Recent Minima of 234 Eclipsing Binary Stars

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Abstract This paper continues the publication of times of minima for eclipsing binary stars. Times of minima determined from observations received by the AAVSO Eclipsing Binaries Section from February 2022 through July 2022 are presented.

1. Recent observations

The accompanying list (Table 1) contains times of minima calculated for 234 variables 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: DV Cep (Frank and Lichtenknecker 1987), Z Dra (Danielkiewicz-Krosniak *et al.* 1996), DF Hya (Samolyk 1992), EF Ori (Baldwin and Samolyk 2005), GU Ori (Samolyk 1985).

The light elements used for HV Aqr, CV Boo, LM Boo, EH Cnc, IU Cnc, CZ CMi, AS CrB, V2197 Cyg, V2239 Cyg, LS Del, MR Del, BC Her, IT Her, V728 Her, WZ Leo, XY LMi, DZ Lyn, V404 Lyr, V592 Lyr, V2612 Oph, DK Sct, BS UMa, HX UMa, KM UMa, and CG Vir are from (Kreiner 2004).

The light elements used for V641 Aur, XY Boo, QV Cnc, AW CrB, BD CrB, V2240 Cyg, V2552 Cyg, MY Eri, V1044 Her, V1057 Her, CE Leo, GU Leo, GV Leo, HI Leo, VW LMi, AG LMi, EL Lyn, FI Lyn, KS Lyn, V2610 Oph, V1851 Ori, EQ UMa, QT UMa, and IR Vir are from (Paschke 2014).

The light elements used for V428 Gem, V658 Lyr, and HO Psc are from (Nelson 2014).

The light elements used for PQ Eri, V740 Lyr, V958 Mon, V970 Mon, V723 Per, VY UMi, and V715 Vir 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/gsamj234.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 Veranderliche Sterne e.V. (BAV) at:

http://www.bav-astro.de/LkDB/index.php?lang=en.

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

Star	JD (min) Hel. 2400000 +	Cycle	O–C (day)	F	Observer	Standard Error (day)
AB And	59803.4723	71390.5	–0.0535	V	L. Corp	0.0004
HV Aqr	59791.4441	19471.5	–0.0010	V	L. Corp	0.0006
FK Aql	59777.6806	2767	–0.0813	V	L. Hazel	0.0006
KO Aql	59770.7363	6244	0.1045	V	G. Samolyk	0.0001
KO Aql	59776.4652	6246	0.1053	V	T. Arranz	0.0002
KP Aql	59762.8401	5751	–0.0262	V	G. Samolyk	0.0001
OO Aql	59757.7873	41722.5	0.0827	V	G. Samolyk	0.0001
OO Aql	59769.4432	41745.5	0.0825	V	L. Corp	0.0003
OO Aql	59791.4902	41789	0.0842	R	L. Corp	0.0003
OO Aql	59791.4905	41789	0.0845	V	T. Arranz	0.0001
V343 Aql	59727.8343	16960	–0.0496	V	G. Samolyk	0.0001
V343 Aql	59790.5514	16994	–0.0490	V	T. Arranz	0.0001
V346 Aql	59740.7698	16109	–0.0158	V	L. Hazel	0.0003
V346 Aql	59751.8336	16119	–0.0156	V	G. Samolyk	0.0001
SS Ari	59789.8372	51138.5	–0.4615	V	G. Samolyk	0.0002
SX Aur	59620.4507	16080	0.0256	V	T. Arranz	0.0001
EP Aur	59633.3886	56385	0.0205	V	T. Arranz	0.0001
KU Aur	58138.6546	4273	0.0293	V	K. Alton	0.0001
KU Aur	58138.6547	4273	0.0294	I	K. Alton	0.0001
KU Aur	58138.6548	4273	0.0295	B	K. Alton	0.0001
V641 Aur	59630.4181	16550	–0.0038	V	T. Arranz	0.0002
V641 Aur	59642.5349	16574	–0.0041	V	K. Menzies	0.0002
TU Boo	59665.8572	82025	–0.1716	V	G. Samolyk	0.0001
TU Boo	59707.6907	82154	–0.1711	V	L. Hazel	0.0003
TU Boo	59727.6336	82215.5	–0.1718	V	G. Samolyk	0.0003
TU Boo	59729.4174	82221	–0.1716	CV	M. Castets	0.0002
TU Boo	59736.5516	82243	–0.1717	V	T. Arranz	0.0001
TY Boo	59691.6603	79493.5	0.0546	V	G. Samolyk	0.0003
TY Boo	59707.6752	79544	0.0536	V	G. Samolyk	0.0001
TY Boo	59707.8346	79544.5	0.0544	V	G. Samolyk	0.0002
TY Boo	59709.5784	79550	0.0539	V	K. Menzies	0.0001
TY Boo	59758.4221	79704	0.0568	CV	M. Castets	0.0003
TY Boo	59758.4221	79704	0.0568	V	T. Arranz	0.0001
TZ Boo	59686.7249	67484.5	0.0541	V	G. Samolyk	0.0003
TZ Boo	59755.5170	67716	0.0532	V	T. Arranz	0.0001
TZ Boo	59755.6656	67716.5	0.0532	V	G. Samolyk	0.0002
UW Boo	59681.7151	17196	–0.0048	V	G. Samolyk	0.0002
VW Boo	59691.6872	83308.5	–0.3261	V	G. Samolyk	0.0001
VW Boo	59700.7603	83335	–0.3246	V	K. Menzies	0.0002
VW Boo	59727.6297	83413.5	–0.3277	V	G. Samolyk	0.0001
VW Boo	59736.5300	83439.5	–0.3279	V	T. Arranz	0.0001
XY Boo	59716.4278	53330.5	0.0524	V	T. Arranz	0.0001
AC Boo	59761.4948	96429.5	0.4701	V	T. Arranz	0.0001
AD Boo	59691.6728	17650	0.0401	V	G. Samolyk	0.0002
AQ Boo	59719.4827	21670.5	–0.0165	V	T. Arranz	0.0003
CV Boo	59758.4463	8569	–0.0030	V	T. Arranz	0.0001
EQ Boo	59726.5124	2170	–0.0128	V	T. Arranz	0.0001
ET Boo	59755.4228	7399.5	–0.0156	V	T. Arranz	0.0001
LM Boo	59727.5016	22039.5	0.0022	V	T. Arranz	0.0001
SV Cam	59710.6770	28860	0.0631	V	L. Hazel	0.0003
SV Cam	59713.6418	28865	0.0625	V	L. Hazel	0.0006
AL Cam	59611.8638	24994	–0.0229	V	K. Menzies	0.0001
WW Cnc	59679.4150	3347	0.0510	V	T. Arranz	0.0001
EH Cnc	59684.3883	17185.5	–0.0121	V	T. Arranz	0.0002
IU Cnc	59621.6906	16890	0.0355	V	K. Menzies	0.0001
QV Cnc	59643.6339	15904	0.0292	V	K. Alton	0.0002
QV Cnc	59643.6339	15904	0.0292	R	K. Alton	0.0003
QV Cnc	59643.6340	15904	0.0293	B	K. Alton	0.0003
QV Cnc	59643.7967	15904.5	0.0294	B	K. Alton	0.0004
QV Cnc	59643.7967	15904.5	0.0294	V	K. Alton	0.0003
QV Cnc	59643.7968	15904.5	0.0295	R	K. Alton	0.0002
QV Cnc	59647.7004	15916.5	0.0293	B	K. Alton	0.0005
QV Cnc	59647.7007	15916.5	0.0296	V	K. Alton	0.0004
QV Cnc	59647.7007	15916.5	0.0296	R	K. Alton	0.0003
QV Cnc	59647.8627	15917	0.0289	R	K. Alton	0.0004
QV Cnc	59647.8630	15917	0.0292	B	K. Alton	0.0004
QV Cnc	59647.8631	15917	0.0293	V	K. Alton	0.0004
QV Cnc	59648.6764	15919.5	0.0293	B	K. Alton	0.0004
QV Cnc	59648.6766	15919.5	0.0295	V	K. Alton	0.0002
QV Cnc	59648.6767	15919.5	0.0296	R	K. Alton	0.0003
QV Cnc	59648.8387	15920	0.0290	V	K. Alton	0.0003
QV Cnc	59648.8390	15920	0.0293	B	K. Alton	0.0003
QV Cnc	59648.8391	15920	0.0294	R	K. Alton	0.0002
XZ CMi	59674.4105	29768	0.0076	V	T. Arranz	0.0001
AK CMi	59666.5974	29272	–0.0262	V	G. Samolyk	0.0001
AK CMi	59677.3496	29291	–0.0261	V	T. Arranz	0.0001
CZ CMi	59679.3872	16837	–0.0185	V	T. Arranz	0.0001
AB Cas	59771.8332	12479	0.1523	V	L. Hazel	0.0003
BH Cas	59784.7311	8719	0.0236	V	L. Hazel	0.0006
V523 Cas	59791.6078	79469	0.1396	V	L. Hazel	0.0003
SU Cep	59754.8337	37086	0.0075	V	G. Samolyk	0.0001
WW Cep	59779.7069	22659	0.3695	V	G. Samolyk	0.0001
WZ Cep	59755.6508	75974.5	–0.2399	V	G. Samolyk	0.0002
XX Cep	59749.6489	6379	0.0403	V	L. Hazel	0.0006
DK Cep	59734.8550	26518	0.0261	V	G. Samolyk	0.0002
DL Cep	59789.8026	15850	0.0708	V	G. Samolyk	0.0004
DV Cep	59679.8593	11116	–0.0056	V	G. Samolyk	0.0002
DV Cep	59772.8161	11196	–0.0068	V	G. Samolyk	0.0003
EG Cep	59771.7598	31540	0.0048	V	L. Hazel	0.0003
EG Cep	59788.6432	31571	0.0049	V	G. Samolyk	0.0001
GW Cep	59749.7158	67009.5	0.0257	V	L. Hazel	0.0006
RW Com	59637.8887	82645	0.0205	V	G. Samolyk	0.0002
RW Com	59710.6351	82951.5	0.0204	V	K. Menzies	0.0001
RW Com	59717.4002	82980	0.0211	V	T. Arranz	0.0001
RW Com	59717.5174	82980.5	0.0196	V	T. Arranz	0.0001
RW Com	59745.6449	83099	0.0217	V	G. Samolyk	0.0002
RZ Com	59665.8840	73347	0.0617	V	G. Samolyk	0.0001
SS Com	59686.7337	84021	1.0355	V	G. Samolyk	0.0003
SS Com	59727.3966	84119.5	1.0384	V	T. Arranz	0.0001
CC Com	59611.9113	90981.5	–0.0405	V	K. Menzies	0.0001
CC Com	59658.8056	91194	–0.0420	V	G. Samolyk	0.0001
CC Com	59704.4868	91401	–0.0429	V	T. Arranz	0.0001
U CrB	59748.7469	12456	0.1553	V	G. Samolyk	0.0002
RW CrB	59703.8073	26090	0.0037	V	G. Samolyk	0.0001
RW CrB	59784.4371	26201	0.0018	V	T. Arranz	0.0001
TW CrB	59712.6520	37044	0.0625	V	G. Samolyk	0.0001
TW CrB	59784.4946	37166	0.0625	V	T. Arranz	0.0001
AS CrB	59763.4678	19081	0.0226	V	T. Arranz	0.0004
AW CrB	59764.3999	23169.5	–0.0188	V	T. Arranz	0.0003
AW CrB	59764.5813	23170	–0.0178	V	T. Arranz	0.0003
BD CrB	59762.4453	23939	0.0209	V	T. Arranz	0.0003
BD CrB	59775.4699	23975.5	0.0197	V	T. Arranz	0.0006
BD CrB	59780.4668	23989.5	0.0205	V	T. Arranz	0.0006
BD CrB	59785.4624	24003.5	0.0198	V	T. Arranz	0.0005
W Crv	59709.4278	51694.5	0.0173	V	T. Arranz	0.0001
RV Crv	59696.7469	24981.5	–0.1154	V	G. Samolyk	0.0003
SX Crv	59696.6474	58995.5	–1.0608	V	G. Samolyk	0.0002
V Crt	59665.7179	26022	0.0022	V	G. Samolyk	0.0002
Y Cyg	59734.7861	16781	–0.0938	V	G. Samolyk	0.0005
SW Cyg	59743.8007	3909	–0.3978	V	G. Samolyk	0.0001
WW Cyg	59753.8208	5840	0.1638	V	G. Samolyk	0.0001
WW Cyg	59763.7725	5843	0.1623	V	L. Hazel	0.0006
ZZ Cyg	59733.7844	23438	–0.0847	V	G. Samolyk	0.0001
ZZ Cyg	59735.6706	23441	–0.0844	V	L. Hazel	0.0006
BO Cyg	59767.7815	13279	0.0748	V	L. Hazel	0.0006
BR Cyg	59747.6228	13664	0.0009	V	L. Hazel	0.0006
BR Cyg	59787.6005	13694	0.0016	V	T. Arranz	0.0001
DO Cyg	59733.7536	8916	–0.0645	V	L. Hazel	0.0006
DO Cyg	59745.7285	8923	–0.0597	V	L. Hazel	0.0006
DO Cyg	59786.7636	8947	–0.0648	V	L. Hazel	0.0006
KR Cyg	59789.6736	36305	0.0281	V	G. Samolyk	0.0001
KV Cyg	59774.7083	10675	0.0626	V	G. Samolyk	0.0004

Table continued on following pages

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

Star	JD (min) Hel. 2400000 +	Cycle	O–C (day)	F	Observer	Standard Error (day)
V346 Cyg	59786.6860	8785	0.2036	V	L. Hazel	0.0006
V387 Cyg	59748.8102	49584	0.0173	V	G. Samolyk	0.0001
V387 Cyg	59791.7303	49651	0.0174	V	L. Hazel	0.0006
V401 Cyg	59758.8234	27326	0.1030	V	G. Samolyk	0.0002
V401 Cyg	59788.5409	27377	0.1017	V	T. Arranz	0.0001
V445 Cyg	59710.8316	10044	0.3371	V	L. Hazel	0.0006
V456 Cyg	59758.6694	16660	0.0543	V	G. Samolyk	0.0002
V466 Cyg	59706.8283	22228.5	0.0080	V	G. Samolyk	0.0002
V477 Cyg	59731.6924	6622.5	–0.5168	V	L. Hazel	0.0006
V477 Cyg	59745.7745	6628.5	–0.5166	V	G. Samolyk	0.0002
V477 Cyg	59789.6627	6647	–0.0477	V	G. Samolyk	0.0001
V704 Cyg	59791.7072	38290	0.0420	V	G. Samolyk	0.0003
V836 Cyg	59729.7514	22767	0.0256	V	L. Hazel	0.0006
V2197 Cyg	59782.6489	15636	–0.0009	V	L. Hazel	0.0003
V2239 Cyg	59710.7567	11809	0.0026	V	L. Hazel	0.0006
V2240 Cyg	59717.6956	20763.5	–0.0775	V	L. Hazel	0.0009
V2552 Cyg	59713.8192	29676	0.0012	V	L. Hazel	0.0006
W Del	59789.4415	3425	–0.0005	V	T. Arranz	0.0006
TT Del	59791.7191	5071	–0.1443	V	G. Samolyk	0.0004
YY Del	59754.8401	21177	0.0146	V	G. Samolyk	0.0001
YY Del	59770.7022	21197	0.0148	V	L. Hazel	0.0006
FZ Del	59747.8684	36291	–0.0291	V	G. Samolyk	0.0001
FZ Del	59784.6781	36338	–0.0304	V	L. Hazel	0.0003
LS Del	59784.4652	20020	–0.0047	V	L. Corp	0.0009
MR Del	59769.5280	13934	–0.0148	V	L. Corp	0.0002
Z Dra	59666.8028	7236	–0.0029	V	G. Samolyk	0.0001
Z Dra	59734.6748	7286	–0.0027	V	G. Samolyk	0.0001
RZ Dra	59754.6900	28277	0.0761	V	G. Samolyk	0.0001
RZ Dra	59779.4795	28322	0.0762	V	T. Arranz	0.0001
UZ Dra	59735.7393	5570	0.0019	V	L. Hazel	0.0009
UZ Dra	59753.6771	5575.5	0.0026	V	G. Samolyk	0.0001
AI Dra	59747.7986	13727	0.0436	V	G. Samolyk	0.0001
BW Dra	59743.4905	58771.5	–0.1462	V	T. Arranz	0.0001
BW Dra	59745.388	58778	–0.1480	V	T. Arranz	0.0001
MY Eri	58854.6096	19398.5	0.0058	B	K. Alton	0.0004
MY Eri	58854.6096	19398.5	0.0058	I	K. Alton	0.0006
MY Eri	58854.6098	19398.5	0.0060	V	K. Alton	0.0003
MY Eri	58855.6898	19401.5	0.0056	B	K. Alton	0.0004
MY Eri	58855.6899	19401.5	0.0057	I	K. Alton	0.0006
MY Eri	58855.6902	19401.5	0.0060	V	K. Alton	0.0003
MY Eri	58856.5896	19404	0.0052	V	K. Alton	0.0005
MY Eri	58856.5898	19404	0.0054	B	K. Alton	0.0005
MY Eri	58856.5904	19404	0.0060	I	K. Alton	0.0002
MY Eri	58857.6701	19407	0.0053	V	K. Alton	0.0005
MY Eri	58857.6706	19407	0.0058	I	K. Alton	0.0003
MY Eri	58857.6713	19407	0.0065	B	K. Alton	0.0002
MY Eri	58859.6507	19412.5	0.0053	B	K. Alton	0.0006
MY Eri	58859.6516	19412.5	0.0062	V	K. Alton	0.0002
MY Eri	58859.6516	19412.5	0.0062	I	K. Alton	0.0004
PQ Eri	59210.7609	23429	0.0223	I	K. Alton	0.0005
PQ Eri	59210.7615	23429	0.0229	B	K. Alton	0.0003
PQ Eri	59210.7620	23429	0.0234	V	K. Alton	0.0002
PQ Eri	59241.6274	23527.5	0.0224	I	K. Alton	0.0009
PQ Eri	59241.6282	23527.5	0.0232	V	K. Alton	0.0009
PQ Eri	59241.6292	23527.5	0.0242	B	K. Alton	0.0009
RW Gem	59654.6474	14431	0.0023	V	G. Samolyk	0.0002
SX Gem	59516.7480	29619	–0.0519	V	L. Hazel	0.0006
SX Gem	59638.3960	29708	–0.0559	V	T. Arranz	0.0001
TX Gem	59639.3678	14211	–0.0432	V	T. Arranz	0.0001
WW Gem	59666.3721	27211	0.0400	V	T. Arranz	0.0002
AF Gem	59616.4370	26099	–0.0698	CV	M. Castets	0.0001
AF Gem	59631.3592	26111	–0.0697	V	T. Arranz	0.0001
AL Gem	59630.4197	23938	0.1120	V	T. Arranz	0.0001
AZ Gem	59647.4227	33440	0.0992	CV	M. Castets	0.0001
CX Gem	59628.4053	14533	–0.0451	V	T. Arranz	0.0002
V428 Gem	59616.6845	5207.5	–0.0008	V	K. Menzies	0.0001
SZ Her	59712.7175	21817	–0.0378	V	G. Samolyk	0.0001
SZ Her	59717.6263	21823	–0.0376	V	L. Hazel	0.0003
SZ Her	59772.4384	21890	–0.0381	V	T. Arranz	0.0001
TT Her	59727.7921	21634	0.0436	V	G. Samolyk	0.0002
TT Her	59783.4279	21695	0.0428	V	T. Arranz	0.0001
TU Her	59730.6889	6912	–0.2805	V	L. Hazel	0.0003
TU Her	59730.6900	6912	–0.2795	V	G. Samolyk	0.0002
TU Her	59771.4963	6930	–0.2792	V	T. Arranz	0.0001
UX Her	59734.7878	12953	0.1824	V	G. Samolyk	0.0001
UX Her	59745.6304	12960	0.1831	V	L. Hazel	0.0006
UX Her	59762.6680	12971	0.1834	V	G. Samolyk	0.0001
UX Her	59773.5105	12978	0.1839	V	T. Arranz	0.0001
AK Her	59727.4896	41613.5	0.0235	V	L. Corp	0.0003
BC Her	59446.6631	2250	0.0526	V	L. Hazel	0.0006
BC Her	59733.7962	2343	0.0707	V	L. Hazel	0.0003
CC Her	59727.7035	11568	0.3824	V	G. Samolyk	0.0001
CC Her	59774.5234	11595	0.3841	V	T. Arranz	0.0001
CT Her	59734.6649	9635	0.0117	V	G. Samolyk	0.0001
CT Her	59786.4692	9664	0.0111	V	T. Arranz	0.0001
IT Her	59763.4684	21401	–0.0189	V	L. Corp	0.0002
LT Her	59730.7320	17504	–0.1651	V	G. Samolyk	0.0003
LT Her	59755.6637	17527	–0.1664	V	G. Samolyk	0.0004
V728 Her	59733.6566	15348	0.0329	V	G. Samolyk	0.0004
V728 Her	59768.5332	15422	0.0338	V	T. Arranz	0.0001
V1044 Her	57944.5926	24431	0.0040	V	K. Alton	0.0004
V1044 Her	57944.5929	24431	0.0043	I	K. Alton	0.0009
V1044 Her	57944.5943	24431	0.0057	B	K. Alton	0.0009
V1044 Her	57950.7287	24456.5	0.0038	B	K. Alton	0.0003
V1044 Her	57950.7287	24456.5	0.0038	V	K. Alton	0.0004
V1044 Her	57950.7290	24456.5	0.0041	I	K. Alton	0.0003
V1044 Her	57953.7371	24469	0.0042	I	K. Alton	0.0003
V1044 Her	57953.7379	24469	0.0050	V	K. Alton	0.0002
V1057 Her	59772.4723	8984	–0.0123	V	T. Arranz	0.0003
AV Hya	59677.3890	33661	–0.1231	V	T. Arranz	0.0001
DF Hya	59637.5933	50966.5	0.0258	V	G. Samolyk	0.0003
DF Hya	59637.7593	50967	0.0265	V	G. Samolyk	0.0001
DF Hya	59671.6468	51069.5	0.0270	V	G. Samolyk	0.0002
SW Lac	59789.8052	45256	–0.0876	V	G. Samolyk	0.0002
TW Lac	59740.7466	6005	0.5229	V	L. Hazel	0.0006
CO Lac	59747.7172	20888	0.0141	V	L. Hazel	0.0006
RT Leo	59683.3588	4812	–0.0019	V	T. Arranz	0.0002
UU Leo	59658.7018	8490	0.2456	V	G. Samolyk	0.0003
UU Leo	59707.4152	8519	0.2465	V	T. Arranz	0.0001
UV Leo	59611.7671	35280	0.0497	V	K. Menzies	0.0003
UV Leo	59665.4747	35369.5	0.0497	V	L. Corp	0.0001
UV Leo	59675.3761	35386	0.0497	CV	M. Castets	0.0001
UV Leo	59705.3814	35436	0.0508	V	T. Arranz	0.0001
VZ Leo	59690.3887	26173	–0.0370	V	T. Arranz	0.0001
WZ Leo	59710.4396	5120	–0.0001	V	T. Arranz	0.0002
XY Leo	59639.4800	51267	0.1936	V	L. Corp	0.0002
XZ Leo	59639.4550	29963	0.0902	V	L. Corp	0.0003
AM Leo	59639.4238	46873	0.0133	V	L. Corp	0.0002
AP Leo	59637.5093	46707.5	0.0397	V	L. Corp	0.0005
AP Leo	59707.4439	46870	0.0412	V	T. Arranz	0.0001
CE Leo	59665.4118	39501	–0.0108	CV	M. Castets	0.0006
CE Leo	59705.4621	39633	–0.0132	V	T. Arranz	0.0001
GU Leo	58198.6301	16418	0.0005	V	K. Alton	0.0001
GU Leo	58198.6306	16418	0.0010	B	K. Alton	0.0004
GU Leo	58198.6313	16418	0.0017	I	K. Alton	0.0005
GU Leo	58211.7323	16455	0.0015	V	K. Alton	0.0002
GU Leo	58211.7324	16455	0.0016	B	K. Alton	0.0004
GU Leo	58211.7326	16455	0.0018	I	K. Alton	0.0003
GU Leo	58213.6798	16460.5	0.0016	B	K. Alton	0.0005
GU Leo	58213.6798	16460.5	0.0016	I	K. Alton	0.0002
GU Leo	58213.6801	16460.5	0.0019	V	K. Alton	0.0001
GU Leo	58217.7519	16472	0.0017	I	K. Alton	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) Hel. 2400000 +	Cycle	O–C (day)	F	Observer	Standard Error (day)
GU Leo	58217.7525	16472	0.0023	V	K. Alton	0.0003
GU Leo	58217.7528	16472	0.0026	B	K. Alton	0.0004
GU Leo	58219.7011	16477.5	0.0034	I	K. Alton	0.0004
GU Leo	58219.7020	16477.5	0.0043	V	K. Alton	0.0003
GU Leo	58219.7021	16477.5	0.0044	B	K. Alton	0.0006
GU Leo	59710.4027	20687.5	0.0072	V	T. Arranz	0.0001
GV Leo	59695.3877	26022.5	–0.0857	V	T. Arranz	0.0001
HI Leo	59699.4391	22333	0.0420	V	T. Arranz	0.0001
T LMi	59699.4077	4736	–0.1357	V	T. Arranz	0.0001
VW LMi	59706.4396	23466	0.0468	V	T. Arranz	0.0001
XY LMi	59698.4931	16476.5	–0.0105	V	T. Arranz	0.0003
AG LMi	59621.8519	11913	–0.0019	V	K. Menzies	0.0001
Z Lep	59639.3523	32419	–0.2053	V	T. Arranz	0.0001
SS Lib	59747.7317	12929	0.1917	V	G. Samolyk	0.0002
SS Lib	59766.4260	12942	0.1920	V	T. Arranz	0.0001
RY Lyn	59672.4693	11697	–0.0283	V	T. Arranz	0.0001
SW Lyn	59687.4043	24395	0.0877	V	T. Arranz	0.0001
UU Lyn	59672.4919	32016.5	–0.0109	V	T. Arranz	0.0003
UV Lyn	59666.3812	46736.5	0.1241	V	T. Arranz	0.0002
DZ Lyn	59687.4466	18425	–0.0084	V	T. Arranz	0.0001
EL Lyn	59637.6561	12452	–0.0166	V	K. Menzies	0.0004
FI Lyn	59677.4493	21697	–0.0066	V	T. Arranz	0.0001
KS Lyn	59629.7984	13340	–0.0074	V	K. Menzies	0.0004
RV Lyr	59738.7776	3949	–0.3022	V	L. Hazel	0.0006
RV Lyr	59792.7342	3964	–0.3314	V	L. Hazel	0.0009
RV Lyr	59803.5655	3967	–0.2972	V	L. Corp	0.0001
UZ Lyr	59763.8101	8499	–0.0581	V	G. Samolyk	0.0002
BV Lyr	59738.6769	14679	0.0432	V	L. Hazel	0.0006
EW Lyr	59762.7677	17069	0.3178	V	G. Samolyk	0.0001
EW Lyr	59776.4089	17076	0.3180	V	T. Arranz	0.0001
FL Lyr	59787.4566	9901	–0.0026	V	T. Arranz	0.0001
FL Lyr	59791.8131	9903	–0.0024	V	K. Menzies	0.0001
V404 Lyr	59717.8199	9874	0.0017	V	L. Hazel	0.0009
V592 Lyr	59713.7425	20281	0.0132	V	L. Hazel	0.0006
V658 Lyr	59729.6769	13055	–0.0854	V	L. Hazel	0.0006
V740 Lyr	59776.5551	21060.5	0.0258	V	T. Arranz	0.0001
V740 Lyr	59787.4031	21093.5	0.0262	V	T. Arranz	0.0002
V740 Lyr	59787.5663	21094	0.0250	V	T. Arranz	0.0001
V740 Lyr	59792.4983	21109	0.0262	V	T. Arranz	0.0001
RW Mon	59639.4493	13619	–0.0946	V	T. Arranz	0.0001
BO Mon	59671.5920	7264	0.0020	V	G. Samolyk	0.0001
V958 Mon	59633.3807	27178.5	0.0526	V	T. Arranz	0.0001
V970 Mon	59269.6160	11498.5	–0.0096	I	K. Alton	0.0002
V970 Mon	59269.6178	11498.5	–0.0078	V	K. Alton	0.0008
V970 Mon	59269.6188	11498.5	–0.0068	B	K. Alton	0.0009
V970 Mon	59272.6231	11506.5	–0.0075	V	K. Alton	0.0011
V970 Mon	59272.6232	11506.5	–0.0074	I	K. Alton	0.0007
V970 Mon	59272.6236	11506.5	–0.0070	B	K. Alton	0.0013
V970 Mon	59537.9992	12213	–0.0097	B	K. Alton	0.0007
V970 Mon	59537.9993	12213	–0.0096	I	K. Alton	0.0006
V970 Mon	59547.9542	12239.5	–0.0087	I	K. Alton	0.0009
V970 Mon	59547.9559	12239.5	–0.0070	B	K. Alton	0.0011
V970 Mon	59549.8314	12244.5	–0.0097	V	K. Alton	0.0009
V970 Mon	59549.8319	12244.5	–0.0092	B	K. Alton	0.0002
U Oph	59755.7192	9145	0.0021	V	G. Samolyk	0.0005
SX Oph	59770.6432	12781	0.0003	V	G. Samolyk	0.0004
V501 Oph	59772.7625	29817	–0.0096	V	G. Samolyk	0.0001
V501 Oph	59781.4741	29826	–0.0095	V	T. Arranz	0.0001
V508 Oph	59734.8039	42496	–0.0254	V	G. Samolyk	0.0001
V508 Oph	59763.4213	42579	–0.0258	V	T. Arranz	0.0005
V508 Oph	59763.5929	42579.5	–0.0266	V	T. Arranz	0.0001
V508 Oph	59782.3845	42634	–0.0261	V	T. Arranz	0.0001
V508 Oph	59784.4531	42640	–0.0263	V	L. Corp	0.0002
V566 Oph	59785.3941	43816.5	0.2920	V	T. Arranz	0.0001
V566 Oph	59785.5984	43817	0.2915	V	T. Arranz	0.0002
V839 Oph	59712.8556	47101	0.3541	V	G. Samolyk	0.0001
V839 Oph	59777.4780	47259	0.3553	V	T. Arranz	0.0001
V1010 Oph	59727.8147	31432.5	–0.2311	V	G. Samolyk	0.0003
V1010 Oph	59728.8050	31434	–0.2330	V	G. Samolyk	0.0002
V2610 Oph	59741.4986	17283.5	–0.0716	V	L. Corp	0.0007
V2612 Oph	59741.4468	19294.5	–0.0095	V	L. Corp	0.0004
EF Ori	59628.3996	4494	0.0110	V	T. Arranz	0.0001
ER Ori	59620.3865	42498.5	0.1618	V	T. Arranz	0.0001
ET Ori	59612.3251	34627	–0.0049	V	T. Arranz	0.0001
FL Ori	59613.3372	9198	0.0419	V	T. Arranz	0.0001
FT Ori	59630.5667	5803	0.0255	V	G. Samolyk	0.0001
FZ Ori	59616.3142	38981	–0.0218	V	T. Arranz	0.0002
FZ Ori	59616.5160	38981.5	–0.0199	V	T. Arranz	0.0002
GU Ori	59604.3852	35129	–0.0706	CV	M. Castets	0.0004
GU Ori	59628.3864	35180	–0.0742	V	T. Arranz	0.0001
V648 Ori	59625.4171	20675.5	0.0679	V	T. Arranz	0.0002
V1851 Ori	59582.6904	24994.5	–0.0014	V	K. Alton	0.0002
V1851 Ori	59582.6907	24994.5	–0.0011	B	K. Alton	0.0005
V1851 Ori	59582.6907	24994.5	–0.0011	I	K. Alton	0.0004
V1851 Ori	59582.8284	24995	–0.0019	V	K. Alton	0.0002
V1851 Ori	59582.8287	24995	–0.0016	I	K. Alton	0.0002
V1851 Ori	59582.8288	24995	–0.0015	B	K. Alton	0.0001
U Peg	59770.7985	62061	–0.1806	V	G. Samolyk	0.0001
BB Peg	59769.7999	44275	–0.0390	V	L. Hazel	0.0003
BB Peg	59774.8615	44289	–0.0384	V	G. Samolyk	0.0002
BB Peg	59787.6947	44324.5	–0.0385	V	L. Hazel	0.0006
BN Peg	59792.6483	36305	–0.0016	V	L. Hazel	0.0003
WY Per	59613.4112	4091	–0.3665	V	T. Arranz	0.0001
AY Per	59620.3171	2757	–0.1293	V	T. Arranz	0.0004
V723 Per	59618.3864	10253.5	0.3314	V	T. Arranz	0.0001
HO Psc	58755.9620	4420	–0.0030	I	K. Alton	0.0005
HO Psc	58755.9627	4420	–0.0023	V	K. Alton	0.0003
HO Psc	58755.9633	4420	–0.0017	B	K. Alton	0.0005
HO Psc	58759.8610	4432	–0.0010	I	K. Alton	0.0001
HO Psc	58759.8611	4432	–0.0009	V	K. Alton	0.0005
HO Psc	58759.8613	4432	–0.0007	B	K. Alton	0.0005
UZ Pup	59658.6286	18928	–0.0132	V	G. Samolyk	0.0001
AV Pup	53799.5681	40661	0.1411	V	G. Samolyk	0.0002
AV Pup	54215.6542	41409	0.0857	V	J. Bialozynski	0.0002
AV Pup	59676.3862	51224	0.3514	V	T. Arranz	0.0001
U Sge	59790.4818	12619	0.0351	V	T. Arranz	0.0001
V1968 Sgr	59789.6494	39004	–0.0187	V	G. Samolyk	0.0004
DK Sct	59789.5049	5986	0.0177	V	T. Arranz	0.0005
AO Ser	58306.7112	27490	–0.0142	V	K. Alton	0.0001
AO Ser	58306.7112	27490	–0.0142	I	K. Alton	0.0001
AO Ser	58306.7114	27490	–0.0140	B	K. Alton	0.0001
AO Ser	58307.5904	27491	–0.0143	I	K. Alton	0.0009
AO Ser	58307.5906	27491	–0.0141	V	K. Alton	0.0009
AO Ser	58307.5911	27491	–0.0136	B	K. Alton	0.0006
AO Ser	59757.6410	29140	–0.0077	V	G. Samolyk	0.0001
AO Ser	59766.4341	29150	–0.0081	V	T. Arranz	0.0001
CC Ser	59681.8836	43021	1.2109	V	G. Samolyk	0.0003
CC Ser	59754.6447	43162	1.2151	V	G. Samolyk	0.0002
RW Tau	59619.4396	5033	–0.3140	V	T. Arranz	0.0001
RZ Tau	59616.3981	52781	0.1048	V	T. Arranz	0.0001
RZ Tau	59631.3625	52817	0.1049	V	T. Arranz	0.0001
AC Tau	59617.4512	6842	0.2194	V	T. Arranz	0.0001
AH Tau	59603.3958	85792	–0.0002	CV	M. Castets	0.0001
AH Tau	59617.3679	85834	–0.0005	V	T. Arranz	0.0001
V781 Tau	59619.3581	45648	–0.0476	V	L. Corp	0.0002
RV Tri	59617.3410	18024	–0.0516	V	T. Arranz	0.0001
W UMa	59679.6248	41704	–0.1316	V	G. Samolyk	0.0003
TY UMa	59654.6379	56754.5	0.4804	V	G. Samolyk	0.0003
TY UMa	59706.4035	56900.5	0.4834	V	T. Arranz	0.0001
UX UMa	59703.6780	113239	–0.0015	V	G. Samolyk	0.0001
UX UMa	59703.8743	113240	–0.0018	V	G. Samolyk	0.0002
UX UMa	59732.3915	113385	–0.0020	V	T. Arranz	0.0001

Table continued on next page

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

Star	JD (min) Hel. 2400000 +	Cycle	O–C (day)	F	Observer	Standard Error (day)	Star	JD (min) Hel. 2400000 +	Cycle	O–C (day)	F	Observer	Standard Error (day)
UX UMa	59740.6524	113427	–0.0013	V	K. Menzies	0.0004	BH Vir	59722.4139	20189	–0.0160	V	T. Arranz	0.0001
UX UMa	59753.6324	113493	–0.0016	V	G. Samolyk	0.0001	BH Vir	59734.6673	20204	–0.0157	V	G. Samolyk	0.0001
VV UMa	59666.6313	20151	–0.0996	V	G. Samolyk	0.0001	CG Vir	59708.3861	7707	0.0098	CV	M. Castets	0.0004
VV UMa	59704.4365	20206	–0.1003	V	T. Arranz	0.0001	IR Vir	59737.4333	26833.5	–0.0189	V	T. Arranz	0.0001
XZ UMa	59683.4531	11057	–0.1651	V	T. Arranz	0.0001	V715 Vir	59327.8619	19372.5	–0.0016	B	K. Alton	0.0006
BS UMa	59736.4339	16558	–0.0247	V	T. Arranz	0.0004	V715 Vir	59327.8645	19372.5	0.0010	I	K. Alton	0.0013
EQ UMa	59676.3951	30628.5	–0.0285	V	T. Arranz	0.0004	V715 Vir	59327.8649	19372.5	0.0014	V	K. Alton	0.0013
HX UMa	59737.4158	19088	–0.0396	V	T. Arranz	0.0003	V715 Vir	59339.7316	19409.5	–0.0025	V	K. Alton	0.0007
KM UMa	59715.4260	20506	–0.0247	V	T. Arranz	0.0001	V715 Vir	59339.7329	19409.5	–0.0012	I	K. Alton	0.0007
QT UMa	59685.3843	17150	0.0140	V	T. Arranz	0.0002	V715 Vir	59339.7333	19409.5	–0.0008	B	K. Alton	0.0002
W UMi	59658.7676	15270	–0.2320	V	G. Samolyk	0.0005	V715 Vir	59341.8180	19416	–0.0015	B	K. Alton	0.0003
RU UMi	59686.8519	34463	–0.0155	V	G. Samolyk	0.0003	V715 Vir	59341.8180	19416	–0.0015	V	K. Alton	0.0006
VY UMi	59629.7879	25675.5	0.0672	V	K. Menzies	0.0002	V715 Vir	59341.8199	19416	0.0004	I	K. Alton	0.0003
VV Vir	59636.8927	63693	–0.0509	V	G. Samolyk	0.0002	V715 Vir	59343.7436	19422	–0.0008	V	K. Alton	0.0005
VV Vir	59708.7199	63854	–0.0516	V	L. Hazel	0.0003	V715 Vir	59343.7437	19422	–0.0007	I	K. Alton	0.0002
VV Vir	59727.4573	63896	–0.0519	V	T. Arranz	0.0001	V715 Vir	59343.7438	19422	–0.0006	B	K. Alton	0.0004
AG Vir	59704.3759	22208	–0.0266	CV	M. Castets	0.0007	AW Vul	59758.8063	16707	–0.0424	V	G. Samolyk	0.0001
AH Vir	59650.8523	33952	0.3143	V	G. Samolyk	0.0001	AW Vul	59767.6769	16718	–0.0428	V	L. Hazel	0.0003
AH Vir	59747.6420	34189.5	0.3178	V	G. Samolyk	0.0003	AX Vul	59723.7587	7344	–0.0460	V	L. Hazel	0.0006
AK Vir	59748.6568	14387	–0.0471	V	G. Samolyk	0.0001	AX Vul	59788.5562	7376	–0.0433	V	T. Arranz	0.0001
AW Vir	59666.8247	41368	0.0339	V	G. Samolyk	0.0001	AY Vul	59779.7636	7086	–0.2114	V	G. Samolyk	0.0002
AW Vir	59745.4116	41590	0.0334	V	T. Arranz	0.0001	BE Vul	59772.7744	12668	0.1000	V	G. Samolyk	0.0001
AX Vir	59654.8473	45670	0.0317	V	G. Samolyk	0.0001	BO Vul	59775.7363	12224	0.0026	V	L. Hazel	0.0003
AX Vir	59738.4486	45789	0.0324	V	T. Arranz	0.0002	BS Vul	59779.6571	34683	–0.0394	V	G. Samolyk	0.0001
AZ Vir	59703.7604	44978	–0.0169	V	G. Samolyk	0.0001	BU Vul	59747.7705	46071	0.0110	V	L. Hazel	0.0006
AZ Vir	59733.6572	45063.5	–0.0165	V	G. Samolyk	0.0001	CD Vul	59734.7747	19651	–0.0033	V	L. Hazel	0.0003
BH Vir	59707.7109	20171	–0.0153	V	G. Samolyk	0.0001	FR Vul	59745.6760	26293	–0.0118	V	L. Hazel	0.0006