

Virtual Observatory Services at WFAU

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The VO at WFAU

The Wide Field Astronomy Unit (WFAU) provides an array of VO services that enable access to both data and processing applications housed on servers at the Institute for Astronomy in Edinburgh. These services provide a powerful set of tools for obtaining and exploring data in ways unattainable through conventional access methods.

Data and Image Access Services

WFAU hosts a number of databases developed by our data centre as well as mirrors of important databases developed elsewhere. All of these databases are accessible through cone search and ADQL services and are listed below. We also host several SIAP services for accessing images from the sky surveys curated by WFAU.

WFAU data enabled via Cone Search and ADQL

- UKIDSS (unsecured) – DR1, DR2, DR3
- UKIDSS (secured ADQL only) – DR4, DR5
- SuperCOSMOS Science Archive
- 6dF Galaxy Survey – DR2, DR3
- VISTA – Services to be enabled when releases go public

Mirrors enabled via Cone Search and ADQL

- SDSS – DR3, DR5, DR6 (SEGUE), DR7
- XMM-Newton Serendipitous Source Catalogue
- GLIMPSE
- IRAS
- FIRST
- ROSAT
- TWOMASS

SIAP Services

- UKIDSS DR1, DR2, DR3
- SuperCOSMOS Sky Surveys
- VISTA – Services will be enabled when releases go public

Future Developments

WFAU plans on implementing future IVOA standard services relevant to our users and data holdings. In the near future this will include the newly IVOA ratified TAP protocol. We are also planning on implementing a secure cone search and secure SIAP service set for our proprietary datasets.

For More Details

A complete list of VO services hosted by WFAU, their access details, and their explanations can be found at:

<http://vo.roe.ac.uk/>

Data processing services

We offer useful data processing services that are conveniently located on hardware directly networked to the databases, which ensures minimal transfer time when using them in conjunction with one another.

VO Enabled Applications

- **STILTS** – A library of powerful functions for manipulation of tabular data. <http://www.star.bris.ac.uk/~mbt/stilts/>
- **Fast Kernel Density Analysis Classifier** – A data mining service for classifying objects using kernel density estimation.
- **VO Table to KML** – A conversion utility for generating a KML file for use in Google Sky from a VO Table.

VO Infrastructure

We also host VO infrastructure services that provide users with both basic and enhanced VO functionality.

Infrastructure Services

- **Publishing Registry** – an IVOA compliant registry of all services hosted by WFAU
- **Full Registry** – an IVOA compliant registry of all VO services.
- **WFAU Community** – a secure logon service for identifying users and access rights (utilizes x509 certificates). Used to provide secured access to proprietary UKIDSS and VISTA data releases.
- **VO Space** – an online workspace for user data. Useful for intermediate staging of query results or processed data in a workflow or scripted environment.

What these services make possible

These services provide users with a simplified means to perform complex data retrieval and manipulation that is not possible through conventional access methods alone. In particular, users can leverage our data services, along with the STILTS library, to perform crossmatch queries between any of our collection of large survey datasets as well as VO enabled datasets around the world.

These VO services allow us to present our data and applications to users in a consistent manner, ensuring they do not need to learn and interact with a different interface for every different dataset they require.



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