

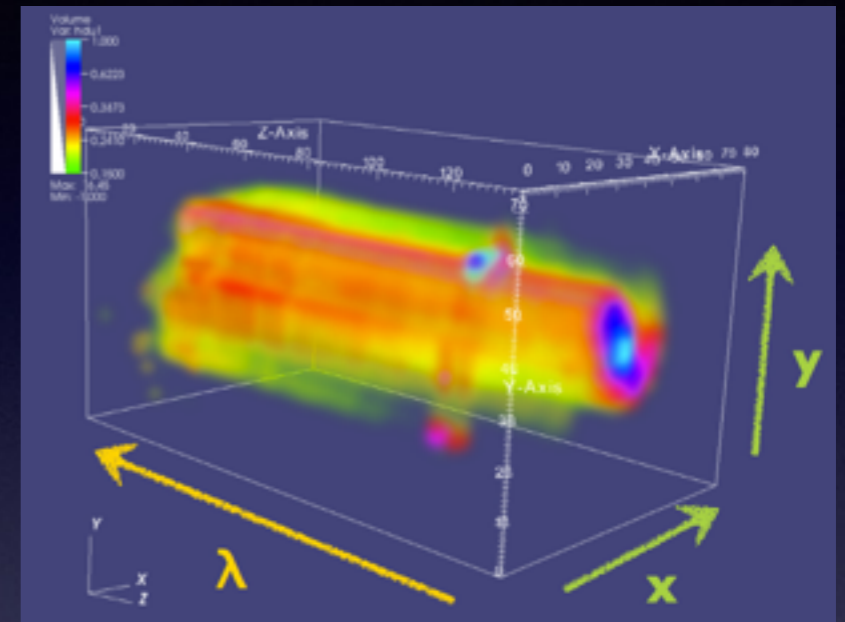
Multi-d Data Focus Session summary

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Multi-d data

- Impressive progress
- DAL, DM, Apps
- Demos, prototypes, ideas, innovation
- Priority area taken seriously
- Builds on long term IVOA efforts in this area



Engagement

- +1 yr follow-up with projects from Heidelberg Focus Sessions
- New contacts - JIVE/MLBI, JWST, MeerKAT
- Strong willingness to integrate VO in their projects, and provide feedback to IVOA
- Desire to use VO to make things faster, cheaper, interoperable
- Various approaches, challenges, constraints

Presentations

- What data products do your projects plan to deliver?
- Are there plans to do this in a VO-compatible manner?
- Is there intent to provide users with the capability to modify project-provided data before downloading it?

- What data products do your projects deliver or plan to deliver?
 - PB archives to collections of (~500) observations
 - cubes - large cubes coming
 - visibilities
 - event lists
 - different formats
 - multi-band surveys

- Our three main data products will be
 - Images, Cubes and Catalogues
- These are pretty well understood (??) VO products and so we don't expect too much hassle

```
In [2]: s = pyfits.open('NGC6497.V500.rscube.fits')
```

```
In [3]: s.info()
```

No.	Name	Type	Cards	Dimensions	Format
0	PRIMARY	PrimaryHDU	496	(77, 72, 1877)	float32
1	ERROR	ImageHDU	9	(77, 72, 1877)	float32
2	ERRWEIGHT	ImageHDU	9	(77, 72, 1877)	float32
3	BADPIX	ImageHDU	9	(77, 72, 1877)	uint8

- Are there plans to do this in a VO-compatible manner?
 - Yes, already happening
 - mentions of cone-search, SIA, TAP, VOTable
 - use of tools - TOPCAT etc.
 - desire for VO compatibility so users can use VO tools

Panel Discussion

- Do standards and prototypes match expectations for 1st steps?
- What are the paths to implementation of IVOA standards? What are the impediments?
- What added functions are needed?
- What goes into the next set of requirements?

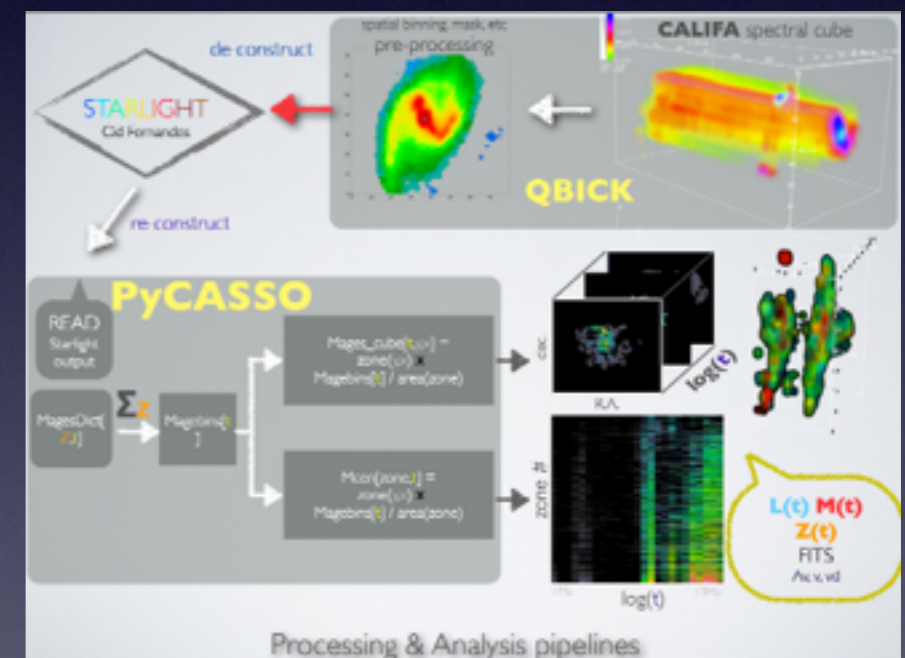
- Do standards and prototypes match expectations for 1st steps?
 - ~ yes
 - sparse cubes, event lists, time axis cubes need more attention
 - low tolerance for instabilities, not going to write software multiple times

- What are the paths to implementation of IVOA standards? What are the impediments?
- Different approaches for supporting VO up-take
 - IVOA How to Publish to VO pages
 - Assistance from VO projects - visits/training
 - Hosting - by VO projects/Data Centres

- What additional functions are needed?

– User Interface improvements

- Unit support in query fields, clean up response fields etc
- Query based on region selected in current image



- Typical: 1000^3 (Gpix), Possible: $> 10,000^3$ (Tpix), (x1-4 polarizations)
 - GB \rightarrow TB image sizes, Mb \rightarrow Gb network pipes
 - Server-side cutouts/subregions are important!

Next Steps

- Finish first standards - ASAP
 - Very important check-point
 - Reference Implementations (*prototype -> ref. implementation?*)
- Promote implementation (who/when/how?)
- Continue consultation with community to define use cases and set priorities for next steps