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**CCD LIGHT CURVES OF ROTSE1 VARIABLES, XXII: GSC 2533:1519 CV_n,
GSC 2534:1121 CV_n, GSC 2537:520 CV_n AND GSC 2544:1007 CV_n**

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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	
GSC2533:1519				
ROTSE1 J124033.39+342255.8	EW	12 40 33.4	+34 22 56	GSC 2533:1553 / GSC 2533:1207
GSC2534:1121				
ROTSE1 J130625.38+342917.7	EW	13 06 25.4	+34 29 18	GSC 2534:1056 / GSC 2534:1091
GSC2537:520				
ROTSE1 J134117.73+315429.5	EB	13 41 17.7	+31 54 30	SAO 63685 / GSC 2537:909
GSC2544:1007				
ROTSE1 J135313.76+322248.9	EW	13 53 13.8	+32 22 49	GSC 2544:976 / GSC 2544:1098

Ephemeris:				
Star name	E 2400000+	P [day]	Source	
ROTSE1 J124033.39+342255.8	53094.6168(13)	0.491421	present paper	
ROTSE1 J130625.38+342917.7	53060.5691(9)	0.342687	"	
ROTSE1 J134117.73+315429.5	53094.3741(8)	0.371039	"	
ROTSE1 J135313.76+322248.9	53117.3815(8)	0.315367	"	

Times of minima:						
Star name	Time of min. HJD 2400000+	Error	Type	Filter	$O - C$ [day]	Rem.
GSC2533:1519 (CV _n)	51275.8649	7	p	none		ROTSE1
	51296.757	2	s	none		ROTSE1
	53045.4713	11	p	none		
	53060.4671	20	s	none		
	53060.706	3	p	none		
	53068.5686	8	p	none		
	53081.347	3	p	none		
	53094.3764	19	s	none		
	53094.6153	12	p	none		
	53117.4705	14	s	none		
GSC2534:1121 (CV _n)	51244.6674	9	p	none		ROTSE1
	51338.7449	7	s	none		ROTSE1
	53045.4896	15	p	none		
	53060.3985	18	s	none		
	53060.5698	12	p	none		
	53068.4488	17	p	none		
	53081.4698	20	p	none		
	53094.3252	23	s	none		
	53094.4965	10	p	none		
	53117.4565	8	p	none		
GSC2537:520 (CV _n)	53117.6272	25	s	none		
	51248.8222	8	p	none		ROTSE1
	51348.8239	15	s	none		ROTSE1
	53045.5866	18	s	none		
	53060.4205	10	s	none		
	53060.6083	12	p	none		
	53068.402	6	p	none		
	53068.5850	6	s	none		
	53081.3868	19	p	none		
	53094.3736	13	p	none		
GSC2544:1007 (CV _n)	53094.5600	17	s	none		
	53117.3783	14	p	none		
	53117.5665	16	s	none		
	51251.8239	7	s	none		ROTSE1
	51259.872	5	p	none		ROTSE1
	53045.4760	9	p	none		
	53060.4579	13	s	none		
	53060.6181	20	p	none		
	53068.4984	18	p	none		
	53081.4294	19	p	none		
	53094.3569	12	p	none		
	53094.5212	21	s	none		
	53117.3811	17	p	none		
	53117.5393	11	s	none		

Explanation of the remarks in the table:

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

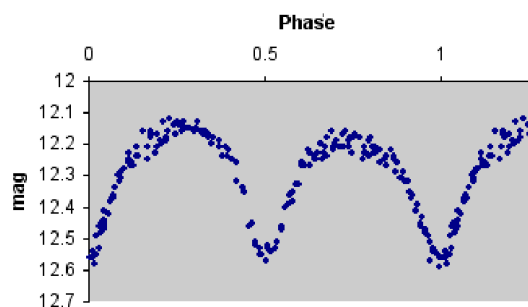


Figure 1. CCD light curve (without filter) of GSC 2533:1519

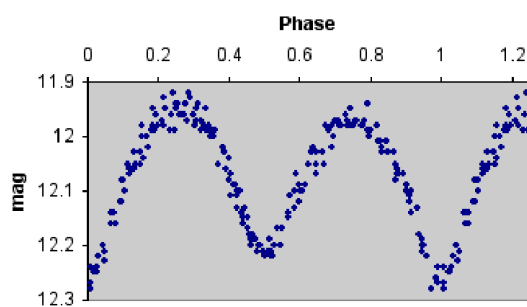


Figure 2. CCD light curve (without filter) of GSC 2534:1121

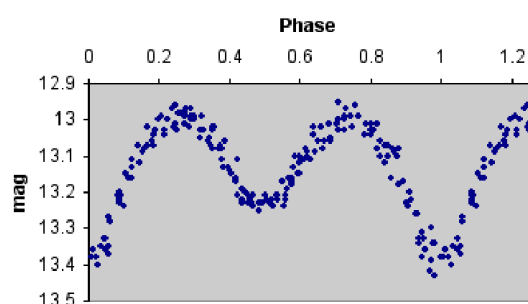


Figure 3. CCD light curve (without filter) of GSC 2537:520

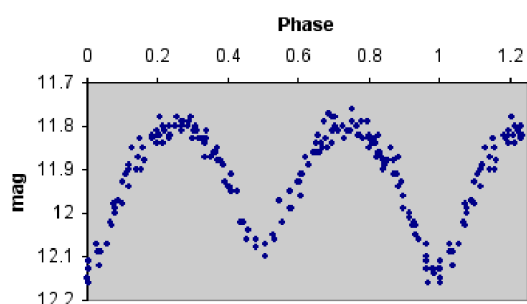


Figure 4. CCD light curve (without filter) of GSC 2544:1007

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 Canes Venatici. The four stars were observed with our CCD equipment during seven nights between JD 2453045 and JD 2453117. A total of 194 CCD frames were measured of GSC 2533:1519, 206 frames of GSC 2534:1121, 185 frames of GSC 2537:520 as well as 178 frames of GSC 2544:1007. 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