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HD 205249: A NEW VARIABLE STAR

Because Bidelman and MacConnell (1973) reported Ca II H and K emission, we suspected HD 205249 might be an RS CVn binary and therefore might show the photometric wave characteristic of most stars of that type. According to their table VII, $m_v = 8^m.0$ and the spectral type is K1 III.

Henry and Sherlin, observing in V with the 48-inch Newtonian at Cloudcroft, obtained data on 4 nights between JD 2444872.7 and 2444877.7 and on 8 nights between 2445119.9 and 2445153.9. The comparison star was BD $-14^\circ 6063$. The individual differential magnitudes, corrected for differential extinction and transformed differentially to V of the UBV system, have been sent to the I.A.U. Commission 27 Archive for Unpublished Observations of Variable Stars (Breger 1979), where they are available as file no. 106.

Inspection of our data showed immediately that HD 205249 was variable, with an amplitude of $\Delta V = 0^m.13$. The two groups of data do not cover the entire light variation between maximum and minimum, but the portions covered do indicate a period greater than about 50 days. Further analysis of the data suggests that a period of 58 days would combine the two groups into a smooth light curve. The figure below is a plot of the nightly means, where

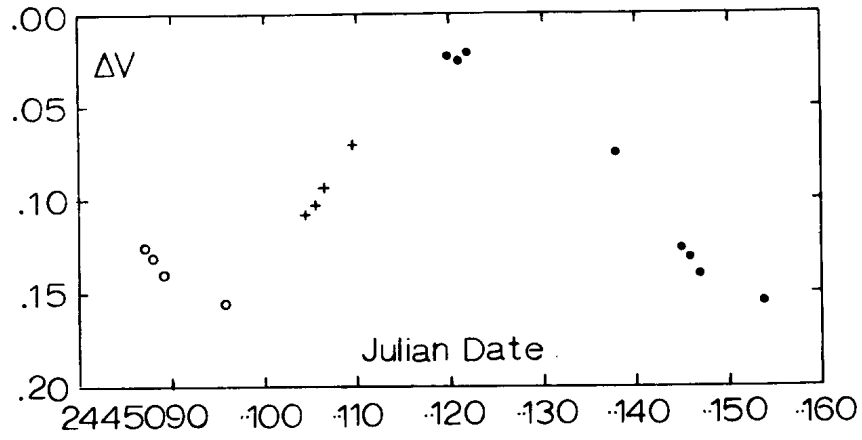

Figure 1

ΔV is in the sense variable minus comparison. The dots are from the second group; the circles are the last four points moved back one cycle (58 days); and the plusses are from the first group, moved forward four cycles (232 days).

If this interpretation is correct, then a time of maximum would be JD 2445121 and a time of minimum would be 2445154. The slight asymmetry (faster rise, slower decline) is consistent with the steeper slope defined by the four points of the first group.

The photometric period of 58 days, which we tentatively suggest, is not firmly established, however, and should be confirmed with additional photometry. We have been in communication with Luis Balona and T. Lloyd Evans of the South African Astronomical Observatory, who tell us they have been obtaining spectrocopic and photometric observations of this star (and all of the stars in table VII of Bidelman and MacConnell). If radial velocity measures indicate HD 205249 is a binary system with an orbital period around 58 days, then it would be a long-period RS CVn binary by the definition of Hall (1976).

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References:

Bidelman, W. P. and MacConnell, D. J. 1973, A. J. 78, 687.

Breger, M. 1979, I.B.V.S. no. 1659.

Hall, D. S. 1976, I.A.U. Colloq. No. 29, 287.