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SOME NON-VARIABLE STARS

Although optical variability of stars remains an excellent indicator of unusual conditions, the non-variability of stars that are interesting or unusual from a spectroscopic point of view is also of interest. This paper reports on the photometric monitoring of ten stars which might have been considered potentially variable from their spectra. Table I details the stars and the reason for which they were chosen for observation.

TABLE I

THE PROGRAM STARS

HD 31342	Possible variable from Halbedel (1986).
32640	Possible variable from Halbedel (1986).
37149	Helium weak Be star.
97859	Possible variable from Geneva photometry (Rufener & Bartholdi, 1982); A0.
128220	Possible variable from Geneva photometry (ibid.); sdO + G0 III.
134458	F3 V star.
135485	B5 IIp star.
157857	O7f star with x-ray emission. Possible neutron star companion.
192641	WC+B binary system.
210208	Spectroscopic binary with Hα emission (Bidelman, 1988).

Differential BV photometry was performed for each of the above stars primarily with the 0.6-m, telescope of the Corralitos

TABLE II

STAR	V, SE	B-V, SE	#	JD RANGE	COMPARISON STARS, V, B-V
HD 31342	9.057 (.025)	+.169 (.018)	14	6335-7590	HD 31380 (8.985; +.213) 32316 (8.117; +.287)
HD 32640	8.692 (.020)	+.303 (.019)	12	6331-7590	HD 33153 (9.263; +.197) 33183 (9.113; +.261)
HD 37149	8.052 (.018)	-.095 (.016)	17	6376-7234	HD 37141 (8.451; +.007) 37173 (7.862; -.073)
HD 97859	9.349 (.023)	-.081 (.022)	28	7300-8042	HD 98452 (9.233; +.265) 98631 (7.166; +.402)
HD 128220	8.471 (.016)	+.303 (.029)	19	7300-7704	HD 127667 (7.821; +.499) 128254 (8.444; +1.071)
HD 134458	8.767 (.017)	+.460 (.016)	29	6866-7326	HD 133772 (7.469; +.075) 134214 (7.473; +.354)
HD 135485	8.158 (.013)	-.058 (.018)	28	6866-7326	HD 135637 (8.036; +.282) 136276 (7.933; +.397)
HD 157857	7.777 (.014)	+.216 (.035)	6	6867-7703	HD 157499 (8.074; +.922) 158119 (9.094; +.431)
HD 192641	7.901 (.019)	+.292 (.032)	9	7313-7703	HD 192661 (6.571; +1.307) 192745 (8.177; +.025)
HD 210208	7.959 (.017)	+.072 (.022)	15	7790-7881	BD+42 4298 (8.613; +1.027) BD+42 4301 (8.563; +.738)

Observatory and its uncooled single-channel photon-counting photomultiplier which utilizes an EMI 9924A tube. Several magnitudes were also obtained with the Kitt Peak Observatory #2 0.9-m. telescope and its automated filter photometer and 1P21 tube. There was excellent consistency between the Kitt Peak and Corralitos systems: 0.003 magnitudes in Δ V & Δ B-V, a difference not considered significant. The average standard errors about the mean for the comparison stars for all the stars concerned were 0.017 and

0.020 magnitudes in V and B-V respectively. Therefore, the average external errors of the program stars may be considered to be comparable.

Table II details the mean magnitudes, comparison stars utilized, and time periods of observation for the program stars. All were considered to be non-variable over the time periods over which they were observed. Remarks on individual stars follow.

HD 31342, 32640: Although stated to be possibly variable by Halbedel in a previous paper, sustained series of observations have revealed that they are essentially constant. HD 31342, however, has a higher standard error in V than the other stars and may be microvariable at the limits of detection of the Corralitos system.

HD 97859: Photometric observations at Geneva showed a possible microvariability in V magnitude. This was not confirmed over the time period stated.

HD 128220: Found to be microvariable in V and colors at Geneva, HD 128220 was also found to be non-variable over the JD range 2447275-7328 by Hooten et al. (1989) for 88 observations over 47 nights.

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