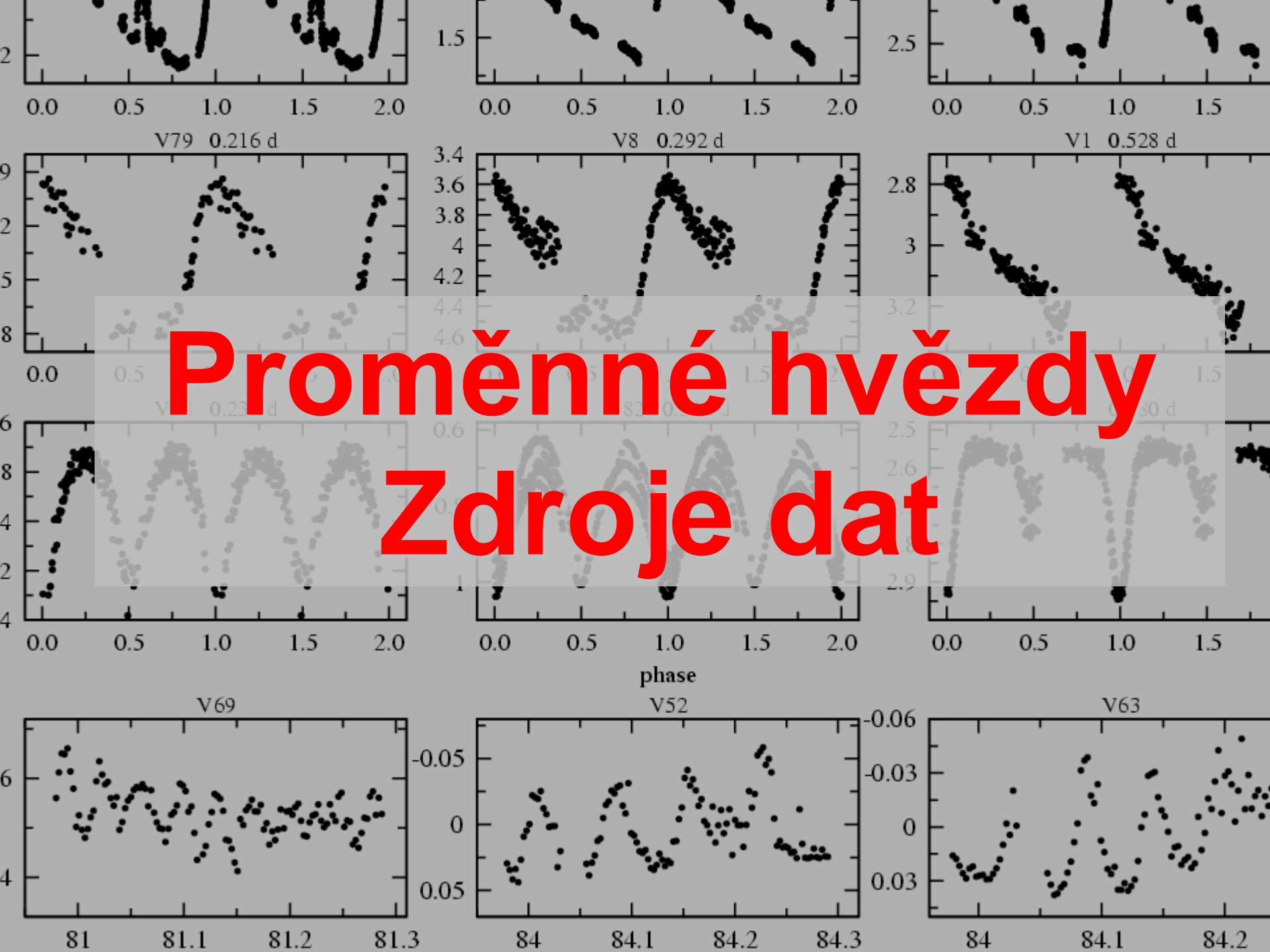


Proměnné hvězdy

Zdroje dat



Astronomie – věda založená na datech a jejich analýze

Zdroje dat:

- ❖ vlastní pozorování (fotometrická, spektroskopická, interferometrická, polarimetrická aj.) – pozorovatelů (alespoň těch profesionálních) ubývá
důvody – pohodlnost, robotické dalekohledy, přehlídky
- ❖ data z publikací, literatury
- ❖ archívy přehlídkových projektů – minulých i aktivních

= > astronom musí umět:

1. hledat data v literatuře a archívech
2. získaná data korektně zpracovat!



Předmět našeho studia – změny jasnosti proměnných hvězd (světelné křivky)
u periodicky proměnných – světelnou křivku nahrazuje fázová křivka

Data z literatury, publikací

zdroje:

- ADS

<https://ui.adsabs.harvard.edu/>

- SIMBAD

<http://simbad.u-strasbg.fr/simbad/>

- WoS

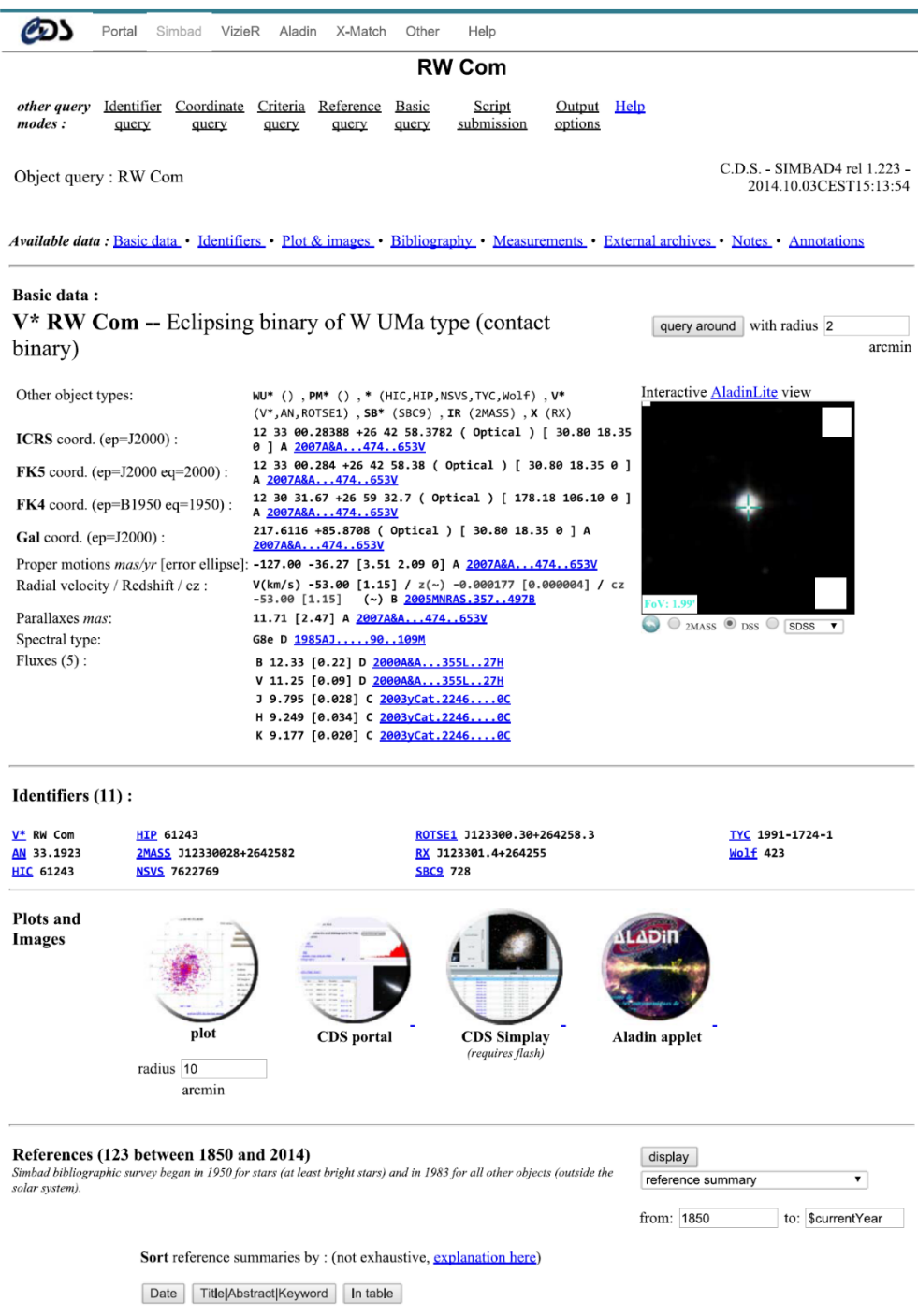
<http://apps.webofknowledge.com/>

- CDS

<https://cds.u-strasbg.fr/> aj.

poznámky:

1. starší a azbukou psané články nemusí být dostupné v elektronické podobě!
2. čtěte pozorně - zvyklosti, jak uvádět časy, hvězdné velikosti, chyby, fotometrické filtry aj. se s časem mění!
3. zkontrolujte, zda byla aplikována heliocentrická (event. jiná) korekce a pokud ano, jak byla spočtena!



RW Com

other query Identifier Coordinate Criteria Reference Basic Script Output Help
modes : query query query query query submission options

Object query : RW Com C.D.S. - SIMBAD4 rel 1.223 - 2014.10.03CEST15:13:54

Available data : [Basic data](#) • [Identifiers](#) • [Plot & images](#) • [Bibliography](#) • [Measurements](#) • [External archives](#) • [Notes](#) • [Annotations](#)

Basic data :
V* RW Com -- Eclipsing binary of W UMa type (contact binary) query around with radius 2 arcmin

Other object types: WU* () , PM* () , * (HIC, HIP, NSVS, TYC, Wolf) , V* (V*, AN, ROTSE1) , SB* (SBC9) , IR (2MASS) , X (RX)

ICRS coord. (ep=J2000) : 12 33 00.28388 +26 42 58.3782 (Optical) [30.80 18.35 0] A [2007A&A...474..653V](#)

FK5 coord. (ep=J2000 eq=2000) : 12 33 00.284 +26 42 58.38 (Optical) [30.80 18.35 0] A [2007A&A...474..653V](#)

FK4 coord. (ep=B1950 eq=1950) : 12 30 31.67 +26 59 32.7 (Optical) [178.18 106.10 0] A [2007A&A...474..653V](#)

Gal coord. (ep=J2000) : 217.6116 +85.8708 (Optical) [30.80 18.35 0] A [2007A&A...474..653V](#)

Proper motions *mas/yr* [error ellipse]: -127.00 -36.27 [3.51 2.09 0] A [2007A&A...474..653V](#)

Radial velocity / Redshift / cz : V(km/s) -53.00 [1.15] / z(~) -0.000177 [0.000004] / cz -53.00 [1.15] (~) B [2005MNRAS...357..497B](#)

Parallax *mas*: 11.71 [2.47] A [2007A&A...474..653V](#)

Spectral type: G8e D [1985AJ....90..109M](#)

Fluxes (5) : B 12.33 [0.22] D [2000A&A...355L..27H](#)
V 11.25 [0.09] D [2000A&A...355L..27H](#)
J 9.795 [0.028] C [2003yCat.2246....0C](#)
H 9.249 [0.034] C [2003yCat.2246....0C](#)
K 9.177 [0.020] C [2003yCat.2246....0C](#)

Identifiers (11) :

V* RW Com	HIP 61243	ROTSE1 J123300.30+264258.3	TYC 1991-1724-1
AN 33.1923	2MASS J12330028+2642582	RX J123301.4+264255	Wolf 423
HIC 61243	NSVS 7622769	SBC9 728	

Plots and Images

radius 10 arcmin

plot CDS portal CDS Simplay (requires flash) Aladin applet

References (123 between 1850 and 2014)
Simbad bibliographic survey began in 1950 for stars (at least bright stars) and in 1983 for all other objects (outside the solar system).

display
reference summary

from: 1850 to: \$currentYear

Sort reference summaries by : (not exhaustive, [explanation here](#))

Date Title|Abstract|Keyword In table



SIMBAD Astronomical Database

Queries

[basic search](#)

[by identifier](#)

[by coordinates](#)

[by criteria](#)

[reference query](#)

[scripts](#)

[TAP queries](#)

[options](#)

[Display all user annotations](#)

Documentation

[User's guide](#)

[Query by urls](#)

[Nomenclature Dictionary](#)

[Object types](#)

[List of journals](#)

[Measurement description](#)

[Spectral type coding](#)

[User annotations documentation](#)

Information

[Presentation](#)

[Acknowledgment](#)

Release:

SIMBAD4 1.223 - 15-May-2014

Content

The SIMBAD astronomical database provides basic data, cross-identifications, bibliography and measurements for astronomical objects outside the solar system.

SIMBAD can be queried by object name, coordinates and various criteria. Lists of objects and scripts can be submitted.

Links to some other on-line services are also provided.

Statistics

Simbad contains on 2014.11.30

7,711,243

objects

18,992,258

identifiers

298,023

bibliographic references

11,024,409

citations of objects in papers

Acknowledgment

If the Simbad database was helpful for your research work, the following acknowledgment would be appreciated:

This research has made use of the SIMBAD database, operated at CDS, Strasbourg, France

[2000.A&AS.143.9](#). "The SIMBAD astronomical database". Wenger et al.

Basic search

identifier, coordinates (radius=10 arcmin), or bibcode

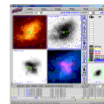
[help](#)

[Install the Simbad basic search in your tool bar](#)

Aladin Sky Atlas

New: Aladin version 8 - March 2014 - *The new release of Aladin* ([more](#)) ...

Description [\(en français\)](#) Aladin is an interactive software sky atlas allowing the user to visualize digitized astronomical images, superimpose entries from astronomical catalogues or databases, and interactively access related data and information from the Simbad database, the Vizier service and other archives for all known sources in the field ([see available data](#)). Created in 1999, Aladin has become a widely-used VO tool capable of addressing challenges such as locating data of interest, accessing and exploring distributed datasets, visualizing multi-wavelength data. Compliance with existing or emerging VO standards, interconnection with other visualisation or analysis tools, ability to easily compare heterogeneous data are key topics allowing Aladin to be a powerful data exploration and integration tool as well as a science enabler. The Aladin sky atlas is available in four modes: a Java Standalone application, a Java applet, a Aladin Lite javascript and a simple previewer.



Download
Aladin
on your
machine



Launch
Aladin
applet
([En](#), [US](#), [De](#), [It](#), [UK](#), [Cn](#)*)



Use
Aladin Lite



Jump to
[simple](#)
[previewer](#)

Documentation [The Aladin FAQ](#)
[The Aladin user manual](#) ([En](#) - [Fr](#) - [It](#) - corresponds to version 0)
[Available Hierarchical Progressive Surveys](#) ([HiPS doc](#))
Provide [my data in Aladin](#) ([help form](#))
[The Aladin science case tutorial](#)
[The Aladin filter manual](#)
[The script reference manual](#)

Demonstration [What's new?](#) - a Flash video (40MB)
[Become a beta tester](#) - exercices for discovering/testing Aladin
[Object gallery](#) - 2 million Simbad object thumbnails created by Aladin in batch mode
[Amateur's corner](#) - movie for starting (48MB)

Mailing list **Subscribe:** just send this e-mail to sympa@unistra.fr
[Archive access](#)

Plugins Aladin can be extended by your [own java plugins](#).
See the [Aladin plugin repository](#).

Copyright UDS/CNRS - distributed under GPL v3 licence
- Portions of the code (outreach developments) have been developed in the framework of the EuroVO AIDA project (2008-2010).
- Portions of the code (FoV advanced integration, Fits cubes, Xmatcher by ellipses, Plastic integration) have been developed in the framework of the EuroVO VOTech project (2005-2008).
- Portions of the code (contours, filters, metadataTree) have been developed in the framework of the Astrophysical Virtual Observatory (AVO), an EC RTD project 2002-2004
- The RGB feature has been developed in the framework of the IDHA project (ACI GRID of the French Ministère de la Recherche).

Acknowledgment If the Aladin sky atlas was helpful for your research work, the following citation would be appreciated: [2000A&AS.143..33B](#).

(*) *The Aladin Java applet can be started from the CDS (Strasbourg - France), from the CFA (Harvard - USA), from the ADAC (Tokyo - Japan), from the ICAA (Pune - India), from the UKADC (Cambridge - UK), or from the CADC (Victoria - Canada).*



CDS portal

<http://cdsportal.u-strasbg.fr/>

The screenshot displays the CDS portal interface. At the top, there is a navigation bar with the CDS logo and menu items: Portal, Simbad, Vizier, Aladin, X-Match, Other, and Help. A search bar labeled 'Search CDS Web pages' is also present. Below the navigation bar, the main header features the CDS logo and the text 'Centre de Données astronomiques de Strasbourg' and 'Strasbourg astronomical Data Center'. The main content area is divided into several sections:

- Service Icons:** Four icons representing different services: 'Entry point to all services' (CDS Portal), 'Object database' (Simbad), 'Catalogue database' (VizieR), and 'Interactive sky atlas' (Aladin). Each icon has a corresponding search input field below it.
- Other services:** A section with icons for 'X-match', 'Dictionary', 'Sesame', and 'SimPlay'.
- Hosted services:** A section with icons for 'ADS mirror', 'A&A', and 'TIPTOPbase INES'.
- Recent events:** A section titled 'Recent events' with a link to the 'LISA VIII conference (Library and Information Services in Astronomy)' and a note that 'Proceedings are now available.' It includes a circular image of the LISA VIII conference logo.
- Latest news:** A section titled 'Latest news' with a list of news items: 'Catalogs added between 28-Sep-2019 and 05-Oct-2019', 'Catalogs added between 21-Sep-2019 and 28-Sep-2019', and 'DOI are available for VizieR catalogues'. A 'More news' button is located below the list.
- Featured news:** A section titled 'Featured news' with the text 'CDS certified by the CoreTrustSeal' and a large 'CORE TRUST SEAL' logo.

On the left side of the page, there is a vertical navigation menu with the following categories and links:

- Home
- About CDS
- People
- Support
 - Help and Tutorials
 - Developer's corner
 - Publication support
- myCDS
- Virtual Observatory projects
 - IVOA
 - Euro VO
 - ASTERICS
 - CoSADIE
 - Past projects:
 - Euro-VO ICE
 - AIDA - DCA - VOTech
 - OV France
 - Europlanet
- Other projects
 - RDA Europe
 - ARCHES
 - ASTRODEEP
 - Gaia
- Authorities
 - Strasbourg astronomical Observatory
 - CNRS - INSU
 - University of Strasbourg
- Links
 - ADS
 - NED
 - CNES
 - ESA
 - ESO
 - NASA
- Internal
 - Twiki
- Contact us

IRSA (Infrared Processing and Analysis Center)



data z projektů NASA (IR a submm), družic a několik souborů dat



all-sky projekty v 20 oborech,
přes 20 miliard řádek dat v katalogu,
přes 18 milionů snímků,
přes 100 000 spekter

<http://irsa.ipac.caltech.edu/frontpage/>

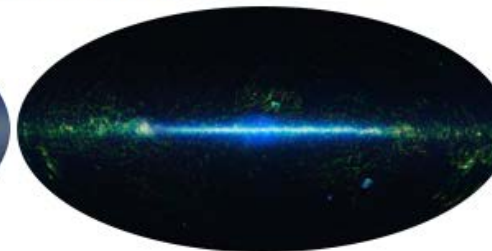
<http://www.ipac.caltech.edu/>



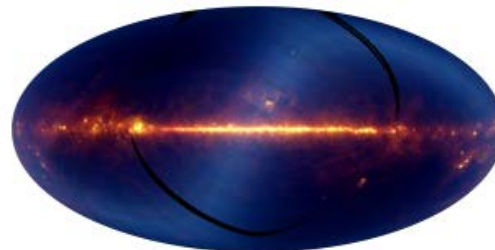
Spitzer: 3.6, 4.5, 5.8, 8, 24, 70, 160 microns



2MASS: J, H, K



WISE: 3.4, 4.6, 12, 22 microns



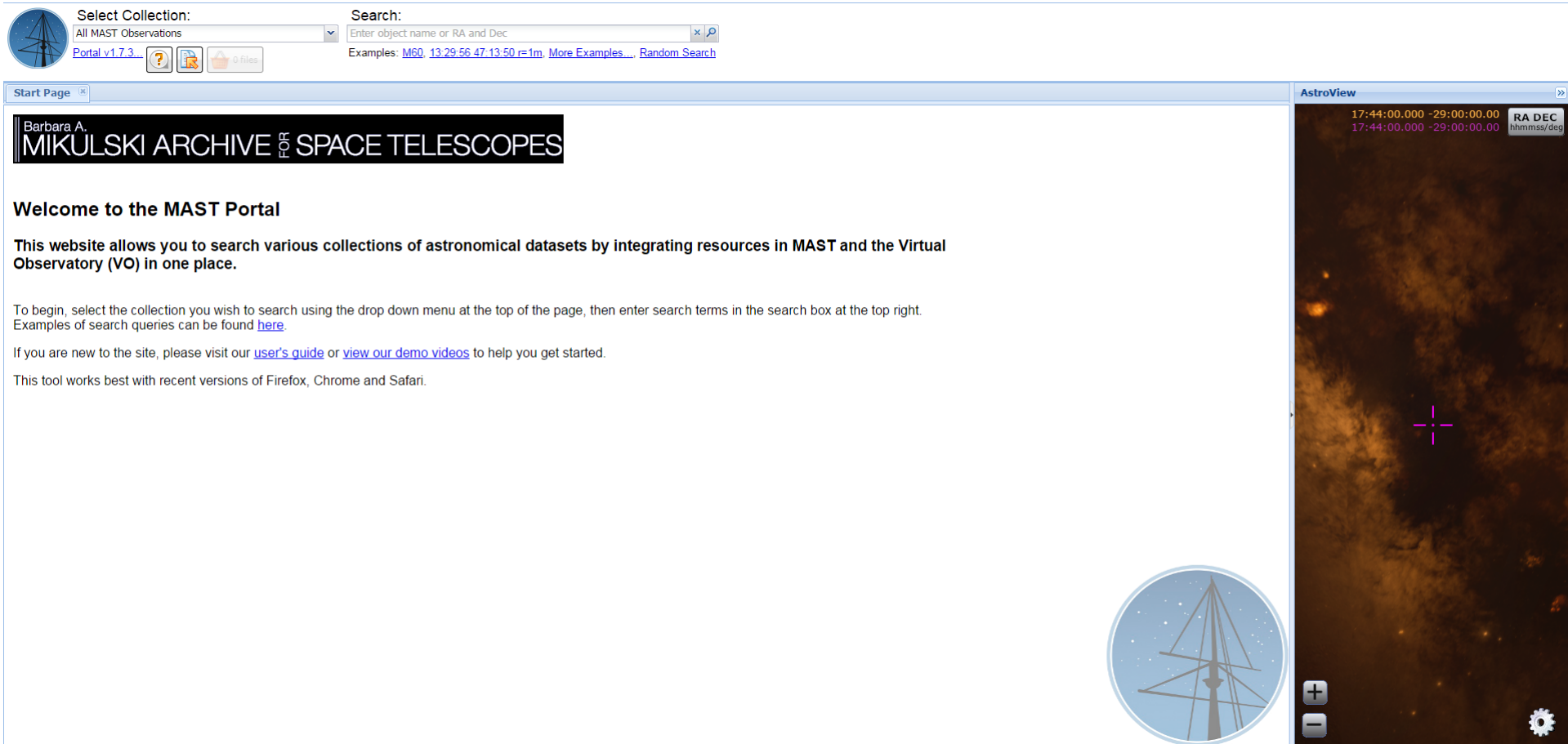
IRAS: 12, 25, 60, 100 microns



Planck: 30-857 GHz

MAST

<https://mast.stsci.edu/portal/Mashup/Clients/Mast/Portal.html>



The screenshot displays the MAST Portal interface. At the top, there is a navigation bar with a circular logo on the left, a "Select Collection:" dropdown menu set to "All MAST Observations", and a "Search:" input field with a search icon. Below the search field, there are example queries: "Examples: M60, 13:29:56 47:13:50 r=1m. More Examples..., Random Search".



The main content area is titled "Start Page" and features a black banner with the text "Barbara A. MIKULSKI ARCHIVE FOR SPACE TELESCOPES". Below the banner, a heading reads "Welcome to the MAST Portal". The text below states: "This website allows you to search various collections of astronomical datasets by integrating resources in MAST and the Virtual Observatory (VO) in one place." It provides instructions: "To begin, select the collection you wish to search using the drop down menu at the top of the page, then enter search terms in the search box at the top right. Examples of search queries can be found [here](#)." It also offers resources for new users: "If you are new to the site, please visit our [user's guide](#) or [view our demo videos](#) to help you get started." A note at the bottom states: "This tool works best with recent versions of Firefox, Chrome and Safari."

On the right side, there is a "Start Page" tab and an "AstroView" window. The AstroView window shows a dark astronomical image with a red crosshair. At the top of the AstroView window, there are coordinates: "17:44:00.000 -29:00:00.00" and "17:44:00.000 -29:00:00.00" with a label "RA DEC hhmmss/deg". At the bottom of the AstroView window, there are zoom controls (+, -) and a gear icon for settings.

AAVSO

<https://www.aavso.org/vsx/>

AAVSO Home


 The International Variable Star Index  [Search](#) [Submit](#) [Register](#) [Log In](#) [Account](#) [About](#)

Current Time: 30 Nov 2014 21:37:10 UTC Welcome, Guest. You are not logged in.
[» Log in](#)

Search VSX


Special searches [» Go](#)


Select a Special search above, or enter information in the fields below, then click **Search**.

 **Name**
Examples: SS Cyg, V456 Sgr, NSV 1009
%And, ASAS %+%, Mis V%
Search by AUID also available

[» Capture coordinates for object to Position field](#)



Const.
Filters search results by boundaries of selected constellation

 **Include** **V** Variables **S** Suspects
 N Non-variables


 **Order by** Descending

Click **More** for coordinate-based searches.

[» Guidelines](#) [» Variability Types](#) [» Passbands](#) [» Copyright](#) [» Acknowledgments](#) [» Privacy](#) [» Contact](#)

The International Variable Star Index
Now cataloging 1,391,027 variable stars



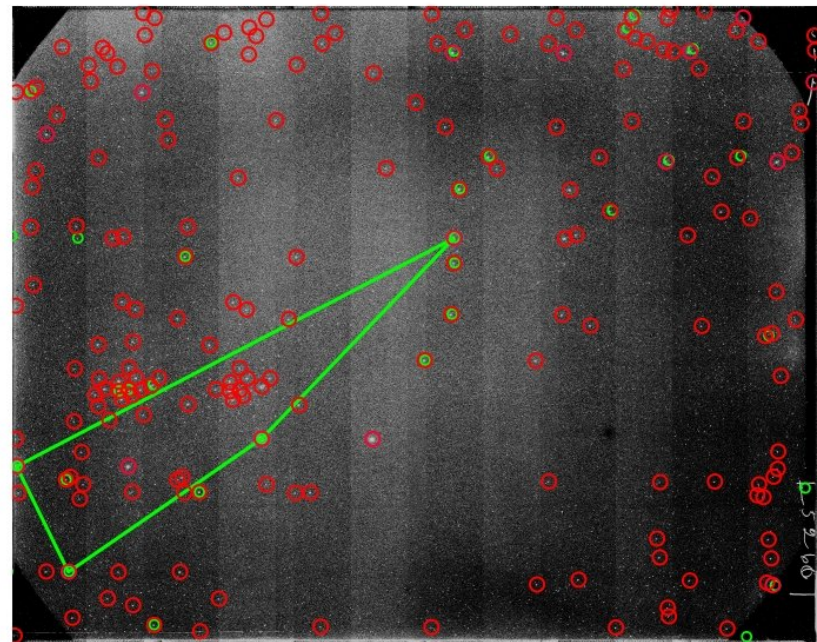
- [Search](#)
- [Submit](#)
- [Register](#)
- [Log In](#)
- [Account](#)
- [Manual](#)
- [About](#)
- [VizieR](#)
- [Help Us](#)

Přehlídkové projekty:

historické – fotografické

- National Geographic Society
– Palomar Observatory Sky Survey
(NGS-POSS)
- Harvard Plate collection
- Moskva
- Pulkovo
- Sonneberg
- Asiago

dnes – proces převodu do digitální
podoby, např. project DASCH





DASCH Lightcurve Access

Enter the J2000 object position or a Simbad-searchable reference in the box below and press "Search" to obtain the lightcurve query results in a separate window. The search center is currently restricted to [released regions](#), a maximum of ten entries, and a maximum search radius is 60 arcsec. Note that the positions returned by Simbad may not necessarily match the DASCH positions because of discrepancies between catalogs. DASCH positions are corrected by UCAC4 proper motions.

HW 982

N := d := arcsec

Source: APASS Input Catalog (B-band) ▾

* Use frame format Use separate tabs

Name and address (Optional)

We are currently using the [AAVSO Photometry All-Sky Survey \(APASS\)](#) DR6 Catalog, the Kepler Input Catalog (KIC), and the GSC2.3.2 Catalog for photometry calibration. The APASS calibration gives the best photometric accuracy over the entire sky. The KIC calibration gives comparable accuracy for the field of the Kepler satellite. Finally, the GSC2.3.2 catalog provides magnitudes for objects outside the 9 to 15 magnitude range of APASS. An overview of DASCH calibration appears in [Laycock S. et al. "Digital Access to a Sky Century at Harvard. II. Initial Photometry and Astrometry"](#) and in [Sumin Tang et al. "Improved Photometry for the DASCH pipeline"](#). An overview of the DASCH pipeline appears in the project [photometry page](#).

Objects in the Kepler field calibrated with the Kepler Catalog (KIC) have g-band magnitudes; objects calibrated with APASS have B-band magnitudes; and objects calibrated with GSC2.3.2 have JpgMag (IIIaJ) magnitudes.

To access photometric data enter object ID's (one per line) in the window above. Valid identifications are: **J2000 RA DEC** (5:45-81.5 or 5:26:50-81:35:12 or 8:41:43.8+19:43:33.5 where a "+" declination sign is mandatory in the third case only) **GSC2.3.2 ID** (for the gsc2.3.2 dataset only; e.g. N2312220195 or N120013341), **Kepler Input Catalog ID** (for the KIC dataset only; e.g. K3433237), **APASS Catalog ID** (for the APASS dataset only; e.g. APASS_J115140.7+020334), **Simbad-searchable object name** (XX Dor), or **DASCH object** (DASCH_J123349.2-113822), i.e. an object which does not have a matching catalog entry. All stars within d arcsec from center, having more than N measurements will be listed. Because of astrometry issues inherent in the processing of old photographic plates, measurements of interest may appear in adjacent lightcurves. To obtain object's light curve, click on its listed ID in the query results window. Data tables for all points returned by the query may be obtained by selecting the "Download all points in table form." link at the bottom of the query results window.

Acknowledgements

The DASCH project at Harvard is grateful for partial support from NSF grants AST-0407380, AST 0909073, and AST 1313370, which should be acknowledged in all papers making use of DASCH data.

We acknowledge the one-time gift of the Connel and Cynthia K. Sarosky Fund for DASCH, and thank Gezegorz Pojmanowski of the ASAS project for providing some of the source code on which the DASCH web-interface is based.

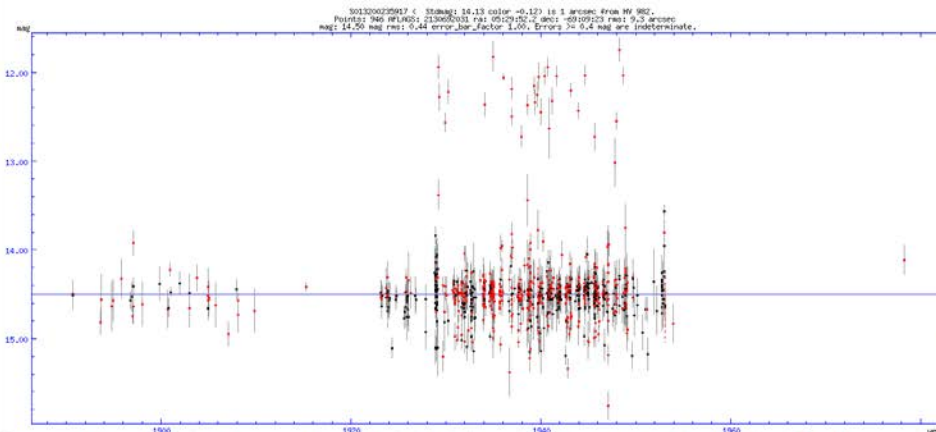
The ongoing AAVSO Photometric All-Sky Survey (APASS) has improved DASCH photometric calibration and is funded by the Robert Martin Ayres Sciences Fund.

DASCH (apass) Catalog Query Results (5")

```
'HW 982' ra: 05:29:52.3 dec: -69:09:22 approx. plates: 2834
arcsec  Nobs  Nplot  mag  id  (nearbyObjects.[mag] [object_type] @ arcsec)
1 1267  946 14.53 5932280235917
```

[Display this table as a text file](#)
[Display this table as a VOTable](#)
[Download all points in table form.](#)

Click on a point in the plot in the upper right panel and the object image will appear here.



Drag mouse across plot to magnify region; or click on any symbol, except the horizontal line limiting magnitude symbols, to get a thumbnail image (lower left panel). Right click anywhere on the lightcurve plot to save as a .gif image.

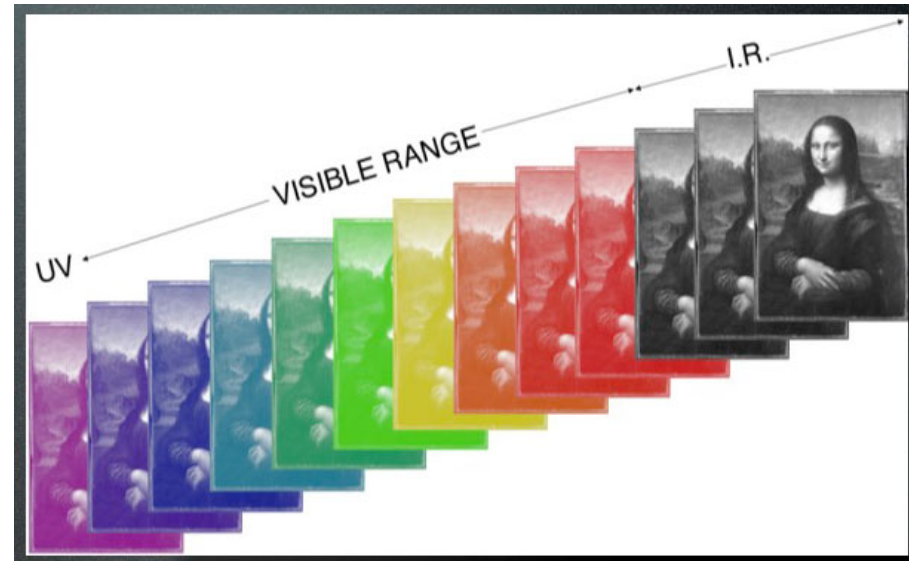
Black points have no quality flags set, but note that these flags have varying probabilities of false positive and false negatives. Red points have one or more issues. Error bars greater than +/- 0.4 mag are truncated to this magnitude and shown as dashed. Stars too bright are shown as blue up arrows and limiting magnitudes are shown as horizontal bars. Undetected images are shown as down arrows at the average limiting magnitude of a square degree region. Buttons below control the display of red points, a button with bold type means that the point is plotted. A 'Show' button click may need to be followed by the above 'Reset plot to original size' to display all of the affected points.

<http://dasch.rc.fas.harvard.edu/>

Současné přehlídkové projekty

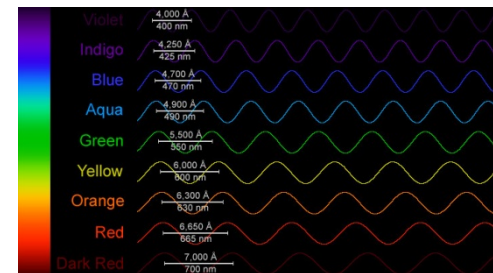
Rozdělení podle sledované části spektra

- Optické
- Infračervené
- Rádiové
- Gama
- Multispektrální



Rozdělení podle umístění přístrojů

- Pozemské
- Družicové
- Atmosférické (letadla, balóny)
- Měsíční



Náš zájem – zejména fotometrická data z dostupných zdrojů!

Družicové fotometrické přehlídky

- Hipparcos – celá hvězdná obloha, obor H_p , + podpora Tycho katalog (B, V)
<https://www.cosmos.esa.int/web/hipparcos>
 - OMC Integral – celá hv. obloha, obor V <https://sdc.cab.inta-csic.es/omc/index.jsp>
 - MOST -dlouhodobé sledování pečlivě vybraných objektů (hvězdy slunečního typu, podtrpaslíci, roAp, WR hvězdy, soustavy s exoplanetami)
(<http://most.astro.ubc.ca/>)???
 - COROT - FOV 2.7° by 3.05° , 2 pole (Ser, Mon) <http://idoc-corot.ias.u-psud.fr/>
 - KEPLER – pole Cyg-Lyr, mise K2
(https://www.nasa.gov/mission_pages/kepler/main/index.html)
 - Chandra - rtg. satelit, 827 prom. hvězd <http://cxc.harvard.edu/vguide/index.php>
 - GAIA - <http://sci.esa.int/science-e/www/area/index.cfm?fareaid=26>
 - BRITe – Kanada, Polsko, Rakousko – sada nanosatelitů
<http://www.brite-constellation.at/>
 - WISE (Wide-field Infrared Survey Explorer) - <http://wise.ssl.berkeley.edu/>
 - TESS (Transiting Exoplanet Survey Satellite) - <https://tess.gsfc.nasa.gov/>
 - HST – Hubble Catalogue of Variables <https://archive.stsci.edu/hlsp/hcv>
- a další



Not logged in

Log in

Object ID:

Odeslat

Reset

Examples: IOMC 2677000065, IOMC 26770000%, V1011 Cyg

Object list:



Object type:

[Blue object] Blue object
[Composite object] Association of Stars
[Composite object] Cataclysmic Var. AM Her type
[Composite object] Cataclysmic Var. DQ Her type
[Composite object] Cataclysmic Variable Star
[Composite object] Cluster of Galaxies

File:

Vybrat soubor

Soubor nevybrán

Magnitude range:

 < V <

Position:

R.A.:

Dec:

Radius (arcmin):

Date:

From:

To:

Time binning:

10 minutes

Centroid method:

Brightest pixel

Source coordinates

Target type:

Scientific

Num. points: Only light curves with points or more.

Avoid scientific targets with NULL priority:

expoziční časy jsou řádově minuty, každý snímek má jiný; uvádí se jen začátek expozice

Output format

HTML

Sort output by

Number of results per page

50

Page to show

1

Pozemské fotometrické přehlídky

- ASAS - <http://www.astrouw.edu.pl/asas/>
- OGLE - <http://ogle.astrouw.edu.pl/>
- MACHO – (<http://wwwmacho.anu.edu.au/Data/MachoData.html>)???
- EROS - <http://eros.in2p3.fr/>
- ROTSE (NSVS) - <http://www.rotse.net/>, (<http://skydot.lanl.gov/nsvs/nsvs.php>)???
- SuperWASP - <http://wasp.cerit-sc.cz/form>
- APASS - <http://www.aavso.org/apass>
- SDSS - <http://www.sdss3.org>
- Catalina (CRTS) - <http://crts.caltech.edu/>
- 2MASS - <http://www.ipac.caltech.edu/2mass/>
- LINEAR – (<https://astroweb.lanl.gov/lineardb/>)???,
(<https://ll.mit.edu/mission/space/linear/>)???
- Stardial - <http://stardial.astro.illinois.edu/>
- HATNet - <http://www.hatnet.org/>
- Pi of the sky - <http://grb.fuw.edu.pl/>
- MASCARA - <http://mascara1.strw.leidenuniv.nl/>
- Pan-STARRS – <http://pan-starrs.ifa.hawaii.edu/>
- ASAS-SN - <http://www.astronomy.ohio-state.edu/~assassin/index.shtml>
- Evryscope - <http://evryscope.astro.unc.edu/>

a další

budované - čipy přes řádově Gpx! – Rubin observatory (LSST) - <http://www.lsst.org/>



white [unfix](#)

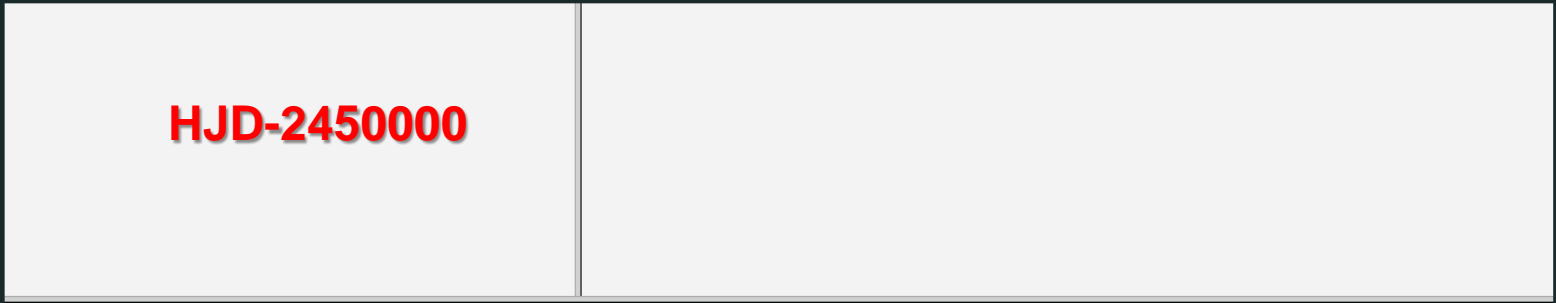
- [Main](#)
- [News](#)
- [Highlights](#)

- Services:
- [Catalogues](#)
 - [ACVS / variables](#)
 - [AASC / photometry](#)
 - [Sky Atlas](#)
 - [Kepler FOV](#)
 - [Download Data](#)
 - [View Alerts](#)
 - [Star of the Month](#)

- Information:
- [Credit](#)
 - [Status](#)
 - [Papers](#)
 - [History](#)
- Other:
- [Gallery](#)
 - [Links](#)
 - [Contact](#)

Visitors so far: 86993.

ASAS All Star Catalogue



Source:

V-band (ASAS-3)
 I-band (ASAS-2)

Eqm:
 N >:
 r <: arcsec

To access photometric data enter object ID's (one per line) in the area above. Valid identifications are:

RA[h] DEC[deg]
 for example: 5:45 -81.5 or 5:26:50, -81:35:12

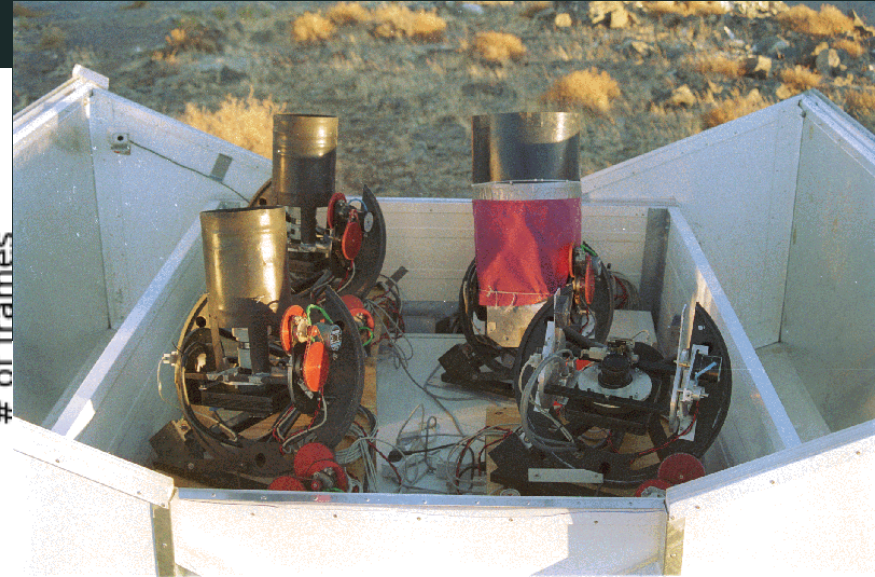
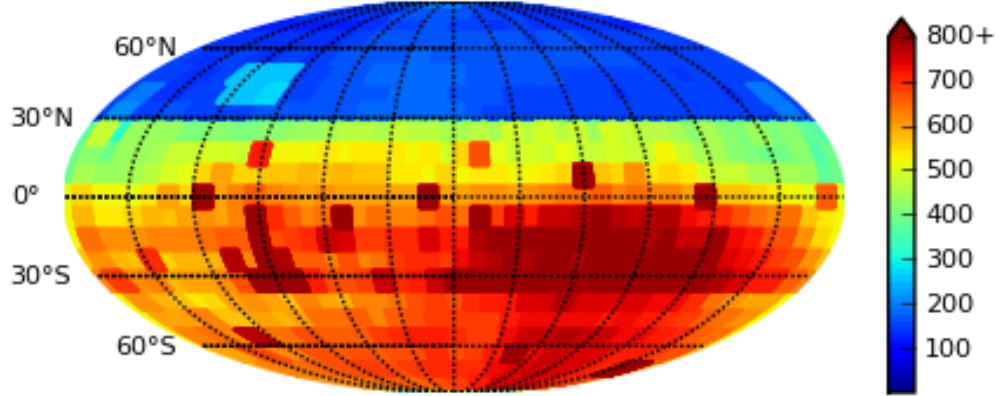
ASAS ID
 for example: 052650-8135.2

GCVS ID
 for example: XX Dor

All stars within r arcsecs from center, having more than N measurements will be listed. To obtain object's light curve, click on its listed ID.

For more information on the catalogues go to the [Catalogues](#) section.

ASAS # of frames distribution



SuperWASP

Wide Angle Search for Planets (Wikipedia, Home page) database contains 17,960,328 objects.

Hosted by CERIT Scientific Cloud, Institute of Computer Science, on behalf of Department of Theoretical Physics and Astrophysics, Faculty of Science, Masaryk University, Brno, Czech Republic

Position

Object ID: (name for Sesame name resolver)

or

R.A.: (0.0-360.0 arc degree or 00:00:00-0:24:00:00 hours)

Declination: (-90.0 to +90.0 arc degree or [+/-]dd.mm.ss.sss arc degree)

Filter objects

Radius: 1 deg

Magnitude range: < V <

Only nearest 10 objects.

Only objects with at least 1 points

<http://wasp.cerit-sc.cz/form>

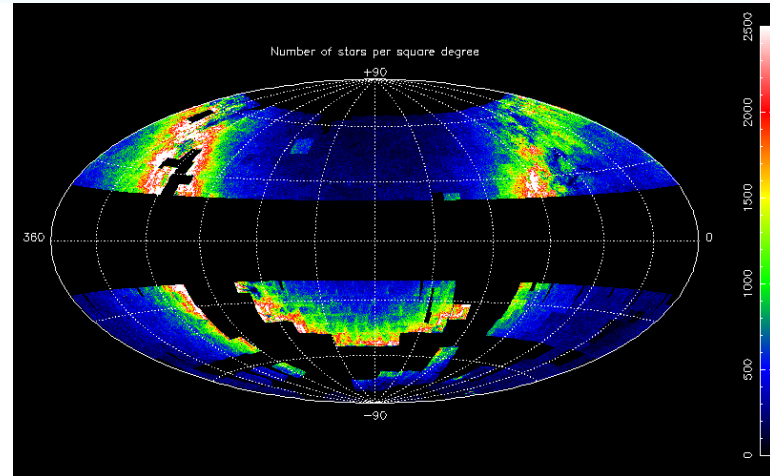
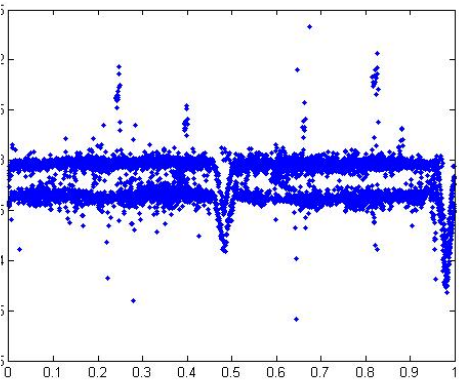
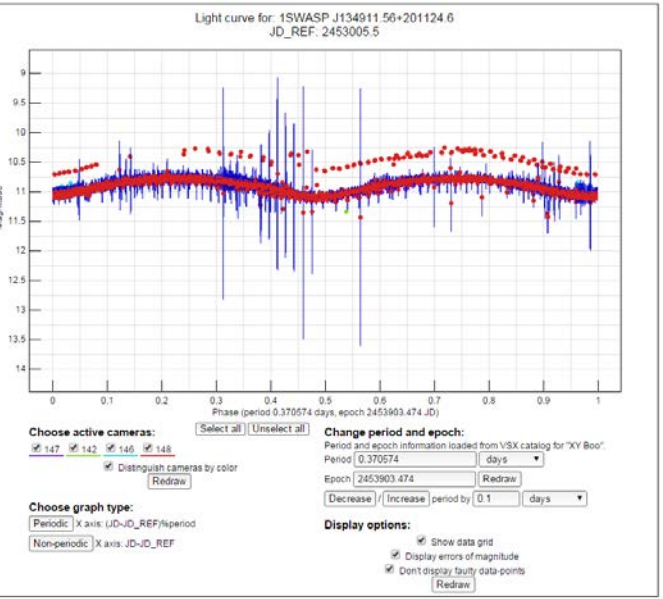


Contact: support@cerit-sc.cz

WASP Data Acknowledgement

If you make use of data from this archive, please include the following acknowledgement:

This paper makes use of data from the DR1 of the WASP data (Butters et al. 2010) as provided by the WASP consortium, and the computing and storage facilities at the CERIT Scientific Cloud, reg. no. CZ.1.05/3.2.00/06.0144 which is operated by Masaryk University, Czech Republic.



TMID (s) – střed expozice v sekundách od JD_REF
 $TMID = ((HJD - JD_REF) * 86400)$

Northern Sky Variability Survey

Before you start:

Cone search radius is limited to 120 arc minutes.

Output is always trimmed to 5000 rows.

Queries other than `select` are ignored

Selected flags reject measurements with certain known problems

(relevant only for light curve viewing)

Cone Search

Radius is in arc minutes. Format for coordinates is sexagesimal hours or decimal degrees: ([+|-]00:00:00.0 | 0.0)

RA

DEC

Radius

SExtractor flags:

NEIGHBORS

BLENDED

SATURATED

ATEDGE

APINCOMPL

ISINCOMPL

DBMEMOVR

EXMEMOVR

Photometric correction flags:

NOCORR

PATCH

LONPTS

HISCAT

HICORR

HISIGCORR

RADECFLIP

Reload the page to restore standard flags

Put your select query here:

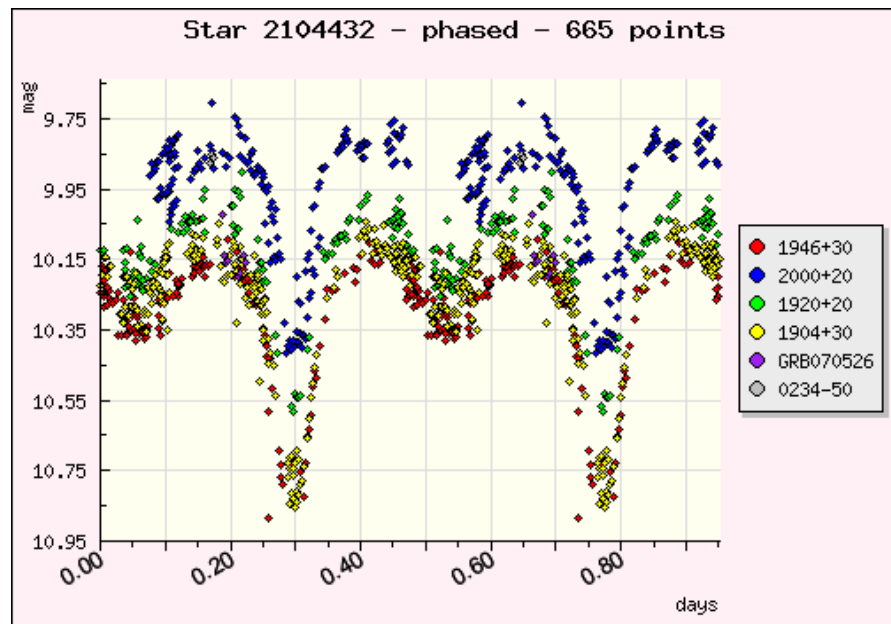
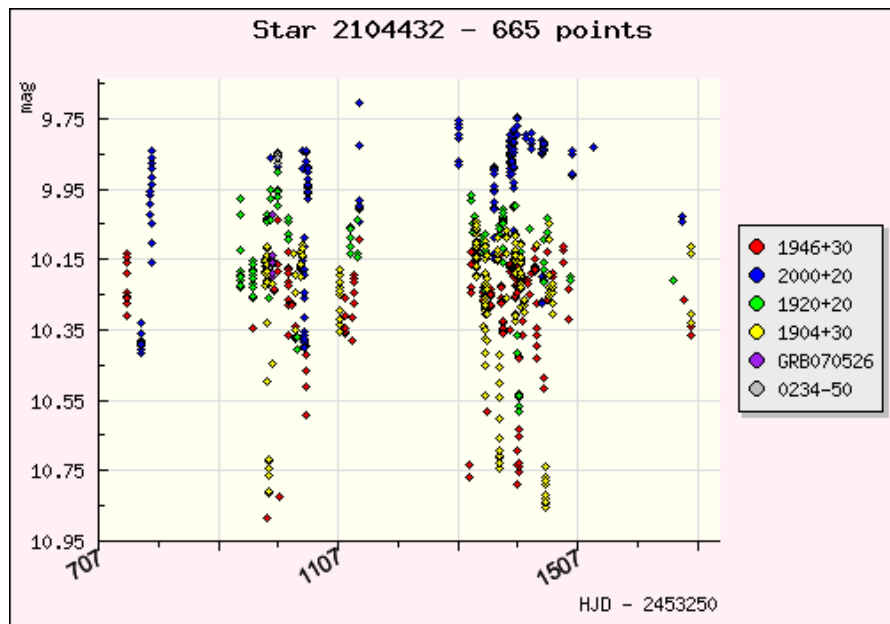
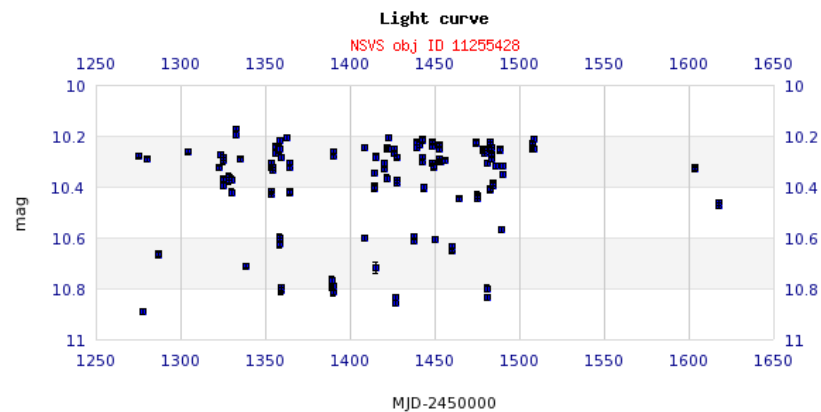
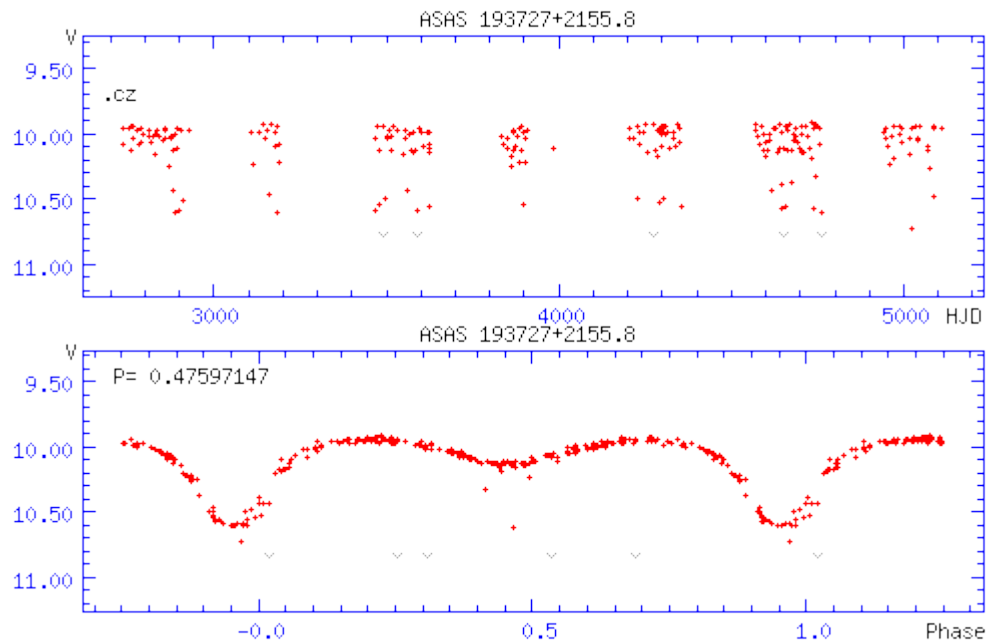
`select * from object limit 10`

MJD-50000

1282.418683 => 2451282.9186

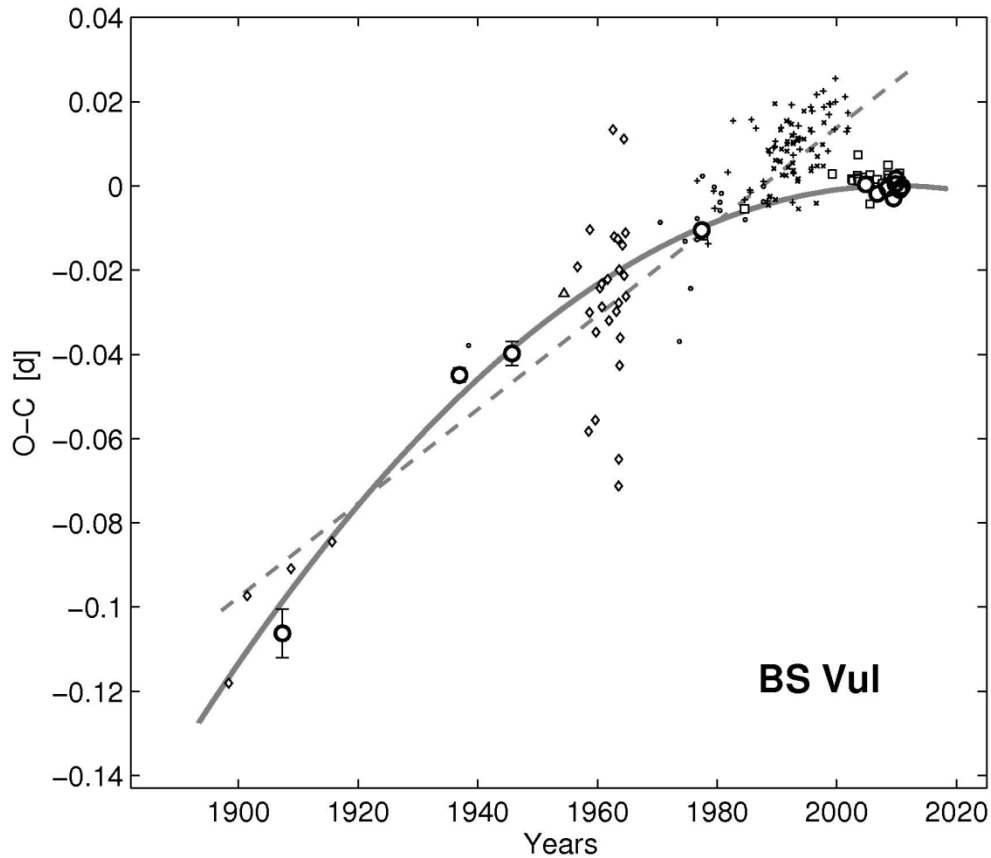
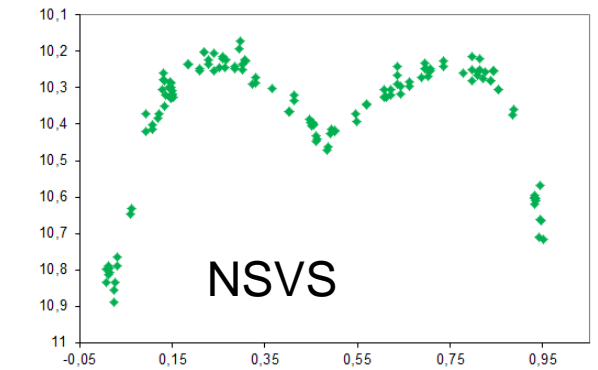
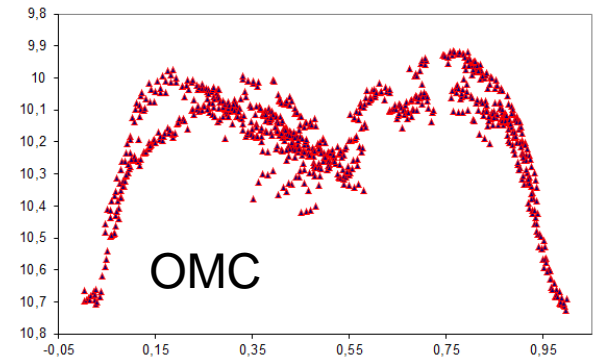
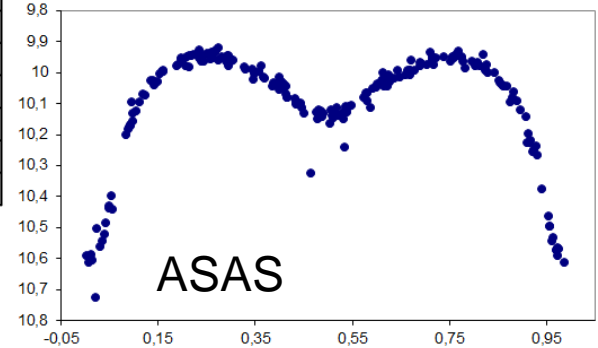
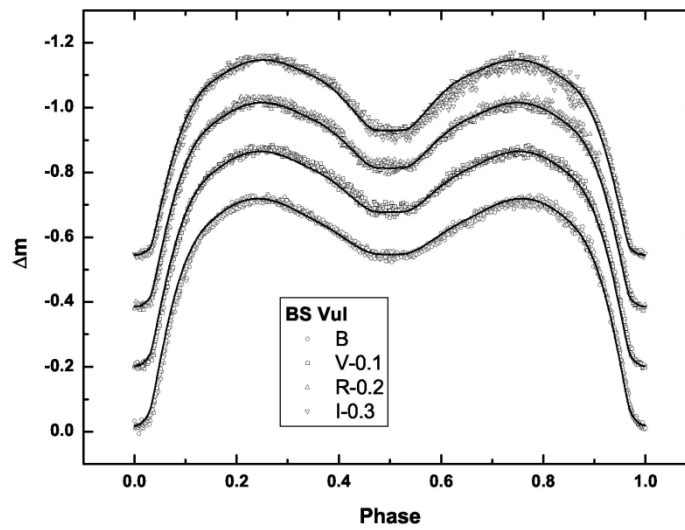


čas měření - 2453250



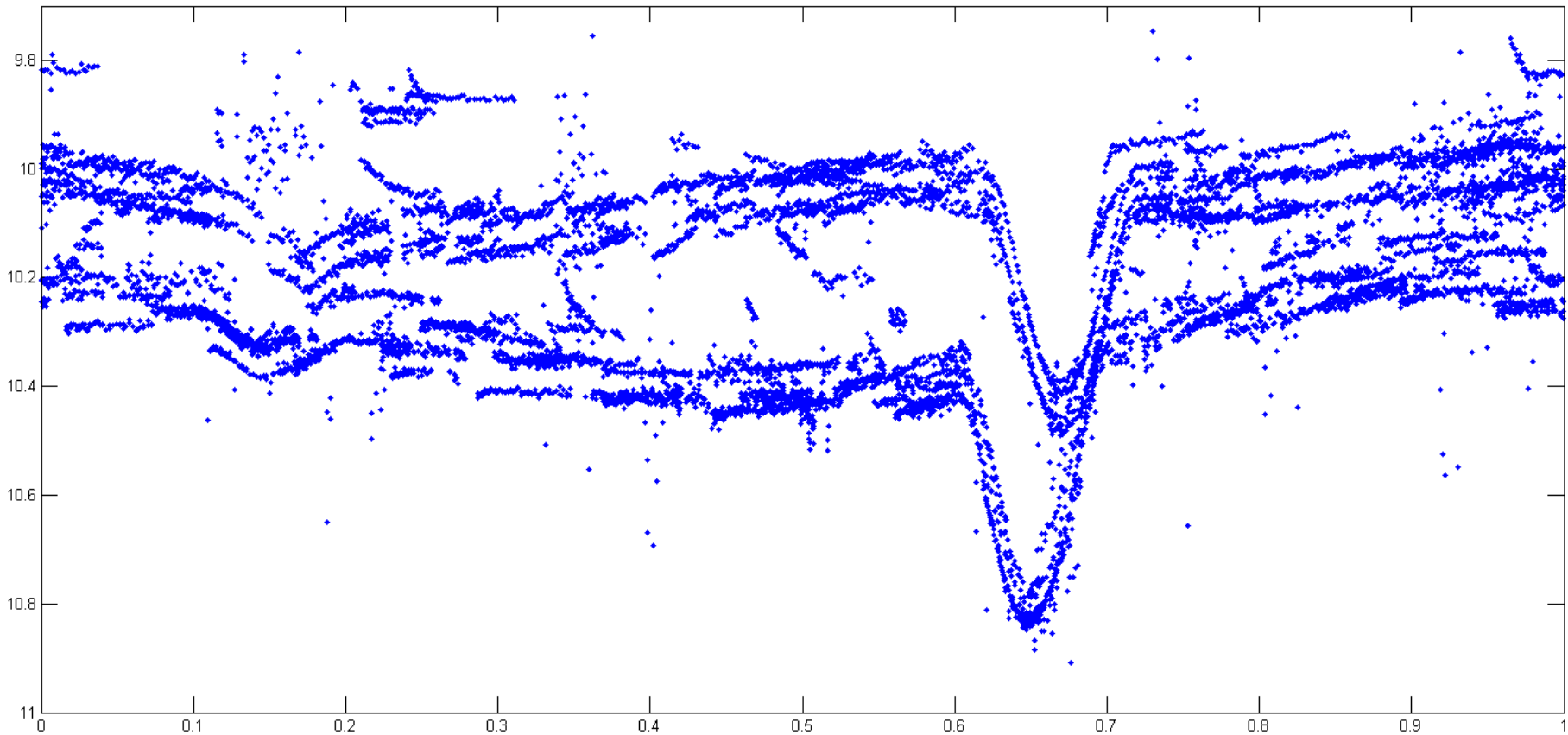
BS Vul

Astronomical Journal 144, 37 (2012)



UX Com (data z SWASP)

proměnná perioda,
změna tvaru světelné křivky,
na rozhraní snímků => několik měření v témže okamžiku, ale různé kalibrace



Vize do budoucna

Virtuální (astronomická) observatoř – VO, příp. VAO – souhrn astronomických dat, nástrojů a služeb, která jsou přístupná všem; částečně funkční

Zásady:

- vlastní formát dat s jasnou strukturou
- společné protokoly práce s daty
- společné nástroje na zpracování dat



International Virtual Observatory Alliance (IVOA) - <https://www.ivoa.net/>

Národní VO – např. britský AstroGrid <http://www.astrogrid.org/>, evropská VO <http://www.euro-vo.org/>, americká <http://www.virtualobservatory.org/>, česká <http://stelweb.asu.cas.cz/czvo/> ...



Nástroje pro práci s daty

příklady:

Lightkurve <https://github.com/lightkurve/lightkurve>

LcTools V19.2 – na vyžádání: Allan Schmitt aschmitt@comcast.net

TopCat - <http://www.star.bris.ac.uk/~mbt/topcat/>

Xamin - <https://heasarc.gsfc.nasa.gov/docs/xaminintro/>

TapHandle - <http://saada.unistra.fr/taphandle/>

VAO's Data Discovery Tool - <http://www.virtualobservatory.org/use/tutorial.aspx>

Peranso - <https://www.cbabelgium.com/peranso/>

Period04 - <http://period04.net/>

Pyriod - <https://github.com/keatonb/Pyriod>

<https://www.ivoa.net/astronomers/applications.html>

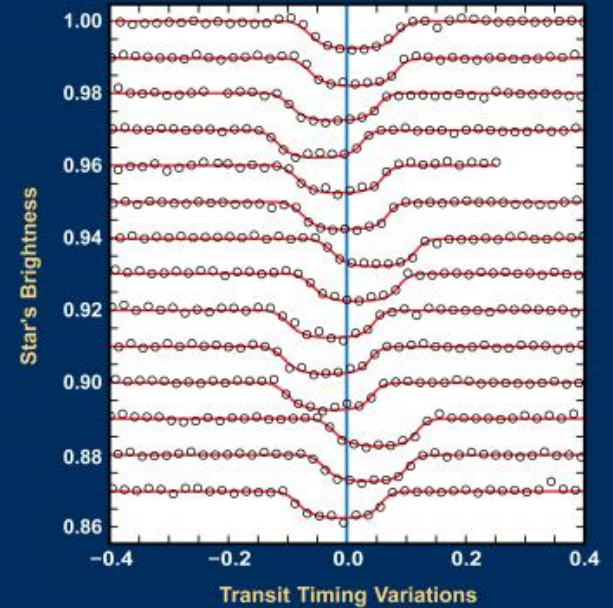
<https://www.aavso.org/software-directory>

proč to všechno?

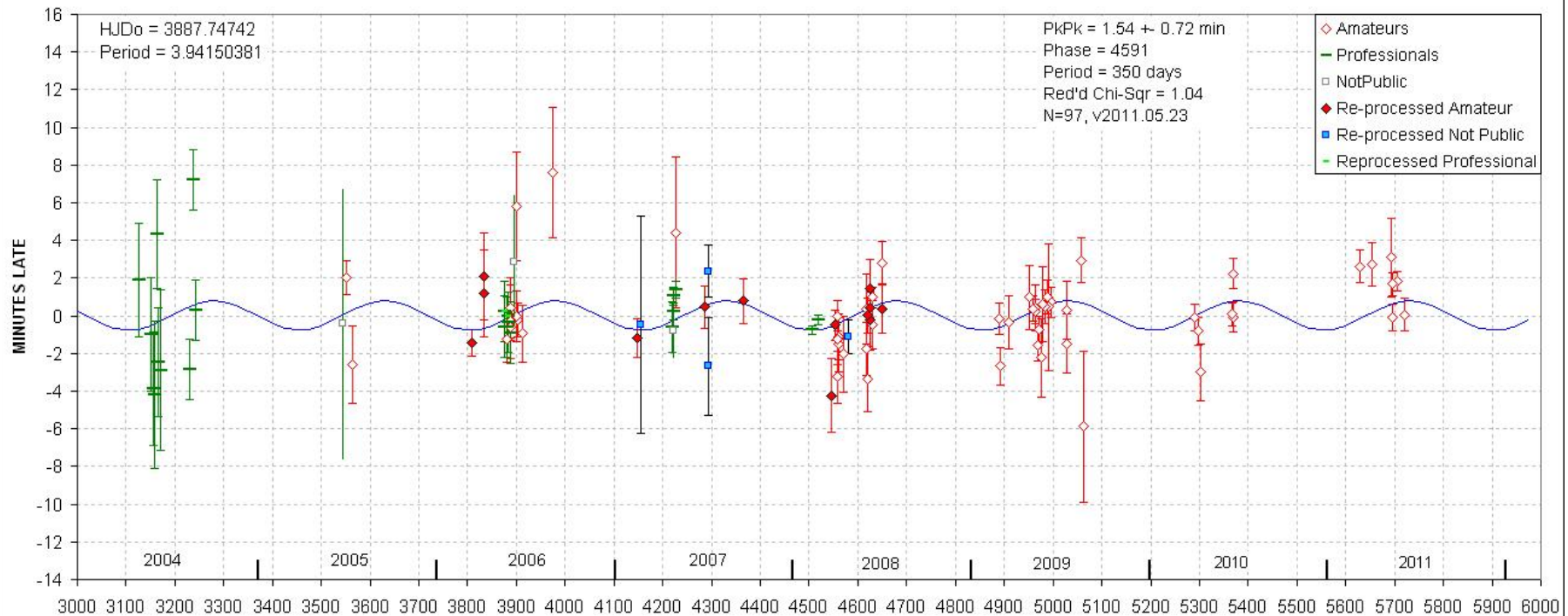
- dlouhodobé studie

např. změny periody, TTV, O-C – dnes změny menší než 1 min! => nutnost větší pozornosti k přesnosti časových značek!

Kepler Telescope Data of Planet b Transiting KOI-872



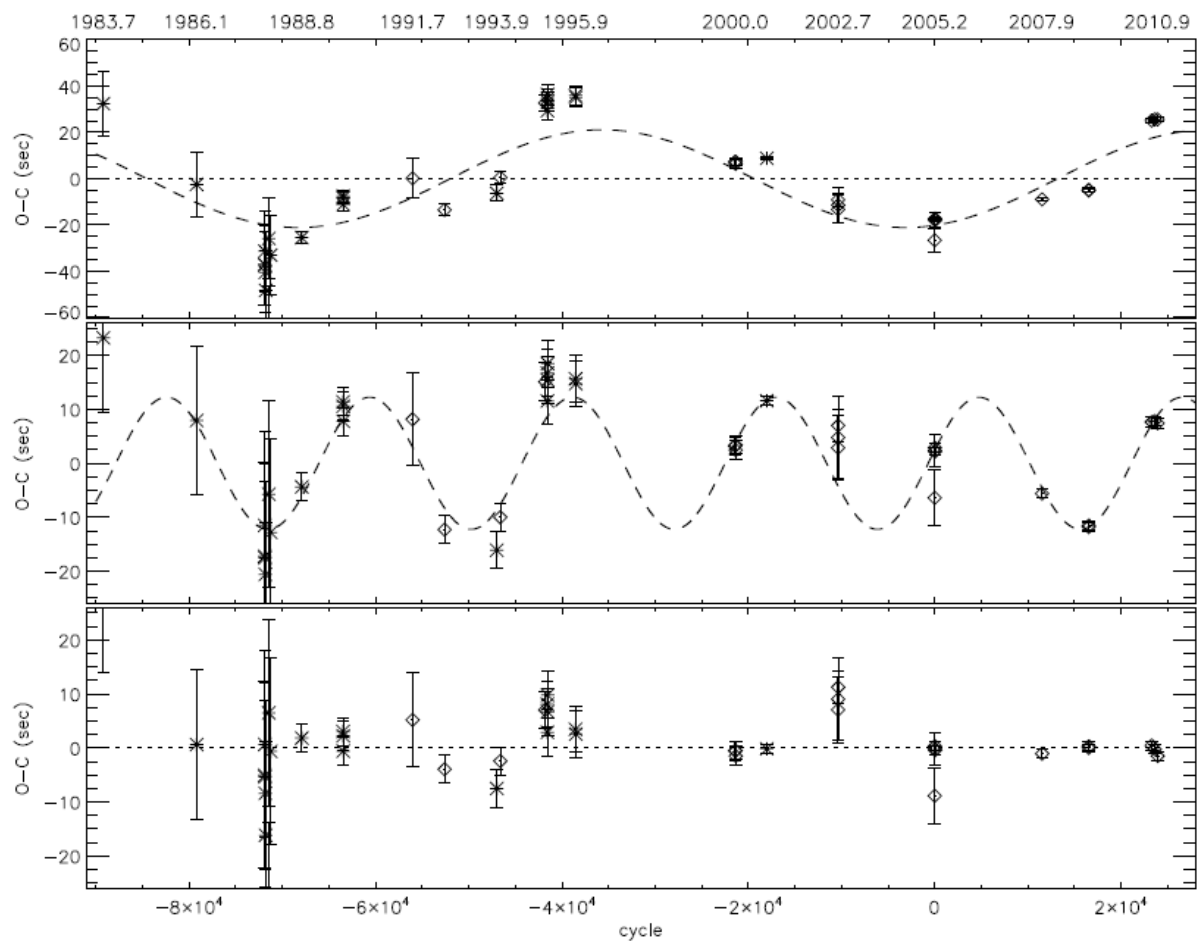
XO-1 TRANSIT TIMING VARIATION



kladný příklad:

Potter, S. B. et al.: Possible detection of two giant extrasolar planets orbiting the eclipsing polar UZ Fornacis

<http://adsabs.harvard.edu/abs/2011MNRAS.416.2202P>



Praktické cvičení:

- vyhledat alias jména k dané hvězdě a získat pro ni fotometrická data alespoň ze dvou zdrojů,
- uspořádat data, vytvořit z nalezených dat datový soubor ve formátu – HJD (BJD), mag, filtr, zdroj (pokud nejsou data v tomto formátu, je třeba uvést původní formát a popsat způsob, jak jste je přepočítali)
- vykreslit fázovou světelnou křivku
- výsledný soubor dat, popisy a graf zaslat na zejda@physics.muni.cz do **16. 12. 2022**

Buranský, Samuel	BD+24 3425
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Honsová, Eliška	GSC 00770-00121
Kapusta, Vlastimil	LMC V2963
Pekárek, Tomáš	HIP 107083
Pocar, Lukáš	HD 215661
Rievajová, Tatiana	ASASSN-V J070521.54-690940.7
Soukup, Tomáš	CzeV343
Šipková, Ema	UCAC4 815-023185
Tomášová, Mária	HD 240055
Vanžurová, Alena	PPM 354816