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UBV PHOTOELECTRIC PHOTOMETRY FOR FLARE STARS
IN THE PLEIADES CLUSTER

Seventeen stars in the Pleiades cluster were observed in the UBV system of Johnson and Morgan (1953). The observations were made with the 1 m telescope of the Lunar and Planetary Laboratory on Mount Lemmon. The stars observed were taken from two lists of flare stars given to the author in advance of publication by Dr. G. Haro. He has recognized these stars as members of the Pleiades cluster, with the exception of HII 2591 and HII 3065. Most of the stars in this work have been observed previously by Johnson and Mitchell (1958). Initially at least two observations for each star were planned in order that the new list have the same weight as the one published earlier (Iriarte 1967). This was not accomplished in every case.

The observations are listed in Table 1. Column 1 gives the original flare star numbers as given in Haro's list. The meaning of the letters preceding the numbers is as follows: T (Tonantzintla), A (Asiago), B (Byurakan), K (Konkoly). Column 2 gives the Hertzsprung (1947) number of the star; Columns 3, 4, and 5, the V magnitudes and the B-V and U-B colors, respectively; Column 6, the number of observations; Column 7, the spectral types. The classification of the spectral type of HII 1100 is by Wilson (1963), the remaining by Kraft and Greenstein (1969).

Great care was exercised in the standardization of the region. A considerable amount of observing time was expended on standard stars. HII 1084, a reddened AoV star member of the Pleiades cluster was used as a secondary standard. An analysis of the data will be published at an early date.

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Table 1

Original flare star number	Star	V	B-V	U-B	n	Spectral type
T56b	HII 97	12.65	1.08	0.87	3	
A90	HII 324*	13.12	1.02	0.79	4	
T160	HII 347	14.04	1.41	-	2	K7Ve
T45	HII 590	14.34	1.37	-	2	
T13	HII 686	13.38	1.27	-	1	
B212	HII 1029	14.21	1.52	-	1	
A148	HII 1039	13.07	1.23	0.79	2	
T43b	HII 1100	12.13	1.17	0.86	2	dK3e
T58b	HII 1553	12.35	1.13	0.76	1	
T48b	HII 1883*	12.64	1.07	0.75	3	
T9b	HII 2034*	12.51	1.04	-	2	
T88	HII 2193	14.18	1.47	-	1	K6Ve
K23	HII 2368	14.02	1.34	-	1	
B294	HII 2591	13.28	1.23	0.92	1	
T109	HII 2927	13.80	1.34	-	1	K4Ve
B295	HII 3065	12.97	1.39	-	2	
T59b	HII 3197	12.04	1.15	0.73	2	

Notes to Table 1

324 observed twice in U

1883 observed twice in U

2034 U was observed on two different nights. The values are consistent but they appear bright: U-B = 0.38 and U-B = 0.33.

References:

- Johnson, H.L., and Mitchell, R.I., 1958, Ap.J., 126, 134.
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 Kraft, R.P., and Greenstein, J.L., 1969, Low Luminosity Stars, ed. S.S. Kumar (Gordon and Breach Science Publishers).
 Wilson, O.C., 1963, Ap.J., 138, 832.