ON THE VARIABILITY OF GSC 5149.2845 (BRH V121) AND GSC 5170.0175 (BRH V122)

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VAR 1:

Name of the object:
GSC 5149.2845

Equatorial coordinates:	Equinox:
R.A.= $19^h38^m22^s\!.2$ DEC.= $-03°32'37''$	2000

Comparison star(s):	GSC 5149.2931, $V \approx 11^m\!.0$

Check star(s):	GSC 5149.2509

Type of variability:	W UMa

VAR 2:

Name of the object:
GSC 5170.0175

Equatorial coordinates:	Equinox:
R.A.= $20^h20^m23^s\!.9$ DEC.= $-03°48'59''$	2000

Comparison star(s):	GSC 5170.0119, $V \approx 11^m\!.3$

Check star(s):	GSC 5166.2478

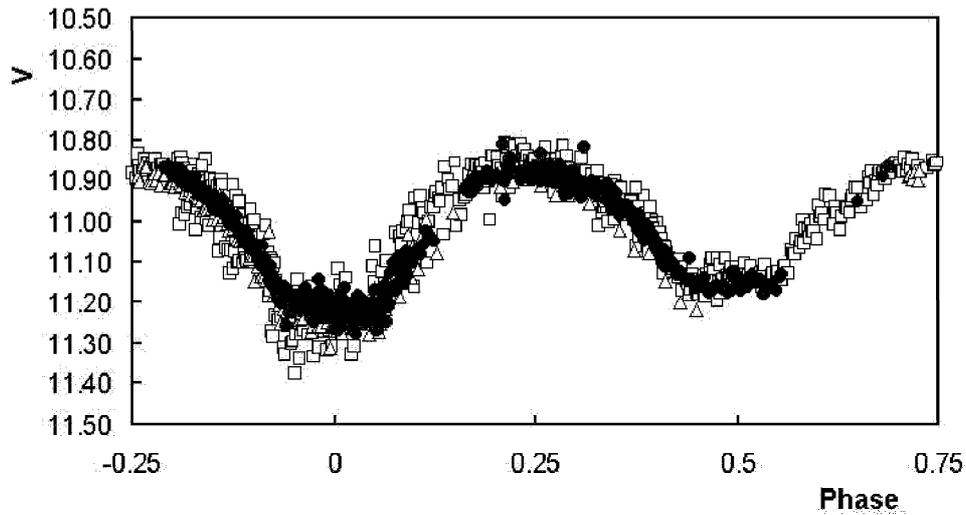| Type of variability:	RRab

Figure 1. The phase diagram of GSC 5149.2845, CCD observations of K. Bernhard (filled circles), S. Kiyota (open triangles) and O. Pejcha (open squares), assuming that the comparison star GSC 5149.2931 has $V=11.0$ mag

Observatory and telescope:
K. Bernhard: Private observatory, 20-cm Schmidt-Cassegrain telescope (1);
S. Kiyota: Private observatory, 25-cm Schmidt-Cassegrain telescope (2);
O. Pejcha: Brno observatory, 40-cm Newtonian telescope (3)

Detector:	K. Bernhard: Starlight Xpress SX CCD camera;
	S. Kiyota: SBIG ST-6 CCD camera;
	O. Pejcha: SBIG ST-7 CCD camera;

Filter(s):	K. Bernhard: None;
	S. Kiyota, O. Pejcha: V

Transformed to a standard system:	No

Availability of the data:
Upon request

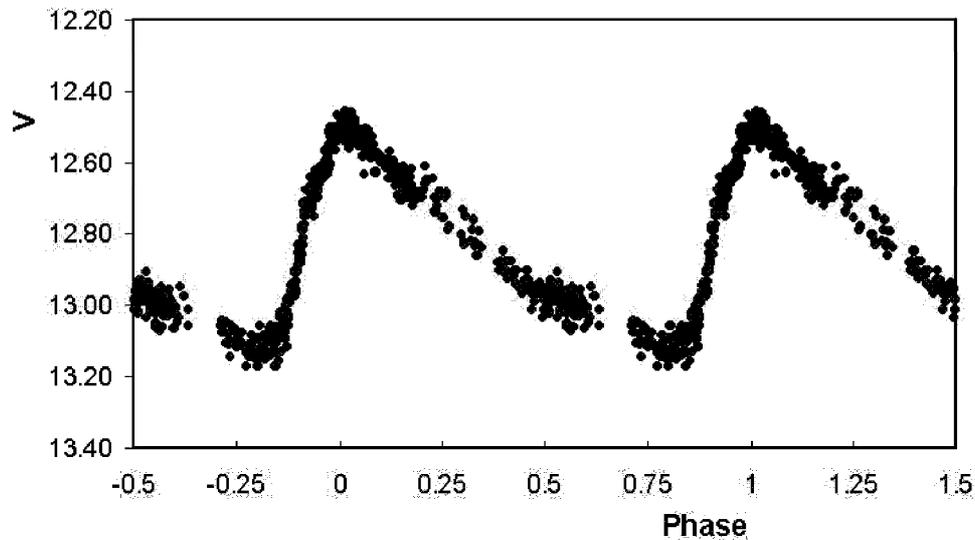| Remarks: |
|---|
| The variability of GSC 5149.2845 and GSC 5170.0175 has been found as part of a programme to discover and classify new variables using CCD observations of selected fields on the edge of the northern Milky Way (Bernhard & Lloyd 2000). Further observations of 5149.2845 were performed on 9 nights in the first, on 4 nights in the second and on 3 nights in the third observatory between August and September 2002. GSC 5170.0175 was observed on 7 nights in September 2002 in the first observatory. |
| The ephemeris were calculated using the "Phase Dispersion Minimization" method. |

Figure 2. The phase diagram of GSC 5170.0175, CCD observations of K. Bernhard (filled circles), assuming that the comparison star GSC 5170.0119 has V=11.3 mag

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Remarks:

The light curves show variations of a W UMa star for GSC 5149.2845 and of a RRab star for GSC 5170.0175.

Vizier investigations show that GSC 5149.2845 is a likely X-ray source (1RXS J193821.2-033245), which supports the classification as a W UMa variable.:

GSC 5149.2845:

$$\mathrm{MinI} = \mathrm{HJD}\ 2452522.440 + 0\overset{d}{.}4128 \times E.$$
$$\pm 7 \qquad \pm 1 \tag{1}$$

GSC 5170.0175:

$$\mathrm{Max} = \mathrm{HJD}\ 2452523.40 + 0\overset{d}{.}5152 \times E.$$
$$\pm 1 \qquad \pm 1 \tag{2}$$

Reference:

Bernhard, K., Lloyd, C., 2000, *IBVS*, No. 4920