

LIST OF VISUAL, CCD AND PHOTOELECTRIC MAXIMA OF RR LYRAE STARS

ABSTRACT

198 instants of maximum light have been determined for 67 RR Lyrae variable stars from CCD and photoelectric measurements or from visual estimates. They are listed with the O-C relative to the most probable cycle number.

RESUME

198 instants de maxima de 67 étoiles variables du type RR Lyrae ont été déterminés à partir de mesures CCD et photoélectriques ou d'estimations visuelles. Ils sont listés avec l'O-C relatif au numéro de cycle le plus vraisemblable.

RIASSUNTO

198 massimi di 67 stelle variabili del tipo RR Lyrae sono stati determinati sulla base di misure CCD e fotoelettriche o di stime visuali. Questi instanti di massimo sono raccolti in una lista con l'O-C relativo al numero di ciclo piú probabile.

RESUMEN

198 instantes de máximos de 67 estrellas variables del tipo RR Lyrae han sido determinados a partir de medidas CCD y fotoeléctricas o de estimaciones visuales. Aparecen listados con los O-C relativos al número de ciclo más probable.

OBSERVATIONS

Most of the observations cover a time interval going from 2000 (JD 2451900) to the end of 2003 (JD 2452700) and were selected from lists issued by GEOS as Notes Circulaires.

The observers are : Roland Boninsegna (BNN), Mario Checcucci (CHC), Michel Dumont (DMT), Gino Farroni (FAR), Andrea Manna (MAA), Massimiliano Martignoni (MRT), Joseph Remis (RMS), Jacqueline Vandebroere (VBR) and Jean-Paul Verrot (VRR).

The instants of maximum were determined from direct visual estimates of the variable stars (vis), from photoelectric measurements in V (p.e.) or from CCD measurements without filter (CCD). The O-C's were calculated from the GCVS 85 ephemerides whenever possible. They appear in notes when new or better ephemerides were used and after correction by a non linear relation.

The cycle numbers were chosen using the most probable solution extending the GEOS RR 14,15,16 and 17 lists. The GEOS database (<http://webast.ast.obs-mip.fr/people/leborgne/dbRR/index.htm>) was examined to avoid any unlikelihood. No complete bibliography research was made for some of the stars.

LIST

<u>STARS</u>	<u>OBS.</u>	<u>MODE</u>	<u>JD HEL.</u>	<u>E(GC 85)</u>	<u>O-C (GC 85)</u>	<u>NOTES</u>
SW And	FAR	CCD	51055.436	74440	-0.637	+0.044 (O-C with non linear term of GCVS 85 notes)
XX And	VRR	vis	52135.398	18053	+0.207	
XX And	VRR	vis	52143.370	18064	+0.228	
CI And	VBR	vis	52694.334	35022	+0.074	
CI And	VBR	vis	52695.306	35024	+0.078	
TZ Aqr	VBR	vis	52147.450	25558	- 0.034	
TZ Aur	VRR	vis	51956.315	81838	+0.015	
TZ Aur	VRR	vis	51965.317	81861	+0.009	

<u>STARS</u>	<u>OBS.</u>	<u>MODE</u>	<u>JD HEL.</u>	<u>E(GC 85)</u>	<u>O-C (GC 85)</u>	<u>NOTES</u>
TZ Aur	VRR	vis	51967.291	81866	+0.025	
TZ Aur	VRR	vis	51992.339	81930	+0.005	
BH Aur	VBR	vis	52619.593	21636	- 0.008	
RS Boo	DMT	vis	52051.474	27246	+0.007	
RS Boo	DMT	vis	52082.425	27328	+0.016	
RS Boo	VBR	vis	52426.562	28240	+0.020	
RS Boo	VBR	vis	52451.459	28306	+0.012	
RS Boo	DMT	vis	52451.460	28306	+0.013	
RS Boo	DMT	vis	52454.476	28314	+0.011	
ST Boo	VBR	vis	52053.458	52824	+0.088	
TW Boo	VBR	vis	52684.659	48459	- 0.034	
UU Boo	VBR	vis	52708.687	36383	+0.139	
RZ Cam	VBR	vis	52693.384	27629	+0.064	
RZ Cam	VBR	vis	52695.323	27633	+0.082	
UU Cam	VBR	vis	52684.311	74792	+0.000	
UU Cam	VbR	vis	52687.369	74801	- 0.013	
NSV 1470 Cam	VBR	vis	52224.303	1129		- 0.069 (O-C with eph IBVS 4903)
NSV 1470 Cam	VBR	vis	52253.466	1180		- 0.082 idem
NSV 1470 Cam	VBR	vis	52258.610	1189		- 0.088 idem
NSV 1470 Cam	VBR	vis	52696.278	1954		- 0.070 idem
RW Cnc	FAR	CCD	51909.497	22575	+0.166	
RW Cnc	VRR	vis	51965.317	22677	+0.171	
AS Cnc	VBR	vis	52254.533	21140	- 0.245	
AS Cnc	VBR	vis	52257.657	21145	- 0.209	
AS Cnc	VBR	vis	52322.479	21250	- 0.227	
EF Cnc	VBR	vis	52253.681	1008	+0.098	
EF Cnc	VBR	vis	52258.702	1025	+0.092	
EZ Cnc	VRR	vis	51965.312	10722	- 0.031	
EZ Cnc	VRR	vis	51995.322	10777	- 0.039	
RR CVn	VBR	vis	52695.479	16156	+0.002	
UZ CVn	VBR	vis	52040.405	36706	+0.205	+0.032 and - 0.015 {O-C with linear terms (eq 2) and non lin IBVS 5170}
UZ CVn	VBR	vis	52042.498	36709	+0.205	+0.031 and - 0.016 idem
UZ CVn	VBR	vis	52254.635	37013	+0.216	+0.041 and - 0.007 idem
UZ CVn	VBR	vis	52368.370	37176	+0.212	+0.037 and - 0.014 idem
BN CVn	VBR	vis	52424.481	10260		+0.041 (O-C with ephemeris JBAA, 101, 3, 1991)
AA CMi	VBR	vis	51925.493	32224	+0.023	
AA CMi	VBR	vis	52254.640	32915	+0.030	
BB CMi	VBR	vis	52690.442	68225	+0.015	
AQ Cep	VBR	vis	52692.549	37707	+0.049	
DX Cep	VRR	vis	51956.285	25283	+0.018	
DX Cep	VRR	vis	51967.317	25304	+0.004	
S Com	VBR	vis	52684.526	20508	+0.083	
S Com	VBR	vis	52694.487	20525	+0.072	
RY Com	VBR	vis	52683.553	27902	+0.018	
ST Com	VBR	vis	52684.594	15795	+0.010	
ST Com	VBR	vis	52696.555	15815	- 0.007	
TV CrB	VBR	vis	52442.520	35620	+0.015	
NSV 7366 CrB	VBR	vis	49896.519	- 1245		- 0.006 (O-C with eph GEOS Circular to be published)
NSV 7366 CrB	VBR	vis	49898.514	- 1242		- 0.007 idem
NSV 7366 CrB	RMS	p.e.	49922.474	- 1206		- 0.002 idem
NSV 7366 CrB	VBR	vis	49922.476	- 1206		+0.000 idem
NSV 7366 CrB	VBR	vis	49924.465	- 1203		- 0.008 idem
NSV 7366 CrB	BNN	p.e.	49946.443	- 1170		+0.011 idem

STARS	OBS.	MODE	JD HEL.	E(GC 85)	O-C (GC 85)	NOTES
NSV 7366 CrB	BNN	vis	50250.531	- 713		+0.000 (O-C with eph GEOS Circular to be published)
NSV 7366 CrB	VBR	vis	50276.472	- 674		- 0.011 idem
NSV 7366 CrB	VBR	vis	50282.468	- 665		- 0.004 idem
NSV 7366 CrB	BNN	vis	50546.643	- 268		- 0.003 idem
NSV 7366 CrB	VBR	vis	50556.614	- 253		- 0.014 idem
NSV 7366 CrB	VBR	vis	50570.609	- 232		+0.007 idem
NSV 7366 CrB	VBR	vis	50578.580	- 220		- 0.006 idem
NSV 7366 CrB	VBR	vis	50600.554	- 187		+0.009 idem
NSV 7366 CrB	VBR	vis	50628.501	- 145		+0.008 idem
NSV 7366 CrB	VRR	vis	50656.436	- 103		- 0.005 idem
NSV 7366 CrB	VRR	vis	50664.422	- 91		- 0.004 idem
NSV 7366 CrB	VRR	vis	50668.408	- 85		- 0.011 idem
NSV 7366 CrB	MAA	vis	50670.410	- 82		- 0.005 idem
NSV 7366 CrB	VRR	vis	50690.363	- 52		- 0.015 idem
NSV 7366 CrB	VRR	vis	50726.296	2		- 0.015 idem
NSV 7366 CrB	VBR	vis	50932.594	312		+0.001 idem
NSV 7366 CrB	VRR	vis	51010.436	429		- 0.011 idem
NSV 7366 CrB	VRR	vis	51012.436	432		- 0.008 idem
NSV 7366 CrB	VBR	vis	51014.443	435		+0.002 idem
NSV 7366 CrB	VRR	vis	51040.382	474		- 0.010 idem
NSV 7366 CrB	VRR	vis	51078.322	531		+0.001 idem
NSV 7366 CrB	VBR	vis	51346.489	934		+0.001 idem
NSV 7366 CrB	VRR	vis	51346.492	934		+0.004 idem
NSV 7366 CrB	BNN	vis	51346.494	934		+0.006 idem
NSV 7366 CrB	BNN	vis	51362.458	958		+0.000 idem
NSV 7366 CrB	VBR	vis	51368.451	967		+0.004 idem
NSV 7366 CrB	VBR	vis	51398.396	1012		+0.005 idem
NSV 7366 CrB	VRR	vis	51420.341	1045		- 0.009 idem
NSV 7366 CrB	VRR	vis	51422.334	1048		- 0.012 idem
NSV 7366 CrB	VRR	vis	51430.318	1060		- 0.013 idem
NSV 7366 CrB	MRT	CCD	52080.452	2037		- 0.000 idem
NSV 7366 CrB	MRT	CCD	52424.479	2554		+0.002 idem
NSV 7366 CrB	MRT	CCD	52436.458	2572		+0.002 idem
UY Cyg	VBR	vis	52427.554	53493	+0.046	
XZ Cyg	FAR	CCD	51052.431	14846	- 0.637	
XZ Cyg	CHC	vis	52086.401	17061	- 0.408	
XZ Cyg	CHC	vis	52150.335	17198	- 0.412	
XZ Cyg	CHC	vis	52199.333	17303	- 0.417	
XZ Cyg	CHC	vis	52235.247	17380	- 0.439	
DM Cyg	FAR	CCD	51056.469	20183	+0.029	
DM Cyg	VBR	vis	52051.554	22553	+0.045	
DM Cyg	VBR	vis	52145.603	22777	+0.046	
DM Cyg	VBR	vis	52175.412	22848	+0.045	
CK Del	VRR	vis	52136.439	39608	+0.049	
CK Del	VRR	vis	52144.405	39626	+0.044	
CK Del	VRR	vis	52164.343	39671	+0.057	
CK Del	VRR	vis	52168.313	39680	+0.042	
VZ Dra	VBR	vis	52685.601	29045	- 0.136	+0.029 (O-C with eph GEOS RR9)
VZ Dra	VBR	vis	52696.511	29079	- 0.141	+0.024 idem
XZ Dra	VBR	vis	52418.434	22015	- 0.022	
XZ Dra	VBR	vis	52426.508	22032	- 0.048	
XZ Dra	VBR	vis	52547.528	22286	- 0.058	
AW Dra	VBR	vis	52051.418	23248	+0.305	
AW Dra	VBR	vis	52053.480	23251	+0.306	
AW Dra	VRR	vis	52080.412	23290	+0.437	
AW Dra	VRR	vis	52080.412	23290	+0.437	

STARS	OBS.	MODE	JD HEL.	E(GC 85)	O-C (GC 85)	NOTES
AW Dra	VRR	vis	52082.427	23293	+0.391	
AW Dra	VRR	vis	52084.418	23296	+0.320	
AW Dra	VRR	vis	52113.386	23338	+0.426	
AW Dra	VRR	vis	52115.381	23341	+0.360	
AW Dra	VRR	vis	52135.364	23370	+0.414	
AW Dra	VRR	vis	52144.366	23383	+0.482	
BC Dra	VBR	vis	52685.664	14463	-0.007	
BC Dra	VBR	vis	52693.577	14474	-0.009	
BK Dra	FAR	CCD	51077.390	43160	-0.152	-0.020 (O-C with eph NC 648)
BK Dra	VBR	vis	52418.474	45425	-0.133	+0.014 idem
BK Dra	VBR	vis	52530.363	45614	-0.147	+0.001 idem
RR Gem	VBR	vis	52228.544	27363	-0.271	
RR Gem	VBR	vis	52252.402	27423	-0.251	
SZ Gem	VBR	vis	52689.310	50875	-0.036	
VZ Her	VRR	vis	52049.400	34657	+0.058	
VZ Her	VRR	vis	52056.446	34673	+0.059	
VZ Her	VRR	vis	52082.419	34732	+0.053	
VZ Her	VRR	vis	52108.410	34791	+0.064	
VZ Her	VRR	vis	52112.363	34800	+0.054	
VZ Her	VRR	vis	52134.384	34850	+0.059	
VZ Her	VRR	vis	52142.332	34868	+0.081	
VZ Her	VRR	vis	52145.386	34875	+0.053	
VZ Her	VRR	vis	52164.338	34918	+0.071	
VZ Her	VRR	vis	52220.257	35045	+0.068	
AG Her	VRR	vis	52042.430	37540	-0.001	
AG Her	VRR	vis	52055.400	37560	-0.020	
AG Her	VBR	vis	52427.544	38133	-0.009	
AR Her	VRR	vis	52116.386	22684	-0.076	+0.078 (O-C with eph AJ, 118, 572, 1999)
AR Her	VRR	vis	52132.357	22718	-0.086	+0.069 idem
AR Her	VRR	vis	52502.355	23505	-0.001	+0.193 idem
V 394 Her	VRR	vis	52057.404	51163	-0.100	
V 394 Her	VRR	vis	52108.429	51280	-0.093	
V 394 Her	VRR	vis	52163.357	51406	-0.109	
UU Hya	VBR	vis	52692.493	25223	+0.026	
DD Hya	VBR	vis	52695.332	21922	-0.105	
DD Hya	VBR	vis	52696.349	21924	-0.092	
GO Hya	VBR	vis	52257.639	41808	-0.026	
RX Leo	VRR	vis	51984.406	23994	+0.051	
RX Leo	VBR	vis	52050.413	24095	+0.063	
RX Leo	VBR	vis	52253.622	24406	+0.061	
ST Leo	VBR	vis	52617.687	51664	-0.012	
AA Leo	VBR	vis	52320.420	21254	-0.063	
AA Leo	VBR	vis	52321.630	21256	-0.050	
AA Leo	VBR	vis	52338.385	21284	-0.057	
AX Leo	VBR	vis	52258.677	37167	-0.042	
AX Leo	VBR	vis	52320.444	37252	-0.056	
RR Lyr	DMT	vis	52048.411	16098	-0.446	+0.114 (O-C with eph GCVS 74)
RR Lyr	DMT	vis	52049.453	16100	-0.537	+0.023 idem
RR Lyr	DMT	vis	52082.440	16158	-0.429	+0.133 idem
RR Lyr	DMT	vis	52112.396	16211	-0.517	+0.047 idem
RR Lyr	DMT	vis	52117.491	16220	-0.523	+0.041 idem
RR Lyr	DMT	vis	52121.446	16227	-0.536	+0.029 idem
RR Lyr	DMT	vis	52134.469	16250	-0.551	+0.015 idem
RR Lyr	DMT	vis	52146.411	16271	-0.514	+0.053 idem
RR Lyr	DMT	vis	52176.440	16324	-0.529	+0.040 idem

<u>STARS</u>	<u>OBS.</u>	<u>MODE</u>	<u>JD HEL.</u>	<u>E(GC 85)</u>	<u>O-C (GC 85)</u>	<u>NOTES</u>
RR Lyr	DMT	vis	52409.398	16735	- 0.553	+0.031 idem
RR Lyr	DMT	vis	52443.422	16795	- 0.541	+0.045 (O-C with eph GCVS 74)
RR Lyr	DMT	vis	52456.471	16818	- 0.530	+0.057 idem
RR Lyr	DMT	vis	52460.426	16825	- 0.543	+0.044 idem
RR Lyr	DMT	vis	52502.390	16899	- 0.528	+0.063 idem
RR Lyr	DMT	vis	52519.374	16929	- 0.550	+0.042 idem
AO Peg	VBR	vis	52533.387	49373	+0.035	
AV Peg	FAR	CCD	50750.346	17829	+0.040	
AV Peg	VRR	vis	52103.422	21295	+0.077	
AV Peg	VRR	vis	52112.391	21318	+0.067	
AV Peg	VRR	vis	52135.425	21377	+0.069	
AV Peg	VRR	vis	52144.407	21400	+0.072	
ES Peg	VRR	vis	52164.353	26478	+0.121	
AN Ser	VBR	vis	52411.408	72217	+0.011	
AN Ser	VBR	vis	52424.484	72242	+0.036	
DF Ser	VBR	vis	52042.448	51020	+0.087	
SS Tau	VRR	vis	51934.267	34875	+0.017	
U Tri	VRR	vis	51952.276	73453	- 0.026	
EX UMa	VBR	vis	52252.621	5968		+0.013 (O-C with eph GEOS Circular RR13)
EX UMa	VBR	vis	52258.591	5979		+0.011 idem
KT UMa	VBR	vis	52252.575	5080		- 0.015 (O-C with eph IBVS 4815)
KT UMa	VBR	vis	52257.631	5088		+0.022 idem
BN Vul	VRR	vis	52116.377	11085	+0.056	
BN Vul	VRR	vis	52135.368	11117	+0.035	
BN Vul	VRR	vis	52163.315	11164	+0.058	

BIBLIOGRAPHY

- T. Berthold and P. Ralincourt, 1985, GEOS Circular on RR Lyr type variables, GEOS RR9
- T. Brelstaff, 1991, Journal of the British Astronomical Association, 101, 3
- H.A. Smith, M. Barnett, N.A. Silbermann and M. Gay, 1999, The Astronomical Journal, 118, 572
- J. Vandenbroere, 1991, Note Circulaire GEOS, NC 648
- J. Vandenbroere, B. Paris and J.P. Verrot, 1999, Information Bulletin on Variable Stars, n° 4815
- J. Vidal-Sainz and E. García-Melendo, 2000, Information Bulletin on Variable Stars, n° 4903
- P.N. Kholopov et al., 1985, General Catalogue of Variable Stars, fourth edition

Vandenbroere

Jacqueline

