

VOTC UK Meeting notes - Data publishing and tools development breakout session - 26/09/2008

Summarised by Jonathan Tedds (with thanks to Dugan Witherick for original notes during session)

The session reviewed requirements across UK projects represented at the meeting and the following 5 key themes, in no particular order, were identified as common to a number of the projects. More detailed notes then follow as discussed during session.

1. cross match project pipeline products with major archives

- general tool for missions to correlate against existing major multi wavelength archives
- demo by J.Tedds/G.Gilchrist of prototype burst alert script for Swift project (J.Lusted)
- feed output into image thumbnails on webpage etc,
- e.g. use case of Herschel (build on Swift script), JWST (G.Wright)...
- identified need for inclusion of position error as pre-filter option on performing cone searches (Swift)

2. time series & lightcurves

- IVOA standard definition work urgently required
- general chronologically ordered all mission transient repository - needed for SWIFT, WASP...

3. grid enabling for future grav wave project support

- IVOA standard definition work required
- see Group B (infrastructure) feedback for details in this area (M.Hendry)

4. lower level data product publishing

- IVOA standard definition work required
- solar/X-ray raw event level data provision
- enable CEA wrapped querying via VO (see P.Harrison talk, day 1)

5. "upper limit server" techniques

- photometric server on optIR multiband data at WFAU
- X-ray upper limit server for high energy XMM, Swift etc

Miscellaneous Further Details

- absolute **astrometric position error** not clearly defined for many catalogues
- input to IVOA standards to include in cone search filtering on table metadata
- use the astrometric information to define the search radius
- need to improve metadata

- **SWIFT burst alert script**

- Demo by J.Tedds & G.Gilchrist (AstroGrid)
- J.Lusted (AstroGrid) adapted data access sections of original script by P.Evans (Swift) to use AstroGrid python
- initial GRB position is refined if better position by x-ray/optical
- thumbnail from image servers (2MASS/DSS) - optical nr-IR
- Swift x-ray thumbnail
- quick search against relevant catalogues - gal, star counterparts
- advantages of VO-ised data access -> multi-threaded approach fast and avoids single point failures
- install python
- install AG python library
- all AstroGrid VO GUI functionality available from command-line
- next action to pipe output to Swift burst alert web page

=> *key point for general application is no need to learn different SQL flavours for multiple archives and common output format*

- *i.e. VOTC UK can provide generic tool for other projects as commonly needed*

- should be useful for solar (L.Fletcher)
- space environment centre in the US

- **cross match tool**: potential application to e.g. Herschel project (A.Smith)
- want counterparts to new object lists incl thumbnails i.e. a general solution to this common project requirement

- **VO incompatible data formats**

- data cubes? (UKATC, JCMT, UKIRT...)
- polarimetry data
- data model of euro 3d (ESA and ESO)
- perhaps work on as a collaboration

- **radio dynamic spectra** - time/column frequency (L.Fletcher)

- some radio observatories just produce data in raw format
- available only as static Vizier tables via VO currently

- **event list** of individual x-ray photons (J.Osborne)

- not yet covered by existing IVOA standards
- not 1-1 mapping of observed and source
- ssap v1.04 standard
- extra metadata is required

- **collaborative model for VOTC UK** suggested

- of course different projects will have different ways in which they wish to participate/spend VO money

- **Applications** to make available to the community

- proof of concept of starlink application
- command line CEA applications relatively simple (P.Harrison talk)
- can define multiple interfaces to command line application
- common look and feel at GUI and application level

- **Project specific webpage functionality**

- referring to Ed's IPHAS webpages demo on day 1
- should be routine to organise similar for other projects
- plug in to web page to do an image search
- a few would like to do this
- adobe flex (web 2.0)
- are people moving to web 2.0 or tried and tested?
- need time and resources
- where is the effort coming from?
- need a clear return from the effort put in
- used in IPHAS case to trap the VO table as it is returned
- interface is a layer on top
- need to make available interface for mobile devices e.g. blackberry

- solar community would like way to search for other **solar images** around the same time interval (S.Dalla)

- a **server side Astro Runtime?**

- multi archive cross correlation on server side
- not yet a solved problem

- **Observation Planning**

- application for detailed selections on catalogues, particularly statistical (for large surveys) desirable
- running on server
- iterative process
- space to store intermediate products
- Table Access Protocol (TAP) interface to data
- work already ongoing in many projects of course, e.g. Gemini phase 2 tools - java based
- but need VO enabling

- **Publication of Images**

- AstroGrid has collaborated with ESA VO on DAL toolkit for publishing images (complementing AstroGrid DSA tool for publishing catalogues)
- as long as database already setup, very quick to do
- requirement to generate images on-the-fly?
- 2 stage process
- DM Mapper from ESA VO to query data cube
- US NVO toolkit also available

- **Time series**

- can data format/SSAP IVOA standard handle spectral data?
- evolution to simple event access protocol

- **Lightcurves**

- IVOA standard protocol required for returning light curves
- application for particle instruments: energy and angle domains as well as time-series