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CSS and SuperWASP Data for Five Variable Stars Discovered on Moscow Archive Plates

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#	Name	Other	Coord (J2000)	Type	Max	Min	System	Period	Epoch (JD)	type	Sp	Comment	L.Curve	Find.Chart	Data
1		USNO-B1.0 1241-0240997	16 22 12.47, +34 11 47.3	UG	14.1	18.7	B			other		Comm. 1	lc1.jpg	fchart1.jpg	data1.txt
2		USNO-B1.0 1336-0271465	16 26 28.35, +43 38 09.2	RRC	14.90	15.30	CV	0.304398	2454943.951	max			lc2.jpg	fchart2.jpg	data2.txt
3		GSC 2588-01076	16 38 31.46, +35 35 39.3	EB	15.05	15.82	CV	0.476071	2455454.424	min		Comm. 3	lc3.jpg	fchart3.jpg	data3.txt
4		USNO-B1.0 1300-0266340	16 47 44.31, +40 04 58.5	EW	15.40	16.07	CV	0.396884	2455350.885	min		Comm. 4	lc4.jpg	fchart4.jpg	data4.txt
5		GSC 3080-00637	17 09 57.03, +42 50 17.2	RS	12.00	12.36	SuperWASP	1.9430	2454620.55	max		Comm. 5	lc5.jpg	fchart5.jpg	data5.txt

Comments:

1. The star was found in outburst only on three Moscow archive plates taken with the 40-cm astrograph on March 8–9, 1973 (JD2441750.517, 2441750.552, 24750.579; B_{pg} ~ 14.1 on all three images). A small part of the first plate is reproduced in the right panel of the finding chart (fchart1.jpg). Later USNO-B1.0 1241-0240997 = SDSS J162212.45+341147.3 was suspected to be a cataclysmic variable star from Sloan spectra (Szkody et al. 2004). Strong hydrogen Balmer and helium emission lines are present in the spectra.
The star seems to vary in minimum brightness based on Catalina Sky Surveys photometry (see lc1.jpg). The tabulated magnitude in minimum is an average of two USNO-B1.0 blue magnitudes.

3. Min_{II} = 15.45.

4. Min_{II} = 16.00.

5. 1RXS J170956.8+425027. Rotating chromospheric active star with very fast changes of its phased light curve. Three seasons of WASP data (Butters et al. 2010) gave a possibility to detect the following changes of amplitude and light elements (the observations with errors exceeding $0^m.05$ were rejected from the analysis):
Max = 2453923.4 + 1.947 x E (2453827–53950); Ampl ~ $0^m.10$;
Max = 2454224.73 + 1.9436 x E (2454189–54316); Ampl ~ $0^m.16$;
Max = 2454620.55 + 1.9430 x E (2454553–54681); Ampl ~ $0^m.27$.
The elements in the Table are for the last season of SuperWASP data. No periodic variability was found in the Catalina Sky Survey data close to the period of 1.94 days because of the long interval of observations and the mentioned fast light-curve changes.
J = 10.034, H = 9.463, K = 9.334 (2MASS) for the bright component of the close pair, which is the variable star.

Remarks:

The new possibility of using the online publicly available photometry (Catalina Sky Surveys data, Drake et al. 2009, and WASP data, Butters et al. 2010) allowed me to investigate and classify five variable stars that earlier were suspected on Moscow archive plates.
A small number of bad data points that deviate strongly from the phased light curves were rejected from the analysis.
The coordinates in the Table are from the 2MASS catalog (Skrutskie et al. 2006).

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