

Recent Minima of 228 Eclipsing Binary Stars

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Abstract This paper continues the publication of times of minima for eclipsing binary stars. Times of minima presented were determined from observations received by the AAVSO Eclipsing Binaries Section from August 2022 through January 2023.

1. Recent observations

The accompanying list (Table 1) contains times of minima calculated for 228 variable stars calculated from recent CCD observations made by participants in the AAVSO's eclipsing binary program. These observations were reduced by the observers or the writer using the method of Kwee and van Woerden (1956).

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 1992), EF Ori (Baldwin and Samolyk 2005), GU Ori (Samolyk 1985).

The light elements used for QX And, V376 And EK Aqr, V688 Aql, V719 Aql, V889 Aql, V644 Aur, LZ Lyr, and GR Psc are from Kreiner (2004).

The light elements used for BN Ari, V641 Aur, CW CMi, CX CMi, EX CMi, V1261 Cas, V700 Cyg, V2477 Cyg, PS Del, V502 Oph, and VZ Psc are from Paschke (2014).

The light elements used for V731 Cep and V495 Vul are from Nelson (2014).

The light elements used for V765 Cas, V796 Cep, V3135 Cyg, V479 Lac, V505 Lac, V589 Lyr, and V882 Per are from Watson *et al.* (2014).

The standard error is included when available. Column F indicates the filter used; a “C” indicates a clear filter.

This list will be web-archived and made available through the AAVSO ftp site at:

<ftp://ftp.aavso.org/public/datasets/gsamj511eb228.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; Walter *et al.* 2015).¹

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¹ Walter *et al.* (2015), <https://www.bav-astro.eu/index.php/veroeffentlichungen/service-for-scientists/lkdb-engl>

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

<i>Star</i>	<i>JD (min)</i> <i>Hel.</i> <i>2400000+</i>	<i>Cycle</i>	<i>O-C</i> <i>(day)</i>	<i>F</i>	<i>Observer</i>	<i>Standard</i> <i>Error</i> <i>(day)</i>	<i>Star</i>	<i>JD (min)</i> <i>Hel.</i> <i>2400000+</i>	<i>Cycle</i>	<i>O-C</i> <i>(day)</i>	<i>F</i>	<i>Observer</i>	<i>Standard</i> <i>Error</i> <i>(day)</i>
RT And	59845.6103	29739	-0.0135	V	G. Samolyk	0.0001	FW Aur	59880.7977	2390	-0.0047	V	L. Hazel	0.0009
RT And	59884.6038	29801	-0.0136	V	G. Samolyk	0.0001	HP Aur	59818.7973	11992	0.0739	V	L. Hazel	0.0006
RT And	59910.3896	29842	-0.0139	V	T. Arranz	0.0003	HP Aur	59952.5452	12086	0.0774	V	G. Samolyk	0.0004
RT And	59918.5659	29855	-0.0137	V	G. Samolyk	0.0001	IM Aur	59824.7992	15481	-0.1367	V	L. Hazel	0.0006
RT And	59944.3520	29896	-0.0137	V	T. Arranz	0.0001	V641 Aur	59876.7989	17038	-0.0035	V	L. Hazel	0.0006
TT And	59875.6254	2247	-0.0129	V	L. Hazel	0.0006	V644 Aur	59629.6731	9135	-0.0009	V	K. Menzies	0.0002
TW And	59852.7142	5053	-0.0732	V	G. Samolyk	0.0001	SV Cam	59863.6926	29118	0.0666	V	L. Hazel	0.0006
TW And	59881.5745	5060	-0.0723	V	G. Samolyk	0.0001	SX Cam	59875.5523	29138	0.0649	V	L. Hazel	0.0003
UU And	59830.8384	12232	0.1257	V	G. Samolyk	0.0002	CD Cam	59914.6718	9359	-0.0274	V	G. Samolyk	0.0005
UU And	59906.6413	12283	0.1275	V	G. Samolyk	0.0002	R CMa	59934.8171	13773	0.1476	V	G. Samolyk	0.0005
WZ And	59852.7075	27284	0.0955	V	G. Samolyk	0.0002	RT CMa	59914.7895	25731	-0.8048	V	G. Samolyk	0.0001
XZ And	59798.6867	26392	0.2143	V	L. Hazel	0.0003	SX CMa	59917.9139	19592	0.0437	V	G. Samolyk	0.0003
XZ And	59874.6951	26448	0.2151	V	L. Hazel	0.0003	TZ CMa	59884.9063	17139	-0.2377	V	G. Samolyk	0.0002
AB And	59795.6709	71367	-0.0554	V	G. Samolyk	0.0001	EG CMa	59909.9077	2936	0.0234	V	L. Hazel	0.0006
AB And	59795.8382	71367.5	-0.0541	V	G. Samolyk	0.0001	AK CMi	59857.8718	29610	-0.0252	V	L. Hazel	0.0003
AB And	59851.5954	71535.5	-0.0548	V	G. Samolyk	0.0001	CW CMi	59876.9156	24427	-0.0739	V	L. Hazel	0.0006
AB And	59906.5226	71701	-0.0557	V	G. Samolyk	0.0001	CX CMi	59907.8541	7091.5	0.0433	V	L. Hazel	0.0009
AB And	59916.3126	71730.5	-0.0565	V	T. Arranz	0.0003	EX CMi	59919.8183	17811.5	0.0205	V	L. Hazel	0.0006
AD And	59796.8074	21085.5	-0.0757	V	G. Samolyk	0.0001	RW Cap	59812.4724	5055	-0.8741	V	T. Arranz	0.0003
AD And	59884.5768	21174.5	-0.0778	V	G. Samolyk	0.0002	TY Cap	59796.7198	10540	0.1069	V	G. Samolyk	0.0001
BD And	59845.7276	53755	0.0145	V	G. Samolyk	0.0002	TY Cap	59826.6139	10561	0.1086	V	L. Hazel	0.0006
BX And	59808.8246	38157	-0.1241	V	G. Samolyk	0.0003	TY Cap	59849.3890	10577	0.1085	V	T. Arranz	0.0002
DS And	59813.8139	23425	0.0053	V	G. Samolyk	0.0002	RZ Cas	59822.6778	13907	0.0715	V	G. Samolyk	0.0002
DS And	59893.6448	23504	0.0052	V	G. Samolyk	0.0001	TV Cas	59851.7858	8413	-0.0344	V	G. Samolyk	0.0008
DS And	59934.5719	23544.5	0.0063	V	G. Samolyk	0.0002	TW Cas	59879.6074	12512	0.0302	V	G. Samolyk	0.0002
DS And	59960.3412	23570	0.0074	V	T. Arranz	0.0004	ZZ Cas	59822.6613	21218	0.0104	V	G. Samolyk	0.0002
EP And	59857.6359	42610	0.0912	V	L. Hazel	0.0006	AB Cas	59804.6387	12503	0.1529	V	L. Hazel	0.0003
EP And	59976.4358	42904	0.0835	V	T. Arranz	0.0001	BS Cas	59803.6462	8175	-0.0325	V	L. Hazel	0.0006
KP And	59877.6176	6026	0.0837	V	L. Hazel	0.0006	BZ Cas	59805.7060	14253	0.3590	V	L. Hazel	0.0006
QX And	59813.8232	17744.5	0.0131	V	G. Samolyk	0.0004	CW Cas	59836.6212	57092	-0.1530	V	G. Samolyk	0.0003
QX And	59893.5798	17938	0.0145	V	G. Samolyk	0.0003	CW Cas	59836.7824	57092.5	-0.1512	V	G. Samolyk	0.0002
QX And	59893.7851	17938.5	0.0137	V	G. Samolyk	0.0003	CW Cas	59884.7692	57243	-0.1535	V	G. Samolyk	0.0001
QX And	59934.5898	18037.5	0.0134	V	G. Samolyk	0.0002	CW Cas	59952.5284	57455.5	-0.1529	V	G. Samolyk	0.0002
V376 And	59926.5759	9298	0.0058	V	K. Menzies	0.0004	CW Cas	59969.2669	57508	-0.1548	V	T. Arranz	0.0001
RY Aqr	59809.7503	9654	-0.1622	V	L. Hazel	0.0003	CW Cas	59969.4287	57508.5	-0.1524	V	T. Arranz	0.0001
RY Aqr	59815.6497	9657	-0.1626	V	L. Hazel	0.0003	DZ Cas	59893.5657	40081	-0.2305	V	G. Samolyk	0.0004
RY Aqr	59894.3105	9697	-0.1655	V	T. Arranz	0.0001	GT Cas	59882.6736	10884	0.2219	V	L. Hazel	0.0006
CX Aqr	59778.8628	41953	0.0188	V	G. Samolyk	0.0001	GT Cas	59885.6567	10885	0.2152	V	G. Samolyk	0.0002
CX Aqr	59875.6048	42127	0.0192	V	G. Samolyk	0.0001	IR Cas	59791.6617	25603	0.0194	V	G. Samolyk	0.0002
CX Aqr	59888.3924	42150	0.0191	V	T. Arranz	0.0001	IR Cas	59917.5889	25788	0.0198	V	G. Samolyk	0.0001
CZ Aqr	59851.7189	19102	-0.0770	V	G. Samolyk	0.0001	IS Cas	59831.6046	16864	0.0765	V	G. Samolyk	0.0002
EK Aqr	59852.7295	23987	0.0522	V	G. Samolyk	0.0003	IV Cas	59894.3055	19068	-0.1567	V	T. Arranz	0.0002
XZ Aql	59795.7509	8364	0.1800	V	G. Samolyk	0.0002	MM Cas	59884.7198	21134	0.1318	V	G. Samolyk	0.0002
XZ Aql	59810.7252	8371	0.1800	V	L. Hazel	0.0006	OR Cas	59887.6290	12585	-0.0405	V	L. Hazel	0.0006
OO Aql	59803.6530	41813	0.0841	V	G. Samolyk	0.0001	OR Cas	59967.3588	12649	-0.0362	V	T. Arranz	0.0001
OP Aql	59791.6118	1370	0.0037	V	T. Arranz	0.0003	OX Cas	59918.5701	7491.5	0.0238	V	G. Samolyk	0.0006
V342 Aql	59799.4319	6040	-0.0764	V	T. Arranz	0.0002	PV Cas	59831.7877	11199.5	-0.0039	V	G. Samolyk	0.0001
V346 Aql	59821.5335	16182	-0.0166	V	T. Arranz	0.0001	PV Cas	59853.6421	11212	-0.0304	V	G. Samolyk	0.0002
V346 Aql	59822.6401	16183	-0.0163	V	G. Samolyk	0.0001	PV Cas	59917.5599	11248.5	-0.0047	V	G. Samolyk	0.0001
V346 Aql	59863.5753	16220	-0.0166	V	G. Samolyk	0.0002	V364 Cas	59800.8388	16504.5	-0.0250	V	G. Samolyk	0.0002
V688 Aql	59810.5748	1879	-0.0006	V	T. Arranz	0.0006	V364 Cas	59937.3996	16593	-0.0257	V	T. Arranz	0.0002
V719 Aql	59828.5053	1085	-0.0050	V	T. Arranz	0.0002	V375 Cas	59853.6550	17111	0.3211	V	G. Samolyk	0.0004
V889 Aql	59805.4857	656	0.0273	V	T. Arranz	0.0003	V380 Cas	59829.7073	25186	-0.0755	V	G. Samolyk	0.0006
RX Ari	59909.5769	20892	0.0608	V	G. Samolyk	0.0001	V380 Cas	59886.7107	25228	-0.0775	V	G. Samolyk	0.0002
SS Ari	59842.8136	51269	-0.4673	V	L. Hazel	0.0006	V523 Cas	59798.7382	79499.5	0.1424	V	L. Hazel	0.0003
SS Ari	59977.3944	51600.5	-0.4734	V	T. Arranz	0.0001	V523 Cas	59802.5959	79516	0.1442	V	L. Hazel	0.0003
BN Ari	59982.3354	28248	-0.0523	V	T. Arranz	0.0001	V523 Cas	59802.7125	79516.5	0.1440	V	L. Hazel	0.0003
RY Aur	59852.8657	7912	0.0091	V	L. Hazel	0.0006	V523 Cas	59802.8292	79517	0.1438	V	L. Hazel	0.0003
RY Aur	59934.6316	7942	0.0133	V	G. Samolyk	0.0003	V523 Cas	59966.2991	80216.5	0.1471	V	T. Arranz	0.0001
TT Aur	59856.9046	28974	-0.0157	V	G. Samolyk	0.0006	V523 Cas	59966.4163	80217	0.1474	V	T. Arranz	0.0001
AP Aur	59848.8470	30569	1.9242	V	L. Hazel	0.0006	V765 Cas	59905.3414	1071.5	-0.0212	V	T. Arranz	0.0004
AP Aur	59875.8964	30616.5	1.9312	V	G. Samolyk	0.0002	V765 Cas	59909.6270	1074	-0.0251	V	T. Arranz	0.0008
BF Aur	59867.6965	12152	0.0329	V	L. Hazel	0.0003	V765 Cas	59910.4853	1074.5	-0.0246	V	T. Arranz	0.0007
EM Aur	59909.7607	15872	-1.1422	V	G. Samolyk	0.0002	V765 Cas	59916.4936	1078	-0.0216	V	T. Arranz	0.0003
EP Aur	59853.8399	56758	0.0258	V	G. Samolyk	0.0001	V765 Cas	59917.3482	1078.5	-0.0248	V	T. Arranz	0.0005
EP Aur	59877.7765	56798.5	0.0266	V	L. Hazel	0.0009	V765 Cas	59947.3782	1096	-0.0208	V	T. Arranz	0.0002
EP Aur	59934.8092	56895	0.0270	V	G. Samolyk	0.0001	V1261 Cas	59967.2949	18756.5	0.0219	V	T. Arranz	0.0005

Table continued on following pages

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

<i>Star</i>	<i>JD (min)</i> <i>Hel.</i> <i>2400000+</i>	<i>Cycle</i>	<i>O-C</i> <i>(day)</i>	<i>F</i>	<i>Observer</i>	<i>Standard</i> <i>Error</i> <i>(day)</i>	<i>Star</i>	<i>JD (min)</i> <i>Hel.</i> <i>2400000+</i>	<i>Cycle</i>	<i>O-C</i> <i>(day)</i>	<i>F</i>	<i>Observer</i>	<i>Standard</i> <i>Error</i> <i>(day)</i>
U Cep	59796.8114	6119	0.2506	V	G. Samolyk	0.0002	V1034 Cyg	59830.5952	17291	0.0223	V	G. Samolyk	0.0004
U Cep	59831.7146	6133	0.2512	V	G. Samolyk	0.0002	V1034 Cyg	59839.3888	17300	0.0235	V	T. Arranz	0.0001
U Cep	59831.7199	6133	0.2565	V	L. Hazel	0.0003	V2477 Cyg	59747.8100	26522	0.0025	V	L. Hazel	0.0006
WZ Cep	59803.6543	76089.5	-0.2428	V	G. Samolyk	0.0002	V2477 Cyg	59809.4375	26720	0.0025	V	T. Arranz	0.0001
XX Cep	59948.3239	6464	0.0426	V	T. Arranz	0.0001	V2477 Cyg	59809.5941	26720.5	0.0034	V	T. Arranz	0.0001
ZZ Cep	59832.6843	14896	-0.0195	V	G. Samolyk	0.0002	V2551 Cyg	59812.6457	34461.5	-0.1108	V	T. Arranz	0.0001
ZZ Cep	59858.3893	14908	-0.0161	V	T. Arranz	0.0001	V2551 Cyg	59823.5495	34506.5	-0.1116	V	T. Arranz	0.0002
DK Cep	59909.3594	26695	0.0251	V	T. Arranz	0.0002	V3135 Cyg	59811.4490	969	-0.0013	V	T. Arranz	0.0002
EG Cep	59867.6131	31716	0.0046	V	L. Hazel	0.0006	W Del	59808.6660	3429	-0.0004	V	G. Samolyk	0.0001
GW Cep	59836.7553	67282.5	0.0192	V	L. Hazel	0.0006	TT Del	59843.3979	5089	-0.1457	V	T. Arranz	0.0001
NW Cep	59860.4743	797	-0.0124	V	T. Arranz	0.0002	TY Del	59830.6578	14164	0.0915	V	G. Samolyk	0.0001
V338 Cep	59870.3873	7487	0.0410	V	T. Arranz	0.0001	TY Del	59866.3919	14194	0.0918	V	T. Arranz	0.0001
V731 Cep	59958.3580	657.5	-0.1568	V	T. Arranz	0.0004	YY Del	59801.6330	21236	0.0150	V	G. Samolyk	0.0001
V796 Cep	59831.8742	16282	-0.0358	V	L. Hazel	0.0006	YY Del	59813.5296	21251	0.0153	V	T. Arranz	0.0001
SS Cet	59887.8290	5863	0.0787	V	L. Hazel	0.0003	YY Del	59820.6679	21260	0.0157	V	L. Hazel	0.0006
SS Cet	59893.7792	5865	0.0810	V	G. Samolyk	0.0002	FZ Del	59824.6237	36389	-0.0286	V	L. Hazel	0.0003
TT Cet	59881.7623	56252	-0.0927	V	G. Samolyk	0.0001	FZ Del	59865.3505	36441	-0.0289	V	T. Arranz	0.0001
TT Cet	59947.3652	56387	-0.0940	V	T. Arranz	0.0001	PS Del	59832.3872	9156	-0.0123	V	T. Arranz	0.0002
TW Cet	59949.2750	55470.5	-0.0363	V	T. Arranz	0.0001	RZ Dra	59808.6760	28375	0.0764	V	G. Samolyk	0.0002
Y Cyg	59863.6361	16824	-0.0861	V	G. Samolyk	0.0005	UZ Dra	59797.7056	5589	0.0035	V	G. Samolyk	0.0001
SW Cyg	59798.6813	3921	-0.3948	V	L. Hazel	0.0003	UZ Dra	59833.5801	5600	0.0037	V	T. Arranz	0.0001
SW Cyg	59821.5425	3926	-0.3993	V	T. Arranz	0.0001	BH Dra	59800.4364	10885	-0.0036	V	T. Arranz	0.0001
UW Cyg	59815.5677	4673	0.0349	V	T. Arranz	0.0004	S Equ	59811.6880	5010	0.0991	V	L. Hazel	0.0003
WW Cyg	59813.5419	5858	0.1651	V	T. Arranz	0.0001	S Equ	59818.5586	5012	0.0975	V	T. Arranz	0.0001
ZZ Cyg	59852.5922	23627	-0.0854	V	L. Hazel	0.0003	S Equ	59842.6113	5019	0.0975	V	G. Samolyk	0.0001
AE Cyg	59796.6483	15694	-0.0043	V	G. Samolyk	0.0002	TZ Eri	59974.3180	6738	0.3870	V	T. Arranz	0.0001
AE Cyg	59866.4306	15766	-0.0035	V	T. Arranz	0.0002	YY Eri	59906.8025	56999.5	0.1727	V	G. Samolyk	0.0001
BR Cyg	59863.5556	13751	0.0006	V	L. Hazel	0.0006	YY Eri	59917.7333	57033.5	0.1727	V	G. Samolyk	0.0001
BR Cyg	59863.5569	13751	0.0019	V	G. Samolyk	0.0001	YY Eri	59976.5675	57216.5	0.1735	V	G. Samolyk	0.0001
CG Cyg	59804.7484	32290	0.0834	V	L. Hazel	0.0003	RW Gem	59863.8282	14504	0.0018	V	L. Hazel	0.0006
CG Cyg	59830.6247	32331	0.0829	V	G. Samolyk	0.0001	AL Gem	59880.8632	24118	0.1146	V	L. Hazel	0.0003
CG Cyg	59834.4116	32337	0.0830	V	T. Arranz	0.0001	BD Gem	59910.6943	20100	-0.0524	V	L. Hazel	0.0006
CG Cyg	59852.7162	32366	0.0845	V	L. Hazel	0.0006	CW Gem	59927.7425	18950	0.3860	V	L. Hazel	0.0006
DK Cyg	59793.6415	46302	0.1439	V	G. Samolyk	0.0002	FG Gem	59893.7562	40032	-0.0199	V	L. Hazel	0.0006
DK Cyg	59854.3628	46431	0.1461	V	T. Arranz	0.0001	RT Lac	59932.3303	2968	-0.5169	V	T. Arranz	0.0003
DK Cyg	59854.5982	46431.5	0.1461	V	T. Arranz	0.0002	RW Lac	59937.2704	3981	-0.0344	V	T. Arranz	0.0002
DO Cyg	59846.6144	8982	-0.0643	V	L. Hazel	0.0003	SW Lac	59840.4785	45414	-0.0882	V	L. Corp	0.0001
DO Cyg	59853.4542	8986	-0.0646	V	T. Arranz	0.0001	SW Lac	59855.5520	45461	-0.0885	V	T. Arranz	0.0001
KR Cyg	59812.4930	36332	0.0284	V	T. Arranz	0.0001	SW Lac	59856.3547	45463.5	-0.0876	V	T. Arranz	0.0002
KR Cyg	59839.5376	36364	0.0282	V	T. Arranz	0.0001	SW Lac	59856.5140	45464	-0.0887	V	T. Arranz	0.0001
KV Cyg	59868.3965	10708	0.0640	V	T. Arranz	0.0002	TW Lac	59819.7101	6031	0.5136	V	L. Hazel	0.0006
MY Cyg	59889.3357	6502	0.0009	V	T. Arranz	0.0001	VX Lac	59801.8354	13535	0.0904	V	G. Samolyk	0.0001
V346 Cyg	59797.6678	8789	0.2123	V	G. Samolyk	0.0003	VX Lac	59867.3795	13596	0.0904	V	T. Arranz	0.0001
V387 Cyg	59843.6184	49732	0.0172	V	G. Samolyk	0.0001	AR Lac	59874.7285	9218	-0.0480	V	G. Samolyk	0.0004
V387 Cyg	59865.3986	49766	0.0172	V	T. Arranz	0.0001	AW Lac	59803.6608	29032	0.2234	V	G. Samolyk	0.0002
V388 Cyg	59793.6687	20768	-0.1532	V	G. Samolyk	0.0001	AW Lac	59857.3753	29079	0.2240	V	T. Arranz	0.0001
V388 Cyg	59819.4378	20798	-0.1552	V	T. Arranz	0.0001	CM Lac	59856.6978	20459	-0.0036	V	G. Samolyk	0.0002
V401 Cyg	59795.5358	27389	0.1039	V	T. Arranz	0.0003	CO Lac	59801.6925	20923	0.0122	V	G. Samolyk	0.0002
V445 Cyg	59833.5381	10107	0.3362	V	T. Arranz	0.0001	CO Lac	59845.6166	20951.5	-0.0166	V	G. Samolyk	0.0003
V456 Cyg	59808.5813	16716	0.0595	V	T. Arranz	0.0001	CO Lac	59954.3693	21022	0.0104	V	T. Arranz	0.0002
V456 Cyg	59850.4648	16763	0.0570	V	T. Arranz	0.0001	DG Lac	59813.6490	6936	-0.2578	V	G. Samolyk	0.0002
V466 Cyg	59805.6304	22299.5	0.0089	V	L. Hazel	0.0003	DG Lac	59824.6865	6941	-0.2530	V	L. Hazel	0.0006
V466 Cyg	59840.4185	22324.5	0.0079	V	T. Arranz	0.0001	DG Lac	59917.3510	6983	-0.2629	V	T. Arranz	0.0002
V477 Cyg	59808.4388	6655	-0.0475	V	T. Arranz	0.0001	GX Lac	59857.3826	3164	-0.0456	V	T. Arranz	0.0002
V488 Cyg	59823.5321	54643.5	-0.2710	V	T. Arranz	0.0002	V479 Lac	58767.6296	21211	-0.0146	V	K. Alton	0.0004
V488 Cyg	59839.5064	54672	-0.2714	V	T. Arranz	0.0002	V479 Lac	58767.6297	21211	-0.0145	R	K. Alton	0.0002
V548 Cyg	59813.6253	8507	0.0124	V	G. Samolyk	0.0004	V479 Lac	58767.6299	21211	-0.0143	B	K. Alton	0.0002
V548 Cyg	59824.4570	8513	0.0127	V	T. Arranz	0.0002	V479 Lac	58767.8016	21211.5	-0.0155	B	K. Alton	0.0004
V700 Cyg	59810.6389	95591.5	-0.0361	V	T. Arranz	0.0002	V479 Lac	58767.8018	21211.5	-0.0153	V	K. Alton	0.0002
V700 Cyg	59829.3832	95656	-0.0375	V	T. Arranz	0.0001	V479 Lac	58767.8020	21211.5	-0.0151	R	K. Alton	0.0002
V700 Cyg	59829.5299	95656.5	-0.0361	V	T. Arranz	0.0002	V479 Lac	58769.7041	21217	-0.0146	B	K. Alton	0.0003
V704 Cyg	59868.4675	38424.5	0.0427	V	T. Arranz	0.0002	V479 Lac	58769.7041	21217	-0.0146	R	K. Alton	0.0003
V753 Cyg	59818.6516	54630	0.0858	V	L. Hazel	0.0003	V479 Lac	58769.7042	21217	-0.0145	V	K. Alton	0.0002
V753 Cyg	59823.4128	54640	0.0851	V	T. Arranz	0.0001	V479 Lac	58773.6796	21228.5	-0.0153	B	K. Alton	0.0004
V995 Cyg	59465.4118	9311	0.6853	V	T. Arranz	0.0002	V479 Lac	58773.6798	21228.5	-0.0151	V	K. Alton	0.0002
V995 Cyg	59810.3764	9408	0.6912	V	T. Arranz	0.0006	V479 Lac	58773.6800	21228.5	-0.0149	R	K. Alton	0.0003
V995 Cyg	59817.4887	9410	0.6910	V	T. Arranz	0.0001	V479 Lac	58773.8534	21229	-0.0143	R	K. Alton	0.0006

Table continued on next page

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

<i>Star</i>	<i>JD (min)</i> <i>Hel.</i> <i>2400000+</i>	<i>Cycle</i>	<i>O-C</i> <i>(day)</i>	<i>F</i>	<i>Observer</i>	<i>Standard</i> <i>Error</i> <i>(day)</i>	<i>Star</i>	<i>JD (min)</i> <i>Hel.</i> <i>2400000+</i>	<i>Cycle</i>	<i>O-C</i> <i>(day)</i>	<i>F</i>	<i>Observer</i>	<i>Standard</i> <i>Error</i> <i>(day)</i>
V479 Lac	58773.8535	21229	-0.0143	V	K. Alton	0.0002	RT Per	59910.5996	31239	0.1247	V	L. Hazel	0.0006
V479 Lac	58773.8537	21229	-0.0140	B	K. Alton	0.0005	RT Per	59974.3048	31314	0.1249	V	T. Arranz	0.0001
V505 Lac	59893.3586	18127.5	0.0124	V	T. Arranz	0.0001	RV Per	59851.7727	9022	0.0105	V	G. Samolyk	0.0001
Y Leo	59909.8552	8584	-0.0954	V	G. Samolyk	0.0001	RV Per	59855.7185	9024	0.0093	V	L. Hazel	0.0006
Z Lep	59874.8624	32656	-0.2056	V	G. Samolyk	0.0001	ST Per	59886.5815	6589	0.3260	V	G. Samolyk	0.0001
RR Lep	59843.8272	32189	-0.0467	V	L. Hazel	0.0006	ST Per	59976.6240	6623	0.3258	V	G. Samolyk	0.0001
RR Lep	59875.8637	32224	-0.0502	V	G. Samolyk	0.0003	XZ Per	59816.8361	14162	-0.0837	V	L. Hazel	0.0003
RY Lyn	59884.8451	11845	-0.0308	V	G. Samolyk	0.0002	DK Per	59857.7595	19319	0.0011	V	L. Hazel	0.0003
SW Lyn	59874.8259	24686	0.0868	V	L. Hazel	0.0003	IT Per	59885.6282	19888	-0.0565	V	G. Samolyk	0.0003
RV Lyr	59803.5655	3967	-0.2972	V	T. Arranz	0.0001	IU Per	59874.9067	16643	0.0020	V	G. Samolyk	0.0001
UZ Lyr	59805.4185	8521	-0.0577	V	T. Arranz	0.0001	KW Per	59904.5671	18792	0.0190	V	G. Samolyk	0.0001
BV Lyr	59804.5404	14715	0.0393	V	T. Arranz	0.0002	KW Per	59975.3429	18868	0.0191	V	T. Arranz	0.0001
BV Lyr	59815.5177	14721	0.0388	V	T. Arranz	0.0002	LS Per	59874.6392	7024	-0.7091	V	L. Hazel	0.0006
BV Lyr	59826.4962	14727	0.0393	V	T. Arranz	0.0001	V432 Per	59856.8740	74591.5	0.0627	V	G. Samolyk	0.0001
LZ Lyr	59796.5363	4528	0.0141	V	T. Arranz	0.0001	V432 Per	59956.5348	74901.5	0.0532	V	T. Arranz	0.0003
V589 Lyr	59795.5255	12221	0.414	V	T. Arranz	0.0004	V882 Per	59857.6837	5002	0.0557	V	L. Hazel	0.0009
Beta Lyr	59770.87	833	3.11	B	G. Samolyk	0.03	Y Psc	59941.3610	3799	-0.0288	V	T. Arranz	0.0001
Beta Lyr	59770.87	833	3.11	R	G. Samolyk	0.03	RV Psc	59905.5555	64124	-0.0722	V	G. Samolyk	0.0003
Beta Lyr	59770.87	833	3.11	V	G. Samolyk	0.03	RV Psc	59970.3718	64241	-0.0729	V	T. Arranz	0.0001
Beta Lyr	59777.30	833.5	3.07	R	G. Samolyk	0.04	VZ Psc	59907.3285	61529.5	-0.0005	V	T. Arranz	0.0004
Beta Lyr	59777.32	833.5	3.09	B	G. Samolyk	0.04	GR Psc	59970.3616	17200.5	-0.0127	V	T. Arranz	0.0002
Beta Lyr	59777.40	833.5	3.17	V	G. Samolyk	0.05	RW PsA	59882.5137	70895	-0.1141	V	L. Hazel	0.0006
RW Mon	59934.8924	13774	-0.0961	V	G. Samolyk	0.0001	UZ Pup	59934.8403	19275.5	-0.0123	V	G. Samolyk	0.0001
AT Mon	59907.7862	16412	0.0100	V	L. Hazel	0.0006	V505 Sgr	59837.5987	12999	-0.1394	V	G. Samolyk	0.0001
V502 Oph	59844.3161	25021	0.0010	V	L. Corp	0.0005	CC Ser	59795.4122	43241	1.2181	V	T. Arranz	0.0002
EF Ori	59885.8929	4653	0.0121	V	G. Samolyk	0.0004	RW Tau	59890.7769	5131	-0.3225	V	L. Hazel	0.0003
EF Ori	59906.9442	4666	0.0106	V	G. Samolyk	0.0004	RW Tau	59918.4652	5141	-0.3226	V	T. Arranz	0.0001
EQ Ori	59855.7874	16275	-0.0333	V	L. Hazel	0.0003	RZ Tau	59917.7668	53506	0.1093	V	G. Samolyk	0.0001
ER Ori	59885.8611	43125.5	0.1655	V	G. Samolyk	0.0001	AC Tau	59915.7969	6988	0.2352	V	L. Hazel	0.0006
ET Ori	59975.5808	35009	-0.0066	V	G. Samolyk	0.0004	AH Tau	59977.3193	86916	-0.0038	V	T. Arranz	0.0001
FR Ori	59906.8703	36284	0.0551	V	G. Samolyk	0.0001	AM Tau	59881.7141	7157	-0.0813	V	L. Hazel	0.0006
FZ Ori	59932.7049	39772	-0.0205	V	G. Samolyk	0.0002	CT Tau	59855.8307	21672	-0.0746	V	L. Hazel	0.0006
GU Ori	59881.8462	35718.5	-0.0761	V	G. Samolyk	0.0005	CT Tau	59881.8354	21711	-0.0762	V	G. Samolyk	0.0002
GU Ori	59885.8484	35727	-0.0747	V	G. Samolyk	0.0002	EQ Tau	59822.8859	57447.5	-0.0559	V	G. Samolyk	0.0002
GU Ori	59906.7924	35771.5	-0.0760	V	G. Samolyk	0.0003	EQ Tau	59874.7702	57599.5	-0.0566	V	K. Menzies	0.0003
U Peg	59840.5075	62247	-0.1810	V	L. Corp	0.0002	V Tri	59881.5857	60504	-0.0050	V	G. Samolyk	0.0001
U Peg	59851.5642	62276.5	-0.1803	V	G. Samolyk	0.0001	X Tri	59906.6869	17914	-0.1157	V	G. Samolyk	0.0001
U Peg	59863.7437	62309	-0.1812	V	G. Samolyk	0.0001	X Tri	59907.6585	17915	-0.1156	V	L. Hazel	0.0003
U Peg	59893.5393	62388.5	-0.1807	V	G. Samolyk	0.0001	RS Tri	59881.5973	11494	-0.0583	V	G. Samolyk	0.0001
U Peg	59914.5262	62444.5	-0.1816	V	G. Samolyk	0.0001	RV Tri	59842.6869	18323	-0.0520	V	L. Hazel	0.0006
U Peg	59932.3288	62492	-0.1811	V	T. Arranz	0.0002	RV Tri	59885.6458	18380	-0.0521	V	G. Samolyk	0.0001
TY Peg	59845.6852	6272	-0.5026	V	G. Samolyk	0.0001	ZZ UMa	59909.7716	10420	-0.0016	V	G. Samolyk	0.0001
TY Peg	59901.3426	6290	-0.5052	V	T. Arranz	0.0003	AF UMa	59903.8888	6297	0.6650	V	G. Samolyk	0.0003
UX Peg	59822.7844	12558	0.0051	V	G. Samolyk	0.0002	W UMi	59801.6628	15354	-0.2340	V	G. Samolyk	0.0004
UX Peg	59836.6873	12567	0.0065	V	L. Hazel	0.0003	RU UMi	59917.8197	34903	-0.0153	V	G. Samolyk	0.0001
UX Peg	59861.4004	12583	0.0057	V	T. Arranz	0.0001	Z Vul	59800.5813	6865	-0.0183	V	T. Arranz	0.0003
UX Peg	59918.5513	12620	0.0058	V	G. Samolyk	0.0002	RR Vul	59844.4106	4912	-0.0648	V	T. Arranz	0.0001
BB Peg	59856.7423	44515.5	-0.0378	V	G. Samolyk	0.0001	RS Vul	59844.4071	6038	0.0179	V	T. Arranz	0.0004
BB Peg	59863.6107	44534.5	-0.0380	V	G. Samolyk	0.0002	AW Vul	59842.6764	16811	-0.0433	V	G. Samolyk	0.0002
BB Peg	59905.5446	44650.5	-0.0383	V	G. Samolyk	0.0001	BE Vul	59808.4718	12691	0.1004	V	T. Arranz	0.0001
BG Peg	59874.6206	7346	-2.5785	V	G. Samolyk	0.0003	BE Vul	59842.6167	12713	0.1003	V	G. Samolyk	0.0001
BX Peg	59801.6290	55653.5	-0.1471	V	G. Samolyk	0.0002	BE Vul	59842.6175	12713	0.1011	V	L. Hazel	0.0006
BX Peg	59801.7677	55654	-0.1486	V	G. Samolyk	0.0001	BE Vul	59856.5850	12722	0.1002	V	G. Samolyk	0.0001
BX Peg	59849.4387	55824	-0.1491	V	T. Arranz	0.0001	BO Vul	59824.3836	12249	0.0032	V	T. Arranz	0.0001
BX Peg	59858.4129	55856	-0.1484	V	T. Arranz	0.0002	BO Vul	59851.6264	12263	0.0039	V	G. Samolyk	0.0001
BX Peg	59858.5523	55856.5	-0.1492	V	T. Arranz	0.0003	BS Vul	59793.4606	34712	-0.0391	V	T. Arranz	0.0001
DI Peg	59800.8552	20517	0.0219	V	G. Samolyk	0.0001	BT Vul	59797.6194	21377	0.0070	V	G. Samolyk	0.0003
EU Peg	59954.3397	36017	0.0517	V	T. Arranz	0.0002	BT Vul	59828.4324	21404	0.0076	V	T. Arranz	0.0002
GP Peg	59822.8117	19049	-0.0617	V	G. Samolyk	0.0001	BU Vul	59796.7040	46157	0.0111	V	G. Samolyk	0.0001
GP Peg	59914.5192	19143	-0.0623	V	G. Samolyk	0.0002	BU Vul	59808.6531	46178	0.0113	V	G. Samolyk	0.0001
GP Peg	59921.3489	19150	-0.0619	V	T. Arranz	0.0002	BU Vul	59823.4471	46204	0.0115	V	T. Arranz	0.0001
KW Peg	59801.6802	14261.5	0.2523	V	G. Samolyk	0.0004	BU Vul	59874.6553	46294	0.0104	V	G. Samolyk	0.0001
KW Peg	59849.4403	14320	0.2540	V	T. Arranz	0.0001	CD Vul	59801.7816	19749	-0.0034	V	G. Samolyk	0.0001
KW Peg	59858.4201	14331	0.2535	V	T. Arranz	0.0002	CD Vul	59886.5655	19873	-0.0039	V	G. Samolyk	0.0001
RT Per	59875.7736	31198	0.1241	V	G. Samolyk	0.0002	V495 Vul	59818.5018	2048	0.0212	V	T. Arranz	0.0003
RT Per	59875.7753	31198	0.1258	V	L. Hazel	0.0003							