BRIEF

CATALOGS SIMBAD

Overview

This lesson will focus on SIMBAD. This catalog can be accessed via two methods: CDS and Stelle Doppie.

Information that can be accessed is: Stellar data and summaries and Publication information.

Online Catalogs

SIMBAD via Stelle Doppie

Stelle Doppie | HOME | DATABASE | WORKBENCH | MISC | SETUP | HELP

FILE | NOTES | REPORTS | MEASURES | IMAGES | NEIGHBORHOODS | COMPLETE

Hello gpboyce
Logout

SEARCH
Search

ACTIONS
Advanced Search
Go to Simbad
New report
New measure

COMPUTED LISTS
Populars
Latest Populars
Doubles in this session
Doubles seen

Add to list

CURRENT SYSTEM
13510+6819 STTA127AB

NEARBY DOUBLES
44' : 13443+6841 HJ 2685

13510+6819 STTA127AB

$13^H\ 50^M\ 59.40^S$ +68° 18' 55.6" P.A. 63 SEP 87.5 MAG 6.53,8.32 SP K2IV DIST. 102.35 PC (333.87 L.Y.)

Coord 2000	13510+6819	Discov num	STTA127	Comp	AB	Coord arcsec 2000	13 50 59.40 +68 18 55.6
Date first	1844	Date last	2015	Obs	35		
Pa first	68	Pa last	63	P.A. Now (θ)	63°		
Sep first	71.2	Sep last	87.5	Sep. Now (ρ)	87.5"		
Mag pri	6.53	Mag sec	8.32	delta mag (ΔM)	1.79	Spectral class	K2IV (yellow-orange)
Pri motion ra	-176	Sec motion ra	-104				
Pri motion dec	-058	Sec motion dec	+011				
Notes	N L (See Notes, Linear solution)						

Theoretical Visual Limit:

rPM=0.54

13510+6819 SYSTEM COMPONENTS

SHOW	NAME	SAO	COORD_2000	DISCOV#	COMP	FIRST	LAST	OBS	PA	SEP	MAG1	MAG2	D_MAG	ORB	CURRENT
Show		16197	13510+6819	STTA127	AB	1844	2015	35	63	87.5	6.53	8.32	1.79		<===
Show		16200	13510+6819	STTA127	BC	1912	2003	4	69	51.9	8.32	13.23	4.91		

Triple system, 0 couples separable
3 visible stars in this system

OTHER CATALOGS AND DESIGNATIONS

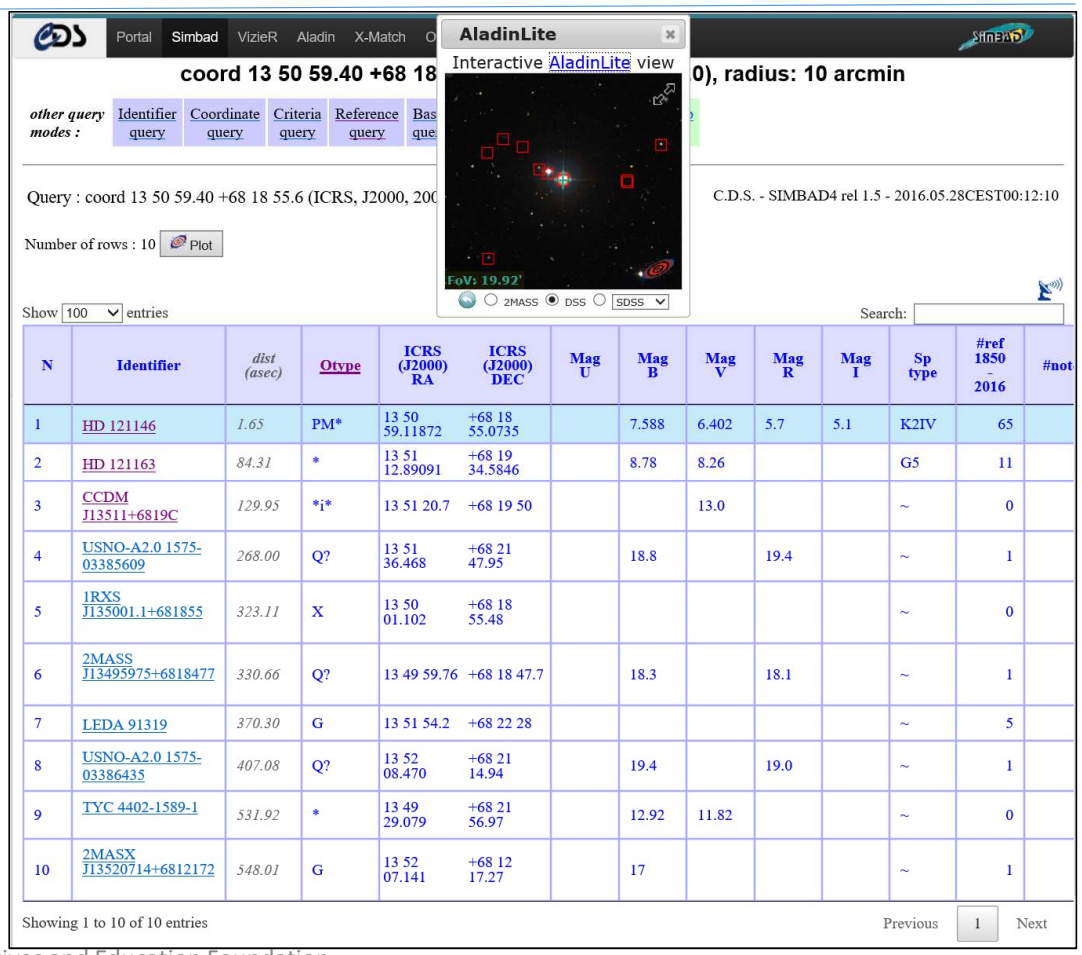
Constellation	Draco	SAO	16197	HIP	67589	Tycho2	4402-01968-1
HD	121146	HR	5227	BD	BD+69 724	Distance	102.35
Distance ly	333.87	last precise pa	62.7	last precise sep	87.469		

SIMBAD via Stelle Doppie

The initial page will show a list of cataloged stars around the RA/DEC from the WDS star inserted into Stelle Doppie.

The stars will be listed by distance from center.

Click on the desired identifier to access more information.



N	Identifier	dist (asec)	Otype	ICRS (J2000) RA	ICRS (J2000) DEC	Mag U	Mag B	Mag V	Mag R	Mag I	Sp type	#ref 1850 - 2016	#not
1	HD 121146	1.65	PM*	13 50 59.11872	+68 18 55.0735		7.588	6.402	5.7	5.1	K2IV	65	
2	HD 121163	84.31	*	13 51 12.89091	+68 19 34.5846		8.78	8.26			G5	11	
3	CCDM J13511+6819C	129.95	*i*	13 51 20.7	+68 19 50			13.0			~	0	
4	USNO-A2.0 1575-03385609	268.00	Q?	13 51 36.468	+68 21 47.95		18.8		19.4		~	1	
5	1RXS J135001.1+681855	323.11	X	13 50 01.102	+68 18 55.48						~	0	
6	2MASS J13495975+6818477	330.66	Q?	13 49 59.76	+68 18 47.7		18.3		18.1		~	1	
7	LEDA 91319	370.30	G	13 51 54.2	+68 22 28						~	5	
8	USNO-A2.0 1575-03386435	407.08	Q?	13 52 08.470	+68 21 14.94		19.4		19.0		~	1	
9	TYC 4402-1589-1	531.92	*	13 49 29.079	+68 21 56.97		12.92	11.82			~	0	
10	2MASX J13520714+6812172	548.01	G	13 52 07.141	+68 12 17.27		17				~	1	

Online Catalogs

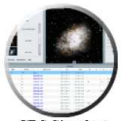
SIMBAD via Stelle Doppie

Plots and Images

plot around

radius 10 arcmin


CDS portal


CDS Simplay
(requires flash)

Aladin applet

References (65 between 1850 and 2016)

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

Follow new references on this object

sort references | display | reference summary | from: 1850 | to: $currentYear

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

Date | Title|Abstract|Keyword | In table | Score

External archives :

Catalogue information from VizieR :

Generic search by coordinates (radius: 5 arcsec)

AG+68 565	BD+69 724	CCDM J13511+6819A	DO 34489	FK5 3103
GSC 04402-01968	HD 121146	HIC 67589	HIP 67589	HR 5227
IRAS 13497+6833	LSPM J1350+6818	2MASS J13505915+6818551	NLTT 35503	PPM 18761
SAO 16197	TYC 4402-1968-1	USNO-B1.0 1583-00151750	WDS J13510+6819A	

Portal | Simbad | VizieR | Aladin | X-Match | Other | Help

HD 121146

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

Query : HD 121146 — C.D.S. - SIMBAD4 rel 1.5 - 2016.05.28CEST00:13:48

Available data : Basic data • Identifiers • Plot & images • Bibliography • Measurements • External archives • Notes • Annotations

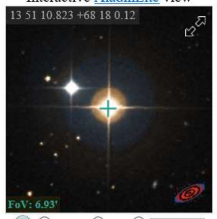
Basic data :

HD 121146 -- High proper-motion Star

SIMBAD query around with radius 2 arcmin

Other object types:	* (AG,ASCC,...), ** (BDS,CCDM,...), PM* (LTT,LSPM,...), IR (IRAS,2MASS)
ICRS coord. *(ep=J2000) :*	13 50 59.11872 +68 18 55.0735 (Optical) [3.25 2.91 89] A 2007A&A...474..653V
FK5 coord. *(ep=J2000 eq=2000) :*	13 50 59.119 +68 18 55.07 [3.25 2.91 89]
FK4 coord. *(ep=B1950 eq=1950) :*	13 49 45.27 +68 33 46.0 [18.78 16.75 90]
Gal coord. *(ep=J2000) :*	114.7979 +47.8616 [3.25 2.91 89]
Proper motions *mas/yr* :	-176.93 -59.03 [0.33 0.37 0] A 2007A&A...474..653V
Radial velocity / Redshift / cz :	V(km/s) -46.60 [0.11] / z(~) -0.000155 [0.000000] / cz -46.60 [0.11] A 2005A&A...430..165F
Parallaxes *(mas)*:	9.77 [0.36] A 2007A&A...474..653V
Spectral type:	K2IV D 1995AJ....110.2968L
Fluxes (7) :	B 7.588 [~] C ~ V 6.402 [~] C ~ R 5.7 [~] E 2003AJ....125..984M I 5.1 [~] E 2003AJ....125..984M J 4.351 [0.240] D 2003yCat.2246....0C H 3.753 [0.232] D 2003yCat.2246....0C K 3.655 [0.258] D 2003yCat.2246....0C

Interactive AladinLite view



2MASS DSS SDSS

VizieR photometry viewer

Search within radius Max 30 arcsec

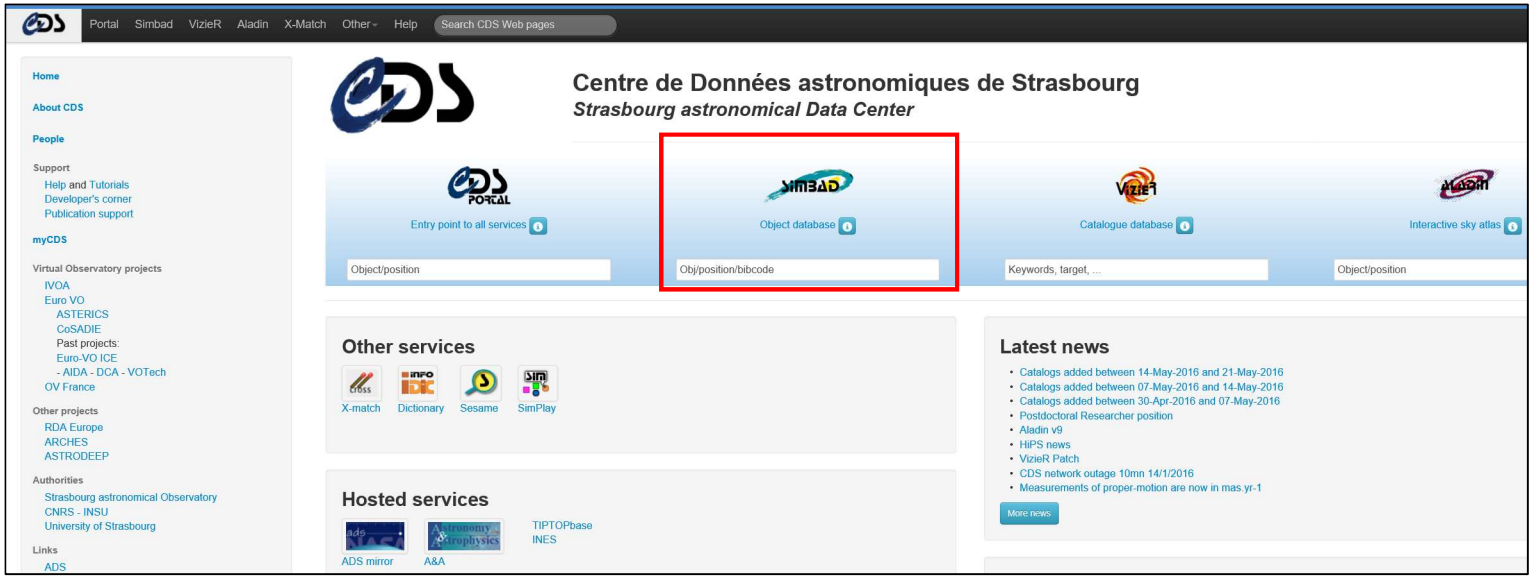
Identifiers (33) :

LTT 14048	GC 18744	IDS 13485+6849 A	SKY# 25404
AG+68 565	GCRV 8186	IRAS 13497+6833	TYC 4402-1968-1
ASCC 84047	GEN# +1.00121146	LSPM J1350+6818	UBV M 19809
BD+69 724	Gmb 2060	2MASS J13505915+6818551	USNO-B1.0 1583-00151750
BDS 6664 A	GSC 04402-01968	NLTT 35503	WDS J13510+6819A
CCDM J13511+6819A	HD 121146	PLX 3168	[GS83] 131
CSI+69 724 1	HIC 67589	PLX 3168.00	
DO 34489	HIP 67589	PPM 18761	
FK5 3103	HR 5227	SAO 16197	

SIMBAD via CDS for Research

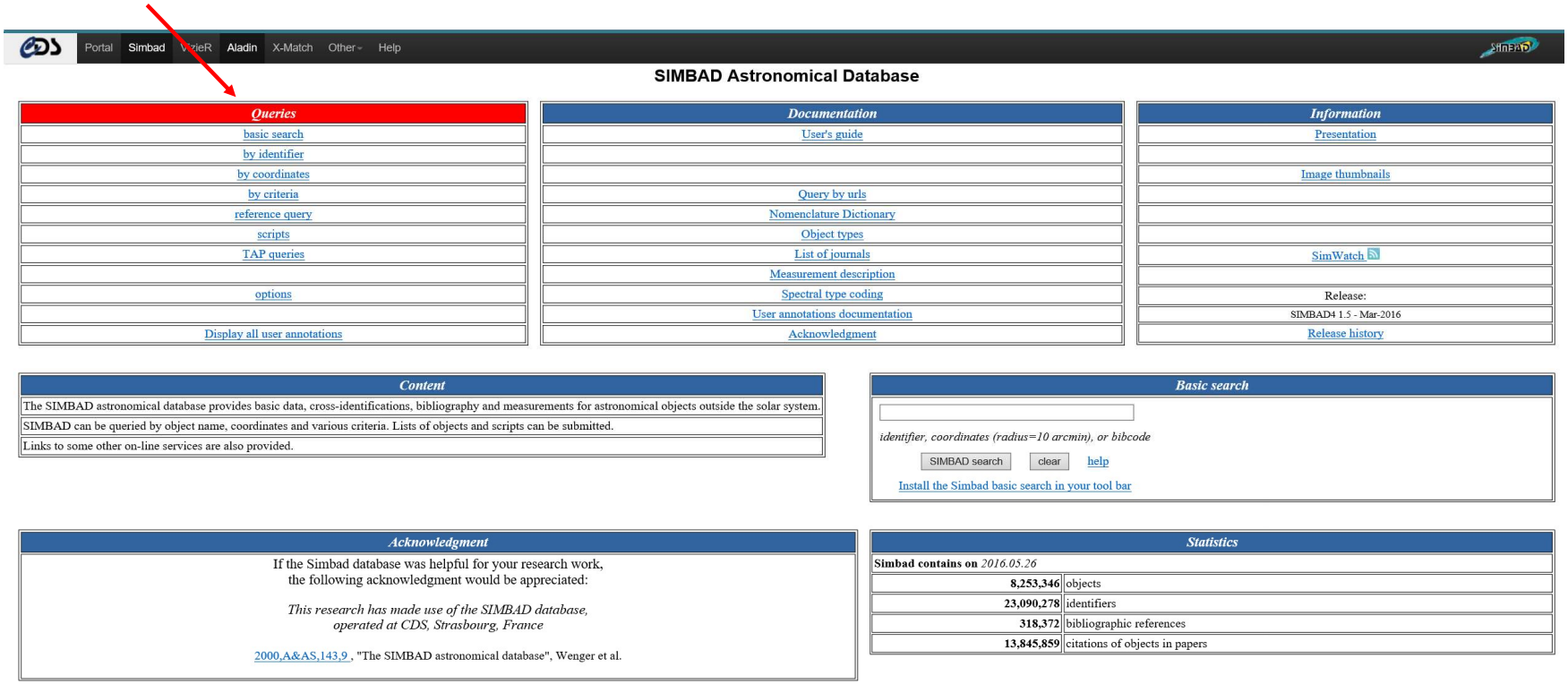
SiMBAD is principally used to access published papers that are referenced in your WDS historical data such as this example:
Click on the SiMBAD link.

WFC1998	Urban, S.E., Corbin, T.E., Wycoff, G.L., Martin, J.C., Jackson, E.S., Zacharias, M.I., & Hall, D.M.	1998AJ....115.1212U
	AJ 115, 1212, 1998 (Astrographic Cat. 2000)	



SIMBAD via CDS for Research

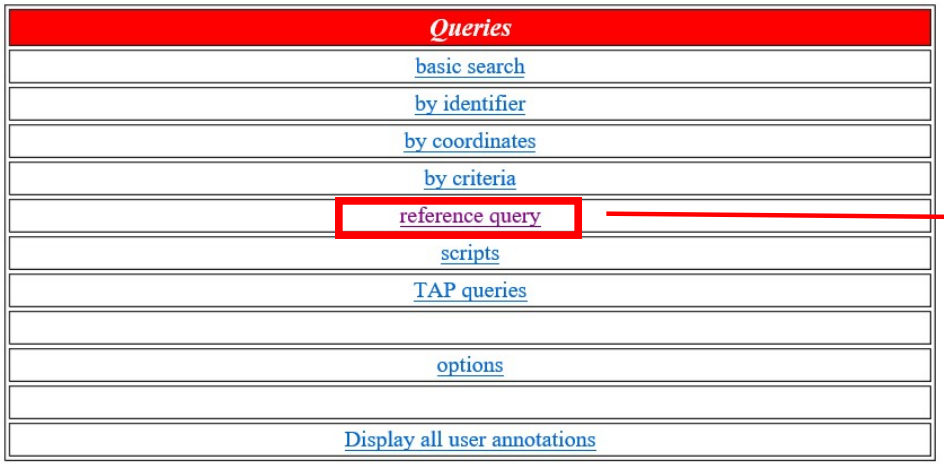
When you click on the SiMBAD link, you will see a page like below. Our attention will focus on the red area: “Queries”

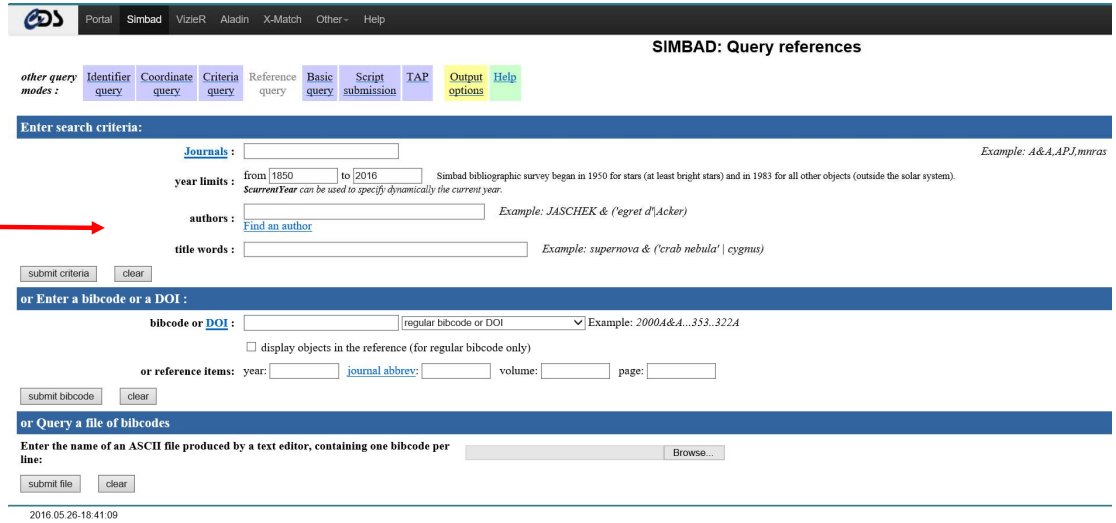


SIMBAD via CDS for Research

Click on “reference query”

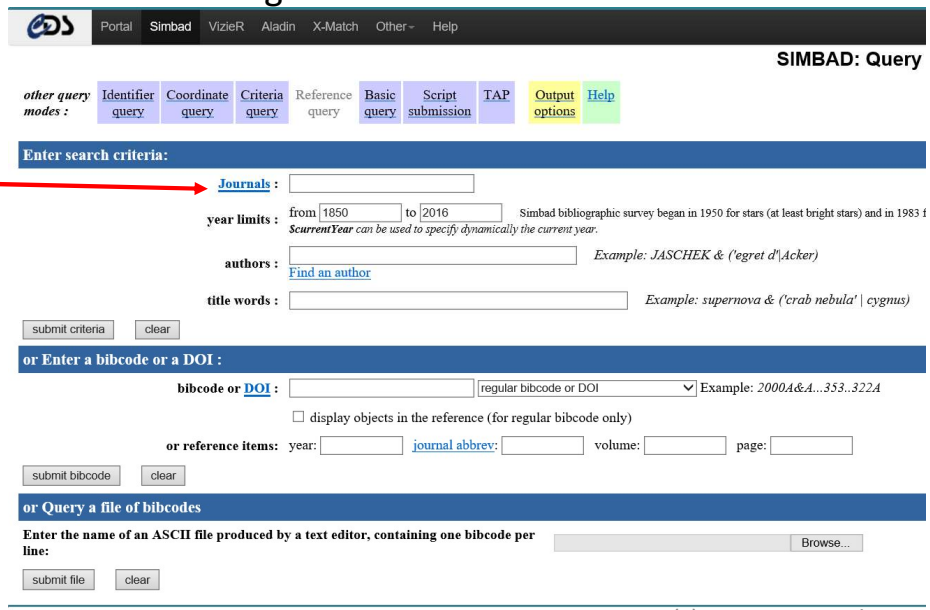
You will see a page like the screen capture on the right.

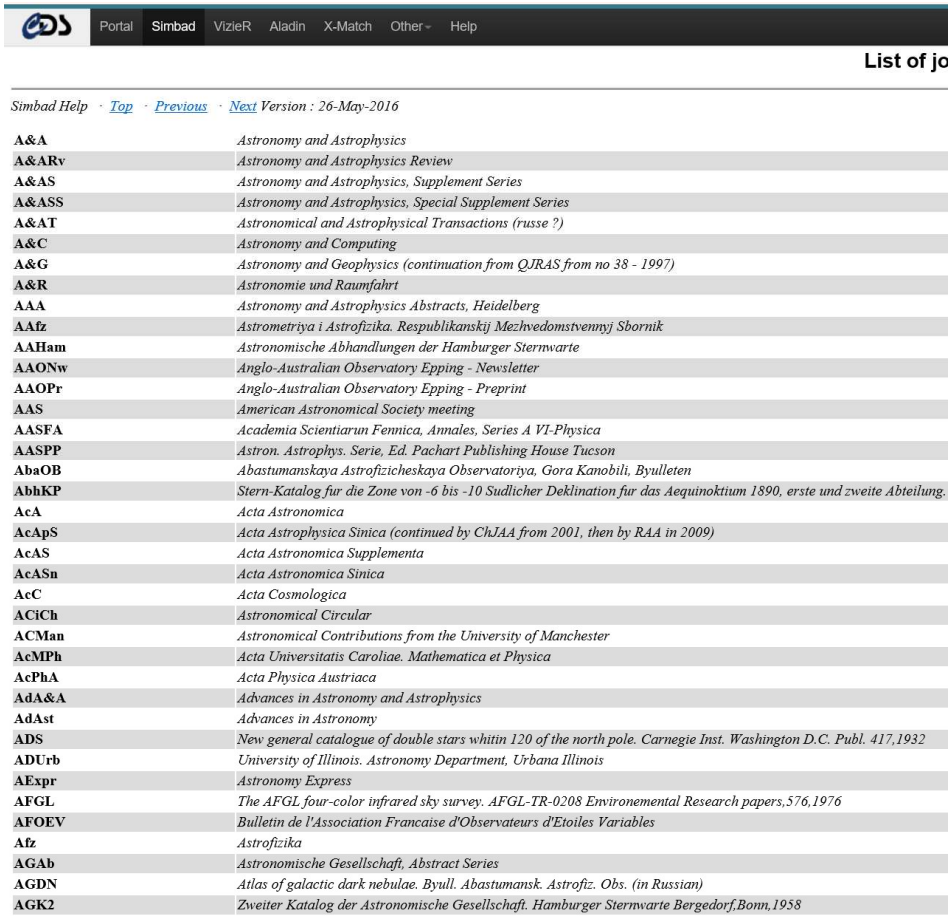




SIMBAD via CDS for Research

If you were to click on the link for “Journals” you would get a list of the various Journals that can be queried by SiMBAD. See image right. These names may also be in your references from the USNO. Scroll through the list.

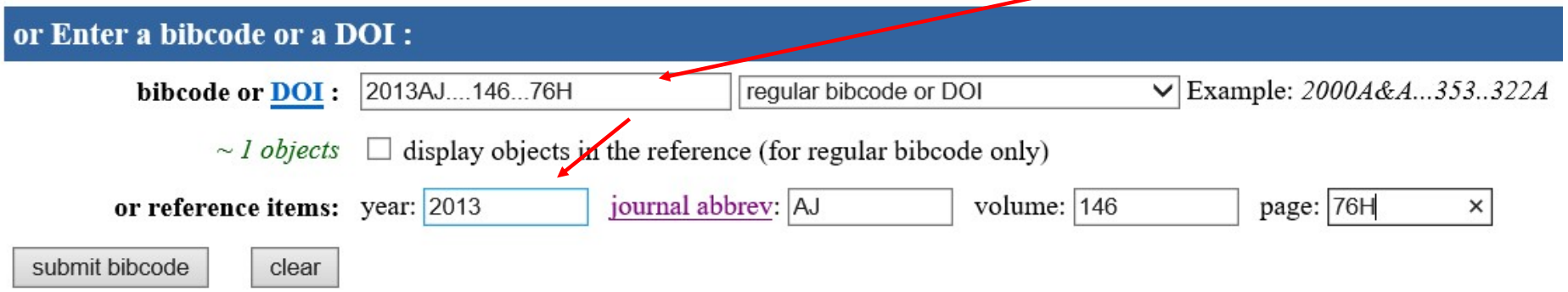




SIMBAD via CDS for Research

We will now process an example using the reference below, extracted from the historical file of a Double Star.
In the “Enter a bibcode or a DOI:” section, we added this info in the “bibcode or DOI” line:
To be repetitive, it was also added in the separate blocks in the “or reference items” line.
Hit “Submit bibcode”

```
UC_2013b   Hartkopf, W.I., Mason, B.D., Finch, C.T., Zacharias, N., Wycoff, G.L., & Hsu, D.      2013AJ....146...76H
           AJ 146, 76, 2013                                    (UC 301 - 5058)
```



SIMBAD via CDS for Research

Here is the page that was displayed as a result of the query:

The following data is provided:

- Abstract
- Abstract Copyright
- Journal Keywords
- Simbad Comments
- VizieR on-line data (VizieR to be discussed later)
- Simbad Objects
- Links, and
- CDS Status

Now, click on “Full Paper” located on the “Links” line.

Portal | Simbad | VizieR | Aladin | X-Match | Other | Help

SIMBAD references

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

Reference query: 2013AJ....146...76H (1 found) C.D.S. - SIMBAD4 rel 1.5 - 2016.05.26CEST19:10:28

send the bibcodes to ADS

2013AJ....146...76H *- Astron. J., 146, 76 (2013) - 15.10.13 24.04.16 October 2013 2013-10-01*

Double stars in the USNO CCD astrographic catalog.

HARTKOPF W.I.; MASON B.D.; FINCH C.T.; ZACHARIAS N.; WYCOFF G.L.; HSU D.

Abstract (from CDS): The newly completed Fourth USNO CCD Astrographic Catalog (UCAC4) has proven to be a rich source of double star astrometry and photometry. Following initial comparisons of UCAC4 results against those obtained by speckle interferometry, the UCAC4 catalog was matched against known double stars in the Washington Double Star Catalog in order to provide additional differential astrometry and photometry for these pairs. Matches to 58,131 pairs yielded 61,895 astrometric and 68,935 photometric measurements. Finally, a search for possible new common proper motion (CPM) pairs was made using new UCAC4 proper motion data; this resulted in 4755 new potential CPM doubles (and an additional 27,718 astrometric and photometric measures from UCAC and other sources).

Abstract Copyright: American Astronomical Society 2013

Journal keyword(s): astrometry - binaries: general - binaries: visual - catalogs

Simbad comments: In section 4.2, 06405-3921 is a misprint for WDS J06405-3912 and 11545+2154 is a misprint for WDS J11545-2154. In figures 2-3 : U0026+494, U0044+635, U0120+751 and U0153+731 not identified (not enough information).

VizieR on-line data: <Available at CDS (J/AJ/146/76): table1.dat table2.dat table4.dat table5.dat>

Simbad objects (1)

Link(s): Full paper ADS services

CDS status: *could be processed*

To bookmark this query, right click on this link: simbad:2013AJ....146...76H and select 'bookmark this link' or equivalent in the popup menu

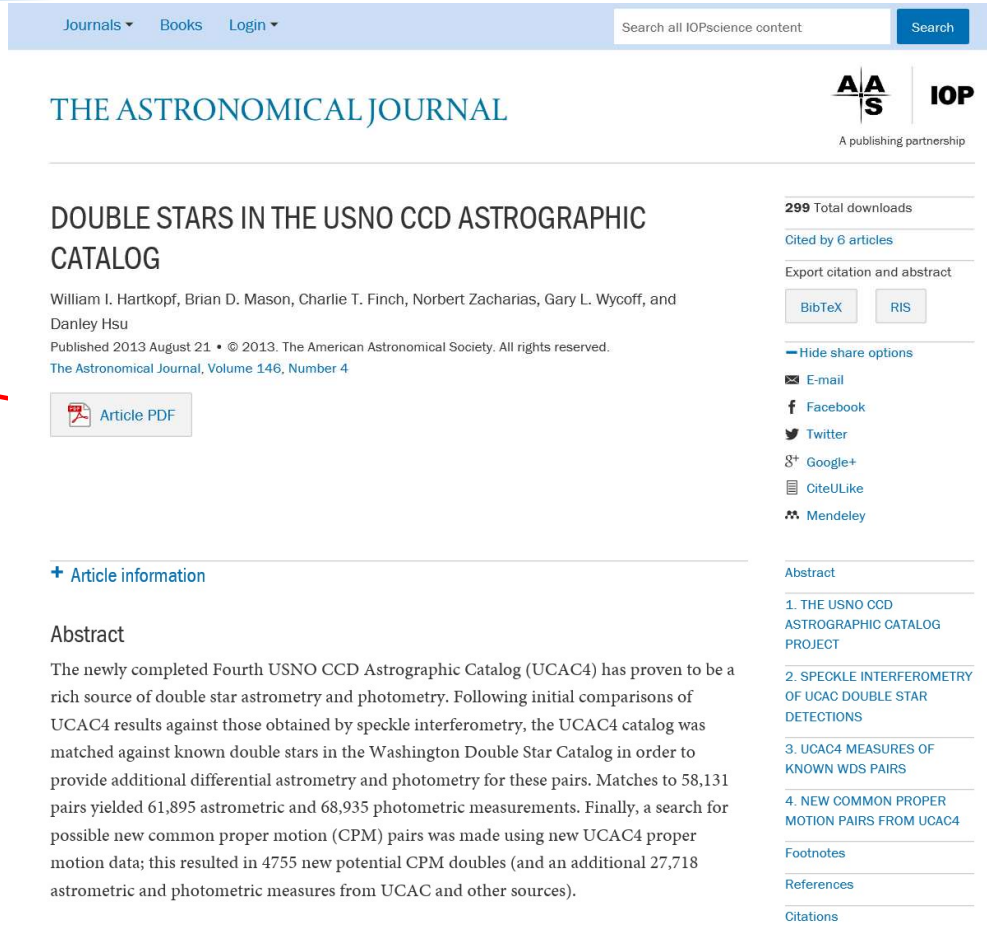
SIMBAD via CDS for Research

After clicking on the "Full Paper" link, this is displayed. NOTE: This format of this page will vary by catalog.

Search the page for the link to the full paper.

In this case, it is here.

Click on it.



SIMBAD via CDS for Research

The paper in which the star was referenced will appear.

Save the paper.

Review the paper for your star.

Make references as appropriate in your research paper.

The Astronomical Journal, 146:76 (8pp), 2013 October doi:10.1088/0004-6256/146/4/76

DOUBLE STARS IN THE USNO CCD ASTROGRAPHIC CATALOG

William I. Hartkopf, Brian D. Mason, Charlie T. Finch, Norbert Zacharias, Gary L. Wycoff, and Danley Hsu
US Naval Observatory, Washington, DC 20392, USA; wih@usno.navy.mil, bdm@usno.navy.mil, finch@usno.navy.mil, nz@usno.navy.mil
Received 2013 June 24; accepted 2013 July 18; published 2013 August 21

ABSTRACT

The newly completed Fourth USNO CCD Astrographic Catalog (UCAC4) has proven to be a rich source of double star astrometry and photometry. Following initial comparisons of UCAC4 results against those obtained by speckle interferometry, the UCAC4 catalog was matched against known double stars in the Washington Double Star Catalog in order to provide additional differential astrometry and photometry for these pairs. Matches to 58,131 pairs yielded 61,895 astrometric and 68,935 photometric measurements. Finally, a search for possible new common proper motion (CPM) pairs was made using new UCAC4 proper motion data; this resulted in 4755 new potential CPM doubles (and an additional 27,718 astrometric and photometric measures from UCAC and other sources).

Key words: astrometry – binaries: general – binaries: visual – catalogs

Online-only material: color figure, machine-readable and VO tables

1. THE USNO CCD ASTROGRAPHIC CATALOG PROJECT

The USNO CCD Astrographic Catalog (UCAC; Zacharias et al. 2013) is a compiled, all-sky star catalog covering mainly the 8–16 mag range in a single bandpass between *V* and *R*. Positional errors are about 15–20 mas for stars in the 10–14 mag range. Since the release of UCAC2 (Zacharias et al. 2004), the UCAC catalogs have been widely used in the community, mainly for astrometric reference stars extending the optical reference frame beyond *Hipparcos* and *Tycho-2*.

Observations for UCAC were obtained using the USNO's 1970s vintage 8 inch Twin Astrograph, originally designed for photographic survey work. The astrograph has two lenses and tubes (both $f/10$, 2 m focal length) mounted in parallel on a Boller and Chivens 24 inch mount. For the UCAC project, the visual bandpass corrected lens was used for guiding, while the five-element "red lens" (a 1990s replacement of the original "blue lens"), equipped with a 579–643 nm bandpass filter, was used for imaging. The detector was a Kodak 4k × 4k CCD with 9 μm square pixels, giving a scale of 0.905 arcsec pixel^{-1}. Although the lens was designed for 8 × 10 inch photographic plates and gives a 9° field of view, only the ~1 deg^2 area covered by the single CCD was used for the program, providing uniform optical quality with all stellar images close to the optical axis.

The entire southern hemisphere and up to about $\delta = +20°$ was observed first from the Cerro Tololo Inter-American Observatory between 1998 and 2001, followed by observations of the remaining parts of the northern hemisphere from the USNO Flagstaff, AZ Station. Observations were completed in 2004.

northern proper motions) version of the previous UCAC3 release (Zacharias et al. 2010) following the same pixel data (Zacharias 2010) and astrometric reductions (Finch et al. 2010).

UCAC astrograph data were combined with many earlier epoch catalog positions to derive proper motions. Thus the published UCAC catalogs contain mean positions based on the astrograph observational program and other data dating back in some cases a century or more. UCAC4 lists over 113 million objects, mainly stars with accurate positions. About 110 million of these also have accurate proper motions. UCAC data are supplemented by Two Micron All Sky Survey (2MASS)[1] near-IR photometry and APASS[2] five-band optical photometry.

1.1. Blended Images and Doubles in the UCAC

For this paper we analyzed UCAC astrograph data to identify double stars. Instead of the published mean catalog positions, object detections on individual astrograph exposures form the basis of this investigation. Depending on the seeing, the typical FWHM of a UCAC astrograph observed stellar profile is about 1.″5–2.″2. (Note that the diffraction limit of the 206 mm aperture for the "red lens" is already about an arcsecond.)

For detected objects, first and second moments were calculated to obtain centroids and a measure of image elongation. The centroids served as starting values for two-dimensional image profile fits to the pixel data. Instead of a Gaussian profile, a modified Lorentz profile was used with the same number of parameters to fit after determining two more shape parameters; these parameters were based on pilot investigations over a large

Questions?