

The Herschel Legacy: Herschel Science Archive

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European Space Agency

Herschel Science Archive (HSA) Interface improvements



- In the HSC_POP plan as:
 - Herschel Science Archive Coordination tasks
 - Testing & validation of new versions of HSA
 - Support to validate HSA releases

- HSA Versions since the beginning of the Post-Operations:
 - HSA 5.0 (& 5.1 & 5.1.1 patches)
 - HSA 5.2 (& 5.2.1)
 - HSA 6.0 (& 6.0.1 & 6.0.2 & 6.0.3 & 6.0.4)
 - HSA 6.1
 - HSA 6.2 (& 6.2.1 & 6.3)
 - HSA 7.0
 - HSA 7.1 (& 7.1.1)
 - HSA 7.5 (current version)



Herschel Science Archive (HSA) Interface improvements



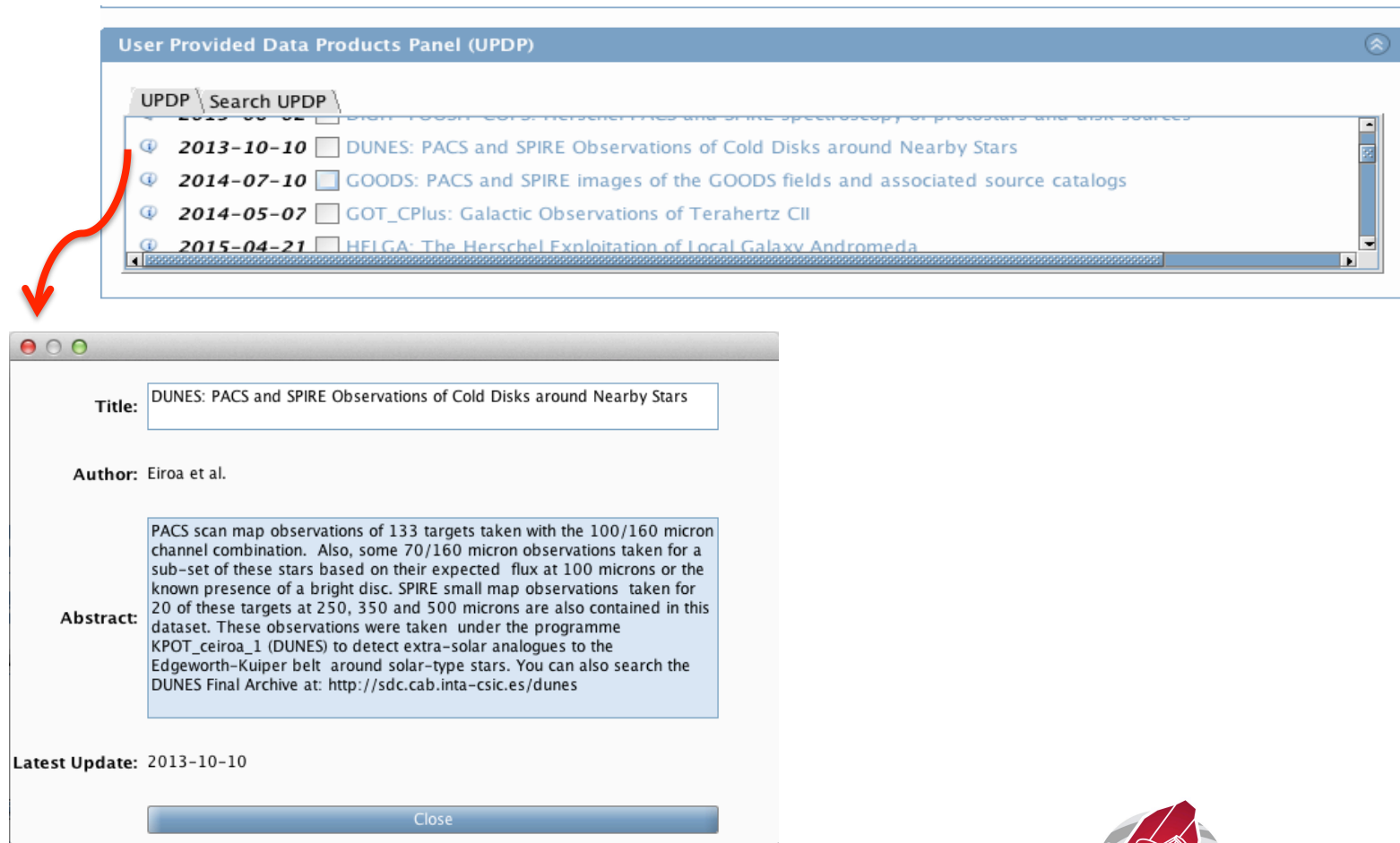
- HSA 5.0 Released On 9 September 2013
 - This version incorporated a new panel in the main search page of the HSA User Interface which provides access to User Provided Data Products (UPDPs). Opening this panel you can get a list of the data sets currently available. Users can retrieve the files associated to individual observations from these data sets or select an entire UPDP for download
 - Several improvements of the HSA User Interface: increased stability of the instrument selection panel, renovated observations list field, improved re-sizing capabilities of windows...
 - Preparation of the system for the ingestion and distribution of the new Level3 data products to be generated with version 11 of the Herschel Science Product Generation (SPG) software
 - Further fixes affecting the interaction with the Operational Data Processing system and correction of various minor bugs.



Herschel Science Archive (HSA) Interface improvements



- HSA 5.0 Released On 9 September 2013: UPDPs in the HSA



The screenshot displays the HSA 5.0 interface. At the top, a window titled "User Provided Data Products Panel (UPDP)" contains a search bar and a list of data products. A red arrow points from the first product in the list to a detailed view window below. The detailed view window shows the following information:

- Title:** DUNES: PACS and SPIRE Observations of Cold Disks around Nearby Stars
- Author:** Eiroa et al.
- Abstract:** PACS scan map observations of 133 targets taken with the 100/160 micron channel combination. Also, some 70/160 micron observations taken for a sub-set of these stars based on their expected flux at 100 microns or the known presence of a bright disc. SPIRE small map observations taken for 20 of these targets at 250, 350 and 500 microns are also contained in this dataset. These observations were taken under the programme KPOT_ceiroa_1 (DUNES) to detect extra-solar analogues to the Edgeworth-Kuiper belt around solar-type stars. You can also search the DUNES Final Archive at: <http://sdc.cab.inta-csic.es/dunes>
- Latest Update:** 2013-10-10
- Close** button



Herschel Science Archive (HSA) Interface improvements



- HSA 5.0 Released On 9 September 2013: UPDPs in the HSA

The screenshot displays the HSA 5.0 interface. The main window shows a list of observations with columns for Observation ID, Postcards, Target, and RA. A red arrow points from the 'USER PROVIDED DATA PRODUCTS' column of the first row to the 'UPDP Details' panel on the right.

Observations

189 Results | Page 1 of 8 | Page Size: 25

Find : Find Next Find Previous

Filter Rows:

				Observation ID	Postcards	Target	RA
<input type="checkbox"/>			DETAILS & PUBLICATIONS			1342195262	GOODS-N 12h 36m 51.87s
<input type="checkbox"/>			DETAILS & PUBLICATIONS			1342195263	GOODS-N 12h 36m 51.88s
<input type="checkbox"/>			DETAILS & PUBLICATIONS			1342195264	GOODS-N 12h 36m 58.40s
<input type="checkbox"/>			DETAILS & PUBLICATIONS			1342195265	GOODS-N 12h 36m 49.38s
<input type="checkbox"/>			DETAILS & PUBLICATIONS			1342195266	GOODS-N 12h 37m 04.92s

UPDP Details

User Provided Data Products

Title
GOODS: PACS and SPIRE images of the GOODS fields and associated source catalogs

Author
Elbaz et al.

Abstract
PACS and SPIRE photometric maps of the two Great Observatories Origins Deep Survey (GOODS) fields in the Northern and Southern hemispheres. It consists of a super deep survey in the Northern hemisphere (GOODS-North field) and an ultra deep survey in the Southern one (GOODS-South field) at 100 microns together with a shallower coverage at 160, 250, 350 and 500 microns. These observations were taken under the programme KPOT_delbaz_1 (GOODS-Herschel). Catalogs of sources extracted from the maps are also provided. For column definitions see the release note (GOODS-Herschel_release.pdf)

Latest Update
2014-07-10 Vizier code for catalogs added

[Documentation](#) [Catalog](#) [Data](#) [Postcards](#)

[Add Related](#) [FULL UPDP](#)

Associated catalogs in Vizier
[GH GOODS-South tables DR1.fits](#)
[GH GOODS-North tables DR1.fits](#)



Herschel Science Archive (HSA) Interface improvements



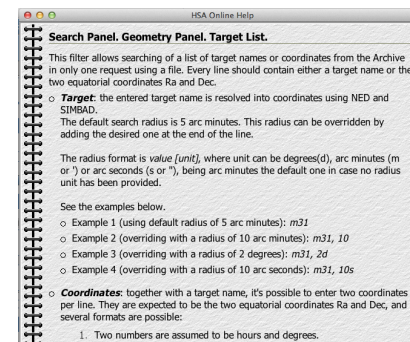
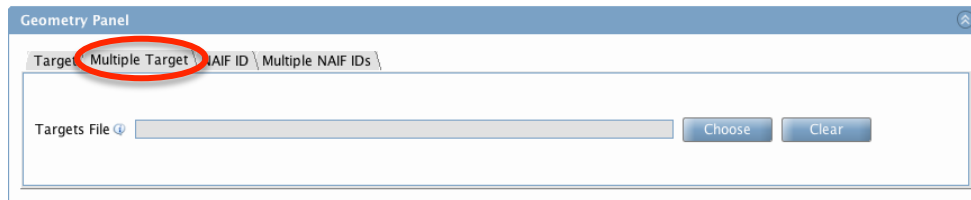
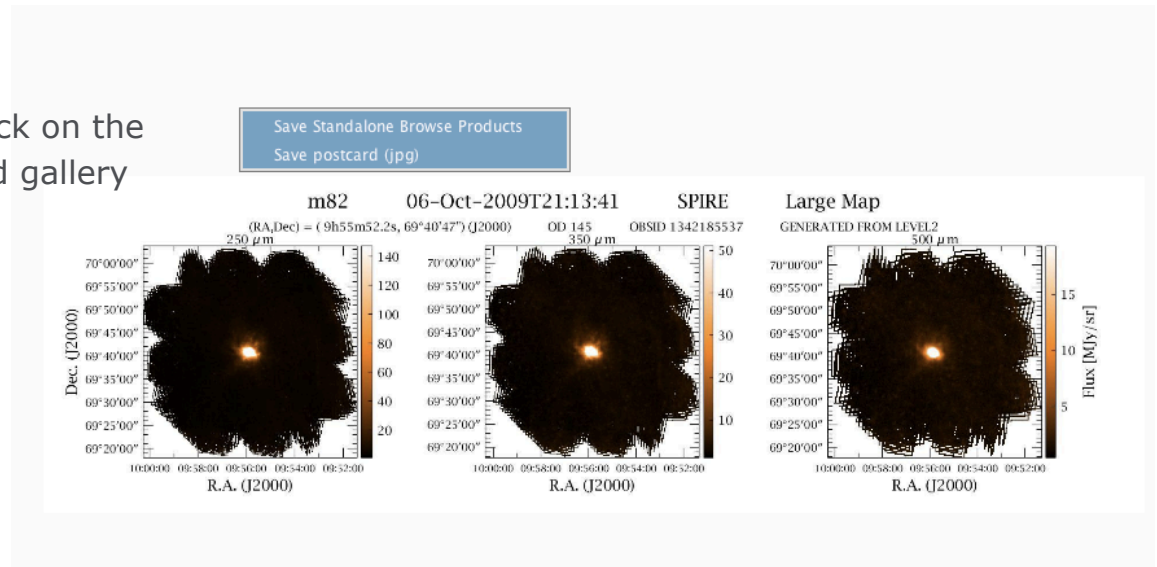
- HSA 5.2 Released on 17 March 2014
 - This version offered the possibility to download 'Standalone Browse Products' from the HSA User Interface (standard retrieval options plus right click in the postcard) and from the postcard gallery. 'Standalone Browse Products' are not necessarily 'science ready' products. They are provided for 'quick look' purposes. At this point, level 2 and level 2.5 FITS products generated by the standard Herschel data processing pipelines are distributed as 'Standalone Browse Products'.
 - Multi-target searches with a list of target names or coordinates
 - Several improvements of the HSA User Interface: Geometrical searches with a box, improvements of help texts, more info added to the columns of the query result table...
 - Further fixes affecting the interaction with the Operational Data Processing system and correction of various minor bugs.



Herschel Science Archive (HSA) Interface improvements



- HSA 5.2 Released on 17 March 2014: Standalone Browse Products and queries by list of targets
- Best products available per observation
- Served in a user-friendly way: Right click on the postcard from the HUI and the postcard gallery
- A simple tar file of FITS files plus a README file (without the need of saving the whole obsContext)
- Currently they are SPG level2 or level2.5 products that can be opened with standard FITS viewers (DS9, Aladin, fv, IDL...)



Herschel Science Archive (HSA) Interface improvements



- HSA 6.0 Released on 30 June 2014
 - This version was mainly devoted to prepare the HSA Database for the inclusion of the new "Advanced Search Panel" per instrument in the User Interface of the next version HSA 6.1. These new panels will allow much more refined queries by the instrument parameters used to define the observations.
 - PACS Photometry Standalone Browse Products with SPGv12.1 have changed to be the JScanam level2.5 maps.
 - SPIRE Parallel Mode Standalone Browse Products are the level2.5 products when available.
 - Further fixes affecting the interaction with the Operational Data Processing system and correction of various minor bugs.



Herschel Science Archive (HSA) Interface improvements



- HSA 6.1 Released on 26 February 2015
 - This version offered the possibility to perform more refined queries on instrument-specific observational parameters like band, wavelength, filter, map size... through the new "Instruments Advanced Query Panel". These queries are performed via four dedicated tabs, one for each sub-instrument mode: HIFI, PACS Photometry, PACS Spectroscopy, SPIRE Photometry and SPIRE Spectroscopy.
 - In addition, HSA 6.1 also included a new "Pipeline Processing Query Panel" which allows queries by SPG (data processing) version, processing level reached (from 'created' to 'level3') or Quality Control status (Failed/Passed/Pending).




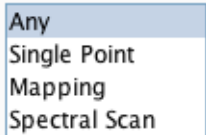
Herschel Science Archive (HSA) Interface improvements


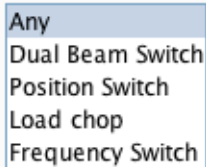




- HSA 6.1 Released on 26 February 2015: Instruments Advanced Query Panel



Instruments Advanced Query Panel


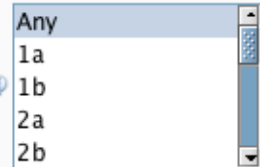
Hifi | Pacs Photometry | Pacs Spectroscopy | Spire Photometry | Spire Spectroscopy


AOT  
Any
Single Point
Mapping
Spectral Scan


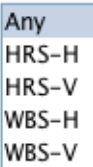
Reference Scheme  
Any
Dual Beam Switch
Position Switch
Load chop
Frequency Switch


Chopping Speed  
Any
Slow
Fast

Sky Ref  
Any
True
False

Band  
Any
1a
1b
2a
2b

Noise (mK) 

Backend  
Any
HRS-H
HRS-V
WBS-H
WBS-V

Sky Freq (GHz) 



Herschel Science Archive (HSA) Interface improvements



- HSA 6.1 Released on 26 February 2015: New Pipeline Processing query panel

A screenshot of the 'Pipeline Processing Query Panel' interface. The panel has a blue header bar with the title. Below the header, there are three dropdown menus: 'SPG version', 'Processing level', and 'Status'. The 'SPG version' dropdown is open, showing options: 'Any', 'SPG v9', 'SPG v10', 'SPG v11', 'SPG v12', 'SPG v13', and 'SPG v14'. The 'Processing level' dropdown is also open, showing options: 'Any', 'Created', 'Level0', 'Level0.5', 'Level1', 'Level2', 'Level2.5', and 'Level3'. The 'Status' dropdown is open, showing options: 'Any', 'FAILED', 'PASSED', and 'PENDING'. To the left of the 'SPG version' dropdown, there is a button labeled 'Timing Constr'. At the bottom right of the panel, there are three buttons: 'Query' (with a green checkmark icon), 'Cancel' (with a red X icon), and 'Clear' (with a trash can icon). Below the panel, there is a 'Log Console' window showing a message: 'everdugo has logged in at 12:03:48'. The ESA logo is visible in the bottom right corner of the interface.

Herschel Science Archive (HSA) Interface improvements



- HSA 6.2 Released on 09 April 2015
 - This version included the modification of the HSA data model to improve the performance of the Data Processing system. Also, prepares the Archive for the upcoming bulk reprocessing exercise with version 13.0 of the Pipeline and solves some bugs found in the previous 6.1 version.



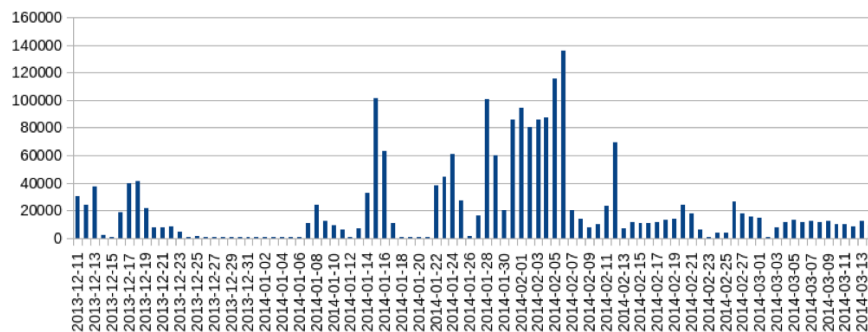
Herschel Science Archive (HSA) Interface improvements



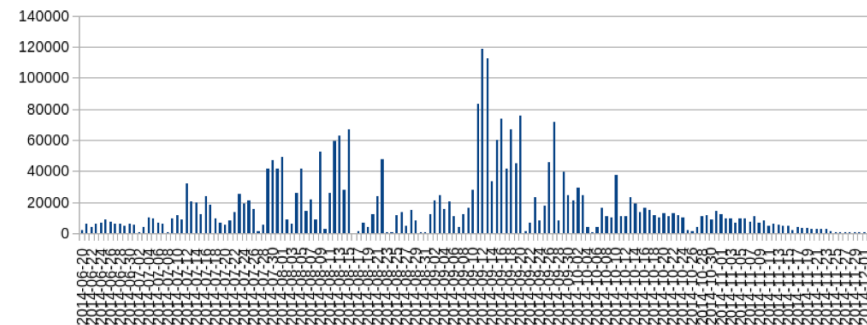
➤ HSA 6.2 Released on 09 April 2015: Performance problems

In 2014 we started to experience a degradation of the system:

- Bad performance: queries lasting forever or even timing out
- Crashes of the HSA



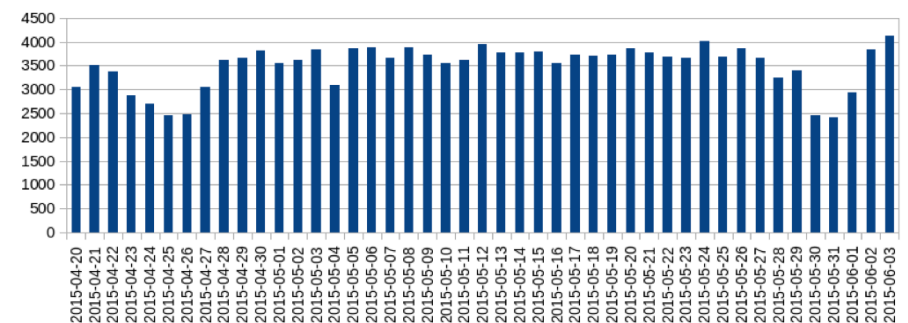
Bulk HCSS 11 (2013-Dec to 2014-Mar)



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

Solutions:

- **Improvement of the Data Model:** From more than 15 millions of products in the same database table to a rational organization of products
- New H/W: Modern and powerful machine, SSDs, network improvement...



Bulk HCSS 13 (2015-Apr ongoing)



Herschel Science Archive (HSA) Interface improvements



- HSA 7.0 Released on 28 October 2015
 - Links to publications: The papers in the Herschel Refereed Publications Library are now linked to the observations in the archive that have been used in each of the papers. Every observation shows what papers it has been linked to. The information can be accessed from the query result page in the HSA User Interface by selecting the "**DETAILS & PUBLICATIONS**" button and then clicking on the tab "**Publications**"
 - Observation details: Relevant parameters associated to every observation in the archive like e.g. band, observed lines, frequency range(s) covered... are now displayed using the option "**DETAILS & PUBLICATIONS**" under the tab "**Details**"
 - Footprints for photometric observations (PACS & SPIRE) strongly improving the accuracy of geometrical searches.
 - Further fixes affecting the interaction with the Operational Data Processing system and correction of various minor bugs mainly affecting the Instruments Advanced Query Panel.



Herschel Science Archive (HSA) Interface improvements




- HSA 7.0 Released on 28 October 2015: Publications and Details

			Observation ID	Postcards	Target	RA/DEC	Instrument
<input type="checkbox"/>		DETAILS & PUBLICATIONS	1342185537		m82	09h 55m 53.90s +69d 40' 27.71"	SPIRE

Details x

Observation: 1342185537 - SPIRE

Right click to download associated Standalone Browse Products



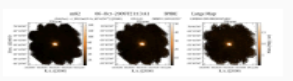
Summary Details Publications

Author	Title	BibCode
Lanz L. et al.	Global Star Formation Rates and Dust Emission over the Galaxy Interaction Sequence	2013ApJ...768...90L
Roussel H. et al.	SPIRE imaging of M 82: Cool dust in the wind and tidal streams	2010A&A...518L..66R
Boselli A. et al.	FIR colours and SEDs of nearby galaxies observed with Herschel	2010A&A...518L..61B
Coker C. T. et al.	Dust Scattering and the Radiation Pressure Force in the M82 Superwind	2013ApJ...778...79C
Lanz L. et al.	Simulated Galaxy Interactions as Probes of Merger Spectral Energy	2014ApJ...785...39L

Details x

Observation: 1342185537 - SPIRE

Right click to download associated Standalone Browse Products



Summary Details Publications


Observing mode:	Large Map
Point mode:	Cross_scan
Bias mode:	nominal
Scan speed:	nominal
Scan direction:	scanab
Number of times to scan over the same area:	2
Map Length (arcmin):	22.0
Map Height (arcmin):	22.0
Spacecraft pointing position angle (deg.):	135.76966066956126

Herschel Science Archive (HSA) Interface improvements



➤ HSA 7.0 Released on 28 October 2015: Footprints for geometrical searches

- **Footprints for PACS and SPIRE:**
Complex polygons for the FoV created per every AOR in the Archive by the Konkoly group.
Strong improvement of the geometrical searches.

 **Herschel Footprint Database**
herchel home observation search rest api docs credits

observation search

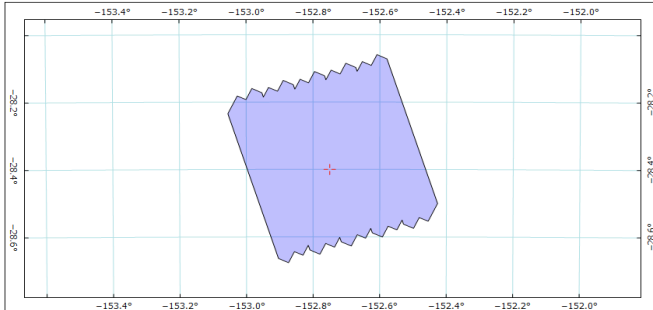
Instruments: ☒ PACS ☐ SPIRE ☐ PACS/SPIRE parallel ☐ HIFI
Fine Time:
Method: ☒ Coordinates ☐ Intersect
Coordinates: [search >](#)

search results

<input checked="" type="checkbox"/>	instrument	obs ID	fine time start	fine time end	angular velocity	area
<input checked="" type="checkbox"/>	Pacs	1342213848	1675840387616874	1675843642547088	20	0.21948
<input type="checkbox"/>	Pacs	1342213849	1675843721599853	1675846976530456	20	0.22009

[plot >](#)

observation footprint



☒ Outline
☒ Fill
☒ Original
☐ Convex Hull
☐ Reduce:
☒ Decimal
☐ HMS-DMS
☒ Grid
☒ Plot Query
[save pdf >](#)



Herschel Science Archive (HSA) Interface improvements



- HSA 7.1 Released on 9 December 2015
 - This version mainly contained some modifications needed to prepare the Archive for the upcoming bulk reprocessing exercise with version 14.0 of the Pipeline
 - Two new tabs in the Geometrical Search Panel for making queries by NAIF ID and by a list of NAIF IDs
 - A link to Vizier from the catalogues (when available) in the User Provided Data Products overview panel
 - The Search Result page has been re-organized and updated
 - Some QC flags include now two new columns IMPACT and ACTION which are displayed in the QC report
 - Further fixes affecting the interaction with the Operational Data Processing system and correction of various minor bugs found in previous versions.



Herschel Science Archive (HSA) Interface improvements



- HSA 7.1 Released on 9 December 2015: Queries by NAIF ID

Geometry Panel

Target \ Multiple Target \ **NAIF ID** \ Multiple NAIF IDs

NAIF ID ⓘ

Geometry Panel

Target \ Multiple Target \ NAIF ID \ **Multiple NAIF IDs**

NAIF IDs File ⓘ



Herschel Science Archive (HSA) Interface improvements



- HSA 7.1 Released on 9 December 2015: Link from UPDP catalogues to Vizier

UPDP Details

User Provided Data Products

Title
GOODS: PACS and SPIRE images of the GOODS fields and associated source catalogs

Author
Elbaz et al.

Abstract
PACS and SPIRE photometric maps of the two Great Observatories Origins Deep Survey (GOODS) fields in the Northern and Southern hemispheres. It consists of a super deep survey in the Northern hemisphere (GOODS-North field) and an ultra deep survey in the Southern one (GOODS-South field) at 100 microns together with a shallower coverage at 160, 250, 350 and 500 microns. These observations were taken under the programme KPOT_delbaz_1 (GOODS-Herschel). Catalogs of sources extracted from the maps are also provided. For column definitions see the release note (GOODS-Herschel_release.pdf)

Latest Update
2014-07-10 Vizier code for catalogs added

[Documentation](#) [Catalog](#) [Data](#) [Postcards](#)

[Add Related](#) [FULL UPDP](#)

Associated catalogs in Vizier
[GH GOODS-South tables DR1.fits](#)
[GH GOODS-North tables DR1.fits](#)

VizieR Search Page

[Simple Target](#) [List Of Targets](#)

Target Name (resolved by [Sesame](#)) or Position: J2000 2 arcmin ☐ Radius ☐ Box size

[J/A+A/533/A119](#) [2011A&](#)
GOODS-Herschel North and South catalogs (Elbaz+, 2011)

[J/A+A/533/A119/ghs](#) [Post annotation](#)
GOODS-HERSCHEL South catalog (2531 rows)

[Simple Constraint](#) [List Of Constraints](#)

Query by [Constraints](#) applied on Columns (Output Order: ☒ + ☐ -)

Show	Sort	Column	Constraint	Explain
<input type="checkbox"/>	<input type="radio"/>	recno	Record number assigned by the VizieR team. Should be used for sorting.	(meta.record)
<input checked="" type="checkbox"/>	<input type="radio"/>	GOODS	(char) IAU coded object identification, GOODS_JHHMM	



Herschel Science Archive (HSA) Interface improvements



- HSA 7.1 Released on 9 December 2015: Quality Control report improvements

Quality Control Report x

Quality Control Report Summary [1342191492]

Common Data

Observation ID	1342191492
Instrument	HIFI
Level	LEVEL2_5_PROCESSED
Sw. Version	SPG v14.0.1
Status	PASSED
Action	NONE

Please refer to:
<http://herchel.esac.esa.int/DpKnownIssues.shtml>
for known problems in products

Comments

Quality Flags

Concept	Value	Impact	Action
[] One of the two polarisations is noisier than the other by more than $\text{SQRT}(2)$. Their noise ratio is given in the value column.	1.7085909527762086	The two polarisations cannot be averaged in order to improve the noise.	Discard one of the two polarisations in your data if necessary.
[] The noise ratio of the two polarisation exceeds that expected from the measured Tsys ratio by more than 10%. Their ratio is given in the value column.	1.7436299999031766	One of the two polarisations is under-performing and may suffer from very poor noise and baseline.	Discard concerned polarisation if the data are unfit.

Save



Herschel Science Archive (HSA) Interface improvements



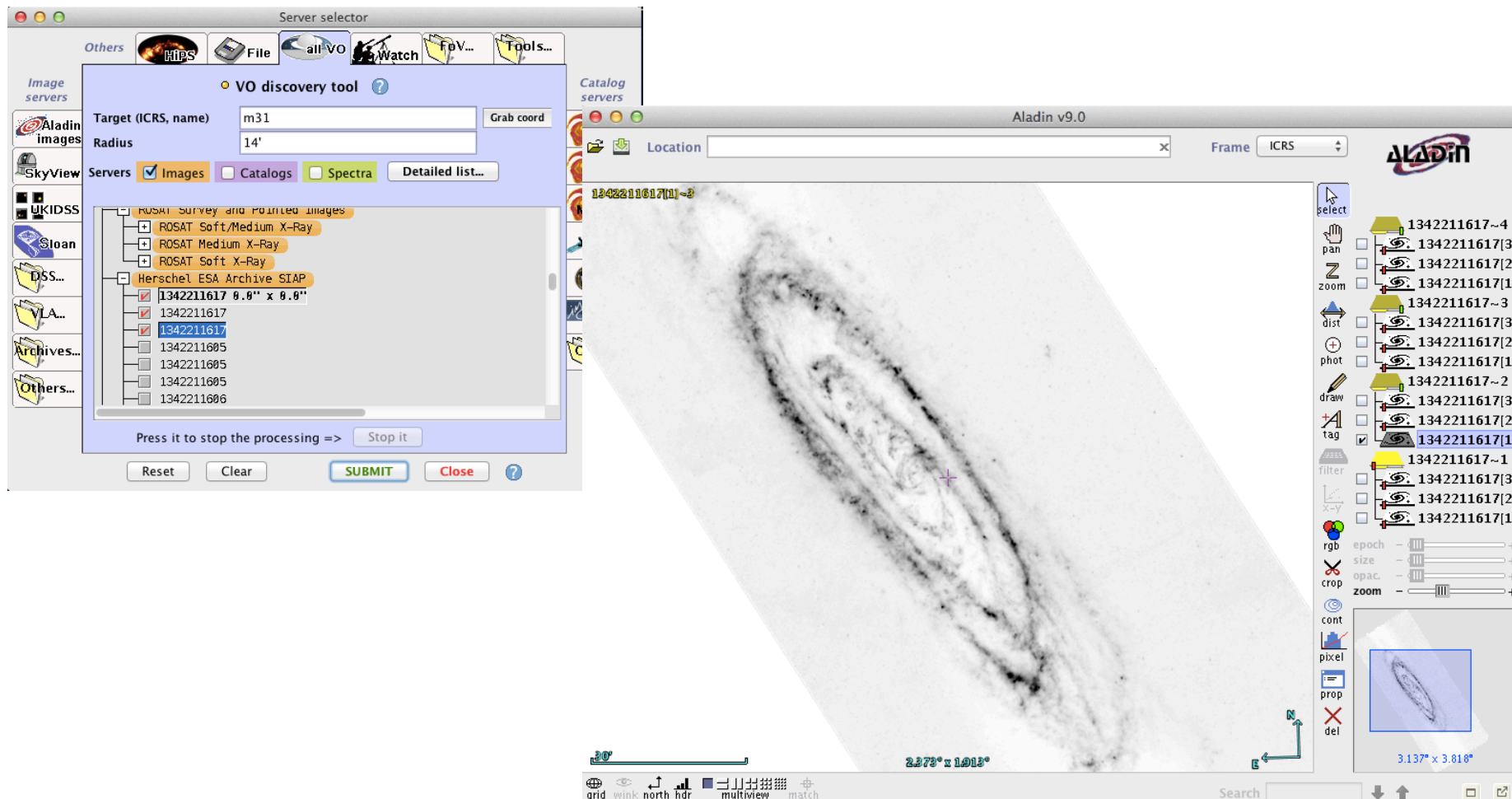
- HSA 7.5 Released on 12 April 2016
 - This last version is mainly devoted to the Registry of Herschel products in the Virtual Observatory (VO) world
 - The possibility to open the Standalone Browse Products with VO tools (like Aladin, VOSpec, CASSIS...) by right-clicking on the postcard
 - Further fixes affecting the interaction with the Operational Data Processing system and correction of various minor bugs found in previous versions.



Herschel Science Archive (HSA) Interface improvements



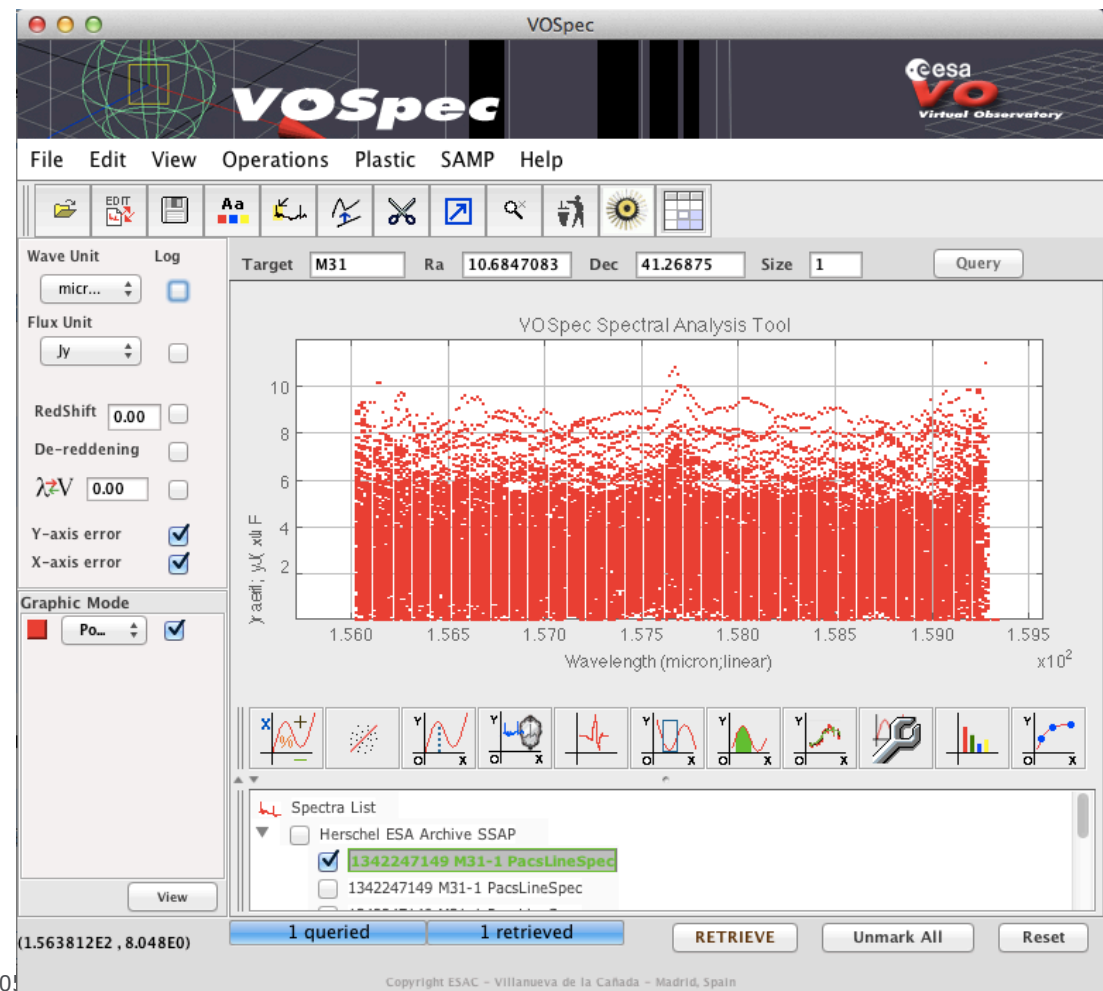
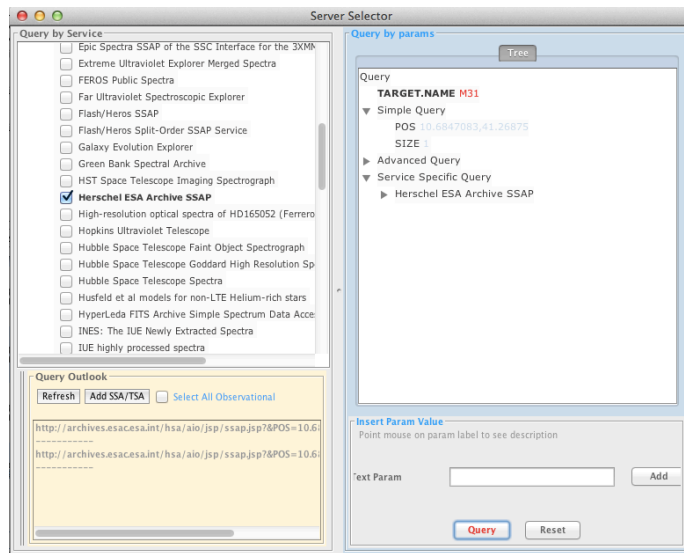
- HSA 7.5 Released on 12 April 2016: Herschel PACS and SPIRE Images registered in Aladin



Herschel Science Archive (HSA) Interface improvements



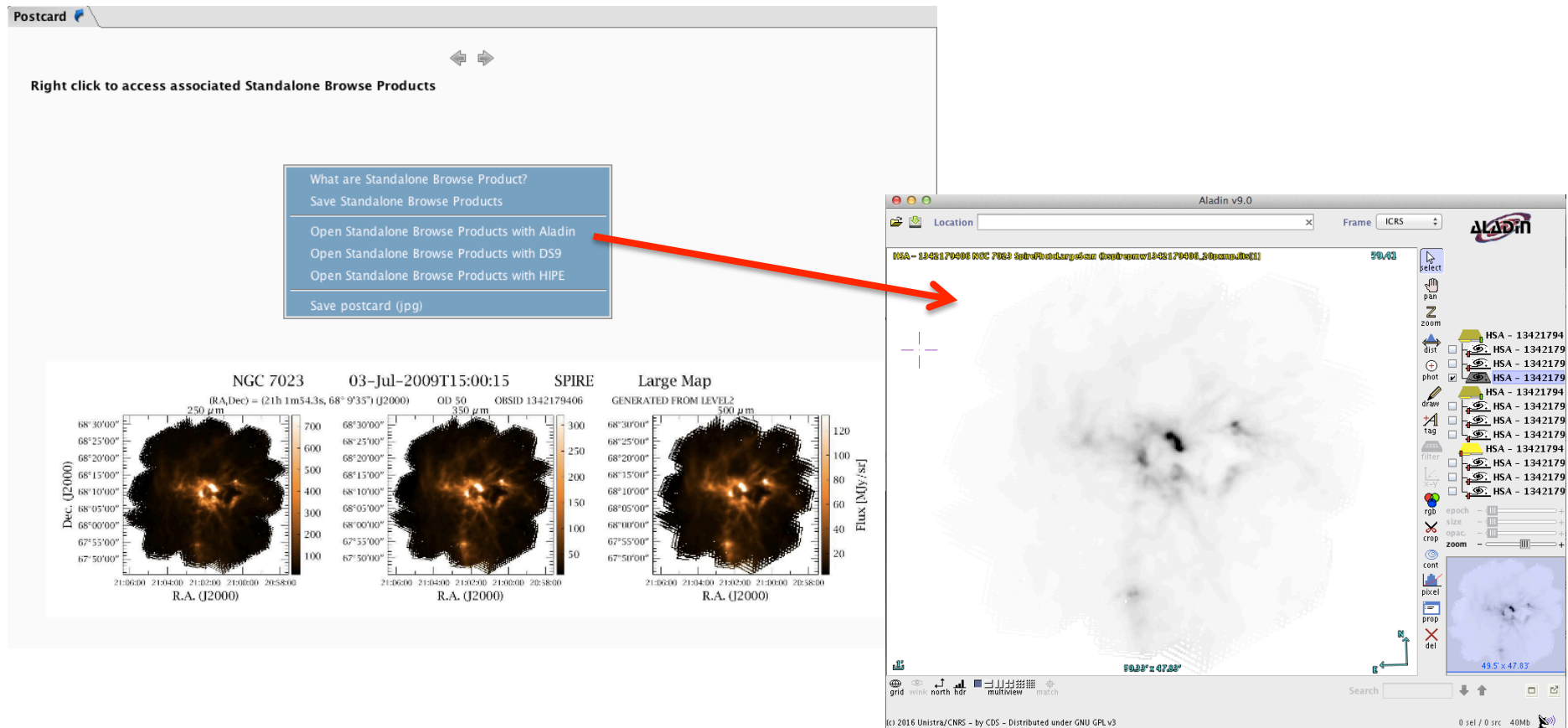
- HSA 7.5 Released on 12 April 2016: Herschel Spectra registered in VOSpec



Herschel Science Archive (HSA) Interface improvements



- HSA 7.5 Released on 12 April 2016: SBPs opened with VO tools



Herschel Science Archive (HSA)

Content I: Pipeline Products



- In the HSC_POP plan as:
 - Product generation, validation and quality control
 - Running bulk reprocessing exercises

- Bulk reprocessing exercises since the beginning of Post-Operations:
 - HCSS v10.3.0 → Until Level2.5
 - HCSS v11.1 → Until Level 3.0
 - HCSS v12.1
 - HCSS v13.0 → First bulk reprocessing after the modification of the DB and the acquisition of the two new HSA servers
 - HCSS v14.0.1
 - HCSS v14.1 (only HIFI and SPIRE; currently running)
 - HCSS v14.2 (only PACS; last bulk reprocessing exercise)



Herschel Science Archive (HSA)

Content I: Pipeline Products



➤ Level-2.5 data products

- HIFI Level-2.5 single-point data products are stitched (i.e. only one concatenates spectrometer sub-band) spectra for each of the polarisations and backends applicable to the observation
- HIFI Level-2.5 map data products are regridded cubes for each of the polarisations and backend sub-bands associated to a given observation. The cube dimension is derived from the geometry of the executed map. For moving targets, the maps are provided in the co-moving frame
- HIFI Level-2.5 spectral scan data products are deconvolved Level-2 spectra (from both WBS-H and WBS-V data) using default parameters.
- PACS Level2.5 photometric products are maps (produced with JScanam, Unimap and the high-pass filter pipelines) combining scan and cross-scan AORs taken on the same sky field
- PACS Level2.5 spectroscopic products combine two observations obtained on-target and on a nearby reference off-position in the unchopped range-scan observing mode
- SPIRE level2.5 products are created from combination of single scan direction observations including the following types:
 - Pairs of scan maps taken in the nominal and orthogonal directions
 - Sets of parallel groups of scans (2+) at various orientations
 - Groups of Large Map mode observations made in overlapping single scan direction

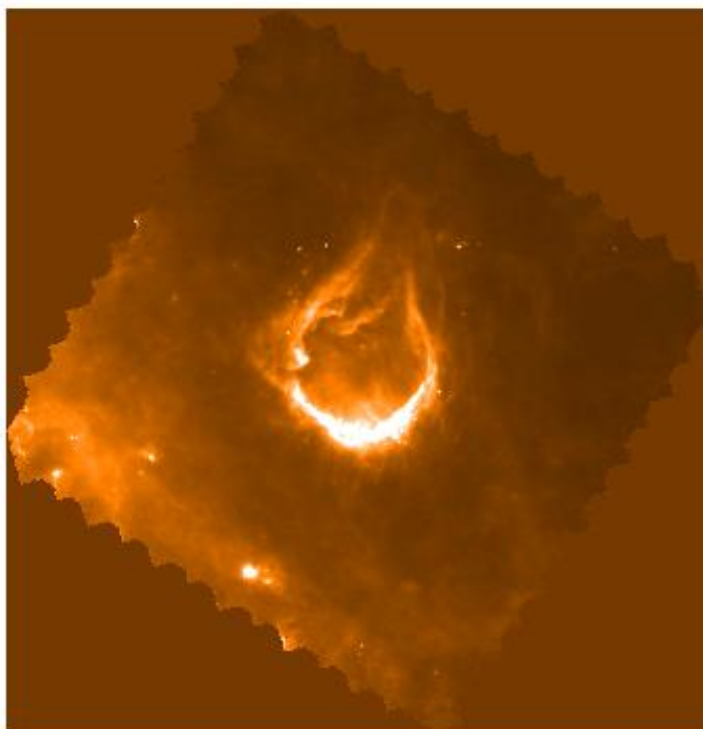


Herschel Science Archive (HSA)

Content I: Pipeline Products



➤ Level-2.5 data products: PACS Photometry



Summary	Details	Publications
Observation Id: 1342185553		
Observing Mode: PacsPhoto		
RA: 17h 12m 23.24s		
DEC: -38d 27' 48.44"		
Target Name: rcw 120		
Summary	Details	Publications
Observing mode: Scan map		
Instrument mode: PacsPhoto		
Point mode: Line_scan		
Blue band: blue2		
Scan speed: medium		
Photometry gain: High		
Source mapping type: largeScan		
Nominal scanning velocity (arcsec/s): 20.0		



Herschel Science Archive (HSA)

Content I: Pipeline Products



➤ Level-3 data products

Level-3 data products are available for PACS and SPIRE

- PACS Level3 Photometric products are combinations of Level-2.5 JScanam and Unimap overlapping maps on a given field generated using the *Mosaic* task of HIPE.
- PACS Level3 Spectroscopic products are provided only for pointed chopNod observations taken in SED mode and they are combined spectrum tables derived from Level-2 products corresponding to several observations of the same target.
- SPIRE Level3 products are mosaics obtained by merging all or a subset of contiguous observations (tracked SSO observations or fixed maps that are known to contain SSOs are excluded). This leads, in some cases, to very large maps which are broken up into reasonable smaller groupings. For instance, the Galactic Plane is cut into chunks of about 15 degrees length with some adjustments around the Galactic Centre.

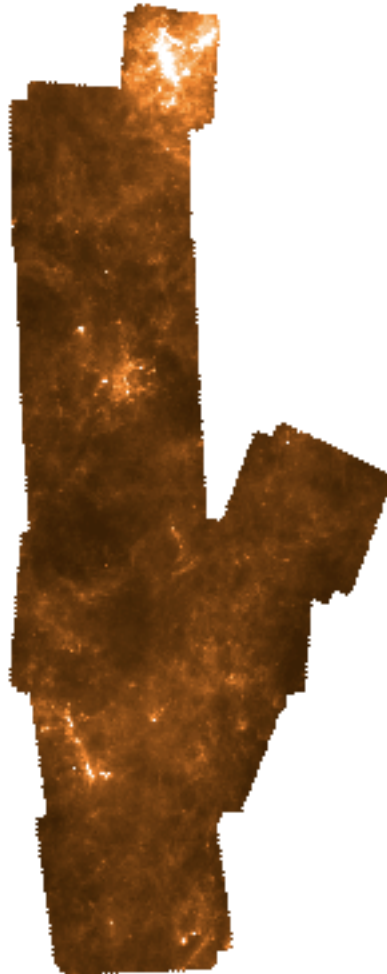


Herschel Science Archive (HSA)

Content I: Pipeline Products



➤ Level-3 data products: SPIRE Photometry



obsid001	1342186121
obsid002	1342186122
obsid003	1342219952
obsid004	1342219953
obsid005	1342219956
obsid006	1342219957
obsid007	1342220616
obsid008	1342220617
obsid009	1342245146
obsid010	1342245147
obsid011	1342245148
obsid012	1342245149
obsid013	1342245150
obsid014	1342245151
obsid015	1342250790
obsid016	1342250791
obsid017	1342250792
obsid018	1342250793
obsid019	1342253427
obsid020	1342253428
obsid021	1342253429
obsid022	1342253430
ra	101.29269061862477
dec	-1.7659933773081797
fileName	hspire_30level3context_0645_m0145



Herschel Science Archive (HSA)

Content II: User Provided Data Products (UPDPs)



- In the HSC_POP plan as:
 - User Provided Data Products: Collection from KPs & other large programmes
 - User Provided Data Products: format validation
 - User Provided Data Products: “ingestion” in HSA

- UPDPs are available from our web page:
<http://www.cosmos.esa.int/web/herschel/user-provided-data-products>

- And from the HUI since HSA version 5.0

- Only format validation is performed in all them and a paper or a technical note is mandatory

(see also D. Teyssier’s presentation)



European Space Agency

Herschel Science Archive (HSA)

Content II: User Provided Data Products



User Provided Data Products Panel (UPDP)

UPDP Search UPDP

- 2013-09-09 ☐ ACOMC: The Auriga-California Molecular Cloud - PACS and SPIRE Data Atlas
- 2013-10-10 ☐ COLDCORES: Galactic Cold Cores: A Herschel survey of the source populations 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 concentrate our efforts on collecting UPDPs for spectroscopic observations



Herschel Science Archive (HSA)

Content III: Highly Processed Data Products (HPDPs)



- In the HSC_POP plan as:
 - Highly Processed Data Products quality checking and integration
- They will be available in HSA v8.0 (new web-based interface)
- And through a dedicated web page
(<http://www.cosmos.esa.int/web/herschel/highly-processed-data-products>)
- About >20 HPDP sets have been identified so far, mostly under HSC custody
(**see also D. Teyssier's presentation**)



Herschel Science Archive (HSA)

Content IV: Ancillary Data Products (ADPs)



- Not in the HSC_POP plan
- They will be available in HSA v8.0 (new web-based interface) and from a dedicated web page
(<http://www.cosmos.esa.int/web/herschel/anciliary-data-products>)
- They are data (products, tables, plots. etc) generated in the course of the Herschel (pre-launched and in-orbit) mission that are not necessarily linked to an obsid, but that shall be preserved for legacy.
 - PSFs
 - Trend Analysis plots
 - Calibration models



Herschel Science Archive (HSA)

Content V: Quality Data Products



- In the HSC_POP plan as:
 - Product generation, validation and quality control
 - Quality control of existing products

- A new DP operator mostly dedicated to Quality Control is available since October 2015

- The Quality Control work was resumed once the performance problems were solved (HSA 6.2) and with HCSS 14.0.1 where the S/W related to QC was highly improved

- A WG led by EV was created involving DP and ICS Teams



Herschel Science Archive (HSA)

Content V: Quality Data Products



			DETAILS & PUBLICATIONS	USER PROVIDED DATA PRODUCTS	QUALITY REPORT	1342188588		ngc4151	12h 10m 29.59s +39d 23' 49.16"	SPIRE	SpirePhotoLargeScan
--	--	--	------------------------	-----------------------------	----------------	------------	--	---------	--------------------------------	-------	---------------------

Quality Control Report Summary [1342188588]

Common Data	
Observation ID	1342188588
Instrument	SPIRE
Level	LEVEL2_PROCESSED
Sw. Version	SPG v2.1.0
Status	PASSED
Action	NONE

Please refer to:
<http://herschel.esac.esa.int/DpKnownIssues.shtml>
 for known problems in products

Comments

- This observation was executed successfully by the instrument/spacecraft. Pipeline processed up to level 2. Passed quality control, with the caveats described in the SPIRE Scan Map AOT release

Quality Flags	
Concept	Value
Ratio of number of flagged samples over number of data samples in the detectors of the PLW array is out of range	0.017419962335216574
Ratio of number of samples that are out of the calibrated voltage range to the number of data samples in the detectors of the PLW array is out of range	0.9285714285714286
Ratio of out of range values to total number of values in PMW data is out of range	0.010991452087342464

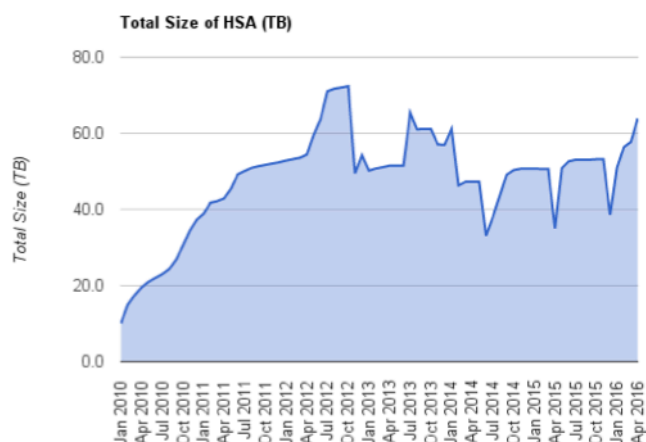
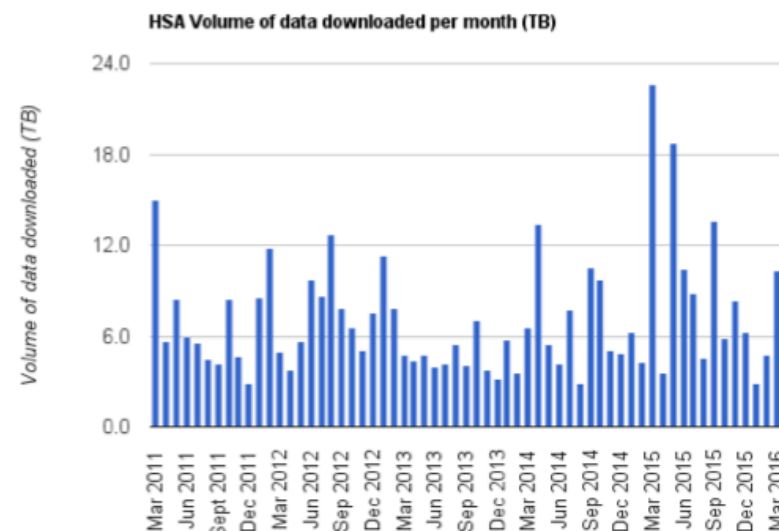
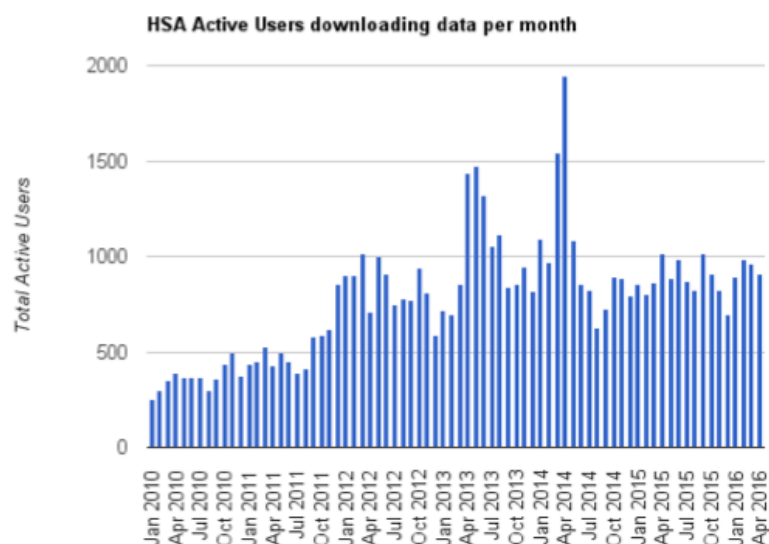
Save

- ~ **77%** of the scientific observations has now quality information (Quality Control Summary Report):
 - HIFI: 99.7%
 - SPIRE: 97.5%
 - PACS: 62%
- **Steps to follow:**
 - Update existing reports with new flags and updated comments → Automatically
 - Continue with the standard QC exercise → Manual inspection of observations



Herschel Science Archive (HSA)

HSA Usage statistics from Jan 2010 to April 2016



After the bulk reprocessing with HCSS versions 14.1 and 14.2 the final total size of the archive will be around 80 TB



Herschel Science Archive (HSA)

What is left for this year?



- HSA v8.0: Migration to thin layer == web-based interface plus the new functionalities for:
 - Ingestion and distribution of HPDPs
 - Distribution of Ancillary Data Products
- The idea is to use the New Hubble Science Archive as a model
- A prototype will be ready by September 2016
- Release date ~ December 2016



Herschel Science Archive (HSA)

What is left for this year?



hubble science archive

SEARCH

Hubble data collection ☒ HST ☒ HLA ☒ HLSP

SPATIAL SEARCH

Name

Equatorial

Galactic

Ecliptic

Target Name

Resolver Any

☒ Science data only ☒ Public products only

ADDITIONAL CONSTRAINTS

Search Clear

CURRENT SEARCH

CURRENT RESULTS

HST Observations:

HLA Observations:

HLSP Observations:

Proposals:

UPDPs

HPDPs

Legacy product?

Pipeline products

hubble science archive

RESULTS #1 x

hst observations (782) hla observations (473) hlsp observations (0) proposals (61) publications (228)

	Observation ID	RA	Dec	Target name	Observation Date	Exposure Time	Release Date
<input type="checkbox"/>	IB6Y01010	00h 43m 02.43s	+41d 12' 56.18"	M31-RV	2009-12-07 14:11:13	1707.000	2010-12-
<input type="checkbox"/>	IB6Y01020	00h 43m 02.43s	+41d 12' 56.17"	M31-RV	2009-12-07 14:55:50	987.000	2010-12-
<input type="checkbox"/>	IB7711010	00h 42m 18.65s	+41d 14' 01.16"	M31-B086	2011-01-26 01:27:33	600.000	2011-01-
<input type="checkbox"/>	IB7711020	00h 42m 18.65s	+41d 14' 01.16"	M31-B086	2011-01-26 01:44:09	120.000	2011-01-
<input type="checkbox"/>	IB7796010	00h 42m 44.24s	+41d 16' 09.19"	M31-NUCLEUS	2009-12-26 10:28:56	600.000	2009-12-

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Herschel Science Archive (HSA)

What is left?



- Continue collecting and ingesting UPDPs (mostly spectroscopic data sets) during 2017
- Complete the ingestion of HPDPs and ADPs during 2017
- Preservation of Uplink / Other products in the HSA?
 - TM files
 - Proposal abstracts
 - POS files
 - Orbit file...
- From Pipeline products, UPDPs and HPDPs to **LEGACY PRODUCT** (the best product possible) per AOR???



Herschel Science Archive (HSA) Summary



- All that was planned for Post-Ops has already been implemented or will be before end of 2017:
 - All the planned functionalities
 - The “best possible” content (Pipeline products, HPDPs, UPDPs...)
 - New web-based interface in line with the rest of ESAC Archives which will facilitate long-term preservation and maintenance of the HSA.

