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G326 - ANOTHER DELTA SCUTI STAR IN THE FIELD OF M4

G326 (Greenstein 1939) = A63 (Alcaino 1975) = L3316 (Lee 1977) is a field star in the direction of the globular cluster M4. The projection distance of the star from the center of the cluster is $x = 110''3$, $y = 458''4$. The proper motion study shows that its $P_c = 0$ (Cudworth 1990). The magnitudes and colors given by the different authors are:

V = 13.03,	B-V = 0.71,	(Alcaino 1975)
13.00,	0.76,	(Lee 1977)
13.04,	0.71, U-B = 0.28	(Cacciari 1979)
12.97,	0.81,	(Cudworth 1990)

If the values of $E_{B-V} = 0.44$ and $E_{U-B} = 0.78E_{B-V}$ are accepted, the star's $(B-V)_0$ is about 0.31 and $(U-B)_0 = -0.06$, suggesting a spectral type of F0 (but the $(U-B)_0$ is too blue if it is a Pop. I dwarf star).

G326 was used as a comparison star to check the light variability of

G326-G298

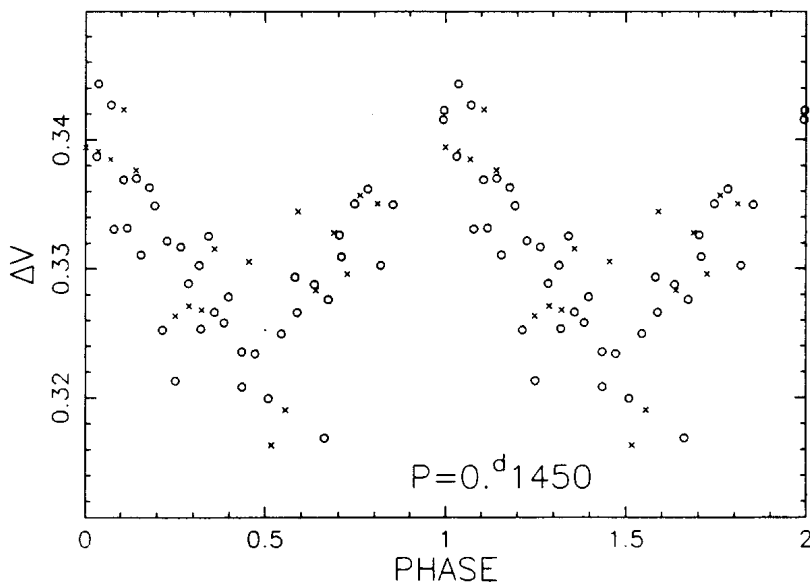


Figure 1

2

G326-G298

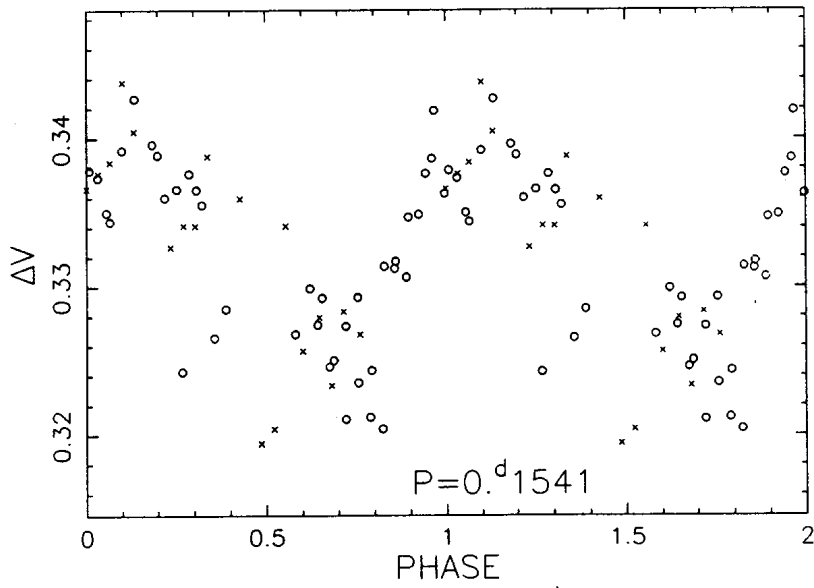


Figure 2

G326-G298

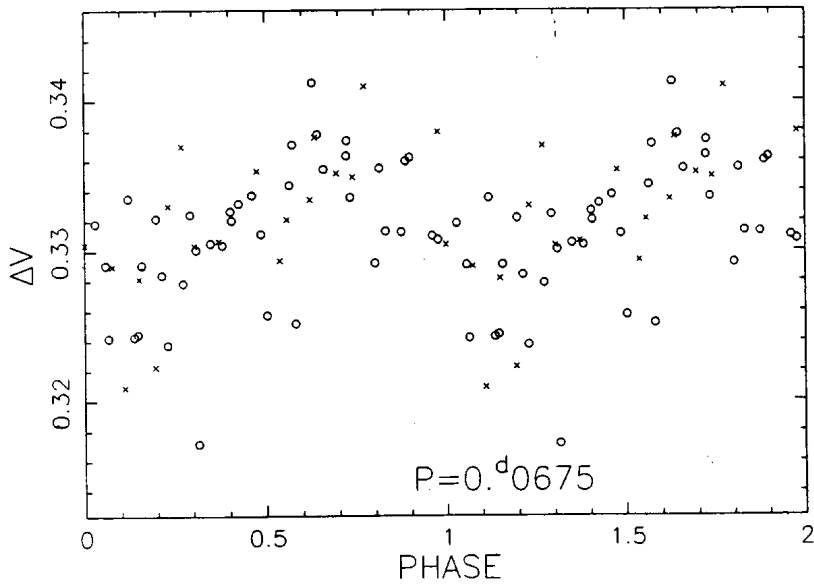


Figure 3

the horizontal branch star G327 in the past. It was shown later that G326 itself was a variable too. The CCD data and the method of reduction used in this paper are the same as before (Yao 1991). Only the zero point shift of about $0^m.01$ between two nights was adjusted.

The preliminary results are:

$$m(t) = 0.329 + \sum_{i=1}^3 A_i \sin(2\pi t/P_i + 2\pi\phi_i)$$

Here

$$\begin{aligned} P_1 &= 0^d.1450, & A_1 &= 0.00801, & \phi_1 &= 0.2518 \\ P_2 &= 0.1541, & A_2 &= 0.00698, & \phi_2 &= 0.4069 \\ P_3 &= 0.0675, & A_3 &= 0.00387, & \phi_3 &= 0.7569 \end{aligned}$$

The folded light curves are given in Figs. 1,2 and 3. Each light curve is plotted with the data prewhitened with the other two frequencies. There is little doubt that G326 is a new Delta Scuti star. However, the periods should be considered as preliminary only due to the limited data.

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References:

- Alcaino, G.: 1975, *Astro. Astrophys. Supp.*, 21, 1.
 Cacciari, C.: 1979, *A.J.*, 84, 1543.
 Cudworth, K.M.: 1990, *A.J.*, 99, 1491.
 Greenstein, J.L.: 1939, *Ap.J.*, 90, 387.
 Lee, S.W.: 1977, *Astro. Astrophys., Supp.*, 27, 367.
 Yao Bao-an: 1991, *IBVS.*, No.3622.