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**CCD LIGHT CURVES OF ROTSE1 VARIABLES, XX: GSC 3510:1283 Her,
GSC 2618:1385 Her, GSC 2614:1369 Her, AND GSC 2615:1821 Her**

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Observatory and telescope:
Private observatory Schüsselacher, Wald, 0.15-m Starfire refractor

Detector:	SBIG ST-7 CCD camera
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Method of data reduction:
Standard CCD-frame reduction using AIP4WIN software

Method of minimum determination:
Kwee – van Woerden algorithm

Observed star(s):				
Star name	GCVS type	Coordinates (J2000)		Comp./check star(s)
		RA	Dec	
GSC 3510:1283				
ROTSE1 J173834.17+452718.4	EW	17 38 34.2	+45 27 18	GSC 3510:1129 / GSC 3510:1583
GSC 2618:1385				
ROTSE1 J173925.40+364700.9	EW	17 39 25.4	+36 47 01	GSC 2618:1243 / GSC 2618:1191
GSC 2614:1369				
ROTSE1 J174143.73+341208.9	EW	17 41 43.7	+34 12 09	GSC 2615:2024 / GSC 2614:1215
GSC 2615:1821				
ROTSE1 J174357.38+341802.5	EW	17 43 57.4	+34 18 02	GSC 2615:1861 / GSC 2615:2174

Ephemeris:				
Star name	E 2400000+	P [day]	Source	
ROTSE1 J173834.17+452718.4	52871.3786(4)	0.2783504	present paper	
ROTSE1 J173925.40+364700.9	52898.3476(2)	0.337146	"	
ROTSE1 J174143.73+341208.9	52898.3144(5)	0.334711	"	
ROTSE1 J174357.38+341802.5	52907.3998(4)	0.340092	"	

Times of minima:							
Star name	Time of min. HJD 2400000+	Error	Type	Filter	$O - C$ [day]	Rem.	
GSC3510:1283 (Her)	51308.7214	8	p	none		ROTSE1	
	51308.8562	7	s	none		ROTSE1	
	52871.3771	9	p	none			
	52871.5177	18	s	none			
	52875.4151	12	s	none			
	52886.4074	13	p	none			
	52898.3778	13	p	none			
	52898.5178	13	s	none			
	52899.3533	13	s	none			
	52907.2856	18	p	none			
	52907.4259	21	s	none			
	52924.4056	8	s	none			
	52926.353	4	s	none			
	52928.3021	11	s	none			
	GSC2618:1385 (Her)	51308.8752	8	s	none		ROTSE1
51311.7411		9	p	none		ROTSE1	
52871.3752		7	p	none			
52871.5447		11	s	none			
52875.4215		7	p	none			
52886.3799		5	s	none			
52898.3467		11	p	none			
52898.5173		9	s	none			
52899.3591		4	p	none			
52907.2826		24	s	none			
52924.3074		16	p	none			
52926.3303		19	p	none			
52928.3537		3	p	none			
GSC2614:1369 (Her)		51297.895	3	s	none		ROTSE1
		52871.3707	5	s	none		
	52871.5390	4	p	none			
	52875.3868	7	s	none			
	52886.4318	7	s	none			
	52898.3170	16	p	none			
	52898.4811	8	s	none			
	52899.318	4	p	none			
	52907.3516	10	p	none			
	52924.424	4	p	none			
	52926.2598	11	s	none			
	52928.2711	11	s	none			
	GSC2615:1821 (Her)	51286.865	4	p?	none		ROTSE1
		51305.7345	3	s?	none		ROTSE1
		52871.3500	22	p	none		
52871.5209		3	s	none			
52875.4319		6	p	none			
52886.3144		8	p	none			
52886.4839		11	s	none			
52898.3874		5	s	none			
52899.4069		12	s	none			
52907.4008		15	p	none			
52924.4035		12	p	none			
52926.2737		13	s	none			
52928.3156		24	s	none			

Explanation of the remarks in the table:

ROTSE1: Observations of Akerlof et al. (2000).
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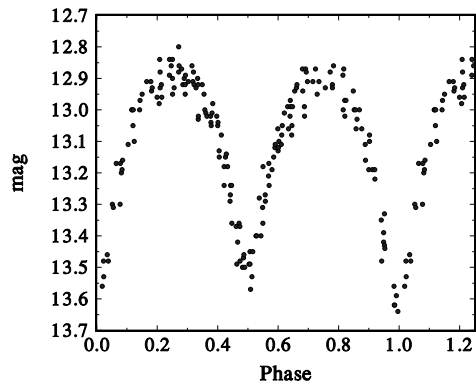


Figure 1. CCD light curve (without filter) of GSC3510:1283

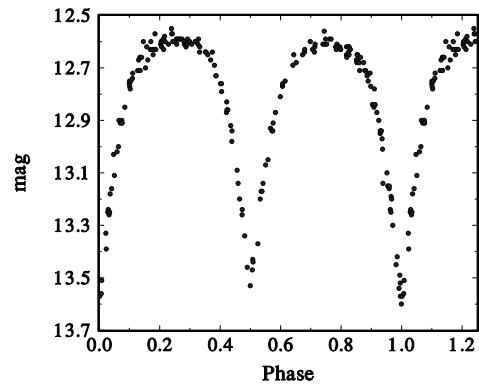


Figure 2. CCD light curve (without filter) of GSC2618:1385

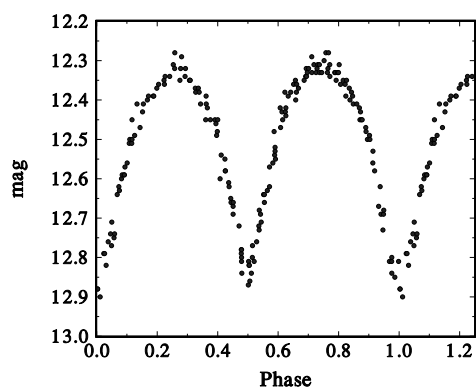


Figure 3. CCD light curve (without filter) of GSC2614:1369

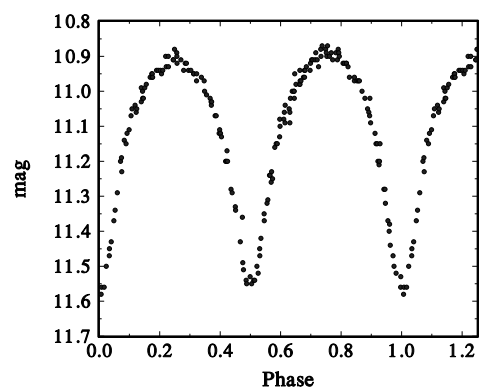


Figure 4. CCD light curve (without filter) of GSC2615:1821

Remarks:

As a byproduct of the ROTSE1 CCD survey, a large number of newvariables have been discovered (Akerlof et al., 2000). In a series of papers, we report unfiltered CCD observations for some of the close binary systems (type EW) in the list of Akerlof et al. (2000). This installment contains information on four variables in the constellation Her. The four stars were observed with our CCD equipment during several nights between JD 2452871 and JD 2452928. A total of 185 CCD frames were measured of GSC 3510:1283, 198 frames of GSC 2618:1385, 193 frames of GSC 2614:1369 as well as 195 frames of GSC 2615:1821. Figures 1 through 4 show our observations folded with the elements given in the Table of Ephemeris. These elements of variation are deduced from a linear fit to the normal minima from the ROTSE1 data and the timings of minimum derived from our data given in the table of Times of minima.

Availability of the data:

Upon request from diethelm@astro.unibas.ch

Acknowledgements:

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Reference:

Akerlof, C., Amrose, S., Balsano, R., Bloch, J., Casperson, D., Fletcher, S., Gisler, G., Hills, J., Kehoe, R., Lee, B., Marshall, S., McKay, T., Pawl, A., Schaefer, J., Szymanski, J., Wren, J., 2000, *AJ*, **119**, 1901