

AVO SWG

Comments from the cosmology
sub-group

January 27-28, 2004

What do we ask?

- Don't ask AVO to do our science, just tools to help: provide data (remote view and loading facility to local disk), cross-ident tools, tools to tests assumptions, pre-view of ideas and problems
- Some tools shown yesterday are there and can be used now!
- Should be delivered to astronomers after minor improvements and documentation (*demo step by step in the tutorial*)
- Must be publicised far before the end of AVO contract in order to be widely used and known by EC referees: best is to propagate asap
- Science project: separate short-term, medium/long term projects using AVO
- WA3 report: could it be more understandable to SWG?
Lots of acronyms , technology must be explained more, constraints must be explained more

Concern about data quality and VO/data center interface

- Critical: understanding the data used
 - Calibration history/method (I guess not urgent for demos)
 - Data quality
 - Error as function of depth
 - Data homogeneity:
 - Detection limit over the fields and time series
 - Completeness : known or on the fly
 - PSF over the field and time series
 - Is a VO-calibrated validation/label realistic?

Summary SWG Jan03

- Most urgent requests have been done.

Thanks to the AVO team

8. Implications for Future Capabilities

In the plenary session a number of areas for future capability were highlighted as of importance:

- access to photometric tools (e.g. redshift determinations)
- access to spectral data sets ability for
- user upload of data/models
- integration of model data (e.g. evolutionary tracks)
- access to theoretical data (e.g. atomic line data)
- access to statistical techniques (e.g. fuzzy cross-correlations)

Immediate actions

- Access to all archived data (a full list)
- Full calibrated SED in all spectral range archived
- PSF measurement of selected data (on the fly?)
- On the fly morphological information (ex: GALFIT)
- Filter actions including : PSF, filters, flux limits, (a list given by SWG in the following month)
- Multi-wavelength cut (from one image)
- When running SExtractor: star/gal separation and automatic dust extinction corrections
- Need autosave if Aladin crashes

Short term cosmology projects

- Focussed surveys, single object physics, multi-purpose target?
 - **Cosmos Treasury Survey:** Huge on going follow up: optical + NIR (subaru, cfht), virmos redshift, Galex, XMM:
 - High-z QSO search (reionisation)
 - SNIa analysis,
 - cosmic shear analysis,
 - clusters of galaxies,
 - galaxy-galaxy lensing,
 - high-z clustering
 - morphological history/formation process
 - Pure CMB analysis
 - Pure Quasar analysis
 - Pure cosmic shear
 - $z \sim 3-5$, $z > \sim 6$ galaxies ?
 - GOODS project continued

An example of a long-term project for AVO

Survey	n (gal/arcmin ²)	A deg ²	σ_ϵ	Merit
<i>Virgos/Descart</i>	15	16	0.42	1
<i>Cosmos</i>	45 (?)	2	0.32	1 (5 smallscales)
<i>CFHTLS</i>	15	170	0.42	10-20
<i>JDEM-Lensing</i>	50 - 100(?)	300+	0.32	800-1000+
<i>PANN-STAR</i>	25	2000	0.37 (?)	400-800
<i>LSST</i>	20	2000+	0.42	400-800+
<i>AVO</i>	20	2000	0.40	300-600

Merit of cosmic shear surveys: an example for EURO-VO