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HD 97305: A NEW VARIABLE IN LEO

While engaged in an observing program devoted to studying the possible long-term light variations of supergiants, it was discovered that one of the stars utilized for comparison purposes was variable. This star, HD 97305, was found to vary over a V range of 0.375 magnitudes from 28 observations.

Differential BV photometry was obtained for HD 97305 with 3 telescope-photometer systems. The major portion of the work was done with the 0.6-m. telescope and uncooled single channel photon-counting photometer of the Corralitos Observatory. 5 magnitudes each in B & V were contributed from the Kitt Peak Observatory's #2 0.9-m. telescope and automated filter photometer with its 1P21 photomultiplier tube. Finally, Stromgren by magnitudes were obtained on three nights with the Lowell Observatory 1.1-m. telescope and red photometer. Sufficient standard stars were observed with all the systems so as to allow meaningful intercomparison of the magnitudes. Standard stars also allowed the transformation of the Lowell by magnitudes to BV.

The comparison stars chosen for HD 97305 were HD 98502 (V= 7.694; B-V=+.984; K0) and HD 98217 (V=6.841; B-V=+.922; G5). The average standard errors about the mean in V and B-V for these comparison stars were 0.014 and 0.023 magnitudes respectively.

Figure 1 shows the magnitudes graphically for HD 97305 and Table I details the values. The star would appear to be a variable in both V and B-V. There is a tendency towards brightening and

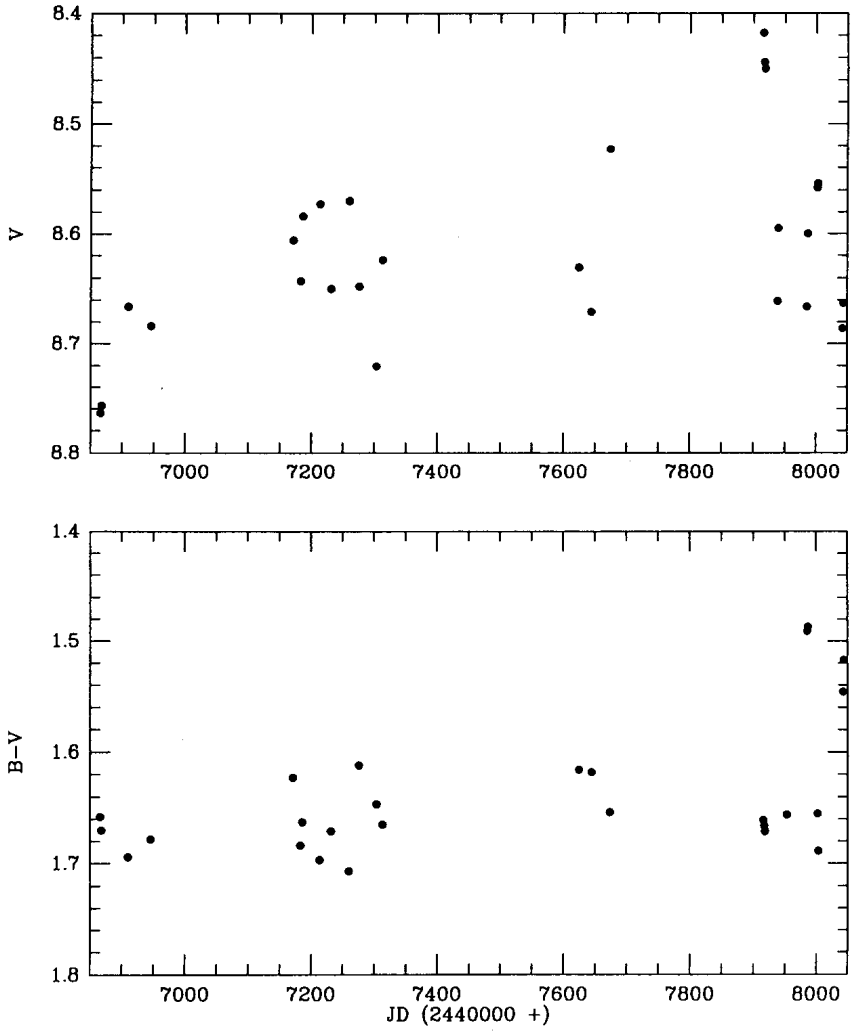

FIGURE 1: V and B-V MAGNITUDES FOR HD 97305

TABLE I

JD	V	B-V	JD	V	B-V
6865.8854	8.764	+1.658	7644.6819	8.671	+1.618
6867.8597	8.757	1.670	7673.6854	8.523	1.654
6909.7319	8.666	1.694	7915.8542	8.418	1.661
6945.6979	8.684	1.678	7916.8854	8.444	1.666
7170.8979	8.606	1.623	7917.8653	8.450	1.671
7182.9778	8.643	1.684	7938.8438	8.661	
7185.9194	8.584	1.663	7939.7942	8.595	
7212.8951	8.573	1.697	7952.7062	8.389	1.656
7230.8639	8.650	1.671	7985.7111	8.666	1.491
7259.7424	8.570	1.707	7986.7021	8.600	1.487
7275.7993	8.648	1.612	8001.7486	8.558	1.655
7303.6896	8.721	1.647	8002.6910	8.554	1.689
7312.7278	8.624	1.665	8042.6764	8.686	1.546
7624.7139	8.631	1.616	8043.6785	8.663	1.517

bluing in the last observing season. A period search utilizing the Minimum Phase Dispersion Technique of Stellingwerf (1978) over the possible range of periods 0.5 to 525 days revealed a possible periodicity at 437.64 days, though it was unconvincing when examined as a phase diagram. Therefore, at present, the variability of HD 97305 is considered to be of an unknown or irregular type. Despite its comparative brightness, no previous spectrum history could be located for HD 97305 except for the spectral type of K5 given in the HD Catalog. In view of the large magnitude range over which the star varies, it would seem that a current spectrum would be of interest.

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