

POPs Status and Plans / HUG#9



18-19 June 2015 @ ESAC



HERSCHEL SPACE
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Pedro García-Lario
Head of HSC / Herschel Mission Manager

Timing of Post-operations across all Centres



HSC		
Launch	14 May 2009	
Start routine operations	01 Dec. 2009	
End routine operations	29 Apr. 2013	
End of the run-down (sub-)Phase (iPOP)	30 June 2013	
End of the main (sub-)Phase (mPOP)	30 Sep. 2017	
End of post-operations Phase (hPOP)	31 Dec. 2017	
ICCs & NHSC		
HIFI ICC wraps-up	31 Mar. 2016	
SPIRE ICC wraps-up	30 June 2016	
PACS ICC wraps-up	31 Dec. 2016	
NHSC wraps-up	30 Sep. 2017	



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SOME PAST EVENTS SINCE END OF HELIUM (I)



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Herschel Science Team #51 @ ESTEC	Jan. 17-18 2013
HCSS v10.0 released	Jan. 22 2013
PACS / SPIRE Map Making Workshop @ ESAC	Jan. 28-31 2013
HSPot v6.3 roll out (in line with HCSSv10.0)	Feb. 7 2013
HCSS v9.1 (BKRP ends)	March 3 2013
DP Webinars round#4 (after HIPE v10.0)	Feb-Apr 2013
Herschel Calibration Workshop @ESAC	March 25-27 2013
Herschel Users Group #6 @ ESAC	April 8-9 2013
HCSS v11.0 branch-off	April 11 2013
End Helium	April 29 2013
Start of Post-Operations – Run Down Phase (iPOP)	April 30 2013
Herschel Science Operations Coordination Group #13	May 07 2013
Herschel Archive Group (HAG) #1	May 8 2013
Herschel disposal Delta-V (130m/s)	May 13/14 2013
Herschel Science Team #52 @ESTEC	May 13-14 2013
End of KP Wrap-Up Telecons (42)	May 17 2013

SOME PAST EVENTS SINCE END OF HELIUM (II)



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End-Helium Lessons Learned Meeting @ ESAC	May 28-30 2013
Final burn and passivation	June 17 2013
Herschel Data Processing for Newcomers @ESAC	June 24-27 2013
HCSS v10.3 (BKRP starts)	June 28 2013
End of Post-Operations – Run Down Phase (iPOP)	June 30 2013
Start of Post-Operations – Main Phase (mPOP)	July 1 2013
Herschel Archive Group (HAG) #2	Aug. 6 2013
Exploiting the Herschel Archive: A Data Processing Workshop (NHSC)	Aug. 26-30 2013
HCSS v10.3 (BKRP ends)	Sep. 5 2013
HSA v5.0 (with links to UPDPs)	Sep. 9 2013
HCSS/HIPE v11.0 release	Sep. 29 2013
HCSS v12.0 branch-off	Oct. 11 2013
Herschel Users Group #7 @ ESTEC	Oct. 14 2013
The Universe Explored by Herschel Symposium @ ESTEC	Oct. 15-18 2013
Herschel Science Operations Coordination Group #14	Oct. 30 2013
End of MOC support to POPs	Oct. 31 2013

SOME PAST EVENTS SINCE END OF HELIUM (III)



Herschel Science Team #53 @ESAC	Nov. 4-5 2013
DP Webinars round #5 (after HIPE v11.0)	Nov-Dec 2013
Herschel Calibration Steering Group #34	Nov. 27 2013
HCSS v11.1 (BKRP starts)	End Jan. 2014
Herschel Science Operations Coordination Group #15	Feb. 5 2014
HSA v5.2 roll out (access to 'standalone browse products')	March 17 2014
HCSS/HIPE v12.0 release	March 21 2014
Herschel Science Team #54 @ ESTEC	April 7-8 2014
HCSS v11.1 (BKRP ends)	April 10 2014
Herschel Spectroscopy On-line Workshop	April 23-25 2014
Herschel Science Operations Coordination Group #16	May 6 2014
Herschel SGS co-location @ Paris area	May 12-14 2014
Herschel Users Group #8	May 22-23 2014
Herschel Data Processing for Newcomers (@ESAC)	June 24-27 2014
HSA 6.0 (database ready for instrument expert query panels)	End June 2014
HCSS v12.1 (BKRP starts)	July 9 2014



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SOME RECENT EVENTS IN 2014-2015



Herschel Science Operations Coordination Group #17	September 12 2014
Full Scope Lessons Learned Meeting @ ESTEC	September 22-23 2014
HCSS v12.1 (BKRP ends)	November 10 2014
Star Formation Across Space and Time – Science Conference @ESTEC	November 10-14 2014
HCSS v13.0 code freeze	November 13 2014
Herschel Science Team#55 @ ESAC	November 17-18 2014
Herschel Science Operations Coordination Group #18	January 16, 2015
HSA 6.1 (access to instrument expert panels from the HUI)	February 26 2015
HSA 6.2 (database model evolution – improved query performance)	April 9 2015
HCSS/HIPE v13.0 release	April 13 2015
Herschel Science Team #56 @ ESTEC	April 13-14 2015
ALMA/Herschel Archival Workshop @ ESO-Garching	April 15-17 2015
HCSS 13.0 (BKRP starts)	End-April 2015
Herschel Science Operations Coordination Group #19	April 30 2015
Herschel Calibration Steering Group Meeting #36 @ ESAC	May 7-8 2015
Herschel Data Processing Workshop for Newcomers 2015	June 16-19 2015



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SOME FUTURE EVENTS IN 2015-2016



Herschel Users Group #9 @ ESAC – you are here	June 18-19 2015
HCSS 13.0 (BKRP ends)	End-June 2015
HCSS v14.0 code freeze – brought forward -	September 2 2015
HSA 7.0 (links to publications / improved geometrical searches)	September 2015
HIFI ICC wrap-up/handover review meeting @ SRON	October 8-9 2015
Herschel Science Team #57 @ ESAC	November 4-5 2015
SPIRE ICC wrap-up/handover review meeting @ RAL	November 18 2015
HCSS/HIPE v14.0 target release date	December 2015
Herschel Explanatory Handbooks & Explanatory Library roll out	January 2016
Bulk reprocessing with HCSS 14.0	Jan-Feb 2016
PACS ICC wrap-up/handover review meeting @ ESAC	March 8-9 2016
End of POPs for HIFI	March 31 2016
Herschel Science Team #58 @ ESTEC	April 11 2016
Water in the Universe: From Clouds to Oceans @ ESTEC	April 12-15 2016
Bulk reprocessing with HCSS 14.1 – only for SPIRE (place holder)	Apr-May 2016



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TIME TO THINK ABOUT THE LEGACY SCIENCE PHASE

End of POPs for SPIRE	June 30 2016
Bulk reprocessing with HCSS 14.2 – only for PACS (place holder)	Jun-Jul 2016
HCSS v15.0 code freeze	September 15 2016
HCSS/HIPE v15.0 target release date	December 2016
End of POPs for PACS	December 31 2016
Bulk reprocessing with HCSS 15.0 (place holder)	Jan-Feb 2017
NHSC wrap-up/handover review meeting	End March 2017?
End of NHSC support	September 30 2017
End of Post-Operations - Main Phase	September 30 2017
End of Post-Operations – Handover Phase	December 31 2017
Beyond Post-Operations – Legacy Science Phase	> January 2018



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PERSONNEL

RECENT CHANGES: DEPARTURES AND ARRIVALS



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- **Leo Metcalfe:** ExoMars 2016 SGS Development Manager (since 1-Sep-2013), continued as Herschel Mission Manager at 10-20% level; full handover to **Pedro Garcia-Lario** took place on 1 March 2015
- **Bruno Altieri** and **Roland Vavrek** moved 100% to Euclid as of 1st Jan 2015
- **Rosario Lorente** (HCSG team), shared 50% with Rosetta (Liaison Scientist) as of 1st March 2015
- **Bruno Merin** (DP Scientist) shared 50% with SAT (ESAC Astronomy Archives Science Lead) since 1st April 2015 – will move 100% to SAT on 1st July 2015
- **Tanya Lim** (ICS Team - SPIRE) will leave Herschel, becoming Exomars Archive Scientist on 1st July 2015
- **Elena Puga** (ICS team – PACS/XCal) on maternity leave for six months – will be back in Sep 2015; replaced temporarily by **Christophe Jean**
- **Craig Stephenson** (ICS Team - Pointing) will leave Herschel by end of June 2015
- **Miriam Rengel** joined the ICS Team providing ‘off-site services’ in the HIFI area as of 1st April 2015 (following earlier appointments of **Katrina Exter** and **Luca Calzoletti** in May 2014, also as off-site contractors)

AREAS OF CONCERN / OPEN QUESTIONS



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- **Risk of losing key people**

- ☐ Increased risk now that we are approaching end of POPs
- ☐ So far, lucky with the unexpected departures – fitting the rundown profile
- ☐ Sharing people with other missions is a good strategy to keep expertise around
- ☐ Early departure of people used to extend the contracts of others

- **Drop of resources at ICCs earlier than at formal end date**

- ☐ End of HIFI ICC : end March 2016 (OK)
- ☐ End of SPIRE ICC : end June 2016 (Canadian FTS team ends March 2016)
- ☐ End of PACS ICC : End 2016 (mid-year, early March in practice)
- ☐ End of HSC ICC : End 2017 (in practice most contracts earlier mid-2017)
- ☐ End of NHSC ICC : some funding until 2017, but in October 2015 SW development ends

SOME INTERESTING NUMBERS (I)



- Herschel registered users: 3168 – 1 new user per calendar date for years; also in POPs; may be slightly dropping rate in the last few months

(+318 with respect to HUG#8 in May 2014; +683 since end of Operations on 29 Apr 2013)

- Helpdesk tickets: 7104– drop from ~15-25 tickets/week in operations to ~ 5-7 tickets/week in POPs; maintained rate in the last few months

(+324 with respect to HUG#8; +802 since end of Operations)

- HIPE user release installer downloads – 11033 since June 2010 – 48 last week; maintained rate after every major HIPE release: HIPE 12.1 downloaded 1073 times; HIPE 13.0 downloaded 316 times since recent release in mid-April

(+2013 with respect to HUG#8; +4595 since end of Operations)



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- **Publications Tracking**

- ☐ Herschel Publications Tool – with links to postcards, now improved with publication evolution plots making distinction of archival versus partially archival or non-archival proposals

(<http://herschel.esac.esa.int/hpt/>)

- ☐ Publication statistics twiki, updated every friday

(<http://herschel.esac.esa.int/twiki/bin/view/HSC/StatisticalPublicationReports>)

- per programme
- per (sub-)instrument
- per science category

- **Ph.D. Theses based on Herschel data**

- ☐ Initial list comprised 62 Ph.D. Theses – full text available at least for 36
- ☐ Posted on a dedicated web page (still orphan – adding links will be next):

<http://www.cosmos.esa.int/web/herschel/theses>

SOME INTERESTING NUMBERS (II)



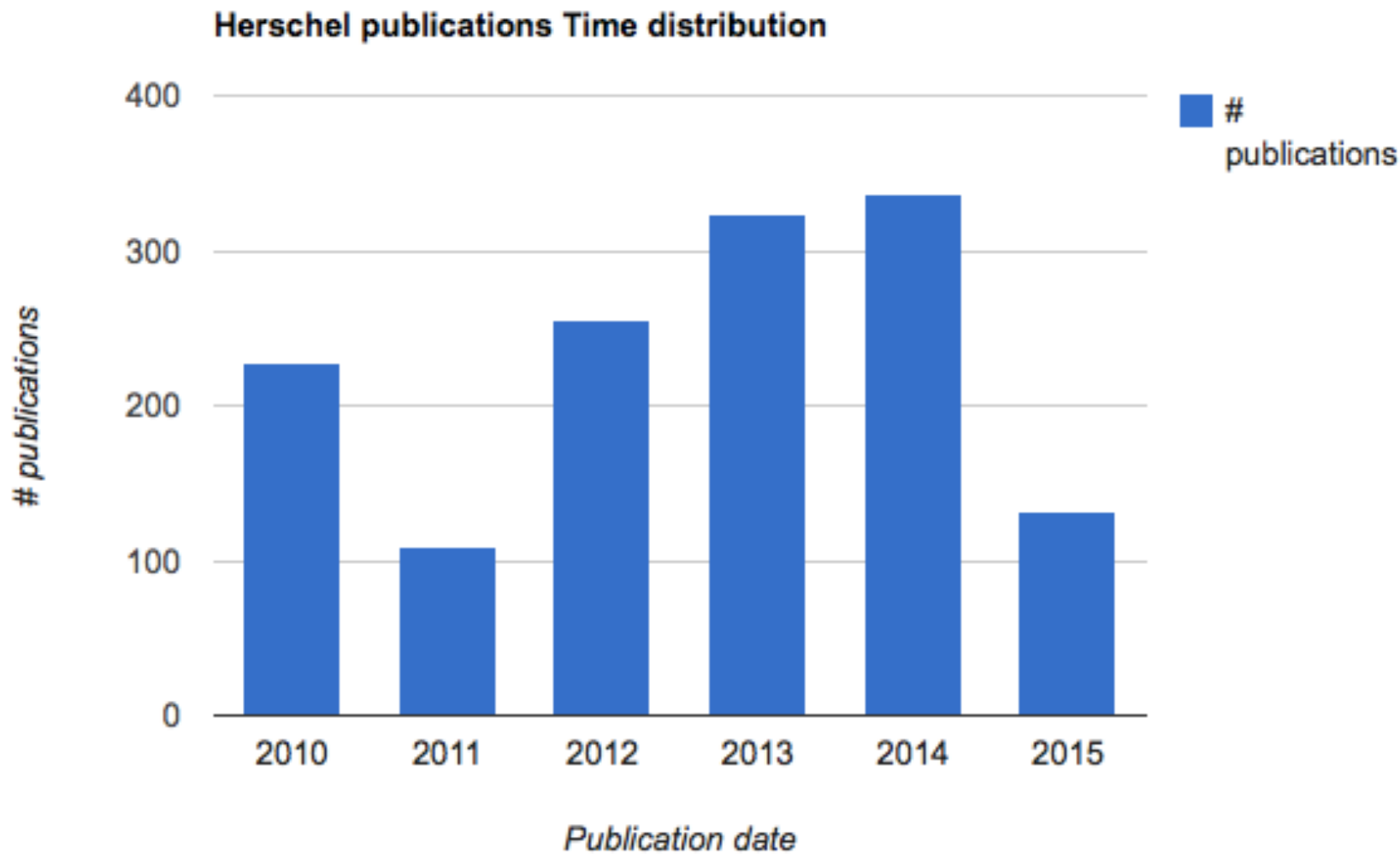
- Total number of refereed publications based on Herschel data: 1402 as of 4 June 2015
 - ❑ 228 papers in 2010
 - ❑ 109 papers in 2011
 - ❑ 255 papers in 2012
 - ❑ 323 papers in 2013
 - ❑ 336 papers in 2014
 - ❑ 151 papers in 2015 (as of 4 June) – in track for exceeding ~300 again this year
- 50.7% (in observing time = 43.3% in #AORs) of the science observations in HSA have already resulted in a refereed publication (based on the 1382 papers recorded as of end-April)

(+31.5% in observing time = +34.2% in #AORs with respect to 20 Sep 2013 when we started the monitoring ~ 1.75 years ago) – constant increase of 15% per year so far

(at this rate, we would achieve a total of ~80% in observing time = 80% also in #AORs by end of POPs, but how do we know if we can keep this rate?)

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PUBLICATIONS: EVOLUTION WITH TIME

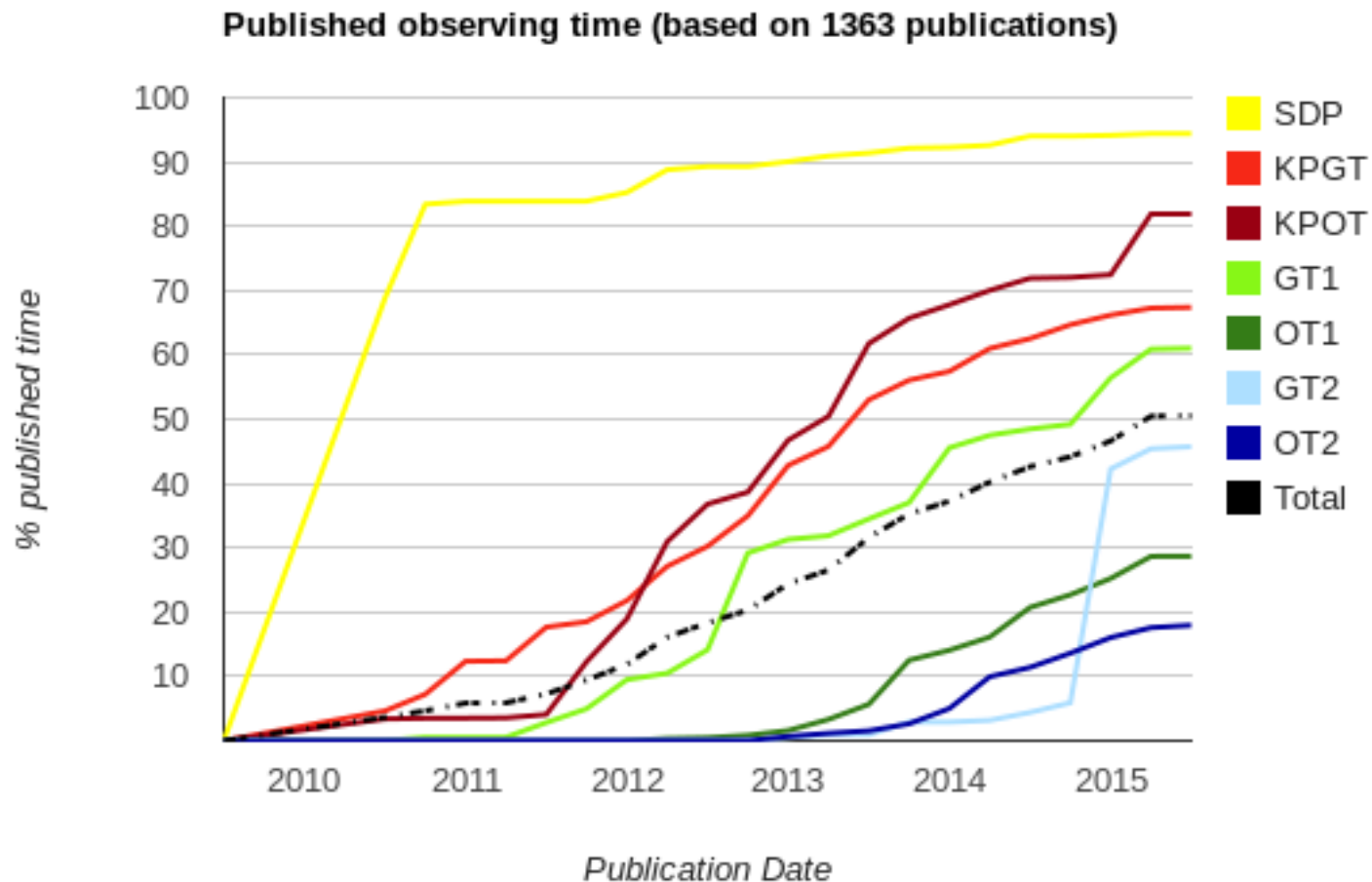


HERSCHEL SPACE OBSERVATORY

PUBLICATIONS: EVOLUTION WITH TIME



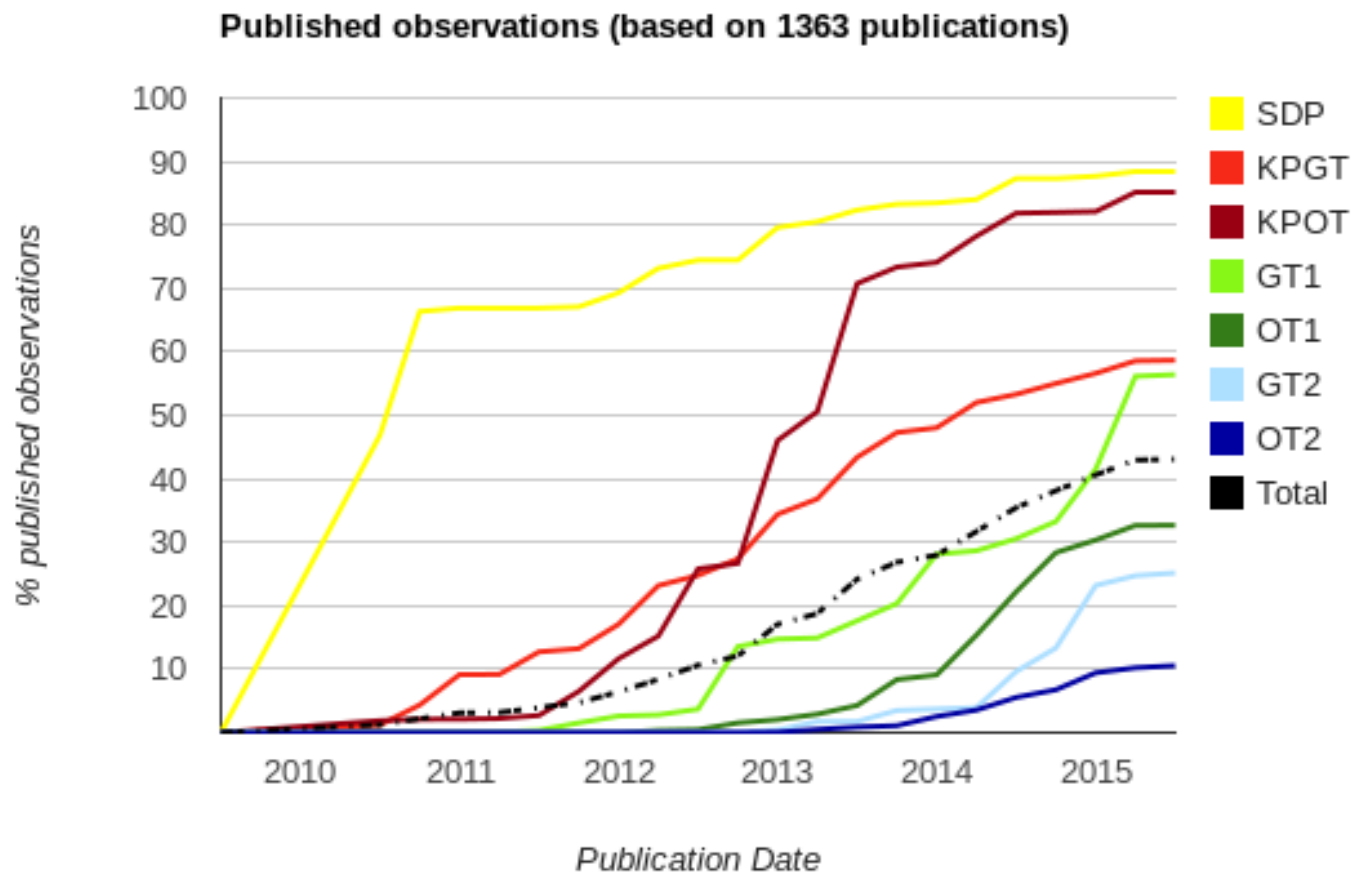
- Evolution of % of observing time resulting in at least one refereed publication



PUBLICATIONS: EVOLUTION WITH TIME



- Evolution of % of AORs used in at least one refereed publication

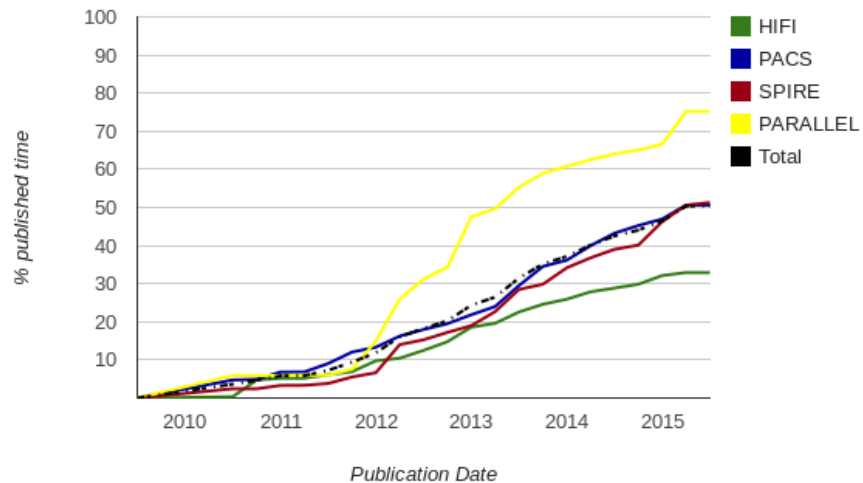


PUBLICATIONS: EVOLUTION WITH TIME

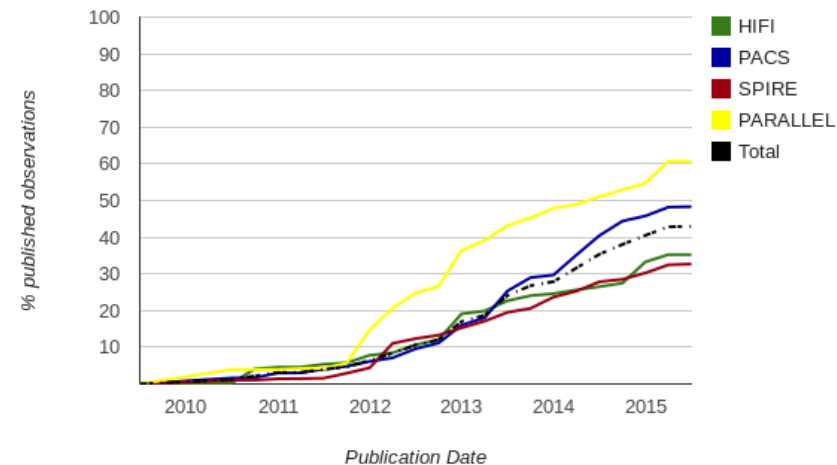


HERSCHEL SPACE OBSERVATORY

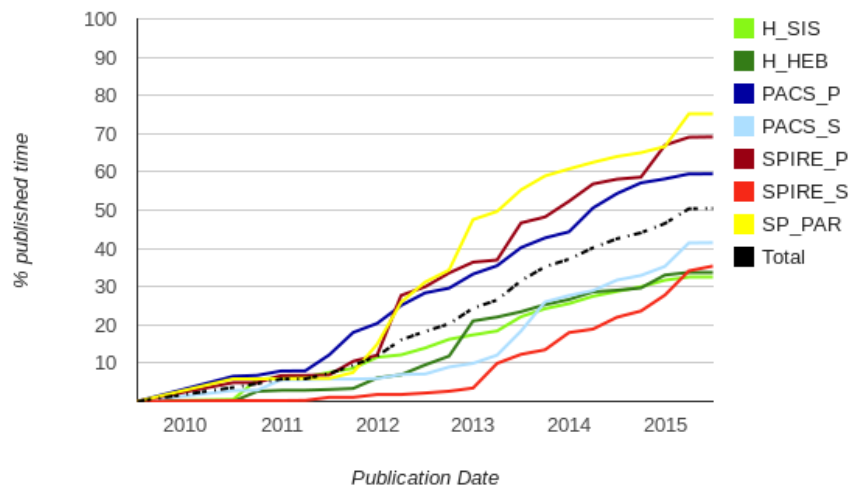
Published observing time (based on 1363 publications)



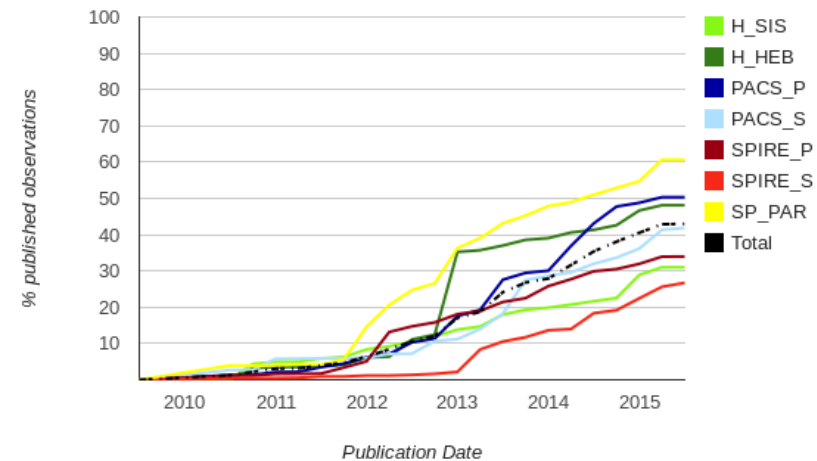
Published observations (based on 1363 publications)



Published observing time (based on 1363 publications)



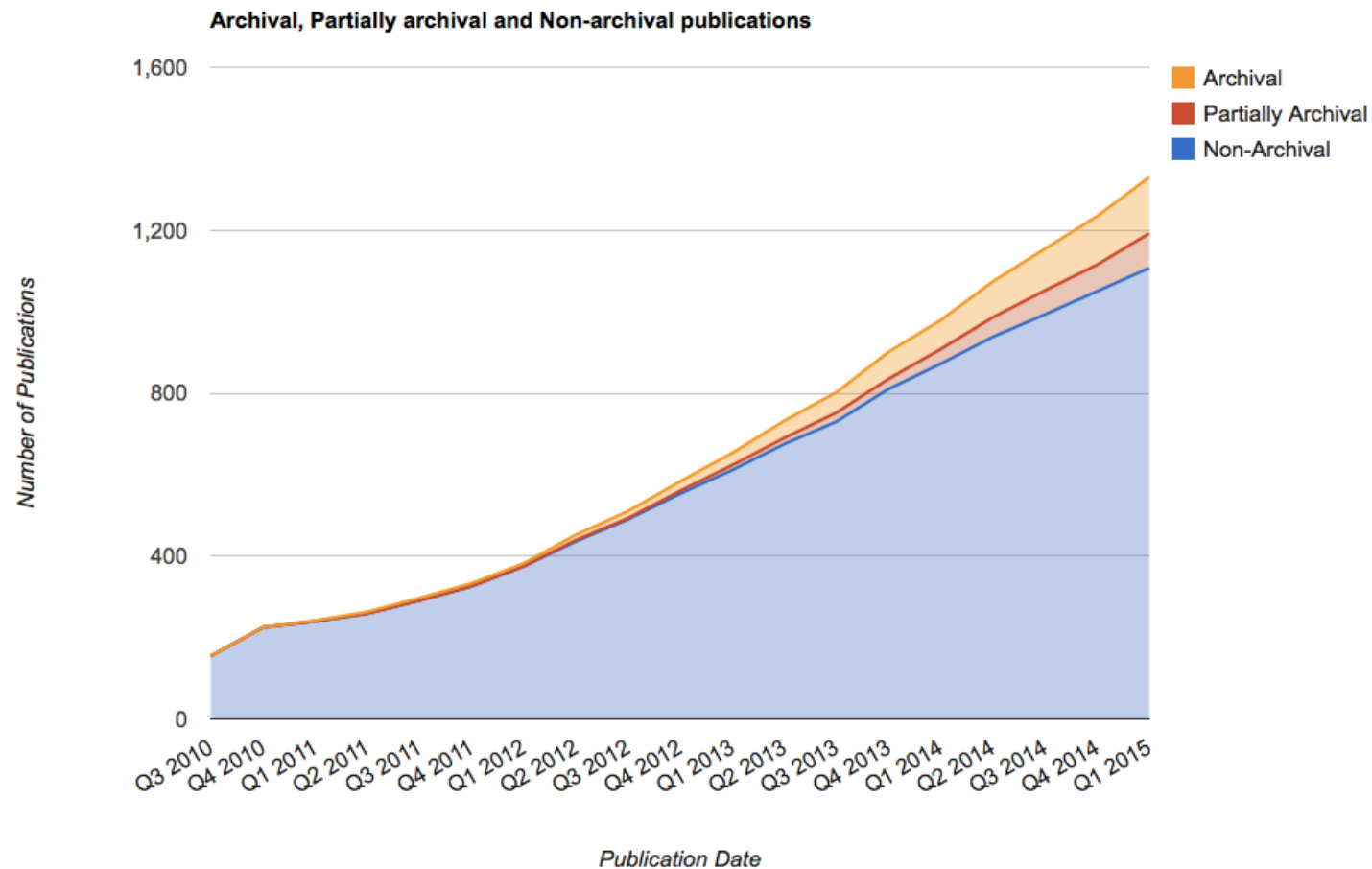
Published observations (based on 1363 publications)



PUBLICATIONS: EVOLUTION WITH TIME



- Archival research represents ~10-15% of total (+ another ~10% of mixed archival/non-archival publications) – increasing relevance?

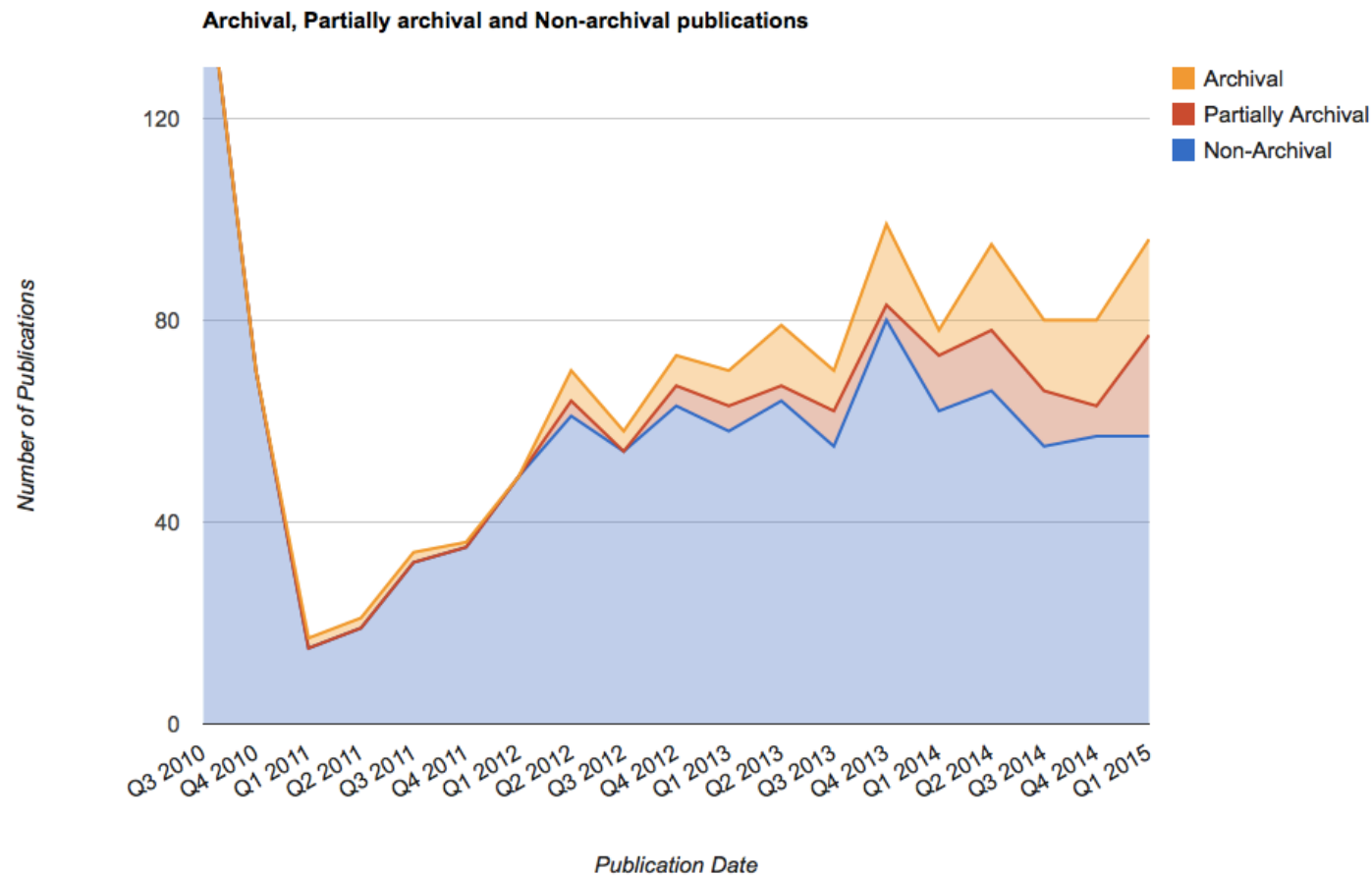


HERSCHEL SPACE OBSERVATORY

PUBLICATIONS: EVOLUTION WITH TIME



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- **Most numbers reflect a healthy status 2 years after end of He**

- ☐ Maintained rate of new registrations / helpdesk tickets / HIPE downloads
- ☐ #publications slightly above ~300 refereed papers/year since 2013 – we may have not seen the peak yet
- ☐ Still new observations (+15% every year) being used for the first time for the publication of a paper (but this cannot be maintained forever)
- ☐ WARNING: soon we will have to incorporate statistics that consider total number of publications (rather than percentages), as we will be approaching asymptotically a value (80%?) which represents the percentage of ‘publishable’ observations per instrument/sub-instrument (we have to admit that some observations may never produce a single paper)

- **Challenges ahead**

- ☐ Need to have the community re-using the same observations for different science goals if we want to keep the current publication rates
- ☐ Promotion of archival research (looks like indeed the relative relevance of archival research with respect to PI research is increasing – need to maintain this trend!) - Herschel awareness in the community / combination with data from other facilities: ALMA, SOFIA, JWST,... / added value – science ready products



- **Release of HCSS v13 (Mid-April 2015)**

- ☐ HCSS v13 (code freeze on 13 November 2014) was last chance to incorporate significant changes to instrument pipelines (e.g. new UNIMAP map-maker(s) for PACS Photometry pipeline; new SPIRE pipeline)
- ☐ It also Includes new treatment of the pointing information, new or reformatted standalone browse products (for PACS spectroscopy they are provided for the first time), among other improvements. See:

<http://herschel.esac.esa.int/twiki/bin/view/Public/HipeWhatsNew13x>

- **Bulk reprocessing exercise with HCSS v13.0 (end April - end June 2014)**

- ☐ Typically take 2 months+ ; 12.1 however took double due to reported infrastructure issues
- ☐ HCSS v13.0 bulk reprocessing using HSA 6.2.(1), released on 9th April, containing the new database model; together with new hardware, expected to be completed in only 2 months with the much improved performance of the new system (perhaps a bit more due to slow generation of Unimap level 2.5 PACS photometry products currently on-going)

- **QC Reports population**

- ☐ Currently completed for ~70% of the science observations in HSA – hampered by the problems affecting archive performance – will be resumed now – high priority task for the remaining POPs !!!



- **Release of HCSS v14 (December 2015)**

- ☐ HCSS v14 (code freeze on 2nd Sep 2015) will be the last version to be produced while all ICCS are still around
 - Versant-free / Java 8
 - Needs to be rolled out before end of 2015 !! In time for HIFI to inspect and validate products generated with this version of the software before they cease activities by end March 2016

- **Bulk reprocessing exercise with HCSS v14.0 (mid-Jan – mid-March 2016)**

- ☐ HCSS v14.0 bulk reprocessing using HSA 7.0, expected to be completed in only 2 months with the improved implementation of UNIMAP for the generation of PACS photometry level 2.5 products

- **Future versions of HCSS in 2016-2017**

- ☐ HCSS 14.1 considered for the moment a place holder for potential bug-fixing by SPIRE in Spring 2016
- ☐ HCSS 15.0 should just contain changes to the framework, not affecting the instrument pipelines – no bulk reprocessing? – legacy version of HIPE, to be rolled out by end 2016

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- **Areas of concern**

- ☐ Tight schedule: crucial to have HCSS/HIPE 14.0 user release ready before end December 2015
- ☐ Limited resources for the validation of anything beyond HCSS/HIPE 14.0
- ☐ Transfer of SW modules from ICCs/NHSC to HSC as they cease their activities
- ☐ Population of QC comments – high priority in remaining POPs

- **Open questions**

- ☐ HCSS/HIPE 14.0 might be the last version used for a bulk reprocessing exercise, but this implies no more changes to the pipelines – can we live with that?
- ☐ Moreover, it would impose also constraints on the implementation of further refinements in auxiliary files, including pointing – everything has to be done by 2 September 2015!
- ☐ Long term preservation of HIPE capabilities:
 - Systematic processing
 - User re-processing
 - User data analysis
 - Other functionalities
- ☐ Wrapping up further development based on defined priorities (see BM presentation) and in the context of future developments like MMI

INSTRUMENT CALIBRATION:



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- **Consolidation of latest calibration models available**
 - ☐ Coordination by HCALSG (Planets, asteroids, stars) which will hold a (possibly last) meeting @ ESAC on 7-8 May 2015
- **Consolidation of pointing related improvements**
 - ☐ After latest modifications of pointing products in HCSS 13.0
- **Maintenance of Instrument Twikis**
 - ☐ Homogenization, structure adapted to POPs needs
 - ☐ Adding / Updating instrument calibration documents in view of future explanatory library
- **Support overall calibration improvements / new data analysis tools**
 - ☐ In coordination with the ICCs
- **Cross-calibration**
 - ☐ Including refereed paper, close to submission (on hold now with Elena Puga on maternity leave)
- **Calibration web pages in preparation with links to models**
 - ☐ As part of the Herschel Explanatory Library
 - ☐ Models will be made available through HSA

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- **Are we done with respect to calibration models?**

- ☐ Essentially, yes (see Tony Marston's presentation)
- ☐ Tidy up in HCSS/HIPE 14.0

- **Areas of concern / work still to be done**

- ☐ Cross-calibration (Elena Puga on maternity leave)
- ☐ Error budgets – not complete but getting there
- ☐ Pointing: last tweaks in HCSS/HIPE 14
- ☐ Generation of Herschel Point Source Catalogue (newly identified as high priority)
- ☐ Ingestion of all calibration models in HSA / posting of files on the web as part of the Herschel Explanatory Legacy Library (HELL)

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- **Helpdesk support**

- ☐ Most frequent topics in POPs: Data Reduction, Data Analysis, UPDP deliveries, publication tracking, DP workshops – FAQ updates as a continuous task
- ☐ Migration to a new version of Kayako 4.0, used by other missions @ ESAC expected for second half of the year (will facilitate long term preservation of our Helpdesk system)

- **Web / Twiki improvements**

- ☐ Migration to Liferay technology took place in May-June 2014, in line with other ESA missions (COSMOS web server) - allows twiki-like editing of specific web pages
- ☐ Regular updates – e.g. posting of Latest News, links to HIPE installers and calibration files, new documentation as it becomes available, etc.
- ☐ Upgrade of the current HSC Twiki to v6.0 (Jerusalem) planned for this summer

- **Mass-Mailings**

- ☐ E-News (mass-mailings to all Herschel registered users) – latest was #33 yesterday with: announcement of new sets of UPDPs in HSA; availability of presentations given at last ALMA/Herschel Workshop on-line; references to a few Herschel-related conferences - migration to html format (see e.g. NHSC Newsletter) planned for later this year
- ☐ General announcements and dedicated messages to subsets of users when necessary – e.g. various announcement related to Herschel DP Workshop or availability of HIPE 13.0



- **DP (HIPE internal) Documentation**

- ☐ Coordinated by the DP Editorial Board led by Alvar Garcia, updated with every new documentation build
- ☐ Plus some twiki pages (What's New, HIPE Known Issues, ...), updated by hand



- **Explanatory Supplement**

- ☐ Four Handbooks (will NOT be printed in paper), one per instrument plus a general one on the mission/spacecraft – evolution of Observers Manuals towards versions oriented to legacy archive users
- ☐ First versions will be rolled out by end 2015 – editors Mark Kidger (General Handbook + overall coordination) + HSC ICS team (Ivan Valtchanov, David Teyssier/Miriam Rengel, Katrina Exter), for the instrument specific volumes, with the support of the ICCs (Rosario Lorente, Eva Verdugo and Pedro G.Lario)

- **Explanatory Library**

- ☐ Collection of technical documents collected during the mission – physical repository is still an open question – Livelink (OpenText) seems to be the adopted solution
- ☐ HCSG will support reorganisation of instrument-specific twiki pages, identify missing/obsolete docs, chase expected contributors – first iteration completed –; as for the Handbooks, it is expected to be rolled out by end of 2015.

- **SGS Twiki**

- ☐ Documentation internal to the Science Ground Segment

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- **Areas of concern**

- ❑ Documentation effort to build the Herschel Explanatory Legacy Library is highly demanding in terms of resources – little time to collect all the information / update documents / fill gaps plus lack of manpower (contributions from ICC members might be critical in some cases)
- ❑ Long term preservation of HSA (legacy data products) granted for years as responsibility will be transferred to the Science Archives Team @ ESAC – but this is not the case at the moment for other areas (e.g. legacy software, legacy documentation)

- **Open questions**

- ❑ Who will take care of services like: Web, Helpdesk, Publications tracking, access to Software, Documentation, after end 2017?
- ❑ Documentation Management System (Livelihood/OpenText) in combination with LifeRay (current departmental environment) seems to be not adequate to host the Herschel Explanatory Legacy Library in a proper way (difficulties with link names / tagging ...) – see Mark Kidger's presentation

ENHANCED PRODUCTS (UPDPs and HPDPs):



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- **User Provided Data Products**

- ☐ Chasing KP Pls promised deliveries – continuous effort – but little manpower available
- ☐ Collection of new UPDPs from the community of non-KP Pls is also encouraged
- ☐ Ingestion in HSA ; delivery of associated catalogues to Vizier
 - 20 UPDPs (from 13 different Key Programmes plus a few other) already in HSA;; many including postcards – DIGIT, HEXOS_HIFI, HELGA and MESS_PPHOT are among the latest additions)
 - Herschel Observing Log (37,093 entries) in Vizier plus many other (around 70) Herschel catalogues
- ☐ UPDP Statistics twiki:
<http://herschel.esac.esa.int/twiki/bin/view/HSC/StatisticalUpdpReports>
 - Only around 32% of the KP observing time has been ingested back in HSA so far

- **Highly Processed Data Products**

- ☐ Herschel Point Source Catalogue: collaboration between HSC/NHSC and Konkoly Observatory, coordinated by a Working Group chaired by Luca Calzoletti
- ☐ Other enhanced legacy products that go beyond the SPG pipeline products: HIFI spectral scans and spectral maps, line list catalogues (SPIRE, HIFI and PACS?) and PACS (notably un-chopped mode observations) spectrometer data through interactive data reduction (TBD)
- ☐ Looking for other possibilities – in coordination with ICCs and/or expert groups in the community – some EC funded FP7 programmes may be potential contributors

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- **Areas of concern**

- ☐ Collection of UPDPs from Key Programmes progressing slowly
- ☐ In some cases it may not make sense any more as the pipeline is generating better quality products now that what could be produced by old versions of HIPE years ago

- **Open questions**

- ☐ Shall we concentrate our efforts during the remaining POPs in the collection of spectroscopic data requiring interactive data reduction / data analysis and proper scientific judgement to produce science ready products?
- ☐ Other added value data identified so far: Herschel Point Source Catalogue, other catalogues combining Herschel data with data from other facilities, ... shall we also allocate resources for establishing more solid links with the EC-funded projects that may generate similar added value data products in the near future?



- **Herschel Archive Group**
 - ☐ Regular meetings every 2-3 months (Chairs: D. Shupe / E. Verdugo - HSC) to provide advice on science requirements related to HSA; last (#8) was on 6 November
- **HSA 6.1 (26 February 2014)**
 - ☐ Incorporating instrument advanced panels / Required population of queryable metadata after bulk reprocessing with HCSS v12.1 – delayed to end-February for this reason
- **HSA 6.2 (9 April 2015) and 6.2.1 (2 June 2015)**
 - ☐ Improved query performance after implementation of SPR-80
 - ☐ Database ready for ingestion of new metadata only available in 13.0 – originally 6.3, now merged with 6.2
 - ☐ New instrument-specific advanced query panels (tabs)
- **HSA 7.0 (September 2015)**
 - ☐ Providing links to associated publications and improved geometrical searches by adding footprint information to all observations in HSA (Konkoly-led effort)
- **HSA and EMMI**
 - ☐ Eventually, Herschel products should be queryable and accessible from EMMI (ESA Multi-Mission Interface), under development at ESAC



Search

Instruments Query Panel

Instrument ⓘ

All
HIFI
PACS
SPIRE
SPIREPACS

Obs. Type: ⓘ

HIFI

Single Point
Mapping
Spectral Scan

☒ Standard Data

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 \

Instrument Mode ⓘ

Any

Line Spec
Range Spec

Chopping Mode ⓘ

Any

ChopNod
Unchopped

Pointing Mode ⓘ

Any

Pointed
Raster/Mapping

Filter ⓘ

Any

A [55-70]
B [70-105]
SEDB2B
SEDB3A
SEDB2A

Chopper Throw ⓘ

Any

Small
Medium
Large

Spatial Sampling ⓘ

Any

Oversampled
Nyquist
Tiling

Wavelength (microns) ⓘ

Bright Line ⓘ

Any

True
False

Observer Line ID ⓘ

Any

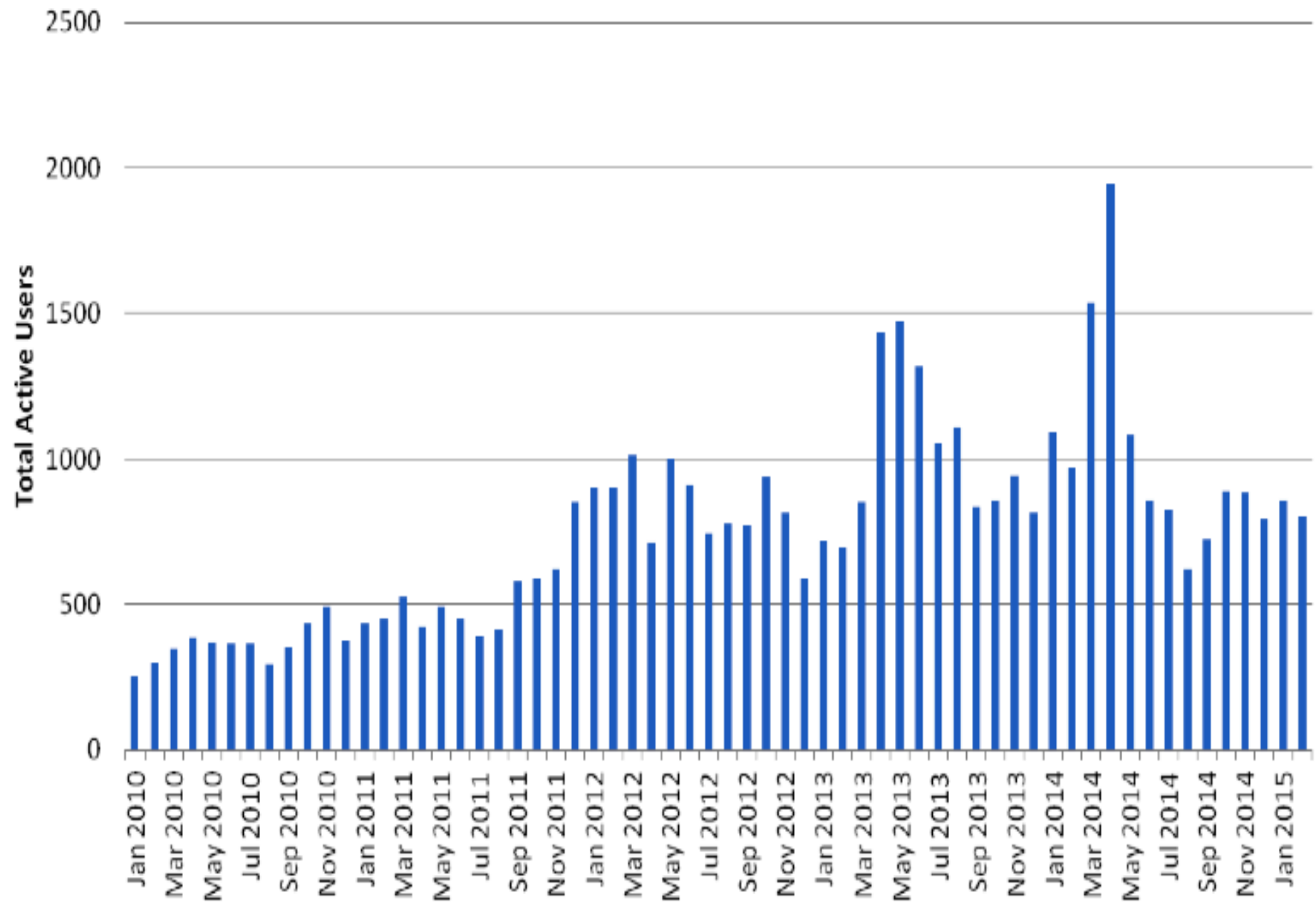
CO 13-12 200.27
CO 14-13 185.99
CO 15-14 173.63
CO 16-15 162.81

Wavelength Sampling ⓘ

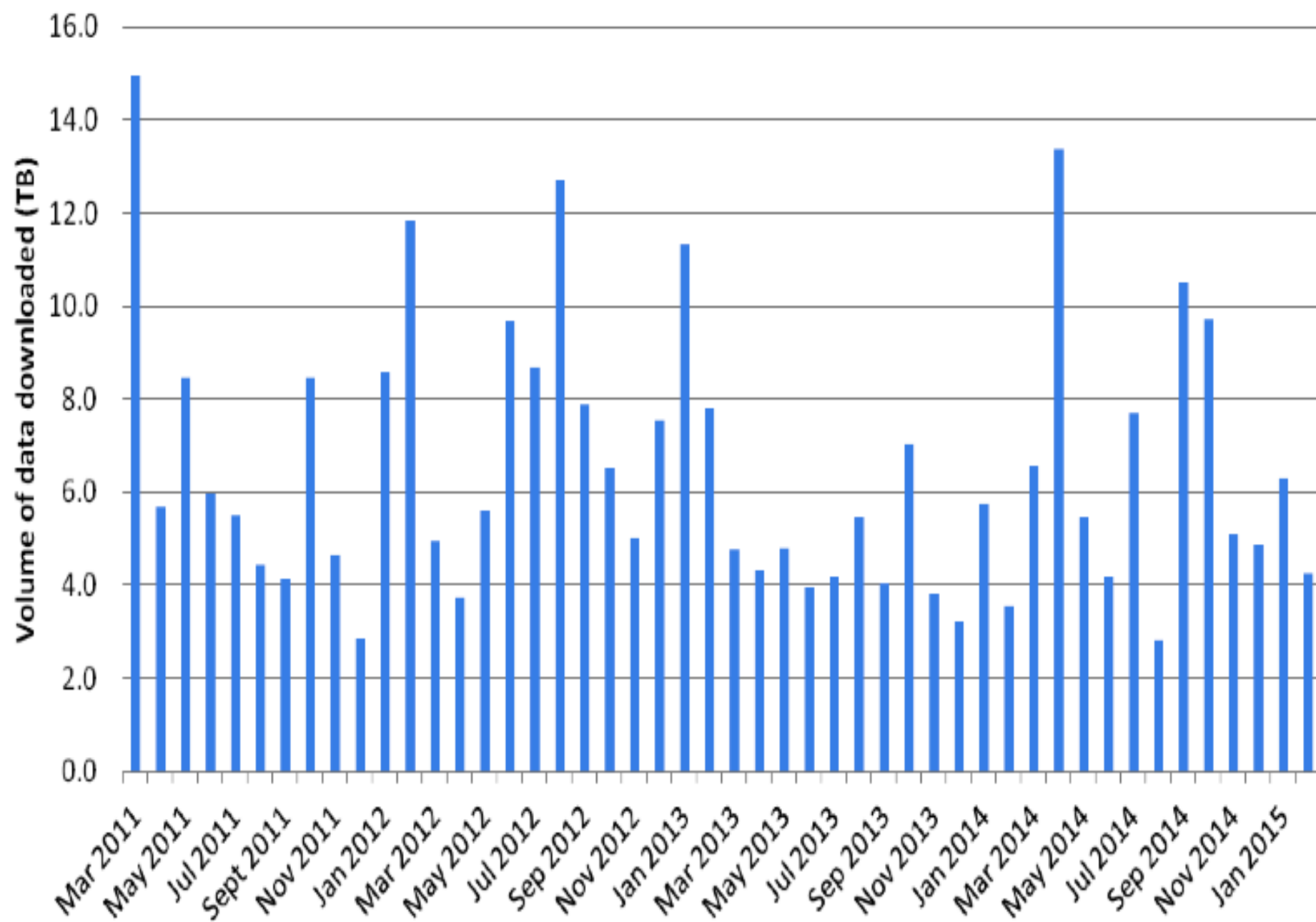
Any

Nyquist
High

HSA Active Users downloading data per month



HSA Volume of data downloaded per month (TB)



AREAS OF CONCERN / OPEN QUESTIONS



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- **New HSA functionalities and improved overall performance in HSA 6.x**
 - ☐ Advanced Instrument Query Panels / Pipeline Processing Query Panel
 - ☐ New database models
 - ☐ New hardware
- **More to come in HSA 7.0**
 - ☐ Links to Publications
 - ☐ Footprints provided by Konkoly group
- **Open questions / Work planned**
 - ☐ Ingestion of ancillary data
 - ☐ Ingestion of HPDPs – should some of them replace standalone ‘browse’ products?
 - ☐ How to make a clear distinction between standalone ‘browse’ products and standalone ‘legacy’ products?
 - ☐ Switch to Thin Layer technology?

TRAINING THE COMMUNITY:



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- **ALMA-Herschel Archival Workshop @ ESO-Garching, 15-17 April 2015**

- ☐ Jointly organised by ALMA and Herschel Community Support Teams
- ☐ Promote archival research through the combined use of ALMA/Herschel data
- ☐ 80 participants registered

<http://www.eso.org/sci/meetings/2015/AlmaHerschel2015.html>

- **Herschel DP (on-line) Workshop for Newcomers, 16-19 June 2015**

- ☐ Yearly event – last on 24-27 June 2014, following the nice experience we had with the same kind of workshop in June 2013
- ☐ On-line participation through webex – a big success!
- ☐ Presentations recorded for posting on the web (see next point)
- ☐ Around ~50 participants registered for the workshop that is taking place this week

<http://www.cosmos.esa.int/web/herschel/data-processing-for-newcomers-2015>

- **HIPE academy (video-tutorials)**

- ☐ Shorter than 3-5 minutes, addressing very specific topics related to data mining, data access, data processing and data analysis; effort led by A. Garcia
- ☐ Some of the existing ones may have become obsolete: validity is being reviewed

<https://www.youtube.com/user/hipeacademy>

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- **Training the community**

- ☐ Good experience with recent ALMA/Herschel Workshop
- ☐ Data Processing Workshop for Newcomers 2014 and 2015, very well received by the community
- ☐ Not so much demand for advanced workshops on particular data reduction issues
- ☐ Video tutorials identified as an alternative channel for training purposes

- **Open questions / Work still to be done**

- ☐ Shall we extend the ALMA/Herschel experience to other observatories (e.g. JWST; others?)
- ☐ Intention to build a library of short duration video tutorials for legacy training purposes: is it seen as a good idea?

PROMOTING HERSCHEL AWARENESS (I):



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- **Access to the Herschel Observing Log and ‘standalone browse products’**

- ☐ Through VizieR since October 2013 – it also provides direct links to postcards now – and, through them, to the ‘standalone browse products’
- ☐ Through the Herschel Publications Tool by selecting the observations used in a given refereed paper
- ☐ Through SIMBAD queries (this requires prior cross-matching between the Herschel Observing Log and individual SIMBAD objects - a difficult task initiated only recently) – so far only for a small number of Herschel observations
- ☐ And from ADS (through the existing ‘link to data’ functionality) – proposal abstracts recently added to ADS

- **Herschel data in the Virtual Observatory**

- ☐ Many catalogues (up to 70) are available through VizieR, some of them associated to UPDPs received at the HSC or delivered by users as added-value data
- ☐ Some small data sets are already available through the VO (images and catalogues), served by individual PIs
- ☐ Soon all SPIRE and PACS photometry maps will be made available through the VO, as science ready legacy Herschel products – just a first step in this direction, as we need to extend this stamp to as many as possible data sets in HSA

PROMOTING HERSCHEL AWARENESS (II):



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- **Herschel-related science conferences**

- ☐ Information regularly posted on the web
- ☐ Science Conference organised at ESTEC: “Star Formation Across Space and Time” – 10-14 November 2014 – with strong Herschel content
- ☐ Next will be “Water in the Universe: From Clouds to Oceans” – 12-15 April 2016
- ☐ Presentations on Herschel to other communities at various conferences:
 - Sofia Workshop @ Ringberg Castle, March 2015
 - ALMA-Herschel Archival workshop, April 2015
- ☐ Another one in connection with JWST in 2017?

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- See presentation ‘Data mining tools enabling Herschel science’ for additional details on how Herschel awareness is currently promoted in the community

http://herschel.esac.esa.int/twiki/pub/HSC/HUG9/Herschel_DataMiningTools_PGL.pptx

- Any other suggestion in this area?

- ☐ Which data should be served through the VO? For PACS and SPIRE photometry we can serve the products generated by the pipeline but, what do we do for products which are not science ready? Should we service HPDPs instead?

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ICC/NHSC WRAP-UP REVIEW MEETINGS:



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- **6-9 months before formal ICC end-of-support date**
 - ☐ HIFI ICC: 8-9 October 2015 / formal end of HIFI ICC is 31 March 2016
 - ☐ SPIRE ICC: 18 November 2015 / formal end of SPIRE ICC is 30 June 2016
 - ☐ PACS ICC: 8-9 March 2016 / formal end of PACS ICC is 31 December 2016
 - ☐ NHSC: end 2016? / formal end of NHSC is 30 September 2017
- **Coincident with an ICC meeting and part of it**
 - ☐ 1.0-1.5 days, preferably at the end of the ICC meeting
 - ☐ Attended by relevant ICC/HSC (NHSC) staff
- **Main goals**
 - ☐ Identify work packages and priorities (must do / can do / nice to have)
 - ☐ Agree on deliverables
 - ☐ Define / transfer responsibilities
 - ☐ Make commitments (management)

ICC/NHSC WRAP-UP REVIEW MEETINGS:



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- **Meeting format?**

- ☐ ICC presentation(s) covering different POPs areas (legacy software, calibration, data products, documentation)
 - What the ICC can do with the available resources in the remaining time (and cannot be delegated)
 - What the ICC would like to do if time permits
 - What the ICC can delegate/transfer to HSC/NHSC
 - What the ICC will be unable to do – and cannot be delegated
- ☐ HSC presentation(s) covering different POPs areas (legacy software, calibration, data products, documentation)
 - What the HSC needs from the ICC (and cannot be delegated/transferred)
 - What the HSC would like to get from the ICC (and cannot be delegated/transferred)
 - What the HSC can assume as delegated/transferred work packages/responsibilities
- ☐ Agreed at HSOCG#18 to create a spreadsheet with the above information some time (1 month) in advance to the start of the meeting as a working document
- ☐ Negotiation/Executive Session where actions, work packages and responsibilities are (re-)defined and agreed
- ☐ Report/Minutes agreed by all parties?

- **Final Handover meeting (in the last week/month of activity of the ICC)?**

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- Any suggestion regarding the format and scope of these wrap-up/handover review meetings?



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