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IVOA NEWSLETTER

May 2011

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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, the United Kingdom, and the United States and inter-governmental organizations (ESA and ESO). 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

Argentina joins the IVOA

In February 2011, The IVOA Executive Committee approved Argentina's application to join the IVOA. With the addition of the Nuevo Observatory Virtual Argentino (NOVA), the total number of IVOA member organizations worldwide has now reached 19, covering four continents and many time zones. Argentina's membership, which follows that of Brazil in September 2009, demonstrates the growing interest in VO in South America. Informal expressions of interest have also been received recently by other countries in South America, Europe, and Africa. More information on IVOA Members and Membership can be found on the IVOA Members page and the document describing Guidelines for Participation.

VO APPLICATIONS HIGHLIGHTS

VODance

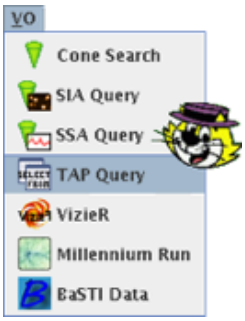
VODance is a tool for rapid deployment of Virtual Observatory compliant services. This tool helps users to publish their datasets to the Virtual Observatory without dealing with the technical details, and without having to move their data. Publishing is as easy as configuring a database connection to INAF IA2 (Italian Astronomical Archive Center) pointing to the data, and providing a standardized metadata description. Virtual Observatory services are then created, providing access to the data. VODance has been successfully used to publish image and tabular data from MySQL and Oracle database management systems.

Publish with VO-Dance

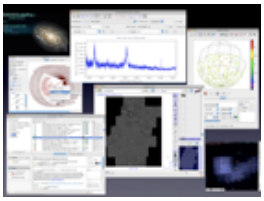
More information: http://ia2.oats.inaf.it/

TOPCAT talks TAP

TOPCAT is a powerful and easy-to-use GUI table analysis tool offering plotting, matching,



selection, and many other facilities for exploration of large or small catalogues. It has extensive capabilities for accessing remote data -- from direct access to special purpose services such as VizieR and the Millennium Simulation to positional searches and positional crossmatching with remote catalogue, image and spectral data sets -- all powered by the VO-enabled services which many astronomical archives offer. The latest version, 3.8, adds support for the recently standardized Table Access Protocol (TAP) which allows SQL-like queries from a uniform interface to remote surveys and other databases, opening the door to much more flexible data mining than position-based selections, bringing the power of SQL-based queries to many more data sets.
More information: http://www.starlink.ac.uk/topcat/



EURO-VO scientific tutorials
In the past three years, as a result of the three VO Schools organised by the EURO-VO, a number of science tutorials using VO tools and services have been made available online. These science cases include examples from both galactic and extragalactic astronomy and explore VO capabilities such as accessing images, spectra and catalogues of individual objects or lists of objects simultaneously, cross-correlating large catalogues, combining images coming from different observatories/instruments/wavelengths, analysing spectral lines, and more. The tutorials are being kept up-to-date to reflect the latest versions of the various tools.
More information: http://www.euro-vo.org/pub/fc/workflows.html.

SOME RECENT PAPERS ABOUT VO-ENABLED SCIENCE

Featured Paper

A search for new hot subdwarf stars by means of Virtual Observatory tools
Oreiro et al., 2011, A&A, 530, A2
Hot subdwarf stars are faint, blue objects whose origin is still uncertain. Increasing the number of detections is crucial to undertake statistical studies that could shed light on this question. This work describes a strategy to find new, uncatalogued hot subdwarfs making use of Virtual Observatory tools. More precisely, VO applications were used to collect photometry from very large surveys, namely GALEX and 2MASS, in order to select adequate subdwarf candidates, to build and fit the spectral energy distribution of these candidates and estimate their effective temperature, Teff, before heading to the telescope for spectroscopic confirmation. The high success rate (the contamination factor is of only 13%) demonstrates the validity of the methodology and its application to the entire sky will be presented in a forthcoming work.

Refereed Publications

- A proper motion study of the Lupus clouds using VO tools
  Lopez Marti B., Jimenez-Esteban F., Solano E., 2011, A&A, 529, 108
- A search for new hot subdwarf stars by means of Virtual Observatory tools
  Oreiro R., Rodriguez-Lopez C., Solano E., Ulla A., Ostensen R., Garcia-Torres M., 2011, A&A, 530, A2
- Weeds: a CLASS extension for the analysis of millimeter and sub-millimeter spectral surveys
  Maret S., Hily-Blant P., Pety J., Bardeau S., Reynier E., 2011, A&A, 526, 47
- Dynamical versus Stellar Masses of Ultracompact Dwarf Galaxies in the Fornax Cluster
  Chilingarian I., Mieske S., Hilker M., Infante L., 2011, MNRAS, 412, 1627
- Virtual Observatory based identification of AX J194939+2631 as a new cataclysmic variable
  Zolotukhin I., Chilingarian I., 2011, A&A, 526, 84
- Sample of LMXBs in the Galactic bulge. I. Optical and near-infrared constraints from the Virtual Observatory
  Zolotukhin I., Revnivtsev M., 2011, MNRAS, 411, 620
- Identification of blue high proper motion objects in Tycho-2 and 2MASS catalogues using Virtual Observatory tools
  Jimenez-Esteban F.M., Caballero J.A., Solano E., 2011, A&A, 525, 29
- New Optical Reddening Maps of the Large and Small Magellanic Clouds
  Haschke R., Grebel E.K., Duffau S., 2011, AJ, 141, 158
- Early Science Result from the Japanese Virtual Observatory: AGN and GalaxyClustering at z = 0.3 to 3.0
  Y. Shirasaki, M. Tanaka, M. Ohishi, Y. Mizumoto, N. Yasuda, and T. Takata, PASJ, 2011, 63, 469

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

May 16-20, 2011 - IVOA Interoperability Meeting
Naples, Italy
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.

July 5, 2011 -Science with the Virtual Observatory
St. Petersburg, Russia
A one-day session of JENAM-2011: European Week of Astronomy and Space Science (July 4-8, 2011). Topics will include: Modern astronomical data resources, VO tools/ instruments/data mining/data analysis, Results of VO scientific applications, Interaction between VO community and other astronomers, Future of VO. Preserving and digitizing legacy data.

September 19-23, 2011 - IAU Symposium 285: New Horizons in Time Domain Astronomy
Oxford, United Kingdom
This symposium will cover all aspects of time-domain astronomy, interpreting its various forms to obtain a detailed understanding of the physics involved. Focus sessions include one on using the VO to study the time domain.

17-21 October, 2011 - IVOA Interoperability Meeting
Pune, India
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.

International Virtual Observatory Alliance

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