The ISO Legacy Archive

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The ISO Data Archive

- The ISO Data Archive contains all ISO data, software and documentation of long term interest to the astronomical community

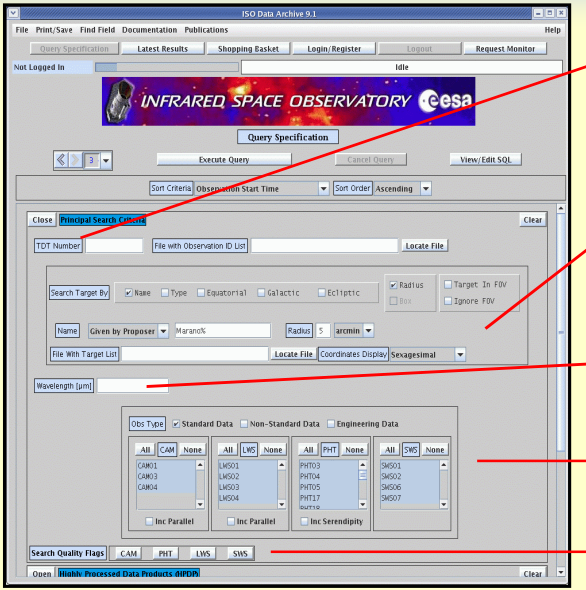
- ICSA (ISO Central Science Archive) contains queriable data (e.g. coordinates and wavelengths) and the actual science data (e.g. a calibrated spectrum).

- The ISO Data Archive offers a self-contained, fast and powerful interface to all ISO data products. Complex queries can be made against hundred of database parameters using friendly and modular query panels (general astronomical parameters, observer and proposal, timing constraints, list of targets, instrument details…)

The ISO Data Archive

- Opening of the ISO Data Archive (9/Dec/1998)
- 15 different versions till 2003 (end of Post Operation Phase):
  - Improving functionalities
  - Introduction of tools to view and examine GIF and FITS files interactively
  - Accessing external data (as IRAS)
  - Introducing data quality information (queriable flags)
  - Accessing publication information
  - Introducing a new kind of products: “User Reduced Data”
- Active Archive Phase (2003-2006):
  - Strengthen links to other databases
  - Improve quality/accuracy indicators of problems or uncertainties in the data
  - Ensure that the archive remains homogeneous
  - Perform scientifically focussed interactive data processing by users/experts

IDA User Interface: Main query panel



Observation number identifier

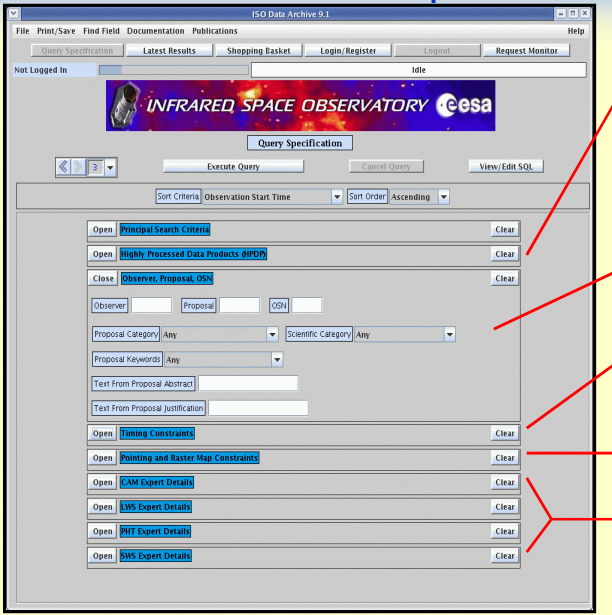
Name, type or coordinates of the objects

Observed wavelengths

Observing mode

Quality of the observation

IDA User Interface: Other panels



Highly Processed Data Products

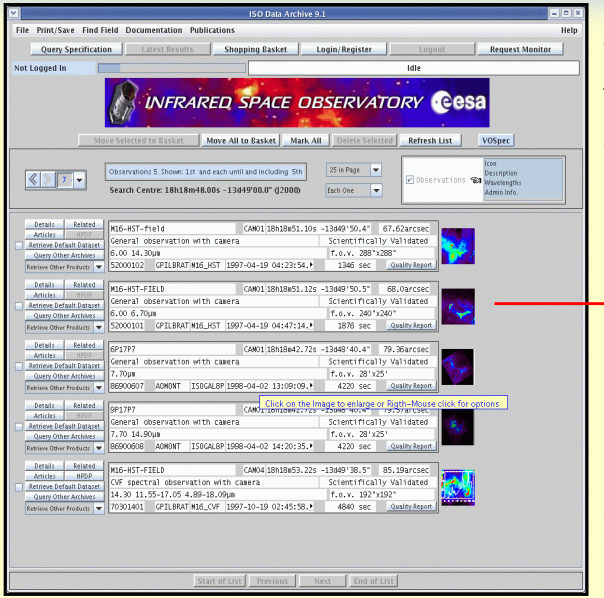
Observer and proposal

Observations executed time or revolution

Observation mode: pointing, raster, maps…

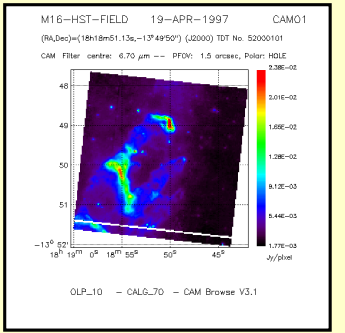
Instrument details

IDA User Interface: Query result



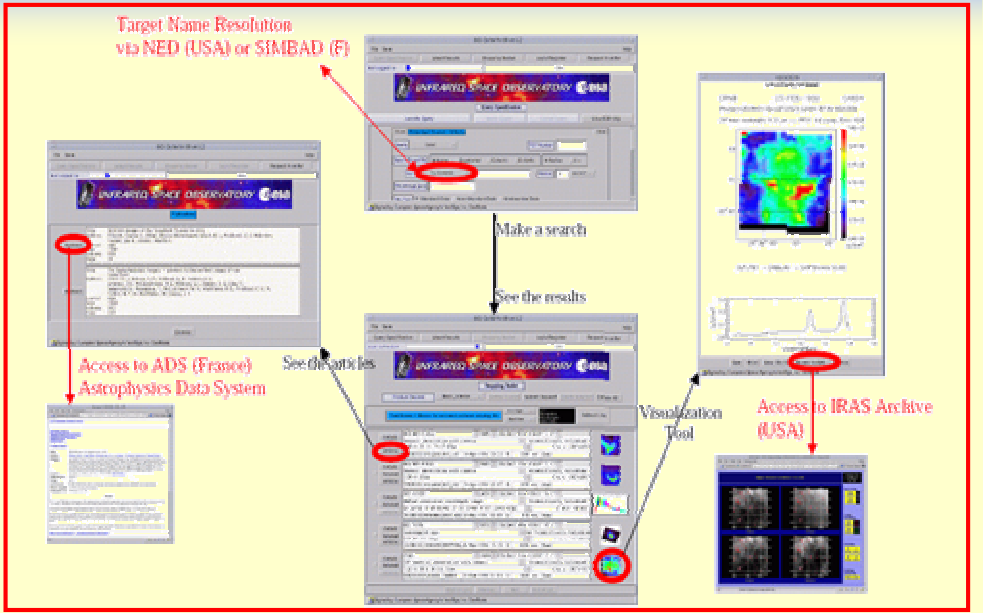
5 observations of the M16 Eagle Nebula with the ISO Camera that the user can:

- Quickly visualize



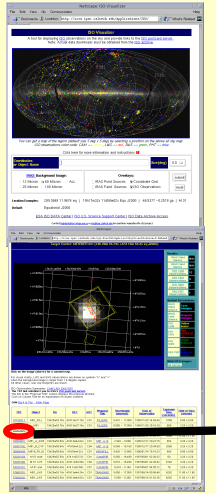
- Save
- Get information ➔

IDA: Links with external Archives

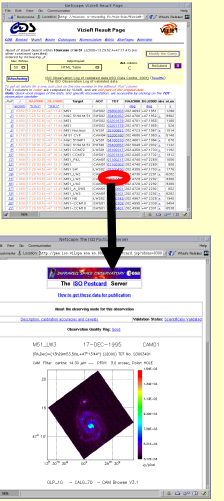


IDA: Links with external Archives

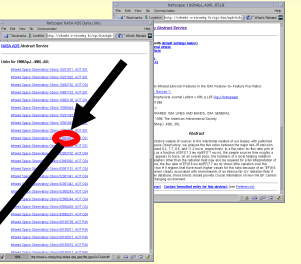
IRSA



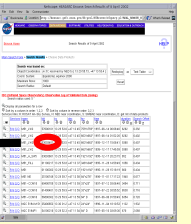
VizieR



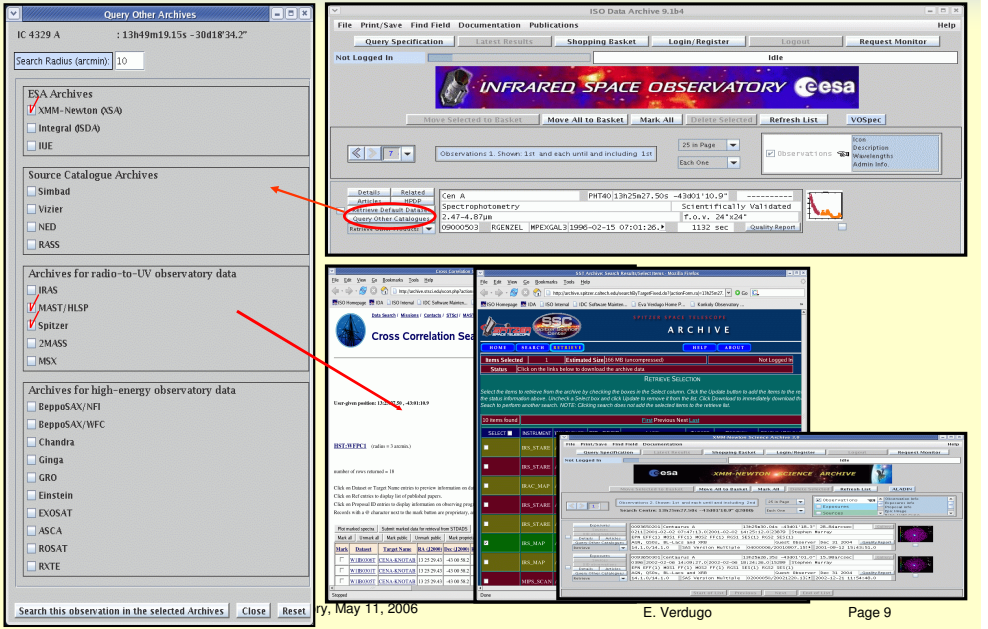
ADS



HEASARC



IDA: Links with external & internal (ESA) Archives



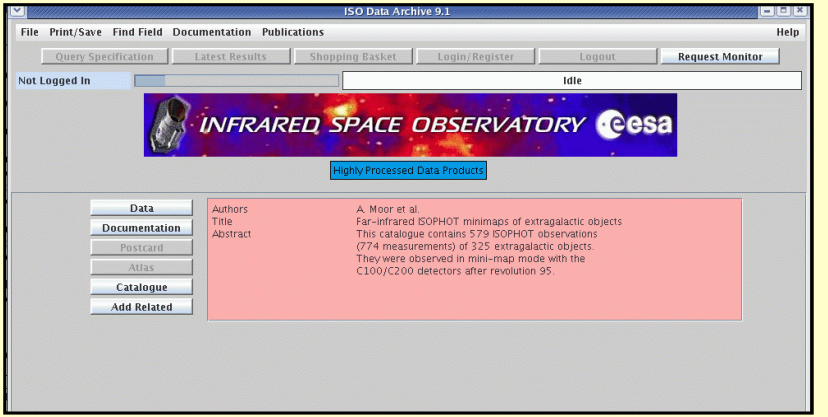
Version 6.0 (24/Jul/2003): HPDPs

(Highly Processed Data Products)

- Facility for continuous ingestion of systematic processing of selected observing modes or class of objects, corrected “by-hand” for residual instrumental artefacts.
- Products improved systematically `by-hand’
  - via Interactive Analysis or improved algorithms, to correct for residual instrumental artefacts still present in the pipeline data.
- Data, catalogues, atlases
  - By dedicated projects, via reprocessing of observing modes, funded by the IDC and/or with active IDC participation
- Goal is to populate at least 1/3 of the archive with more “readily usable” products

Version 6.0 (24/Jul/2003): HPDPs

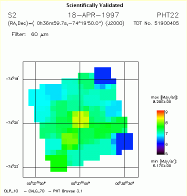
- 22 HPDPs ingested in IDA: 8 from Konkoly Observatory
- Around 20 more coming this year: 6-7 from Konkoly Observatory



Version 6.0 (24/Jul/2003): HPDPs

Far-Infrared ISOPHOT minimaps of evolved objects

- ✓Drift correction
- ✓Transient correction
- ✓Empirical correction for systematic trends
- ✓Background determination
- ✓Flux extraction
- ✓Compilation of a catalogue



From a map to a catalogue with final photometric values

Object name	Object type	ISO name	TDTNUM ON	On Meas.#	RA(2000)	DEC(2000)	Detector	Wavelength [micron]	Epoch	TDTNUM OFF	Off Meas #	Flux density [Jy]	Flux uncertainty [Jy]	Background [MJy/sr]	Detection [sigma]	Object size	Quality
[GB98] S02	Star	S2	51900405	01	0.616583334	-74.330527778	C1	60	18-APR-1997	51900405	01	0.088	0.017	6.9	7.0	P	R1
[GB98] S09	Star	S9	53300720	01	0.835750000	-73.524750000	C1	60	2-MAY-1997	53300720	01	0.08	0.011	12.3	2.5	P	R9
[GB98] S13	Star	S13	75000401	01	0.849583333	-73.861944444	C1	60	4-DEC-1997	75000401	01	0.232	0.024	8.3	12.9	P	R9
[GB98] S13	Star	S13	75000331	01	0.849583333	-73.861916667	C1	100	4-DEC-1997	75000331	01	0.184	0.016	7.3	7.3	P	R9
[GB98] S13	Star	S13	85901135	01	0.849583333	-73.861916667	C2	200	23-MAR-1998	85901135	01	0.0050	0.02	7.8	-0.1	P	R6R10R12R13
[GB98] S16	Star	S16	51901737	01	0.951361111	-73.587222222	C1	60	18-APR-1997	51901737	01	0.027	0.0050	7.0	2.0	P	R1
[GB98] S22	V*	S22	53300849	01	1.150555556	-71.403888889	C1	60	2-MAY-1997	53300849	01	0.0070	0.0090	7.2	1.0	P	R1
[GB98] S23	Star	S23	51901852	01	1.175777778	-73.084750000	C1	60	18-APR-1997	51901852	01	0.0070	0.0080	8.0	0.9	P	R1
IRAS 04374-6831	Star	PSC04374-6831	66300936	01	4.623000000	-68.417500000	C1	60	9-SEP-1997	66300936	01	0.025	0.0070	7.8	2.3	P	R1
IRAS 04407-7000	Star	PSC04407-7000	56702037	01	4.674555555	-69.920277778	C1	60	5-JUN-1997	56702037	01	0.064	0.013	7.4	4.4	P	R1
IRAS 04496-6958	C*	IRAS04496-6958	86800502	01	4.821833333	-69.887222222	C1	60	1-APR-1998	86800502	01	0.023	0.0090	7.0	2.5	P	R1
IRAS 04545-7000	Star	PSC04545-7000	56701440	01	4.902750000	-69.932722222	C1	60	5-JUN-1997	56701440	01	0.124	0.019	9.5	3.6	P	R9
IRAS 05146+2521	V*	05146+2521	68801094	01	5.295388889	25.416388889	C2	200	4-OCT-1997	68801094	01	0.155	0.329	40.3	0.0	P	R8R13
SV* HV 2446	V*	HV2446	58401843	01	5.333750000	-67.578666667	C1	60	22-JUN-1997	58401843	01	0.023	0.01	9.7	1.0	P	R1
IRAS 05289-6617	C*	PSC05289-6617	63003745	01	5.484055556	-66.258583333	C1	60	7-AUG-1997	63003745	01	0.142	0.015	7.8	7.3	P	R10
IRAS 05402-6956	Star	PSC05402-6956	62401648	01	5.662583333	-69.921527778	C1	60	1-AUG-1997	62401648	01	0.182	0.083	35.6	1.4	P	R9
IRAS 07486-7753	Mira	07486-7753	73501601	01	7.776583334	-78.018777778	C2	200	20-NOV-1997	73501601	01	0.064	0.107	14.3	0.0	P	R8R13
IRAS 08478-7919	Star	08478-7919	73501809	01	8.765694444	-79.503888889	C2	200	20-NOV-1997	73501809	01	0.377	0.075	12.7	0.0	P	R8
IRAS 10283-8048	Star	10283-8048	67404231	01	10.470166667	-81.059472222	C2	200	20-SEP-1997	67404231	01	0.042	0.045	7.7	0.0	P	R8R13
OH359.508+0.179	Mira	OH359.508+0.179	50401333	01	17.729083334	-29.262250000	C1	60	3-APR-1997	50401333	01	12.346	3.586	1745.9	2.1	P	R9R10
OH359.513+0.174	Mira	OH359.513+0.174	49800630	01	17.729611111	-29.260250000	C1	60	28-MAR-1997	49800630	01	11.623	4.027	1987.5	2.0	P	R9
OH359.889+0.361	Mira	OH359.889+0.361	48502533	01	17.732472223	-28.841750000	C1	60	15-MAR-1997	48502533	01	2.481	0.438	651.1	1.7	P	R10
OH0.019+0.345	Mira	OH0.019+0.345	49402145	01	17.738638889	-28.739361111	C1	60	24-MAR-1997	49402145	01	2.713	0.523	729.2	2.4	P	R1
OH359.943+0.260	Mira	OH359.943+0.260	48502436	01	17.741138889	-28.848888889	C1	60	15-MAR-1997	48502436	01	-0.082	0.673	893.4	-0.3	P	R1
OH359.800+0.165	Mira	OH359.800+0.165	49801418	01	17.741666667	-29.020527778	C1	60	28-MAR-1997	49801418	01	-0.08	3.26	1426.4	0.2	P	R9R10
OH359.899+0.222	OH/IR	OH359.899+0.222	31802061	01	17.741888889	-28.906750000	C1	60	30-SEP-1996	31802061	01	4.235	1.225	974.8	2.8	P	R10
OH359.890+0.155	Mira	OH359.890+0.155	48502109	01	17.745805556	-28.949388889	C1	60	15-MAR-1997	48502109	01	7.542	3.498	1363.8	3.8	P	R1
OH359.783-0.392	Mira	OH359.783-0.392	50800648	01	17.777222222	-29.325416667	C1	60	7-APR-1997	50800648	01	6.925	3.583	1779.6	1.2	P	R9
OH0.096-0.427	OH/IR	OH0.096-0.427	48501806	01	17.791916667	-29.076000000	C1	60	15-MAR-1997	48501806	01	3.506	1.018	918.1	1.6	P	R1
OH0.495-0.211	OH/IR	OH0.495-0.211	50801193	01	17.793555555	-28.623166667	C1	60	7-APR-1997	50801193	01	18.851	2.701	1716.0	3.4	P	R10
OH0.523-0.206	Mira	OH0.523-0.206	49400990	01	17.794333333	-28.596027778	C1	60	24-MAR-1997	49400990	01	3.501	0.875	1792.4	0.5	P	R1

Version 7.0 (08/Jun/2004): DQRs

- **Data Quality Report**: Innovate mechanism for characterization of observations.

✓ Compile all info
✓ html file (“linkable”)
✓ looking at the future (VO)

INFRARED SPACE OBSERVATORY

Data Quality Report

Observation number: 791002040

Observation flags:

Incomplete Raster Maps

Pipeline data reduction flags and caveats:

Signals not stable — Check Related File

FCS signal not stable — Check Related File

Caveats

Highly Processed Data Products are the result of further processing beyond the pipeline and/or using new, refined algorithms for which some of the pipeline data reduction flags and caveats may no longer be applicable:

Recommended HPDP (Default Dataset)

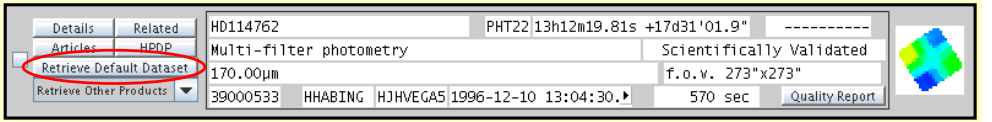
No Highly Processed Data Products for this observation.

Comments:

This map is affected in the following way:
1) Partial saturation due to bright areas insight the map occur for 4 raster positions (377, 378, 383, 384) with up to 42%. As this map is performed on the SHC with bright regions, saturation events are expected.
2) An on-target flag jitter occurs on raster positions 29, 277, 317, 341, 352, 368, 390. Loss of ramps is minimal (at maximum 4 out of 15). No problem.
3) On raster position 234 a huge glitch hits pixel 4. This leads for several raster points to unusable ramps for this pixel. It looses its reset level (up to -0.5 V!) which leads on many subsequent raster points to partially saturated ramps. The signals of this pixel should be considered as unreliable (and noisy!). The pixel does not recover any more, though towards the end of this sap some raster points with nominal reset levels are found; this may be due to partial curing after passage of the bright spot at around raster position 380. After interrupt of the exposure and start of the second FCS measurement, the pixel shows nominal signals (as compared to the 1st FCS measurement) and the reset level is nominal, though slightly increased w.r.t. the neighbouring pixels. Pixel 4 does not show normally such an erratic behaviour (this is attributed to pixel 1) and in the course of quality analysis this hit is a really unique event. 41.5% of the data taken with this pixel are doubtful. As the map has nearly no redundancy (only 20% overlap from different raster points) 10% of the total map is affected.
4) The orientation of the array (3 deg. w.r.t. N) is different from the orientation of the raster (225 deg. w.r.t. N). Therefore, it is expected that the sap shows holes, which amount to about 15% of the total map area.

Version 9.0 (27/Jul/2005): Default Dataset

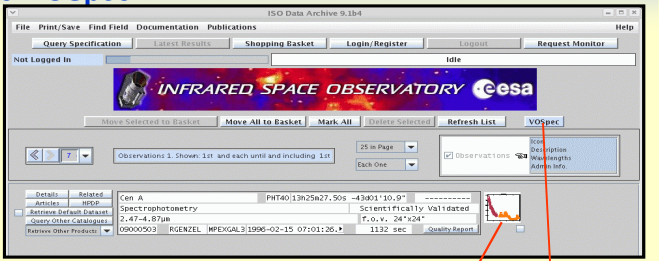
- IDAv9.0 incorporates the option to retrieve the most reliable dataset associated to a given observation. The "Default Dataset" can be: The best Highly Processed Data Products (HPDP) associated to the observation or the Off-Line Processing Pipeline v10.1 products.
- Survey products, icon and postcards generated by the Off-Line Processing Pipeline v10.1 are replaced by the ones created from the HPDP when available.
- Data Quality Reports have been better sorted to include the detailed information of the best HPDP (default dataset) when available.

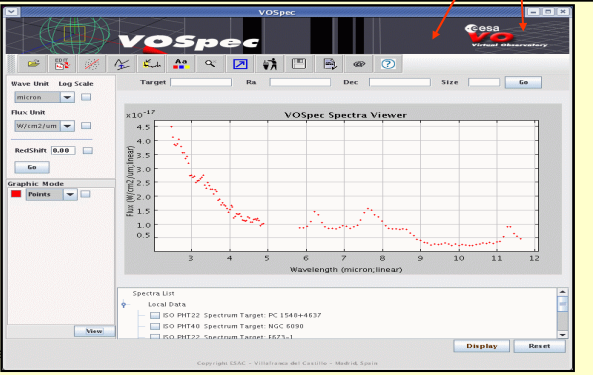


Version 9.1 (15/Mar/2006):

Query Other Archives & VOSpec

- IDAv9.1 incorporates the new facility "Query Other Archives" to search for observations in other ESAC/External Archives using the coordinates of the queried object.
- IDA9.1 also incorporates the VO tool, VOSpec, to display and handle ISO spectra. It can be launched from the spectra icons or from the new "VOSpec" button on the top of the query result page.





The future:
Version 10 (summer 2006) Object type query

- Based on SIMBAD classification
- 34708 observations currently classified
- ~ 143 different object types (11 ISO types: SSO, ISOGAL, ELAIS…)