Recent Minima of 150 Eclipsing Binary Stars

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Received January 23, 2012; accepted January 23, 2012

Abstract This paper continues the publication of times of minima for eclipsing binary stars from observations reported to the AAVSO EB section. Times of minima from observations made from April 2011 through December 2011 along with some unpublished times of minima from older data are presented.

1. Recent Observations

The accompanying list contains times of minima calculated from recent PEP and CCD observations made by participants in the AAVSO's eclipsing binary program. This list will be web-archived and made available through the AAVSO ftp site at ftp://ftp.aavso.org/public/datasets/gsam2j402.txt. This list, along with the eclipsing binary data from earlier AAVSO publications, is also included in the Lichtenknecker database administrated by the Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne e. V. (BAV) at: http://www.bav-astro.de/LkDB/index.php?lang=en. These observations were reduced by the observers or the writer using the method of Kwee and Van Worden (1956). The standard error is included when available. Column F in Table 1 indicates the filter used. A "C" indicates a clear filter.

The linear elements in the *General Catalogue of Variable Stars* (GCVS; Kholopov *et al.* 1985) were used to compute the O–C values for most stars. For a few exceptions where the GCVS elements are missing or are in significant error, light elements from another source are used: CD Cam (Baldwin and Samolyk 2007), CW Cas (Samolyk 1992a), V1115 Cas (Kholopov et al. 2011), Z Dra (Danielkiewicz-Krośniak and Kurpińska-Winiarska 1996), DF Hya (Samolyk 1992b), EF Ori (Baldwin and Samolyk 2005), GU Ori (Samolyk 1985). Light elements for V471 Cas, BC Eri, V728 Her, CD Lyn, V1128 Tau, KM UMa, and MS Vir are from up-to-date linear elements of eclipsing binaries (Kreiner 2012). O–C values listed in this paper can be directly compared with values published in the *AAVSO Observed Minima Timings of Eclipsing Binaries* series.

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Table 1. Recent times of minima of stars in the AAVSO eclipsing binary program.

Star	*JD (min) HJD 2400000+*	*Cycle*	*O–C (day)*	*F*	*Observer*	*Standard Error (day)*
RT And	55850.6541	23387	–0.0094	V	K. Menzies	0.0001
WZ And	55836.6375	21511	0.0569	V	G. Samolyk	0.0002
XZ And	55836.7518	23473	0.1738	V	G. Samolyk	0.0001
AB And	55748.7710	59173.5	–0.0284	V	K. Menzies	0.0002
AB And	55793.5776	59308.5	–0.0273	R	L. Corp	0.0004
AB And	55838.3811	59443.5	–0.0292	R	L. Corp	0.0001
AB And	55838.5476	59444	–0.0286	R	L. Corp	0.0002
AB And	55890.3218	59600	–0.0296	R	L. Corp	0.0001
AB And	55906.5850	59649	–0.0291	V	G. Samolyk	0.0002
BD And	55824.9533	45069	0.0095	V	R. Sabo	0.0003
BX And	55873.6462	31707	–0.0586	V	K. Menzies	0.0001
BX And	55906.5895	31761	–0.0615	V	G. Samolyk	0.0002
DS And	55864.7039	19517	0.0036	V	N. Simmons	0.0002
CX Aqr	55907.5249	34990	0.0128	V	G. Samolyk	0.0001
OO Aql	55773.6378	33861	0.0509	V	K. Menzies	0.0003
OO Aql	55773.6378	33861	0.0509	V	N. Simmons	0.0002
OO Aql	55790.3637	33894	0.0528	R	L. Corp	0.0001
OO Aql	55793.4035	33900	0.0518	R	L. Corp	0.0002
OO Aql	55825.3320	33963	0.0527	R	L. Corp	0.0006

Table continued on following pages

Table 1. Recent times of minima of stars in the AAVSO eclipsing binary program, cont.

Star	*JD (min) HJD 2400000+*	*Cycle*	*O–C (day)*	*F*	*Observer*	*Standard Error (day)*
SS Ari	55866.6860	41475	–0.2936	V	R. Poklar	0.0002
SX Aur	55923.6455	13025	0.0154	V	R. Poklar	0.0002
TT Aur	55890.6875	25998	–0.0134	V	G. Samolyk	0.0001
TT Aur	55902.6839	26007	–0.0116	V	R. Poklar	0.0003
TT Aur	55914.6787	26016	–0.0115	V	N. Simmons	0.0001
AP Aur	55874.7679	23589.5	1.3617	V	K. Menzies	0.0001
AP Aur	55890.7106	23617.5	1.3636	V	G. Samolyk	0.0003
CL Aur	55838.8305	18380	0.1490	V	G. Samolyk	0.0002
CL Aur	55924.6936	18449	0.1509	V	R. Poklar	0.0002
EP Aur	55872.8002	50022	0.0160	V	K. Menzies	0.0001
HP Aur	55797.9141	9166	0.0608	V	R. Sabo	0.0002
HP Aur	55889.6847	9230.5	0.0600	V	G. Samolyk	0.0003
IM Aur	55844.7034	12290	–0.1109	V	G. Samolyk	0.0002
TU Boo	55654.6273	69655.5	–0.1359	V	K. Menzies	0.0002
TU Boo	55718.6727	69853	–0.1371	V	N. Simmons	0.0001
TY Boo	55718.2987	66965	0.0780	C	Y. Ogmen	0.0001
TZ Boo	55666.7288	53956.5	0.0655	V	K. Menzies	0.0004
TZ Boo	55699.7121	54067.5	0.0639	V	G. Samolyk	0.0004
TZ Boo	55704.3151	54083	0.0609	C	Y. Ogmen	0.0001
TZ Boo	55716.6510	54124.5	0.0645	V	K. Menzies	0.0003
VW Boo	55745.6648	71781	–0.1936	V	G. Samolyk	0.0002
Y Cam	55923.6781	3921	0.3973	V	G. Samolyk	0.0002
SV Cam	55893.6696	22424	0.0539	V	R. Poklar	0.0001
CD Cam	55905.7874	4113	–0.0009	V	G. Samolyk	0.0004
AM CMi	55897.8921	30076	0.2010	V	K. Menzies	0.0003
TY Cap	55836.6486	7758	0.0731	V	G. Samolyk	0.0002
TV Cas	55838.7074	6199	–0.0261	V	G. Samolyk	0.0003
TW Cas	55844.5549	9687	–0.0070	V	G. Samolyk	0.0003
TW Cas	55864.5530	9701	–0.0054	V	N. Simmons	0.0002
CW Cas	55914.5221	44791.5	–0.0642	V	G. Samolyk	0.0002
IR Cas	55875.6672	19850	0.0080	V	R. Poklar	0.0001
IS Cas	55857.6111	14706	0.0667	V	K. Menzies	0.0001
OR Cas	55872.7162	9362	–0.0248	V	K. Menzies	0.0001
V380 Cas	55798.6136	22216	–0.0684	V	N. Simmons	0.0003
V380 Cas	55836.6183	22244	–0.0673	V	N. Simmons	0.0002
V380 Cas	55844.7634	22250	–0.0658	V	K. Menzies	0.0002
V380 Cas	55889.5527	22283	–0.0666	V	G. Samolyk	0.0005
V471 Cas	55923.6121	8538.5	0.0016	V	G. Lubcke	0.0002

Table continued on following pages

Table 1. Recent times of minima of stars in the AAVSO eclipsing binary program, cont.

Star	JD (min) HJD 2400000+	Cycle	O–C (day)	F	Observer	Standard Error (day)
V471 Cas	55923.6122	8538.5	0.0017	I	G. Lubcke	0.0001
V1115 Cas	55923.5541	7842	–0.0551	I	G. Lubcke	0.0001
V1115 Cas	55923.5542	7842	–0.0550	V	G. Lubcke	0.0007
SU Cep	55806.6959	32706	0.0065	V	G. Samolyk	0.0001
WW Cep	55836.7798	20088	0.3280	V	G. Samolyk	0.0001
WZ Cep	55747.6643	66373	–0.1081	V	N. Simmons	0.0001
XY Cep	50702.637	2491	–0.0258	C	S. Cook	
XY Cep	51465.637	2766	–0.0207	C	S. Cook	
DK Cep	55836.5917	22564	0.0367	V	G. Samolyk	0.0001
DL Cep	55747.8256	13371	0.0561	V	G. Samolyk	0.0003
EG Cep	55689.8277	24045	0.0133	V	G. Samolyk	0.0001
EK Cep	55810.6345	3796	0.0098	V	G. Samolyk	0.0001
GK Cep	49311.725	11341	0.0622	C(PEP)	R. Benge	0.0004
GK Cep	50675.721	12798	0.0774	C	S. Cook	0.0003
GK Cep	51057.682 :	13206	0.0864	C	S. Cook	0.0005
SS Cet	55905.6333	4524	0.0369	V	G. Samolyk	0.0001
SS Cet	55911.5810	4526	0.0366	V	R. Poklar	0.0008
TT Cet	55811.9036	47877	–0.0658	V	R. Sabo	0.0002
TT Cet	55888.6840	48035	–0.0665	V	R. Poklar	0.0001
TW Cet	55891.6792	42664.5	–0.0267	V	R. Poklar	0.0001
TX Cet	55903.6244	17306	0.0087	V	R. Poklar	0.0002
RW Com	55921.9726	66989	–0.0082	V	G. Samolyk	0.0002
RW Com	55924.9399	67001.5	–0.0077	V	K. Menzies	0.0001
RZ Com	55666.5871	61532.5	0.0444	V	K. Menzies	0.0002
CC Com	55664.6330	73095	–0.0136	V	N. Simmons	0.0003
TW CrB	52428.8443	24675	0.0283	V	S. Dvorak	0.0002
TW CrB	53091.9185	25801	0.0312	V	S. Dvorak	0.0003
TW CrB	55748.3357	30312	0.0410	R	Y. Ogmen	0.0001
ZZ Cyg	55810.6136	17197	–0.0603	V	G. Samolyk	0.0001
AE Cyg	55867.5625	11640	–0.0053	V	N. Simmons	0.0003
CG Cyg	55759.7491	25881	0.0668	V	K. Menzies	0.0002
CG Cyg	55785.6255	25922	0.0664	V	N. Simmons	0.0001
DK Cyg	55479.7104	37137	0.0916	V	G. Samolyk	0.0003
DK Cyg	55810.6074	37840	0.0932	V	N. Simmons	0.0002
KR Cyg	55838.5786	31630	0.0173	V	G. Samolyk	0.0005
V388 Cyg	55790.6151	16108	–0.0934	V	N. Simmons	0.0001
V401 Cyg	55812.6005	20554	0.0735	V	N. Simmons	0.0001
V456 Cyg	55769.6862	12184	0.0474	V	K. Menzies	0.0003

Table continued on following pages

Table 1. Recent times of minima of stars in the AAVSO eclipsing binary program, cont.

Star	*JD (min) HJD 2400000+*	*Cycle*	*O–C (day)*	*F*	*Observer*	*Standard Error (day)*
V466 Cyg	55770.7815	19400	0.0065	V	K. Menzies	0.0004
V836 Cyg	55744.5868	16668	0.0220	R	L. Corp	0.0005
V1073 Cyg	50657.644 :	15251	–0.0839	C	S. Cook	
V1073 Cyg	54085.5347	19613	–0.1132	V	V. Petriew	0.0004
TT Del	55806.6615	3683	–0.0888	V	G. Samolyk	0.0002
TY Del	55778.4084	10762	0.0558	R	L. Corp	0.0011
TY Del	55792.7025	10774	0.0564	V	R. Sabo	0.0003
DM Del	50309.745	6876.5	–0.0594	C	S. Cook	
DM Del	55773.4976	13345	–0.0923	R	L. Corp	0.0006
FZ Del	55792.6349	31241	–0.0389	V	N. Simmons	0.0001
Z Dra	55921.6210	4477	–0.0196	V	G. Samolyk	0.0001
TZ Dra	52494.5844	11002	–0.0114	V	S. Dvorak	0.0003
TZ Dra	53309.5192	11943	–0.0152	V	S. Dvorak	0.0003
AX Dra	52435.5845	45177	–0.0536	V	S. Dvorak	0.0001
AX Dra	52975.9090	46128	–0.0534	V	S. Dvorak	0.0001
BV Dra	50590.685	17472	–0.0144	C	S. Cook	
BV Dra	51056.629	18803	–0.0097	C	S. Cook	
S Equ	55777.6736	3836	0.0624	V	N. Simmons	0.0001
SV Equ	50309.550	12403	0.0800	C	S. Cook	
SV Equ	50310.004	12403.5	0.0935	C	S. Cook	
YY Eri	55836.8182	44340	0.1436	V	G. Samolyk	0.0001
YY Eri	55906.7428	44557.5	0.1432	V	G. Samolyk	0.0001
YY Eri	55926.6762	44619.5	0.1440	V	R. Poklar	0.0001
BC Eri	53304.8230	1526	0.0011	V	S. Dvorak	0.0020
BC Eri	53369.6753	1649	0.0014	V	S. Dvorak	0.0004
SX Gem	55854.8866	26940	–0.0498	V	R. Sabo	0.0004
WW Gem	55858.8461	24135	0.0206	V	K. Menzies	0.0003
HR Gem	52549.8571	20796	0.0146	V	S. Dvorak	0.0001
HR Gem	52578.7190	20823	0.0145	V	S. Dvorak	0.0002
RX Her	55336.7469	12463	0.0011	V	G. Samolyk	0.0004
RX Her	55795.6170	12721	–0.0005	V	N. Simmons	0.0002
SZ Her	55673.7814	16880	–0.0227	V	K. Menzies	0.0001
SZ Her	55836.5822	17079	–0.0235	V	G. Samolyk	0.0001
TT Her	55745.6655	17268	0.0385	V	G. Samolyk	0.0001
TU Her	55747.6338	5155	–0.2158	V	G. Samolyk	0.0003
LT Her	55752.3184	13834	–0.1306	C	Y. Ogmen	0.0001
LT Her	55778.3450	13858	–0.1211	C	Y. Ogmen	0.0001
V728 Her	51704.6717	–1688	0.0075	V	J. Howell	0.0004

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Table 1. Recent times of minima of stars in the AAVSO eclipsing binary program, cont.

Star	JD (min) HJD 2400000+	Cycle	O–C (day)	F	Observer	Standard Error (day)
V728 Her	52752.8244	536	0.0030	V	S. Dvorak	0.0004
VZ Hya	55923.5621	5395	0.0040	R	L. Corp	0.0003
DF Hya	55654.5906	38919	–0.0106	V	N. Simmons	0.0001
DF Hya	55878.9067	39597.5	–0.0101	V	K. Menzies	0.0001
FG Hya	52347.5530	22509.5	–0.0578	V	S. Dvorak	0.0010
FG Hya	52629.8087	23370.5	–0.0655	V	S. Dvorak	0.0006
FG Hya	53025.8222	24578.5	–0.0730	V	S. Dvorak	0.0006
FG Hya	53088.6048	24770	–0.0702	V	S. Dvorak	0.0003
SW Lac	55856.4707	32992	–0.1009	R	L. Corp	0.0002
VX Lac	55889.5903	9894	0.0787	V	G. Samolyk	0.0001
CM Lac	55907.5513	17998	–0.0041	V	G. Samolyk	0.0002
CO Lac	55751.8415	18297	–0.0019	V	N. Simmons	0.0003
CO Lac	55775.7447	18312.5	–0.0029	V	K. Menzies	0.0002
UV Leo	55664.3946	28702	0.0349	R	L. Corp	0.0001
UZ Leo	55661.4231	25663.5	–0.0913	R	L. Corp	0.0005
XY Leo	55653.4706	37237	0.0637	R	L. Corp	0.0004
AM Leo	55659.3644	35992.5	0.0125	R	L. Corp	0.0004
AP Leo	55653.4048	37450	–0.0293	R	L. Corp	0.0003
AP Leo	55659.4298	37464	–0.0293	R	L. Corp	0.0004
SW Lyn	52629.7070	13437	0.0371	V	S. Dvorak	0.0001
SW Lyn	53012.9317	14032	0.0441	V	S. Dvorak	0.0001
CD Lyn	51956.8230	–120	0.0026	V	S. Dvorak	0.0010
CD Lyn	51979.5681	–115	0.0003	V	S. Dvorak	0.0003
FL Lyr	55718.6648	8033	–0.0020	V	G. Samolyk	0.0001
β Lyr	55836.21	529	1.55	R	G. Samolyk	0.01
β Lyr	55836.22	529	1.56	V	G. Samolyk	0.02
β Lyr	55836.30	529	1.64	B	G. Samolyk	0.02
β Lyr	55842.51	529.5	1.38	V	G. Samolyk	0.02
β Lyr	55842.60	529.5	1.47	B	G. Samolyk	0.02
β Lyr	55842.61	529.5	1.48	R	G. Samolyk	0.03
RW Mon	55874.9343	11644	–0.0737	I	R. Sabo	0.0001
EP Mon	55914.8879	20056	0.0323	V	G. Samolyk	0.0002
V451 Oph	55751.4441	4970	–0.0038	R	L. Corp	0.0004
V501 Oph	52475.3887	22278	–0.0053	V	L. Baldinelli	0.0005
V501 Oph	52506.3610	22310	–0.0074	V	L. Baldinelli	0.0004
EF Ori	55911.7618	2199	0.0050	V	G. Samolyk	0.0003
ER Ori	55890.8172	33690	0.1000	V	G. Samolyk	0.0001
ER Ori	55915.7982	33749	0.1005	V	R. Sabo	0.0001

Table continued on following pages

Table 1. Recent times of minima of stars in the AAVSO eclipsing binary program, cont.

Star	*JD (min) HJD 2400000+*	*Cycle*	*O–C (day)*	*F*	*Observer*	*Standard Error (day)*
FR Ori	52265.7152	27632	0.0191	V	S. Dvorak	0.0002
FR Ori	52342.5496	27719	0.0184	V	S. Dvorak	0.0001
FR Ori	54102.6977	29712	0.0243	V	R. Poklar	0.0001
FR Ori	54139.7893	29754	0.0231	V	J. Bialozynski	0.0006
FT Ori	55925.6701	4627	0.0167	V	R. Poklar	0.0001
GU Ori	55921.7978	27305	–0.0499	V	G. Samolyk	0.0003
U Peg	55844.6258	51585	–0.1430	V	G. Samolyk	0.0001
AT Peg	52270.5261	6152	0.0079	V	S. Dvorak	0.0002
AT Peg	52976.5136	6768	0.0123	V	S. Dvorak	0.0005
BB Peg	55790.5999	33267.5	–0.0046	V	K. Menzies	0.0001
BB Peg	55837.5955	33397.5	–0.0043	V	G. Samolyk	0.0001
BB Peg	55845.5487	33419.5	–0.0041	V	K. Menzies	0.0001
BX Peg	55838.6233	41521	–0.1058	V	G. Samolyk	0.0001
BX Peg	55845.6342	41546	–0.1055	V	K. Menzies	0.0001
GP Peg	55786.6940	14912	–0.0481	V	K. Menzies	0.0001
RT Per	55882.6933	26497	0.0747	V	R. Poklar	0.0001
RV Per	55914.6450	7027	–0.0015	V	G. Samolyk	0.0001
XZ Per	55837.9646	10707	–0.0593	V	R. Sabo	0.0001
IT Per	53339.7475	15620	0.0054	V	S. Dvorak	0.0003
IT Per	54095.8632	16113	–0.0058	V	J. Bialozynski	0.0006
IT Per	54115.8064	16126	–0.0011	V	J. Bialozynski	0.0006
V432 Per	52503.8691	51722	–0.0092	V	S. Dvorak	0.0002
V432 Per	52629.5940	52113	0.0026	V	S. Dvorak	0.0001
V432 Per	52973.8089	53183.5	0.0335	V	S. Dvorak	0.0002
β Per	55837.7575	3556	0.1100	V	G. Samolyk	0.0002
Y Psc	55836.6946	2709	–0.0092	V	G. Samolyk	0.0001
RV Psc	55868.6393	56837	–0.0527	V	R. Poklar	0.0001
CC Ser	55701.6856	35308	0.9687	V	G. Samolyk	0.0002
Y Sex	50519.621	20850	0.0276	C	S. Cook	
Y Sex	51608.635	23444	0.0213	C	S. Cook	
RW Tau	55806.8207	3656	–0.2463	V	G. Samolyk	0.0001
CT Tau	55874.8717	15702	–0.0567	V	K. Menzies	0.0001
EQ Tau	55826.9198	45741	–0.0260	V	R. Sabo	0.0001
EQ Tau	55844.8411	45793.5	–0.0255	V	G. Samolyk	0.0002
EQ Tau	55865.6639	45854.5	–0.0250	V	K. Menzies	0.0001
EQ Tau	55921.6445	46018.5	–0.0255	V	G. Samolyk	0.0001
V1128 Tau	55923.3619	11210	0.0009	R	L. Corp	0.0002
V1128 Tau	55923.5154	11210.5	0.0017	R	L. Corp	0.0006

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Table 1. Recent times of minima of stars in the AAVSO eclipsing binary program, cont.

Star	*JD (min) HJD 2400000+*	*Cycle*	*O–C (day)*	*F*	*Observer*	*Standard Error (day)*
V Tri	55837.8148	53594	–0.0045	V	G. Samolyk	0.0001
X Tri	55806.8448	13694	–0.0792	V	G. Samolyk	0.0001
X Tri	55881.6520	13771	–0.0802	V	R. Poklar	0.0001
X Tri	55920.5129	13811	–0.0807	V	N. Simmons	0.0001
RS Tri	55790.7941	9351	–0.0386	V	K. Menzies	0.0003
RV Tri	55905.5500	13099	–0.0352	V	G. Samolyk	0.0001
W UMa	55906.9130	30396	–0.0706	V	G. Samolyk	0.0001
TX UMa	55921.8507	3566	0.1958	V	G. Samolyk	0.0001
TY UMa	55717.6631	45650.5	0.3022	V	K. Menzies	0.0002
UX UMa	55757.2760	93173	0.0024	C	Y. Ogmen	0.0001
VV UMa	55914.9607	14693	–0.0501	V	G. Samolyk	0.0001
XZ UMa	55648.6327	7756	–0.1072	V	N. Simmons	0.0001
XZ UMa	55907.7609	7968	–0.1109	V	G. Samolyk	0.0001
KM UMa	55692.2752	9072	–0.0017	C	Y. Ogmen	0.0001
AH Vir	55698.6342	24254	0.2349	V	N. Simmons	0.0003
AX Vir	50567.641	32735	0.0018	C	S. Cook	
AX Vir	52402.6425	35347	0.0049	V	S. Dvorak	0.0001
BF Vir	52406.6237	9891	0.0618	V	S. Dvorak	0.0005
BF Vir	53097.8067	10970	0.0698	V	S. Dvorak	0.0001
MS Vir	52371.7634	–410.5	0.0033	V	S. Dvorak	0.0003
MS Vir	52407.6931	–295.5	0.0026	V	S. Dvorak	0.0003
MS Vir	53150.6746	2082.5	0.0060	V	S. Dvorak	0.0003
AW Vul	55784.6403	11779	–0.0159	V	N. Simmons	0.0001
BE Vul	55718.8180	10056	0.0825	V	G. Samolyk	0.0001
BE Vul	55763.8270	10085	0.0823	V	R. Sabo	0.0001
BE Vul	55788.6603	10101	0.0829	V	N. Simmons	0.0001
BS Vul	55779.6050	26279	–0.0273	V	K. Menzies	0.0001
BT Vul	55773.7433	17851	0.0021	V	K. Menzies	0.0004
BU Vul	55837.6585	39199	0.0189	V	G. Samolyk	0.0001
CD Vul	55747.8599	13820	–0.0010	V	G. Samolyk	0.0002
ER Vul	54008.7294	19806	0.0158	V	V. Petriew	0.0023
ER Vul	54078.5378	19906	0.0147	V	V. Petriew	0.0006