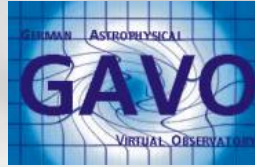
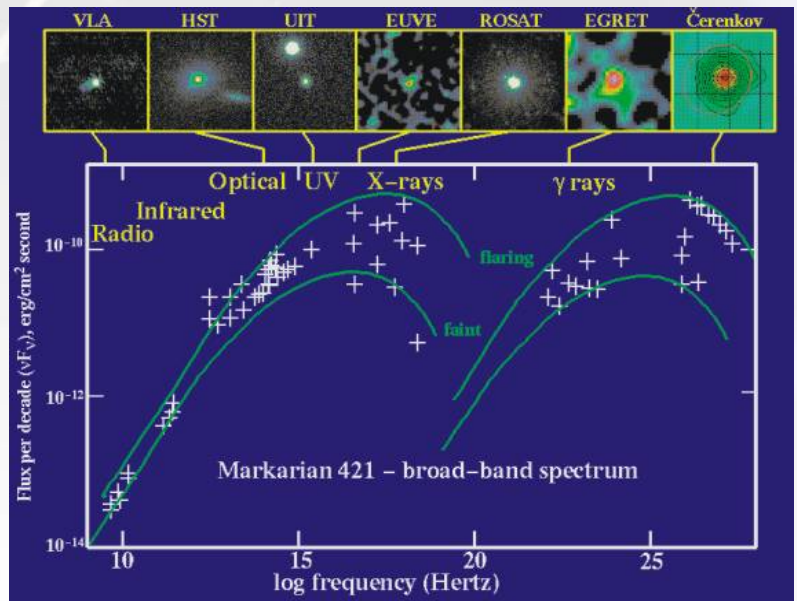
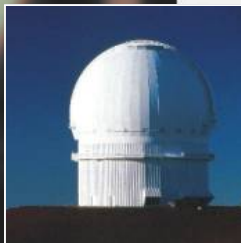
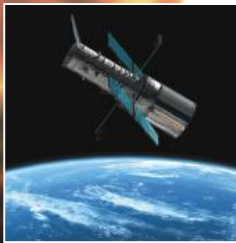


# CANADIAN VIRTUAL OBSERVATORY



The Canadian Virtual Observatory (CVO) is one of a family of international projects whose goal is to develop the next generation of data and information management systems and infrastructure for astrophysical science. A vigorous collaboration with the German Astrophysical Virtual Observatory (GAVO) and with the Australian VO (AUS-VO) through the Anglo-Australian Observatory has produced a collection of prototype VO services that demonstrate service discovery, exploration, and distributed data access across several classes of astronomical data. The CVO prototype demonstrates the exploration of multi-wavelength observations and source catalogs to locate key elements for a scientific project. The CVO project is supported by the National Research Council of Canada and the Canadian Space Agency.

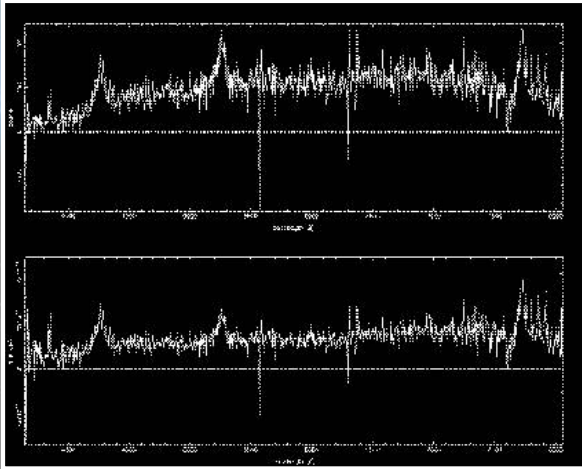


The demonstration at the IAU General Assembly is focused on the central role that exploratory database querying plays in understanding the available content and locating resources for a science project. In our view, the full power of the Virtual Observatory will follow from the exploitation of large multi-wavelength datasets. CVO has developed a practical data model for storing and querying multi-wavelength content that may include direct imaging, spectroscopy, or other energy- and time-discriminating classes of data. To deal with the large size of the datasets we are using a parallel database cluster with 16 processors and 7 Terabytes of storage capacity.



### **Motivation**

The CVO project is creating tools that will enable scientists to do research of the highest quality using a variety of datasets from a variety of space-based and ground-based observatories. Philosophy: The CVO project is distinguished in a number of ways from other VO projects. First, CVO is actively involved in generating content for the VO. Second, our development work is fairly self-contained (although this results in no obstacles whatsoever to full linkage with distributed data sources), giving us a wider range in our prototyping efforts.



### **Collaborations**

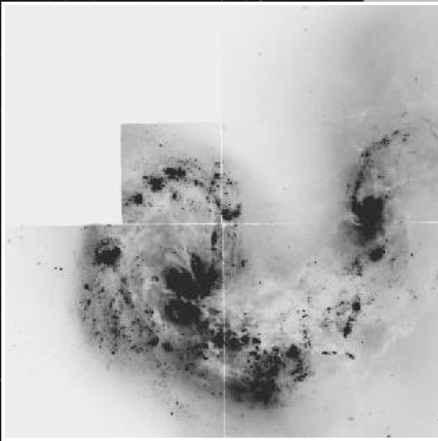
CVO has joint projects in collaboration with the German Astrophysical Observatory (GAVO), the Australian Virtual Observatory (AUS-VO), and the U.S. National Virtual Observatory (NVO). The integration of multi-wavelength data requires a broad range of scientific expertise and CVO will obtain that expertise via collaborations with experts in various fields.

### **Design**

- Practical relationship between archives that deliver data and catalogs that enable exploratory querying.
- CVO has a strong orientation toward astrophysical data mining, differentiating it from those projects focused on a 'virtual sky' approach to VO.
- Database system that includes substantial multi-wavelength and multi-project content.
- CVO will link to other available distributed databases and archives.
- Multi-project multi-wavelength data model for querying and processing

### **Content**

- WFPC2 Associations (64,000 stacked WFPC2 images)
- ROSAT All Sky Survey fields (4,000 images in 3 X-ray bands)
- 2QZ Spectroscopic Quasar survey (20,000 1D spectra)
- WFPC2 Associations Source Catalog (25 million sources)
- RASS Bright Source Catalog (100,000 sources)
- 2QZ Source Catalog (20,000 sources)



<http://services.cadc-ccda.hia-ihc.nrc-cnrc.gc.ca/cvo>