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uvbyβ PHOTOMETRY OF V1719 Cyg

uvby photoelectric photometry of the pulsating variable V1719 Cyg was carried out at Abastumani Astrophysical Observatory during three nights , 10-11, 11 - 12, 12 - 13 September, 1986 with the 125 cm automatic reflector. Measurements were made relative to the star HD 200739. Crawford's primary standards were found to be too bright for our apparatus; besides, they are considerably far from the comparison star. So HD 200739 was reduced to HD 201319. Photometric characteristics for the latter were taken from the catalogue of Perry and Johnson (1982). The results for the comparison star are as follows:

$$y = 8.282 \pm 0.007, \quad b-y = 0.096 \pm 0.005,$$
$$m_1 = 0.227 \pm 0.010, \quad c_1 = 1.009 \pm 0.014, \quad \beta = 2.854 \pm 0.016$$

(the r.m.s. errors are obtained for a series of 20 observations). Such a high value of the m_1 index for HD 200739 was not a surprise as it is a metallic line star (Bertaud, 1960).

The technique of observing the RR Lyrae stars with our telescope was previously discussed in detail (Alania and Abuladze,1986). Altogether 220 light estimations are obtained for V1719 in each colour of the uvbyβ system. They are very well distributed in phase.

By averaging the observed values close in phase the normal curves v, b-y, m_1, c_1 and β were drawn, Then, according to Crawford's method (1975, 1979) they were corrected for the effect of the interstellar light absorption. On the average E(b-y) = 0.042 was obtained. Phases were calculated according to Poretti's (1984) elements

$$\text{Max.Hel.} = 2444212.145 + 0^d.267298.E$$

According to our observations $O-C=-0^p.07$. b-y and c_1 corrected for the interstellar absorption, were plotted on Relyea and Kurucz's (1978) theoretical diagrams for b-y and c_1 to determine the effective temperatures and gravity on the stellar surface for the solar content. Calculations were carried out for each phase of the normal curves. Figure 1 shows the variations of all

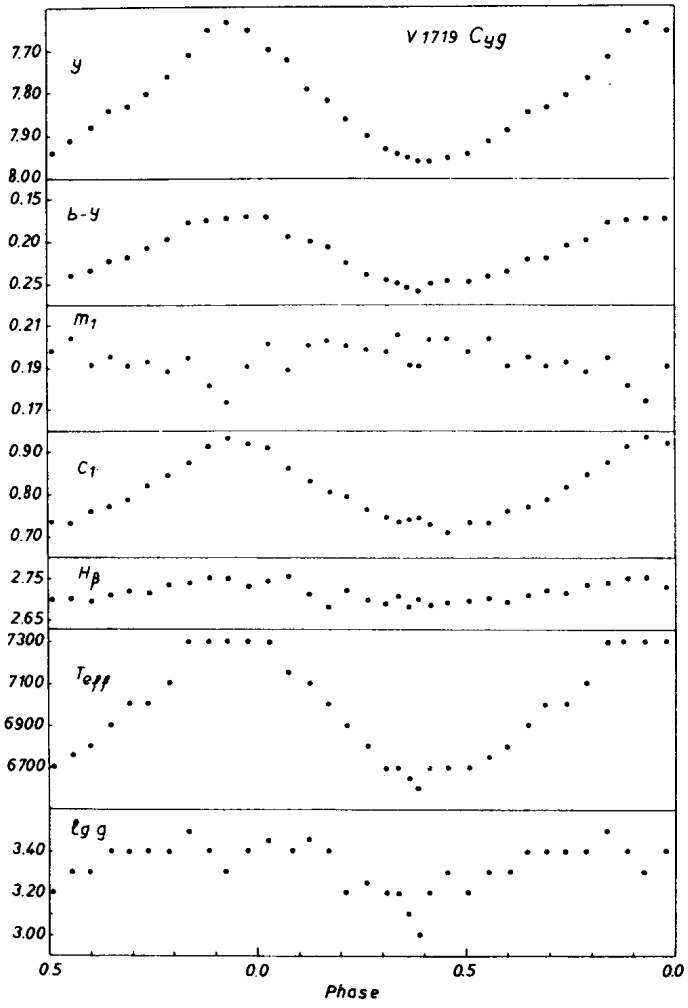
V 1719 Cyg
y
7.70
7.80
7.90
8.00
b-y
0.15
0.20
0.25
m1
0.21
0.19
0.17
c1
0.90
0.80
0.70
Hβ
2.75
2.65
Teff
7300
7100
6900
6700
lg g
3.40
3.20
3.00
0.5
0.0
0.5
0.0
Phase

Figure 1

the photometric characteristics for V1719 Cyg during a cycle.

It is known that RRc stars are characterised by a certain structure at their maxima on the light curves. This feature was not observed for the star in question. A mean value of m_1 over the cycle is 0.197, which according to the relation (Butler,1975)

$$[\ Fe/H\ ] = 15.87(m_1)_o - 2.86$$

gives +0.3 for [Fe/H].

In addition, m_1 somewhat decreases near the maximum light of V1719 Cyg.

Table I contains the extreme values of V=y, b-y, c_1, β, T_{eff} and lg g.

Table I

Parameters	Max.	Min.	Amplitude
y	7.63	7.96	0.33
b-y	0.172	0.253	0.081
c_1	0.935	0.724	0.211
β	2.755	2.685	0.070
T_{eff}	7300	6700	600
lg g	3.40	3.20	0.20

The observational material and discussion will be published elsewhere.

I.PH.ALANIA

Abastumani Astrophysical Observatory,
Academy of Sciences of the Georgian SSR,
U.S.S.R.

References:

Alania, I.Ph. and Abuladze,O.P., 1986, Bull.Abastumani Astrophys.Obs., 61, 3.

Bertaud,Ch., 1960, J.Obs. 43, 129.

Butler, D., 1975, Astrophys.J. 200, 68.

Crawford, D.L. , 1975, Astron. J. 80 , 955
1979, Astron. J. 84 , 1858

Perry, C.L. and Johnson, L., 1982, Astrophys.J. Suppl. 50 , 451.

Poretti,E., 1984, Astron.Astrophys.Suppl. 57, 435.

Relyea,L.J. and Kurucz,R.L., 1978, Astrophys.J. Suppl. 37, 45.