Searching and Visualizing XMM-Newton Catalogues via XSA and ESAsky

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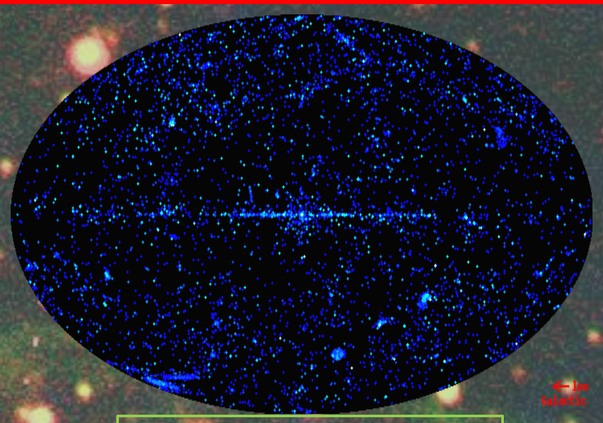
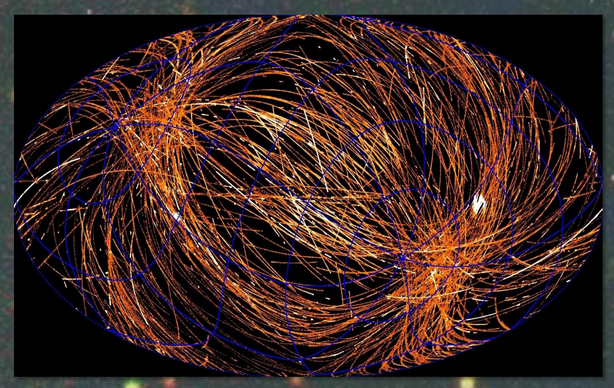
The content of the XMM-Newton Science Archive (XSA)

- Observation Data Files (ODF) and Pipeline Products (PPS) of ~13600 pointed observations.
- Slew Data Files of ~4100 Slew Survey observations.
  and ~196000 Slew Survey sub-pointings.
- 531454 unique EPIC sources (3XMM-DR8 catalogue).
- Stacked Catalogue of EPIC sources (soon!).
- 6880116 OM sources (OM-SUSS3 catalogue).
- >69000 Slew Survey catalogue sources (XMMSL2).
- Ancillary info: proposal info, publications (> 5600!), etc.
- Radiation Monitor data files.



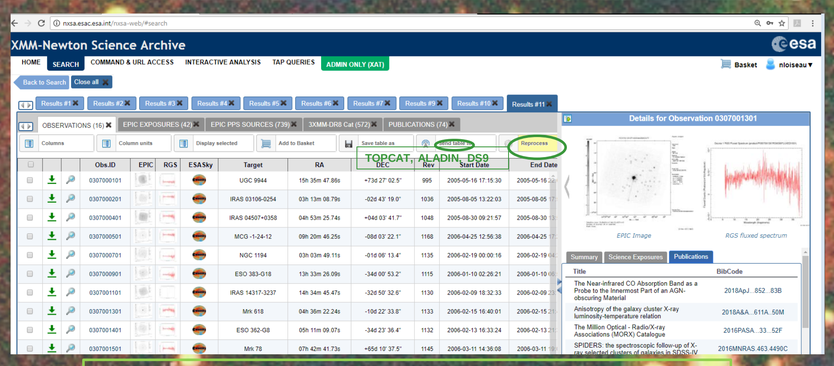
Pointed observations performed by XMM-Newton



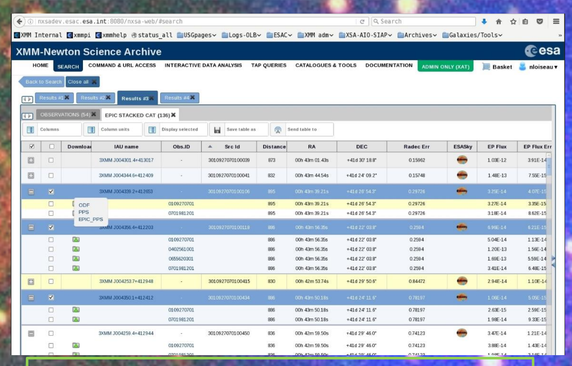
Slew observations performed by XMM-Newton

The XSA Web Interface

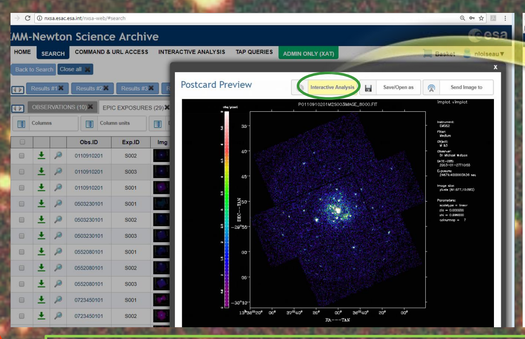
The XSA provides direct access to the XMM-Newton data and catalogues and gives the possibility to perform on-the-fly interactive analysis without the need of downloading the data or installing the SAS software.

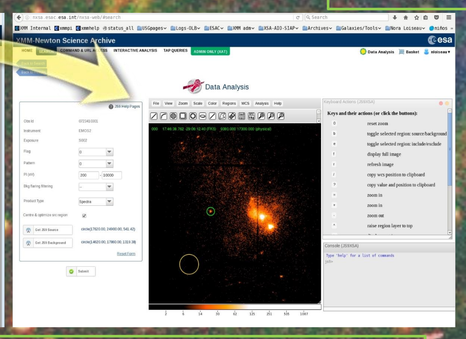


Results with display, download and reprocessing options

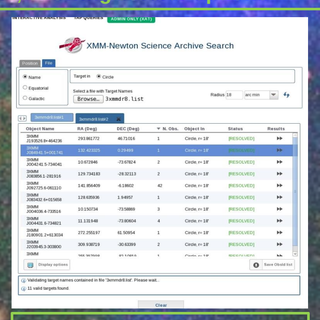


Results display for the future EPIC Stacked Catalogue, showing several options





On-the-fly sources spectra or light curves can be extracted with the last software and calibration versions without installing software or downloading data

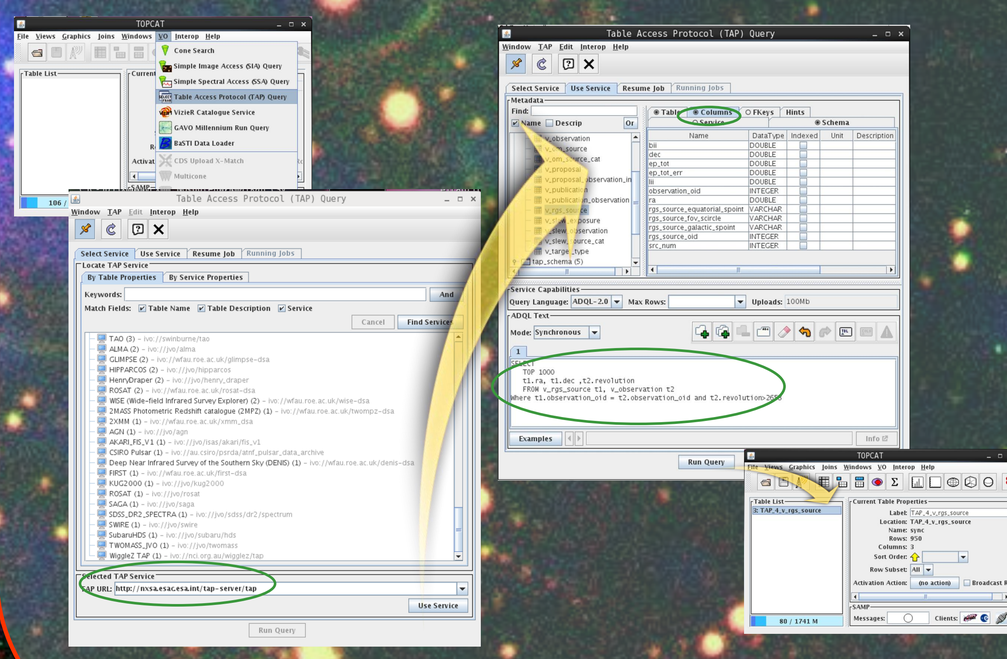


Search of a list of objects, including 3XMM-DR8 sources not yet recognised by Simbad or NED.

Query the XSA Database

The XSA Database can be queried by means of the TAP protocol using ADQL (Astronomical Data Query Language:

- using TOPCAT
- via command line queries (see http://nxsa.esac.esa.int/nxsa-web/#tap)



Example: list position (RA, Dec) and revolution for all the RGS sources detected in revolutions > 2658

XSA direct access

Examples of fast web access and command line data download (see: http://nxsa.esac.esa.int/nxsa-web/#aio)

Searches via the web interface:

- pos & size=0 (FOV): If the size is equal to '0' observations are searched in a circle of 15 arcmin radius, centred at the position indicated (aprox. the XMM-Newton FOV).
  http://nxsa.esac.esa.int/nxsa-web/#pos=220.767,-62.4617&size=0&entity=OBSERVATION

- targetname: Search observations by matching the target name literal.
  http://nxsa.esac.esa.int/nxsa-web/#targetname=A%202199

- iauname: Search the EPIC source catalogue by the IAU name.
  http://nxsa.esac.esa.int/nxsa-web/#iauname=3XMM%20J041942.1+555957

Retrieve data via the aio server:

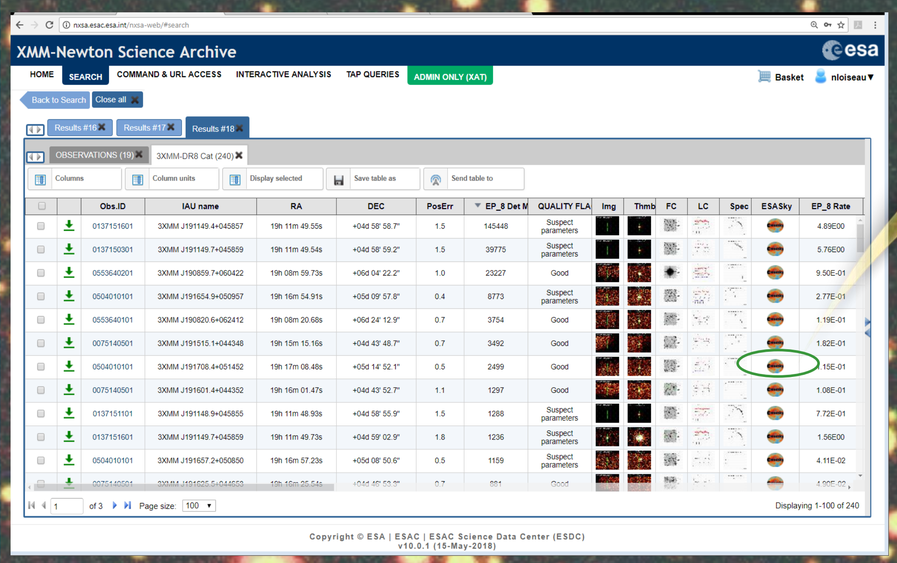
- Retrieve all specific file type (image files) for a given observation:
  http://nxsa.esac.esa.int/nxsa-sl/servlet/data-action-aio?obsno=0505720401&name=IMAGE_&level=PPS

Retrieve data via command line:

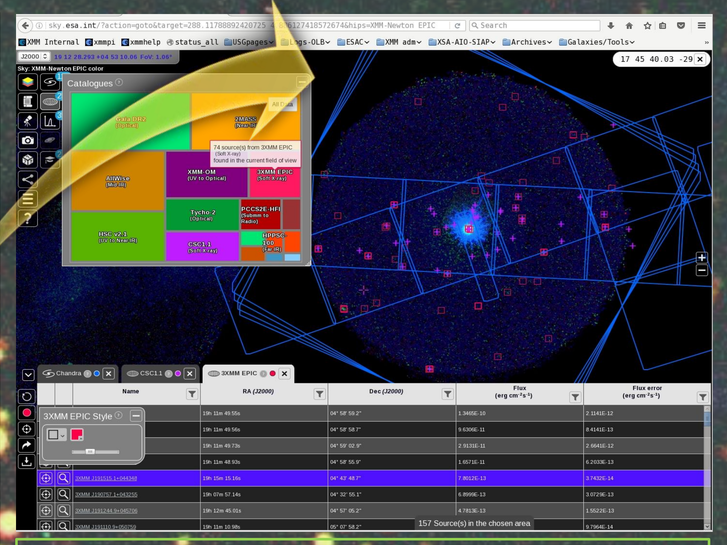
- Download all specific file type (image files) for a given observation:
  curl -o files.tar "http://nxsa.esac.esa.int/nxsa-sl/servlet/data-action-aio?obsno= 0505720401&name=IMAGE_&level=PPS"

XSA integrated into ESASky

ESAsky (http://sky.esa.int) → service and visual interface for multi-wavelength data exploration. Intended for accessing all ESA and many non ESA data.



The field of every source or observation can be visualised and searched in other wavelengths with ESASky.



Chandra footprints overlaid on the XMM-Newton EPIC 3 colour HIPS, with 3XMM and Chandra catalogues sources.
Other catalogues available for the region appear to the top left. Other high enery data, like Suzaku, are also available.