



# Inter-Operability of ESA Science Archives

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## IDA and XSA Quick Overview

### Open and Flexible 3-tier Architecture

#### From ESA Archives to External Archives

SIMBAD, NED, ADS, IRAS

#### From External Archives to ESA Archives

Observation / Exposure log

Postcard and Product Server

## Conclusions

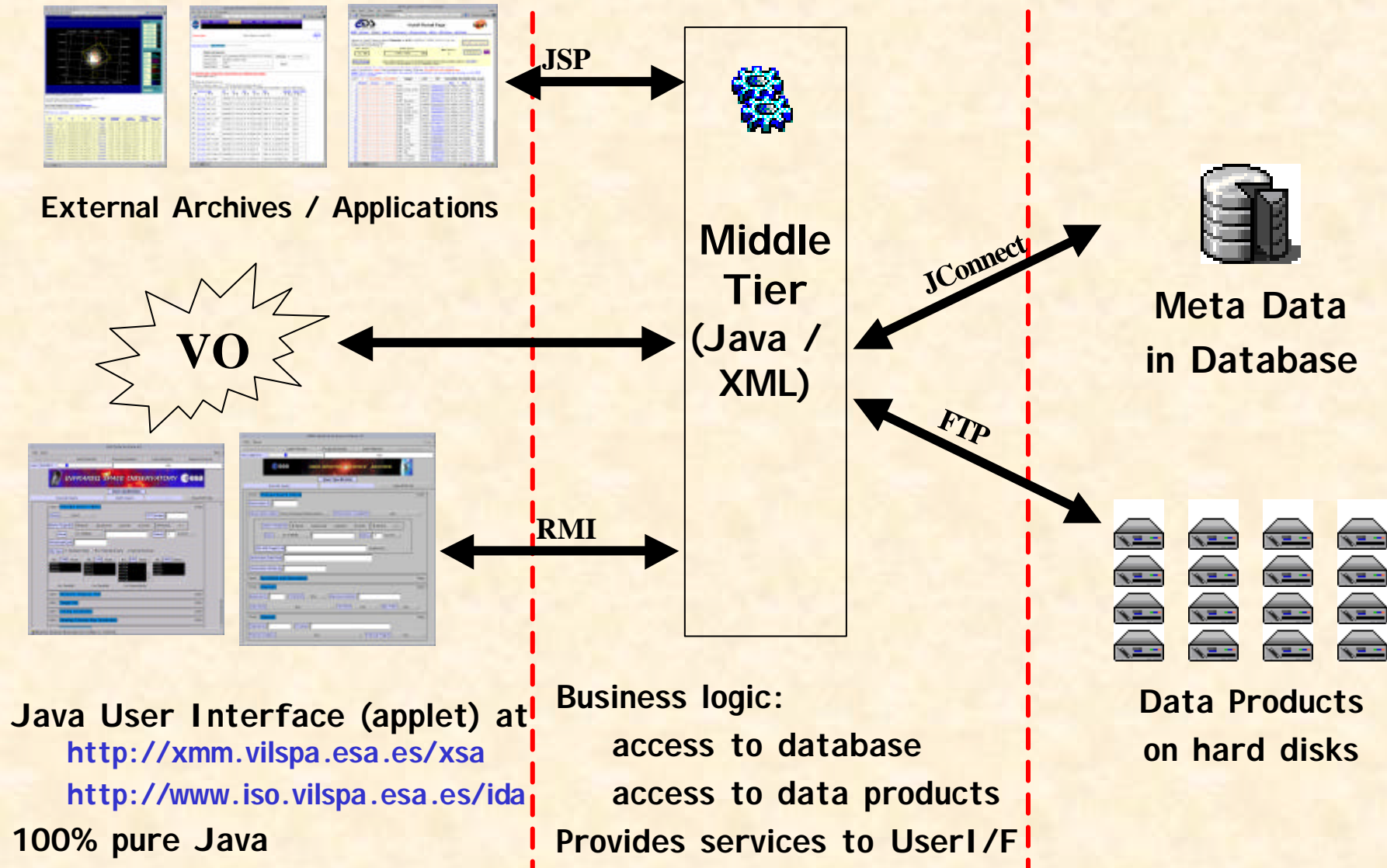
## ISO Data Archive (IDA)

- Available at <http://www.iso.vilspa.esa.es/ida> since December 1998
- Contains all raw data, fully processed, science and calibration data
- Contains all ancillary data (engineering, uplink and downlink data)
- Around 400 GB of data on magnetic disks
- Already downloaded more than 5 times, over 1200 registered users
- Configurable and re-usable
- Each observation has a data quality flag

## XMM-NEWTON Science Archive (XSA)

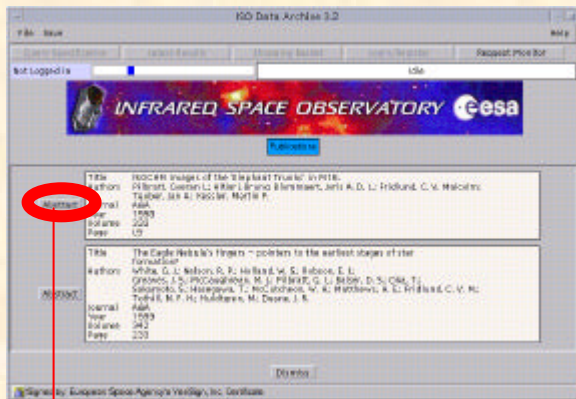
- Available at <http://xmm.vilspa.esa.es/xsa> since April 2002
- Based on IDA design and architecture (95% same code)
- Contains all raw data, fully processed, science and calibration data
- Contains some ancillary data
- Around 1 TB of data on magnetic disks
- Unrestricted access to public data, observation PI access to proprietary data

# An open 3-tier architecture : Separate the Data from the Presentation



# From ESA Archives to External Archives

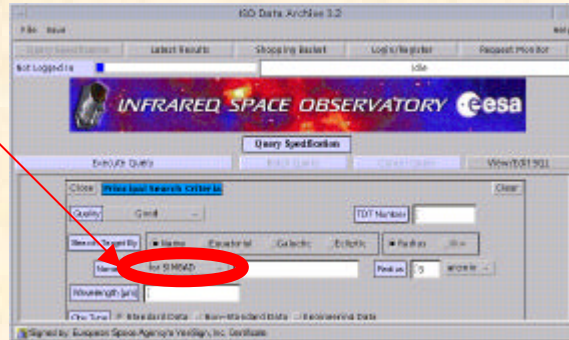
Target Name Resolution  
via NED (USA) or SIMBAD (F)



Access to ADS (France)  
Astrophysics Data System



See the  
articles

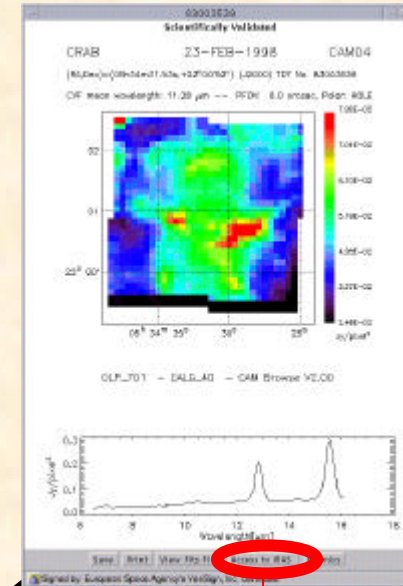


Make a search

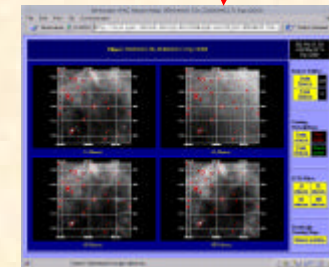
See the results



Visualization  
Tool





Access to IRAS  
Archive (USA)



# From External Archives to ESA Archives

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1. **Delivery of the Archive observation / exposure log**
  - Format and update frequency to be agreed
2. **Integration of this log into the remote archive or application**
3. **Link from the remote archive / application to the quick look image**
  -  **Postcard Server**
4. **Link from the remote archive / application to the data products via FTP**
  -  **Product Server**

- ✍ **File with the list of ISO observations or XMM-NEWTON observations / exposures with associated parameters**
  - Obs / exp id, PI name, coordinates, time, quality flag, release date, ...
  - Can be tuned according to remote service requirements
- ✍ **Currently the logs are ASCII fixed width files**
  - Just an export view of our database
  - But could be other format (XML, HTML, VOTable, etc...)
  - Easy to ingest and parse
- ✍ **Delivery mean (mail, FTP) and update frequency to be agreed with the remote service**

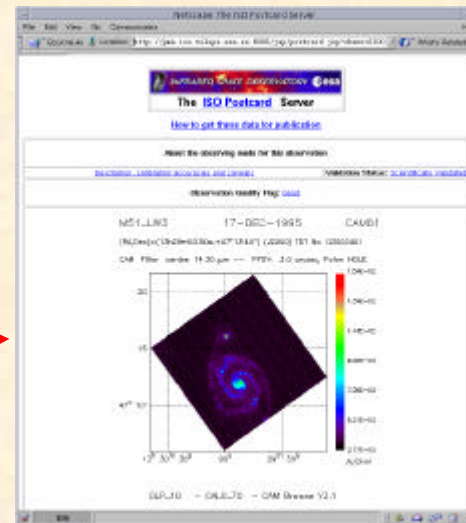
Obsno	PI	PPS	PropDate	Object	RA	DEC	Start UTC	End
0119100201	Dr Norbert Schartel	Yes	26/02/2002	PKS0558	5,996291	-50,452192	01/03/2000 14:33:23	02/0
0122330701	Dr Fred Jansen - XMM Project Scientist	Yes	05/11/2001	Crab Pulsar	5,575369	22,010803	29/03/2000 12:29:13	29/0
0119100201	Dr Norbert Schartel	Yes	26/02/2002	PKS0558	5,996291	-50,452192	01/03/2000 14:33:23	02/0
0122330701	Dr Fred Jansen - XMM Project Scientist	Yes	05/11/2001	Crab Pulsar	5,575369	22,010803	29/03/2000 12:29:13	29/0
0122340101	Dr Fred Jansen - XMM Project Scientist	Yes	03/10/2001	GX13+1	18,242083	-17,152792	30/03/2000 14:11:34	30/0
0122340101	Dr Fred Jansen - XMM Project Scientist	Yes	03/10/2001	GX13+1	18,242083	-17,152792	30/03/2000 14:11:34	30/0
0122340101	Dr Fred Jansen - XMM Project Scientist	Yes	03/10/2001	GX13+1	18,242083	-17,152792	30/03/2000 14:11:34	30/0
0122340101	Dr Fred Jansen - XMM Project Scientist	Yes	03/10/2001	GX13+1	18,242083	-17,152792	30/03/2000 14:11:34	30/0
0119100201	Dr Norbert Schartel	Yes	26/02/2002	PKS0558	5,996291	-50,452192	01/03/2000 14:33:23	02/0
0119100201	Dr Norbert Schartel	Yes	26/02/2002	PKS0558	5,996291	-50,452192	01/03/2000 14:33:23	02/0
0119700201	Dr Norbert Schartel	Yes	22/02/2002	Capella_offset	5,278016	45,970058	03/03/2000 12:22:29	03/0
0119700201	Dr Norbert Schartel	Yes	22/02/2002	Capella_offset	5,278016	45,970058	03/03/2000 12:22:29	03/0
0119700201	Dr Norbert Schartel	Yes	22/02/2002	Capella_offset	5,278016	45,970058	03/03/2000 12:22:29	03/0
0119700601	Dr Norbert Schartel	Yes	28/02/2002	Capella_offset	5,278030	45,970060	03/03/2000 11:42:21	03/0

- ✍ **URL / Java Server Page** which returns a HTML page
  - Input parameter typically is observation / exposure id
  - HTML page contains the corresponding image with relevant links to on-line documentation and **data quality flag**
  - Check is made on data availability

✍ **Already available for ISO in CDS, IRSA, ADS, HEASARC**

✍ **Available for XMM-NEWTON this summer**

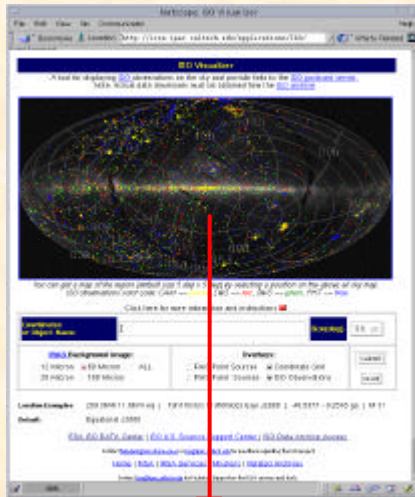
ObsID	RA	DEC	DATE-OBS	INSTRUMENT	EXPOSURE	RA	DEC	RA	DEC	RA	DEC	RA	DEC
0100000001	17 30 30.33	52 17 11.11	1995-12-17T00:00:00.000	EPIC	1000	17 30 30.33	52 17 11.11	17 30 30.33	52 17 11.11	17 30 30.33	52 17 11.11	17 30 30.33	52 17 11.11





# ISO Postcard Server

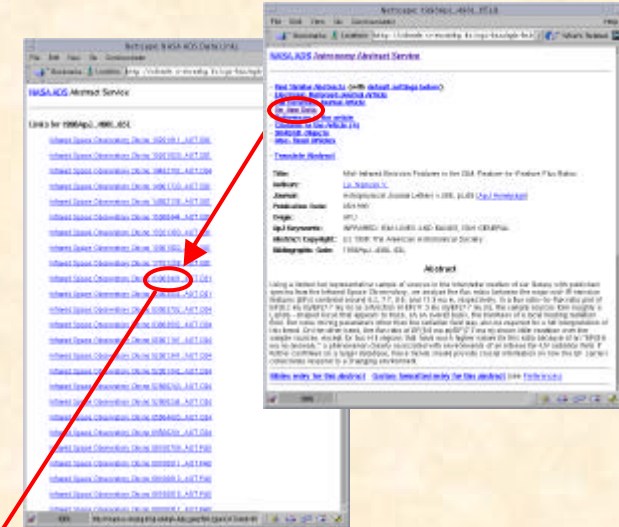
From IRSA



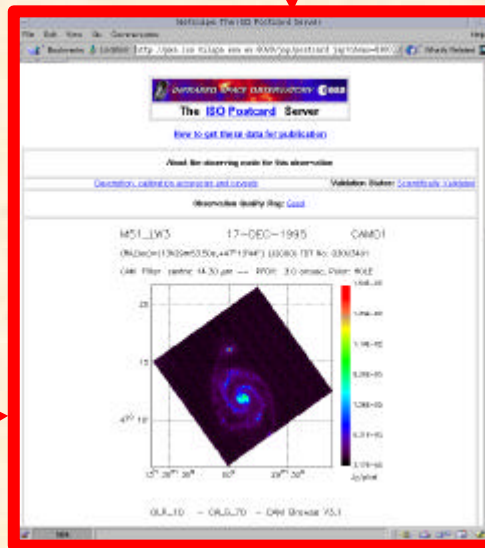
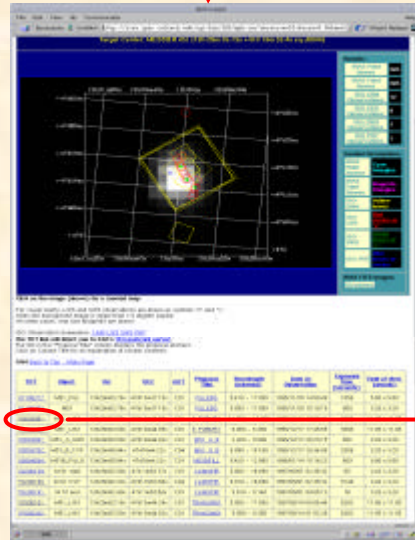
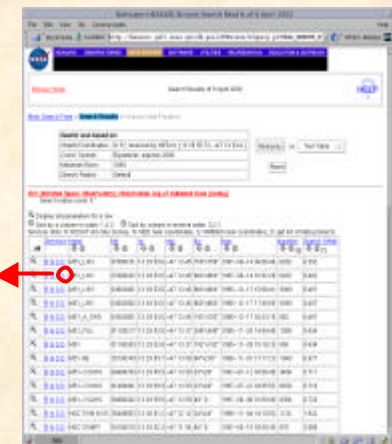
From CDS/VizieR



From ADS



From HEASARC



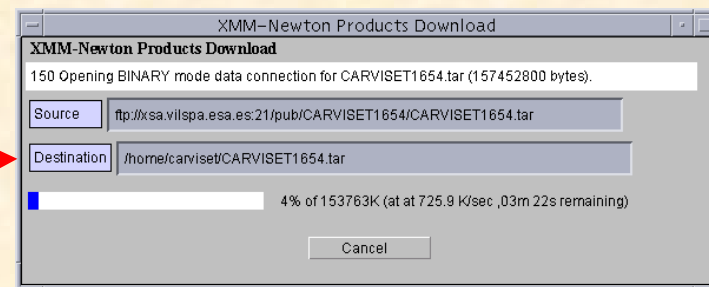
ISO Postcard Server

✍ **URL / Java Server Page which returns a FTP download session**

- Input parameter typically is observation / exposure id
- The full associated dataset is downloaded
- Check is made on data availability

✍ **Available for ISO and XMM-NEWTON this summer**

The screenshot shows a 'VizieR Result Page' with a table of astronomical data. The table has columns for 'Star', 'RA', 'DEC', 'Target', 'ADT', 'TST', 'RAJ2000', 'DECJ2000', 'RA', 'DEC', and 'Name'. A red circle highlights the row for 'M51' (NGC 505) with RA 15 09 50.1 and DEC 47 17 42. The table contains 23 rows of data.



- ✍ **Open 3-tier architecture allows easy inter-operability with other archives and applications**
  - Easy and fast integration into the VO architecture
  
- ✍ **Flexible, fast, direct and secure**
  - Remote service can choose how to use the log (html, map, ...)
  - Only the metadata (log) is needed on the remote service
  - Instant access to the latest data sets
  - Product access is controlled by our local archive
  
- ✍ **Currently dedicated interfaces have been defined but having common standards would help the integration**
  - XML, VOTable, ...
  - Automatic and dynamic obs log delivery
  - Direct query mechanisms

If you want your archive / application  
to inter-operate with our Archives,



*Just ask for it !*

Please contact me *Christophe.Arviset@esa.int*