



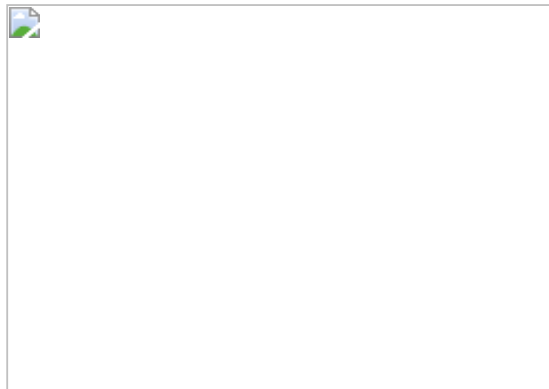
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IVOA NEWSLETTER

May 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

This issue is dedicated to the memory of Dr. Dave De Young, one of the pioneers of the Virtual Observatory movement. Dave, who was an astronomer at NOAO from 1980 until his retirement in September 2011, was Project Scientist of the National Virtual Observatory (2002-2009) and of the Virtual Astronomical Observatory (2009-2011). He was a great source of strength and inspiration for the IVOA, of which he was the Vice-Chair (2006-2007) and Chair (2007-2008). Through his role as the Chair of the Standing Committee on Science Priorities (2008-2011) Dave did much to target VO efforts towards applications to scientific issues, rather than just technology development. Dave's presence will be greatly missed at IVOA meetings, during the sessions, as well as in the evenings where he dazzled everyone with his knowledge, wisdom and personality. - *Ajit Kembhavi (IVOA Chair)*

VO APPLICATIONS HIGHLIGHTS



US VAO Data Discovery Portal

Find datasets from thousands of astronomical collections known to the VO and over wide areas of the sky. This includes important collections from archives around the world. Feedback on your experience with the tool is appreciated -- please send your comments, suggestions, and questions to the VAO Help Desk.

More information: <http://www.usvao.org/tools>



VOSA (VO Sed Analyzer) 3.0

VOSA is a tool developed by the Spanish VO to determine physical parameters (e.g. temperatures, gravities, masses, ages) of astronomical objects through the comparison of photometry gathered from VO services, with collections of theoretical models. VOSA 3.0 represents a profound change with respect to previous versions: new VO services, new theoretical collections, and new functionalities such as template fitting and estimation of the extinction, making VOSA a powerful tool in many areas of research astrophysics. VOSA can also be used as a platform to develop new specific applications for different astrophysical problems benefiting from a common methodological base (e.g., Sanchez-Janssen 2011IAUS..277..230S).

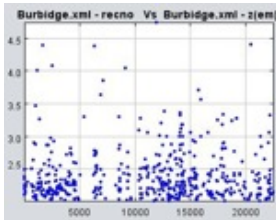
More information: <http://svo.cab.inta-csic.es/theory/vosa>



US VAO Cross-Comparison Tool

Perform fast positional cross-matches between an input table of up to 1 million sources and common astronomical source catalogs, such as 2MASS, SDSS DR7 and USNO-B. Feedback on your experience with the tool is appreciated -- please send your comments, suggestions, and questions to the VAO Help Desk.

More information: <http://www.usvao.org/tools>



VOPlot v1.8 Beta

VOPlot v1.8Beta includes many enhancements and bug fixes. To name a few v1.8Beta supports multi-grid plots for 2D Scatter-Plot which allows the user to have multiple plots having grid size from 1x1 to 3x3 in a single window. Paginated view is added to see data in tabular format which allows user to navigate systematically. Provision to label Lat/Long lines is also added. Users can now plot a cumulative histogram for all histogram types. VOPlot 1.8Beta shows the metadata of a FITS file instantaneously while the actual loading happens in background. VOPlot v1.8Beta also provides better handling of "faulty data" while parsing an ASCII file.

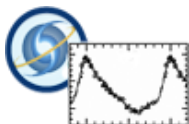
More information: <http://vo.iucaa.ernet.in/~voi/voplot.htm>



CDS XMatch Service

CDS Xmatch is a new service for efficient positional cross-matching of very large catalogues. Input catalogues include all (~10000) Vizier tables, a tabular view of the Simbad database, plus GALEX, UKIDSS DR5 LAS, SDSS DR8, and user-uploaded tables. The service has been designed for large jobs; for example, the entire SDSS DR8 can be cross-matched with the 2MASS point source catalogue in less than 17 minutes, resulting in $\sim 55 \times 10^6$ cross-matched associations with separations $< 2.5''$, and producing a ~ 15 GB output file.

More information: <http://cdsxmatch.u-strasbg.fr/xmatch>



US VAO Time Series Search Tool

Discover time-series data from the Harvard Time Series Center, Catalina Real-time Transient Survey, and the NASA Exoplanet archive - and analyze them with the NASA Exoplanet Archive periodogram application. Feedback on your experience with the tool is appreciated -- please send your comments, suggestions, and questions to the VAO Help Desk.

More information: <http://www.usvao.org/tools>

Featured Paper

- **Identification of red high proper-motion objects in Tycho-2 and 2MASS catalogues using Virtual Observatory tools**

Jiménez-Esteban, F. M.; Caballero, J. A.; Dorda, R.; Miles-Páez, P. A.; Solano, E.
Astronomy & Astrophysics, Volume 539, id.A86

With available Virtual Observatory tools, we looked for new M dwarfs in the solar neighbourhood and M giants with high tangential velocities. From an all-sky cross-match between the optical Tycho-2 and the near-infrared 2MASS catalogues, we selected objects with proper motions $\mu > 50$ mas yr⁻¹ and very red VT - Ks colours. For the most interesting targets, we collected multi-wavelength photometry, constructed spectral energy distributions, estimated effective temperatures and surface gravities from fits to atmospheric models, performed time-series analysis of ASAS V-band light curves, and assigned spectral types from low-resolution spectroscopy obtained with CAFOS at the 2.2 m Calar Alto telescope. We got a sample of 59 bright red high proper-motion objects, including fifty red giants, four red dwarfs, and five objects reported in this work for the first time. The five new stars have magnitudes VT \approx 10.8-11.3 mag, reduced proper motions midway between known dwarfs and giants, near-infrared colours typical of giants, and effective temperatures Teff \approx 2900-3400 K. From our time-series analysis, we discovered a long secondary period in Ruber 4 and an extremely long primary period in Ruber 6. With the CAFOS spectra, we confirmed the red giant nature of Ruber 7 and 8, the last of which seems to be one of the brightest metal-poor M giants ever identified.

Refereed Publications

- Optical Spectroscopy with the Technology of Virtual Observatory
Škoda, P. *Baltic Astronomy*, Vol. 20, p. 531-53.9
- New ultracool subdwarfs identified in large-scale surveys using Virtual Observatory tools: Part I: UKIDSS LAS DR5 vs SDSS DR7
N. Lodieu, M. Espinoza Contreras, M. R. Zapatero Osorio, E. Solano, M. Aberasturi, E. L. Martín. Accepted by A&A.
- A universal ultraviolet-optical colour-colour-magnitude relation of galaxies
Chilingarian, I., Zolotukhin, I., 2012, *MNRAS*, 419, 1727
- Astrometrics of galaxies and quasars: a new general method for photometric redshifts estimation
Laurino, O., D'Abusco, R., Longo, G., Riccio, G., 2011, *MNRAS*, 418, 2165
- WISE/2MASS-SDSS brown dwarfs candidates using Virtual Observatory tools
Aberasturi, M., Solano, E., Martín, E. L., *A&A*, 2011, 534, L7
- SearchCal: a Virtual Observatory tool for searching calibrators in optical long-baseline interferometry. II. The faint-object case
Bonneau, D., Delfosse, X., Mourard, D., Lafrasse, S., Mella, G., Cetre, S., Clausse, J.-M., Zins, G., *A&A*, 2011, 535, A53
- TESELA: a new Virtual Observatory tool to determine blank fields for astronomical observations
Cardiel, N., Jiménez-Esteban, F. M., Alacid, J. M., Solano, E., Aberasturi, M., 2011, *MNRAS*, 417, 3061
- The Parkes Observatory Pulsar Data Archive
Hobbs, G.; Miller, D.; Manchester, R. N.; Dempsey, J.; Chapman, J. M.; Khoo, J.; Applegate, J.; Bailes, M.; Bhat, N. D. R.; Bridle, R.; and 32 coauthors. *PASA*, Volume 28, Issue 3, pp. 202-214

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

VO CALENDAR

21-25 May 2012 - IVOA Interoperability Meeting

Urbana, IL, USA

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.

9-11 July, 2012 -.Astronomy 4

Heidelberg, Germany

The Internet provides an incredible platform for astronomers and astrophysical research. .Astronomy (pronounced 'dot-astronomy') aims to bring together an international community of astronomy researchers, developers, educators and communicators to showcase and build upon these many web-based projects, from outreach and education to research tools and data analysis.

10-13 September, 2012 - AstroInformatics 2012

Redmond, WA

Astronomy, like many other fields, is becoming exponentially data-rich, and the tasks of data management, data exploration, and knowledge discovery become central to our research enterprise, bringing along many technical and methodological challenges. Information technology also provides the stage where we collaborate and interact, and publish, preserve, and disseminate knowledge. The general philosophy behind the conference is to be future-oriented, and essentially define the emerging discipline of AstroInformatics.

23-28 September, 2012 -Session on "e-Infrastructures and the VO for Planetary Sciences" at EPSC 2012

Madrid, Spain

A VO session entitled "e-infrastructures and the VO for planetary sciences" will be held at the European Planetary Science Congress 2012 (IFEMA-Feria de Madrid 23-28 September) as session MT2 in the group "Missions and Techniques". Call for papers abstract deadline is 23 May 2012.

International Virtual Observatory Alliance

www.ivoa.net

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