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HD 185510: A NEW VARIABLE STAR

Because Bidelman and MacConnell (1973) reported Ca II H and K emission, we suspected HD 185510 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, $m_v = 8^m.1$ and the spectral type is KO III/IV.

Henry, observing with the No. 4 16-inch Cassegrain at Kitt Peak, obtained data on 3 nights between JD 2444716.9 and 2444719.9. Henry and Sherlin, observing with the 48-inch Newtonian at Cloudcroft, obtained data on 6 nights between JD 2444872.6 and 2444893.6 and on 11 nights between 2445115.9 and 2445153.9. All observations were made in V with BD - 6°5222 as the comparison star. 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and transformed differentially to V of the UBV system, have been sent to the I.A.U. Commission 27 Archive for Unpublished Observations of Variable Stars (Breger 1979), where they are available as file no. 106.

Examination of our data showed immediately that HD 185510 is variable, with an amplitude of $\Delta V = 0^m.20$. We had difficulty finding one period which would combine all of the data into a light curve which had a smooth shape and no discrepant points. As the figure below shows, the period does seem to be around 25 days. This is a plot of the nightly means of the second group of Cloudcroft data, where ΔV is in the sense variable minus comparison.

Additional photometry should be obtained in order to determine the photometric period accurately and see if all of our data can be phased together properly. We have been in communication with Luis Balona and T. Lloyd Evans of the South Africa Astronomical Observatory, who tell us they are obtaining spectroscopic and photometric observations of this star (and all of the stars in table VII of Bidelman and MacConnell). If radial velocity measures indicate HD 185510 is a binary system with an orbital period

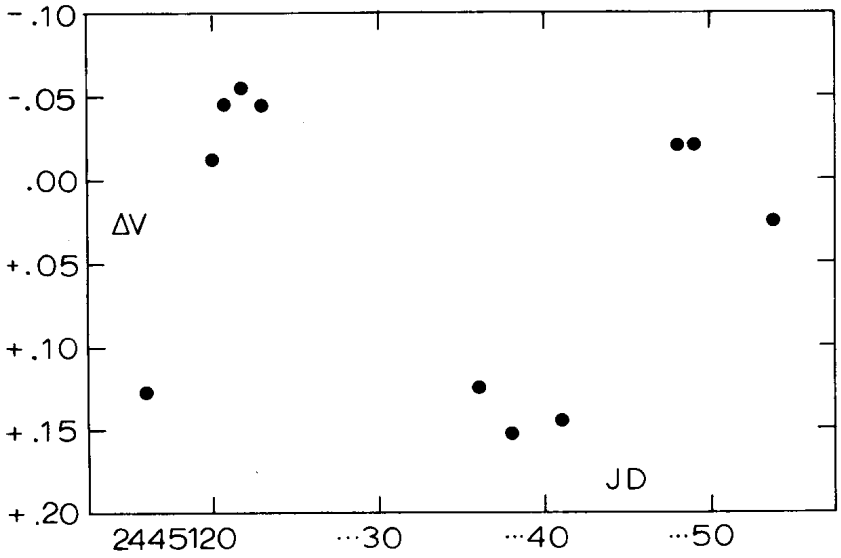

Figure 1

around 25 days, then it would be a long-period RS CVn binary by the definition of Hall (1976).

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