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CCD LIGHT CURVES OF ROTSE1 VARIABLES, XI: GSC 2066:1210 Her, GSC 2063:902 Her, GSC 2594:1289 Her AND GSC 1522:599 Her

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VAR 1:

Name of the object:
GSC 2066:1210 = ROTSE1 J165039.99+274421.1

Equatorial coordinates:	**Equinox:**
R.A.= $16^h50^m40^s.0$ **DEC.**= $+27°44'21''$	2000.0

Comparison star(s):	GSC 2066:1252

Check star(s):	GSC 2066:1390

VAR 2:

Name of the object:
GSC 2063:902 = ROTSE1 J165551.74+245335.9

Equatorial coordinates:	**Equinox:**
R.A.= $16^h55^m51^s.7$ **DEC.**= $+24°53'36''$	2000.0

Comparison star(s):	GSC 2063:1158

Check star(s):	GSC 2063:992

VAR 3:

Name of the object:
GSC 2594:1289 = ROTSE1 J165819.76+334022.8

Equatorial coordinates:	**Equinox:**
R.A.= $16^h58^m19^s.8$ **DEC.**= $+33°40'23''$	2000.0

Comparison star(s):	GSC 2598:1627

Check star(s):	GSC 2594:1266

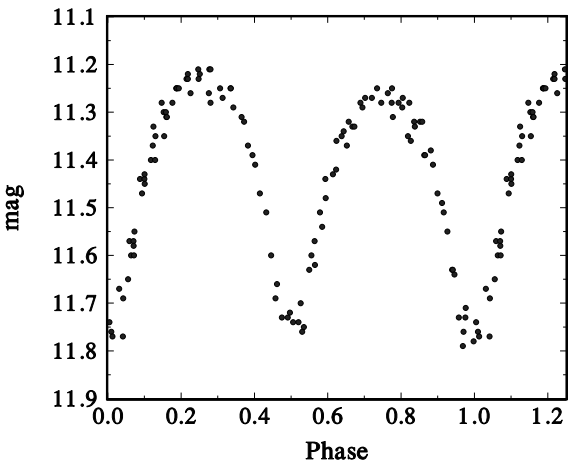

Figure 1. CCD light curve (without filter) of GSC 2066:1210

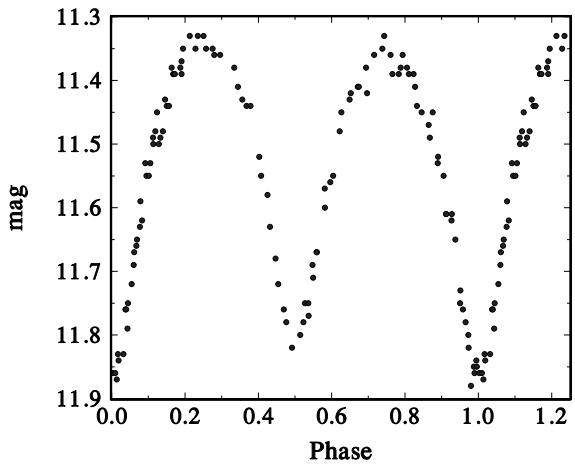

Figure 2. CCD light curve (without filter) of GSC 2063:902

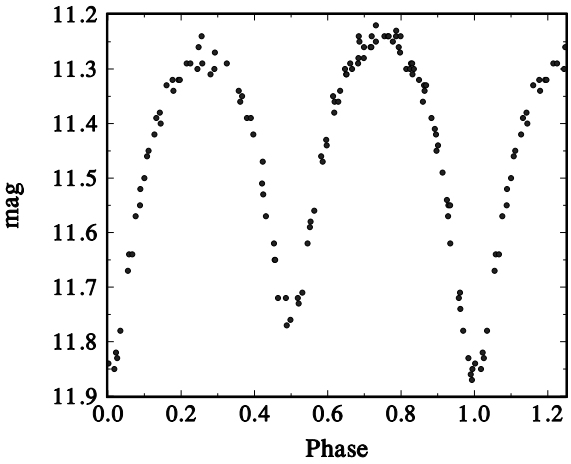

Figure 3. CCD light curve (without filter) of GSC 2594:1289

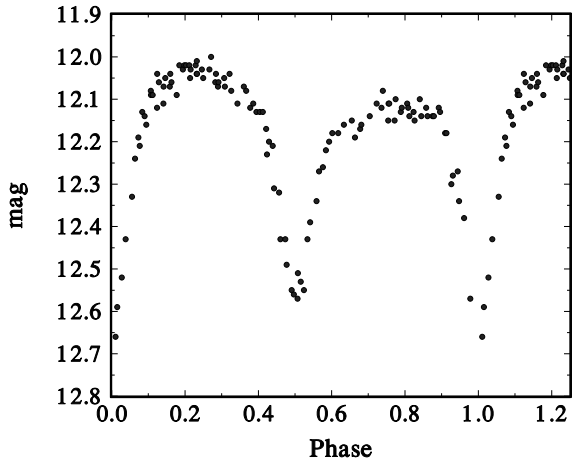

Figure 4. CCD light curve (without filter) of GSC 1522:599

VAR 4:

Name of the object:
GSC 1522:599 = ROTSE1 J165924.08+151220.7

Equatorial coordinates:	**Equinox:**
R.A.= $16^{h}59^{m}24^{s}.1$ **DEC.**= $+15°12'21''$	2000.0

Comparison star(s):	GSC 1522:351

Check star(s):	GSC 1522:1350

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

Detector:	SBIG ST-7 CCD camera

Filter(s):	None

Availability of the data:
Upon request from diethelm@astro.unibas.ch

Type of variability:	E

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 E) 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 as mentioned above during 6 nights between JD 2452056 and JD 2452082. A total of 122 CCD frames were measured of GSC 2066:1210 (VAR 1), 119 frames of GSC 2063:902 (VAR 2), 121 frames of GSC 2594:1289 (VAR 3) and 116 frames for GSC 1522:599 (VAR 4). Figures 1–4 show our observations folded with the elements:

$$\begin{aligned}
&\text{GSC 2066:1210:} && \text{JD(min,hel)} = 2452056.4147 + 0.298052 \times E;\\
&\text{GSC 2063:902:} && \text{JD(min,hel)} = 2452073.3761 + 0.391676 \times E;\\
&\text{GSC 2594:1289:} && \text{JD(min,hel)} = 2452056.4333 + 0.268179 \times E;\\
&\text{GSC 1522:599:} && \text{JD(min,hel)} = 2452065.4890 + 0.507924 \times E.
\end{aligned}$$

These elements of variation are deduced from a linear fit to the normal minima from the ROTSE1 data (Diethelm 2001) and the timings of minimum derived from our data given in Blättler (2001).
The light curve of GSC 1522:599 attracts attention through the marked difference in the brightness of the two shoulders between the minima as well as a possible variability of these brightnesses. In addition, the period should be checked because the number of revolutions between the ROTSE1 data and our new photometry is somewhat ambiguous.

Acknowledgements:

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References:

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