

Recent Maxima of 79 Short Period Pulsating Stars

Gerard Samolyk

P. O. Box 20677, Greenfield, WI 53220; gsamolyk@wi.rr.com

Received February 8, 2021; accepted February 8, 2021

Abstract This paper contains times of maxima for 79 short period pulsating stars (primarily RR Lyrae and δ Scuti stars). They represent the CCD observations received by the AAVSO Short Period Pulsator (SPP) Section in 2020.

1. Recent observations

Table 1 contains times of maxima calculated from CCD observations made by participants in the AAVSO's Short Period Pulsator (SPP) Section. This list will be web-archived and made available through the AAVSO ftp site at:

ftp:ftp.aavso.org/public/datasets/gsamj491spp79.txt.

The error estimate is included. RR Lyr stars in this list, along with data from earlier AAVSO publications, are included in the GEOS database at:

http://rr-lyr.ast.obs-mip.fr/dbrr/dbrr-V1.0_0.php.

This database does not include δ Scuti stars. The observations were reduced by the writer using the PERANSO program (Vanmunster 2007). In the table, "TG" in the Filter (F) column indicates DSLR green band; "C" indicates a clear filter.

The linear elements in the *General Catalogue of Variable Stars* (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: V799 Aur (AAVSO VSX site

(Watson *et al.* 2014)); VY CrB (Antipin 1996); RZ Cap and DG Hya (Samolyk 2010); V2416 Cyg (Samolyk 2018); GO Hya (GEOS 2020); and GW UMa (Hintz *et al.* 2005).

References

- Antipin, S. V. 1996, *Inf. Bull. Var. Stars*, No. 4343, 1.
 Groupe Européen d'Observation Stellaire (GEOS) 2020, GEOS RR Lyr Database (<http://rr-lyr.irap.omp.eu/dbrr/index.php>).
 Hintz, E. G., Bush, T. C., and Rose, M. B. 2005, *Astron. J.*, **130**, 2876.
 Kholopov, P. N., *et al.* 1985, *General Catalogue of Variable Stars*, 4th ed., Moscow.
 Samolyk, G. 2010, *J. Amer. Assoc. Var. Stars*, **38**, 12.
 Samolyk, G. 2018, *J. Amer. Assoc. Var. Stars*, **46**, 70.
 Vanmunster, T. 2007, PERANSO period analysis software (<http://www.peranso.com>).
 Watson, C., Henden, A. A., and Price, C. A. 2014, AAVSO International Variable Star Index VSX (Watson+, 2005–2020; <https://www.aavso.org/vsx>).

Table 1. Maxima of stars from data submitted to the AAVSO SPP Section in 2020.

<i>Star</i>	<i>JD (max) Hel. 2400000+</i>	<i>Cycle</i>	<i>O–C (day)</i>	<i>F</i>	<i>Observer</i>	<i>Error (day)</i>	<i>Star</i>	<i>JD (max) Hel. 2400000+</i>	<i>Cycle</i>	<i>O–C (day)</i>	<i>F</i>	<i>Observer</i>	<i>Error (day)</i>
SW And	59075.8391	92574	–0.5306	V	G. Samolyk	0.0009	AA Aqr	59156.5710	63079	–0.1926	V	G. Samolyk	0.0019
SW And	59114.7595	92662	–0.5308	V	K. Menzies	0.0015	BO Aqr	59085.7725	25164	0.2364	V	G. Samolyk	0.0019
SW And	59125.8167	92687	–0.5305	V	K. Menzies	0.0009	BR Aqr	59157.6395	44662	–0.2371	V	G. Samolyk	0.0009
SW And	59209.4011	92876	–0.5370	V	T. Arranz	0.0010	CY Aqr	59127.6091	406616	0.0169	V	G. Samolyk	0.0004
SW And	59210.2863	92878	–0.5363	V	T. Arranz	0.0009	CY Aqr	59127.6700	406617	0.0168	V	G. Samolyk	0.0004
XX And	59073.8592	27653	0.2952	V	G. Samolyk	0.0016	CY Aqr	59127.7310	406618	0.0167	V	G. Samolyk	0.0003
XX And	59125.8960	27725	0.2942	V	K. Menzies	0.0012	CY Aqr	59127.7921	406619	0.0168	V	G. Samolyk	0.0004
AC And	59091.7527	14891	0.5249	V	G. Samolyk	0.0009	CY Aqr	59130.6003	406665	0.0172	V	G. Samolyk	0.0004
AC And	59096.6546	14898	0.4481	V	G. Samolyk	0.0033	CY Aqr	59130.6610	406666	0.0169	V	G. Samolyk	0.0003
AC And	59171.3488	15003	0.4621	V	T. Arranz	0.0047	CY Aqr	59130.7219	406667	0.0168	V	G. Samolyk	0.0003
AC And	59176.3445	15010	0.4791	V	T. Arranz	0.0009	CY Aqr	59130.7831	406668	0.0169	V	G. Samolyk	0.0004
AC And	59186.3507	15024	0.5279	V	T. Arranz	0.0014	CY Aqr	59152.2690	407020	0.0173	V	T. Arranz	0.0005
AC And	59196.2820	15038	0.5019	V	T. Arranz	0.0015	CY Aqr	59152.3295	407021	0.0168	V	T. Arranz	0.0003
AC And	59208.3633	15055	0.4921	V	T. Arranz	0.0009	CY Aqr	59152.3906	407022	0.0169	V	T. Arranz	0.0003
AT And	59111.7804	27181	0.0001	V	G. Samolyk	0.0024	CY Aqr	59152.4522	407023	0.0174	V	T. Arranz	0.0006
AT And	59170.3787	27276	–0.0085	V	T. Arranz	0.0017	DN Aqr	59165.5624	48505	0.0446	V	G. Samolyk	0.0021
AT And	59210.4784	27341	–0.0083	V	K. Menzies	0.0021	TZ Aur	58894.4397	99552	0.0160	V	T. Arranz	0.0009
GM And	59112.6331	47359	0.0473	V	K. Menzies	0.0018	TZ Aur	59156.8625	100222	0.0168	V	G. Samolyk	0.0007
SW Aqr	59068.8183	73963	0.0001	V	G. Samolyk	0.0008	TZ Aur	59193.6799	100316	0.0169	TG	G. Conrad	0.0009
SW Aqr	59089.4872	74008	0.0004	V	T. Arranz	0.0007	TZ Aur	59200.7303	100334	0.0171	TG	G. Conrad	0.0009
SW Aqr	59138.6329	74115	0.0006	V	G. Samolyk	0.0009	BH Aur	58856.6381	35311	0.0092	V	G. Samolyk	0.0011
TZ Aqr	59081.7948	37698	0.0121	V	G. Samolyk	0.0019	BH Aur	58885.3683	35374	0.0057	V	T. Arranz	0.0012
YZ Aqr	59130.7033	43060	0.0867	V	G. Samolyk	0.0021	BH Aur	58913.6513	35436	0.0111	V	R. Sabo	0.0011

Table continued on following pages

Table 1. Maxima of stars from data submitted to the AAVSO SPP Section in 2020, cont.

<i>Star</i>	<i>JD (max)</i> <i>Hel.</i> 2400000+	<i>Cycle</i>	<i>O-C</i> <i>(day)</i>	<i>F</i>	<i>Observer</i>	<i>Error</i> <i>(day)</i>	<i>Star</i>	<i>JD (max)</i> <i>Hel.</i> 2400000+	<i>Cycle</i>	<i>O-C</i> <i>(day)</i>	<i>F</i>	<i>Observer</i>	<i>Error</i> <i>(day)</i>
BH Aur	58923.6835	35458	0.0094	TG	G. Conrad	0.0017	RV Cap	59050.8087	56210	-0.1441	V	G. Samolyk	0.0016
BH Aur	59123.9070	35897	0.0094	V	K. Menzies	0.0012	RZ Cap	59073.7416	19174	0.0018	V	G. Samolyk	0.0013
BH Aur	59167.6933	35993	0.0111	V	G. Samolyk	0.0008	VW Cap	59054.7945	107061	0.2046	V	G. Samolyk	0.0019
BH Aur	59188.6713	36039	0.0090	TG	G. Conrad	0.0016	YZ Cap	59133.5764	56330	0.0420	V	G. Samolyk	0.0019
V799 Aur	58561.3942	57296	0.0057	V	T. Arranz	0.0008	RR Cet	59111.8079	46888	0.0205	V	G. Samolyk	0.0009
V799 Aur	58883.3631	61527	0.0051	V	T. Arranz	0.0006	RR Cet	59213.5660	47072	0.0214	V	K. Menzies	0.0013
V799 Aur	58883.4394	61528	0.0052	V	T. Arranz	0.0007	RU Cet	59159.7105	32976	0.1302	V	G. Samolyk	0.0015
V799 Aur	58900.3331	61750	0.0053	V	T. Arranz	0.0006	RV Cet	58865.5602	31684	0.2965	V	G. Samolyk	0.0021
V799 Aur	58900.4095	61751	0.0055	V	T. Arranz	0.0006	RV Cet	59181.6318	32191	0.3028	V	G. Samolyk	0.0026
V799 Aur	59192.6258	65591	0.0066	TG	G. Conrad	0.0008	RZ Cet	59150.7592	49439	-0.2172	V	G. Samolyk	0.0015
V799 Aur	59192.7015	65592	0.0062	TG	G. Conrad	0.0007	RZ Cet	59193.6464	49523	-0.2213	V	G. Samolyk	0.0013
V799 Aur	59192.7773	65593	0.0059	TG	G. Conrad	0.0007	TY Cet	59182.7133	23961	-0.0232	V	G. Samolyk	0.0019
RS Boo	58944.6597	45514	-0.0357	I	G. Samolyk	0.0011	UU Cet	59155.6629	29612	-0.1837	V	G. Samolyk	0.0031
RS Boo	58964.6575	45567	-0.0369	TG	G. Conrad	0.0018	VY CrB	59017.6675	37242	-0.1871	V	K. Menzies	0.0008
RS Boo	58988.4323	45630	-0.0344	V	T. Arranz	0.0007	XX Cyg	59012.7391	107940	0.0043	V	G. Samolyk	0.0005
RS Boo	58990.6993	45636	-0.0315	TG	G. Conrad	0.0011	XX Cyg	59012.8736	107941	0.0039	V	G. Samolyk	0.0008
RS Boo	58994.4691	45646	-0.0351	V	T. Arranz	0.0007	XX Cyg	59050.6360	108221	0.0041	V	G. Samolyk	0.0006
RS Boo	58997.4880	45654	-0.0349	V	T. Arranz	0.0007	XX Cyg	59050.7708	108222	0.0040	V	G. Samolyk	0.0005
RS Boo	59020.5108	45715	-0.0298	V	T. Arranz	0.0009	XZ Cyg	59017.7162	31918	-2.8544	V	G. Samolyk	0.0006
ST Boo	58942.8406	63895	0.0911	TG	G. Conrad	0.0015	XZ Cyg	59044.7862	31976	-2.8530	V	G. Samolyk	0.0013
ST Boo	58994.4948	63978	0.0952	V	T. Arranz	0.0016	XZ Cyg	59049.4509	31986	-2.8553	V	T. Arranz	0.0007
ST Boo	58999.4760	63986	0.0981	V	T. Arranz	0.0018	XZ Cyg	59055.5209	31999	-2.8524	V	T. Arranz	0.0005
ST Boo	59027.4764	64031	0.0954	V	T. Arranz	0.0015	XZ Cyg	59056.4546	32001	-2.8521	V	T. Arranz	0.0006
ST Boo	59032.4566	64039	0.0973	V	T. Arranz	0.0014	XZ Cyg	59057.3870	32003	-2.8531	V	T. Arranz	0.0006
ST Boo	59050.5029	64068	0.0972	V	T. Arranz	0.0014	XZ Cyg	59062.5190	32014	-2.8548	V	T. Arranz	0.0006
SW Boo	58915.8827	31828	0.5503	V	G. Samolyk	0.0011	XZ Cyg	59063.4506	32016	-2.8566	V	T. Arranz	0.0007
SW Boo	58975.4554	31944	0.5538	V	T. Arranz	0.0009	XZ Cyg	59066.7142	32023	-2.8599	V	G. Samolyk	0.0009
SW Boo	58983.6728	31960	0.5548	TG	G. Conrad	0.0017	XZ Cyg	59069.5092	32029	-2.8651	V	T. Arranz	0.0006
SW Boo	58993.4312	31979	0.5561	V	T. Arranz	0.0009	XZ Cyg	59070.4421	32031	-2.8656	V	T. Arranz	0.0007
SZ Boo	58915.8489	59821	0.0146	V	G. Samolyk	0.0013	XZ Cyg	59071.3746	32033	-2.8665	V	T. Arranz	0.0008
SZ Boo	58981.7252	59947	0.0156	V	G. Samolyk	0.0011	XZ Cyg	59073.7071	32038	-2.8675	V	G. Samolyk	0.0008
SZ Boo	58987.4741	59958	0.0135	V	T. Arranz	0.0013	XZ Cyg	59080.6987	32053	-2.8764	V	G. Samolyk	0.0006
TV Boo	58936.7676	109826	0.1083	V	K. Menzies	0.0009	XZ Cyg	59084.4331	32061	-2.8756	V	T. Arranz	0.0008
TV Boo	58986.4607	109985	0.1045	V	T. Arranz	0.0009	XZ Cyg	59091.4361	32076	-2.8731	V	T. Arranz	0.0009
TV Boo	58987.3990	109988	0.1051	V	T. Arranz	0.0011	XZ Cyg	59092.3700	32078	-2.8726	V	T. Arranz	0.0007
TV Boo	58991.4936	110001	0.1364	V	T. Arranz	0.0011	XZ Cyg	59119.4409	32136	-2.8703	V	T. Arranz	0.0007
TV Boo	58992.4252	110004	0.1304	V	T. Arranz	0.0014	XZ Cyg	59120.3741	32138	-2.8705	V	T. Arranz	0.0007
TV Boo	58996.4628	110017	0.1047	V	T. Arranz	0.0011	DM Cyg	59039.7553	39197	0.0969	V	G. Samolyk	0.0009
TV Boo	58997.3997	110020	0.1039	V	T. Arranz	0.0009	DM Cyg	59088.4602	39313	0.0980	V	T. Arranz	0.0008
TV Boo	59006.4659	110049	0.1059	V	T. Arranz	0.0007	DM Cyg	59107.7751	39359	0.0994	V	K. Menzies	0.0015
TV Boo	59013.6601	110072	0.1112	V	K. Menzies	0.0041	DM Cyg	59154.3797	39470	0.0995	V	T. Arranz	0.0012
TV Boo	59022.4283	110100	0.1278	V	T. Arranz	0.0017	V2416 Cyg	59012.6590	96620	-0.0021	V	G. Samolyk	0.0015
TV Boo	59026.4714	110113	0.1076	V	T. Arranz	0.0009	V2416 Cyg	59012.7166	96621	-0.0004	V	G. Samolyk	0.0012
TV Boo	59036.4703	110145	0.1046	V	T. Arranz	0.0015	V2416 Cyg	59012.7746	96622	0.0017	V	G. Samolyk	0.0011
TV Boo	59047.4217	110180	0.1164	V	T. Arranz	0.0028	V2416 Cyg	59012.8308	96623	0.0020	V	G. Samolyk	0.0017
TW Boo	58945.7114	60222	-0.1102	V	G. Samolyk	0.0012	V2416 Cyg	59050.6095	97299	-0.0007	V	G. Samolyk	0.0019
TW Boo	58999.4772	60323	-0.1040	V	T. Arranz	0.0009	V2416 Cyg	59050.6671	97300	0.0010	V	G. Samolyk	0.0014
TW Boo	59023.4241	60368	-0.1094	V	T. Arranz	0.0009	V2416 Cyg	59050.7208	97301	-0.0012	V	G. Samolyk	0.0013
UU Boo	58908.8592	49952	0.3564	V	G. Samolyk	0.0009	V2416 Cyg	59050.7788	97302	0.0009	V	G. Samolyk	0.0015
UU Boo	59019.4388	50194	0.3612	V	T. Arranz	0.0009	V2416 Cyg	59050.8337	97303	0.0000	V	G. Samolyk	0.0012
UU Boo	59035.4317	50229	0.3619	V	T. Arranz	0.0008	RW Dra	58933.7732	44153	0.2679	V	G. Samolyk	0.0011
UY Boo	58915.8160	26242	0.8706	V	G. Samolyk	0.0017	RW Dra	58941.7349	44171	0.2571	V	G. Samolyk	0.0014
UY Boo	58998.4545	26369	0.8528	V	T. Arranz	0.0009	RW Dra	59007.7629	44320	0.2905	TG	G. Conrad	0.0015
UY Boo	59001.7119	26374	0.8560	V	G. Samolyk	0.0012	RW Dra	59029.4405	44369	0.2651	V	T. Arranz	0.0009
UY Cam	58854.7074	87213	-0.0952	V	G. Samolyk	0.0022	RW Dra	59033.4372	44378	0.2756	V	T. Arranz	0.0010
UY Cam	58871.7990	87277	-0.0943	V	K. Menzies	0.0017	RW Dra	59037.4368	44387	0.2889	V	T. Arranz	0.0009
UY Cam	58904.6461	87400	-0.0934	TG	G. Conrad	0.0029	RW Dra	59041.4340	44396	0.2999	V	T. Arranz	0.0009
UY Cam	58908.6460	87415	-0.0992	V	G. Samolyk	0.0029	RW Dra	59049.4035	44414	0.2969	V	T. Arranz	0.0006
UY Cam	59157.8005	88348	-0.0952	V	G. Samolyk	0.0027	RW Dra	59068.4096	44457	0.2575	V	T. Arranz	0.0012
UY Cam	59190.9140	88472	-0.0949	V	K. Menzies	0.0021	XZ Dra	58955.8899	35735	-0.1044	V	G. Samolyk	0.0009
RW Cnc	58895.6683	35342	0.2472	V	G. Samolyk	0.0016	XZ Dra	58978.7749	35783	-0.0913	V	G. Samolyk	0.0012
RW Cnc	59182.9456	35867	0.2451	V	G. Samolyk	0.0016	XZ Dra	59041.6664	35915	-0.0974	V	G. Samolyk	0.0015
TT Cnc	58901.7636	33645	0.1415	V	G. Samolyk	0.0009	XZ Dra	59054.5313	35942	-0.0979	V	T. Arranz	0.0015
TT Cnc	59182.9175	34144	0.1342	V	G. Samolyk	0.0011	XZ Dra	59055.4837	35944	-0.0985	V	T. Arranz	0.0011
VZ Cnc	57807.6531	100414	0.0155	V	N. Simmons	0.0013	XZ Dra	59065.4829	35965	-0.1057	V	T. Arranz	0.0009
VZ Cnc	57815.6905	100459	0.0266	V	N. Simmons	0.0014	XZ Dra	59066.4366	35967	-0.1050	V	T. Arranz	0.0009

Table continued on next page

Table 1. Maxima of stars from data submitted to the AAVSO SPP Section in 2020, cont.

<i>Star</i>	<i>JD (max)</i> <i>Hel.</i> 2400000 +	<i>Cycle</i>	<i>O-C</i> <i>(day)</i>	<i>F</i>	<i>Observer</i>	<i>Error</i> <i>(day)</i>	<i>Star</i>	<i>JD (max)</i> <i>Hel.</i> 2400000 +	<i>Cycle</i>	<i>O-C</i> <i>(day)</i>	<i>F</i>	<i>Observer</i>	<i>Error</i> <i>(day)</i>
XZ Dra	59067.3891	35969	-0.1055	V	T. Arranz	0.0009	SZ Hya	58907.6930	33930	-0.2797	V	G. Samolyk	0.0009
XZ Dra	59087.4096	36011	-0.0979	V	T. Arranz	0.0008	UU Hya	58898.7649	37070	0.0203	V	G. Samolyk	0.0012
XZ Dra	59108.3771	36055	-0.0962	V	T. Arranz	0.0012	DG Hya	58898.7971	8650	0.0327	V	G. Samolyk	0.0025
RX Eri	58891.5821	63345	-0.0087	V	G. Samolyk	0.0012	DH Hya	58891.8034	56678	0.1194	V	G. Samolyk	0.0013
RX Eri	59165.8255	63812	-0.0093	V	G. Samolyk	0.0012	GO Hya	58562.7648	6350	-0.0022	V	G. Samolyk	0.0029
SV Eri	59167.7516	33083	1.1163	V	G. Samolyk	0.0024	GO Hya	58854.8860	6809	-0.0054	V	G. Samolyk	0.0024
BB Eri	59153.8691	34382	0.3450	V	G. Samolyk	0.0022	GO Hya	58907.7172	6892	0.0017	V	G. Samolyk	0.0025
RR Gem	58883.4891	44114	-0.6757	V	T. Arranz	0.0008	GO Hya	58944.6259	6950	-0.0029	V	G. Samolyk	0.0044
RR Gem	58893.4190	44139	-0.6786	V	T. Arranz	0.0007	RR Leo	58886.8728	34464	0.1881	V	G. Samolyk	0.0007
RR Gem	58895.4026	44144	-0.6815	V	T. Arranz	0.0007	RR Leo	58986.4004	34684	0.1892	V	T. Arranz	0.0007
RR Gem	58899.3806	44154	-0.6766	V	T. Arranz	0.0007	SS Leo	58933.7248	27385	-0.1174	V	G. Samolyk	0.0015
RR Gem	58901.3649	44159	-0.6789	V	T. Arranz	0.0007	ST Leo	58854.8968	64713	-0.0192	V	G. Samolyk	0.0009
RR Gem	58903.3494	44164	-0.6809	V	T. Arranz	0.0006	TV Leo	58959.6982	32575	0.1348	V	G. Samolyk	0.0016
RR Gem	58905.3401	44169	-0.6768	V	T. Arranz	0.0008	WW Leo	58945.6222	39916	0.0564	V	G. Samolyk	0.0018
RR Gem	58907.3253	44174	-0.6781	V	T. Arranz	0.0007	AA Leo	58900.7852	32246	-0.1215	V	G. Samolyk	0.0013
RR Gem	58916.4591	44197	-0.6825	V	T. Arranz	0.0006	U Lep	58895.5233	30170	0.0403	V	G. Samolyk	0.0013
RR Gem	58918.4465	44202	-0.6816	V	T. Arranz	0.0009	SZ Lyn	58856.6861	172002	0.0406	V	G. Samolyk	0.0013
RR Gem	58922.4208	44212	-0.6804	V	T. Arranz	0.0006	SZ Lyn	58856.8069	172003	0.0408	V	G. Samolyk	0.0006
RR Gem	58932.3509	44237	-0.6831	V	T. Arranz	0.0006	SZ Lyn	58906.7084	172417	0.0409	TG	G. Conrad	0.0011
RR Gem	58934.3424	44242	-0.6782	V	T. Arranz	0.0007	SZ Lyn	58906.8291	172418	0.0410	TG	G. Conrad	0.0011
RR Gem	59167.9437	44830	-0.6955	V	G. Samolyk	0.0006	SZ Lyn	59150.9056	174443	0.0343	V	G. Samolyk	0.0006
RR Gem	59181.8500	44865	-0.6951	V	G. Samolyk	0.0007	SZ Lyn	59156.9326	174493	0.0346	V	G. Samolyk	0.0008
TW Her	58973.7575	93665	-0.0202	V	G. Samolyk	0.0008	SZ Lyn	59165.8517	174567	0.0341	V	G. Samolyk	0.0007
TW Her	59035.6952	93820	-0.0206	V	G. Samolyk	0.0008	SZ Lyn	59185.7394	174732	0.0335	V	G. Samolyk	0.0007
TW Her	59046.4847	93847	-0.0203	V	T. Arranz	0.0006	SZ Lyn	59185.8602	174733	0.0338	V	G. Samolyk	0.0006
TW Her	59048.4828	93852	-0.0202	V	T. Arranz	0.0007	RR Lyr	59008.7789	28377	-0.6468	V	G. Samolyk	0.0011
TW Her	59054.4768	93867	-0.0202	V	T. Arranz	0.0005	RR Lyr	59061.4895	28470	-0.6549	V	T. Arranz	0.0008
TW Her	59058.4728	93877	-0.0202	V	T. Arranz	0.0006	RR Lyr	59065.4550	28477	-0.6575	V	T. Arranz	0.0009
VX Her	58959.8056	81712	-0.1010	V	G. Samolyk	0.0008	RR Lyr	59069.4208	28484	-0.6598	V	T. Arranz	0.0008
VX Her	59027.6544	81861	-0.1027	V	K. Menzies	0.0008	RR Lyr	59074.5214	28493	-0.6610	V	T. Arranz	0.0009
VX Her	59034.4844	81876	-0.1033	V	T. Arranz	0.0008	RR Lyr	59096.6293	28532	-0.6609	V	N. Simmons	0.0022
VX Her	59047.6897	81905	-0.1038	V	G. Samolyk	0.0008	RR Lyr	59103.4283	28544	-0.6643	V	T. Arranz	0.0008
VZ Her	59001.7741	50446	0.0954	V	G. Samolyk	0.0007	RZ Lyr	59000.6752	34851	-0.0562	V	G. Samolyk	0.0011
AR Her	58945.7600	37216	-1.1490	V	G. Samolyk	0.0015	RZ Lyr	59047.6945	34943	-0.0712	V	G. Samolyk	0.0009
AR Her	58953.7433	37233	-1.1562	V	G. Samolyk	0.0014	RZ Lyr	59062.5208	34972	-0.0709	V	T. Arranz	0.0009
AR Her	58978.6601	37286	-1.1509	V	G. Samolyk	0.0011	RZ Lyr	59091.6693	35029	-0.0632	V	G. Samolyk	0.0011
AR Her	58983.8158	37297	-1.1655	V	K. Menzies	0.0009	CX Lyr	58975.7692	42009	1.7665	V	K. Menzies	0.0012
AR Her	58993.7451	37318	-1.1068	V	K. Menzies	0.0011	AV Peg	59076.8193	39158	0.2108	V	G. Samolyk	0.0009
AR Her	58994.6831	37320	-1.1089	TG	G. Conrad	0.0021	AV Peg	59121.7124	39273	0.2108	TG	G. Conrad	0.0005
AR Her	59000.7766	37333	-1.1257	V	G. Samolyk	0.0007	AV Peg	59163.4839	39380	0.2122	V	T. Arranz	0.0005
AR Her	59008.7454	37350	-1.1474	V	G. Samolyk	0.0014	BH Peg	59091.6929	30775	-0.1467	V	G. Samolyk	0.0018
AR Her	59017.6590	37369	-1.1643	V	G. Samolyk	0.0011	BH Peg	59141.6938	30853	-0.1432	TG	G. Conrad	0.0025
AR Her	59025.6918	37386	-1.1220	V	G. Samolyk	0.0012	DY Peg	59112.6145	200347	-0.0208	V	G. Samolyk	0.0004
AR Her	59028.5253	37392	-1.1087	V	T. Arranz	0.0012	DY Peg	59112.6864	200348	-0.0217	V	G. Samolyk	0.0005
AR Her	59029.4547	37394	-1.1193	V	T. Arranz	0.0011	DY Peg	59112.7601	200349	-0.0210	V	G. Samolyk	0.0005
AR Her	59030.3864	37396	-1.1277	V	T. Arranz	0.0008	DY Peg	59112.8331	200350	-0.0209	V	G. Samolyk	0.0005
AR Her	59036.4902	37409	-1.1343	V	T. Arranz	0.0007	DY Peg	59131.5748	200607	-0.0213	V	G. Samolyk	0.0006
AR Her	59037.4330	37411	-1.1315	V	T. Arranz	0.0008	DY Peg	59131.6492	200608	-0.0198	V	G. Samolyk	0.0008
AR Her	59044.4535	37426	-1.1614	V	T. Arranz	0.0009	DY Peg	59131.7198	200609	-0.0221	V	G. Samolyk	0.0006
AR Her	59059.5290	37458	-1.1268	V	T. Arranz	0.0006	DY Peg	59131.7931	200610	-0.0217	V	G. Samolyk	0.0008
AR Her	59068.4505	37477	-1.1359	V	T. Arranz	0.0009	DF Ser	58990.7166	66891	0.1092	V	G. Samolyk	0.0009
AR Her	59069.3887	37479	-1.1377	V	T. Arranz	0.0007	RV UMa	58891.8485	29518	0.1424	V	G. Samolyk	0.0009
DL Her	58959.8450	35075	0.0696	V	G. Samolyk	0.0011	RV UMa	58982.6508	29712	0.1411	V	G. Samolyk	0.0011
DL Her	59028.4754	35191	0.0712	V	T. Arranz	0.0011	RV UMa	58991.5405	29731	0.1376	V	T. Arranz	0.0008
DL Her	59051.5466	35230	0.0689	V	T. Arranz	0.0018	RV UMa	58992.4770	29733	0.1380	V	T. Arranz	0.0008
DY Her	58957.8194	171689	-0.0355	V	G. Samolyk	0.0006	RV UMa	58993.4149	29735	0.1398	V	T. Arranz	0.0009
DY Her	58976.8442	171817	-0.0355	V	G. Samolyk	0.0006	RV UMa	59190.9322	30157	0.1358	V	K. Menzies	0.0007
DY Her	58990.8158	171911	-0.0352	TG	G. Conrad	0.0011	AE UMa	58886.5759	270670	0.0016	V	G. Samolyk	0.0009
DY Her	59015.6365	172078	-0.0360	V	G. Samolyk	0.0006	AE UMa	58886.6641	270671	0.0038	V	G. Samolyk	0.0008
DY Her	59015.7854	172079	-0.0357	V	G. Samolyk	0.0006	AE UMa	58886.7455	270672	-0.0008	V	G. Samolyk	0.0005
DY Her	59035.4043	172211	-0.0361	V	T. Arranz	0.0005	AE UMa	58886.8310	270673	-0.0013	V	G. Samolyk	0.0007
DY Her	59035.5541	172212	-0.0350	V	T. Arranz	0.0007	AE UMa	58886.9237	270674	0.0054	V	G. Samolyk	0.0008
LS Her	59014.6701	134353	0.0148	V	G. Samolyk	0.0014	AE UMa	58962.3590	271551	0.0037	V	T. Arranz	0.0007
SZ Hya	58886.7391	33891	-0.2812	V	G. Samolyk	0.0009	AE UMa	58962.4440	271552	0.0027	V	T. Arranz	0.0004
SZ Hya	58893.7201	33904	-0.2843	V	G. Samolyk	0.0022	GW UMa	58911.5650	34015	0.0021	V	G. Samolyk	0.0011
SZ Hya	58900.6653	33917	-0.3232	V	G. Samolyk	0.0018	GW UMa	58911.7674	34016	0.0013	V	G. Samolyk	0.0015