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**CCD LIGHT CURVES OF ROTSE1 VARIABLES, XXIII: GSC 3510:5 Her,
 GSC 3097:1297 Her, GSC 3101:547 Her AND GSC 3106:1368 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	
GSC3510:5				
ROTSE1 J174737.00+450213.9	EW	17 47 37.0	+45 02 14	GSC3510:19 / GSC3510:71
GSC3097:1297				
ROTSE1 J175307.55+423434.0	EW	17 53 07.6	+42 34 34	GSC3097:429 / GSC3097:153
GSC3101:547				
ROTSE1 J175535.77+434820.8	EW	17 55 35.8	+43 48 21	GSC3101:1105 / GSC3101:1481
GSC3106:1368				
ROTSE1 J180025.53+401103.3	EW	18 00 25.5	+40 11 03	GSC3106:744 / GSC3106:250

Ephemeris:				
Star name	E	2400000+	P [day]	Source
ROTSE1 J174737.00+450213.9	53154.4451		0.349231	present paper
ROTSE1 J175307.55+423434.0	53121.5547		0.370365	"
ROTSE1 J175535.77+434820.8	53229.5522		0.369881	"
ROTSE1 J180025.53+401103.3	53229.5386		0.358398	"

Times of minima:						
Star name	Time of min. HJD 2400000+	Error	Type	Filter	$O - C$ [day]	Rem.
GSC3510:5 (Her)	51341.7374	4	s	none		ROTSE1
	51352.7842	20	p	none		ROTSE1
	53121.620	4	p	none		
	53143.4439	11	s	none		
	53150.4239	10	s	none		
	53154.4479	12	p	none		
	53173.4762	15	s	none		
	53229.353	3	s	none		
	53229.5333	12	p	none		
	53250.4850	12	p	none		
GSC3097:1297 (Her)	51322.8758	7	s	none		ROTSE1
	51332.6910	3	p	none		ROTSE1
	53121.5543	6	p	none		
	53143.4064	10	p	none		
	53150.4440	10	p	none		
	53154.5175	5	p	none		
	53173.4054	6	p	none		
	53203.4050	5	p	none		
	53229.5160	5	s	none		
	53250.4417	7	p	none		
GSC3101:547 (Her)	51358.6965	8	p	none		ROTSE1
	51364.7978	9	s	none		ROTSE1
	53121.5467	5	p	none		
	53143.3703	19	p	none		
	53150.3981	6	p	none		
	53150.5821	15	s	none		
	53154.4662	5	p	none		
	53173.5150	3	s	none		
	53203.4748	5	s	none		
	53229.3671	25	s	none		
GSC3106:1368 (Her)	53229.5524	10	p	none		
	53250.4519	8	s	none		
	51361.7560	18	s	none		ROTSE1
	51600.969	3	p	none		ROTSE1
	53150.5167	11	s	none		
	53154.4579	17	s	none		
	53173.4518	5	s	none		
	53229.356	22	s	none		
	53229.5364	15	p	none		
	53250.3218	7	p	none		
53250.5045	10	s	none			

Explanation of the remarks in the table:

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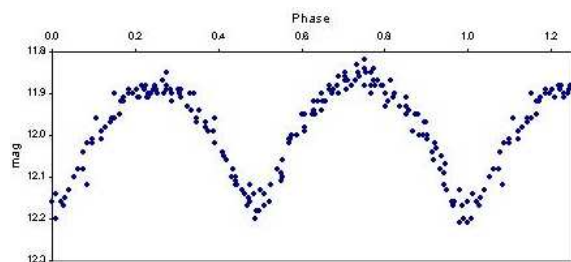


Figure 1. CCD light curve (without filter) of GSC 3510:5

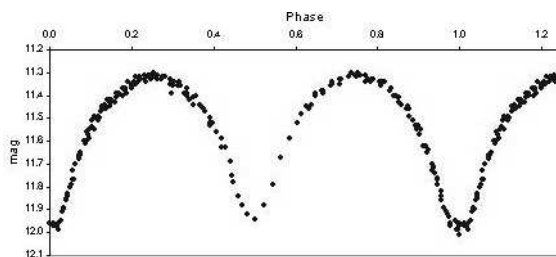


Figure 2. CCD light curve (without filter) of GSC 3097:1297

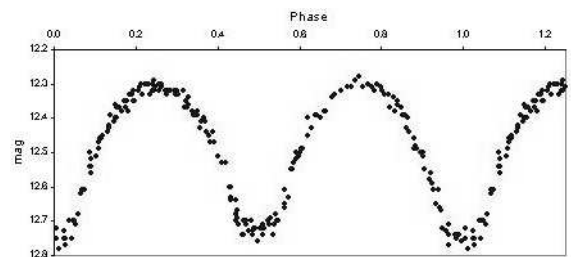


Figure 3. CCD light curve (without filter) of GSC 3101:547

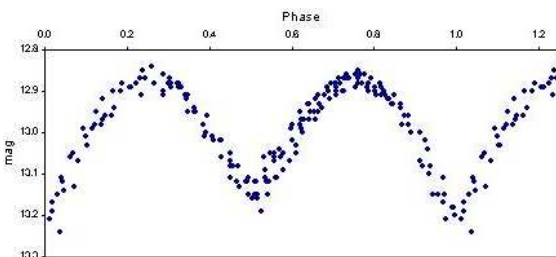


Figure 4. CCD light curve (without filter) of GSC 3106:1368

Remarks:

As a byproduct of the ROTSE1 CCD survey, a large number of new variables 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 Hercules. The four stars were observed with our CCD equipment during eight nights between JD 2453121 and JD 2453250. A total of 190 CCD frames were measured of GSC 3510:5, 219 frames of GSC 3097:1297, 215 frames of GSC 3101:547 as well as 197 frames of GSC 3106:1368. 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:

This research made use of the SIMBAD data base, operated at CDS, Strasbourg, France

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