

Second Xmas in flight!





Merry Christmas and a Happy New Year from the IFSIR Team

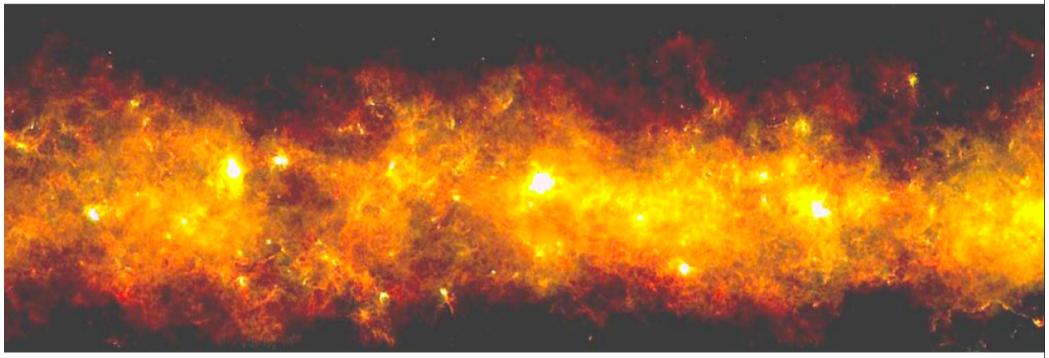
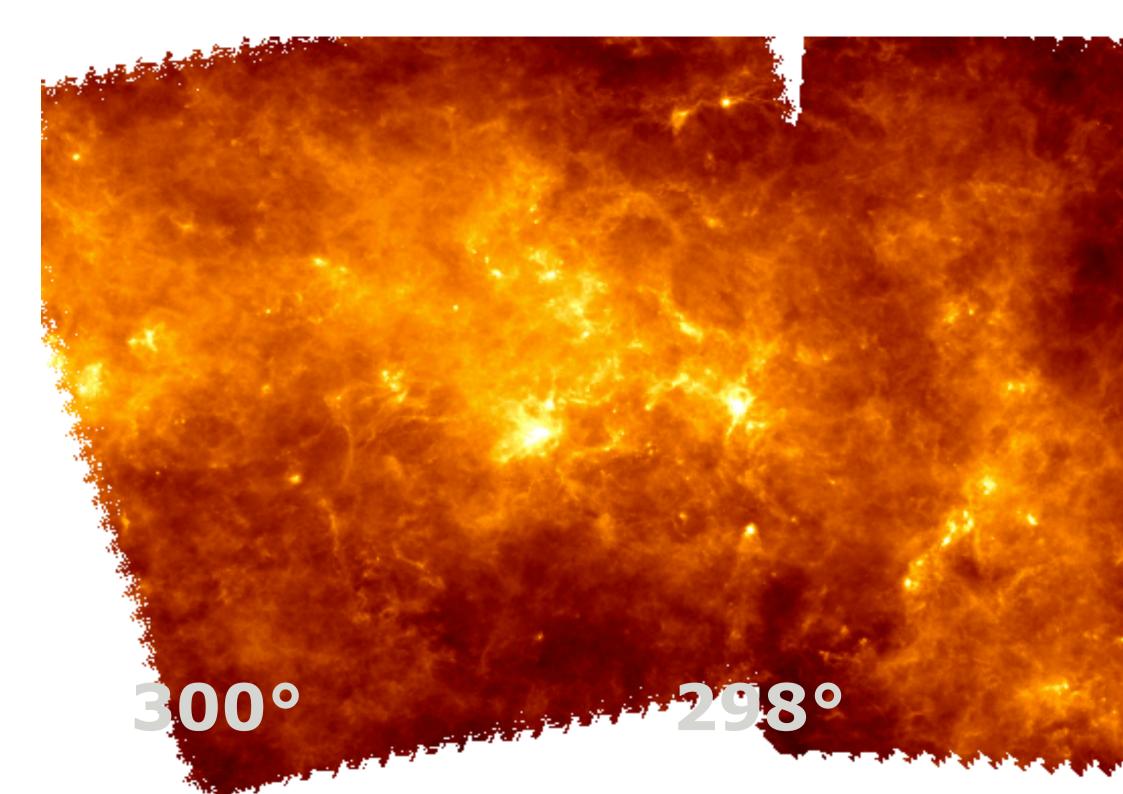


Image of the dust emission in a portion of the Galactic Plane obtained by combining Herschel data at 70, 160 and 350 microns. The region spans some 10 degrees in galactic longitude and 2 in galactic latitude in the first quadrant (between I=36 and I=47).



Some notable events since HUG#1



- HOTAC OT1 meeting (ESAC)
- HUG#1 (Cambridge)
- D/SRE formal decision re OT1 time allocations
- OT1 'phase 2 data entry' commence
 - Still ongoing ~60% complete
- DLCM#2 executed
- Herschel ALMA workshop (ESO, Garching)
- DP users/developers workshops (several)
- HCSS/HIPE v5 User Release
- Calibration workshop (PACS/SPIRE photo, ESAC)
- Herschel Calibration Steering Group (HCalSG#27)
- BBC2 'Stargazing Live' Herschel/XMM-Newton M31
- HST#44 (IPAC)
- NHSC DP training workshops (IPAC)
- HUG#2 (ESAC)
- HCSS/HIPE v6 User Release & DT training (ESAC)
- Herschel A&A reprint 'booklet' shipping

11-14 October 2010

20-21 October 2010

2 November 2010

2 November 2010

2 November 2010

16-19 November 2010

Nov/Dec 2010

24 November 2010

13-15 December 2010

15 December 2010

4 January 2011

17-18 January 2011

2-9 February 2011

23-24 February 2011

~1 & 14-18 March 2011

mid-March 2011

HERSCHEL SPACE
OBSERVATORY





Operational statistics

HERSCHEL SPACE OBSERVATORY

HSCOM Status Summary

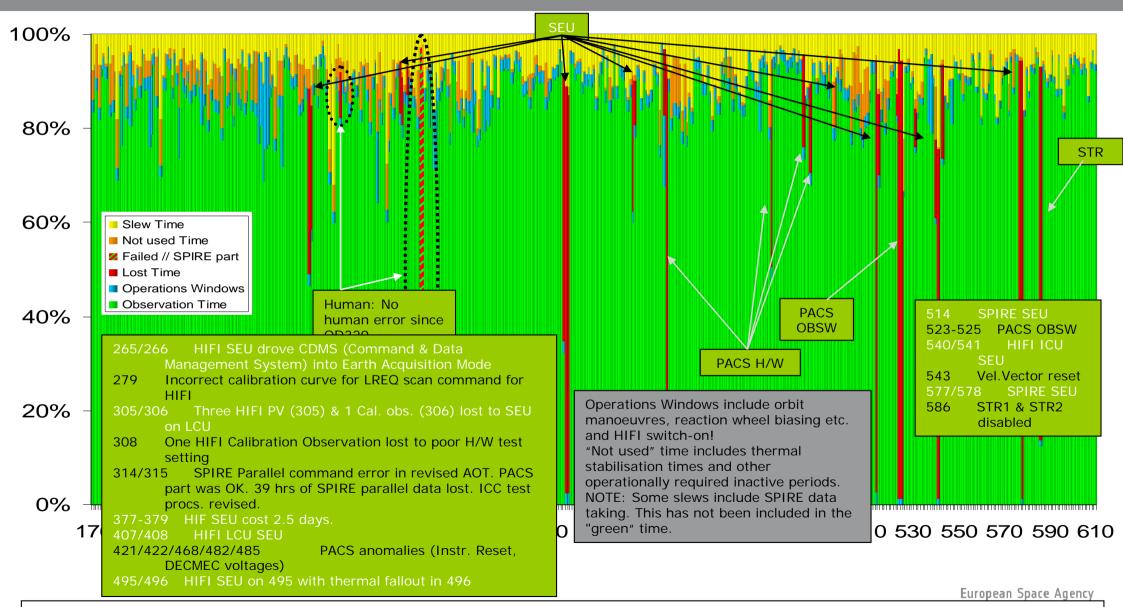


- This afternoon OD#651 commences: all HSC systems nominal
- High-priority to address any HUG recommendations point by point
- Observing Modes pending ongoing testing
 - On-board Gyro Propagation/CP Raster
- Mission Planning is stable
- Data Processing is very stable. Efforts continue, and will continue, to improve pipeline product quality.
- The archive (HSA) is stable and in an advanced state.
 - pushing now to have Browse Products for all instruments in HSA
- Through system & procedural adaptations we are containing the impacts on observing time of SEUs and a range of minor instrument anomalies.
 - continue to examine all events for possible improvements of response
- 3 new people coming for HSC, in the Instr.Cal./Comm.Supp. area
- Detailed system tuning is an ongoing activity



Herschel OD#170 to 610 - HST#44

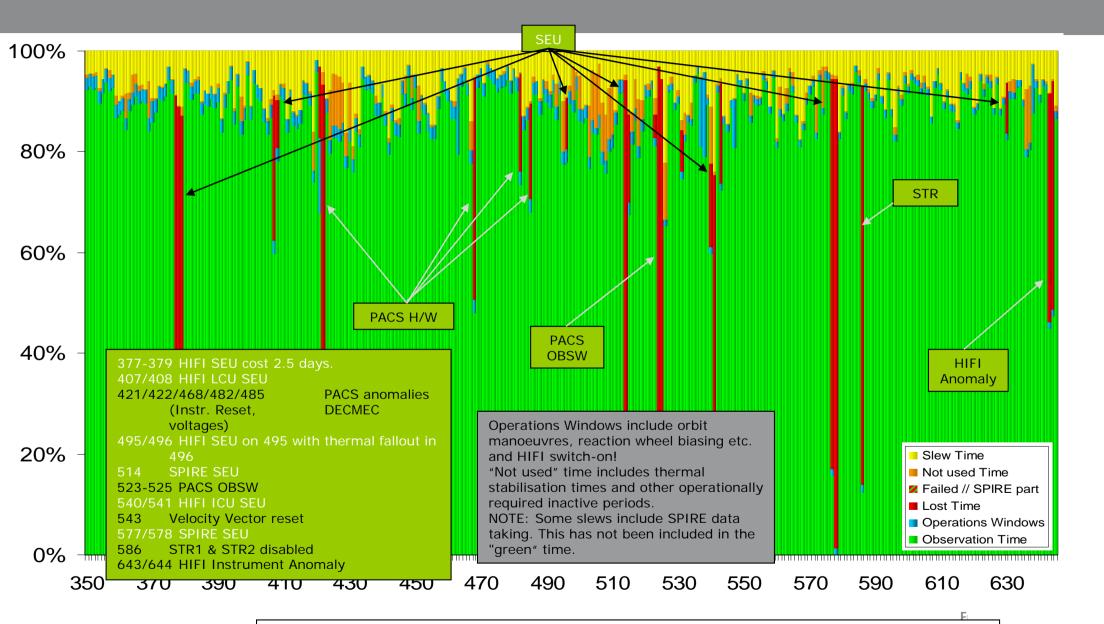




Total lost time from OD#170 to OD#610 from all sources : 336 hours (3.5%)

Herschel OD#350 to 645 - HUG#2

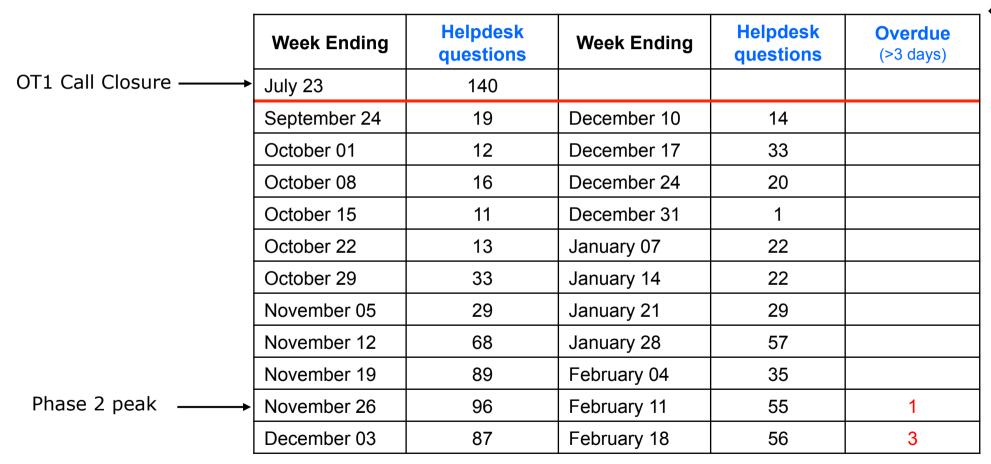




Total lost time from OD 170 to OD 645 - all sources : 357 hours (3.8%)

Community Support: Helpdesk







Mission Planning: POS to MOC





Week Ending	POSs delivered HSC to MOC	Look ahead (at delivery)	Week Ending	POSs delivered HSC to MOC	Look ahead (at delivery)
September 24	8	16 ODs	December 17	9	17 ODs
October 01	8	17 ODs	December 24	12	22 ODs
October 08	7	16 ODs	December 31	0	15 ODs
October 15	9	18 ODs	January 7	7	14 ODs
October 22	5	14 ODs	January 14	4	11 ODs
October 29	15	16 ODs	January 21	14	18 ODs
November 05	10	16 ODs	January 28	10	16 ODs
November 12	6	13 ODs	February 4	10	18 ODs
November 19	16	18 ODs	February 11	9	20 ODs
November 26	8	18 ODs	February 18	6	18 ODs
December 03	7	18 ODs			
December 10	8	18 ODs			

DP: HIPE downloads - by oper. system Cesa





Onerating System		TOTAL			
Operating System	30 Aug02 Oct.	03 Oct30 Oct.	31 Oct27 Nov.	28 Nov31 Dec.	
Linux32	43	30	24	23	
Linux64	87	63	64	46	
MacOSX	89	40	53	61	
Windows32	38	12	25	16	
Windows64	15	6	7	6	
	01 Jan28 Jan.				20 Jun11 Feb
Linux32	30				211
Linux64	62				446
MacOSX	80				493
Windows32	26				175
Windows64	18				79

DP: HIPE downloads – by version



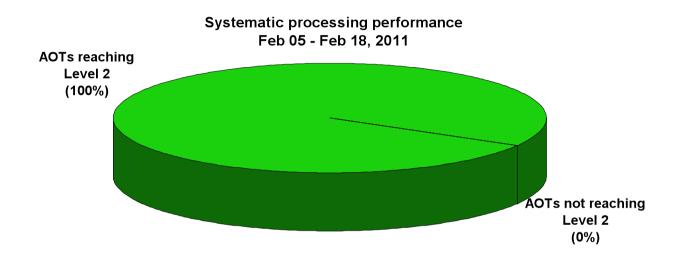
	Number of HIPE downloads					
HIPE version	Total 20 June- 11 Feb.					
VCISION	1404					
<v3< td=""><td>10</td></v3<>	10					
3.0.1	217					
3.1.1	33					
3.2.0	20					
4.0.0	98					
4.1.0	25					
4.2.0	328					
4.3.0	49					
4.4.0	64					
4.5.0	21					
4.6.0	24					
5.0.0	224					
5.1.0	233					
5.2.0	56					





DP: Pipeline Processing (systematic)





Most recent 2-week period

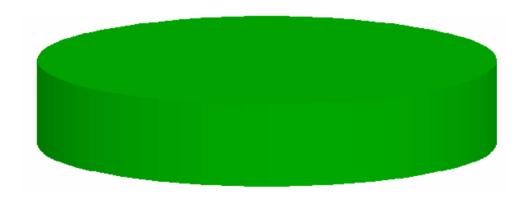
- Quite typical!
- DP has been very reliable

ODs processed	[631-644]
Total Observations processed	439
Eng/Cal Observations	94
AOT Observations	345
AOTs Processed to Level 2	345

DP: Pipeline Processing (on demand)



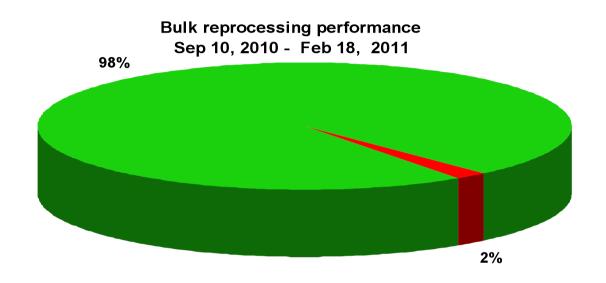
mid-Sept. 2010 - mid-Feb. 2011



Total No. of on demand requests	41
Total No. of requests processed up to expected level	41

DP: Pipeline Processing (bulk)





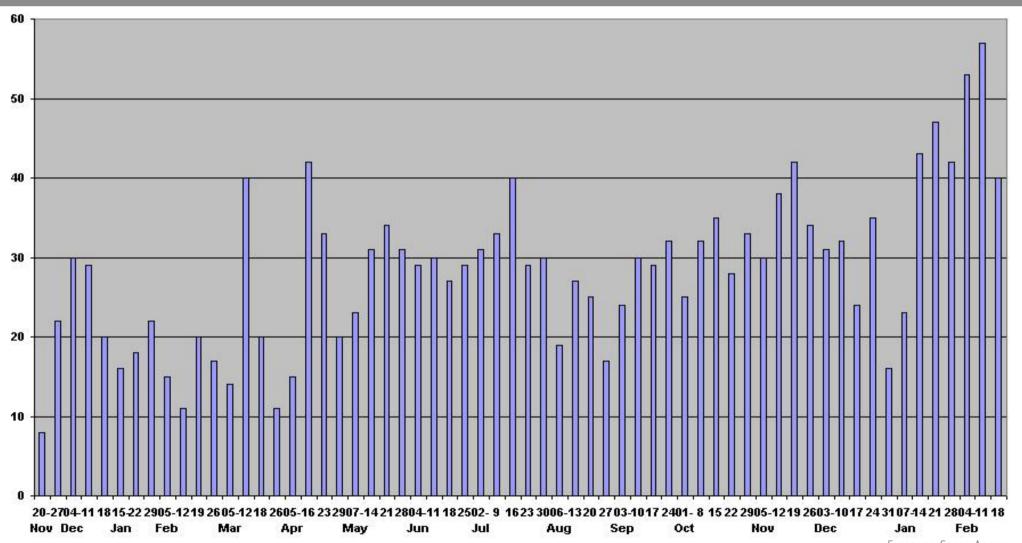
Status of the recent Bulk Reprocessing exercise with HCSSv4.1 (Started Sep.2010)

(*) The difference between estimated bulk speed (\sim 8 ODs/day) to actual (\sim 4 ODs/day) is due to a combination of GRID and DP issues being solved for the next bulk exercise (HCSS v6.0)

Total No. of ODs reprocessed	470 (ODs 10 to 480)
Total No. of Observations processed	12610
Total No. of Observations processed (up to expected level)	12358
Total No. of Processing failures	252
Percentage of observations successfully processed	98%
Average processing speed	~4 ODs/day (*)

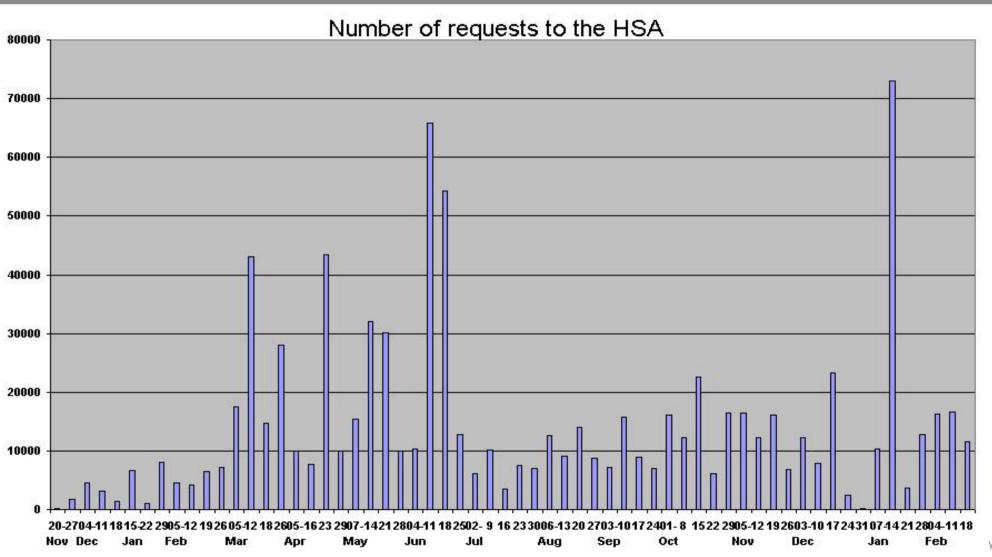
HSA: Users accessing archive





HSA: Requests to archive

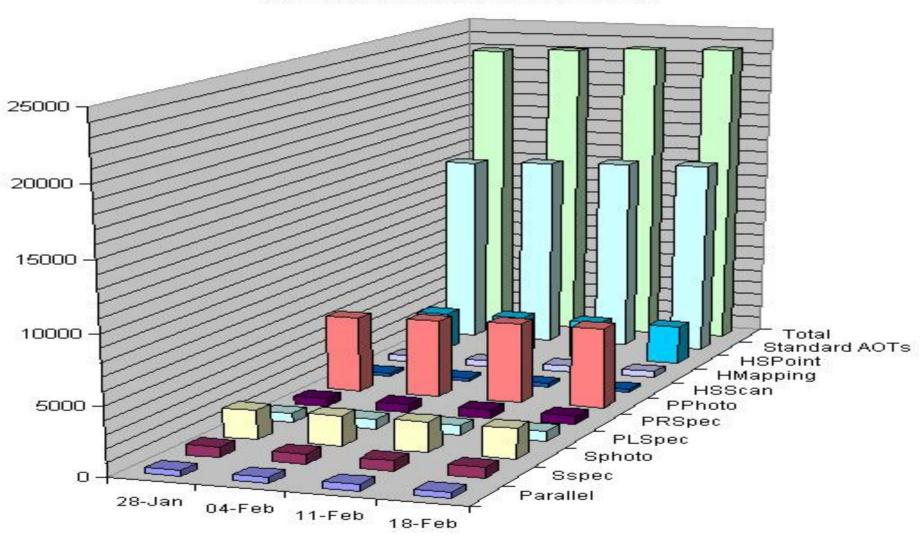




HSA: Growth of archive content



Number of observations in HSA







Observing status

Observing status



Execution status as per end of OD#645 (17 February 2011)



- KPGT
- KPOT
- GT1
- OT1

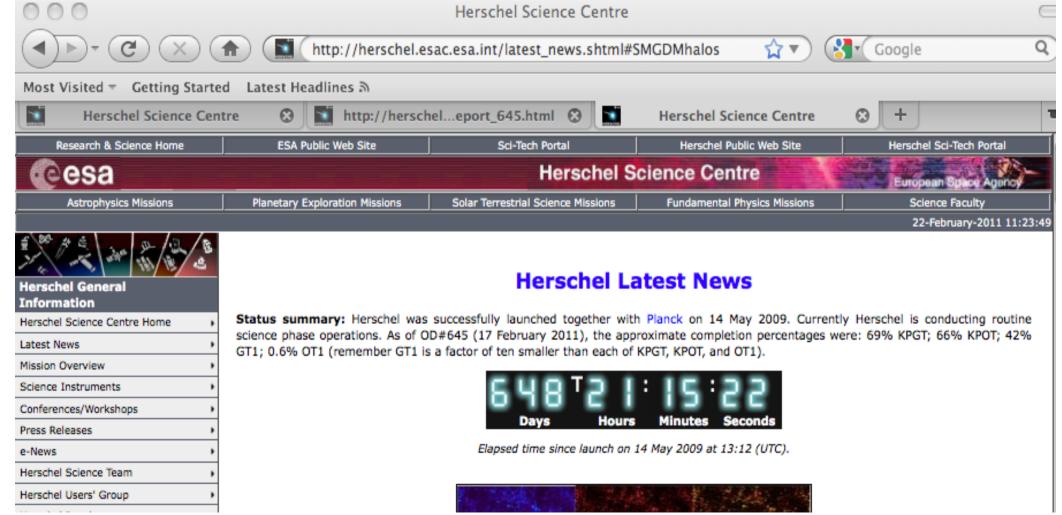
69 %	of	5496.4 hr	
66 %	of	5206.6 hr	
42 %	of	546.9 hr	
0.6 %	of	6576.9 hr	(hmm!)

Observing status



Execution status as per end of OD#645 (17 February 2011)





Exe status OD#645 (17 Feb 2011)



Name	#AORs	Duration(h)	Alloc.(h)	# Executed	% # Executed	Executed(h)	% T Executed ▼
TOO_awehrle_2	55	5.12	0.00	55	100.00	5.12	100.00
KPOT_ckrame01_1	33	144.10	191.90	33	100.00	144.10	100.00
KPOT_aedge_1	77	129.27	140.50	77	100.00	129.27	100.00
KPOT_mmeixner_1	29	234.83	238.00	29	100.00	234.83	100.00
KPOT_delbaz_1	191	361.30	362.60	191	100.00	361.30	100.00
DDT_lorourke_14	2	0.96	0.00	2	100.00	0.96	100.00
GT1_mkidger_2	12	10.70	10.70	12	100.00	10.70	100.00
GT1_okrause_4	4	24.20	24.40	4	100.00	24.20	100.00
GT1_bdevries_1	1	3.88	3.90	1	100.00	3.88	100.00
GT1_ivaltcha_1	7	12.05	12.00	7	100.00	12.05	100.00
GT1_jfritz_1	4	18.33	18.20	4	100.00	18.33	100.00
KPGT_seales01_1	235	94.81	112.60	235	100.00	94.81	100.00
OT1_tpreibis_1	2	6.94	6.90	2	100.00	6.94	100.00
KPGT_kmeisenh_1	404	149.24	164.50	389	96.29	144.04	96.51
KPOT_jdavie01_1	30	242.75	286.00	28	93.33	226.57	93.34
GT1_jcernich_4	14	45.03	45.00	13	92.86	41.95	93.16
KPOT_eegami_1	132	308.91	292.30	121	91.67	284.99	92.26
KPOT_pvanderw_1	62	99.98	100.00	58	93.55	90.88	90.90
KPGT_golofs01_1	43	63.07	61.00	39	90.70	57.07	90.49
KPGT_dlutz_1	376	663.18	654.90	341	90.69	586.54	88.44
KPGT_vbujarra_1	327	180.37	190.99	291	88.99	157.83	87.50
KPGT_rguesten_1	417	270.72	291.00	370	88.73	236.00	87.18
KPGT_okrause_1	240	84.89	111.70	202	84.17	70.69	83.27
KPGT_fmotte_1	82	128.65	126.00	60	73.17	106.56	82.83
KPOT_ceiroa_1	375	140.51	140.00	308	82.13	116.08	82.61

KPGT exe status OD#645 (17 Feb 2011) CSA



Name A	#AORs	Duration(h)	Alloc.(h)	# Executed	% # Executed	Executed(h)	% T Executed
KPGT_aabergel_1	183	154.74	163.00	120	65.57	91.89	59.38
KPGT_cceccare_1	119	214.43	222.76	90	75.63	168.11	78.40
KPGT_cwilso01_1	102	144.68	143.90	61	59.80	99.51	68.78
KPGT_dlutz_1	376	663.18	654.90	341	90.69	586.54	88.44
KPGT_ebergin_1	291	366.76	346.80	203	69.76	243.64	66.43
KPGT_esturm_1	556	346.33	295.50	396	71.22	236.86	68.39
KPGT_evandish_1	730	374.64	410.16	582	79.73	294.65	78.65
KPGT_fmotte_1	82	128.65	126.00	60	73.17	106.56	82.83
KPGT_golofs01_1	43	63.07	61.00	39	90.70	57.07	90.49
KPGT_kmeisenh_1	404	149.24	164.50	389	96.29	144.04	96.51
KPGT_mgerin_1	942	109.65	112.98	603	64.01	64.48	58.81
KPGT_mgroen01_1	452	324.63	310.14	362	80.09	207.00	63.76
KPGT_okrause_1	240	84.89	111.70	202	84.17	70.69	83.27
KPGT_pandre_1	203	460.71	461.00	105	51.72	237.89	51.64
KPGT_pharto01_1	432	295.49	258.42	170	39.35	145.04	49.08
KPGT_rguesten_1	417	270.72	291.00	370	88.73	236.00	87.18
KPGT_seales01_1	235	94.81	112.60	235	100.00	94.81	100.00
KPGT_smadde01_1	298	104.36	104.90	257	86.24	77.92	74.67
KPGT_soliver_1	394	820.59	900.00	312	79.19	430.39	52.45
KPGT_vbujarra_1	327	180.37	190.99	291	88.99	157.83	87.50
KPGT_vossenko_1	284	138.68	138.89	149	52.46	49.97	36.03

KPOT exe status OD#645 (17 Feb 2011) Cesa

Name A	#AORs	Duration(h)	Alloc.(h)	# Executed	% # Executed	Executed(h)	% T Executed
KPOT_bdent_1	946	390.63	400.00	286	30.23	141.50	36.22
KPOT_bmatthew_1	979	142.58	140.00	588	60.06	96.39	67.61
KPOT_ceiroa_1	375	140.51	140.00	308	82.13	116.08	82.61
KPOT_ckrame01_1	33	144.10	191.90	33	100.00	144.10	100.00
KPOT_cmarti01_1	77	115.38	125.00	34	44.16	29.66	25.71
KPOT_delbaz_1	191	361.30	362.60	191	100.00	361.30	100.00
KPOT_eegami_1	132	308.91	292.30	121	91.67	284.99	92.26
KPOT_gsmith01_1	88	149.11	145.00	74	84.09	122.86	82.40
KPOT_jdavie01_1	30	242.75	286.00	28	93.33	226.57	93.34
KPOT_mjuvela_1	527	138.15	150.90	41	7.78	21.02	15.22
KPOT_mmeixner_1	29	234.83	238.00	29	100.00	234.83	100.00
KPOT_nevans_1	201	249.68	250.00	127	63.18	128.16	51.33
KPOT_pgolds01_1	129	139.84	140.00	96	74.42	113.63	81.25
KPOT_pvanderw_1	62	99.98	100.00	58	93.55	90.88	90.90
KPOT_rkennicu_1	739	457.74	536.60	334	45.20	257.20	56.19
KPOT_seales01_2	66	585.55	600.00	34	51.52	290.27	49.57
KPOT_smolinar_1	120	340.70	344.30	70	58.33	200.59	58.87
KPOT_thmuelle_1	1129	425.56	372.70	875	77.50	293.57	68.98
KPOT_tmegeath_2	358	182.78	200.00	66	18.44	25.09	13.73
KPOT_wlanger_1	573	223.28	223.00	330	57.59	128.21	57.42

Instr exe status OD#645 (17 Feb 2011) Cesa





Status	HIFI(#)	HIFI(AORs %)	HIFI(h)	HIFI(T%)	PACS(#)	PACS(AORs %)	PACS(h)	PACS(T%)
EXECUTED	2906	45.34	1,615.54	45.34	5029	30.56	3,503.51	37.94
SCHEDULED	225	3.51	103.93	2.92	140	0.85	110.96	1.20
RELEASED	1699	26.51	845.64	23.73	5351	32.52	3,008.14	32.57
ACCEPTED	1580	24.65	997.90	28.01	5599	34.03	2,540.52	27.51
SUBMITTED	0	0.00	0.00	0.00	335	2.04	72.43	0.78
TOTAL	6410	100.00	3,563.00	100.00	16454	100.00	9,235.57	100.00
Status	SPIRE(#)	SPIRE(AORs %)	SPIRE(h)	SPIRE(T%)	SP_PAR(#)	SP_PAR(AORs %)	SP_PAR(h)	SP_PAR(T %)
EXECUTED	1440	29.41	887.58	35.09	328	53.42	1,511.00	55.02
SCHEDULED	68	1.39	41.33	1.63	19	3.09	59.09	2.15
RELEASED	1614	32.97	850.49	33.63	167	27.20	899.54	32.75
ACCEPTED	1774	36.23	749.94	29.65	100	16.29	276.74	10.08
SUBMITTED	0	0.00	0.00	0.00	0	0.00	0.00	0.00
TOTAL	4896	100.00	2,529.33	100.00	614	100.00	2,746.38	100.00

Instr exe status OD#544 (15 Oct 2010) Cesa





Status	HIFI(#)	HIFI(AORs %)	HIFI(h)	HIFI(T%)	PACS(#)	PACS(AORs %)	PACS(h)	PACS(T%)
EXECUTED	2111	51.34	1,167.19	50.50	2927	34.86	2,278.24	40.93
SCHEDULED	290	7.05	104.20	4.51	241	2.87	209.65	3.77
RELEASED	1499	36.45	718.45	31.08	3513	41.84	1,988.45	35.73
ACCEPTED	212	5.16	321.52	13.91	1716	20.44	1,089.32	19.57
SUBMITTED	0	0.00	0.00	0.00	0	0.00	0.00	0.00
TOTAL	4112	100.00	2,311.36	100.00	8397	100.00	5,565.66	100.00
Status	SPIRE(#)	SPIRE(AORs %)	SPIRE(h)	SPIRE(T%)	SP_PAR(#)	SP_PAR(AORs %)	SP_PAR(h)	SP_PAR(T %)
EXECUTED	1188	60.43	709.53	64.20	256	53.56	1,063.0	45.87
SCHEDULED	15	0.76	7.24	0.66	20	4.18	59.53	2.57
RELEASED	542	27.57	300.00	27.15	202	42.26	1,195.21	51.57
ACCEPTED	221	11.24	88.34	7.99	0	0.00	0.00	0.00
ACCEPTED								
SUBMITTED	0	0.00	0.00	0.00	0	0.00	0.00	0.00

Observation 'production'



Evolution in science execution over the mission



CYCLE # OD_RANGE

Cycle -4 119-132 1.01h Cycle -3 133-146 1.33h Cycle -2 147-160 8.61h Cycle -1 161-174 8.02h Cycle 0 175-188 11.01h Cycle 1 189-202 11.47h Cycle 2 203-216 15.39h Cycle 3 217-230 19.08h Cycle 4 231-244 18.64h Cycle 5 245-258 15.16h Cycle 6 259-272 10.53h Cycle 7 273-286 7.28h Cycle 8 287-300 18.10h Cycle 9 301-314 10.80h Cycle 10 315-328 15.39h Cycle 11 329-342 15.05h Cycle 12 343-356 16.66h Cycle 13 357-370 17.29h Cycle 14 371-384 15.98h Cycle 15 385-398 16.17h Cycle 16 399-412 16.54h Cycle 17 413-426 17.39h Cycle 18 427-440 17.49h

CYCLE # OD_RANGE this is last 6 months

Cycle 19 441-454 18.37h / 18.13h Cycle 20 455-468 17.85h / 17.34h Cycle 21 469-482 20.71h / 20.34h Cycle 22 483-496 18.97h / 18.62h Cycle 23 497-510 19.83h / 19.83h Cycle 24 511-524 18.16h / 15.41h Cycle 25 525-538 19.52h / 17.75h Cycle 26 539-552 18.86h / 17.03h Cycle 27 553-566 19.15h / 19.15h Cycle 28 567-580 18.08h / 15.32h Cycle 29 581-594 19.49h / 18.12h Cycle 30 595-608 18.33h / 18.33h Cycle 31 609-622 20.18h / 20.18h Cycle 32 623-636 19.09h / 19.01h Cycle 33 637-650 19.50h / 17.96h (TBC) Cycle 34 651-664 20.15h / TBD

This confirms – as assumed in the 'mission design':

- Clear positive evolution
- •Mean of last 6 months: 19.07 h / 18.27 h
- **•=>>**
- •18-19 hours/OD is credible for the future

AOT release overview







Data processing

HERSCHEL SPACE OBSERVATORY

Data Processing Status



- HCSS 6.0 was branched off 11th of January; the release of HCSS 6.0 is forecasted to 1st of March. The HCSS validation procedure was reviewed to speed up the validation process, e.g. we had co-location of astronomers and key developers at ESAC during the acceptance test period. The release schedule will be reviewed during further sCCB meetings
- Few highlights of HIPE improvements
 - Gathering user feedback
 - Sending crash reports
 - Possibility to leave comments on HIPE and documentation
 - Autocompletion in the console has been improved
 - Jobs can be shown and cancelled individually via status progress indicator
 - Support of plug-ins
 - Updates of documentation start-up page, links to data reduction guides from Help menu

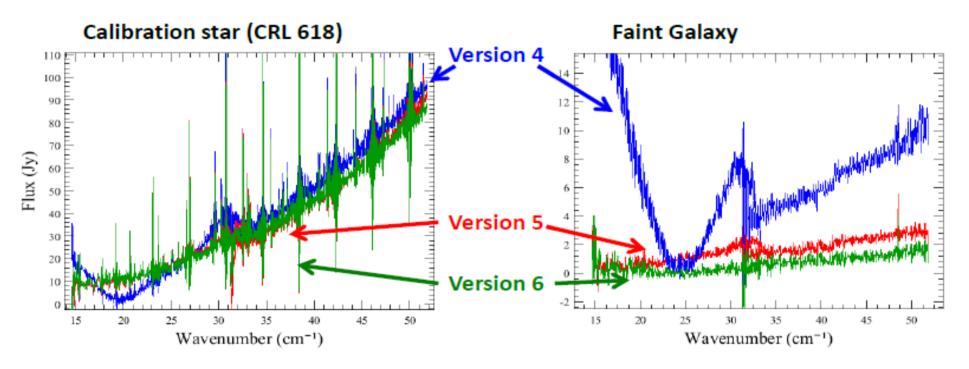
HERSCHEL SPACE OBSERVATORY

Data Processing Evolution



SPIRE FTS pipeline v4, v5, & v6 (to be released)





- Subtle improvements to normal sources
- Much improved spectral shape for weak sources





Observing oppportunities

HERSCHEL SPACE

Observing opportunities



Pre-flight AO – Key Programmes

- In 2007
- 21 Guaranteed Time (GT) Key Programmes
- 21 Open Time (OT) Key Programmes

First in-flight AO - AO1: GT1 & OT1

OT1: May-July 2010



HUG#1: AO OT1 – from HSC Latest News Cesa



Herschel Open Time Announcement of Opportunity released! The first in-flight Open Time (OT1) Announcement of Opportunity (AO) process has started. The OT1 call has been released on 20 May 2010. It offers 6592 hours of Herschel observing time with proposal submission deadline on 22 July 2010 at 12:00h UT. See the menu on the left.



Herschel Open Time Announcement of Opportunity closed. The proposal submission deadline for the first in-flight Open Time (OT1) Announcement of Opportunity (AO) was on 22 July 2010. The preliminary outcome is a total of 585 proposals requesting 21760 hours of observing time. These numbers are still TBC.

Herschel AO OT1 response consolidated. After a period of consolidation of the OT1 proposals received, including identifying and removing duplicate proposals and other checks, the consolidated response is a total of 576 proposals requesting 20962 hours of Herschel observing time. These proposals are provided to the Herschel Time Allocation Committee (HOTAC) for scientific assessment.

This was the public information!

HERSCHEL SPACE OBSERVATORY

Observing opportunities



Pre-flight AO – Key Programmes

- In 2007
- 21 Guaranteed Time (GT) Key Programmes
- 21 Open Time (OT) Key Programmes

First in-flight AO - AO1: GT1 & OT1

- OT1: May-July 2010
- 35 GT1 programmes
- 241 OT1 programmes priorities 1 & 2



HERSCHEL SPACE OBSERVATORY

Observing opportunities



Pre-flight AO – Key Programmes

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Herschel AO OT1 time allocation outcome. Based on the recommendations from the HOTAC the Director has decided to award observing time to 241 of the 576 proposals. All proposers will get individual notifications very shortly combined, for the successful proposers, with instructions for how to proceed. The list of approved proposals with abstracts, amount of allocated time, and some general statistics will be posted in the near future.

This is the public information!



HERSCHEL SPACE OBSERVATORS

Observing opportunities



Pre-flight AO – Key Programmes

- In 2007
- 21 Guaranteed Time (GT) Key Programmes
- 21 Open Time (OT) Key Programmes

First in-flight AO – AO1: GT1 & OT1

- OT1: May-July 2010
- 35 GT1 programmes
- 241 OT1 programmes priorities 1 & 2

Second (last) in-flight AO - AO2: GT2 & OT2

- OT2: June-September 2011 as of yesterday
- n GT2 programmes
- m OT2 programmes

More information on the HSC website

- Dates to be formalised and published shortly days
- AO dates and documentation (when released, now OT1 for reference)
- Abstracts of all accepted observing programmes
- AORs can be downloaded using HSpot, and public data through HSA



HERSCHEL SPACE OBSERVATORY

AO-2 overall schedule



GT2

- Opening: 7 April 2011
- Proposal submission deadline: 12 May 2011
- Followed by:
 - D/SRE decision
 - 'phase 2' AOR consolidation
 - HROST update for OT phase

OT2

- Opening: 9 June 2011
- Proposal submission deadline: 15 September 2011
- HOTAC meeting: week of 7 November 2011
- Followed by:
 - D/SRE decision
 - 'phase 2' AOR consolidation
 - HROST update







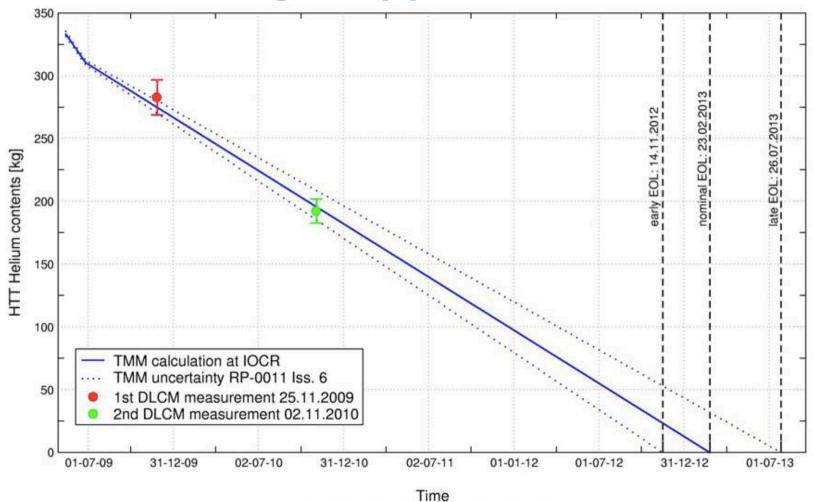
Mission lifetime

Mission (cryostat) lifetime



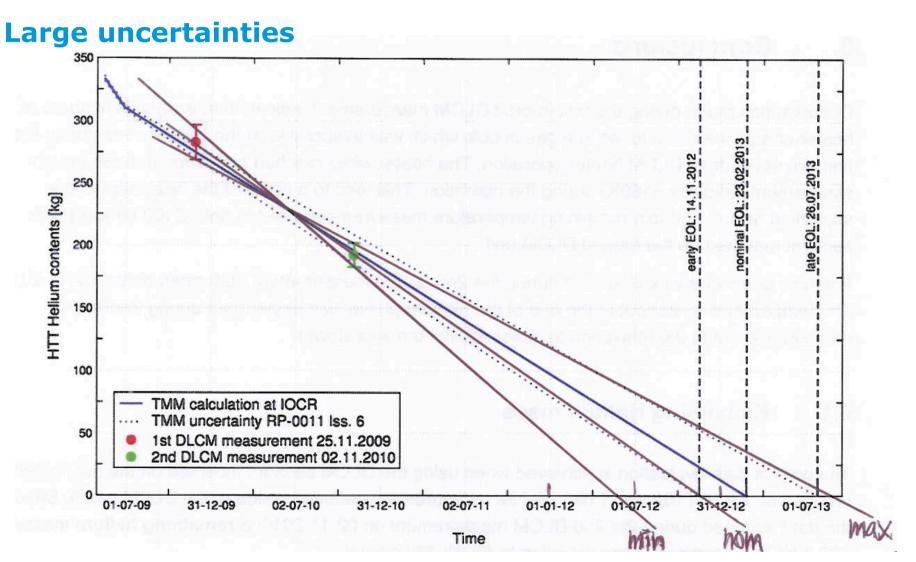
(i) Thermal modelling, and (ii) He mass measurements





Mission (cryostat) lifetime











HUG#1: Improve information to observers

HERSCHEL SPACE OBSERVATORY

HSC web evolution



HUG webpage

Updated with all new members & email functionality

Observers information

- Several updates and clarifications
 - Scheduling priorities
 - Proprietary time

New: Observers documentation

Herschel documentation

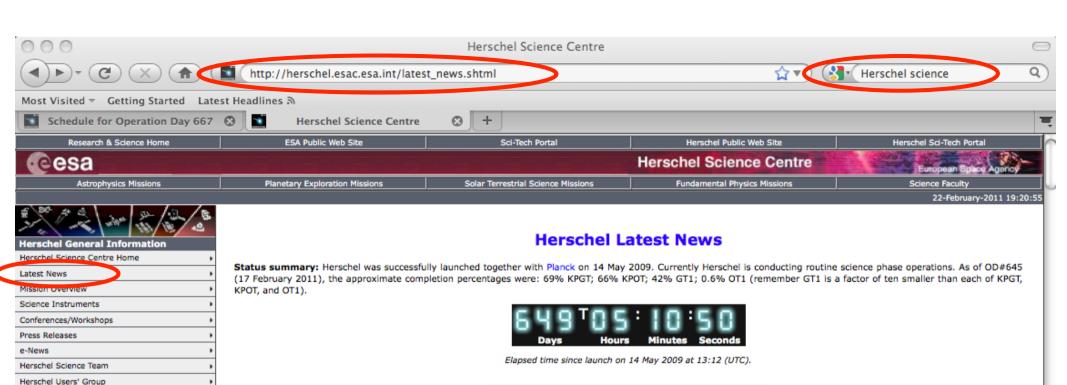
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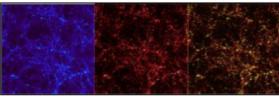
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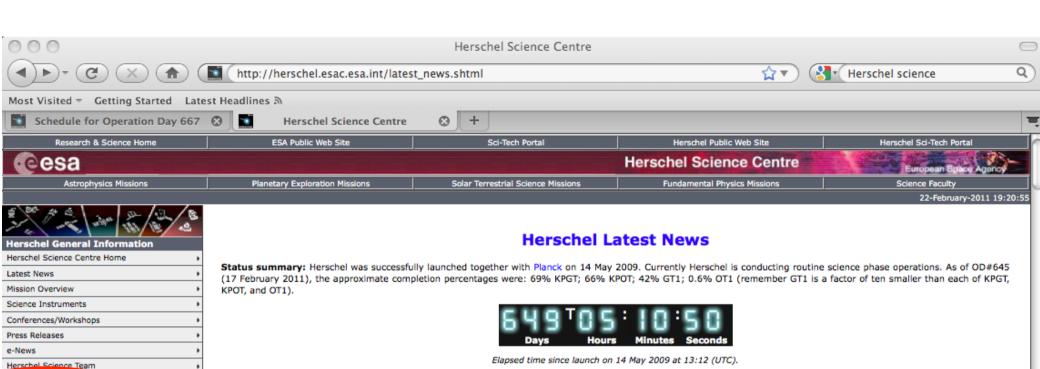
Herschel Announcement of Opportunity (OT1) Introduction 'How-to' step-by-step Documentation



Herschel probes the dark matter halos of SMGs. The far-infrared extragalactic background originates from a population of mostly unresolved enshrouded starburst submillimetre galaxies (SMGs). By performing angular power spectrum analysis of the intensity variations in this background the average properties of the dominating sources can be studied. Using the HerMES Lockman Hole field SDP data Amblard et al. have found that these SMGs reside in dark matter halos with significantly (more than an order of magnitude) lower masses than previously believed based on theoretical modelling. The result is published in Nature online on 16 February 2011. The figure above displays the complex networks of dark matter at z~2 obtained from numerical simulations. For more see the the ESA Herschel SciTech and Space Science Portal webreleases, as well as the UK Herschel outreach and HerMES' own websites.



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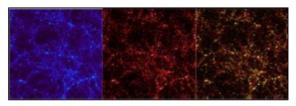
Herschel Documentation

Observatory

HIFI PACS

Herschel Announcement of Opportunity (OT1) Introduction 'How-to' step-by-step Documentation

Elapsed time since launch on 14 May 2009 at 13:12 (UTC).



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Herschel Users' Group - HUG



Membership

The HUG has been extended to its full complement of twelve people in early 2011, by adding four members drawn from the OT1 community to the original eight members. The HUG members are:

- Rob Kennicutt, Institute of Astronomy, Cambridge, UK (chair) Send an E-mail
- Edith Falgarone, École Normale Supérieure & Paris Observatory, F Send an E-mail
- Paul Hartogh, MPIfS, Katlenburg-Lindau, D Send an E-mail
- Leslie Hunt, Arcetri Observatory, I Send an E-mail
- Lars Kristensen, Leiden Observatory, NL Send an E-mail
- Jean-François Lestrade, Paris Observatory, F Send an E-mail
- Margaret Meixner, Space Telescope Science Institute, Baltimore, USA Send an E-mail
- Gwendolyn Meeus, UAM, Madrid, E Send an E-mail
- Alberto Noriega-Crespo, Caltech, Pasadena, USA Send an E-mail
- Dimitra Rigopoulou, U Oxford, UK Send an E-mail
- Gordon Stacey, U Cornell, USA Send an E-mail
- Axel Weiss, MPIfR, Bonn, D Send an E-mail

Meetings

The HUG had several interactions including a telecon on 24 June 2010 in order to prepare for the first meeting which took place on 20-21 October 2010 in Cambridge. Below a listing of held and planned meetings and associated documentation.

HUG#1, held on 20-21 October 2010, Cambridge

- HUG#1 minutes
- Herschel PS presentation

HUG#2, to be held on 23-24 February 2011, ESAC

HUG#3, to be held on 3-4 May 2011, ESAC

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Scheduling



Scheduling

In connection with the OT1 process a number of questions regarding Herschel scheduling have arisen. The purpose of this section is to provide an overview of how the scheduling is performed, in particular with respect to priorities between different 'categories' of observations.

The top priority for Herschel scheduling is scheduling efficiency, or in other words, 'helium economy'. The output of the mission planning are schedules that utilise the available observing time in the most efficient fashion. Scheduling 'cycles' contain sequences of instrument usage, adhering to various constraints, and reflecting the nature and amounts of observations available for scheduling for the part of the sky currently visible. There are no specified priority differences between the various Key Programmes (KPs), however, the GT KPs have been available for a longer time and have a higher average completion percentage than the OT KPs do.

It is worth commenting at this point that there are large differences between the completion levels between different KPs. This is true for the GT as well as (and in particular) for the OT KPs. However, it is possible to provide a rational explanation in each case. Generally spectroscopy is lagging photometry, although it is worth to point out that despite the fact that the HIFI instrument was unavailable for about half a year, on the average HIFI completion levels are not lagging those of PACS and SPIRE.

In the spring of 2010 the GT1 observations became available for scheduling, and as of December 2010 the OT1 observing programmes are gradually becoming available for scheduling. A number GT1 observations have been executed, and the very first OT1 observations have been scheduled for execution in December 2010. However, for some months into 2011 the emphasis will remain on the KPs.

In addition to the top priority of producing efficient schedules, there is a second mission planning priority, observations belonging to an earlier AO have priority over observations from a later AO. This is true also within an AO, the GT observations have priority over OT observations in the same AO (but not over OT from an earlier AO). Thus, as examples, the KPs have priority over GT1/OT1, GT1 over OT1, but OT1 has priority over (yet to be assigned) GT2. However, these priorities will not be allowed to interfere with efficient scheduling which always has top priority. What this means is that OT1 execution will be slow in early 2011, but it also means that occasionally OT1 observations will be carried out.

Proprietary time



Proprietary time

The basic rules for regarding proprietary time come from the Herschel 'Science Management Plan' (SMP) and have been reproduced in the 'Policies and Procedures' document in each AO.

The basic rule is that: 'All observations (GT and OT, KP and non-KP) observed in the first year of the routine science phase will have proprietary times of 12 months, while for all observations observed later, the proprietary time will be 6 months, with a simple 'bridging scheme'. The proprietary time applies to each observation individually, counted from the day when the data are available to the initial data owner.'

It has recently been decided that 'the first year of routine science phase' started on 15 December 2009 for all PACS, SPIRE, and SPIRE/PACS parallel mode observations, and on 15 April 2010 for all HIFI observations. The 'bridging scheme' referred to is a simple linear interpolation ensuring that observation2, carried out later than observation1, is not becoming public earlier than observation1.

What this means in terms of dates is the following. For non-HIFI observations carried out:

- on 14 December 2010 or earlier, the proprietary time is 12 months
- on 15 June 2011 or later, the proprietary time is 6 months
- from 15 December 2010 to 14 June 2011, will become public at the same time as observations carried out on 15 June 2011.

For HIFI observations carried out:

- on 14 April 2011 or earlier, the proprietary time is 12 months
- on 15 October 2011 or later, the proprietary time is 6 months
- from 15 April to 14 October 2011, will become public at the same time as observations carried out on 15 October 2011.

Proprietary time



The basic rule applies to individual observations (AORs), neither to targets, fields, sets of spectral lines, or the like, nor to observing programmes: 'The proprietary time applies to each observation individually, counted from the day when the data are made available to the initial data owner.'

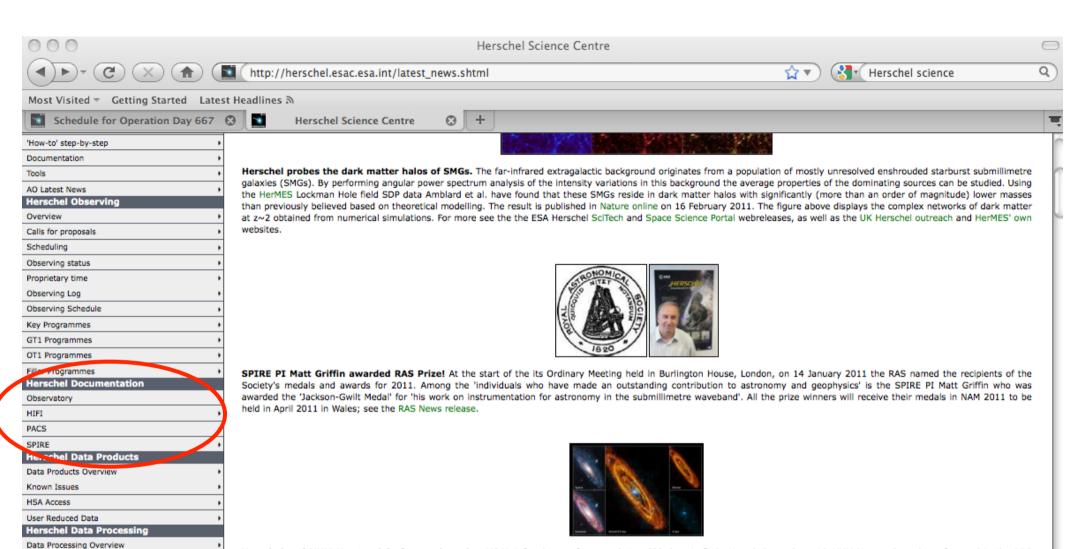
These rules were written well before the launch of Herschel, and at the time it was prudent to allow for the unknown: 'However, a scheme will be put in place whereby the Herschel Project Scientist and the HOTAC Chair in consultation can grant additional proprietary time to certain large programmes, in order to prevent the release of improperly or inhomogeneously calibrated or processed data.'

A couple of requests have been submitted for proprietary time extensions on the basis of this part of the rules. It is clear that such requests cannot be viewed in isolation, a policy is required to ensure fairness and correctness, anticipating also possible additional future requests.

As a starting point it is necessary to recall that the rules were written the way they were to deliberately 'force' the maximum number of observations into the public domain as early as possible. This is the explicitly intended situation! To deviate would require extraordinary circumstances, where it could be argued that it is necessary to deviate from the letter of the SMP in order to preserve its spirit.

On the basis of discussions in the Herschel Science Team and with the HOTAC chair it has been decided that with the current knowledge of the in-flight performance of Herschel this 'escape route' is no longer applicable. Hence, the proprietary time rules will be strictly applied per observation as was the originally stated intention.

Last updated: Wednesday, 22-Dec-2010 16:23:42 CET



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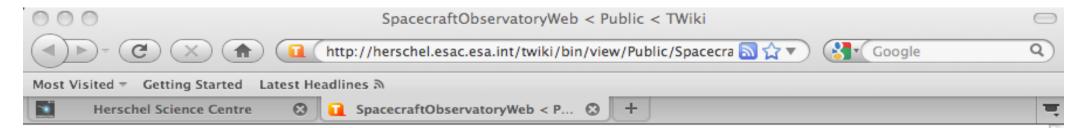
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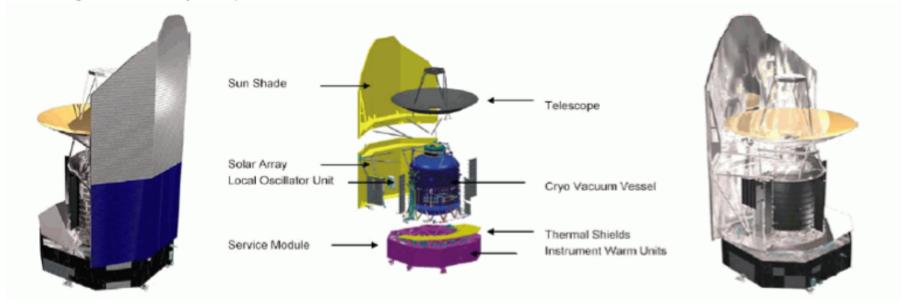
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Spacecraft and observatory web pages

General information

The Herschel spacecraft has a modular design. On the left, facing the "warm" side and on the right, facing the "cold" side of the spacecraft, the
middle image names the major components.:



* Herschel Observers' Manual (HTML) and PDF (6.2 MB)

Pointing calibration and performance

- Plan
- Pointing calibration report, v1.0 (November, 2009): pointing calibration report v10.pdf
- Spacecraft/instrument alignment matrix historical record

Spacecraft health monitoring

Spacecraft temperature tracking

50

200

M1

300

Time [ODs]

350

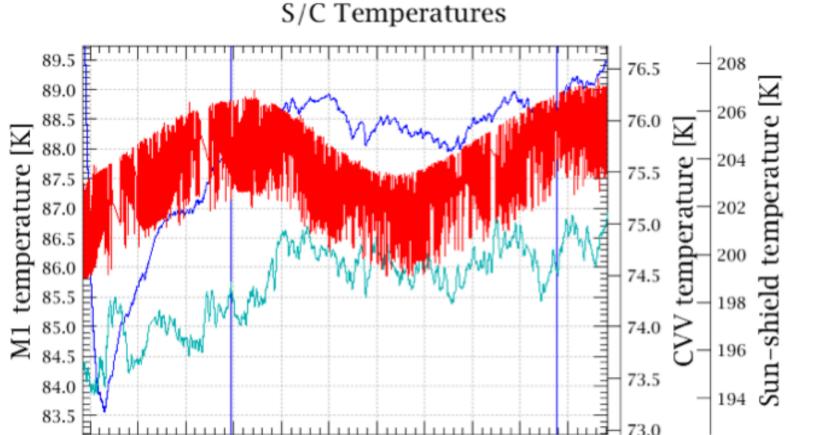
CVV

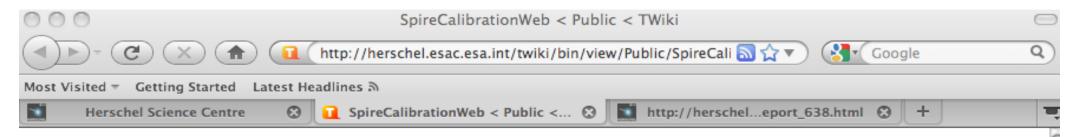
450

550

Sun-shield

 The figure below shows the temperature evolution of the main mirror (M1), the Cyo Vacuum Vessel (CVV) and the Sun-Shade (SS) of the Herschel Spacecraft since OD 50 (2009-07-02) to OD 600 (2011-01-03):





SPIRE instrument and calibration web pages

Observing with SPIRE

- The SPIRE Observer's Manual (HTML) and PDF (15.5 MB)
- The Herschel-SPIRE instrument and its in-flight performance, Griffin et al., 2010, A&A, 518, L3, in-flight scientific capabilities of the SPIRE instrument.
- In-flight calibration of the Herschel-SPIRE instrument: Swinyard et al., 2010, A&A, 518, L4

Overall Calibration

Calibration files for all three instruments can be obtained here:

Latest calibration trees

Note that these can also be downloaded with the observation context of a given observation.

The available calibration trees for SPIRE are listed with details <u>here</u>. At least calibration trees spire_cal_5_0 and above can be retrieved in HIPE from the HSA using

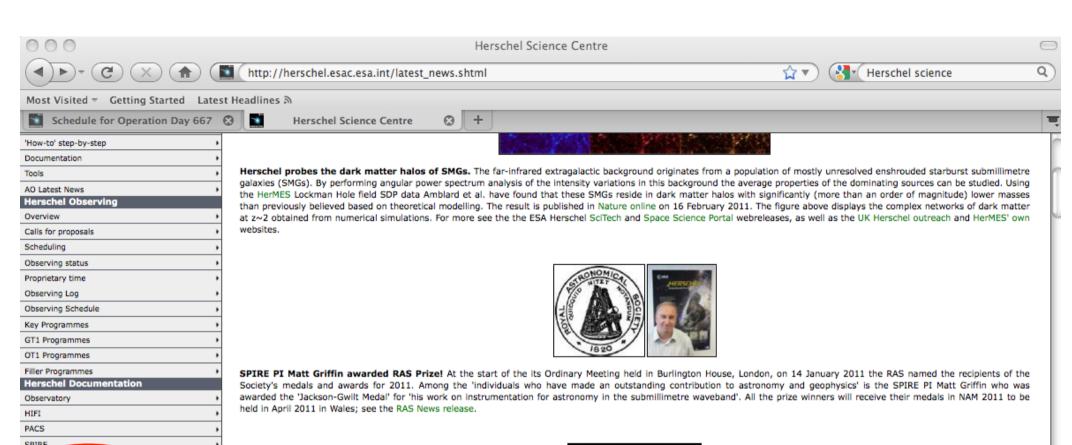
cal = spireCal(calTree="spire_cal_5_0") etc. The default one can be obtained with cal = spireCal(calTree="spire_cal")

SPIRE photometer

SPIRE Photometer AOT release notes

Photometer point source mode

SPIRE photometer point source release note (30 April 2010)



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Data Products Known Issues

HCSS, SPG, and HIPE

The whole suite of Herschel software is known as the **Herschel Common Science System (HCSS)**. This encompasses all the software aspects related to the mission: automatic pipelines, spacecraft calibrations, etc. As data are retrieved from the spacecraft they are ingested in the Herschel Science Archive (HSA) and processed with the current version of the pipeline. That means that, at any given time, different data in the HSA may be reduced with different pipeline versions. The pipeline version is listed in the HSA GUI as SPG vX.X.X, where SPG stands for **Standard Product Generator**. The SPG version is available as the header keyword 'creator', in the data .fits files. Occasionally, the whole HSA is re-processed with the same, up-to-date version of the HCSS.

From the user point of view, the most important piece of the HCSS system is the Herschel Interactive Processing Environment (HIPE). HIPE allows the astronomer the possibility of inspecting the data and re-process them, if the results from the automatic pipeline are not good enough for his/her purposes. Because HIPE is part of the HCSS, the latest version of HIPE will have the most up-to-date pipeline and calibrations available.

For example, some data in the HSA may be marked SPG v4.1.0, which means that they were processed with that HCSS version. If the current HCSS version is 5.2, HIPE is informally called HIPE 5.2. If you re-reduce the data with this HIPE version, they will get the result that would be produced with the 5.2 pipelines.

The latest version of HIPE can be obtained here. Known HIPE issues/problems/bugs are detailed here.

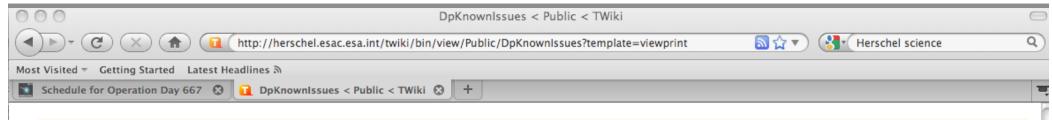
In what follows, we provide a summary of the known issues that you may encounter when inspecting data processed with the automatic pipelines **HCSS versions 4.x to 5.2.** Most can be resolved by running the pipelines within HIPE and optimizing their parameters.

Note that some of this information can also be found in the quality report of the observation (QC Report) and as metadata with the FITS keyword "PCAVEATS".

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 - → PACS Photometer Release Notes
- → PACS Spectroscopy
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- HIFI observations (point mode, spectral survey and mapping observations)
 - → HIFI Release Notes
- Other Technical Notes
- Calibration Documents

PACS Photometer (scan mapping)



PACS Photometer (scan mapping)

- In order to obtain the best possible Level 2 PACS scan-map data, the observations should be reprocessed with a HIPE stable developer build version 6.0 build 1985 (download for Mac OS X, Linux 32 bits, Linux 64 bits, Windows 32 bits, Windows 64 bits).
 - · Caveat: these developer versions have not been fully tested and should be used at your own risk. Please, send questions to the HSC helpdesk if you find problems with it.

. High Pass Filter artifacts in blue and red maps

• These are due to a non-optimal estimate of background by the high-pass filter close to a bright source. The current masked high-pass filter pipeline is a trade-off, designed to get a good sensitivity on point-sources and preserve some extended emission up to a few arcmin scale. However due to the relatively large width in the second high-pass filtering, significant stripping from the 1/f noise is still present in the level 2 maps. The observer is advised to play with the threshold to define the mask and with the width of the high-pass filter to reduce these effects.

. Saturation of brightest sources on blue channel (Level 2) map

This is due to the MMT deglitching at high speed (60"/s), which can wrongly identify bright sources as glitches. A possible solution in these cases is to use 2nd order deglitching as a default.

· Pointing issues

If your source is severely mis-pointed you should contact the <u>HSC helpdesk</u>. The measured Herschel APE (Absolute Pointing Error) on pointed observation is 2 arcsec (1 sigma). But the astrometry of several PACS scan maps has been reported to be up to 4 arcsec off (solid offset of the whole map).

. Glitches from Cosmic ray hits

- Level 2 maps in the archive (HSA) processed with SPG 4.1 or 5.2 are affected by glitches as a side effect of disabling the deglitching on bright sources. This will be corrected in future versions. Interactive HIPE sessions shall get rid off of all these glitches.
- o At 20"/s scan speed, the MMT deglitching does fine if there are no bright sources (>~1Jy), for instance for cosmological survey observations. For brigher sources (nearby galaxies or galactic fields) it is better to switch to second order degliching. See: http://www.herschel.be/twiki/bin/view/Public/SecondLevelDeglitching

No absolute noise map

Full noise propagation in the HSC pipelines will be available at later HCSS versions, so the current noise map is relatively but not absolutely correct. Furthermore, the default pipeline results
in correlated noise in individual pixels. In order to estimate a proper background standard deviation, the observers are advised to make 10+ aperture photometry measurements in different
sky patches and to estimate the absolute standard deviation of the image as the sigma of those photometric points.

Other calibration/pipeline problems/needs

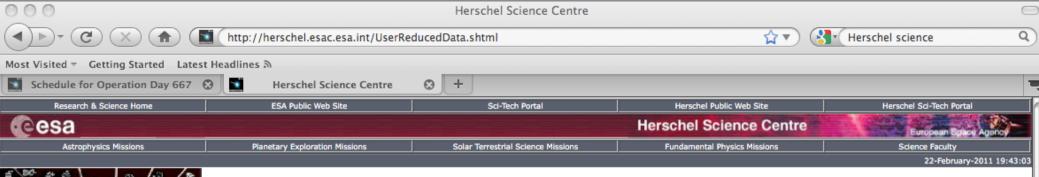
For more information check the <u>PACS Instrument and Calibration webpage</u> and/or contact the <u>HSC helpdesk</u>.

PACS Photometer Release Notes

PACS Scan Map AOT release note: 23 Feb 2010

PACS Photometer - Point/Compact Source Observations: Mini Scan-Maps & Chop-Nod AOT release note: 12 Nov 2010

PACS Spectroscopy



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Herschel User Reduced Data

Introduction

The Herschel Science Archive contains products obtained by processing the observations data through an automatic processing pipeline. This corrects well a number of instrumental artifacts in an automatic fashion. The final products can, however, be significantly improved by processing them further, e.g. by means of the interactive analysis software tools available within HIPE or with the help of other external tools and/or user contributed software.

The resulting products are called Highly Processed Data Products (HPDPs). In a broader sense this definition includes catalogues and atlases. In the future, the Herschel Science Archive is expected to be enhanced with the functionality for continuous ingestion of new user reduced data, catalogues and atlases, in the form of HPDPs.

In particular, and as agreed at the time of submission of the Key Programme observing proposals, KP consortia are committed to deliver back to the HSC the User Reduced Data corresponding to the data obtained as part of the Science Demonstration Phase. In addition, on a best effort basis, they are also expected to continue contributing back with additional User Reduced Data corresponding to the results obtained as part of their core programmes as they become published in the refereed literature.

For the moment, this web page is intended to play the role of a User Reduced Data repository by providing links to those external sites (mostly via ftp repositories hosted by the consortia delivering the data) containing data generated by different projects (and associated documentation), that one day in the future may eventually become ingested in the Herschel Science Archive, if considered appropriate as HPDPs.

User Reduced Data

The table below provides access to the currently available User Reduced Data:

Proposal ID	Proposal Name	Release Note	User Reduced Data Repository	Documentation	Latest update
KPOT_seales01_2	H-ATLAS	First data release of the Herschel ΔTI ΔS 124-Oct-20101	H-ATLAS SDP images and files	PACS maps (Ibar et al. 2010) SPIRE maps (Pascale et al. 2010) 5-band source catalogue (Rigby et al. 2010)	[24-Oct-2010]
KPGT_soliver_1	HerMES	HerMES consortium provides public release of Herschel data [1-Jul-2010]	HeDaM: Herschel Database in Marseille	HerMES related publications	[1-Jul-2010]

Basic guidelines on how to provide your user reduced data products, catalogues and atlases are provided in the document "Herschel Data Products and Tools Contributor Guide".

Please contact the Herschel Science Centre Helpdesk if you have any question or if you need further assistance on how to deliver your User Reduced Data. Feedback and comments related to the contents of this web page are welcome.

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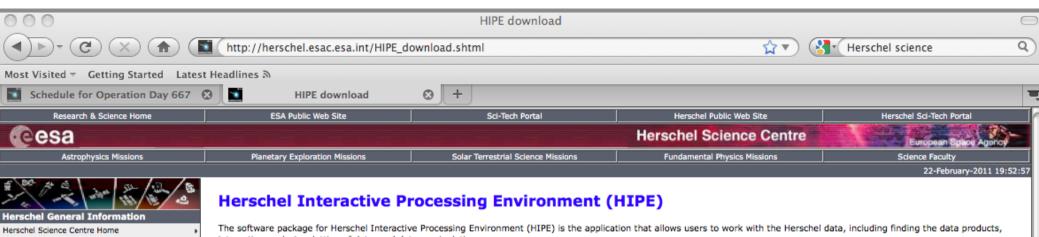
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interactive analysis, plotting of data, and data manipulation.

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- HIPE Users' Documentation

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'How-to' step-by-step

Herschel Observing

Herschel Announcement of Opportunity (OT1)

- Access HIPE developer builds
- HIPE System Requirements

Which version of HIPE do I need?

In general, users are recommended to use always the latest user release version of HIPE, as this the latest version of HIPE which contains fully validated versions of all pipelines and of the extended interactive data processing packages which come with HIPE, and it has been subject to dedicated validation campaigns by an extended group of testers and astronomers. This is in principle the version recommended for a general user and for the processing of Herschel data from all instruments.

It must be noted, however, that in order to obtain the best possible Level 2 data for some Herschel instruments and specific observing modes, sometimes more advanced HIPE developer versions are identified and made available which are intended to provide early access to better quality products in some particular cases.

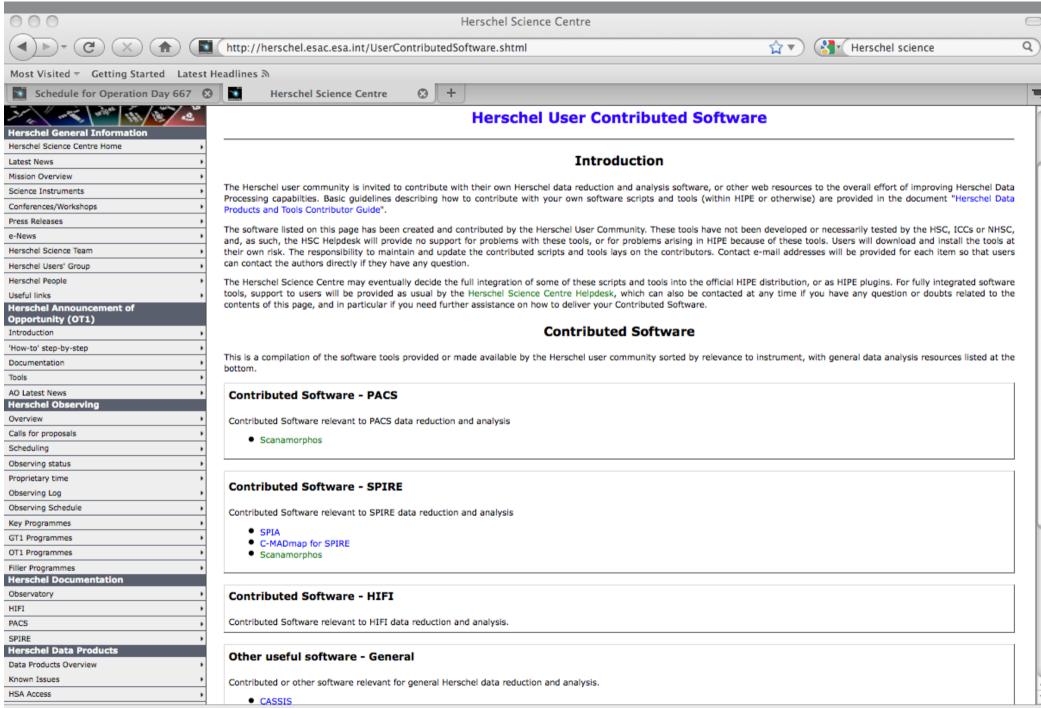
In the table below we list the latest recommendations made by the instrument ICCs on which version should be used depending on the kind of analysis that you need to perform. Note that in some cases a developer build version is recommended for use. It is important that you understand that as such developer build versions they may have not been fully tested and should be used only for the particular purpose indicated below (e.g., data reduction and analysis of PACS Photometry/Spectroscopy). Any other usage of this build for any different purpose is at your own risk. Please, send your questions to the HSC helpdesk if you need further clarifications on which version is the more appropriate for you to use and if you find problems of any kind installing HIPE or running your data reduction session.

Observing mode	HIPE version
SPIRE Photometry	HIPE 5.2
SPIRE FTS Spectroscopy	HIPE 5.2
HIFI	HIPE 5.2
PACS Photometry	HIPE 6.0 build 1985
PACS Spectroscopy	HIPE 6.0 build 1985

HIPE Download and Installation Instructions

Download the latest HIPE User Release installer

The latest HIPE User Release (v5.2) installer can be downloaded from the links below. See the installation instructions on the different operating systems.



Observing Log
Observing Schedule
Key Programmes
GT1 Programmes
OT1 Programmes
Filler Programmes

Observatory

HIFI PACS SPIRE

Herschel Documentation

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Scientific Publications
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Helpdesk
Proposal Handling

Subscribe to Herschel eMail list Herschel User Registration

User Registration

Lost Password ???

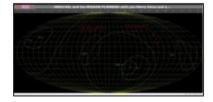
HIPE Download



SPIRE PI Matt Griffin awarded RAS Prize! At the start of the its Ordinary Meeting held in Burlington House, London, on 14 January 2011 the RAS named the recipients of the Society's medals and awards for 2011. Among the 'individuals who have made an outstanding contribution to astronomy and geophysics' is the SPIRE PI Matt Griffin who was awarded the 'Jackson-Gwilt Medal' for 'his work on instrumentation for astronomy in the submillimetre waveband'. All the prize winners will receive their medals in NAM 2011 to be held in April 2011 in Wales; see the RAS News release.



Herschel and XMM-Newton join forces observing M31! A few hours after completing 600 days in-flight Herschel together with XMM-Newton have been featured in the BBC Stargazing Live show joining forces observing M31, the Andromeda Galaxy. The observations very convincingly display the importance of having access to multiple regions in the spectrum, each providing unique and complementary information. For more information see the reports on the ESA and ESA Space Science portals, and the ESA SciTech, the UK Herschel outreach, and the BBC News websites. Furthermore in French on the French Herschel outreach and in Spanish on the EI País websites.



Happy New 2011 from the Herschel Science Centrel For Herschel clearly 2010 has been the year of coming out! Stunning results are presented by Herschel observers in a multitude of meetings around the globe. It really has been an exceptional time to work on Herschel, and we believe all of our observers share this sentiment. So, from all of us, to all

Publication guidelines



Mandatory footnote in all Herschel papers

It has been agreed that in all papers using Herschel and/or Herschel data a mandatory footnote on the first page should **be included.** The footnote serves multiple purposes, including providing credit and simplifying publication tracking. The footnote is:

"Herschel is an ESA space observatory with science instruments provided by European-led Principal Investigator consortia and with important participation from NASA."

As an example, using the A&A LaTeX template this should be done using the \thanks command as illustrated here:

\title{The title of your paper\thanks{{\it Herschel} is an ESA space observatory with science instruments provided by European-led Principal Investigator consortia and with important participation from NASA.}}

In other journals the mechanics will be different but similar, however, the footnote should be included. This instruction is valid for all Herschel-related publications in all journals until further notice.

Standard references to Herschel and its instruments

Reference to Herschel and its instruments should be made using the following standard references as appropriate. By means of an example:

"In the present paper we will be discussing observations performed with the ESA Herschel Space Observatory (Pilbratt et al. 2010), in particular employing Herschel's large telescope and powerful science payload to do photometry using the PACS (Poglitsch et al. 2010) and SPIRE (Griffin et al. 2010) instruments, and very high resolution spectroscopy with the HIFI (de Graauw et al. 2010) instrument."

These four references are to four papers in the A&A Special Issue, the references are (assuming the first three names should be written followed by et al., this is the case for A&A):

Pilbratt, G.L., Riedinger, J.R., Passvogel, T. et al. 2010, A&A, 518, L1 Poglitsch, A., Waelkens, C., Geis, N. et al. 2010, A&A, 518, L2 Griffin, M.J., Abergel, A., Abreu, A. et al. 2010, A&A, 518, L3 de Graauw, T., Helmich, F.P., Phillips, T.G. et al. 2010, A&A, 518, L4

Publication list



Herschel Scientific Publications

Introduction

The de facto way of communicating the scientific results based on Herschel observations is via publications in the refereed scientific literature which is very strongly encouraged. This webpage provides a listing of published refereed Herschel papers, the applicable rules and guidelines for publishing can be found in elsewhere.

Herschel Publication List

The listing provided here is generated by searching the ADS followed by manual inspection of the 'hits' using the criteria listed below. It is maintained by the Herschel Project Scientist, to whom feedback can be provided.

Herschel Publication List

What papers are listed?

The listing provided is still 'under construction'. The 'rules' for what criteria should be fulfilled by a paper to make it eligible for listing are currently being established, and can be updated. (Ultimately this possibly could lead to the provision of multiple listings.)

The criteria used for being included in the listing (or not) currently in use are:

- Papers must be based on Herschel in-flight measurements and/or observations. Consequently no papers published before the launch of Herschel are included.
- The vast majority of the papers listed are articles presenting Herschel observational results, also included are papers discussing
 Herschel performance, including telescope and instrument performance, plus additional science papers based on the direct use of

Publication list



gpilbratt@rssd.esa.int | my Account | Sign off

Sort options

SAO/NASA Astrophysics Data System (ADS)

<u>Private Library HerschelPapers</u> (Refereed papers based on Herschel (data), last modified 23-Feb-2011) for gpilbratt@rssd.esa.int

Go to bottom of page

(Note: the link on the library name is a public link to this library)

Selected and retrieved 236 abstracts.

☐ 2011 A & A 527 A 05337

1.000

03/2011

#	Bibcode Authors	Score Title	Date	List of Links Access Contr				
1	 □ 2011ApJ729L19A Arimatsu, Ko; Izumiura, Hideyuki; Ueta, Toshiya; Yamamura, Issei; Onaka, Takashi 	1.000 Detection	03/2011 on of the Deta	AZEF ched Dust Shell	X l of U Antli	Rae at Mid-infrare	<u>U</u> ed Wavelengths with	n AKARI/IRC
2	□ 2011A&A527A.111J Juvela, M.; Ristorcelli, I.; Pelkonen, VM.; Marshall, D. J.; Montier, L. A.; Bernard, JP.; Paladini, R.; Lunttila, T.; Abergel, A. André, Ph.; and 8 coauthors		03/2011 cold cores. I	AZEF	X ly of the ext	R tended dust emiss	<u>U</u> sion around the first	Planck detections
3	☐ 2011A&A527A.102B Barbey, N.; Sauvage, M.;	1.000 Feasibil	03/2011 ity and perfor	AZEF mances of com	X pressed sen	R sing and sparse r	<u>U</u> nap-making with H	erschel/PACS data

HERSCHEL SPACE OBSERVATORY

HSC web non-evolution



General pages

- Although some are fully up-to-date e.g.
 - Latest News
 - Conferences
 - Press Releases
 - HUG
- Others need updating
 - Overview
 - Science instruments

Missing pages

- DDT/ToO information
- Communications

Overdue

e-News







Communications

HERSCHEL SPACE OBSERVATORY

PR aka Communications





ESA wants to communicate your results

- Provides expertise/resources science writers, image making
- Provides the channels websites, mailing lists, etc
- All material can be used by others
- Wants to create win-win situation

Possibilities

- Web-releases Portal and/or SciTech
- Exceptionally fully fledged press release
 - Press reps invited in person
 - Done in connection with 'First Results Symp' in May 2010

Project Scientist is your contact point

- PS will initiate process applying for resources
- Web-page providing information to come...

PR aka Communications



ID No.

Date Received:

TEMPLATE FOR REQUESTING WEB ARTICLES

(to be returned to Clare Bingham)

PROPOSER(S): Göran Pilbratt, Herschel Project Scientist

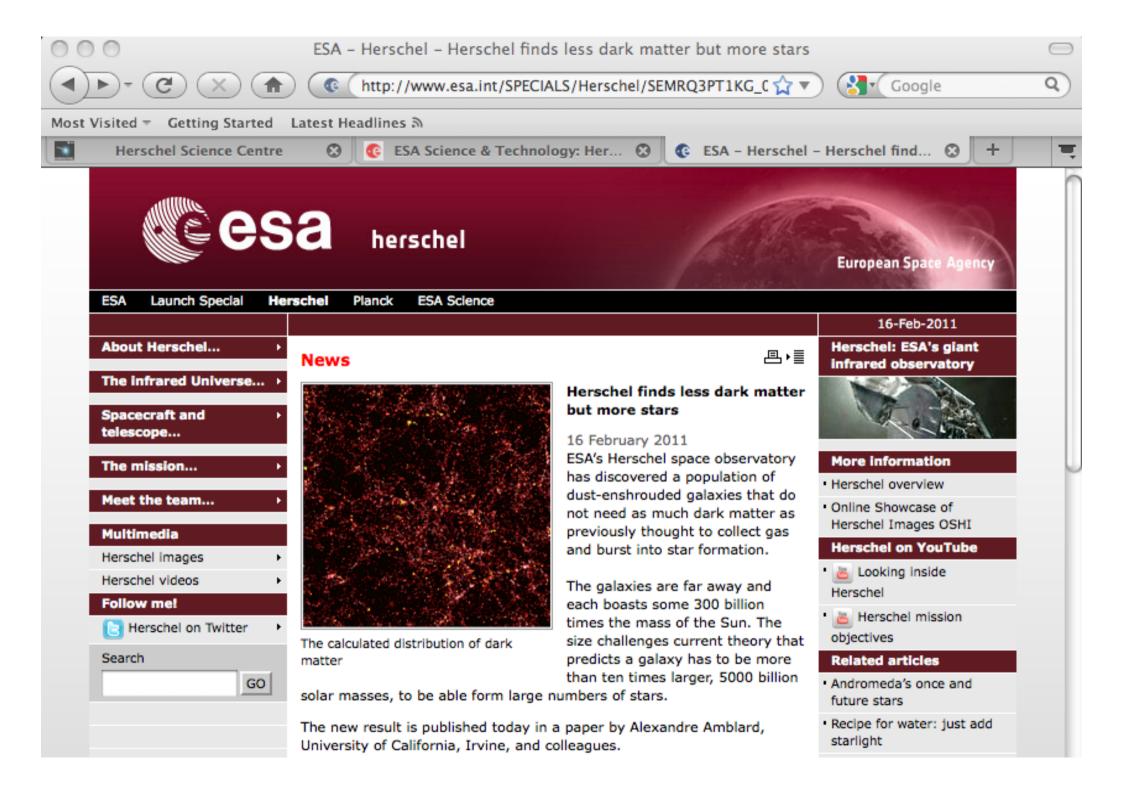
incl. Division Code: SRE-SA

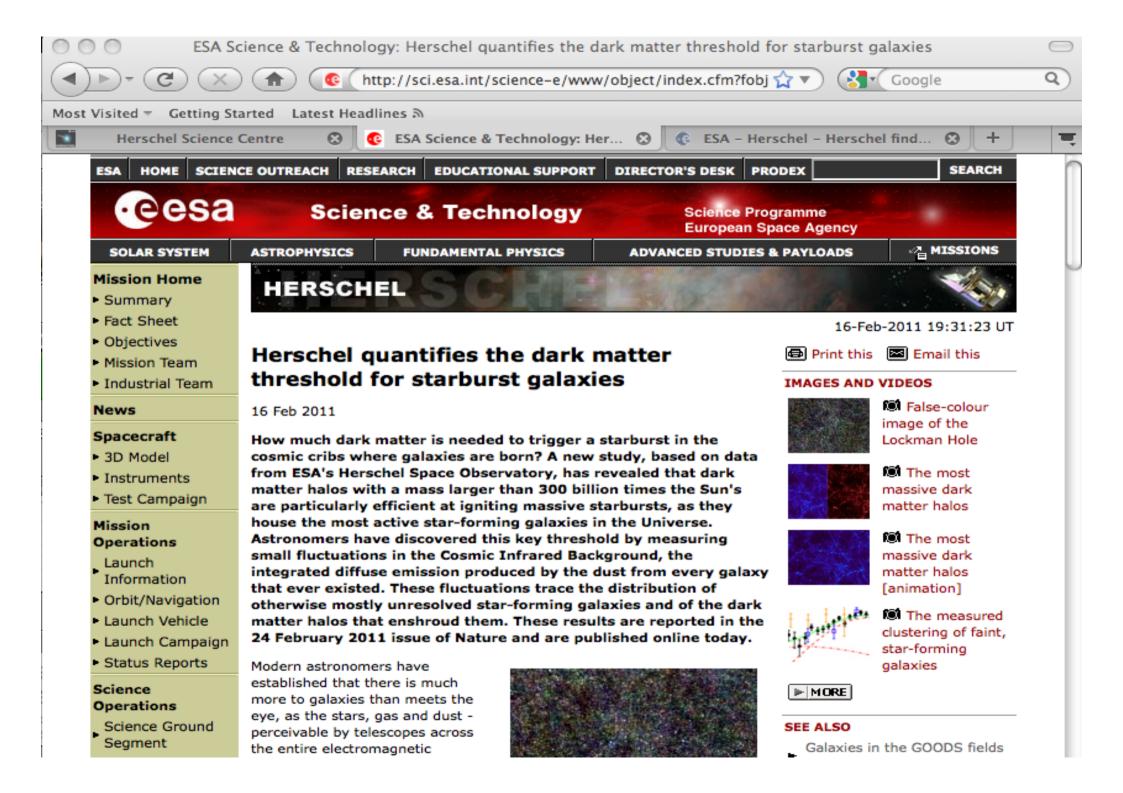
Date of request: 27 December 2010

TITLE: [Working title] Submillimetre galaxies provide dark matter halo masses

DATE REQUIRED: [Please indicate if this is linked to a time-critical event, e.g. an event (workshop, conference, natural phenomenon), or the publication date of a paper.]

The posting of this web-release should coincide with the publication of a Nature paper by A. Amblard et al. The paper was accepted on 21 December 2010. The actual publication date is currently not known, the best guess is in 'late January 2011 at the earliest'.





Herschel & XMM in BBC Stargazing Live CSa

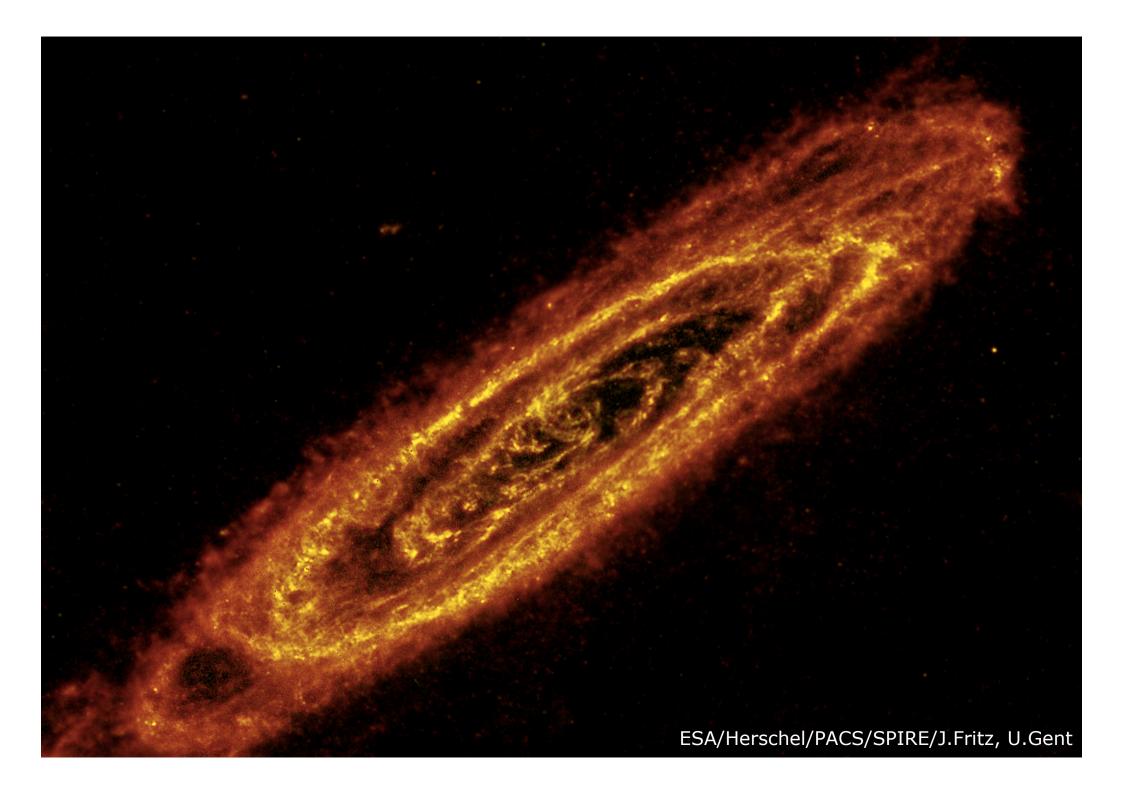


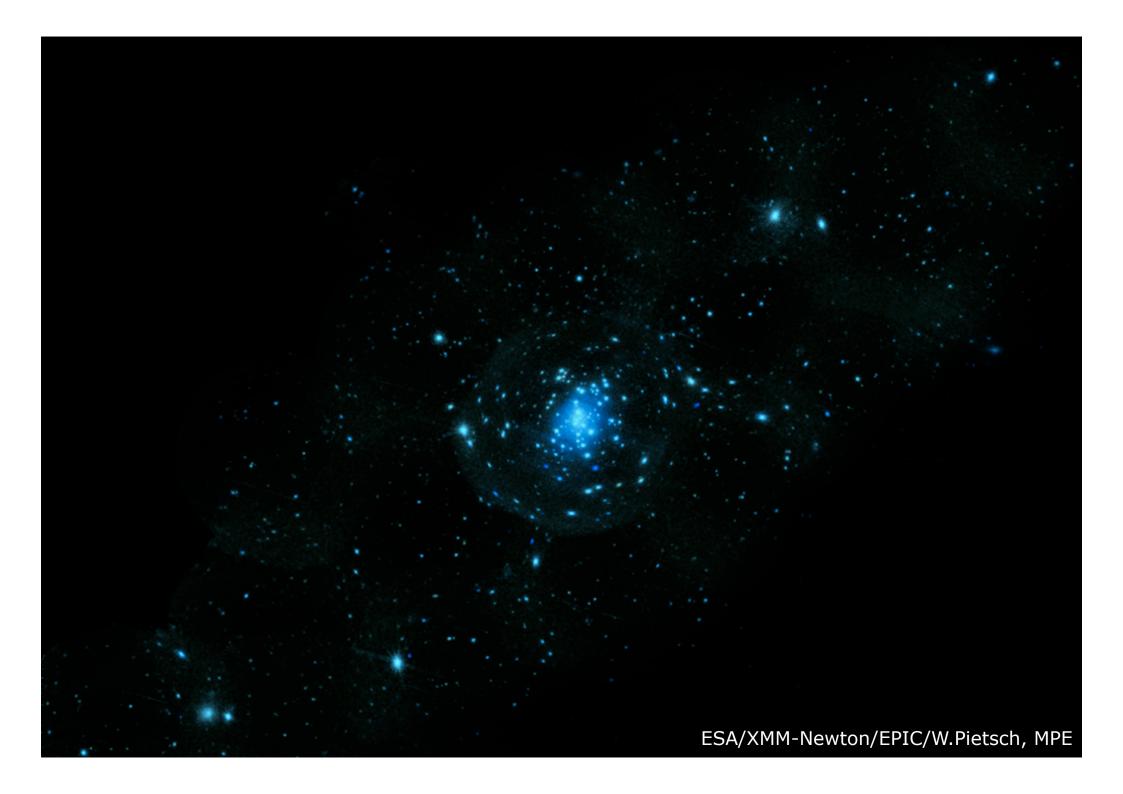




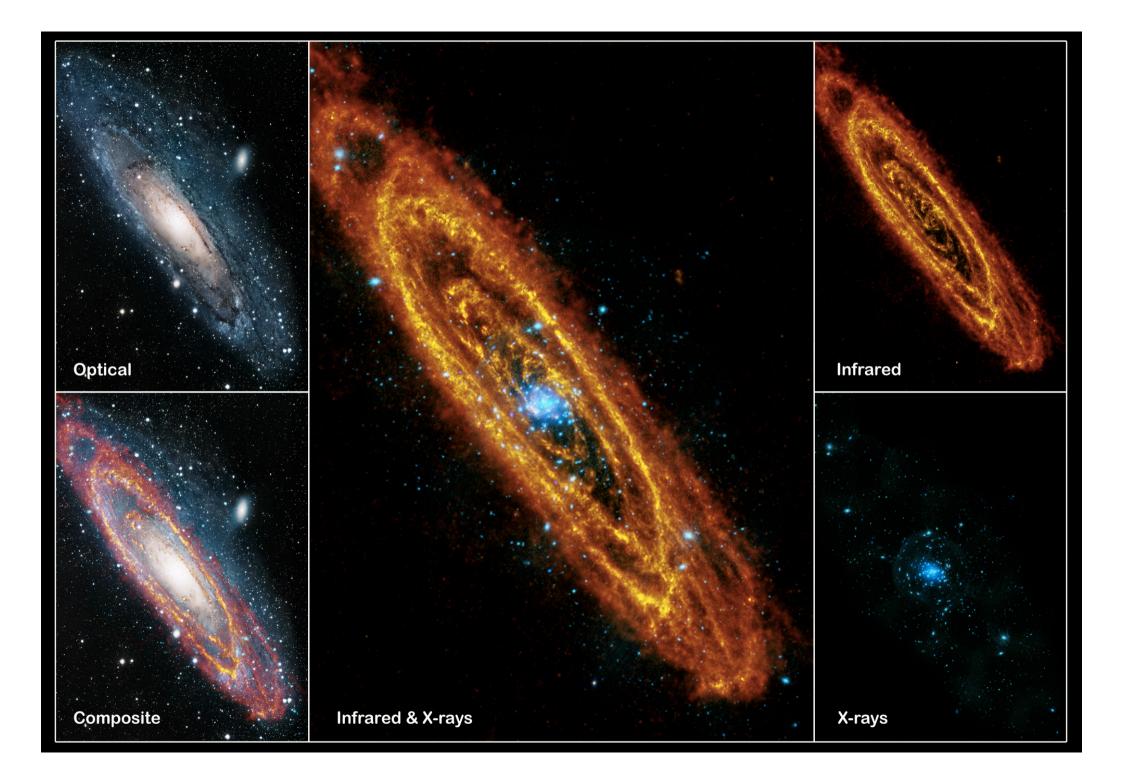
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THANK YOU!