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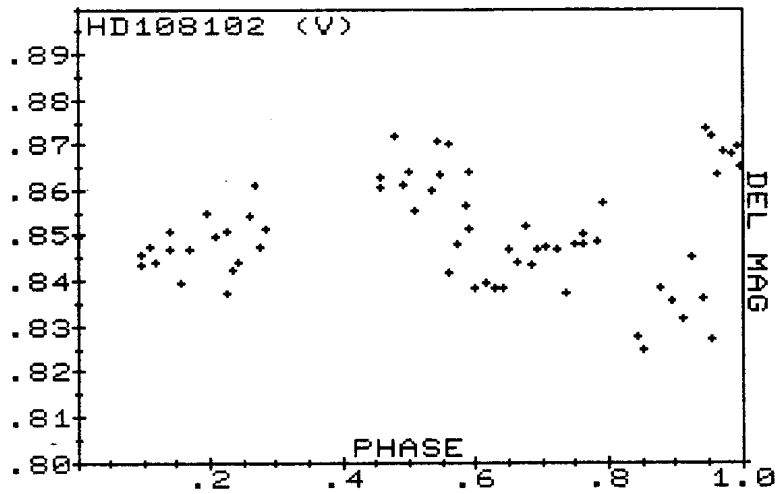
1982 UBVR PHOTOMETRY OF HD 108102

We have completed a light curve for HD 108102 (SAO 82295, BD +26° 2347) that shows its photometric variability. The data was obtained between March 17, 1982 and June 10, 1982 at the University of New Mexico's Capilla Peak Observatory. Our photon-counting system employs a cooled EMR 641A phototube and a Kitt Peak UBVR filter set. The photon counts are fed to a microcomputer, which integrates the data online to insure statistical errors for each point of about  $\pm 0.01$  magnitude or less (Elston and Zeilik, 1982).

We used SAO 82325 (G5) as our comparison star. We compared the magnitude of this star at V band with that of SAO 82631 (our comparison star for UX Com) at very similar air masses for five different nights and found the total variation to be less than  $\pm 0.01$  magnitude, consistent with our statistical error, so SAO 82325 appears to have constant light output.

Our results are summarized in Figures 1-4 in the instrumental UBVR magnitude system (comparison minus source). Phases were calculated using the spectroscopic period for this noneclipsing binary system, 0.9616 day (Barry, 1979), and an arbitrary epoch of 2440000.0. The nights of observation and phases covered are listed in Table I.

Variations of the light curve of about 0.04 magnitude (except for the R-filter data where more scatter is present) follow the same general pattern in all four figures. The star definitely exhibits optical variability, but the



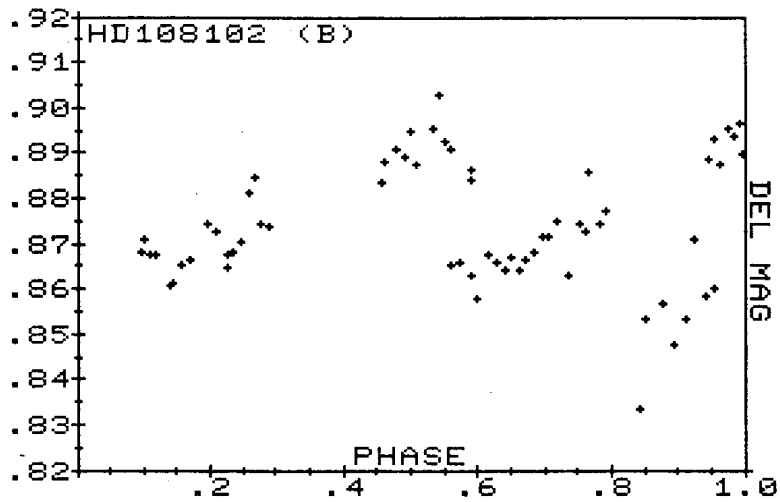


FIGURE 3

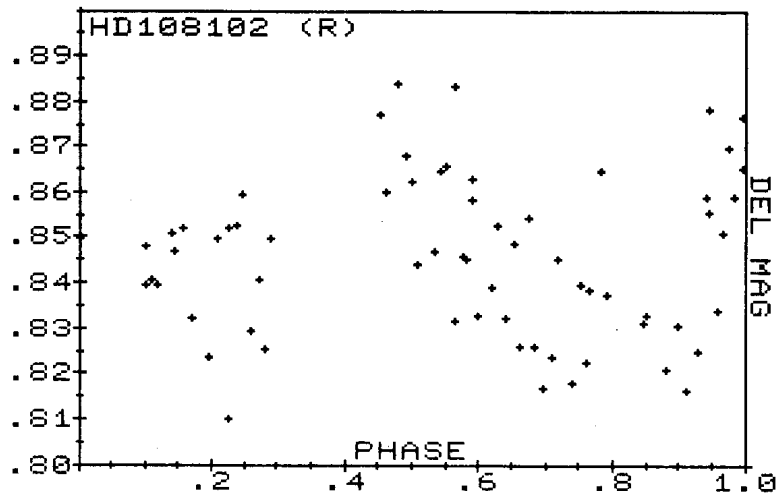


FIGURE 4

TABLE I - 1982 Phase Log HD 108102

<u>Date (UT)</u>	<u>Phase</u>	<u>Date (UT)</u>	<u>Phase</u>
3/17	0.56-0.78	5/21	0.09-0.16
4/3	0.19-0.28	5/31	0.46-0.59
4/19	0.94-0.99	6/10	0.84-0.95

regions of phase overlap (0.56-0.59 and 0.94-0.95) have such large discontinuities in magnitude that we are sure that the photometric period and the spectroscopic period are not the same. Analysis of the data using a minimum-line-length routine while varying the period indicates that other periods near one day (notably 0.82 and 1.3 day) may fit the data much better, but further analysis and new observations with smaller gaps will be required to determine the actual photometric period.

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