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

ABSTRACT

116 instants of maximum light have been determined for 54 RR Lyrae variable stars from photoelectric and CCD measurements or from visual estimates. They are listed with the O-C relative to the most probable cycle number.

RESUME

116 instants de maxima de 54 étoiles variables du type RR Lyrae ont été déterminés à partir de mesures photoélectriques et CCD ou d'estimations visuelles. Ils sont listés avec l'O-C relatif au numéro de cycle le plus vraisemblable.

RIASSUNTO

116 massimi di 54 stelle variabili del tipo RR Lyrae sono stati determinati sulla base di misure fotoelectriche e CCD 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

116 instantes de máximos de 54 estrellas variables del tipo RR Lyrae han sido determinados a partir de medidas fotoelectricas y CCD 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 October 2004 (JD 2453300) to January 2006 (JD 2473760) and were selected from lists issued by GEOS as Notes Circulaires.

The observers are : L. Detre (DET), Michel Dumont (DMT), Anton Paschke (APS), J.H. Peña (PEN) and Jacqueline Vandenbroere (VBR).

The maxima of DET and PEN were determined by VBR from the photoelectric measurements (p.e.) published in Detre (1934) and Peña (2003 and 1990). The CCD maximum has been obtained by CCD measurements without filter and the other instants are the results of visual estimates of the variable stars (vis). The instants are appearing in notes when new or better ephemerides were used and after correction by a non linear relation.

The GEOS database (Le Borgne et al., 2000 – 2006) was examined to avoid any unlikelihood. The O-C curves showed by J.F. Le Borgne in the database and by J. Vandenbroere (2005 – 2006) in several Notes Circulaires GEOS have been used to choose the cycle numbers or the most probable solution extending the GEOS Circulars RR 14, 15, 16, 17, 19 and 23 has been taken. No complete bibliography research was made for some of the stars.

LIST

STARS	OBS.	MODE	HJD	E(GC 85)	O-C (GC 85)	NOTES
SW And	VBR	vis	53617.478	80233	- 0.721	+0.070 (O-C with non lin. term of GCVS)
					- 0.086	+0.020 (O-C with eph. of NC 1021)
SW And	VBR	vis	53621.459	80242	- 0.720	+0.071 (O-C with non lin. term of GCVS)
					- 0.085	+0.021 (O-C with eph. of NC 1021)
RS Aps	APS	CCD	53546.600	49928	- 0.187	
TZ Aqr	VBR	vis	53635.458	28163	+0.013	
BN Aqr	VBR	vis	53614.551	33518	+0.520	+0.423 and -0.016 (O-C with lin. and non lin. eph. of NC 1030)
BN Aqr	VBR	vis	53671.387	33639	+0.528	+0.432 and -0.010 idem
V 341 Aql	VBR	vis	53585.558	21434	+0.014	
ST Boo	VBR	vis	53463.570	55090	+0.089	

STARS	OBS.	MODE	HJD	E (GC 85)	O-C (GC 85)	NOTES
SW Boo	VBR	vis	53464.493	21213	+0.262	+0.404 and +0.004 (O-C with lin. and non lin. eph. of NC 1021)
LP Cam	VBR	vis	52904.497	2318	- 0.092	eph. IBVS 4903
LP Cam	VBR	vis	52908.480	2325	- 0.114	idem
LP Cam	VBR	vis	52991.449	2470	- 0.099	idem
LP Cam	VBR	vis	53360.428	3115	- 0.118	idem
LP Cam	VBR	vis	53764.336	3821	- 0.108	idem
TT Cnc	VBR	vis	53410.317	23899	+0.073	
TT Cnc	VBR	vis	53464.426	23995	+0.090	
AQ Cnc	VBR	vis	53386.439	37164	- 0.075	
AQ Cnc	VBR	vis	53430.338	37244	- 0.058	
AS Cnc	VBR	vis	52280.281	21181	+0.284	
W CVn	VBR	vis	53406.540	58004	- 0.131	- 0.008 (O-C with non lin. term of GCVS)
W CVn	VBR	vis	53448.464	58080	- 0.142	- 0.018 idem
W CVn	VBR	vis	53533.453	58234	- 0.124	- 0.001 idem
SS CVn	VBR	vis	53464.542	28926	+0.139	
AA CMi	VBR	vis	53386.402	35291	+0.049	
AA CMi	VBR	vis	53759.363	36074	+0.049	
AA CMi	VBR	vis	53768.418	36093	+0.053	
AL CMi	VBR	vis	53081.388	29944	- 0.140	
AL CMi	VBR	vis	53349.501	30431	- 0.121	
AL CMi	VBR	vis	53360.491	30451	- 0.141	
AL CMi	VBR	vis	53430.410	30578	- 0.135	
RZ Cep	VBR	vis	49921.569	23605	- 0.321	
DX Cep	VBR	vis	53353.433	27939	-0.000	
DX Cep	VBR	vis	53536.506	28287	+0.010	
EZ Cep	VBR	vis	53618.441	71206	+0.068	
EZ Cep	VBR	vis	53621.482	71214	+0.077	
EZ Cep	VBR	vis	53654.453	71301	+0.075	
EZ Cep	VBR	vis	53671.505	71346	+0.073	
TV CrB	VBR	vis	53444.552	37334	+0.017	
TV CrB	VBR	vis	53502.415	37433	+0.004	
UY Cyg	VBR	vis	53567.469	55526	+0.048	
XZ Cyg	VBR	vis	53567.421	20337	- 1.627	
XZ Cyg	VBR	vis	53631.335	20374	- 1.651	
XZ Cyg	VBR	vis	53638.335	20389	- 1.651	
DM Cyg	VBR	vis	53613.458	26273	+0.070	
DM Cyg	VBR	vis	53621.435	26292	+0.069	
DX Del	VBR	vis	53613.487	30143	+0.061	
DX Del	VBR	vis	53621.513	30160	+0.052	
XZ Dra	VBR	vis	53540.507	24370	- 0.099	
XZ Dra	VBR	vis	53541.475	24372	- 0.084	
XZ Dra	VBR	vis	53572.449	24437	- 0.082	
BK Dra	VBR	vis	53633.410	47477	- 0.149	
BK Dra	VBR	vis	53636.379	47482	- 0.140	
BK Dra	VBR	vis	53655.312	47514	- 0.153	
SZ Gem	VBR	vis	53792.302	53076	- 0.046	
SZ Gem	VBR	vis	53800.326	53092	- 0.040	
VX Her	VBR	vis	53531.487	69792	- 0.376	- 0.013 (O-C with non lin. term of GCVS) - 0.044 and 0.000 (O-C with lin. and non lin. eph. of NC 1036)
AR Her	VBR	vis	53444.561	25510	- 0.200	+0.089 (O-C with eph. of Smith et al. 1999)
AR Her	VBR	vis	53564.389	25765	- 0.229	+0.072 idem
CW Her	VBR	vis	53258.341	26508	+0.219	
CW Her	VBR	vis	53533.465	26949	+0.229	
CZ Lac	VBR	vis	53613.537	19517	- 0.136	
CZ Lac	VBR	vis	53636.421	19570	- 0.158	
CZ Lac	VBR	vis	53671.428	19651	- 0.161	
ST Leo	VBR	vis	53448.427	53402	- 0.008	

STARS	OBS.	MODE	HJD	E (GC 85)	O-C (GC 85)	NOTES
TT Lyn	VBR	vis	52683.491	26835	- 0.016	
TT Lyn	VBR	vis	52695.435	26855	- 0.021	
TT Lyn	VBR	vis	53768.402	28651	- 0.045	
TW Lyn	VBR	vis	53472.397	17556	-0.042	
RR Lyr	DMT	vis	53253.416	18224	- 0.601	+0.039 (O-C with eph. GCVS 74)
RR Lyr	DMT	vis	53291.388	18291	- 0.609	+0.033 idem
RR Lyr	DMT	vis	53529.457	18711	- 0.625	+0.034 idem
RR Lyr	DMT	vis	53571.400	18785	- 0.630	+0.031 idem
RR Lyr	DMT	vis	53592.435	18822	- 0.569	+0.094 idem
RR Lyr	DMT	vis	53597.504	18831	- 0.602	+0.061 idem
RR Lyr	DMT	vis	53634.369	18896	- 0.563	+0.082 idem
RR Lyr	DMT	vis	53635.482	18898	- 0.604	+0.062 idem
RR Lyr	DMT	vis	53639.444	18905	- 0.610	+0.056 idem
RR Lyr	DMT	vis	53647.364	18919	- 0.627	+0.040 idem
RR Lyr	DMT	vis	53660.399	18942	- 0.629	+0.038 idem
RZ Lyr	VBR	vis	53618.363	24323	- 0.009	
RZ Lyr	VBR	vis	53620.411	24327	- 0.006	
RZ Lyr	VBR	vis	53621.429	24329	- 0.011	
VV Peg	VBR	vis	53561.471	29018	- 0.020	
VV Peg	VBR	vis	53653.300	29206	- 0.011	
AV Peg	VBR	vis	53566.562	25043	+0.093	+0.064 and -0.001 (O-C with lin. and non lin. eph. of NC 1034)
DH Peg	VBR	vis	53340.287	34741	+0.030	
DH Peg	VBR	vis	53569.485	35638	+0.035	
TU Per	VBR	vis	49748.307	18080	- 0.197	
RU Psc	DET	p.e.	26593.460	- 34713	- 0.069	
RU Psc	DET	p.e.	26595.405	- 34708	- 0.075	
RU Psc	DET	p.e.	26600.450	- 34695	- 0.105	
RU Psc	DET	p.e.	26620.370	- 34644	- 0.092	
VY Ser	PEN	p.e.	46961.841	22037	+0.014	
AN Ser	PEN	p.e.	46967.786	61790	+0.034	
AN Ser	VBR	vis	53535.422	74370	+0.006	
AN Ser	VBR	vis	53536.471	74372	+0.010	
AT Ser	PEN	p.e.	46961.696	6916	+0.001	
AV Ser	PEN	p.e.	46962.714	38189	+0.049	
BH Ser	PEN	p.e.	46961.742	12609	+0.040	
BT Ser	PEN	p.e.	46965.832	47873	+0.011	
BT Ser	PEN	p.e.	46968.773	47883	- 0.003	
CS Ser	PEN	p.e.	46960.796	29963	- 0.020	
DF Ser	VBR	vis	53502.501	54355	+0.093	
SS Tau	VBR	vis	53384.308	38795	+0.046	
KT UMa	VBR	vis	53407.453	6921	+0.008	O-C with eph. IBVS 4815
KT UMa	VBR	vis	53429.401	6956	+0.000	idem
AE Vir	VBR	vis	53142.481	39220	+0.095	
AE Vir	VBR	vis	53462.579	39725	+0.095	
AV Vir	VBR	vis	53107.429	17715	+0.003	
AV Vir	VBR	vis	53111.391	17721	+0.023	
BC Vir	VBR	vis	52736.469	58128	+0.071	
BC Vir	VBR	vis	53112.471	58794	+0.106	
BC Vir	VBR	vis	53164.393	58886	+0.093	
BC Vir	VBR	vis	53471.508	59430	+0.111	
BN Vul	VBR	vis	53612.400	13603	+0.061	
BN Vul	VBR	vis	53634.384	13640	+0.063	

Note : The cycle numbers in column E (GC85) have been changed with regard to our previous lists in order to avoid cycle jumps for BN Aqr and XZ Cyg.

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Erratum : TU Per : the 4 maxima from VBR published in GEOS Circular RR 15 (49309.539, 49961.539, 49964.581 and 50718.572) are erroneous

AS Cnc : the 3 maxima from VBR published in GEOS Circular RR 19 (52254.533, 52257.657 and 52322.479) are erroneous.

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