

Date: Mon, 18 Jul 2005 14:57:54 +0500 (AMST)  
From: Areg Mickaelian

Subject: ArVO status

## **The Armenian Virtual Observatory (ArVO)**

ArVO has being created originally to utilize the Digitized First Byurakan Survey (DFBS), as it is the largest low-dispersion spectroscopic database.

ArVO is a project of the Byurakan Astrophysical Observatory (BAO) aimed at construction of a modern system for data archiving, extraction, acquisition, reduction, use and publication. ArVO is based on the Digitized First Byurakan Survey (DFBS) and is the Armenian contribution to the International Virtual Observatories Alliance (IVOA). One of the ArVO's main tasks is to create and utilize a global Spectroscopic Virtual Observatory, which will combine data from DFBS and other low-dispersion spectroscopic databases, as well as provide the first understanding on the nature of any object up to  $B=18m$ .

ArVO's main goal is to create an interoperability data system for Armenian astronomy based on the Armenian and world astronomy resources and according to IVOA standards. At the beginning, it is based on the Digitized First Byurakan Survey (DFBS), and will provide quick access to this unique spectroscopic archive of some 40,000,000 low-dispersion spectra. On the other hand, ArVO will give a quick access to the Byurakan 2.6m and other telescopes observations.

### **The Armenian astronomical databases:**

- Digitized First Byurakan Survey - DFBS (Markarian survey)
- Digitized Second Byurakan Survey - DSBS
- Byurakan Observatory photographic archive (~20,000 plates)
- 2.6m telescope data from ByuFOSC-2 and SCORPIO focal reducers (multiband imaging and spectroscopic modes), and VAGR multi-pupil fiber spectrograph

### **ArVO is being organized in the following way:**

- Preparation of the Armenian astronomical databases (collection of information about all Armenian astronomical data resources, their classification and registration in the registries of the WFPDB and other VO projects)
- Digitization of the Armenian astronomical plate archive and construction of an electronic plate library, containing scans of plates
- Setting an online access for 2.6m observations (automatic 1-year delay access for special programs)
- Preparing the Armenian metadata system
- Mirroring of world principal databases and construction of special collection of links to useful astronomical resources
- Organization of ArVO in the AVOs appropriate format
- Utilization of AVO standards in ArVO: ADQL, VOTab, VOPlot, SIA and SSA
- Creation of low-dispersion spectroscopic database: spectroscopic VO
- Free access for the astronomical community
- Integration in the international AVOs

ArVO includes also some science development, as it is the actual goal of AVOs. It is the development

of an automatic identification procedure for X-ray, IR and radio sources using the low-dispersion spectra and all other available databases; optical identification of ~100,000 X-ray, IR & radio sources; development of an automatic search procedure for modeled objects; automatic search new bright AGN in DFBS/DSBS.

**ArVO team in the Byurakan Observatory:**

Project manager: A.M. Mickaelian

Project scientist: T.Yu. Magakian

Team members: L.A. Sargsyan, L.K. Erastova, P.K. Sinamian

In frame of the ArVO, BAO collaborates with the Institute of Information Technologies (IIT) of the Armenian National Academy of Sciences to develop software for ArVO corresponding to the IVOA standards.

An organizational meeting on ArVO affairs is planned for August 10.

**ArVO web page is available at <http://www.aras.am/arvo.htm>**