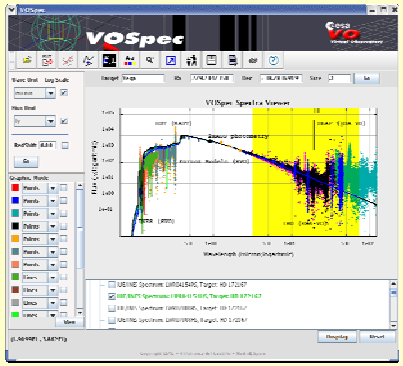
ESA VO Project



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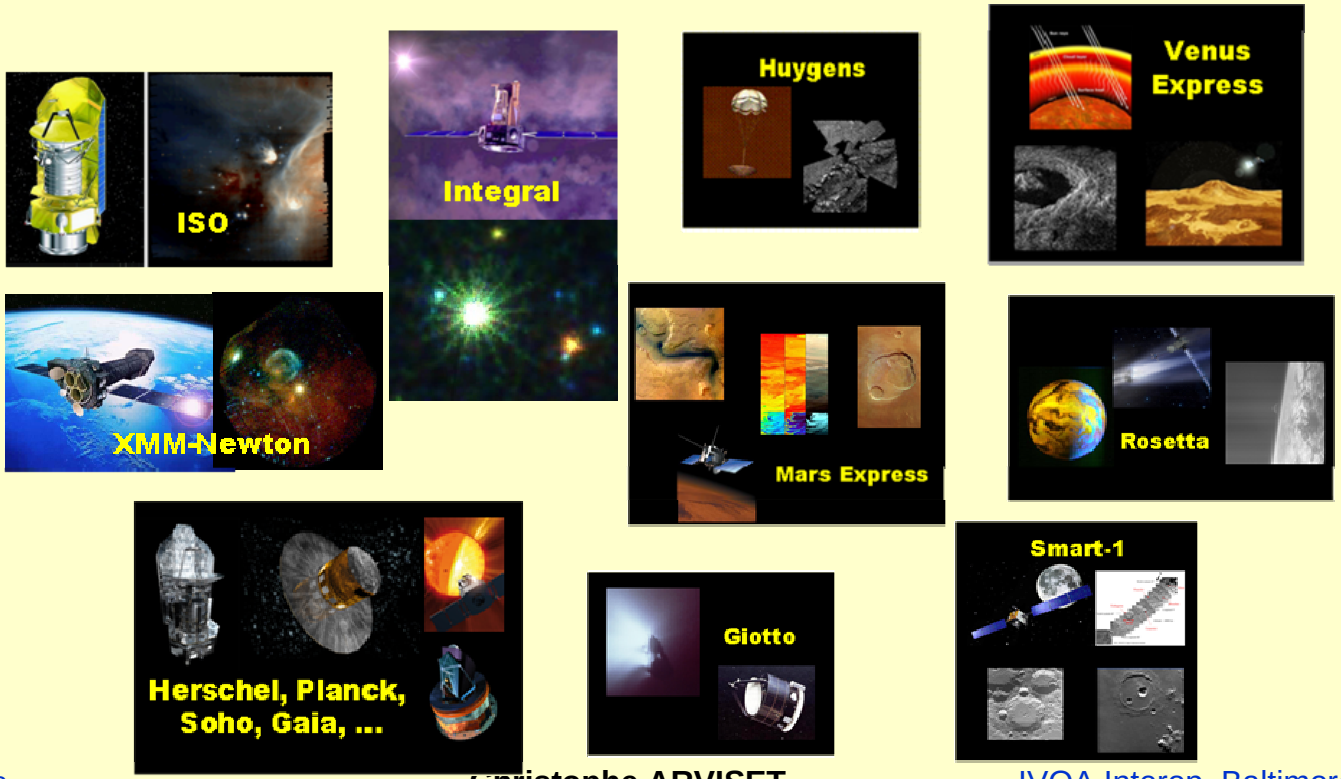
Science Archives and VO Team

- ESAC Science Archives Team is leading all VO activities for astronomy within ESA through the ESA-VO Project
  - http://esavo.esac.esa.int/
- A core Science Archives and VO Team (~15 people) in ESAC
- Support many projects (horizontal support vs vertical organization)
  - ISO, XMM-Newton, Integral, Planetary missions, Herschel, Soho
  - Planck, Lisa PF, Gaia in the future…
  - **Virtual Observatory (~4-5 FTE)**
- Organized by functions:
  - database,
  - user interface,
  - data distribution,
  - inter-operability and VO

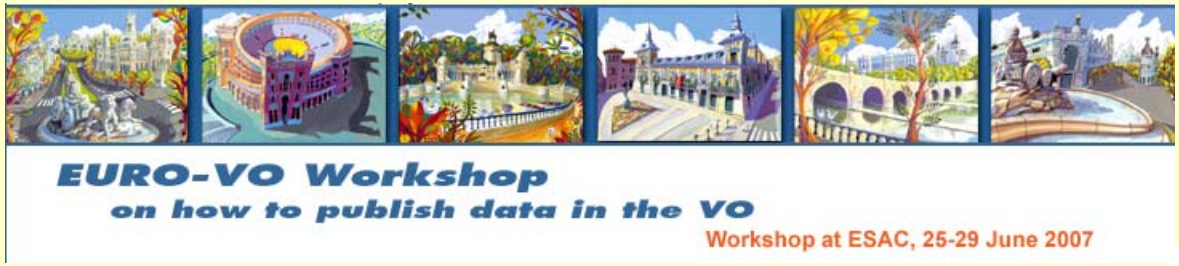
VO-compliant ESA archives

- ESA-VO ensures all ESA Science astronomy Archives are VO compatible
  - VO in mind when building the archives VO access is built on top of the Archive scriptable interfaces (AIO)
  - VO access inherits all archive functionalities (public/proprietary access, usage login, …)



ESA-VO and EURO-VO DCA

- Development of the ESAC Astronomical Archives
- Make these archives accessible through VO standards
- Support to European data centres for VO take-up
  - workshops, on-site visits
  - DALToolkit, DMMapper publishing tools development

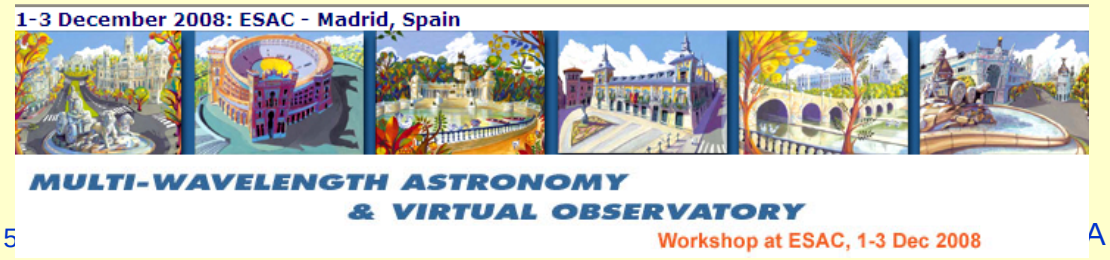


- Data Processing Centre, through the ESAC GRID

ESA-VO and EURO-VO AIDA

- EURO-VO Technology Centre
  - Technology research and prototyping on VO standards
    - In particular WP7 IVOA standards on DAL, DM and VOQL
  - Link with IVOA corresponding working groups

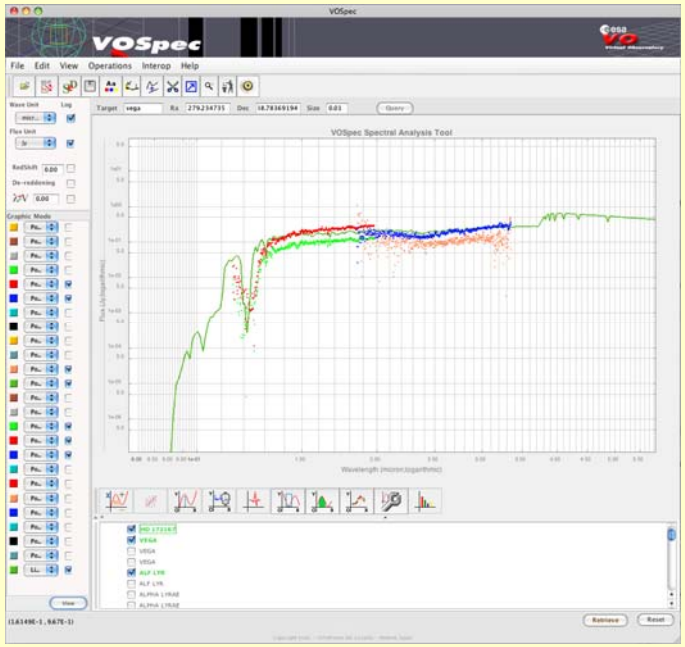
- EURO-VO Facility Centre (co-led by ESA – ESO)
  - EURO-VO Science Advisory Committee
  - Call and support for VO Science projects
  - ESA-VO Registry to become EURO-VO Registry, curation tools
  - Science link with the Astronomy missions at ESAC
  - Community workshop co-organization



VOSpec

- A tool to retrieve, display, manipulate spectra and lines coming from various VO resources

- Create a Spectra Energy Distribution from spectra coming from a wide range of different providers registered in the VO Registry and from local data
- Automatic units conversion
- Math operations like Polynomial, BlackBody fitting, Gaussian, Normalization, DeReddening, Red-shift, Luminosity Differences etc.
- Many spectra operations (add, substract, divide, multiply, convolve, bisector, mirroring, filtering, smoothing, averaging, …)
- Interface with theoretical models
- Interface with atomic and molecular databases and on-the-fly identification on SEDs
- Interoperability with other VO-aware tools through Plastic Technology



http://esavo.esac.esa.int/vospec

ESA VO Registry

- Full Searchable Registry
  - implemented in Java with Sybase RDBMS
  - Being upgraded to IVOA RI 1.0 specs
- Fully compliant OAI interface for harvesting
- Services accessible by Web Service, HTTP POST or GET
- User friendly Interface with Web Pages for Search and Insert/Update
- http://esavo.esac.esa.int/registry
- To become the EURO-VO Registry as part of the EURO-VO AIDA project

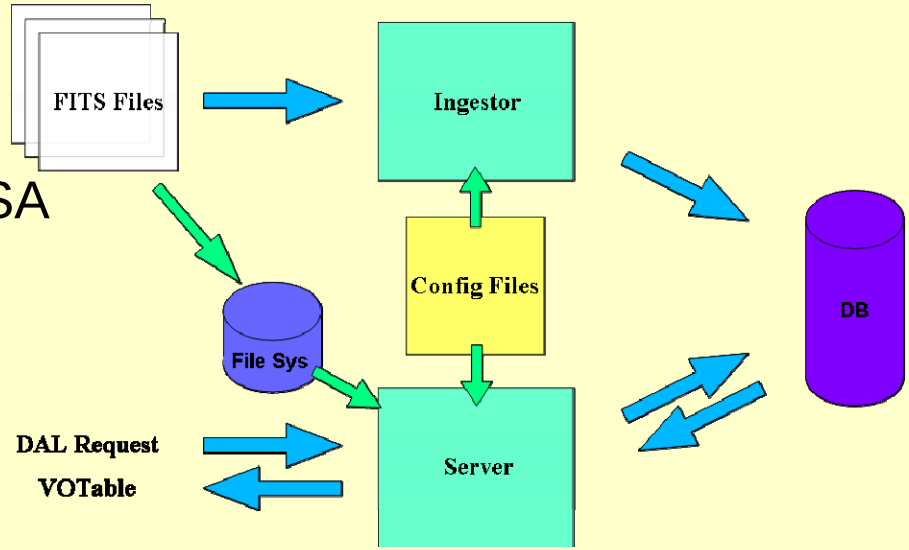
ESAVO DALToolkit

- Purpose : help data centres / astronomers to easily publish their data through VO protocols

- ESAVO DALToolkit
  - http://www.sciops.esa.int/index.php?project=ESAVO&page=dal_proj
  - Java based server software for publishing data into the VO
  - Flexible with configurable templates for SIAP 1.0, SSAP1.0
  - Will support SLAP, TAP, SIAP 2 when available

- DALingestor
  - Takes FITS as inputs
  - Create necessary metadata for SSA

- DALserver
  - Publish data through SxAP



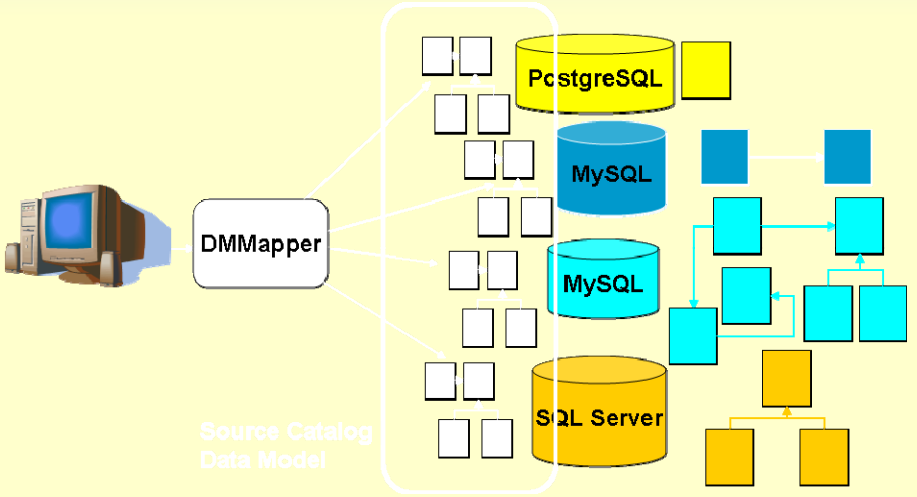
ESAVO DM Mapper

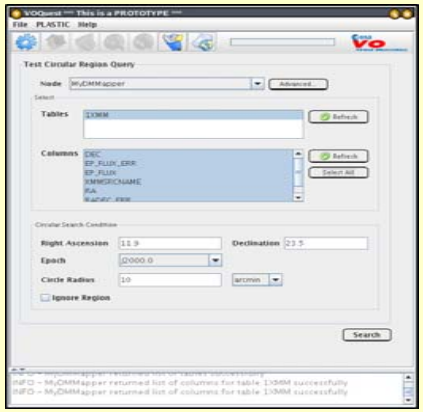
- DataModel Mapper
- http://www.rssd.esa.int/index.php?project=ESAVO&page=dal_proj

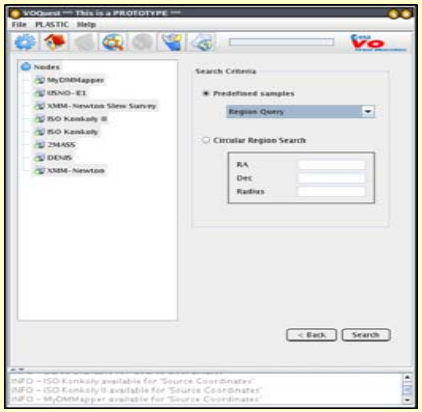
- Maps your own RDBMS model into a VO DM through configuration files
  - SCDM (Source Catalogue DM)

- Works in conjunction with ESAVO DALToolkit

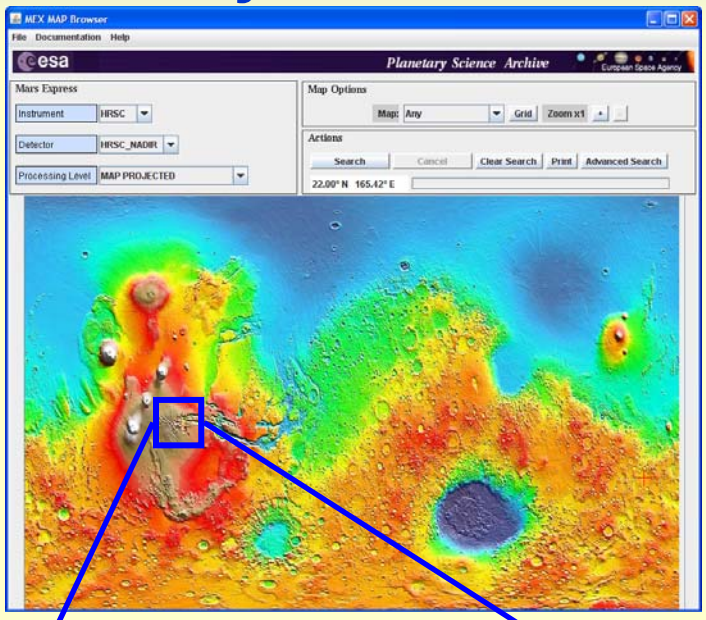
- VOQuest
  - Prototype
  - ADQL / SCDM

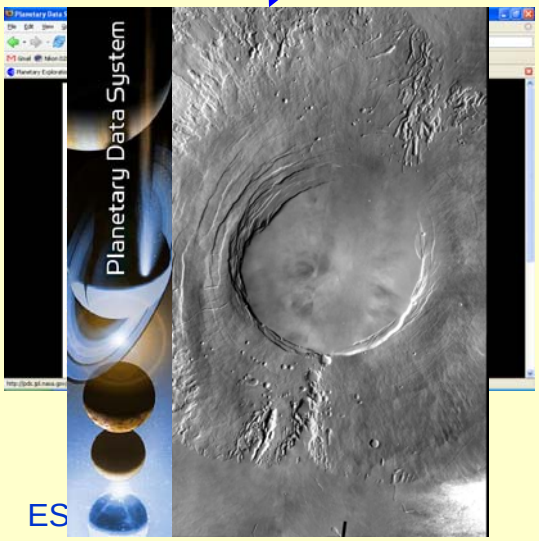


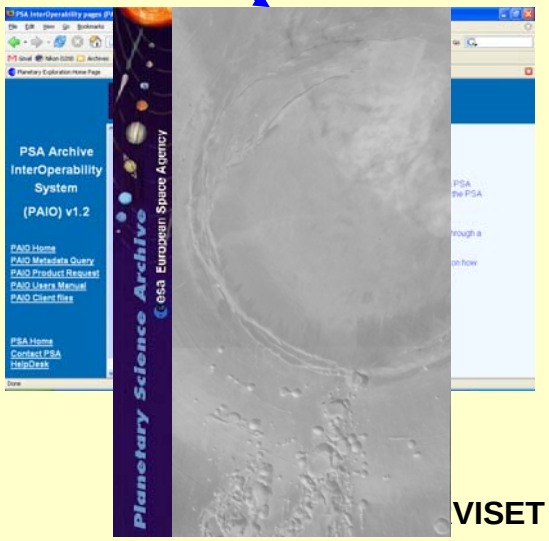




VO activities in other fields: Interoperability ESA PSA – NASA PDS







- (Prototype in development) in the context of the IPDA (International Planetary Data Alliance)
  - Re-use of IVOA DAL experience
- From Mars Map Browser, Select region of interest
- Contact PSA and PDS using the PDAP (Planetary Data Access Protocol)
- Display NASA PDS and ESA PSA images