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CCD LIGHT CURVES OF ROTSE1 VARIABLES, XVII: GSC 3528:44 Her,  
 GSC 3532:939 Her, GSC 2629:1932 Her AND GSC 3532:174 Her

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<b>Observatory and telescope:</b>
Private observatory Schüsselacher, Wald, 0.15-m Starfire refractor

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

<b>Method of minimum determination:</b>
Kwee – van Woerden algorithm

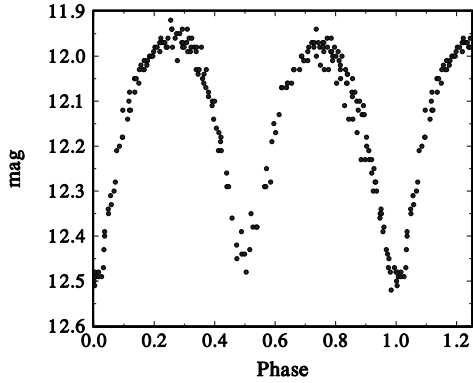
<b>Observed star(s):</b>				
Star name	GCVS type	Coordinates (J2000)		Comp./check star(s)
		RA	Dec	
GSC 3528:0044				
ROTSE1 J180733.29+465435.0	EW	18 <sup>h</sup> 07 <sup>m</sup> 33 <sup>s</sup> .3	+46°54'35"	GSC 3524:161 / GSC 3524:223
GSC 3532:0939				
ROTSE1 J180801.30+502451.8	EW	18 <sup>h</sup> 08 <sup>m</sup> 01 <sup>s</sup> .3	+50°24'52"	GSC 3532:1003 / GSC 3532:1199
GSC 2629:1932				
ROTSE1 J180818.61+343436.0	EW	18 <sup>h</sup> 08 <sup>m</sup> 18 <sup>s</sup> .6	+34°34'36"	GSC 2629:1601 / GSC 2629:1409
GSC 3532:0174				
ROTSE1 J180947.50+490254.0	EW	18 <sup>h</sup> 09 <sup>m</sup> 47 <sup>s</sup> .5	+49°02'54"	GSC 3532:224 / GSC 3532:395

<b>Ephemeris:</b>				
Star name	E 2400000+	P [day]	Source	
ROTSE1 J180733.29+465435.0	52526.4776	0.382655	present paper	
ROTSE1 J180801.30+502451.8	52526.4937	0.309005	"	
ROTSE1 J180818.61+343436.0	52526.3704	0.291353	"	
ROTSE1 J180947.50+490254.0	52526.4286	0.2278765	"	

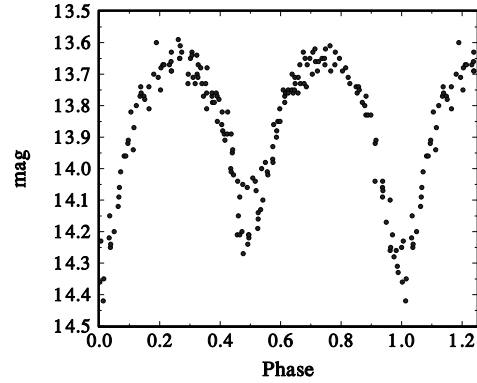
<b>Times of minima:</b>						
Star name	Time of min. HJD 2400000+	Error	Type	Filter	$O - C$ [day]	Rem.
GSC 3528:0044 (Her)	51260.8469	8	s	none		ROTSE1
	51295.8598	6	p	none		ROTSE1
	52495.4826	25	p	none		
	52502.3709	8	p	none		
	52526.4760	6	p	none		
	52533.3651	6	p	none		
	52548.2893	9	p	none		
	52548.4812	14	s	none		
	52568.3786	23	s	none		
	GSC 3532:0939 (Her)	51310.7142	9	s	none	
51310.8705		12	p	none		ROTSE1
52495.4335		21	s	none		
52502.3921		11	p	none		
52526.3387		10	s	none		
52526.4940		7	p	none		
52533.2900		13	p	none		
52533.4456		13	s	none		
52546.2733		20	p	none		
52548.2788		13	s	none		
GSC 2629:1932 (Her)	52548.4348	8	p	none		
	52548.5893	9	s	none		
	51259.8599	5	p	none		ROTSE1
	51265.8340	5	s	none		ROTSE1
	52502.4791	5	p	none		
	52526.3716	12	p	none		
	52526.5155	3	s	none		
	52533.3634	14	p	none		
	52546.3279	16	s	none		
	52548.3670	12	s	none		
GSC 3532:0174 (Her)	52568.3254	11	p	none		
	51275.8425	4	p	none		ROTSE1
	51312.8723	12	s	none		ROTSE1
	52495.4374	5	p	none		
	52502.3878	8	s	none		
	52502.5015	6	p	none		
	52509.3367	2	p	none		
	52526.3149	17	s	none		
	52526.4288	14	p	none		
	52526.5424	17	s	none		
52533.3794	13	s	none			
52533.4936	11	p	none			
52536.3419	16	s	none			
52548.3051	12	p	none			
52548.4187	4	s	none			
52548.5324	9	p	none			

<b>Explanation of the remarks in the table:</b>
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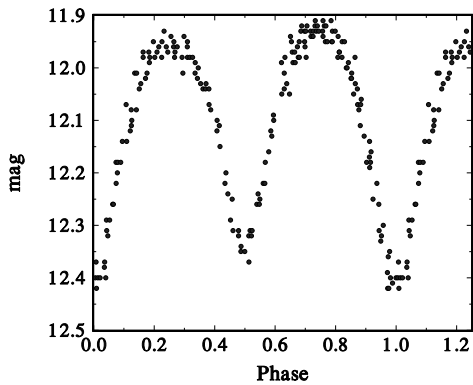
ROTSE1: Observations of Akerlof et al. (2000).
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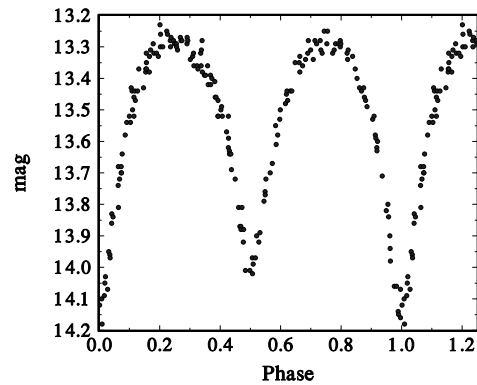
**Figure 1.** CCD light curve (without filter) of GSC 3528:0044



**Figure 2.** CCD light curve (without filter) of GSC 3532:0939



**Figure 3.** CCD light curve (without filter) of GSC 2629:1932



**Figure 4.** CCD light curve (without filter) of GSC 3532:0174

<b>Remarks:</b>
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<p>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 7 nights between JD 2452495 and JD 2452568. A total of 216 CCD frames were measured of GSC 3528:0044, 187 frames of GSC 3532:0939, 194 frames of GSC 2629:1932 and 193 frames for GSC 3532:0174. 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 and also in Blättler (2003). In the case of GSC3532:0174, we find an interesting contact binary with one of the shortest periods of revolution known, comparable to CC Comae.</p>
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<b>Availability of the data:</b>
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Upon request from <a href="mailto:diethelm@astro.unibas.ch">diethelm@astro.unibas.ch</a>
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<b>Acknowledgements:</b>
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## References:

- 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
- Blättler, E., 2003, *BBSAG Bulletin*, **129**, in preparation