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NEW FLARE STARS IN THE PLEIADES REGION
(1972 - 1973)

During the months of October, November and December, 1972, and January and February, 1973, we obtained 180 ultraviolet multiple exposure plates centered in Alcyone. The number of different exposures were 1,054 and the total time of effective observation $225^h 10^m$. In this photographic material we detected 124 outbursts in different stars. Table 1 summarizes our results but only comprises the 21 new flare stars found. The many flare-up repetitions in the previously known flare stars are not included. The numbering of the new flare stars is the continuation of the serial numbers used by Haro and González, (1972) and Haro and Chavira (1972). The coordinates and U magnitudes given are approximate.

As can be noticed from Table 1 the brightest new flare stars are H_{II}2244, H_{II}1883 and H_{II}1100, which have visual magnitudes during minima equal to 12.67, 12.60 and 12.16, respectively, according to the Johnson and Mitchell (1958) photoelectric photometry.

Star H_{II}1100, according to Wilson (1963), shows a K3Ve spectral type. If we consider that Kraft and Greenstein (1969) classified the Pleiades stars H_{II}740, H_{II}2588 and H_{II}2908 as having K3Ve spectral types, we find an extremely large magnitude and color dispersion amongst these Pleiades star members. This can be interpreted either as the result of a) Possible discrepancies in the spectral classification criteria used by Wilson and by Kraft and Greenstein; b) Errors in the Johnson and Mitchell photometry larger than the one recognized before (Iriarte 1967); c) Real intrinsic differences amongst these Pleiades stars due to stellar evolution effects. We are inclined to give more weight to this last supposition.

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T A B L E 1

New Flare Stars in the Pleiades Region (1972-1973)

N°	Star	R.A. (1900)	Dec. (1900)	Mag. in U (Minimum)	Δm_U	Date of Flare-up
35b		3h34m1	+24°28'	19.8	3.3	2 Oct. 1972
36b		3 34.8	22 55	19.4	2.8	7 Jan. 1973
37b		3 37.3	24 03	17.0	0.4	6 Nov. 1972
38b		3 37.6	25 17	19.0	3.0	6 Oct. 1972
39b	HII 133	3 37.6	24 05	17.0	0.8	7 Jan. 1973
40b		3 38.1	25 21	14.8	2.8	4 Oct. 1972
41b		3 38.4	24 33	19.6	5.6	2 Jan. 1973
42b		3 38.4	24 28	17.2	3.7	9 Jan. 1973
43b	HII 1100	3 40.6	24 02	14.46	0.6	3 Feb. 1973
44b	HII 1114	3 40.7	24 38	16.6	0.8	13 Nov. 1972
45b	HII 1355	3 41.3	23 43	16.5	1.2	11 Nov. 1972
46b		3 41.9	22 32	~21.0	~6.0	26 Jan. 1973
47b		3 42.2	23 25	19.4	3.9	26 Jan. 1973
48b	HII 1883	3 42.5	22 59	14.37	2.1	11 Nov. 1972
49b		3 42.6	22 33	>22.0	>6.7	7 Dec. 1972
50b		3 43.3	25 23	19.0	5.0	7 Nov. 1972
51b	HII 2244	3 43.4	24 28	14.33	1.7	6 Feb. 1973
52b		3 43.6	23 36	19.1	4.0	6 Dec. 1972
53b		3 44.1	24 18	~22.0	~7.3	2 Oct. 1972
54b		3 44.4	21 52	17.3	3.3	6 Feb. 1973
55b	HII 3063	3h45m5	+23°36'	15.7	1.0	6 Nov. 1972

References:

- 1) Haro, G. and Gonzales, G., 1972, IAU Information Bulletin on Variable Stars No. 715.
- 2) Haro, G. and Chavira, E., 1972, IAU Information Bulletin on Variable Stars No. 716.
- 3) Iriarte, B., 1967, Bol.Obs.Ton. y Tac.; 4, No.28. pág. 79.
- 4) Johnson, H.L. and Mitchell, R.I., 1958, Ap.J. 128,31.
- 5) Kraft, R.P. and Greenstein, J.L., 1969, Low Luminosity Stars, ed. S.S. Kumar (Gordon and Breach Science Publishers) p.65.
- 6) Wilson, O.C., 1963, Ap.J. 138, 832.