

Astrogrid VODesktop

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<http://www.astrogrid.org/>

VODesktop

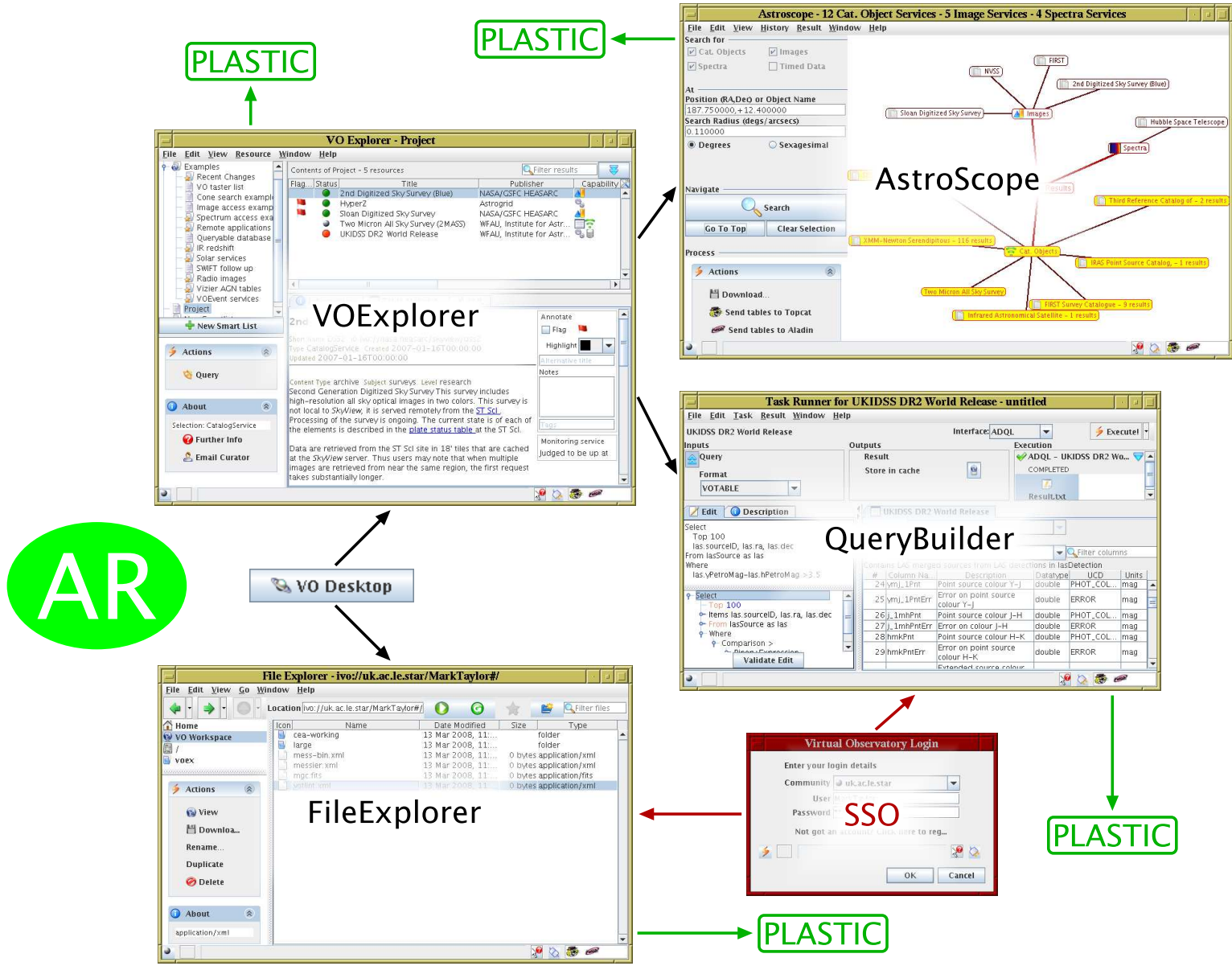
VODesktop is integrated GUI for access to VO services

- Brings together existing and newer AG components
- Interface and functionality is collaboration between AG engineers and science team
- Now uses VOResource 1.0
- Released 1 April (UK National Astronomy Meeting)

AstroGrid moves into Operations Mode

- More conservative attitude to software upgrades and service downtime
- Well-defined procedures for user error tracking
- Improve robustness
- Bugfixes
- Beta testing
- Cosmetic issues
- User documentation

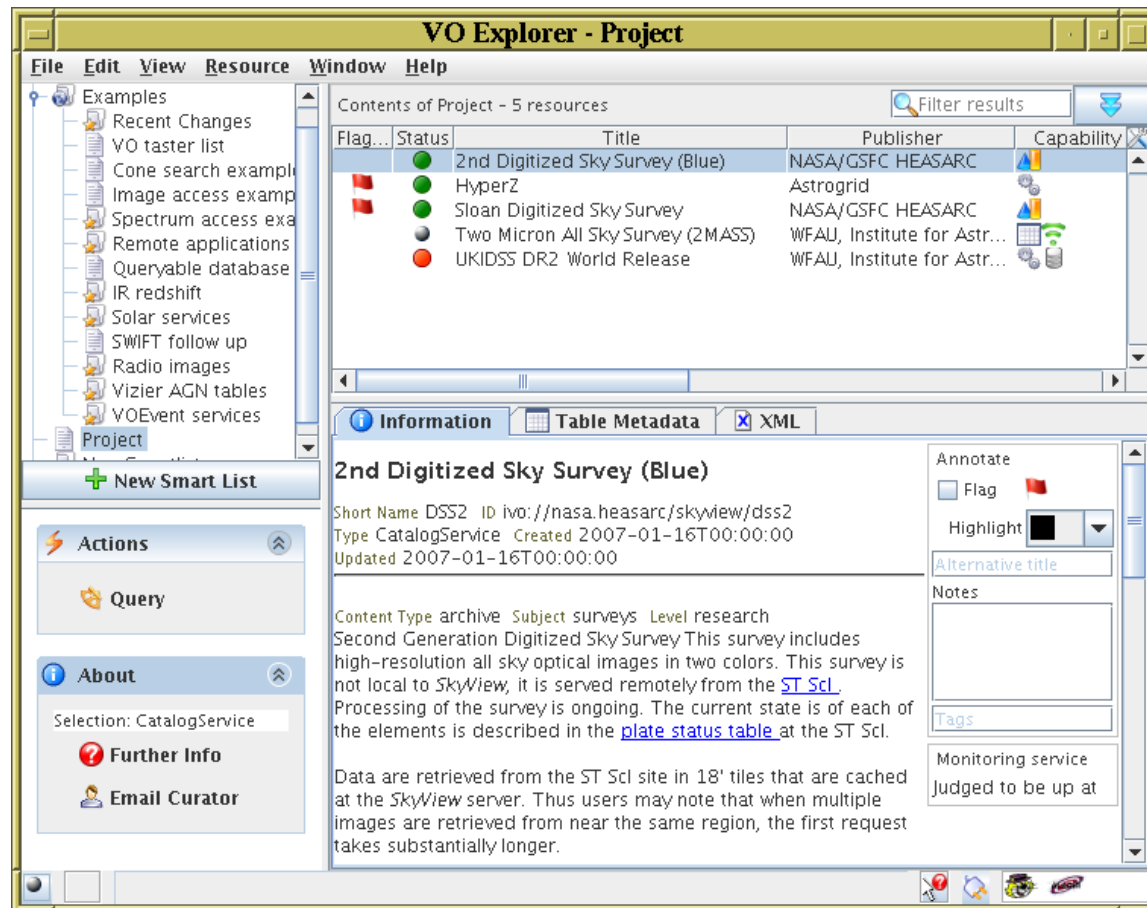
VO Desktop Overview



VO Desktop: VOExplorer

Registry Browser

- Various options for interrogating the registry
- Hierarchical storage of custom registry lists, queries, bookmarks, subscribed lists
- Various options for resource viewing (formatted text, XML, tabular, DB metadata)
- Resource availability flagging (VOMon)
- Resource-sensitive service launching (Cone, SIAP, SSAP, STAP, CEA, ADQL Query)



VODesktop: AstroScope/HelioScope

Graphical client for VO positional search protocols

- AstroScope: Cone Search, SIAP, SSAP by sky position and radius
- HelioScope: STAP by time interval and optionally position (mainly solar)
- Search *all* or (with VOExplorer) *some* registered services
- View results as graph or table

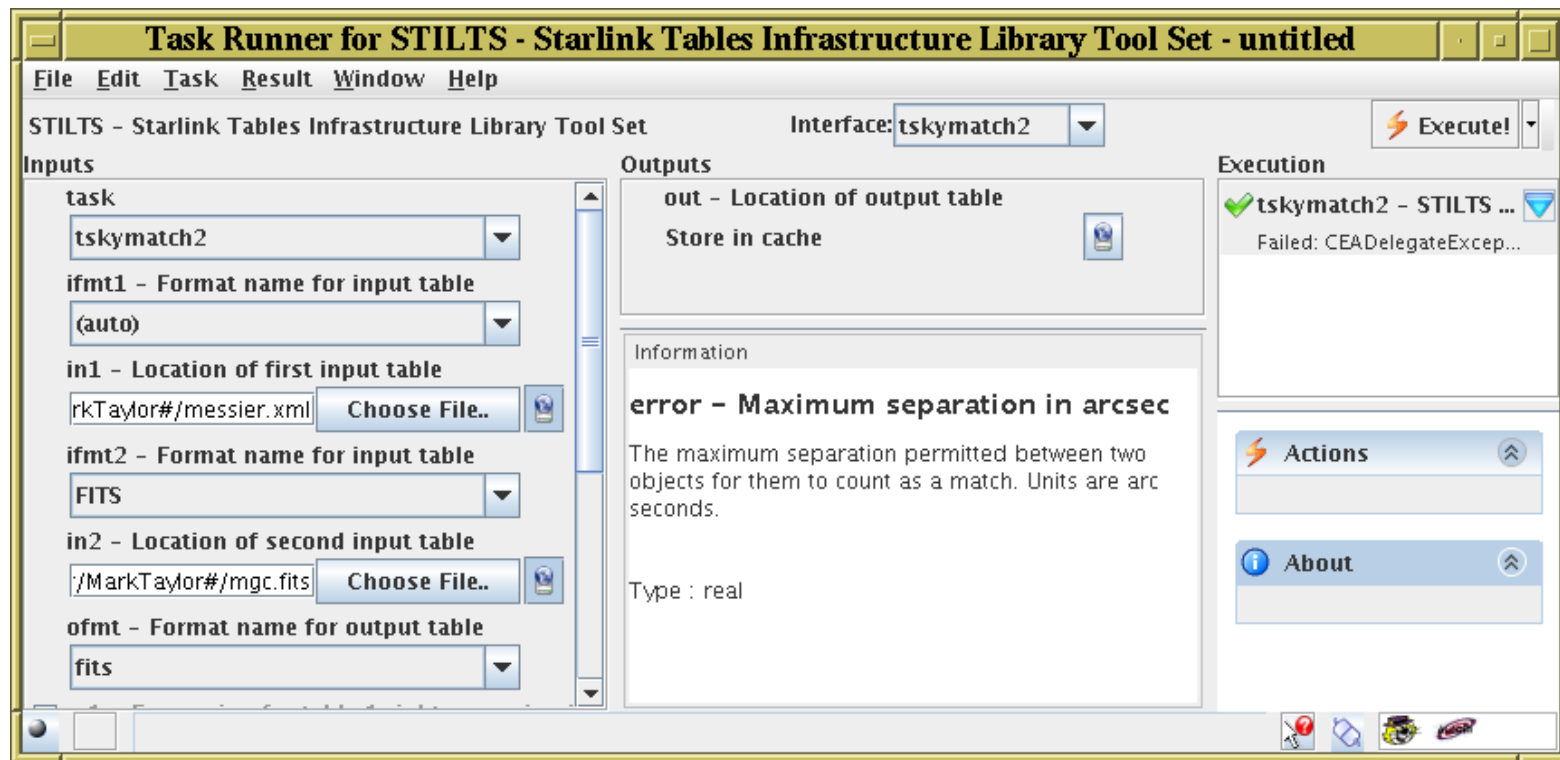
The screenshot displays the AstroScope interface with search parameters set to RA 187.750000, Dec 12.400000, and a radius of 0.110000 degrees. A network diagram shows connections between services like NVSS, FIRST, Sloan Digitized Sky Survey, and SDSS Data Release 5 (DR5). The results table shows 23 total results, with 10 from SDSS Data Release 5 (DR5) and 6 from Sloan Digitized Sky Survey (Blue).

| Status | Results | Capabil... | Title | SubName |
|--------|---------|------------|--|-------------------|
| ● | 23 | | SDSS Data Release 5 (DR5) | cone WFAU, In... |
| ● | 10 | | Sloan Digitized Sky Survey | NASA/GS |
| ● | 6 | | 2nd Digitized Sky Survey (Blue) | NASA/GS |
| ● | 2 | | FIRST | NASA/GS |
| ● | 0 | | FIRST Survey Catalogue (03Apr11 Version) | cone WFAU, In... |
| ● | 0 | | IRAS Point Source Catalog, Version 2.0 | NASA/GS |
| ● | 0 | | Third Reference Catalog of Bright Galaxies | NASA/GS |
| ● | 0 | | Two Micron All Sky Survey (2MASS) | cone1 WFAU, In... |
| ● | 0 | | Two Micron All Sky Survey (2MASS) | cone2 WFAU, In... |
| ● | 0 | | H-alpha Full Sky Map | NASA/GS |
| ● | 0 | | NVSS | NASA/GS |
| ● | 0 | | Hubble Space Telescope Spectra | MAST |
| ● | Failed | | CIELO-AGN XMM-Newton/RGS spectra | Europear... |
| ● | Failed | | Infrared Space Observatory Simple Spect... | Europear... |
| ● | Failed | | Sloan Digital Sky Survey Simple Spectrum ... | JHU |

VODesktop: TaskRunner

Graphical Client for running CEA tasks

- Fill in CEA parameter values
- Select locations of input files in VOSpace
- Select locations of output files in VOSpace/local cache
- View task status, execution transcript and output files



VODesktop: QueryBuilder

Specialised TaskRunner mode for ADQL queries

- Full table and column metadata available for browsing
- Enter ADQL in free text or using menus
- ADQL validated prior to submitting query

The screenshot displays the 'Task Runner for UKIDSS DR2 World Release - untitled' window. The interface includes a menu bar (File, Edit, Task, Result, Window, Help) and a title bar. The main area is divided into several sections:

- Inputs:** A 'Query' field with a 'Format' dropdown set to 'VOTABLE'.
- Outputs:** A 'Result' field with a 'Store in cache' checkbox and a file icon.
- Execution:** A status area showing a green checkmark, 'ADQL - UKIDSS DR2 Wo...', 'COMPLETED', and a 'Result.txt' file icon.
- Query Editor:** A text area containing the ADQL query:

```
Select
Top 100
las.sourceID, las.ra, las.dec
From lasSource as las
Where
las.yPetroMag-las.hPetroMag > 3.5
```

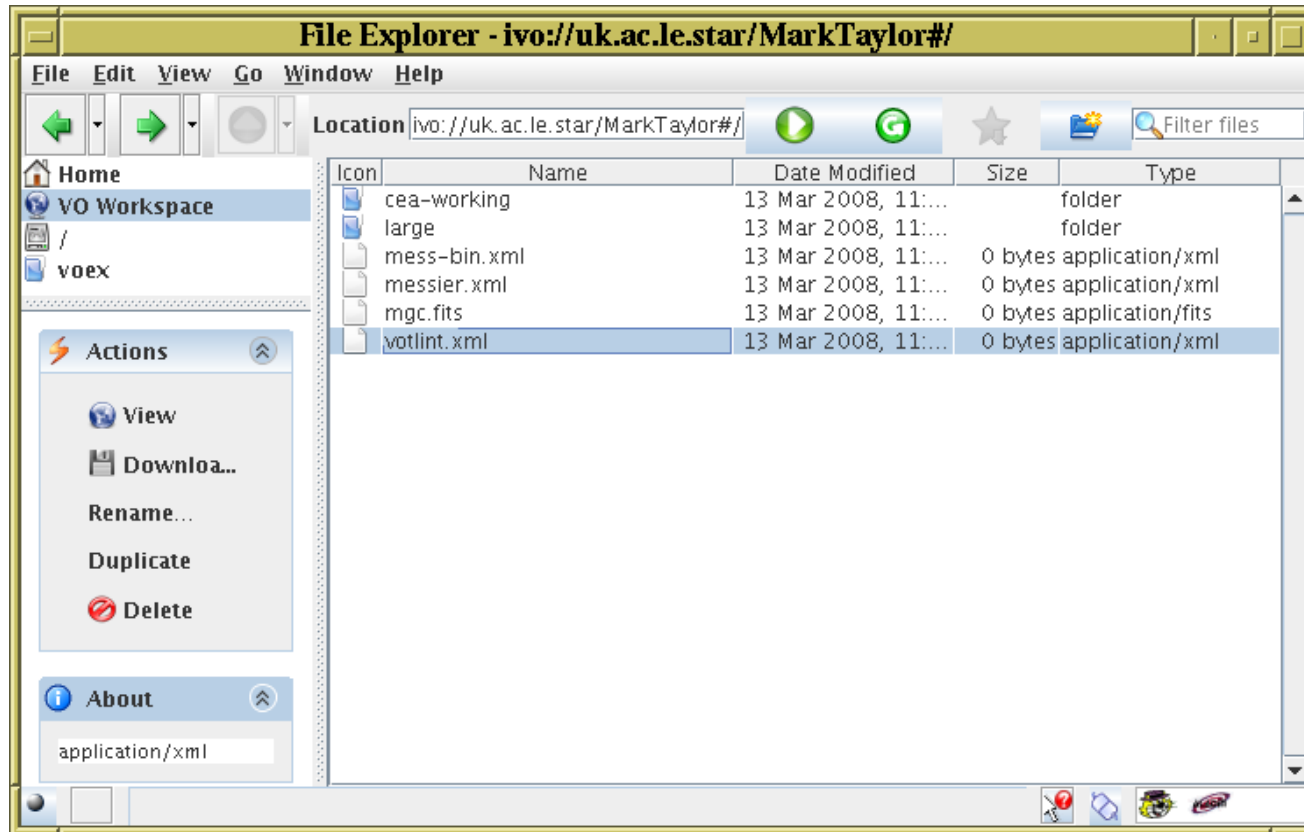
A tree view below the query shows the structure of the query, including 'Select', 'Top 100', 'Items las.sourceID, las.ra, las.dec', 'From lasSource as las', and 'Where' with a 'Comparison >' and 'Binary Expression' sub-items. A 'Validate Edit' button is visible at the bottom of this section.
- Table Browser:** A section titled 'UKIDSS DR2 World Release' showing a 'Catalogue' dropdown and a 'Table lasSource' dropdown. Below this is a table with columns: '#', 'Column Na...', 'Description', 'Datatype', 'UCD', and 'Units'. The table contains the following data:

| # | Column Na... | Description | Datatype | UCD | Units |
|----|--------------|----------------------------------|----------|-------------|-------|
| 24 | ymj_1Pnt | Point source colour Y-J | double | PHOT_COL... | mag |
| 25 | ymj_1PntErr | Error on point source colour Y-J | double | ERROR | mag |
| 26 | j_1mhPnt | Point source colour J-H | double | PHOT_COL... | mag |
| 27 | j_1mhPntErr | Error on colour J-H | double | ERROR | mag |
| 28 | hmkPnt | Point source colour H-K | double | PHOT_COL... | mag |
| 29 | hmkPntErr | Error on point source colour H-K | double | ERROR | mag |

VO Desktop: File Explorer

General purpose file browser

- Same interface for VOSpace and local disk
- Bookmark useful directories
- Copy/move local disk ↔ VOSpace ≡ file upload/download
- Move, copy, new directory, delete, . . .



Astro Runtime

Daemon which provides VO services to VODesktop and independent user apps

- Access using XML-RPC or Java-RMI
- Runs while VODesktop is running

Provides easy access to many VO services

- Cone, SIAP, SSAP, STAP
- Registry
- CEA
- VOSpace
- SkyNode
- Sesame
- VOMon
- . . .

Hides complexity of services from application code (e.g. scripts)

- Single Sign On provided automatically
- Client code doesn't need to talk SOAP/WSDL (or REST)
- Client code protected from standard version changes

Python Library

Library of python routines for VO access

- Python bindings for AR functions
- Additionally provides higher level functions based on these
- Comes with example scripts:
 - ▷ SIAP registry query/searches
 - ▷ Multiple cone search (serial/parallel)
 - ▷ Table format conversion in VOSpace
 - ▷ Crossmatch tables in VOSpace
 - ▷ Execute ADQL query
 - ▷ Execute remote applications (e.g. SExtractor on data in VOSpace)
 - ▷ PLASTIC functions
- Easy entry for astronomers to VO functionality
 - ▷ Very little python experience/expertise required
 - ▷ Works well with other python modules (PyFits, . . .)