Science Priorities

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IVOA Committee for Science Priorities

CoSADIE Project

IVOA level

- Gathered from Astro community via national projects *(in Europe via Euro-VO SAC and Science teams, and VO School feedback)*
- current and past priority areas:
  - *Time Series*
  - *Multi-dimensional Data (Radio/mm/IFU/simulation...)*
  - *Spectral Energy Distributions*
  - *Query by object classification and lists*
  - *Query via core observational parameters*

Current Science Priorities

Multi-dimensional Data

Radio astronomy, Integral Field Spectroscopy, high energy, polarization, simulation, data mining datasets + ...

Time Domain Astronomy

Time Series, light curves, transient event reports, +...

- Need to ensure that these are accessible and useable within the VO

Engagement with data producers

- IVOA Focus Sessions (Heidelberg 2013) engaged projects and surveys that produce and use multi-d and time domain data
- Invited presentations / Panel Discussions
- Part of IVOA process - requirements, use cases, feedback from implementation. Follow-up technical WG sessions.

Tuesday May 14 2013				
5	09:00–09:10	gHS	Focus session on multi-dimensional data - Introduction	Mark Allen (Session Chair)
	09:10–09:30	gHS	CyberSKA	Russ Taylor
	09:30–09:50	gHS	ALMA, JVLA, VLBA	Brian Glendenning
	09:50–10:10	gHS	CALIFA	Mariya Lyubenova
	10:10–10:30	gHS	MUSE	Thomas Martinsson
Wednesday May 15 2013				
9	09:00–09:10	gHS	Focus session on time domain astronomy - Introduction	Enrique Solano (Session Chair)
	09:10–09:30	gHS	CoRoT, Kepler time series	Jonas Debosscher
	09:30–09:50	gHS	Designs and Requirements for Time Domain Data in LSST	Mario Juric (LSST)
	09:50–10:10	gHS	ASKAP/VAST	Paul Hancock
	10:10–10:30	gHS	LOFAR Transients	John Swinbank
	10:30–11:00	***Break***		

Goals/Results of Focus Sessions

- Summarize data being produced now ✓
- Identify the metadata needed to discover, access, analyse these data ✓
- Status of VO standards in these areas ✓
- Identify implementation hurdles ✓
- Identify desirable features in standards, services, tools ✓

VO already in use/plans

- ALMA - using OpenCADC TAP, voview, will use SAMP, ObsCore, SIAPv2
- CyberSKA - VO access option via CADC
- CALIFA - data access via TAP and SSA
- MUSE - VO publishing via AstroWise
- ASKAP - all data through VO protocols
- CoRoT - avail from SVO, Kepler - avail from MAST
- LOFAR - VOEvent broker

- Identify the metadata needed to discover, access, analyse these data

Radio - commonly 4-6D RA, Dec, freq/vel, pol, (time)

Event lists: Time stamp, (x,y) -> (ra,dec), energy (freq, wave)

IFU - 3D: ra, dec, wave

Polarization + auxillary data/models

IFU footprints - fibre size/pos/filling

PSF

Calibration, quality flags

Time

period

Data count statistics

ephemeris - position

spectral type, classification

+ ...

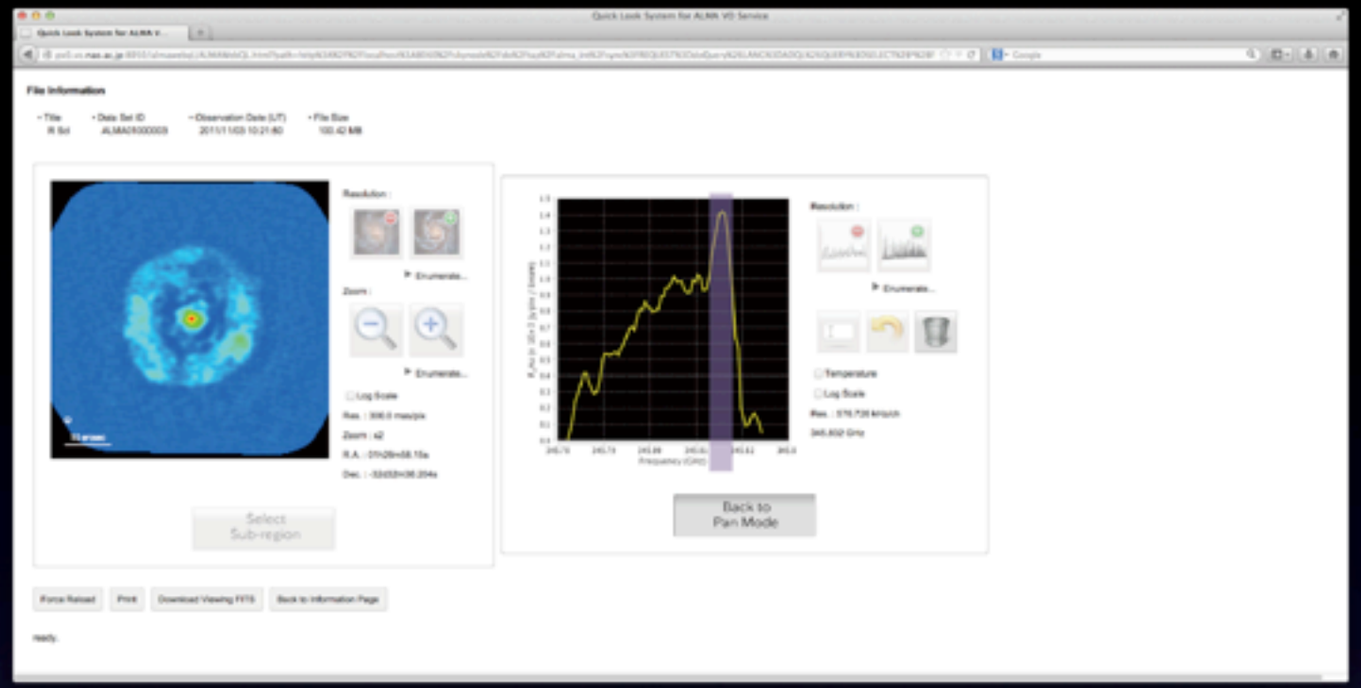
Multi-d → negotiated minimal requirements for Data Cube Access

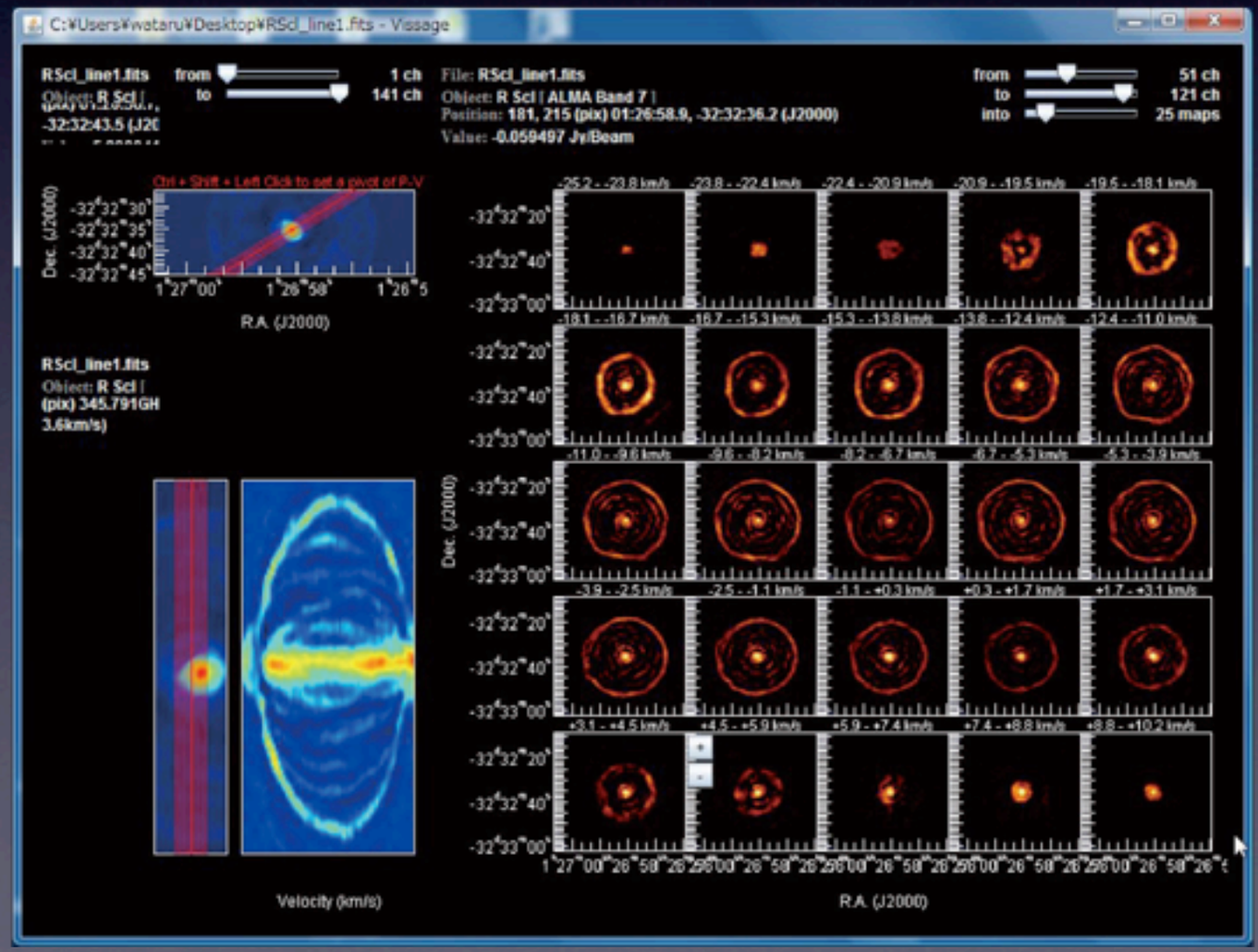
- Being pursued by projects. *(VAO, Euro-VO [CDS])*
- *(Japan VO access to ALMA cubes)*
- Demonstrations expected at Hawaii interop

VAO - ?

CDS

JVO
(demo?)





Time Domain ➔

need to discuss near term goals

- Time Domain Interest Group
- *Engagement with time domain community e.g. via Transient Universe meeting (Nov 2013)*
- *Need to discuss minimal requirements for Time Series Access*

Euro-VO Science

- Good, but affected by reduced effort
- Spanish community has high rate of publishing 'VO' papers
- VO School successful, some tutorials renewed but more updates needed
- Importance recognized via ASTRONET infrastructure roadmap, but maintaining visibility important