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GSC 3969.2430 Lac: A NEW SHORT PERIOD ECLIPSING BINARY

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Name of the object:
GSC 3969.2430

Equatorial coordinates:	**Equinox:**
R.A.= $22^h09^m37^s.5$ **DEC.**= $52°34'16''$	2000

Observatory and telescope:
Private observatory, 20-cm SCT

Detector:	SBIG ST6 camera

Filter(s):	None

Comparison star(s):	GSC 3969.2314

Check star(s):	GSC 3969.2134, GSC 3969.2994, GSC 3969.2152

Transformed to a standard system:	No

Availability of the data:
Upon request

Type of variability:	EW

Remarks:

In a photometric investigation in the field of IU Lac, GSC 3969.2430 showed to be variable. A check of the GCVS (Kholopov 1985) and NSV catalog (Kukarkin et al. 1982) did not reveal any previously known variable at this position. The brightness of GSC 3969.2430 is given as $12^m.56$. Observations were performed in 6 nights between August and December 2000. The primary and secondary minima have an amplitude of $0^m.22$ and $0^m.19$ respectively. The minimum times are calculated according to the Kwee–van Woerden method (Kwee, van Woerden 1956). A least squares fit to the data given in Table 1 (weighting half those assigned by colon) led to the preliminary ephemeris:

$$\begin{array}{c} \text{Min I} = \text{HJD } 2451817.5495 + 0^d.308894 \times E. \\ \qquad\qquad\quad \pm 2 \qquad\quad \pm 5 \end{array} \qquad (1)$$

Table 1: Observed times of minima for GSC 3969.2430, epochs and residuals computed with respect to the linear ephemeris derived in this paper

HJD 2400000 +	Type*	Epoch	$O-C$	HJD 2400000 +	Type*	Epoch	$O-C$
51771.3699	s	−150.5	+0.0001	51817.5489	p	0.0	−0.0006
51771.5226	p	−149.0	−0.0017	51838.5548	p	68.0	+0.0005
51816.314:	p	−4.0	+0.000:	51839.3283	s	70.5	+0.0018
51816.4691	s	−4.5	+0.0007	51839.4831	p	71.0	+0.0021
51816.6221	p	−3.0	−0.0007	51890.289:	s	235.5	−0.005:

* 'p' and 's' denote primary and secondary minima, respectivelty

Acknowledgements:
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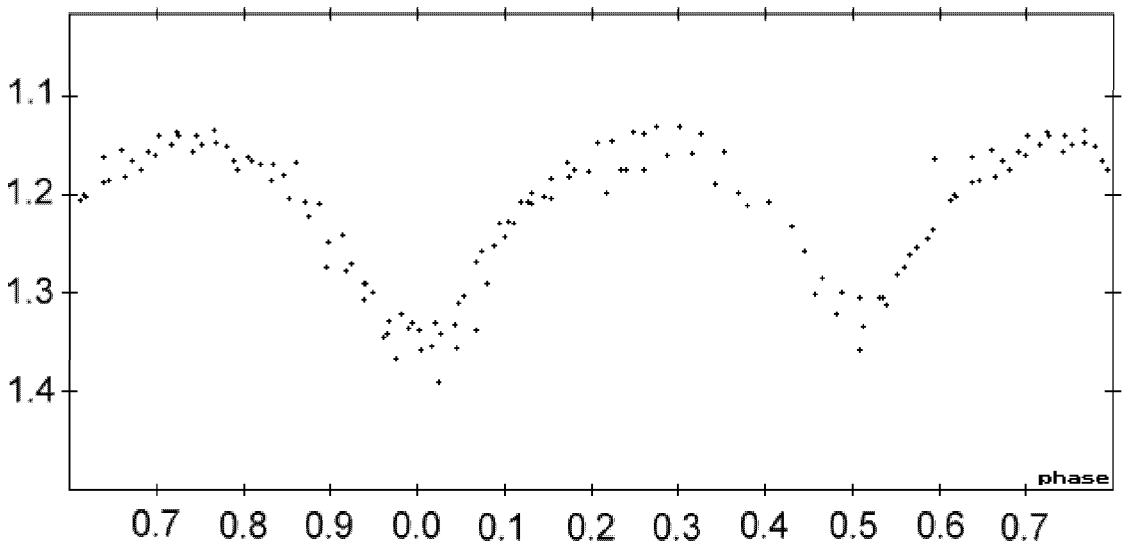

Figure 1. Differential light curve of GSC 3969.2430

References:

Kholopov, P. N. et al., 1985, *General Catalogue of Variable Stars*, 4th Edition, Nauka, Moscow

Kukarkin, B. et al., 1982, *NSV Catalogue*, Nauka, Moscow

Kwee, K. K., van Woerden, H., 1956, *Bull. Astr. Inst. Netherlands*, **12**, No. 464, 327