

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS

Number 3501

Konkoly Observatory
Budapest
8 August 1990

HU ISSN 0374 - 0676

HD 90892: A NEW VARIABLE IN HYDRA

While engaged in an observing program devoted to the study of the long-term light variations of Be stars, it was noted that one of the stars chosen as a comparison was in itself variable. This star, HD 90892, was found to change irregularly in V magnitude from 50 observations over the time period JD 2447124-8015 by a range of approximately 0.247 V magnitudes.

Differential BV photometry of HD 90892 was obtained with 3 separate observing systems. The majority of magnitudes were taken with the 0.6-m. telescope of the Corralitos Observatory and its uncooled single channel photon-counting photometer. The 5 magnitudes on JD 7182-6 were derived from the Kitt Peak Observatory's #2 0.9-m. telescope and its automated 1P21-based filter photometer. Finally, Stromgren *b* magnitudes were obtained on JD 7938-9 with the Lowell Observatory 1.1-m. telescope and red photometer. These were then transformed to BV magnitudes. Observations of a sufficient number of standard stars with the Kitt Peak and Lowell Observatory photometric systems allowed their magnitudes to be well integrated with those from the Corralitos.

Three comparison stars were utilized to derive magnitudes for HD 90892. Initially, HD 91120 ($V=5.583$; $B-V=-.028$; B9 IVe) and HD 90045 ($V=6.592$; $B-V=+.497$; F6/7 V) were chosen. Despite the fact that HD 91120 is a Be star and potentially variable, its magnitude was found to be entirely constant during the time period of observation. Therefore, its use as a comparison star was justified.

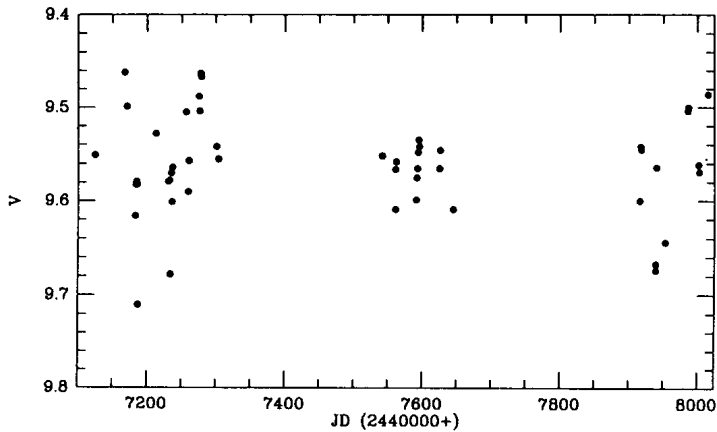


FIGURE 1: V MAGNITUDES FOR HD 90892

In the last observing season another comparison star (HD 91816; $V=8.040$; $B-B=+.860$; K3 V) was added in an attempt to provide a fainter star for the observations. The mean standard errors in V and B-V for the comparison stars were 0.017 and 0.015 magnitudes respectively.

Figure 1 presents the V changes for HD 90892, and Table I the magnitudes themselves. Clearly, the star is variable in V, though perhaps not in B-V (mean B-V = $+0.371 \pm 0.020$).

Previous history for HD 90892 is quite sparse, undoubtedly due to its relative faintness. It does not appear in either the GENERAL CATALOGUE OF VARIABLE STARS or the CATALOGUE OF SUSPECTED VARIABLES. The only published spectral type would appear to be that of Houk & Smith-Moore (1988) who give A1/2 V + (G/K) composite. No other references could be located with the exception of a spectral type of A2 V from Buscombe & Foster (1990).

The type of variability which HD 90892 displays is at present considered to be irregular or unknown, and perhaps derives from some consequence of binarity or from variations of the G/K companion. An analysis for possible periodic behavior was carried

TABLE I

JD	V	B-V	JD	V	B-V
7124.9933	9.551	+.390	7541.8250	9.552	+.375
7167.8944	9.462	.370	7560.8499	9.609	.359
7170.8606	9.499		7560.8660	9.566	.379
7182.9184	9.616	.399	7561.8035	9.558	.373
7183.8852	9.582		7590.7597	9.599	.386
7184.8921	9.579	.392	7591.8222	9.575	.395
7185.8950	9.582	.397	7592.8063	9.565	.378
7186.9103	9.710	.406	7593.7443	9.548	.391
7212.8287	9.528		7594.7417	9.535	.376
7230.7733	9.579	.392	7595.7597	9.542	.323
7232.7545	9.578	.341	7624.7049	9.565	.396
7233.7559	9.678	.358	7625.6507	9.546	.384
7234.7747	9.570	.342	7644.6660	9.609	.374
7235.7441	9.601	.391	7915.8486	9.600	.378
7236.7691	9.565	.388	7916.8812	9.542	.389
7256.7039	9.505	.339	7917.8618	9.545	.401
7259.7038	9.590	.386	7938.8151	9.667	
7260.7058	9.557	.405	7938.8521	9.674	
7275.6744	9.488	.346	7939.7877	9.564	
7276.6715	9.504		7952.7028	9.644	.386
7277.6895	9.463		7985.7021	9.504	
7278.6776	9.467	.346	7986.6986	9.500	
7300.6731	9.542	.399	8001.7326	9.561	
7303.6583	9.555	.377	8002.6819	9.569	.392
7540.8674	9.552	.375	8015.7278	9.486	

out using the Minimum Phase Dispersion Method of Stellingwerf (1978) for the range in possible periods of 0.5 to 396 days. A possible period of 55.052 days was indicated, though not strongly. Examination of the phase diagram for that period showed unconvincing regularity. Therefore, at present it is considered that no periodicity was found.

HD 90892 would seem to be an interesting star to examine for

spectroscopic changes in view of its relatively large photometric range.

Sincere thanks are rendered to C. Gullixson and T. Kreidl for their assistance with the Lowell telescope and photometry system.

E.M. HALBEDEL

Corralitos Observatory
P.O. Box 16314
Las Cruces, NM 88004
U.S.A.

REFERENCES

- Buscombe, W. & Foster, B.E. (1990) MK SPECTRAL CLASSIFICATIONS, 8TH GENERAL CATALOGUE (Evanston: Northwestern Univ.).
- Houk, N. & Smith-Moore, M. (1988) MICHIGAN CATALOGUE OF TWO-DIMENSIONAL SPECTRAL TYPES FOR THE HD STARS (Ann Arbor: Univ. of Michigan).
- Stellingwerf, R. (1978) *Astrophys. J.*, 224, 953.