

COMMISSIONS 27 AND 42 OF THE IAU
INFORMATION BULLETIN ON VARIABLE STARS

Number 5835

Konkoly Observatory
Budapest
30 May 2008

HU ISSN 0374 – 0676

NEW AND ARCHIVE TIMES OF MINIMA
OF ECLIPSING BINARY SYSTEMS

BORKOVITS, TAMÁS^{1,10}; VAN CAUTEREN, PAUL²; LAMPENS, PATRICIA³;
DUFOER, SJOERD⁴; KLEIDIS, STELIOS⁵; VAN LEENHOVE, MAARTEN⁶;
CSIZMADIA, SZILÁRD^{7,1,8}; REGÁLY, ZSOLT⁸; PATKÓS, LÁSZLÓ⁸; KLAGYIVIK, PÉTER⁹;
BÍRÓ, IMRE BARNA¹; HEGEDÜS, TIBOR¹; KISS, ZOLTÁN TAMÁS¹

¹ Baja Astronomical Observatory of Bács-Kiskun County, Baja, Szegedi út, Kt. 766, H-6500 Hungary;
e-mail: borko@alcyone.bajaobs.hu

² Beersel Hills Observatory, Beersel, Belgium

³ Royal Observatory of Belgium

⁴ Belgium

⁵ Zagori Observatory (ZPO), Epirus, Greece

⁶ Willebroek Observatory, Belgium

⁷ FÖMI Satellite Geodetic Observatory, Pf. 585, Budapest, H-1592 Hungary

⁸ Konkoly Observatory of the Hungarian Academy of Sciences, Budapest, Pf. 67, H-1525 Hungary

⁹ Department of Astronomy, Eötvös Loránd University, Budapest, Pf. 32, H-1518 Hungary

¹⁰ Guest observer at Pizskéstető Observatory of Konkoly Observatory

Observatory and telescope:

50-cm $f/8.4$ Ritchey–Chrétien telescope (Ba50) of the Baja Astronomical Observatory (Hungary)

50-cm $f/15$ Cassegrain telescope (Pi50) of the Konkoly Observatory at Pizskéstető Mountain Station (Hungary)

13-cm refractor, 25, and 40-cm Newton telescopes (BHO13, BHO25, BHO40, respectively); Beersel Hills Observatory (Belgium)

8-cm refractor and 20-cm reflector (Duf08, Duf20) of Sjoerd Dufoer (Belgium)

20-cm reflector and 30-cm SC telescope (ZPO20, ZPO30) of Zagori Observatory (ZPO), Epirus (Greece)

28-cm SC telescope (WOB28) of Willebroek Observatory (Belgium)

40-cm $f/8.9$ Ritchey–Chrétien telescope (IAO40) of the Izsák Astrophysical Observatory of the Eötvös Loránd University (Hungary)

Detector:	512 × 512 Apogee AP-7 CCD camera (Ba50) cooled UBVR Photometer (Pi50) uncooled UBVR Photometer (Pi50u) 2184 × 1472 SBIG ST-10XME with filter wheel (filters Bessell specifications) (BOHxx) SBIG ST-7 with filter wheel (filters Bessell specifications) (BHOxxST7) 2184 × 1472 SBIG ST-10XME (Dufxx) SBIG ST-7XMEI with filter wheel (ZPO30) FLI CM10 CCD camera (ZPO20) 2184 × 1472 SBIG ST-10XME (WOB28) 4008 × 2672 SBIG STL-11K (IAO40)
------------------	---

Method of data reduction:

Reduction of Baja and IAO (Budapest) CCD frames was made with a customly developed IRAF¹ package.
 BHO observations were reduced by Mira-AP (7) software.
 Duf and WOB measurements by MaximDL4.
 ZPO observations: AIPWIN V1.25.

Method of minimum determination:

The minima times were computed with parabolic fitting, and in some cases with linearized Pogson-method or Kwee-van Woerden method (Kwee & van Woerden, 1956). ZPO minima calculations: Minima25 (developed: R.H. Nelson)

Times of minima:					
Star name	Time of min. HJD 2400000+	Error	Type	Filter	Rem.
AP Aur	54133.2997	2	II	<i>V</i>	Csz/IAO40
CL Aur	54487.4260	1	I	<i>V</i>	ZPO30
	54510.4465	3	II	<i>R</i>	Bor/Ba50
HP Aur	54172.3437	5	II	<i>V</i>	BHO25
	54428.4489	3	II	<i>V</i>	WOB28
	54487.4952	1	I	<i>B</i>	ZPO20
IM Aur	53762.3599	5	II	<i>R</i>	Bir/Ba50
	54078.5493	4	I	<i>B, V, R</i>	Heg/Ba50
	54516.3425	1	I	<i>V</i>	Kis/Ba50
IU Aur	54495.3575	2	II	<i>B, V</i>	ZPO30
	54496.2615	1	I	<i>B</i>	ZPO20
	54523.4332	4	I	<i>V</i>	ZPO30
44i Boo ^a	54199.3577	7	II	<i>U, B</i>	Reg/Pi50
	54199.3592	5	II	<i>V, R</i>	Reg/Pi50
	54199.4926	6	I	<i>U, B, V, R</i>	Reg/Pi50
	54222.5252	3	I	<i>B, V, R</i>	Bor/Pi50
Y Cam	52558.3989	3	I	<i>V</i>	BHO40ST7
	52687.3230	1	I	<i>V</i>	BHO40ST7
	54201.3690	3	I	<i>V</i>	BHO40
SV Cam	44661.4686	1	I	<i>V, B</i>	Pat/Pi50u
	45613.3482	1	I	<i>V, B</i>	Pat/Pi50u
	45766.3647	1	I	<i>V, B</i>	Pat/Pi50u
	46362.4016	1	I	<i>V, B</i>	Pat/Pi50u

¹IRAF is distributed by the National Optical Astronomical Observatories, operated by the Association of the Universities for Research in Astronomy, inc., under cooperative agreement with the National Science Foundation

Times of minima:					
Star name	Time of min. HJD 2400000+	Error	Type	Filter	Rem.
AS Cam	54077.4252	5	II	<i>R</i>	Bor/Ba50
	54525.3607	1	I	<i>R</i>	Bor/Ba50
IT Cas	54445.2352	3	I	<i>V</i>	ZPO30
OX Cas	54342.4736	4	II	<i>V</i>	Duf08
PV Cas	54454.3461	2	II	<i>V</i>	WOB28
VW Cep	54190.4896	6	I	<i>B, V, R</i>	Bor+Reg/Pi50
	54192.438	1	I	<i>B, V, R</i>	Reg/Pi50
	54557.4398	10	II	<i>B, V, R</i>	Bor+Reg/Pi50
GK Cep ^b	54222.3977	6	II	<i>B</i>	Bor/Pi50
	54222.4014	6	II	<i>V, R</i>	Bor/Pi50
CC Com	54192.3224	2	II	<i>V</i>	Csz/IAO40
	54192.4325	2	I	<i>V</i>	Csz/IAO40
	54207.3290	2	II	<i>V, R</i>	Bor/Ba50
	54207.4393	3	I	<i>V, R</i>	Bor/Ba50
	54207.5500	1	II	<i>V, R</i>	Bor/Ba50
V370 Cyg	54397.3474	4	I	<i>V</i>	Duf20
V453 Cyg	54366.4316	12	I	–	Duf08
V477 Cyg	54323.5483	1	I	<i>V</i>	Duf08
V478 Cyg	54457.3028	11	I	<i>V</i>	Duf20
V961 Cyg	54397.3462	3	I	<i>V</i>	Duf20
RX Dra	54192.5694	3	I	–	BHO13
EF Dra	54570.4248	5	I	<i>V</i>	Kla/IAO40
TU Her	54192.5171	4	I	<i>V</i>	BHO40
AK Her	54212.4950	6	I	<i>R</i>	Bor/Ba50
	54223.4556	9	I	<i>V, R</i>	Bor/Pi50
CT Her	54174.5508	54	II	<i>V</i>	BHO40
	54200.4662	2	I	<i>B</i>	BHO40
AU Lac	54366.3163	3	I	–	Duf08
RW Leo	54202.3591	2	I	–	BHO40
XY Leo	54133.3698	2	I	<i>V</i>	Csz/IAO40
UV Lyn	54442.5408	1	II	<i>V</i>	ZPO30
EF Ori	54380.5720	9	II	–	BHO40
GU Ori	54380.5621	2	II	–	BHO40
AG Per	54452.3540	2	I	<i>V</i>	Duf20
	54452.3542	3	I	<i>V</i>	WOB28
V432 Per	54389.3808	1	I	<i>V</i>	Csz/IAO40
AO Ser	54175.5429	3	I	<i>V</i>	BHO13
	54186.5371	14	II	<i>V</i>	BHO13
	54201.4835	7	II	<i>V</i>	BHO40
	54211.5959	2	I	<i>B</i>	BHO40
	54213.3545	1	I	<i>B</i>	BHO40
	54244.5717	9	II	<i>V</i>	BHO40
OU Ser	54234.3739	4	I	<i>V</i>	Csz/IAO40
	54234.5152	3	II	<i>V</i>	Csz/IAO40
SV Tau	54454.6025	3	I	<i>V</i>	Duf20
RS Tri	54397.2910	8	I	<i>V</i>	WOB28
W UMa	54556.5283	2	II	<i>V</i>	Kla/IAO40
VV UMa	54192.3861	2	I	–	BHO13
	54193.4220	11	II	–	BHO13
	54203.3849	6	I	<i>V</i>	BHO13ST7
	54388.6326	7	II	<i>V</i>	BHO40
XY UMa	54556.4186	1	I	<i>V</i>	Kla/IAO40
DW UMa	54176.3651	1	I	<i>R</i>	Bor/Ba50
	54176.5016	1	I	<i>R</i>	Bor/Ba50
	54176.6384	1	I	<i>R</i>	Bor/Ba50
	54214.3420	3	I	<i>V, R</i>	Bor/Ba50
	54214.4785	6	I	<i>V, R</i>	Bor/Ba50
	54544.3831	1	I	<i>R</i>	Bor/Ba50
	54544.5196	1	I	<i>R</i>	Bor/Ba50
	54544.6563	2	I	<i>R</i>	Bor/Ba50
HX UMa	54211.425	2	II	<i>V</i>	Csz/IAO40

Times of minima:					
Star name	Time of min. HJD 2400000+	Error	Type	Filter	Rem.
LP UMa	54176.4566	8	I	<i>R</i>	Bor/Ba50
	54176.621	1	II	<i>R</i>	Bor/Ba50
	54214.4245	8	II	<i>V, R</i>	Bor/Ba50
	54214.584	1	I	<i>V</i>	Bor/Ba50
	54544.4768	5	II	<i>R</i>	Bor/Ba50
	54544.629	1	I	<i>R</i>	Bor/Ba50
RT UMi	54172.5058	3	I	<i>V</i>	BHO25
DR Vul	54312.4591	3	I	<i>V</i>	Duf08

Explanation of the remarks in the table:

[[Observer(s)]]/Instrument

^a: 44i Boo: On the night 2454199 the discrepancy between the secondary mid-eclipse times in *U, B* and *V, R* bands is supposed to be real.

^b: GK Cep: On the night 2454222 the discrepancy between the mid-eclipse times in *B* and *V, R* bands is supposed to be real.

Acknowledgements:

P.L., P.V.C., M.V.L., S.D. and S.K. thank Patrick Wils for providing them with software.
--

Part of BHO data were acquired with equipment purchased thanks to a research fund financed by the Belgian National Lottery (1999).

P.V.C thanks Astrotechniek (<http://www.astrotechniek.net>)

References:

Kwee, K. K., & van Woerden, H., 1956, *Bull. Astron. Inst. Neth.*, **12**, 327