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THE GEOS RR Lyr SURVEY

Second list of maxima of RR Lyr stars observed by the automated telescope TAROT

(GEOS Circular RR 24)

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We present here the second list of light maxima of RR Lyrae stars from the GEOS RR Lyr Survey, a GEOS program (`http://www.upv.es/geos/`) (Boninsegna et al., 2002) of automated observations of RR Lyr stars started in January 2004. We are using the 25cm automatic telescope TAROT (`http://tarot.obs-hp.fr`) (Boër et al., 2001, Bringer et al., 1999) located in Calern Observatory (Observatoire de la Côte d'Azur, Nice University, France). The aim of this legacy project for the study of period variations of RR Lyr stars is to monitor maxima of light of these stars in order to feed the GEOS RR Lyr web database (`http://www.ast.obs-mip.fr/people/leborgne/dbRR`).

The present list contains 101 maxima observed with no filter between July and December 2004 (Table 1). The maxima are determined by fitting a polynomial function on the data points. The uncertainties on individual maxima are estimated from the data sampling of each maximum. The nominal sampling (two consecutive measurements taken every 10 minutes on a time baseline of 2 hours centered around the predicted maximum time) may be altered by local events (weather or telescope operation). This results uncertainties from 0.002 to 0.010 day. For a well observed star, the mean uncertainty on maxima is about 0.003 day (4.3 minutes). All $O-C$'s are computed with the GCVS elements (Kholopov et al. 1985) and are displayed in table 2 in column "$O-C$ (1)". "$O-C$ (2)" are computed with elements which allow more precise predictions for scheduling observations from the BAV web site `http://www.var-mo.de` when available. For the star SW And (columns $O-C(1)$,E(1)), we used the non-linear elements from GCVS: $2418132.7913 + 0.442279456\mathrm{E} - 1.22910^{-10}\ \mathrm{E}^2$.

Table 1: maxima of RR Lyrae stars

Variable	Maximum HJD 24...	$O-C$ (1) (days)	E (1)	$O-C$ (2) (days)	E (2)	ref (2)
SW And	53346.355±0.003	0.052	79620.	−0.003	10826.	1
SW And	53350.334±0.004	0.051	79629.	−0.004	10835.	1
XX And	53271.564±0.005	0.214	19625.	0.008	2899.	1
XX And	53326.490±0.008	0.212	19701.	0.005	2975.	1
ZZ And	53326.388±0.010	0.024	51391.			
AT And	53200.506±0.004	0.003	17599.			
AT And	53208.515±0.004	−0.008	17612.			
AT And	53232.587±0.005	0.004	17651.			
AT And	53269.592±0.005	−0.006	17711.			
AT And	53271.447±0.005	−0.001	17714.			
AT And	53295.506±0.010	−0.002	17753.			
DM And	53289.465±0.005	−0.059	27875.			
DM And	53296.409±0.010	−0.050	27885.			
DM And	53320.357±0.004	−0.056	27924.			
SW Aqr	53226.483±0.005	0.001	61243.			
SW Aqr	53254.505±0.005	0.006	61304.			
SX Aqr	53210.504±0.003	−0.106	25040.	−0.010	25040.	2
SX Aqr	53225.509±0.005	−0.101	25068.	−0.005	25068.	2
SX Aqr	53226.578±0.005	−0.103	25070.	−0.008	25070.	2
SX Aqr	53270.509±0.002	−0.101	25152.	−0.005	25152.	2
BR Aqr	53259.544±0.002	−0.140	32422.	−0.009	3833.	2
CP Aqr	53198.544±0.003	−0.096	33047.	−0.007	33047.	2
X Ari	53296.583±0.005	0.291	24131.	0.031	3273.	1
X Ari	53326.536±0.002	0.291	24177.	0.031	3319.	1
TZ Aur	53354.589±0.002	0.011	85408.			
BH Aur	53326.538±0.010	−0.002	23186.			
AH Cam	53325.442±0.002	−0.006	39584.			
SS Cnc	53357.566±0.003	0.047	82428.	−0.001	82428.	1
TT Cnc	53350.607±0.006	0.088	23793.	0.016	6579.	2
FP Cep	53286.481±0.007	−0.029	34555.			
UY Cyg	53207.498±0.003	0.050	54884.	0.004	25266.	2
UY Cyg	53249.549±0.004	0.048	54959.	0.002	25341.	2
UY Cyg	53267.494±0.002	0.050	54991.	0.004	25373.	2
UY Cyg	53276.468±0.005	0.053	55007.	0.007	25389.	2
XZ Cyg	53243.576±0.005	−0.182	19540.	0.004	10014.	3
DM Cyg	53201.557±0.005	0.052	25292.	0.001	25291.	1
DM Cyg	53269.572±0.002	0.050	25454.	−0.001	25454.	1
DM Cyg	53272.514±0.003	0.053	25461.	0.002	25461.	1
DM Cyg	53296.445±0.006	0.052	25518.	0.000	25518.	1

ref.: 1 `http://www.var-mo.de/rr-lyrae-sektion.htm`
2 `http://www.var-mo.de/st-daten.htm`
3 `Baldwin, Samolyk, 2003`

Table 1 (cont.): maxima of RR Lyrae stars

Variable	Maximum HJD 24...	$O-C$ (1) (days)	E (1)	$O-C$ (2) (days)	E (2)	ref (2)
DX Del	53197.569±0.003	0.046	29263.	−0.007	29263.	1
DX Del	53198.527±0.002	0.058	29265.	0.006	29265.	1
DX Del	53206.555±0.005	0.052	29282.	−0.001	29282.	1
DX Del	53207.499±0.002	0.051	29284.	−0.002	29284.	1
DX Del	53215.533±0.004	0.050	29301.	−0.003	29301.	1
DX Del	53223.574±0.003	0.057	29318.	0.004	29318.	1
DX Del	53232.554±0.004	0.057	29337.	0.004	29337.	1
DX Del	53233.497±0.002	0.055	29339.	0.002	29339.	1
DX Del	53259.487±0.002	0.051	29394.	−0.002	29394.	1
DX Del	53268.468±0.004	0.052	29413.	−0.001	29413.	1
RW Dra	53196.573±0.002	0.172	31200.	0.016	31200.	3
RW Dra	53204.548±0.004	0.174	31217.	0.018	31218.	3
RW Dra	53275.410±0.002	0.169	31377.	0.012	31378.	3
XZ Dra	53246.533±0.005	−0.074	23753.	−0.024	15480.	2
TW Her	53195.552±0.002	−0.008	79205.			
TW Her	53197.549±0.003	−0.009	79210.			
TW Her	53207.544±0.005	−0.004	79235.			
TW Her	53209.538±0.004	−0.008	79240.			
VX Her	53204.524±0.003	0.075	69073.	−0.026	3268.	1
VZ Her	53199.537±0.003	0.059	37269.	−0.005	29060.	2
DD Hya	53349.630±0.006	−0.123	23226.	0.033	7280.	2
DD Hya	53351.629±0.004	−0.131	23230.	0.025	7284.	2
RR Leo	53357.598±0.003	0.064	22242.	0.021	4692.	1
RR Leo	53362.575±0.002	0.065	22253.	0.021	4704.	1
TW Lyn	53349.530±0.004	0.049	17281.			
RZ Lyr	53216.545±0.005	0.009	23537.	0.008	3855.	2
RZ Lyr	53218.578±0.004	−0.003	23541.	−0.004	3859.	2
RZ Lyr	53238.508±0.002	−0.011	23580.	−0.012	3898.	2
RZ Lyr	53239.534±0.005	−0.008	23582.	−0.009	3900.	2
CN Lyr	53217.520±0.010	0.008	21223.			
CN Lyr	53224.526±0.005	0.020	21241.			
CN Lyr	53245.495±0.002	0.009	21292.			
AV Peg	53201.555±0.002	0.086	24108.	0.001	9066.	2
AV Peg	53210.537±0.002	0.089	24131.	0.004	9089.	2
AV Peg	53217.565±0.005	0.090	24149.	0.005	9107.	2
AV Peg	53224.590±0.002	0.089	24167.	0.003	9125.	2
AV Peg	53233.571±0.004	0.091	24190.	0.006	9148.	2
AV Peg	53242.548±0.002	0.089	24213.	0.004	9171.	2
AV Peg	53253.481±0.002	0.092	24241.	0.006	9199.	2
AV Peg	53258.553±0.002	0.089	24254.	0.003	9212.	2

ref.: 1 `http://www.var-mo.de/rr-lyrae-sektion.htm`
2 `http://www.var-mo.de/st-daten.htm`

Table 1 (cont.): maxima of RR Lyrae stars

Variable	Maximum HJD 24...	$O-C$ (1) (days)	E (1)	$O-C$ (2) (days)	E (2)	ref (2)
AV Peg	53267.533±0.002	0.090	24277.	0.005	9235.	2
AV Peg	53285.487±0.002	0.087	24322.	0.001	9281.	2
BH Peg	53212.550±0.004	−0.102	21603.	−0.008	3764.	2
BH Peg	53239.482±0.004	−0.091	21645.	0.002	3807.	2
BH Peg	53244.611±0.003	−0.090	21653.	0.004	3815.	2
BH Peg	53255.497±0.002	−0.101	21670.	−0.007	3832.	2
BH Peg	53289.479±0.005	−0.092	21723.	0.002	3885.	2
CG Peg	53200.582±0.003	−0.045	30180.	0.009	3038.	2
CG Peg	53201.520±0.005	−0.041	30182.	0.013	3040.	2
CG Peg	53207.594±0.004	−0.040	30195.	0.014	3053.	2
CG Peg	53208.528±0.005	−0.040	30197.	0.014	3055.	2
CG Peg	53215.538±0.005	−0.037	30212.	0.017	3070.	2
CG Peg	53230.479±0.004	−0.045	30243.	0.009	3102.	2
CG Peg	53237.493±0.002	−0.038	30259.	0.016	3117.	2
CG Peg	53244.491±0.002	−0.047	30274.	0.007	3132.	2
CG Peg	53258.509±0.002	−0.043	30304.	0.011	3162.	2
CG Peg	53272.525±0.004	−0.041	30334.	0.013	3192.	2
ES Peg	53287.502±0.008	0.139	28563.	−0.007	28563.	2
ET Peg	53294.399±0.010	−0.032	29170.			
AR Per	53277.590±0.005	0.057	61192.	0.010	3572.	1
AR Per	53324.395±0.006	0.052	61303.	0.005	3682.	1
SS Tau	53325.480±0.003	0.032	38636.	−0.026	4807.	2

ref.: 1 `http://www.var-mo.de/rr-lyrae-sektion.htm`
2 `http://www.var-mo.de/st-daten.htm`

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