



ASTROPHYSICAL VIRTUAL OBSERVATORY

***Further Science Requirements
from the AVO***

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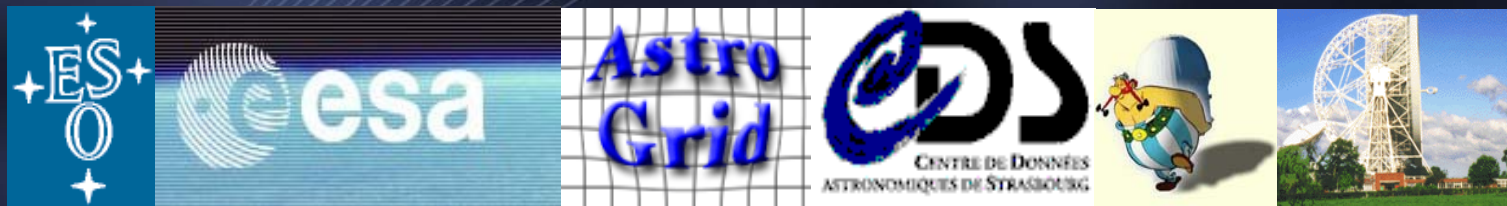
VOSystems Dept & AVO Science Manager

VOtech Project "Kick off" Meeting

Nov. 18 - 19, Cambridge

AVO

- R&D on scientific requirements and technology for building a EURO-VO, 50% funded by European Community



- Phase A, 2001 - 2004/5
- Driven by strategy of **scientific VO annual demonstrations**
- Science Working Group established to provide scientific advice to AVO project
- First refereed astronomical paper enabled via end-to-end use of VO tools and systems (Padovani, Allen, Rosati, & Walton, 2004, A&A, 424, 545)

The AVO Science Reference Mission

- The Science Reference Mission (SRM) defines key scientific results that the full-fledged EURO-VO should achieve when fully implemented.
- Will consist of science cases, with related requirements, against which the success of the EURO-VO will be measured.
- Being put together right now, with input from the Science Working Group, final version by end of January 2005.

The AVO Science Reference Mission

- Three SWG sub-groups: cosmology, galaxies, stars
- One example: *Galaxy formation and evolution from $z = 10$ to $z = 0.1$* . Some (missing) VO Tools needed:
 - ✓ Point Spread Function (PSF) matching for images taken in different bands with different instruments (and possibly varying across the image)
 - ✓ Fitting tool to find best match between observations and models
 - ✓ Inclusion of already existing morphological software (e.g., GALFIT, GIM2D, etc.)
 - ✓ Inclusion of already existing theoretical simulations (e.g., VIRGO, GALICS, etc.)

The AVO Science Working Group

- Selection of SWG input which was beyond AVO (more later):
 - ✓ Show available data for a source/position (or list of sources/positions) from all archives; classify products (raw, calibrated, science-ready). Requires strong coordination with Data Center Alliance (DCA).
 - ✓ Spectral Energy Distribution (SED) from archival data (VOSpec moving in that direction).