

# Interlinking between IBVS and WFPDB

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## Abstract

We describe a pilot project for creating links between databases (Wide-Field Plate Database, WFPDB) and electronic journals (Information Bulletin on Variable Stars, IBVS). The project aims to create closer links between scientific papers and the data they are based upon. The merits of a paper can be evaluated better (both before and after publication) if the data used is accessible, which in turn, gives a possibility of re-use - one of the goals of the Virtual Observatory.

## Introduction

The observational data archiving in astronomy is well established for large (mainly space-born) projects. Archives can be easily built for Big Science (e.g. MAST at STScI, with literature links described by Padovani, 2002). For ESO data a database linking publications and observations has been built (Delmotte, 2005). (URL: <http://archive.eso.org/wdb/wdb/eso/publications/form> .) Accomazzi et al. (2004) describe possible standards to refer to data stored in archives. Another possibility for data archiving is given by the journals in which the research paper, based on the given dataset, is published. Data tables associated to the A&A papers are being archived at CDS. IBVS archives data tables along with papers (Holl, 2004b). The journal Nature requires authors to make data available to readers on request. Availability (and possible restrictions) should be stated. (See Nature publication policies at <http://www.nature.com/nature/submit/policies/index.html#6> .) Archival store and retrieval of research papers and their data, within the Open Archives Initiative framework is discussed by Harnad (2003).

## Information Bulletin on Variable Stars

IBVS is a small journal specialised in the field of variable star research. The journal is published by Konkoly Observatory, on behalf of Commissions 27 and 42 of the IAU. In 1994 IBVS appeared on the WWW, and since then the archive issues have been electronically available too. IBVS offers publication of electronic-only auxiliary material (tables, data files, figures), while the papers are still printed as well. (URL: <http://www.konkoly.hu/IBVS/IBVS.html> .)

Efforts are made to make available auxiliary material belonging to papers published before 1994. Files available in electronic form at the Commission 27 Archives were retrieved and put on-line.

The electronic IBVS will offer in the future database-like features (see Holl, 2004a).

## The Wide-Field Plate Database

The WFPDB (Tsvetkov et al., 1994) is a database storing meta-data on wide-field ( $> \sim 1$  deg) photographic observations existing all over the world. Up to now in the WFPDB the information for 414 wide-field plate archives (with more than 2 200 000 plates) is stored. Apart from this the detailed information for almost 500 000 plates is already included in the WFPDB too. (URL: <http://www.skyarchive.org/> .)

Search and sampling from the WFPDB is possible by equatorial coordinates and observation time (UT),

as well as by instrument type and aperture, plate scale and size, object/field designation, method of observation, emulsion, filter, exposure time. Data retrieval for the plate quality and availability, notes, observer and plate digitalisation (if exists) is also possible. All-sky distribution of the wide-field plates included in the WFPDB is daily calculated at [http://www.skyarchive.org/news\\_updates.html](http://www.skyarchive.org/news_updates.html). Since August 1997 an on-line search in the WFPDB has been possible via the VizieR catalogue browser in CDS Strasbourg at <http://vizier.u-strasbg.fr/cats/VI.htx> - catalogue number VI/90. Since November 2001 a new on-line search especially developed in the Sofia Sky Archive Data Center (SSADC) and dedicated to the WFPDB tasks has been available at address <http://www.skyarchive.org/search>.

The WFPDB version installed in the SSADC also provides on-line access to digitized preview plate images (with low resolution in order to ensure an availability of the image for a rough evaluation). For the real (with sufficient resolution) plate scans a special query has to be done if such scans exist. Possibilities for plate digitization in the SSADC are given through the PDS 1010Plus Perkin Elmer Microdensitometer donated by the ESO and equipped with a cooling system and temperature control, as well as with the Epson Expression 1640 XL flatbed scanner donated by the Alexander von Humboldt Foundation.

### Links between the WFPDB and IBVS

IBVS published papers based on photographic plate material. As the WFPDB contains meta-data on most of the plates in question, we started a pilot project to explore possibilities of interlinking the electronic IBVS with the WFPDB, having in mind that if the primary data used is accessible, it gives a possibility of re-use - one of the goals of the Virtual Observatory.

This project was facilitated by the fact that we scanned selected plates from the Konkoly Observatory plate collection using the UMAX flatbed scanner (at disposal in the Konkoly Observatory) with 600 dpi resolution as preview plate images and with 1600 dpi as real plate scans. The list of these plates is given in Table 1. The WFPDB software were modified, and plate details pages became addressable (i.e. links can be created to these pages at other servers). On IBVS side, auxiliary files (tables) were created for some papers with links to the WFPDB entries of the plate material identified in the database. On WFPDB side a possibility of adding publication information (if available) to the database is investigated. With bibliographic information the use of BIBCODE designators would conform to astronomy standards and enable linking to ADS.

In the future WFPDB plate detail pages could contain links to plate preview and/or full scan pages at scanned plate archive sites. We recommend that authors should supply a list of plate identifiers to the editors of IBVS when submitting a paper. We solicit help from those who have published papers in any journal using astronomical plates, that if they could locate lists of plates used for a given paper, send this information to the WFPDB (or IBVS, in case the paper was published in IBVS).

An example for the IBVS auxiliary table can be accessed at <http://www.konkoly.hu/cgi-bin/IBVSetable?1456-t3.tex>.

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**Table 1.**

Real Scan WFPDB Identifier	Preview Scan WFPDB Identifier	IBVS Number
KON060 005560 _1	KON060 005560 _P	1345
KON060 006615 _1	KON060 006615 _P	1345
KON060 006611 _1	KON060 006611 _P	1345
KON060 007650 _1	KON060 007650 _P	1456
KON060 006474 _1	KON060 006474 _P	1456
KON060 006475 _1	KON060 006475 _P	1456

KON060	007730	_1	KON060	007730	_P	1456
KON060	008188	_1	KON060	008188	_P	1696
KON060	008189	_1	KON060	008189	_P	1696
KON060	008190	_1	KON060	008190	_P	1696
KON060	008191	_1	KON060	008191	_P	1696
KON060	008182	_1	KON060	008182	_P	1696
KON060	008183	_1	KON060	008183	_P	1696
KON060	008184	_1	KON060	008184	_P	1696
KON060	008185	_1	KON060	008185	_P	1696
KON060	008195	_1	KON060	008195	_P	1696
KON060	008196	_1	KON060	008196	_P	1696
KON060	008197	_1	KON060	008197	_P	1696
KON060	008198	_1	KON060	008198	_P	1696
KON060	008199	_1	KON060	008199	_P	1696
KON060	008200	_1	KON060	008200	_P	1696
KON060	008221	_1	KON060	008221	_P	1696

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