

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

Number 5854

Konkoly Observatory
Budapest

16 October 2008

HU ISSN 0374 – 0676

MAXIMA OF RR LYR STARS FROM AAVSO INTERNATIONAL DATABASE

LE BORGNE, J. F.^{1,2}; VANDENBROERE, J.¹; HENDEN, A. A.³; BUTTERWORTH³, N.;
DVORAK, S.³

¹ GEOS (Groupe Européen d’Observations Stellaires), 23 Parc de Levesville, 28300 Bailleau l’Evêque, France

² LATT, Université de Toulouse, CNRS, Toulouse, France

³ AAVSO (American Association of Variable Star Observers), 49 Bay State Rd., Cambridge, MA 02138, USA

We present here a list of light maxima of RR Lyrae stars of ab and c types extracted from AAVSO International Database (<http://www.aavso.org/>, Henden, 2007). We have extracted the measurements of RR Lyrae stars made with CCDs and selected the time series which allow the determination of maximum times with an accuracy better than 0.005 day and which have not been used and published for such a purpose yet. These unpublished times of maximum were determined in order to supply the GEOS RR Lyr database (<http://dbrr.ast.obs-mip.fr>, Le Borgne et al., 2007).

The selected data were obtained by 20 observers (Table 1) who use telescopes of diameter from 20 to 40 cm. The time series contain from about 30 to 300 measurements obtained during a time interval from 2 to 6 hours. The present list contains 479 maxima observed with *V*, *B*, *R* or *I* filters between JD 2452654 and 2454452 (Table 2). Most of the measurements have been done through *V* filter. In Table 2, the filter is indicated in the last column when different from *V*. Some maxima have been obtained with more than 1 filter: the times of maximum were computed separately for each filter but the mean value is given since the differences are within errors in all cases. Only 3 maxima were obtained with no filter. The columns in Table 2 are self explanatory. The observers are identified by their AAVSO acronyms which identifies them in Table 1. The times of maximum are determined by fitting a polynomial function on the data points. $O - C$ s are computed with GCVS elements (Kholopov et al., 1985), when available. Note that the cycle number ‘*E*’ takes into account the shifts induced by the elements when the period of the elements is very different from the actual one, the absolute value of $O - C$ becoming then greater than 1 period. The uncertainty on the times of maximum depends on individual measurement uncertainties, the time sampling and the shape of the light curve; the sharp maximum of an RRab star is determined with a better accuracy than the flat one of an RRC though the period of an RRC is shorter. The typical uncertainty is about 0.002 day (~ 3 min). As noted above, the maxima of RRC stars are usually flat and may be even double. In this last case, we have measured the first occurring maximum. When relevant, this is noted as remarks in the last column of Table 2.

Acknowledgments

We acknowledge with thanks the variable star observations from the AAVSO International Database contributed by observers worldwide and used in this research.

References:

- Henden, A. A., 2007, Observations from the AAVSO International Database, private communication.
- Kholopov, P. N., et al., 1985, *General Catalogue of Variable Stars*, Moscow: Nauka Publishing House, 1988, 4th ed., edited by Kholopov, P. N.; and 2006 web edition (<http://www.sai.msu.su/groups/cluster/gcvs/>).
- Le Borgne, J. F., Paschke, A., Vandenbroere, J., Poretti, E., Klotz, A., Boër, M., Damerdjij, Y., Martignoni, M., Acerbi, F., 2007, *A&A*, **476**, 307

Table 1: Observers

Observer	Number of maxima	Observer	Number of maxima		
M. Banfi	5	BVN	M. A. Nicholas	1	NMI
N. Butterworth	142	BIW	R. Papini	4	PCC
G. Di Scala	11	DSI	V. Petriew	8	PVA
S. Dvorak	291	DKS	H. Pulley	1	PHA
G. Hagen	1	HGH	W. Rauscher	1	RWA
R. Huziak	5	HUZ	C. W. Robertson	10	RCW
G. Klingenberg	2	KGE	D. R. Starkey	1	SDB
A. Marchini	2	MXI	D. Trowbridge	1	TDW
M. P. Nicholson	1	NMR	J. Waller	4	WAJ

Table 2: maxima of RR Lyrae stars

Variable	Maximum HJD 24...	$O - C$ (days)	E	Obs.	Variable	Maximum HJD 24...	$O - C$ (days)	E	Obs.
XX And	54126.579±0.003	0.219	20808	DKS	BH Aur	53396.774±0.002	-0.004	23340	DKS
ZZ And	53709.568±0.003	0.022	52082	DKS	BH Aur	53698.707±0.003	-0.002	24002	DKS
AC And	54023.423±0.014	-0.220	7766	PCC	BH Aur	53762.560±0.002	-0.002	24142	DKS
AC And	54024.561±0.008	0.207	7767	PCC	BH Aur	54124.695±0.003	-0.002	24936	NMI
AC And	54056.576±0.004	0.216	7812	DKS	RS Boo	53755.903±0.003	-0.004	31763	DKS
AC And	54058.700±0.007	0.206	7815	DKS	RS Boo	53803.825±0.002	-0.005	31890	DKS
AC And	54295.495±0.004	0.158	8148	PCC	RS Boo	54152.868±0.002	-0.000	32815	DKS
AC And	54308.537±0.009	-0.313	8167	BVN	RS Boo	54222.671±0.002	-0.004	33000	DKS
AC And	54308.540±0.008	-0.310	8167	MXI	RS Boo	54292.855±0.002	-0.006	33186	TDW
AC And	54316.490±0.013	-0.184	8178	MXI	ST Boo	53467.927±0.005	0.091	55097	NMR
AT And	53338.683±0.003	-0.009	17823	DKS	SW Boo	53006.910±0.003	0.232	20322	DKS
AT And	54029.634±0.004	-0.003	18943	DKS	SW Boo	53041.832±0.003	0.234	20390	DKS
AT And	54063.561±0.004	-0.006	18998	DKS	SW Boo	53474.755±0.002	0.253	21233	DKS
AT And	54278.865±0.006	-0.005	19347	DKS	SW Boo	53479.889±0.003	0.252	21243	DKS
CI And	53731.648±0.003	0.091	37162	DKS	SW Boo	53511.729±0.003	0.253	21305	DKS
CI And	54008.917±0.002	0.101	37734	DKS	SW Boo	53530.732±0.002	0.255	21342	DKS
CI And	54033.635±0.003	0.098	37785	DKS	SZ Boo	53167.960±0.003	0.007	48827	BIW
CI And	54044.781±0.003	0.096	37808	DKS	SZ Boo	53474.856±0.002	0.008	49414	DKS
CI And	54078.710±0.002	0.094	37878	DKS	TV Boo	52654.895±0.002	0.054	89728	DKS
CI And	54129.610±0.003	0.099	37983	DKS	TV Boo	53396.919±0.003	0.062	92102	DKS
DR And	53697.708±0.002	-0.007	29261	DKS	TV Boo	53482.875±0.003	0.064	92377	RCW
DR And	53745.571±0.003	-0.009	29346	DKS	TV Boo	53500.705±0.004	0.078	92434	RCW
DR And	53754.583±0.002	-0.007	29362	DKS	TV Boo	53510.706±0.004	0.077	92466	RCW
DR And	53763.592±0.003	-0.008	29378	DKS	TV Boo	53523.822±0.004	0.066	92508	RCW
DR And	54006.843±0.004	-0.024	29810	DKS	TV Boo	53540.706±0.004	0.072	92562	RCW
DR And	54028.811±0.002	-0.018	29849	DKS	TV Boo	53544.763±0.003	0.065	92575	RCW
DR And	54066.532±0.004	-0.025	29916	DKS	TV Boo	53545.704±0.003	0.069	92578	RCW
DR And	54075.533±0.004	-0.034	29932	DKS	TV Boo	54139.906±0.006	0.095	94479	DKS
SW Aqr	52893.026±0.002	-0.002	60517	BIW	TV Boo	54185.825±0.003	0.068	94626	DKS
SW Aqr	53265.981±0.003	-0.001	61329	BIW	TV Boo	54228.680±0.002	0.102	94763	DKS
SW Aqr	53672.004±0.002	-0.002	62213	BIW	TV Boo	54243.646±0.003	0.066	94811	DKS
SW Aqr	54360.041±0.002	-0.001	63711	BIW	TW Boo	52817.718±0.005	-0.043	48709	WAJ
SX Aqr	53668.541±0.002	-0.104	25895	DKS	TW Boo	53073.742±0.002	-0.043	49190	DKS
TZ Aqr	52898.040±0.003	0.007	26872	BIW	TW Boo	53469.750±0.002	-0.046	49934	DKS
TZ Aqr	53640.029±0.004	0.014	28171	BIW	UU Boo	52658.891±0.002	0.147	36274	DKS
TZ Aqr	54037.577±0.003	0.011	28867	DKS	UU Boo	53051.853±0.002	0.157	37134	DKS
YZ Aqr	52896.037±0.003	0.043	31764	BIW	UU Boo	53133.645±0.002	0.160	37313	DKS
YZ Aqr	53245.960±0.004	0.041	32398	BIW	UU Boo	53504.674±0.002	0.170	38125	DKS
AA Aqr	52903.972±0.003	-0.099	52810	BIW	UU Boo	53810.821±0.002	0.180	38795	DKS
AA Aqr	53261.992±0.005	-0.107	53398	BIW	UU Boo	54241.709±0.002	0.192	39738	DKS
AA Aqr	53687.605±0.002	-0.107	54097	DKS	UY Boo	53485.664±0.006	-0.003	17900	DKS
BO Aqr	52895.002±0.005	0.112	16244	BIW	UY Boo	53539.697±0.003	0.010	17983	DKS
BO Aqr	53267.001±0.003	0.117	16780	BIW	UY Boo	54240.742±0.003	0.104	19060	DKS
BO Aqr	54018.643±0.003	0.137	17863	DKS	XX Boo	54172.738±0.003	0.011	42666	DKS
BR Aqr	52915.967±0.003	-0.137	31709	BIW	AE Boo	54164.854±0.002	0.093	75507	DKS
BR Aqr	53273.034±0.002	-0.142	32450	BIW	AE Boo	54242.637±0.008	0.098	75754	DKS
BR Aqr	53646.002±0.001	-0.148	33224	BIW	AE Boo	54248.614±0.008	0.092	75773	DKS
BR Aqr	53697.563±0.002	-0.149	33331	DKS	U Cae	53701.006±0.004	-0.091	46181	BIW
BR Aqr	54388.567±0.002	-0.158	34765	DKS	U Cae	53740.046±0.002	-0.092	46274	BIW
BR Aqr	54390.976±0.002	-0.158	34770	BIW	U Cae	54446.962±0.002	-0.109	47958	BIW
BR Aqr	54415.552±0.002	-0.158	34821	DKS	U Cae	54452.001±0.002	-0.107	47970	BIW
DN Aqr	52911.022±0.003	0.022	38636	BIW	UY Cam	53808.421±0.010	-0.082	68316	KGE
DN Aqr	53277.965±0.005	0.022	39215	BIW	AH Cam	53669.839±0.005	-0.376	40519	DKS
AA Aql	53661.571±0.002	0.031	81026	DKS	AH Cam	53670.936±0.001	-0.386	40522	DKS
S Ara	53184.979±0.003	-0.179	26628	BIW	AH Cam	53680.895±0.002	-0.382	40549	DKS
S Ara	53625.983±0.003	-0.212	27604	BIW	AH Cam	53697.881±0.002	-0.358	40595	DKS
TZ Aur	53687.904±0.002	0.011	86259	DKS	AH Cam	53717.780±0.006	-0.371	40649	DKS
IN Ara	53176.070±0.003	0.141	41059	BIW	AH Cam	53731.792±0.003	-0.371	40687	DKS
IN Ara	54338.018±0.003	0.146	42899	BIW	AH Cam	53734.727±0.002	-0.385	40695	DKS
MS Ara	53198.925±0.003	-0.218	48026	BIW	AH Cam	53744.693±0.002	-0.375	40722	DKS
BH Aur	52660.648±0.003	-0.001	21726	DKS	AH Cam	53764.605±0.002	-0.375	40776	DKS
BH Aur	53380.812±0.003	-0.003	23305	DKS	AH Cam	53785.631±0.004	-0.367	40833	DKS

1
1
2

R

BVRI

VI

VI

Table 2 (cont.): maxima of RR Lyrae stars

Variable	Maximum HJD 24. . .	$O - C$ (days)	E	Obs.	Variable	Maximum HJD 24. . .	$O - C$ (days)	E	Obs.
AH Cam	54002.806±0.005	-0.377	41422	DKS	AN Cap	52849.050±0.005	0.112	6035	BIW
RW Cnc	52695.839±0.003	0.183	24012	DKS	AN Cap	52854.043±0.005	0.116	6047	BIW
RW Cnc	53102.959±0.003	0.187	24756	BIW	AN Cap	52883.991±0.004	0.127	6119	BIW
RW Cnc	53442.772±0.003	0.189	25377	DKS	AN Cap	53226.999±0.005	0.108	6944	BIW
RW Cnc	53450.985±0.005	0.194	25392	BIW	AN Cap	53632.045±0.005	0.175	7918	BIW
RW Cnc	53726.794±0.003	0.215	25896	DKS	IU Car	53105.945±0.006	0.272	15479	BIW
RW Cnc	53739.916±0.005	0.204	25920	DKS	BI Cen	53163.886±0.002	0.007	36351	BIW
RW Cnc	53745.925±0.003	0.194	25931	DKS	V499 Cen	53161.011±0.002	0.024	23090	BIW
RW Cnc	53761.811±0.003	0.211	25960	DKS	V674 Cen	53115.014±0.002	-0.062	37825	BIW
RW Cnc	53767.830±0.003	0.211	25971	DKS	RR Cet	53718.661±0.002	0.004	37136	DKS
RW Cnc	53788.615±0.004	0.202	26009	DKS	RU Cet	52931.010±0.005	0.068	22352	BIW
RW Cnc	53802.910±0.004	0.270	26035	DKS	RU Cet	53273.996±0.005	0.081	22937	BIW
RW Cnc	53829.662±0.004	0.209	26084	DKS	RV Cet	52968.037±0.004	0.166	22224	BIW
RW Cnc	54075.892±0.003	0.200	26534	DKS	RV Cet	53401.947±0.005	0.187	22920	BIW
RW Cnc	54081.920±0.003	0.209	26545	DKS	RV Cet	53673.741±0.005	0.178	23356	DKS
RW Cnc	54087.940±0.003	0.209	26556	DKS	RX Cet	52933.028±0.006	0.133	22324	BIW
RW Cnc	54126.797±0.003	0.215	26627	DKS	RX Cet	53286.973±0.002	0.110	22941	BIW
SS Cnc	54100.692±0.002	0.048	84451	DKS	RZ Cet	52969.921±0.003	-0.112	37334	BIW
SS Cnc	54150.649±0.002	0.047	84587	DKS	RZ Cet	53380.959±0.003	-0.116	38139	BIW
TT Cnc	53000.700±0.003	0.084	23172	DKS	RZ Cet	54041.674±0.002	-0.131	39433	DKS
TT Cnc	53455.978±0.003	0.094	23980	BIW	UU Cet	52930.064±0.004	-0.119	19340	BIW
TT Cnc	53479.646±0.002	0.098	24022	DKS	UU Cet	53264.011±0.004	-0.122	19891	BIW
TT Cnc	53698.813±0.003	0.083	24411	DKS	RY Col	53097.960±0.003	-0.084	39234	BIW
TT Cnc	53707.835±0.002	0.090	24427	DKS	RY Com	54151.821±0.002	-0.007	31033	DKS
TT Cnc	53734.897±0.003	0.106	24475	DKS	WW CrA	53193.962±0.003	-0.065	39156	BIW
TT Cnc	53742.782±0.002	0.102	24489	DKS	RV CrB	54177.917±0.003	-0.099	67768	DKS
TT Cnc	53755.735±0.002	0.096	24512	DKS	RV CrB	54188.859±0.002	-0.101	67801	DKS
TT Cnc	53764.739±0.003	0.085	24528	DKS	RV CrB	54246.892±0.003	-0.100	67976	DKS
TT Cnc	53772.620±0.002	0.078	24542	DKS	TV CrB	53486.656±0.004	0.029	37406	DKS
TT Cnc	53772.621±0.002	0.079	24542	DKS	SW Cru	53091.035±0.004	0.057	82557	BIW
TT Cnc	53794.604±0.003	0.087	24581	DKS	SW Cru	53835.098±0.002	0.060	84827	DSI
TT Cnc	53803.624±0.003	0.092	24597	DKS	SW Cru	54171.074±0.002	0.061	85852	DSI
TT Cnc	54049.842±0.003	0.083	25034	DKS	SW Cru	54175.007±0.002	0.061	85864	DSI
TT Cnc	54054.918±0.007	0.088	25043	DKS	SW Cru	54214.012±0.003	0.060	85983	BIW
TT Cnc	54058.865±0.003	0.091	25050	DKS	RW Dra	52786.882±0.003	0.179	30275	DKS
TT Cnc	54167.615±0.003	0.095	25243	DKS	RW Dra	53504.822±0.002	0.150	31896	DKS
TT Cnc	54198.607±0.000	0.097	25298	DKS	RW Dra	53513.682±0.003	0.152	31916	DKS
AS Cnc	54129.910±0.002	0.340	24176	DKS	RW Dra	53535.861±0.002	0.185	31966	DKS
W CVn	54155.831±0.003	-0.131	59362	DKS	RW Dra	53822.879±0.002	0.193	32614	DKS
W CVn	54176.797±0.003	-0.131	59400	DKS	RW Dra	53970.776±0.005	0.156	32948	PHA
Z CVn	53519.626±0.003	0.245	22312	DKS	XZ Dra	52753.847±0.004	-0.062	22719	DKS
Z CVn	53726.904±0.002	0.263	22629	DKS	RX Eri	53007.963±0.002	-0.008	53326	BIW
Z CVn	53743.892±0.005	0.252	22655	DKS	RX Eri	53359.722±0.003	-0.009	53925	DKS
Z CVn	53762.853±0.004	0.252	22684	DKS	RX Eri	53409.054±0.004	-0.006	54009	BIW
Z CVn	53794.897±0.003	0.259	22733	DKS	RX Eri	53739.670±0.002	-0.010	54572	DKS
Z CVn	53813.858±0.004	0.259	22762	DKS	BB Eri	53056.949±0.003	0.194	23684	DKS
Z CVn	53830.864±0.004	0.266	22788	DKS	BB Eri	53396.618±0.003	0.204	24280	DKS
Z CVn	54197.687±0.003	0.296	23349	DKS	BB Eri	53415.995±0.004	0.204	24314	BIW
RX CVn	54208.795±0.003	-0.040	27115	DKS	RX For	53032.606±0.003	-0.018	22101	DKS
SS CVn	53043.949±0.002	0.166	28047	DKS	RX For	53373.064±0.003	-0.029	22671	BIW
AA CMi	54116.612±0.003	0.055	36824	DKS	SS For	52964.991±0.003	-0.146	28856	BIW
AL CMi	54141.678±0.002	0.437	31869	DKS	SS For	53391.563±0.002	-0.141	29717	DKS
RV Cap	52868.974±0.003	0.023	42403	BIW	SS For	53398.995±0.003	-0.140	29732	BIW
RV Cap	53228.961±0.003	0.024	43207	BIW	SS For	53400.975±0.002	-0.142	29736	BIW
RV Cap	53596.970±0.003	-0.013	44029	BIW	SX For	53680.974±0.005	0.038	23991	BIW
RV Cap	53613.981±0.002	-0.016	44067	BIW	SX For	53683.998±0.005	0.036	23996	BIW
RV Cap	54003.536±0.003	0.001	44937	DKS	RR Gem	52659.608±0.002	-0.289	28448	WAJ
VW Cap	52860.003±0.005	0.106	87349	BIW	RR Gem	52669.545±0.004	-0.285	28473	WAJ
VW Cap	53239.960±0.005	0.123	88558	BIW	RR Gem	52674.706±0.003	-0.289	28486	DKS
VW Cap	53596.033±0.005	0.139	89691	BIW	RR Gem	52682.652±0.002	-0.289	28506	DKS
YZ Cap	53221.990±0.005	0.034	34712	BIW	RR Gem	52707.685±0.003	-0.287	28569	WAJ
YZ Cap	53639.013±0.005	0.036	36237	BIW	RR Gem	52742.645±0.003	-0.290	28657	WAJ

Table 2 (cont.): maxima of RR Lyrae stars

Variable	Maximum HJD 24...	$O - C$ (days)	E	Obs.	Variable	Maximum HJD 24...	$O - C$ (days)	E	Obs.
RR Gem	53073.588±0.002	-0.306	29490	DKS	SZ Hya	53465.043±0.002	-0.149	23799	BIW
RR Gem	53323.878±0.001	-0.322	30120	DKS	SZ Hya	53708.950±0.002	-0.149	24253	DKS
RR Gem	53352.879±0.001	-0.325	30193	DKS	SZ Hya	53784.697±0.003	-0.152	24394	DKS
RR Gem	53429.957±0.002	-0.325	30387	BIW	SZ Hya	54145.710±0.005	-0.165	25066	DKS
RR Gem	53467.697±0.002	-0.330	30482	PVA	SZ Hya	54173.646±0.002	-0.166	25118	DKS
RR Gem	53482.396±0.002	-0.331	30519	HGH	UU Hya	53065.993±0.003	0.008	25936	BIW
RR Gem	53687.800±0.002	-0.337	31036	DKS	UU Hya	53112.629±0.001	0.019	26025	DKS
RR Gem	53730.706±0.002	-0.341	31144	DKS	UU Hya	53421.701±0.003	0.010	26615	DKS
RR Gem	54138.719±0.001	-0.365	32171	DKS	UU Hya	53459.946±0.004	0.012	26688	BIW
RR Gem	54169.710±0.002	-0.364	32249	DKS	UU Hya	53464.658±0.002	0.009	26697	DKS
RR Gem	54175.667±0.002	-0.367	32264	DKS	DG Hya	53058.665±0.010	0.044	37310	DKS
SZ Gem	54138.579±0.002	-0.054	53767	DKS	DG Hya	53069.973±0.005	0.173	37336	BIW
GI Gem	53705.773±0.002	0.070	53914	DKS	DG Hya	53419.941±0.003	0.143	38150	BIW
GI Gem	54089.646±0.002	0.069	54800	DKS	DH Hya	53043.806±0.003	0.051	44719	DKS
GI Gem	54148.570±0.002	0.070	54936	DKS	DH Hya	53056.031±0.003	0.052	44744	BIW
RR GRU	53609.065±0.003			BIW	DH Hya	53377.795±0.003	0.055	45402	DKS
RR GRU	54351.022±0.003			BIW	DH Hya	53413.001±0.002	0.053	45474	BIW
SS Gru	53631.019±0.003	0.163	51661	BIW	DH Hya	53705.916±0.001	0.057	46073	DKS
TW Her	52732.814±0.002	-0.009	78047	DKS	V Ind	53647.023±0.002	-0.153	28209	BIW
TW Her	53120.826±0.001	-0.009	79018	DKS	V Ind	54364.983±0.002	-0.140	29706	BIW
TW Her	53203.942±0.002	-0.010	79226	BIW	RR Leo	52787.572±0.002	0.054	20982	DKS
TW Her	53275.667±0.002	-0.012	81908	DKS	RR Leo	53092.942±0.002	0.059	21657	DKS
VX Her	52757.819±0.001	-0.365	68093	DKS	RR Leo	53463.007±0.002	0.065	22475	BIW
VX Her	53174.928±0.002	-0.378	69009	BIW	RR Leo	53735.806±0.002	0.071	23078	DKS
VX Her	53509.619±0.002	-0.386	69744	DKS	SS Leo	53478.968±0.003	-0.043	18676	BIW
VX Her	54249.577±0.002	-0.409	71369	DKS	ST Leo	53490.001±0.002	-0.019	53489	BIW
AR Her	52744.715±0.005	-1.585	24024	DKS	SZ Leo	53440.687±0.004	-0.138	14930	DKS
AR Her	53489.693±0.005	-1.601	25609	DKS	SZ Leo	53441.753±0.003	-0.141	14932	DKS
AR Her	53497.668±0.002	-1.617	25626	DKS	SZ Leo	54078.893±0.002	-0.136	16125	DKS
AR Her	53505.635±0.005	-1.640	25643	DKS	SZ Leo	54116.828±0.001	-0.119	16196	DKS
AR Her	53510.783±0.005	-1.192	25653	DKS	SZ Leo	54148.876±0.002	-0.115	16256	DKS
AR Her	53519.764±0.003	-1.612	25673	DKS	SZ Leo	54168.625±0.003	-0.126	16293	DKS
AR Her	53536.653±0.004	-1.644	25709	DKS	TV Leo	52727.696±0.004	0.093	23313	DKS
AR Her	53817.728±0.002	-1.176	26306	PVA	TV Leo	52737.114±0.003	0.091	23327	BIW
AR Her	54245.378±0.004	-1.251	27216	BNV	TV Leo	53087.004±0.003	0.098	23847	BIW
AR Her	54260.462±0.003	-1.208	27248	BNV	TV Leo	53477.932±0.003	0.099	24428	BIW
AR Her	54276.394±0.006	-1.257	27282	BNV	WW Leo	53135.973±0.003	0.027	30279	BIW
AR Her	54276.396±0.003	-1.255	27282	PCC	WW Leo	53366.864±0.002	0.028	30662	DKS
AR Her	54300.392±0.002	-1.230	27333	BNV	WW Leo	53428.959±0.003	0.030	30765	BIW
DL Her	52871.942±0.006	0.017	24785	BIW	WW Leo	53744.852±0.003	0.032	31289	DKS
DL Her	53223.970±0.006	0.027	25380	BIW	WW Leo	53822.619±0.003	0.032	31418	DKS
DL Her	53954.049±0.005	0.037	26614	BIW	AA Leo	52764.619±0.003	-0.067	21996	DKS
DL Her	54191.875±0.005	0.029	27016	DKS	AA Leo	53503.955±0.002	-0.070	23231	BIW
DL Her	54249.847±0.004	0.021	27114	DKS	AA Leo	53718.873±0.003	-0.070	23590	DKS
DL Her	54274.714±0.003	0.040	27156	DKS	AA Leo	54154.690±0.003	-0.074	24318	DKS
SZ Hya	52673.698±0.010	-0.139	22326	DKS	Y LMi	53784.905±0.004	-0.173	34757	DKS
SZ Hya	52720.949±0.005	-0.165	22414	BIW	Y LMi	54165.641±0.002	-0.203	35483	DKS
SZ Hya	52729.044±0.003	-0.129	22429	BIW	Y LMi	54185.569±0.003	-0.205	35521	DKS
SZ Hya	52736.035±0.002	-0.122	22442	BIW	U Lep	52994.704±0.002	0.042	20022	DKS
SZ Hya	52741.941±0.003	-0.126	22453	BIW	U Lep	53042.966±0.002	0.041	20105	BIW
SZ Hya	52755.908±0.003	-0.127	22479	BIW	U Lep	53399.994±0.002	0.043	20719	BIW
SZ Hya	52756.986±0.003	-0.123	22481	BIW	TT Lyn	54155.552±0.003	-0.033	29299	DKS
SZ Hya	52758.060±0.003	-0.124	22483	BIW	TV Lyn	53806.531±0.003	0.022	53420	KGE
SZ Hya	52763.971±0.003	-0.123	22494	BIW	TV Lyn	54110.714±0.002	0.022	54684	DKS
SZ Hya	52777.884±0.004	-0.178	22520	BIW	TV Lyn	54127.561±0.002	0.024	54754	DKS
SZ Hya	52784.919±0.002	-0.127	22533	BIW	TV Lyn	54177.617±0.002	0.024	54962	DKS
SZ Hya	53055.683±0.002	-0.132	23037	DKS	TW Lyn	54088.705±0.002	0.051	18815	DKS
SZ Hya	53382.822±0.005	-0.172	23646	DKS	RR Lyr	53956.872±0.003	-0.045	19465	RCW
SZ Hya	53389.839±0.002	-0.140	23659	DKS	RR Lyr	53984.684±0.007	-0.008	19514	RCW
SZ Hya	53410.784±0.005	-0.147	23698	DKS	RZ Lyr	53073.901±0.002	0.002	23258	DKS
SZ Hya	53427.967±0.005	-0.155	23730	BIW	RZ Lyr	53538.623±0.002	0.004	24167	DKS
SZ Hya	53431.686±0.002	-0.197	23737	DKS	RZ Lyr	53671.546±0.002	0.004	24427	DKS

Table 2 (cont.): maxima of RR Lyrae stars

Variable	Maximum HJD 24. . .	$O - C$ (days)	E	Obs.	Variable	Maximum HJD 24. . .	$O - C$ (days)	E	Obs.
RZ Lyr	53821.842±0.003	-0.005	24721	DKS	RU Scl	53284.970±0.002	0.366	44922	BIW
RZ Lyr	54014.587±0.002	0.002	25098	DKS	RU Scl	54016.124±0.004	0.392	46404	DSI
RZ Lyr	54269.698±0.002	0.003	25597	DKS	RU Scl	54021.056±0.002	0.391	46414	DSI
RZ Lyr	54275.835±0.002	0.005	25609	DKS	CS Ser	53165.956±0.002	0.012	41742	BIW
CN Lyr	53559.804±0.006	0.022	22056	DKS	CS Ser	53561.048±0.002	0.007	42492	BIW
EZ Lyr	53557.654±0.002	-0.118	37397	DKS	CS Ser	53567.893±0.003	0.003	42505	BIW
KS Lyr	54002.587±0.002			DKS	CS Ser	53568.947±0.003	0.004	42507	BIW
Z Mic	54358.966±0.002	-0.116	21743	BIW	CS Ser	53570.001±0.003	0.004	42509	BIW
CM Ori	54140.633±0.003	-0.022	43972	DKS	SS Tau	53671.721±0.002	0.489	42471	DKS
V964 Ori	53668.819±0.002	-0.357	43929	DKS	SS Tau	53734.607±0.002	0.489	42641	DKS
V964 Ori	53707.676±0.002	-0.358	44006	DKS	SS Tau	54009.822±0.002	0.485	43385	DKS
BN Pav	54368.017±0.003	-0.035	45897	BIW	SS Tau	54013.891±0.003	0.484	43396	DKS
AO Peg	54269.790±0.003	0.038	52546	DKS	SS Tau	54020.917±0.002	0.482	43415	DKS
AV Peg	52909.943±0.002	0.083	23361	BIW	SS Tau	54023.878±0.002	0.483	43423	DKS
AV Peg	53267.923±0.002	0.090	24278	BIW	SS Tau	54088.594±0.002	0.464	43598	DKS
AV Peg	53315.549±0.001	0.090	24400	RWA	BI Tel	53201.144±0.007	-0.051	46834	BIW
AV Peg	53645.031±0.002	0.096	25244	BIW	HH Tel	53627.980±0.002	-0.187	52389	BIW
AV Peg	53680.556±0.001	0.097	25335	DKS	HH Tel	54381.007±0.002	-0.170	53951	BIW
AV Peg	54020.579±0.002	0.104	26206	DKS	U Tri	54034.672±0.002	-0.040	78109	DKS
AV Peg	54261.836±0.002	0.109	26824	DKS	U Tri	54050.773±0.003	-0.040	78145	DKS
BH Peg	53538.832±0.004	-0.085	22112	DKS	U Tri	54063.743±0.002	-0.041	78174	DKS
BH Peg	53678.553±0.004	-0.101	22330	DKS	UX Tri	53662.854±0.006	0.036	3061	DKS
BH Peg	54001.622±0.004	-0.092	22834	DKS	UX Tri	53672.641±0.003	0.018	3082	DKS
BH Peg	54015.710±0.003	-0.106	22856	DKS	UX Tri	53700.636±0.004	-0.001	3142	DKS
BH Peg	54044.542±0.003	-0.119	22901	DKS	UX Tri	53735.645±0.004	-0.010	3217	DKS
BT Peg	53677.588±0.003	0.079	30929	DKS	UX Tri	54032.627±0.002	0.021	3853	DKS
BT Peg	54059.535±0.004	0.082	31615	DKS	UX Tri	54038.683±0.002	0.007	3866	DKS
CG Peg	54023.681±0.005	-0.043	31942	DKS	YY Tuc	53644.015±0.003	-0.276	18503	BIW
CG Peg	54248.838±0.002	-0.047	32424	DKS	YY Tuc	54424.960±0.002	0.229	19732	BIW
DZ Peg	53728.537±0.002	0.156	32662	DKS	RV UMa	53223.593±0.002	0.094	17408	DKS
ET Peg	54034.524±0.002	-0.046	30681	DKS	RV UMa	53506.770±0.003	0.094	18013	DKS
GY Peg	54054.710±0.002	-0.246	25499	DKS	RV UMa	53507.705±0.005	0.093	18015	SDB
GY Peg	54100.536±0.003	-0.234	25590	DKS	RV UMa	53762.807±0.002	0.102	18560	PVA
TU Per	54011.769±0.002	-0.222	25103	DKS	RV UMa	53827.867±0.003	0.102	18699	DKS
TU Per	54031.806±0.002	-0.219	25136	DKS	RV UMa	54127.899±0.002	0.108	19340	DKS
TU Per	54115.574±0.002	-0.227	25274	DKS	RV UMa	54255.676±0.003	0.104	19613	DKS
AR Per	53661.855±0.002	0.051	62096	DKS	SX UMa	53480.861±0.002	0.111	27258	PVA
AR Per	53678.876±0.003	0.050	62136	DKS	SX UMa	53483.932±0.002	0.111	27268	PVA
AR Per	54089.533±0.002	0.052	63101	DKS	SX UMa	53492.840±0.002	0.112	27297	PVA
ET Per	53731.558±0.002	0.064	64841	DKS	SX UMa	53780.935±0.002	0.131	28235	PVA
ET Per	54014.837±0.002	0.048	65560	DKS	SX UMa	54061.040±0.002	0.145	29147	PVA
FM Per	53705.655±0.006	0.007	40760	DKS	TU UMa	54165.880±0.001	-0.028	20325	DKS
FM Per	53727.682±0.003	0.020	40805	DKS	AB UMa	54191.679±0.004	0.113	29961	DKS
U Pic	53715.051±0.003	0.051	27360	BIW	AB UMa	54236.643±0.006	0.108	30036	DKS
U Pic	53715.051±0.002	0.051	27360	BIW	AX UMa	54140.874±0.004	0.234	16373	DKS
U Pic	53715.931±0.003	0.051	27362	BIW	AF Vel	53114.922±0.003	0.253	22151	BIW
U Pic	53715.932±0.002	0.051	27362	BIW	AN Vel	53093.959±0.002	-0.127	68769	BIW
RU Psc	54019.652±0.006	0.014	35545	DKS	CD Vel	53090.911±0.002	-0.183	42494	BIW
RU Psc	54028.626±0.005	0.010	35568	DKS	AE Vir	53151.980±0.003	0.086	39235	BIW
RU Psc	54064.526±0.006	-0.006	35660	DKS	AE Vir	53518.990±0.005	0.093	39814	BIW
HH Pup	53737.017±0.002	0.008	38994	BIW	BB Vir	54256.648±0.002	-0.221	31083	DKS
V796 Sgr	53202.988±0.004	-0.059	30316	BIW	BC Vir	53499.721±0.002	0.099	59480	DKS
V494 Sco	53195.939±0.002	-0.031	28244	BIW	FK Vul	53698.560±0.003	0.023	40599	DKS
RU Scl	52931.728±0.003	0.355	44206	DKS					

¹ RRC, double maximum² RRC, flat maximum³ No filter