

ASTRONOMICAL WEB SERVICES OF UKRVO

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Ukraine Virtual Observatory (UkrVO) has been a member of the International Virtual Observatory Alliance (IVOA) since 2011. The virtual observatory (VO) is not a magic solution to all problems of data storing and processing, but it provides us standards for building infrastructure of astronomical data centre. Astronomical databases facilitate data mining and provide users an easy access to observation metadata, images within celestial sphere and results of image processing. Astronomical web services (AWS) of UkrVO provide users handy data selection from a large astronomical catalogues for a relatively small region of interest in the sky. Examples of the AWS usage are given.

Ground-based and space telescopes have produced large volume of data over entire electromagnetic spectrum. In 2010, the Executive Committee of IVOA endorsed a note describing technical architecture to deal with all accumulated data resources. Interoperability of computer systems is one of the main concepts behind the technical architecture to share and use astronomical data and metadata. The IVOA technical architecture consists of three main layers, namely user layer, VO core layer, resource layer. The VO core as the middle layer provides quick and easy access to the resources wherever they are located. The AWS allow users to obtain access to the resources, distributed across five continents, thanks to the interoperability between different astronomical archives and data centers. Simple cone search is one of many data access protocols, which provides the interoperability.

The AWS of UkrVO have successfully passed 30 regular checks out of 36 since November 2012. Most failures were caused by communication errors between servers in Ukraine and the USA.

The UkrVO image servers in Mykolaiv and Kyiv allow the user to get access to databases of observations, conducted with photo plates and CCD, via a web browser or a desktop application by using different graphical user interfaces.