XMM-Newton data access in the VO

Ada Nebot

CENTRE DE DONNÉES
ASTRONOMIQUES DE STRASBOURG

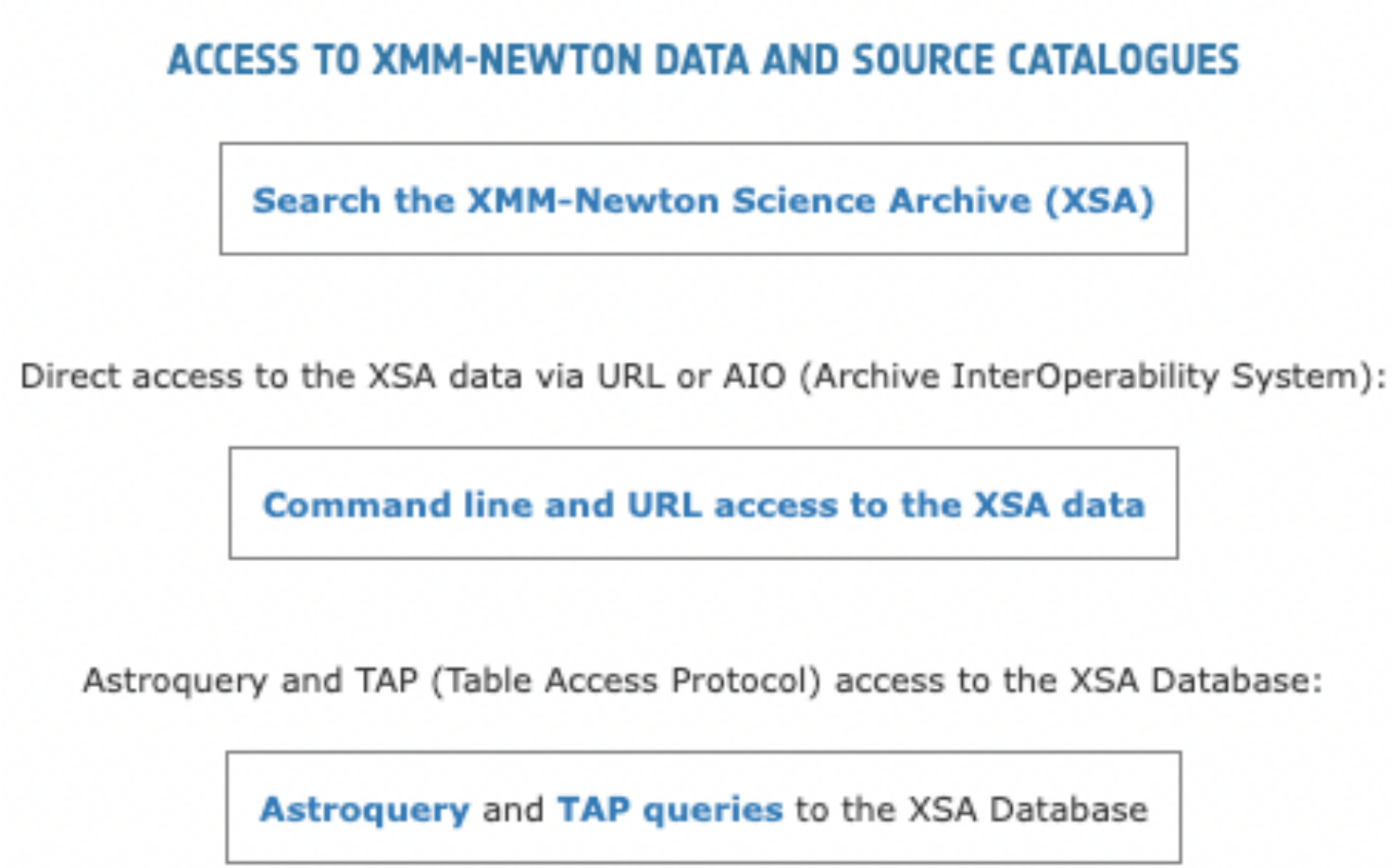
XMM2ATHENA

XMM-Newton data

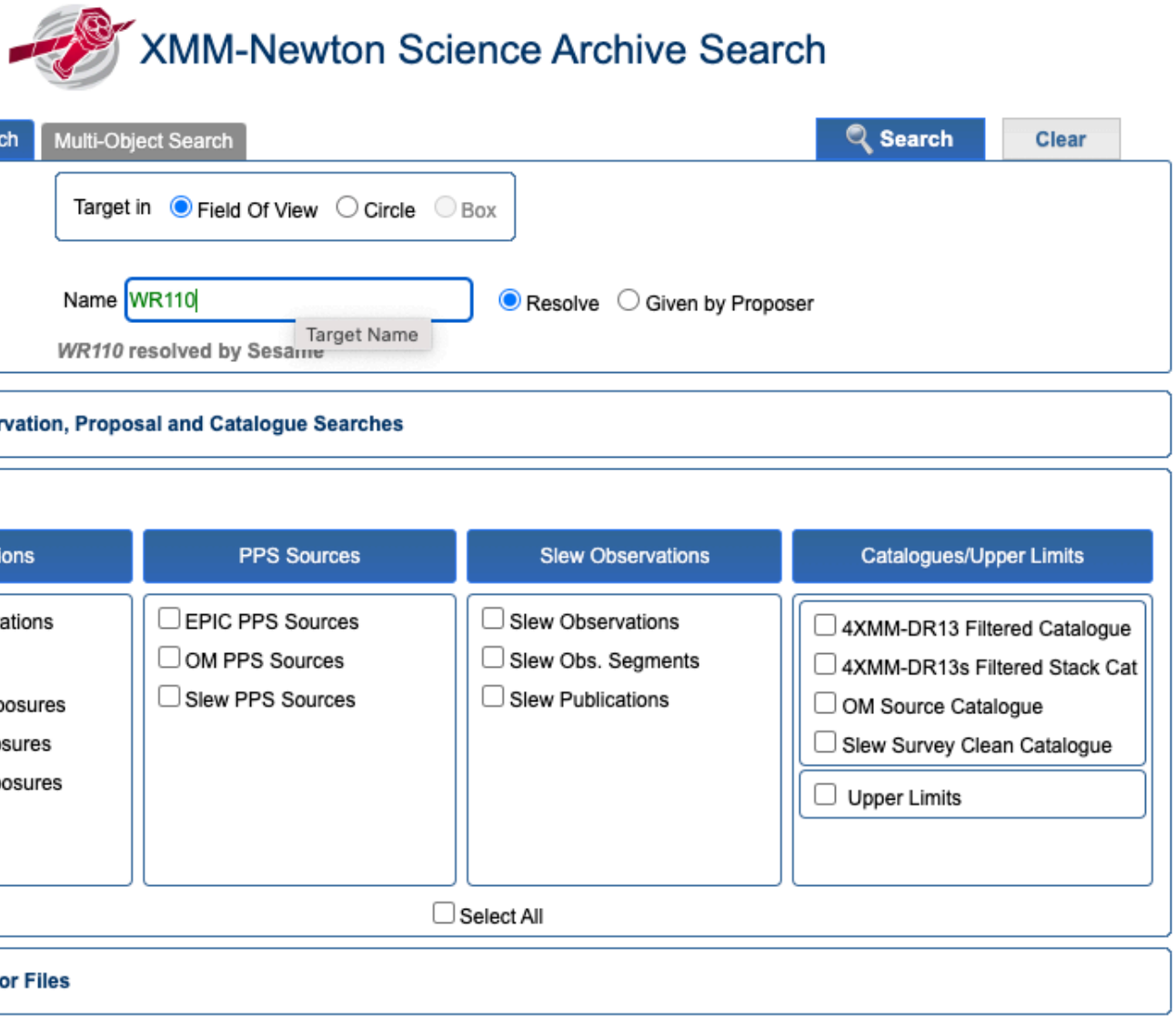
- Observations
- Pipeline products
- Proposals
- Catalogues

Data access at ESA

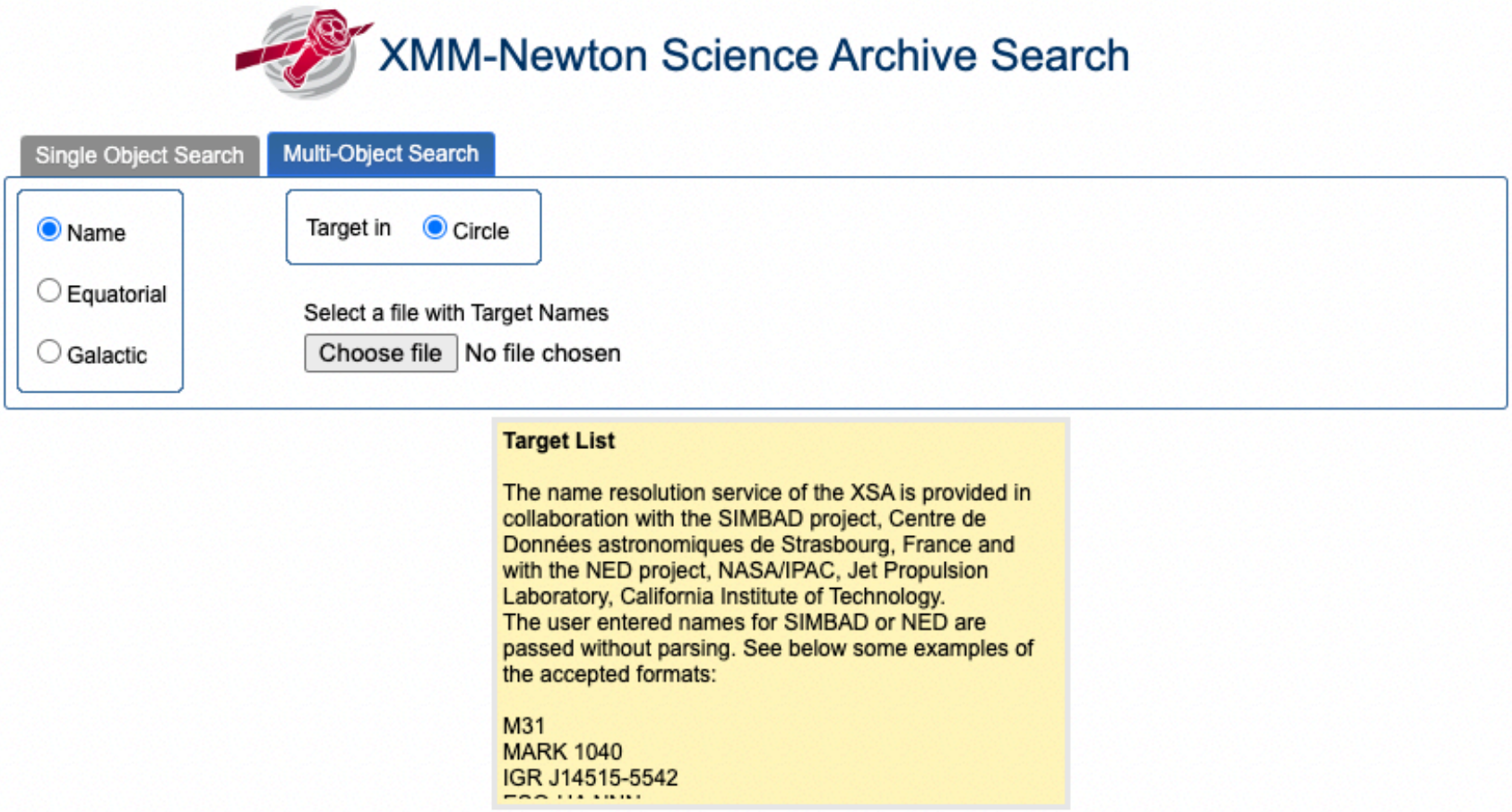
https://www.cosmos.esa.int/web/xmm-newton/xsa



XSA


XMM-Newton Science Archive Search
Single Object Search
Multi-Object Search
Search
Clear
Name
Equatorial
Galactic
Target in
Field Of View
Circle
Box
Name
WR110
Target Name
Resolve
Given by Proposer
WR110 resolved by Sesame
Filters for Observation, Proposal and Catalogue Searches
Display options
Observations
PPS Sources
Slew Observations
Catalogues/Upper Limits
Pointed Observations
Exposures
EPIC Exposures
OM Exposures
RGS Exposures
Proposals
Publications
EPIC PPS Sources
OM PPS Sources
Slew PPS Sources
Slew Observations
Slew Obs. Segments
Slew Publications
4XMM-DR13 Filtered Catalogue
4XMM-DR13s Filtered Stack Cat
OM Source Catalogue
Slew Survey Clean Catalogue
Upper Limits
Select All
Radiation Monitor Files
Search
Clear

Data at ESA in collaboration with CDS



XSA

XMM-Newton Science Archive Search

Single Object Search | Multi-Object Search | Search | Clear

(•) Name ( ) Equatorial ( ) Galactic

Target in (•) Field Of View ( ) Circle ( ) Box

Name WR110 (Target Name) (•) Resolve ( ) Given by Proposer

WR110 resolved by Sesame

▶ **Filters for Observation, Proposal and Catalogue Searches**

▼ **Display options**

Observations	PPS Sources	Slew Observations	Catalogues/Upper Limits
[x] Pointed Observations	[ ] EPIC PPS Sources	[ ] Slew Observations	[ ] 4XMM-DR13 Filtered Catalogue
[ ] Exposures	[ ] OM PPS Sources	[ ] Slew Obs. Segments	[ ] 4XMM-DR13s Filtered Stack Cat
[ ] EPIC Exposures	[ ] Slew PPS Sources	[ ] Slew Publications	[ ] OM Source Catalogue
[ ] OM Exposures			[ ] Slew Survey Clean Catalogue
[ ] RGS Exposures			[ ] Upper Limits
[ ] Proposals			
[ ] Publications			

[ ] Select All

▶ **Radiation Monitor Files**

Search | Clear

HOME | SEARCH | COMMAND & URL ACCESS | INTERACTIVE ANALYSIS | TAP QUERIES | ASTROQUERY | Basket

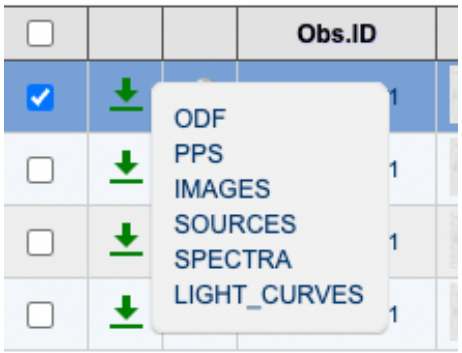
Back to Search | Close all

Results #1

OBSERVATIONS (4) | EXPOSURES (53) | EPIC EXPOSURES (12) | OM EXPOSURES (33) | RGS EXPOSURES (8) | EPIC PPS SOURCES (151) | OM PPS SOURCES (326) | 4XMM-DR13 CAT (128) | 4XMM-DR13s STACKED CAT (76) | OM SOURCE CAT (344) | SLEW OBSERVATIONS

Columns | Column units | Display selected | Add to Basket | Save table as | Send table to | Reprocess | RGS Spectra

Obs.ID	EPIC	RGS	BKGD	ESASky	Target	RA	DEC	Rev	Distance	Start Date	End Date	Dur.	Target Type	PI name	Prop. Program	Public Date	PPS
0024940201					WR110	18h 07m 56.96s	-19d 23' 56.9"	235	0	2001-03-22 01:40:28	2001-03-22 08:52:10	25902	WOLF RAYET STAR WN5	Skinner, Stephen	GO	Public data	17.56_201
0212080501					WR110	18h 07m 56.89s	-19d 23' 56.9"	968	0.02	2005-03-23 04:00:34	2005-03-23 07:31:21	12647	WOLF RAYET STAR WN5	Jansen XMM-Newton MM, Fred	GO	Public data	17.56_201
0152833101					NXGPS_31	18h 08m 04.02s	-19d 34' 01.0"	703	10.21	2003-10-11 15:13:05	2003-10-11 17:41:38	8913	EXTENDED GALACTIC OR EXTRAGALACTIC	Warwick, Robert	GO	Public data	17.56_201
0152833401					NXGPS_34	18h 08m 45.20s	-19d 16' 32.0"	703	13.58	2003-10-11 18:19:45	2003-10-11 20:48:24	8919	EXTENDED GALACTIC OR EXTRAGALACTIC	Warwick, Robert	GO	Public data	17.56_201



TAP query

TAP queries to the XSA database

TAP QUERIES TO THE XSA DATABASE

1. INTRODUCTION

The XSA database content, including catalogues, can be queried via the Table Access Protocol (TAP; see http://www.ivoa.net/documents/TAP/). The default query language for TAP is the Astronomical Data Query Language (ADQL; see http://www.ivoa.net/documents/latest/ADQL.html), which includes most features of SQL plus some spatial search functions. The TAP service can process synchronous and asynchronous queries.

XSA TAP can be accessed via TOPCAT or by cURL using the command line. This page provides useful query examples for both use cases.

2. USING XSA TAP VIA TOPCAT

- Run TOPCAT in your local environment. If you have Java's WebStart installed, you can install and invoke TOPCAT in one click from: http://www.star.bris.ac.uk/~mbt/topcat/topcat-full.jnlp
- Go to the top menu of TOPCAT and select "VO" and there select "Table Access Protocol (TAP) Query".
- In "Select Service", under "TAP Parameters", introduce the following TAP URL:

```
http://nxsa.esac.esa.int/tap-server/tap
```

  and click on "Use Service".
- On the left side of the Metadata panel, select the Tables to be queried.
- Once a table is selected click on "Columns" on the right side of the panel to get info on the table parameters that can be queried.
- Introduce query commands in the ADQL Text panel below. The Examples provided can be edited.
- When clicking on "Run Query" the selection is sent to the XSA TAP service, and the output will appear in TOPCAT as a new table.

3. USING XSA TAP VIA COMMAND LINE

The structure of a TAP query depends on whether the query is synchronous or asynchronous. For both cases the main query parameters are REQUEST, LANG, QUERY, FORMAT and UPLOAD (to upload a table). The description of these parameters can be found in the Section 4 below.

- The full list of public table names and columns can be found via Topcat (see Section 2) or by cURL using a command:

```
curl -o tables.xml "http://nxsa.esac.esa.int/tap-server/tap/tables"
```

- Here are some example queries:
  1. Search the first 10 observations that intersect a given circle (ra, dec and the radius of the circle should be given in decimal degrees), and have been taken after XMM revolution 1000. The output is a CSV file that the contains ra, dec, observation_id and revolution:

```
 curl -o file.csv "http://nxsa.esac.esa.int/tap-server/tap/sync?
REQUEST=doQuery&LANG=ADQL&FORMAT=csv&QUERY=SELECT+top+10+ra,dec,observation_id,revolution+FROM+xsa.v_all_observations+WHERE+1=intersects(observation_fov_scircle,circle('ICRS',10.3,41.5,0.1))+AND+revolutio
n%3E1000"
```

Astroquery

The XMM-Newton Astroquery Module

THE XMM-NEWTON ASTROQUERY MODULE

1. INTRODUCTION

The module **astroquery.esa.xmm_newton** is a python interface for querying the XMM-Newton Science Archive (XSA) web service.

2. USAGE

Once python is installed you can do:

```
pip install --pre astroquery
```

or if you have a previous astroquery version installed:

```
pip install --pre --upgrade astroquery
```

More details can be found in astroquery instructions:
https://astroquery.readthedocs.io/en/latest/

3. EXAMPLES

See: https://astroquery.readthedocs.io/en/latest/esa/xmm_newton.html

1. Getting XMM-Newton data:

```
>>> from astroquery.esa.xmm_newton import XMMNewton
>>>
>>> XMMNewton.download_data('0505720401',level="PPS",extension="PDF",instname="M1",filename="result0505720401.tar")
INFO: File result0505720401.tar downloaded to current directory [astroquery.esa.xmm_newton.core]
```

This will download all PPS files for the observation '0505720401' and instrument MOS1, with 'PDF' extension and it will store them in a tar called 'result0505720401.tar'. The parameters available are detailed in the API.

For more details of the parameters check the section 3.4 at:
http://nxsa.esac.esa.int/nxsa-web/#aio

2. Getting XMM-Newton postcards

```
>>> from astroquery.esa.xmm_newton import XMMNewton
>>>
>>> XMMNewton.get_postcard('0505720401')
INFO: File P0505720401EPX000OIMAGE8000.PNG downloaded to current directory [astroquery.esa.xmm_newton.core] 'P0505720401EPX000OIMAGE8000.PNG'
```

This will download the EPIC postcard for the observation '0505720401' and it will stored in a PNG called 'P0505720401EPX000OIMAGE8000.PNG'.

3. Getting XMM-Newton metadata through TAP

This function provides access to the XMM-Newton Science Archive database using the Table Access Protocol (TAP) and via the Astronomical Data Query Language (ADQL).

XCatDB data access

XMM-Newton Catalogue Observatory of Strasbourg

Select a Catalog

Click on one of the blues frames below to redirect to the requested interface.

Select Sources of Interest

Build simple or complex queries. Have a look at the videos to get an overview on the query features

Get Anything about X-Ray Sources

Access all source parameters, possible identifications, spectral fits and lots of others things.

- 4XMM-dr13 Unique Sources
- 4XMM-dr13 Detections
- 4XMM-dr13 Alix Sky Browser
- 3XMM-dr8 Unique Sources
- 3XMM-dr8 Detections
- ARCHES Unique Sources
- ARCHES Cross-matched Catalogue

XCatDB data access

The XCatDB: An XMM-Newton Catalogue Interface

- **Content**
  - **Possible identifications** of all EPIC sources in archival catalogs
  - **656997 sources** compiled from **983948 detections** in 13243 observations
  - EPIC **spectra**, EPIC **time series** and other useful **previews**.
  - Optical **Finding Charts**
  - Read more on the SSC *Web pages*
- **Additional Data and Features**
  - **Online spectrum fitting:** Select sources with spectra click on below any spectrum preview, choose the model and submit. The back-end runs Xspec-python.
  - **Online region processing (beta):** Click on , draw a region and run the SAS on the enclosed photons (more).
- **Data Access**

  Browse the sky with Alix, a tool derived from Aladin Lite.

  - See XMM sources and the related ACDS source over any Hips survey
  - Overlay the view any Vizier catalogue
  - Overlay the view Simbad sources possibly filtered by object types
  - Overlay the view NED sources
- **Other Interfaces**
  - *XSA* at ESA's XMM-Newton SOC
  - *XCAT-DB* at the SSC institute, Observatoire Astronomique, Strasbourg
  - *Browse* at HEASARC NASA GSFC
  - *The IRAP catalogue server*
  - *LEDAS* at the SSC institute, University of Leicester

XCatDB data access

Filter Detections by

Position | Detection Parameters | Source Parameters | Related Products | Correlations with Arch. Src.

Cone Search Setup

Coord/Name

12.5 +45.8 - 14:03:01.01+54:23:41.6 - M33

Radius(arcmin) 1

System ICRS

Draw a Search Region Upload Position List

List of Active Constraints

Click on a button to append, the constraint to the list

QL stmt

Query Panel

SUBMIT *Result Limit* 1000

Display/Hide Query Text Reset Query Form

```
Select ENTRY From CatalogueEntry In CATALOGUE
Limit 1000
```

Other ways to access the data

DOWNLOAD FULL XMM-NEWTON CATALOGUES AND DATASETS

Alongside all XMM-Newton scientific data products and observation-related information, high-level catalogues and a multiwavelength datasets can be accessed through the XSA or downloaded from the links below:

4XMM-DR13 XMM-Newton ***New*** Serendipitous Source Catalogue	Download the FITS table Download the CSV table	Documentation and watchouts (by the SSC consortium)
Slim version of the ***New*** **4XMM-DR13** catalogue	Download the FITS table Download the CSV table	Documentation and watchouts (by the SSC consortium)
4XMM-DR13s *New* Stacked Catalogue	Download the FITS table Download the stacked sources FITS table Download the stacked observations FITS table	Documentation (Maintained by the SSC consortium)
XMM-DR12s SEDs	Download all SED FITS files	Documentation: Webb et al. 2020A&A...641A.136W (sect 9.1 and Table 4)
4XMM-DR9 Multi-Object Coverage maps (MOC) Fits Files	Download MOCs for individual observations Download the whole 4XMM-DR9 field MOC	Documentation (Maintained by the SSC consortium)
The XMM-Newton **Slew Survey XMMSL2** Source Catalogue	Download the FITS table (FULL) Download the FITS table (CLEAN)	Documentation
XMM-OM-SUSS5 XMM-Newton Serendipitous UV Source Survey Catalogue	Download the FITS table Download the FITS table (SLIM version)	Documentation and watchouts
XMM-Newton OM Bright Sources Catalogue	Download the FITS table	Documentation
Spectral Fit Catalogues	3XMM-DR7 spectral fit catalogue XMMFITCAT 3XMM-DR6 photo Z catalogue XMMPZCAT 3XMM-DR6 spectral fit Z catalogue XMMFITCAT-Z	Documentation (Carried out by an ESA-PRODEX funded collaboration between European institutes and the SSC)

Alongside the XSA, are also distributed through: :

- The IRAP catalogue server
- XCAT-DB at the Observatoire Astronomique de Strasbourg
- HEASARC

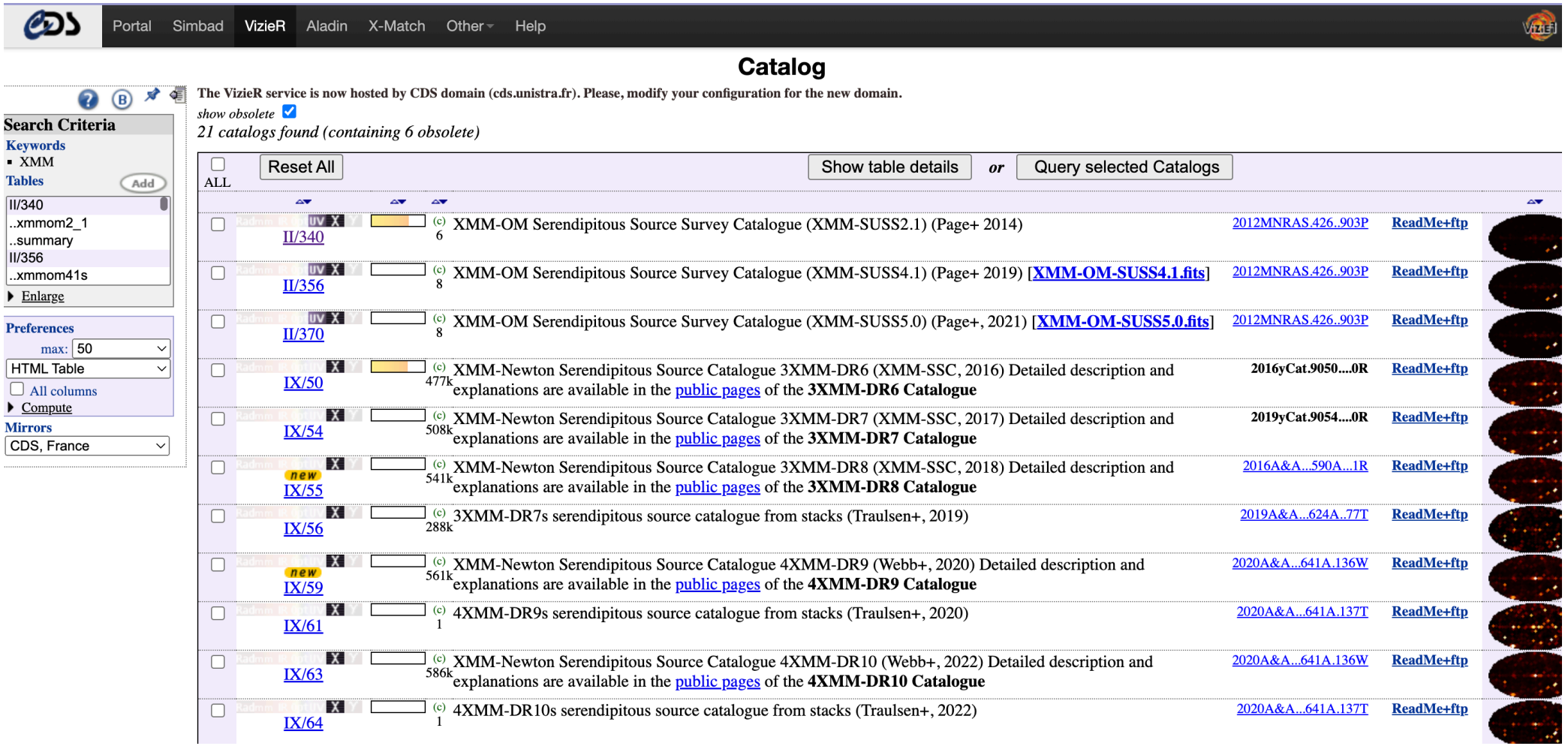
Previous versions of the XMM-Newton Serendipitous Source Catalogue and of the XMM-Newton Serendipitous Stack Source Catalogue can be found here.

Top

One user story to using data

- Download the slim catalogue (can also use TAP, but for my purpose its better to download it once)
- Xmatch the sources with other catalogues
- Find possible outliers
- Analyse them in more detail
  - Visualise the pipeline products:
    - light-curves, spectra, images
  - Reanalyse (if evaluated necessary) with dedicated software (SAS)
    - Download the **individual observation**
    - Download the calibration files
    - Extract spectra, light-curves, select GTI, …

Access using VizieR database



Access using VizieR database

Search Criteria
Save in CDSportal
Keywords Back
▪ IX/68
Tables Add
IX/68
..xmm4d12s
..summary
Choose

Preferences
max: 50
HTML Table
All columns
Compute
Distance ϱ
Position angle θ
Distance (x,y)
Galactic
J2000
B1950
Ecl. J2000
default
Sort by Distance
+ order -
No sort
Position in:
Sexagesimal
Decimal °
Truncated prec.
Time
Time JD

Simple Target | List Of Targets — Fast Xmatch with large catalogs or Simb

Target Name (resolved by Sesame) or **Position**: Clear J2000 — Target dimension: 2 arcmin
NB: The epoch used for the query is the original epoch of the table(s) Radius Box size

IX/68 — XMM-Newton Serendipitous Source Catalogue 4XMM-DR12 (Webb+, 2023) Detailed description and explanations are available in the public pages of the **4XMM-DR12 Catalogue** — Similar Catalogs — 2020A&A...641A.136W — ReadMe+ftp
Post annotation

1. IX/68/xmm4d12s — (c) The 4XMM-DR12 Catalog, "slim" version (original column names in green) *(630347 rows)*
2. IX/68/summary — (c) List of observations (original column names in green) *(12712 rows)*

Xmatch is off

Simple Constraint | List Of Constraints — Submit — Reset

Standard Original

Query by Constraints applied on Columns *(Output Order:* + - *)*

Show	*Sort*	*Join tables* (more / join)	*Column*	Clear	*Constraint*		*Explain* (*UCD*)
☐	○	(ALL)	recno				Record number assigned by the VizieR team. Should Not be used for identification. (meta.record)
☐	○	(1)	Source				(i) [200011101010001/208934003010018] Unique source index (SRCID) (meta.id)
☑	○	(1)	4XMM			(char)	(i) Unique source name (JHHMMSS.s+DDMMSS) (IAUNAME) (meta.id;meta.main)
☑	○	(1)	RA_ICRS			deg	(i) Mean source right ascension (ICRS) (SC_RA) (pos.eq.ra;meta.main)
☑	○	(1)	DE_ICRS			deg	(i) Mean source declination (ICRS) (SC_DEC) (pos.eq.dec;meta.main)
☐	○	(1)	ePos			arcsec	[0.03/20] Mean error on position (SC_POSERR) (stat.error)
☑	○	(1)	srcML				Source detection likelihood (SC_DET_ML) *(Note 2)* (stat.likelihood;instr.saturation)
☐	○	(1)	Flux1			mW/m2	Mean flux in 0.2-0.5keV band (SC_EP_1_FLUX) (phot.flux;em.X-ray)
☐	○	(1)	e_Flux1			mW/m2	Mean error on Flux1 (SC_EP_1_FLUX_ERR) (stat.error)
☐	○	(1)	Flux2			mW/m2	Mean flux in 0.5-1.0keV band (SC_EP_2_FLUX) (phot.flux;em.X-ray)
☐	○	(1)	e_Flux2			mW/m2	Mean error on Flux2 (SC_EP_2_FLUX_ERR) (stat.error)

Access using VizieR database

e_	V	S	F8min mW/m2	e_ (...)	F8max mW/m2	e_ (...)	MJD0 d	MJD1 d	Nd	c	uIRAP	xcatDB	IRAP
	0	0	6.55607e-15	4.42701e-15	6.55607e-15	4.42701e-15	56086.7430	56087.5882	1	0	http://xmm-catalog.irap.omp.eu/source/206931901010113/	xcatDB	IRAP
	0	0	6.72114e-15	1.81038e-15	6.72114e-15	1.81038e-15	54134.4853	54135.0436	1	0	http://xmm-catalog.irap.omp.eu/source/204033901010030/	xcatDB	IRAP
	0	0	6.07856e-15	4.03785e-15	6.07856e-15	4.03785e-15	51696.4409	51696.7881	1	0	http://xmm-catalog.irap.omp.eu/source/201253101010082/	xcatDB	IRAP
	0	0	5.07445e-15	2.70325e-15	5.07445e-15	2.70325e-15	58972.6764	58972.8589	1	0	http://xmm-catalog.irap.omp.eu/source/208626409010038/	xcatDB	IRAP
	0	0	1.81902e-14	6.47640e-15	1.81902e-14	6.47640e-15	56086.7430	56087.5882	1	0	http://xmm-catalog.irap.omp.eu/source/206931901010049/	xcatDB	IRAP
	0	0	6.71373e-15	3.79955e-15	6.71373e-15	3.79955e-15	53534.2889	53534.8276	1	0	http://xmm-catalog.irap.omp.eu/source/203025805010073/	xcatDB	IRAP
	0	0	1.34719e-14	7.07422e-15	1.34719e-14	7.07422e-15	51696.4409	51696.7881	1	0	http://xmm-catalog.irap.omp.eu/source/201253101010058/	xcatDB	IRAP
	0	0	4.48365e-14	4.92823e-14	4.48365e-14	4.92823e-14	57016.9679	57017.0729	1	0	http://xmm-catalog.irap.omp.eu/source/207415815010013/	xcatDB	IRAP
0.303181	0	0	1.41813e-14	2.11389e-15	1.41813e-14	2.11389e-15	53534.2889	53534.8276	1	0	http://xmm-catalog.irap.omp.eu/source/203025805010019/	xcatDB	IRAP
	0	0	2.88613e-14	8.30267e-15	2.88613e-14	8.30267e-15	56291.8823	56292.2589	1	0	http://xmm-catalog.irap.omp.eu/source/207009901010024/	xcatDB	IRAP
	0	0	1.27922e-13	1.32376e-14	1.27922e-13	1.32376e-14	54134.4853	54135.0436	1	0	http://xmm-catalog.irap.omp.eu/source/204033901010024/	xcatDB	IRAP

Access using VizieR database

XMM-Newton Serendipitous Source Catalogue 4XMM-DR12 : IX/68

Access to VizieR | FTP | ReadMe | TAP | Xmatch

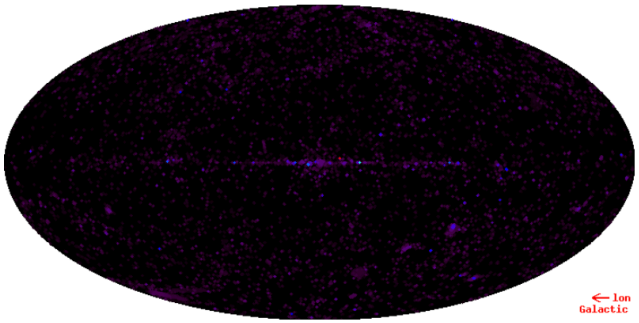
Authors : Webb N.A. , Coriat M., Traulsen I. et..al

Bibcode : 2020A&A...641A.136W (ADS) Cite
...(more)

UAT : Surveys, X-ray sources

Observation (OC)

Records : 630347



Inserted into VizieR : 03-May-2023
Last modification : 03-May-2023

Article Origin | Description | See also | Prov | FTP | VizieR

The XMM-Newton serendipitous survey. IX. The fourth XMM-Newton serendipitous source catalogue. (2023)
Go to the original article (10.1051/0004-6361/201937353)

Keywords : catalogs - astronomical data bases - surveys - X-rays general

Abstract: Sky surveys produce enormous quantities of data on extensive regions of the sky. The easiest way to access this information is through catalogues of standardised data products. XMM-Newton has been surveying the sky in the X-ray, ultra-violet and optical bands for 20 years. The XMM-Newton Survey Science Centre has been producing standardised data products and catalogues to facilitate access to the serendipitous X-ray sky. 4XMM-DR12 contains 939270 X-ray detections above the processing likelihood threshold of 6. These X-ray detections relate to 630347 unique X-ray sources. A significant fraction of sources (117124, 19%) ...(more)

SAS Startup Thread in Python

Introduction

The SAS Start-up thread provides a detailed explanation on how to get started with SAS. In particular it shows how to initialize SAS, how to point SAS to the calibration files needed for a given XMM-Newton Observation, and how to get the data ready to be processed by any SAS task. With SAS 19, we are introducing a new infrastructure for Python which allows one to run Python tasks from the command line, as any other non Python SAS task, and to access the same code from a Jupyter Notebook. Besides that, SAS 19 includes several new Python tasks, among them, two which can help us to start working with SAS: `startsas` and `sasver`.

Expected Outcome

The ability to process any XMM-Newton observation with any SAS task.

SAS Tasks to be Used

- `sasver`
- `startsas`
- `cifbuild`
- `odfingest`

Prerequisites

It is assumed that SAS has been installed properly, according to the explanations given in the current SAS installation pages. Before SAS is initialized, the HEASOFT software must be already initialized as well (see SAS Watchout).

Useful Links

- `pysas`
- SAS web pages
- SAS download page
- SAS external software requirements
- Latest SAS on-line documentation
- SAS Threads

Caveats

Last Reviewed: ***25 May 2023, for SAS v21.0***

Last Updated: ***15 March 2021***

Procedure

Lets begin by asking four questions:

1. Where in my system have I installed the SAS software?
2. Where in my system have I stored the Calibration files?
3. Where have I placed the XMM-Newton Observation data that I want to process?
4. Which directory am I going to use to work with SAS?

Before answering these questions, it is worth emphasizing that, regardless of the approach we choose, we will always need to customize our environment so that we can access easily all the SAS software and Calibration files. Such process is known as *initialisation* and, normally, it involves the definition of some environment variables and the execution of some shell scripts. That is what we will do once the answers to questions 1 and 2 are known. We will then use the SAS task `startsas` to handle the setup and answer questions 3 and 4.

Calibration portal

SCIENCE MISSIONS | EUROPEAN SPACE AGENCY | SCIENCE &TECHNOLOGY | SIGN IN

xmm-newton

esa

XMM-Newton » Calibration & Background » Calibration

- Home / Latest News
- Conferences & Meetings
- News
- General User Support
- Proposers Info
- Observers Info
- Data Analysis
- Archive, Pipeline & Catalogues
- Calibration & Background
- SOC Info
- About XMM-Newton
- Image Gallery
- Publications
- Other Links

XMM-NEWTON CALIBRATION PORTAL

This page gives the necessary calibration information for all XMM-Newton instruments (EPIC, RGS, OM) in order that a proper data reduction may be undertaken.

Which files do I need to analyse my XMM-Newton-data with the newest available calibration?	What is the current status of the calibration?	Where do I get high level information on details of the calibration?
EPIC Response Files	EPIC Calibration Status (pdf)	EPIC Calibration Documentation
RGS Response Files	RGS Calibration Status (pdf)	RGS Calibration Documentation
OM Response Files	OM Calibration Status (pdf)	OM Calibration Documentation
	Cross-Calibration Status	XRT Calibration Documentation
Current Calibration Files	CCF Release Notes	General Calibration Documentation

INTERNATIONAL CONSORTIUM FOR HIGH-ENERGY CROSS-CALIBRATION (IACHEC)

The IACHEC aims to provide standards for high energy calibration and supervise cross calibration between different missions. This goal is reached through working groups, where IACHEC members cooperate to define calibration standards and procedures. The scope of these groups is primarily a practical one: a set of data and results (eventually published on refereed journals) will be the outcome of a coordinated and standardized analysis of references sources ("high-energy standard candles"). Past, present and future high-energy mission can use these results as a calibration reference. For more information, please consult the IACHEC web pages.

CALIBRATION MAILING LIST & ARCHIVES

You may subscribe to the CCF Mailing List ("ccf") to keep up to date with periodic updates to the CCF. To do so, please send an empty e-mail to

ccf-join@sciops.esa.int.

Home / Latest News
Conferences & Meetings
News
General User Support
Proposers Info
Observers Info
Data Analysis
Archive, Pipeline & Catalogues
Calibration & Background
SOC Info
About XMM-Newton
Image Gallery
Publications
Other Links

HOW TO EXTRACT PN SPECTRA OF A POINT-LIKE SOURCE AND ASSOCIATED MATRICES

Introduction

This thread describes how to extract the spectrum of a point-like source observed with the PN camera using the command line.

Expected Outcome

The final outcome of this thread is the standard suite of spectral products required by spectral analysis packages such as XSPEC:

- A source+background (commonly referred to as "source") spectrum
- A background spectrum
- A redistribution matrix (commonly referred to as a "RMF" file)
- An effective area vector (commonly referred to as an "ARF" file)

SAS Tasks to be Used

- `arfgen`
- `backscale`
- `dsplot`
- `evselect`
- `imgdisplay`
- `rmfgen`
- `specgroup`
- `tabgtigen`

Prerequisites

- SAS Startup Thread
- How to reprocess ODFs to generate calibrated and concatenated EPIC event lists Thread

Useful Links

This thread makes use of the image display software `ds9`.

Caveats

LAST REVIEWED: *25 MAY 2023, FOR SAS V21.0*

LAST UPDATED: *24 MAY 2022*