IVOA NEWSLETTER

October 2012

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The International Virtual Observatory Alliance (IVOA) was formed in June 2002 with a mission to facilitate the international coordination and collaboration necessary for the development and deployment of the tools, systems and organizational structures necessary to enable the international utilization of astronomical archives as an integrated and interoperating virtual observatory. The IVOA now comprises 19 VO programs from Argentina, Armenia, Australia, Brazil, Canada, China, Europe, France, Germany, Hungary, India, Italy, Japan, Russia, Spain, Ukraine, the United Kingdom, and the United States and an inter-governmental organization (ESA). Membership is open to other national and international programs according to the IVOA Guidelines for Participation. You can read more about the IVOA and what we do at http://www.ivoa.net/pub/info/.

What is the VO?

The Virtual Observatory (VO) aims to provide a research environment that will open up new possibilities for scientific research based on data discovery, efficient data access, and interoperability. The vision is of global astronomy archives connected via the VO to form a multiwavelength digital sky that can be searched, visualized, and analyzed in new and innovative ways. VO projects worldwide working toward this vision are already providing science capabilities with new tools and services. This newsletter, aimed at astronomers, highlights VO tools and technologies for doing astronomy research, recent papers, and upcoming events.

IVOA NEWS

BRAVO VO School and Brazilian National Astronomy Meeting. VO activities will be prominent in Brazil in October with VO presentations at the Sociedade Astronômica Brasileira XXXVII Reunião Anual, and the Brazilian Virtual Observatory VO School. These events, to be held in the week before the October IVOA interoperability meeting in São Paulo, will highlight VO science, infrastructure and education and outreach activities. BRAVO has organized the VO School for South American students and post-docs to learn about and get hands-on experience with VO tools and services. VO scientists from US, European, and Indian Virtual Observatory projects have cooperated to make a joint program of tutorials and to help the participants use VO for their science.

VO APPLICATIONS AND IMPLEMENTATION HIGHLIGHTS

NASA HEASARC Xamin Catalog & Archive Interface has VO Inside

Virtual Observatory access is now becoming a standard feature of data archives. NASA's High Energy Astrophysics Science Archive Research Center's new Xamin catalog and archive interface has had the VO built into it from the ground up. Xamin's use of VO protocols allows Xamin users to query data at MAST, IRSA, CDS and many other astronomical institutions around the world — not just the HEASARC. Users can download catalog information and astronomical data using the cone, table, image and spectrum VO access protocols.
More Information: http://heasarc.gsfc.nasa.gov/

VOSpec version 6.5 - Photometry now in VOSpec!

The ESA-VO team is pleased to announce the release of VOSpec version 6.5. The new version accesses early photometry services from the NASA/IPAC Extragalactic Database (NED) and CDS VizieR. Spectra from Simple Spectral Access (SSAP) services can now be combined with photometric data from VizieR and NED databases to build combined Spectral Energy Distributions (SEDs) that fulfil new science cases. The following videos demonstrate the new capabilities: Photometry in VOSpec and Building SEDs.
More information: http://www.sciops.esa.int/index.php?project=SAT&page=vospec

VisIVO Science Gateway
The new product of the VisIVO family is a science gateway aimed at creating a working environment for analysis and visualization of astrophysical data. This product offers its services through a web portal that has been deployed in the SCIentific Gateway Based User Support (SCI-BUS) project, a European Commission funded project. This project is a web environment in which the scientist can design pipelines (workflow is the technological object that better implements the “pipeline” concept), share them, and seamlessly run them on clusters, service grids or desktop grids. There are several ready-to-use visualization workflows that allow the scientist to import data and build interactively customized 3D visualization and movies using VisIVO visualization tool that is embedded in the gateway.
More information: http://visivoportal.oact.inaf.it/

TAPHandle: Accessing multiple TAP services from your Browser
TAPHandle is a web application designed to mine multiple Table Access Protocol (TAP) resources from a simple browser. TAP services provide SQL-like access to astronomical tables and databases. TAP services accessed by TAPHandle are presented as one single browsable resource. This tool helps to explore tables by showing the columns available and enables users to formulate queries without typing code. A shopping cart service allows the user to download multiple resources of interest in one archive. The retrieved data files pass through a dynamic filter that binds data sets to appropriate applications (preview, SAMP clients) according to their content description and access format. The last release also enables browsing of huge TAP services such as Vizier.
More information: http://saada.unistra.fr/taphandle

Taverna looks at the sky
AstroTaverna is a plugin for the Taverna 2.4 workflow engine that packages VO web services and existing astronomical tools such as Sesame and STILTS for use as building blocks to construct workflows. Capabilities include searching the VO registry for services to query remote catalogue, image and spectral archives, efficient manipulation and display of table data and metadata, name resolution, sky coordinate conversions, and more. AstroTaverna is developed within the Wf4Ever project.
More information: http://wf4ever.github.com/astrotaverna/

AppLauncher and SAMP Become Transparent
AppLauncher is the new Jean-Marie Mariotti Center (JMMC) software to automatically start Simple Application Messaging Protocol (SAMP) applications 'on-demand'. SAMP applications use the SAMP protocol to interoperate and communicate with one another. With AppLauncher there is now no more need to have applications running to send them SAMP messages, AppLauncher manages the process for you. Users will also easily discover tools they do not yet know, through SAMP or with the provided Application Dock. AppLauncher is freely available on the JMMC website, and the technical group is eager to receive your feedback and include any new software in it.
More information: http://www.jmmc.fr/applauncher

SOME RECENT PAPERS ABOUT VO-ENABLED SCIENCE

Featured Paper

- Multiband Study of Radio Sources of the Rcr Catalogue with Virtual Observatory Tools
  Zhelenkova, O. P.; Soboleva, N. S.; Majorova, E. K.; Temirova, A. V.
  Baltic Astronomy, Vol. 21, p. 371-378
  We present early results of our multiband study of the RATAN Cold Revised (RCR) catalogue obtained from seven cycles of the ``Cold" survey carried with the RATAN-600 radio telescope at 7.6 cm in 1980--1999, at the declination of the SS 433 source. We used the 2MASS and LAS UKIDSS infrared surveys, the DSS-II and SDSS DR7 optical surveys, as well as the USNO-B1 and GSC-II catalogues, the VLSS, TXS, NVSS, FIRST and GB6 radio surveys to accumulate information about the sources. For radio sources that have no detectable optical candidate in optical or infrared catalogues, we additionally looked through images in several bands from the SDSS, LAS UKIDSS, DPOSS, 2MASS surveys and also used co-added frames in different bands. We reliably identified 76% of radio sources of the RCR catalogue. We used the ALADIN and SAOImage DS9 scripting capabilities, interoperability services of ALADIN and TOPCAT, and also other Virtual Observatory (VO) tools and resources, such as CASJobs, NED, Vizier, and WSA, for effective data access, visualization and analysis. Without VO tools it would have been problematic to perform our study.

Refereed Publications

- CLaSPS: A New Methodology for Knowledge Extraction from Complex Astronomical Data Sets
  R. D'Abrusco, G. Fabbiano, G. Djorgovski, C. Donalek, O. Laurino and G. Longo
  2012, ApJ, 755, 92

- TAPAS, a VO archive at the IRAM 30-m telescope
  Leon, Stephane; Espigares, Victor; Ruíz, José Enrique; Verdes-Montenegro, Lourdes; Mauersberger, Rainer; Brunswig, Walter; Kramer, Carsten; Santander-Vela, Juan de Dios; Wiesemeyer, Helmut.
  Experimental Astronomy, Volume 34, Issue 1, pp.65-88

- Science with the Vo: Spectroscopic Studies of Herbig Ae/Be Stars
  Baines, D.; Gonzalez, J.; Arviset, C.; Barbarisi, I.; Laruelo, A.; Leon, I.; Ortiz de Landaluce, I.; Osuna, P.; Rios, C.; Salgado, J.
  Baltic Astronomy, Vol. 21, p. 379-386

- UkrVO Joint Digitized Archive and Scientific Prospects
  Vavilova, I. B.; Pakuliak, L. K.; Protsyuk, Yu. I.; Shlyapnikov, A. A.; Savanevich, V. E.; Kondrashova, N. N.; Yatsenko, A. I.; Andruk, V. N.
  Baltic Astronomy, Vol. 21, p. 356-365

- Vamdc: the Infrastructure
  Le Sidaner, Pierre; Ryabchikova, Tatiana
  Baltic Astronomy, Vol. 21, p. 349-355

- Spectral Analysis via the Virtual Observatory: the Service TheoSSA
  Ringat, E.; Rauch, T.; Werner, K.
  Baltic Astronomy, Vol. 21, p. 341-347

- Cross Catalogue Matching with Virtual Observatory and Parametrization of Stars
  Malkov, O.; Dluzhnevskaya, O.; Karpov, S.; Kilpio, E.; Kniazev, A.; Mironov, A.; Sichevskij, S.
  Baltic Astronomy, Vol. 21, p. 319-330

- The New Version of the Binary Star Database (bdb)
  Kaygorodov, P.; Debray, B.; Kolesnikov, N.; Kovaleva, D.; Malkov, O.
  Baltic Astronomy, Vol. 21, p. 309-318

- Science Initiatives of the us Virtual Astronomical Observatory
  Hanisch, Robert J.
  Baltic Astronomy, Vol. 21, p. 301-308
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More Ways to Find VO-related Publications

- All ADS links mentioning the "virtual observatory" in the abstract
- All refereed publications mentioning the "virtual observatory" in the abstract

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VO CALENDAR

21-26 October 2012 - IVOA Interoperability Meeting
São Paulo, Brazil
The IVOA Interop Meetings are aimed at making significant progress in defining standards and sharing best practices in the development of the world wide Virtual Observatory initiatives.

4-8 November, 2012 Astronomical Data Analysis Software and Systems XXII
Champaign, Illinois, USA
The ADASS conference provides a forum for scientists and developers concerned with algorithms, software and software systems employed in the acquisition, reduction, analysis, and dissemination of astronomical data.

14 November, 2012 - VO Community Day - University of Michigan
Ann Arbor, Michigan, USA
During these “VO Days”, aimed at research astronomers, VO experts from the US Virtual Astronomical Observatory demonstrate new tools and services for data-intensive astronomy in the context of a range of science use cases and tutorials.

29 November, 2012 - VO Community Day - Space Telescope Science Institute
Baltimore, Maryland, USA
During these “VO Days”, aimed at research astronomers, VO experts from the US Virtual Astronomical Observatory (VAO) demonstrate new tools and services for data-intensive astronomy in the context of a range of science use cases and tutorials.

3-7 December, 2012 - VO Astronomical Applications Workshop, University of Calcutta, Kolkata, India
The workshop will introduce postgraduate and research students to the use of VO techniques in various astronomical applications.

4-6 December 2012 - Italian VO workshop, INAF Headquarters, Rome
The workshop will cover three topics: working with the Solar System and High-Energy communities to meet their VO needs, hands-on sessions for publishing data in the VO, and hands-on session on using VO-aware applications.

International Virtual Observatory Alliance

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