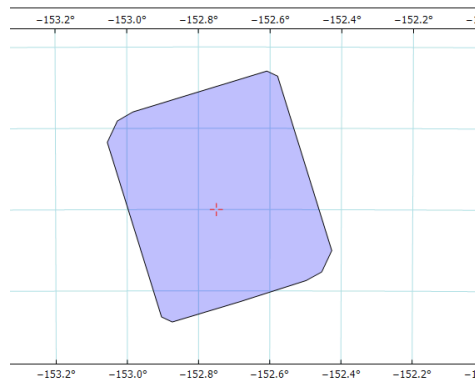
QC Completion Report - July 2014

OD range	Completed	In progress	Comments
1400-1446	43	4	
1300-1399	32	9	
1200-1299	47	12	
1100-1199	82	4	
1000-1099	77	6	
900-999	78	12	
800-899	87	6	
700-799	99	1	
600-699	72	9	
500-599	31	2	Fast checks completed on 73 ODs, started on 6 ODs
400-499	56	0	Fast checks completed on 100 ODs
300-399	54	4	Fast checks completed on 94 ODs, started on 2
200-299	61	3	Fast checks completed on 90 ODs
156-199	44	0	
Total			
1291	863 (66,8%)	72 (6%)	

- **To work with HCSS 14.0:**
  - New QC flags format
  - Better handling of error messages
  - Postcard server to work by OBS_ID

- **Footprints**: Complex polygons for the FoV created per every AOR in the Archive by the Konkoly group. An analysis of the complexity of the polygons vs the query performance of the HSA is on-going. The tool allows various ways of smoothing the footprints:

− **Publications**: Link to published papers per AOR "a la" XMM-Newton

– **Various improvements of the HUI**. For instance, to display the "searchable" information in the Instrument Advance Query Panel per AOR

Observing Mode:
Gain:
Dithering:
Filter selection:
Scan speed for Parallel Mode:

The future

- **Register Herschel products in VO** and opening of standalone browse products with VO tools from the HUI directly:
  - Discussion on the VO compatibility of our products
  - Standalone browse products are going to be the VO Herschel registered products?
  - From standalone browse products to standalone legacy products ("Good products for doing science without any need of using a Herschel specific tool and VO compatible")

- **Highly Processed Data Products** (HPDPs) in the HSA: Similar to the UPDPs but produced by "experts"
  - Point Source Catalogs (PACS & SPIRE)
  - Spectral Surveys (HIFI)
  - Line lists (HIFI & SPIRE)

- **Ancillary Data** in the HSA: To be preserved but not linked to a particular AOR (ftp direct retrieval from the HUI):
  - Distortion maps (PACS)
  - Gas cell (HIFI)
  - Calibration models…

- **Versant information on Proposals into HSA:** Proposals abstract, PI, Co-Is, scientific category