GEOS
Promenade Vénézia, 3
F 78000 VERSAILLES

LIST OF VISUAL AND PHOTOGRAPHIC MAXIMA OF RR LYRAE STARS

ABSTRACT

204 instants of maximum light have been determined for 53 RR Lyr variable stars from visual and photographic estimates. They are listed with the O−C relative to the most probable cycle number.

RESUME

204 instants de maxima de 53 étoiles variables du type RR Lyr ont été déterminés à partir d'estimations visuelles et photographiques. Ils sont repris dans une liste avec l'O−C relatif au numéro de cycle le plus vraisemblable.

RIASSUNTO

204 massimi di 53 stelle variabili del tipo RR Lyr sono stati determinati sulla base di stime visuali e misure fotografiche. Questi istanti di massimo sono raccolti in una lista con l'O−C relativo al numero di ciclo piú probabile.

RESUMEN

204 instantes de máximos de 53 estrellas variables del tipo RR Lyr han sido determinados a partir de estimaciones visuales y fotográficas. Aparecen listados con los O−C relativos al número de ciclo más probable.

OBSERVATIONS

The observations cover a time interval from 1992 (JD 2448600) to 1995 (JD 2450000) and were selected from seven lists and an article coming from several Notes Circulaires issued by GEOS. Some of the moments have also been published by J. Aubaud in various AFOEV bulletins.

The observers are : Jacques Aubaud (AUB), Mino Benucci (BEN), Michele Bigi (BIG), Roland Boninsegna (BNN), Mr. Bottard (BTD), Mario Checcucci (CHC), Davide Dalmazio (DDL), Ghislaine Dine − Zepter (GDZ), Mr. Lebert (LEB), Jacqueline Vandenbroere (VBR) and Sophie Van Eck (SVE).

The instants of maximum were determined from direct visual estimates of the variable stars (vis) or from visual estimates of photographic exposures (phot).

The O−C's were calculated from the GCVS 85 ephemeris 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 after consulting the International Supplement of the Rocznik Astronomizny obserwatorium Krakowskiego (K. Rudnicki, 1995), Information Bulletin on Variable Stars n° 2247 (B.N. Firmanyuk, 1982) and more ancient, unpublished GEOS visual timings of maximum light. No complete bibliography research was made for some of the stars.

LIST

STARS	OBS.	MODES	JD HEL	E (GC 85)	O−C (GC 85)	NOTES
SW And	BTD	phot	48840.578	69432	− 0.560	+ 0.032 (O−C with nonlinear term of the GCVS 85 notes)
OV And	CHC	vis	49003.272	4758	+ 0.069	
OV And	VBR	vis	49200.470	5177	+ 0.099	
OV And	VBR	vis	49278.536	5343	+ 0.050	
OV And	VBR	vis	49279.473	5345	+ 0.046	
TZ Aqr	VBR	vis	49631.365	21153	− 0.008	
TZ Aqr	VBR	vis	49635.358	21160	− 0.013	
AA Aql	BEN	vis	48867.526	67775	+ 0.023	
AA Aql	BEN	vis	48891.403	67841	+ 0.022	
AA Aql	BEN	vis	49189.512	68665	+ 0.019	
AA Aql	BEN	vis	49192.405	68673	+ 0.018	
AA Aql	VBR	vis	49210.502	68723	+ 0.026	
AA Aql	BEN	vis	49213.398	68731	+ 0.027	
AA Aql	BEN	vis	49217.371	68742	+ 0.021	
V 341 Aql	BEN	vis	48865.435	13268	+ 0.008	
V 341 Aql	BEN	vis	49209.351	13863	+ 0.001	
V 341 Aql	VBR	vis	49210.501	13865	− 0.005	
V 341 Aql	BEN	vis	49213.401	13870	+ 0.005	
V 341 Aql	BEN	vis	49217.455	13877	+ 0.013	
BH Aur	VBR	vis	48990.500	13679	+ 0.006	
BH Aur	VBR	vis	49775.401	15400	− 0.004	
BH Aur	VBR	vis	49780.438	15411	− 0.004	
RS Boo	AUB	phot	49164.449	19595	+ 0.002	
ST Boo	VBR	vis	48660.718	47372	+ 0.077	
ST Boo	VBR	vis	48761.526	47534	+ 0.074	
CM Boo	VBR	vis	48746.421	21089	− 0.007	
CM Boo	VBR	vis	49780.639	22787	− 0.007	
SS Cnc	AUB	phot	49042.441	70681	+ 0.041	
SS Cnc	BNN	vis	49074.407	70768	+ 0.048	
SS Cnc	VBR	vis	49074.412	70768	+ 0.053	
SS Cnc	VBR	vis	49310.611	71411	+ 0.054	
TT Cnc	BEN	vis	49033.397	16131	+ 0.028	
TT Cnc	BEN	vis	49037.360	16138	+ 0.047	
TT Cnc	BEN	vis	49099.355	16248	+ 0.062	
AQ Cnc	VBR	vis	49422.323	29937	− 0.041	
AQ Cnc	VBR	vis	49780.491	30590	− 0.056	
W CVn	VBR	vis	48746.441	49558	− 0.072	+ 0.019 (O−C with nonlinear term of the GCVS 85 notes)
W CVn	VBR	vis	48757.447	49578	− 0.100	− 0.010 idem
W CVn	VBR	vis	48762.437	49587	− 0.077	+ 0.013 idem
W CVn	VBR	vis	49787.573	51445	− 0.109	− 0.012 idem

STARS	OBS.	MODES	JD HEL	E (GC 85)	O−C (GC 85)	NOTES
W CVn	VBR	vis	49898.493	51646	− 0.093	+ 0.005 (O−C with nonlinear term of the GCVS 85 notes)
UZ CVn	VBR	vis	49502.560	33069	+ 0.197	
UZ CVn	VBR	vis	49798.408	33493	+ 0.185	
UZ CVn	VBR	vis	49800.518	33496	+ 0.202	
BN CVn	BEN	vis	49129.430	4414		+ 0.006 (O−C with ephemeris JBAA, 101, 3, 1991)
BN CVn	BEN	vis	49133.379	4421		+ 0.009 idem
BN CVn	VBR	vis	49475.498	5028		+ 0.001 idem
BN CVn	VBR	vis	49502.561	5076		+ 0.010 idem
AA CMi	AUB	phot	48688.391	25428	+ 0.012	
RZ Cep	BTD	phot	48836.494	20089	− 0.059	
RZ Cep	AUB	phot	49580.461	22499	− 0.024	
TV CrB	BEN	vis	49129.518	29953	+ 0.023	
TV CrB	BEN	vis	49132.437	29958	+ 0.019	
TV CrB	BEN	vis	49163.421	30011	+ 0.018	
TV CrB	BEN	vis	49177.443	30035	+ 0.009	
UY Cyg	AUB	phot	48823.459	47065	+ 0.162	
XZ Cyg	BTD	phot	48837.480	10099	− 0.163	
XZ Cyg	BTD	phot	49208.423	10894	− 0.247	
XZ Cyg	DDL	vis	49657.297	11856	− 0.338	
XZ Cyg	DDL	vis	49658.231	11858	− 0.338	
XZ Cyg	DDL	vis	49670.367	11884	− 0.336	
XZ Cyg	DDL	vis	49671.291	11886	− 0.345	
XZ Cyg	DDL	vis	49678.296	11901	− 0.341	
XZ Cyg	DDL	vis	49699.278	11946	− 0.360	
XZ Cyg	DDL	vis	49713.294	11976	− 0.345	
DM Cyg	BEN	vis	49183.471	15722	+ 0.026	
DM Cyg	BEN	vis	49212.448	15791	+ 0.033	
DM Cyg	BEN	vis	49217.476	15803	+ 0.022	
DM Cyg	BEN	vis	49220.424	15810	+ 0.031	
DM Cyg	AUB	phot	49225.460	15822	+ 0.029	
DX Del	BEN	vis	48867.432	20101	+ 0.024	
DX Del	BEN	vis	48868.390	20103	+ 0.036	
DX Del	BEN	vis	49195.432	20795	+ 0.027	
DX Del	BEN	vis	49212.450	20831	+ 0.031	
DX Del	BEN	vis	49213.393	20833	+ 0.029	
DX Del	BEN	vis	49220.484	20848	+ 0.030	
XZ Dra	BTD	phot	48829.465	14483	− 0.015	
XZ Dra	AUB	phot	49573.416	16044	+ 0.124	
XZ Dra	VBR	vis	49922.577	16777	+ 0.013	
BK Dra	BEN	vis	48749.369	39228	− 0.109	− 0.014 (O−C with ephemeris NC 648)
BK Dra	BEN	vis	48801.455	39316	− 0.126	− 0.019 idem
BK Dra	VBR	vis	48811.531	39333	− 0.115	+ 0.008 idem
BK Dra	BTD	phot	48827.511	39360	− 0.122	− 0.014 idem

STARS	OBS.	MODES	JD HEL	E (GC 85)	O−C (GC 85)	NOTES
BK Dra	AUB	phot	48830.479	39365	− 0.114	− 0.007 (O−C with ephemeris NC 648)
BK Dra	VBR	vis	48840.527	39382	− 0.131	− 0.007 idem
BK Dra	BEN	vis	48865.400	39424	− 0.126	− 0.018 idem
BK Dra	BEN	vis	48868.364	39429	− 0.123	+ 0.002 idem
BK Dra	BEN	vis	49129.487	39870	− 0.107	+ 0.020 idem
BK Dra	BEN	vis	49132.423	39875	− 0.132	− 0.005 idem
BK Dra	BTD	phot	49177.431	39951	− 0.122	+ 0.006 idem
BK Dra	BEN	vis	49177.433	39951	− 0.120	+ 0.008 idem
RR Gem	VBR	vis	48670.404	18407	− 0.098	
RR Gem	VBR	vis	49004.524	19248	− 0.115	
RR Gem	BEN	vis	49030.337	19313	− 0.128	
RR Gem	AUB	phot	49311.622	20021	− 0.138	
VX Her	AUB	phot	48747.454	59286	− 0.261	+ 0.001 (O−C with nonlinear term of the GCVS 85 notes)
VX Her	AUB	phot	48756.551	59306	− 0.272	− 0.010 idem
VX Her	VBR	vis	48756.556	59306	− 0.267	− 0.005 idem
VX Her	LEB	vis	48850.367	59512	− 0.263	+ 0.001 idem
VX Her	LEB	vis	48891.358	59602	− 0.255	+ 0.009 idem
VX Her	AUB	phot	49568.471	61089	− 0.282	− 0.004 idem
VX Her	VBR	vis	49828.485	61658	− 0.286	+ 0.002 idem
AG Her	VBR	vis	48733.508	32445	+ 0.007	
AG Her	VBR	vis	48746.501	32465	+ 0.011	
AR Her	VBR	vis	48748.426	15518	+ 0.184	
AR Her	VBR	vis	48756.400	15535	+ 0.168	
AR Her	VBR	vis	48757.367	15537	+ 0.195	
AR Her	VBR	vis	49798.400	17752	+ 0.116	
AR Her	VBR	vis	49828.471	17816	+ 0.105	
AR Her	VBR	vis	49842.513	17846	+ 0.046	
AR Her	VBR	vis	49897.532	17963	+ 0.073	
SZ Hya	BEN	vis	49039.394	15561	− 0.013	
WZ Hya	BEN	vis	49100.423	17617	+ 0.135	
GO Hya	VBR	vis	49392.408	37306	− 0.017	
RR Leo	BEN	vis	49030.458	12677	+ 0.066	
RR Leo	BEN	vis	49044.424	12708	+ 0.008	
RR Leo	BEN	vis	49097.364	12825	+ 0.018	
RX Leo	VBR	vis	49780.464	20621	+ 0.068	
RX Leo	VBR	vis	49799.394	20650	+ 0.049	
ST Leo	AUB	phot	48737.426	43546	+ 0.004	
ST Leo	VBR	vis	48747.462	43587	+ 0.002	
ST Leo	BEN	vis	49042.374	44184	− 0.002	
ST Leo	BEN	vis	49074.387	44251	− 0.014	
ST Leo	BEN	vis	49075.354	44253	− 0.003	
ST Leo	BEN	vis	49097.331	44299	− 0.014	
ST Leo	AUB	phot	49475.419	45090	− 0.011	
AA Leo	VBR	vis	49471.433	16495	− 0.048	

STARS	OBS.	MODES	JD HEL	E (GC 85)	O−C (GC 85)	NOTES
AA Leo	VBR	vis	49787.529	17023	− 0.042	
AA Leo	VBR	vis	49799.506	17043	− 0.038	
AN Leo	VBR	vis	49415.506	51671	+ 0.026	
AN Leo	VBR	vis	49474.405	51774	+ 0.007	
AN Leo	VBR	vis	49800.481	52344	+ 0.029	
AX Leo	BNN	vis	49074.485	32786	− 0.001	
AX Leo	VBR	vis	49425.528	33269	− 0.016	
X LMi	VBR	vis	49415.618	14928	+ 0.092	
X LMi	VBR	vis	49422.460	14938	+ 0.091	
RR Lyr	VBR	vis	48850.378	10456	− 0.210	+ 0.137 (O−C GCVS 74)
RR Lyr	BNN	vis	48864.510	10481	− 0.250	+ 0.098 idem
RR Lyr	VBR	vis	48864.525	10481	− 0.235	+ 0.113 idem
RR Lyr	GDZ	vis	48864.533	10481	− 0.228	+ 0.121 idem
RR Lyr	SVE	vis	48864.534	10481	− 0.227	+ 0.121 idem
RR Lyr	SVE	vis	48873.565	10497	− 0.265	+ 0.084 idem
RR Lyr	VBR	vis	49177.413	11033	− 0.258	+ 0.110 idem
RR Lyr	BIG	vis	49186.456	11049	− 0.285	+ 0.084 idem
RR Lyr	BIG	vis	49538.480	11670	− 0.286	+ 0.107 idem
RR Lyr	DDL	vis	49542.418	11677	− 0.316	+ 0.077 idem
RR Lyr	DDL	vis	49546.377	11684	− 0.325	+ 0.068 idem
RR Lyr	DDL	vis	49550.334	11691	− 0.336	+ 0.057 idem
RR Lyr	DDL	vis	49555.436	11700	− 0.336	+ 0.058 idem
RR Lyr	DDL	vis	49559.411	11707	− 0.329	+ 0.065 idem
RR Lyr	DDL	vis	49563.426	11714	− 0.282	+ 0.112 idem
RR Lyr	DDL	vis	49568.516	11723	− 0.294	+ 0.101 idem
RR Lyr	DDL	vis	49572.480	11730	− 0.298	+ 0.097 idem
RR Lyr	DDL	vis	49576.431	11737	− 0.315	+ 0.080 idem
RR Lyr	DDL	vis	49580.403	11744	− 0.311	+ 0.084 idem
RR Lyr	DDL	vis	49584.358	11751	− 0.324	+ 0.072 idem
RR Lyr	DDL	vis	49589.453	11760	− 0.331	+ 0.065 idem
RR Lyr	DDL	vis	49593.416	11767	− 0.336	+ 0.060 idem
RR Lyr	DDL	vis	49601.343	11781	− 0.345	+ 0.052 idem
RR Lyr	DDL	vis	49609.326	11795	− 0.299	+ 0.099 idem
RR Lyr	DDL	vis	49635.352	11841	− 0.348	+ 0.051 idem
RR Lyr	DDL	vis	49643.352	11855	− 0.285	+ 0.115 idem
RR Lyr	DDL	vis	49651.288	11869	− 0.285	+ 0.116 idem
RR Lyr	DDL	vis	49689.250	11936	− 0.303	+ 0.100 idem
RZ Lyr	BTD	phot	48823.438	14944	+ 0.007	
RZ Lyr	BTD	phot	49165.451	15613	− 0.001	
AO Peg	VBR	vis	49929.605	44615	+ 0.033	
AO Peg	VBR	vis	49962.437	44675	+ 0.030	
AR Peg	BEN	vis	49037.397	51229	+ 0.033	+ 0.002 (O−C with nonlinear term of the GCVS 85 notes)
AV Peg	BTD	phot	48839.451	12934	+ 0.028	
AV Peg	BEN	vis	48970.244	13269	+ 0.046	

STARS	OBS.	MODES	JD HEL	E (GC 85)	O−C (GC 85)	NOTES
AV Peg	BEN	vis	49220.458	13910	+ 0.030	
BT Peg	VBR	vis	49224.542	22931	+ 0.084	
BT Peg	VBR	vis	49296.398	23060	+ 0.116	
BT Peg	VBR	vis	49543.549	23504	+ 0.061	
BT Peg	VBR	vis	49547.466	23511	+ 0.081	
BT Peg	VBR	vis	49654.341	23703	+ 0.055	
DH Peg	BIG	vis	49310.348	18969	+ 0.000	
DH peg	DDL	vis	49591.405	20069	− 0.004	
DH Peg	DDL	vis	49611.321	20147	− 0.018	
V 378 Per	BEN	vis	48891.475	53905	+ 0.144	
V 378 Per	BEN	vis	48945.335	54040	+ 0.178	
AN Ser	VBR	vis	48714.618	65136	+ 0.011	
AN Ser	VBR	vis	48746.477	65197	+ 0.024	
AN Ser	VBR	vis	49780.689	67178	+ 0.012	
DF Ser	VBR	vis	49074.612	44241	+ 0.064	
DF Ser	VBR	vis	49124.522	44355	+ 0.065	
RV UMa	BTD	phot	48733.432	7815	+ 0.032	
RV UMa	AUB	phot	49165.446	8738	+ 0.027	
RV UMa	AUB	phot	49458.457	9364	+ 0.032	
TU UMa	DDL	vis	49750.346	12407	− 0.020	
TU UMa	DDL	vis	49755.358	12416	− 0.027	
TU UMa	DDL	vis	49769.290	12441	− 0.037	
TU UMa	DDL	vis	49799.394	12495	− 0.046	
TU UMa	DDL	vis	49813.348	12520	− 0.034	
TU UMa	DDL	vis	49827.299	12545	− 0.024	
TU UMa	DDL	vis	49847.344	12581	− 0.055	
TU UMa	DDL	vis	49857.397	12599	− 0.040	
TU UMa	DDL	vis	49876.354	12633	− 0.043	
NSV 4219	VBR	vis	49842.422	1528		− 0.014 (O−C with ephemeris GEOS Circular RR 13)
FH Vul	AUB	phot	49197.428	32485	− 0.046	
FK Vul	VBR	vis	49578.498	31107	− 0.009	
FK Vul	VBR	vis	49635.374	31238	+ 0.007	
FK Vul	VBR	vis	49897.517	31842	− 0.018	

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Jacqueline Vandenbroere