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NEW FLARE STARS IN THE PLEIADES REGION

(A Re-examination of the Tonantzintla Photographic
Material: 1963-1970)

The continued re-examination of all our multiple exposure photographic material obtained during the years 1963 through 1970 at the Tonantzintla Observatory on the Pleiades region (Haro and González 1970) has been exhaustively completed and we have found - apart of a large number of flare-up repetitions in the already known flare stars discovered at the Asiago, Byurakan and Tonantzintla Observatories - 12 new flare stars that for one reason or other escaped detection in our previous works.

The results are summarized in Table 1, in which a provisional new serial numbering is used adding a b to each number in order to distinguish the new flare stars from the ones listed and numbered before. This has been done because there is certain confusion and mixing-up in the serial numbers published by different Observatories. In a general catalogue that is under preparation by one of the authors (G.H.) we will put together all the flare stars found in the Pleiades region at various Observatories, using a more definitive serial numbering that will be arranged in order of increasing right ascension and avoiding, as far as possible, different numbers for the same star or repeating the same number for distinct flare stars.

In Table 1 the stars 2b and 6b have shown two flare-ups. The star 9b corresponds to HII2034 which is up to now the brightest flare star, at minimum, in the Pleiades ($V = 12.57$) and probably with a spectral type as early or earlier than K3. We erroneously communicated to Dr. Rosino the serial number of flare star 11b as No. 12 and he found a flare repetition of the same star, numbering it as 83.

The many flare-up repetitions found in the previously known flare stars will be published in a future paper.

Table 1
New Flare Stars in the Pleiades Region
1963-1970

No.	Star	R.A. (1900)	Dec. (1900)	Mag. in U at minimum	Δm_U	Date of Flare-up
1b		3 ^h 33.6 ^m	+ 23° 11'	16.6	0.8	6 Feb. 1970
2b		3 33.8	23 36	20.5	6.3	22 Nov. 1963
<u>2b</u>		3 33.8	23 36	20.5	3.5	26 Nov. 1963
3b		3 36.2	23 53	18.4	2.5	21 Dec. 1968
4b	HII-979	3 40.4	24 08	17.8	1.1	27 Oct. 1968
5b		3 41.3	22 03	21.0	5.1	10 Nov. 1963
6b		3 41.5	24 51	19.5	5.1	11 Nov. 1963
<u>6b</u>		3 41.5	24.51	19.5	2.7	20 Nov. 1968
7b		3 42.7	23 55	18.8	3.4	12 Jan. 1970
8b		3 42.7	24 43	18.5 pg.	1.0 pg.	26 Oct. 1968
9b	HII-2034	3 42.8	23 40	14.2	0.8	6 Nov. 1966
10b		3 42.9	22 35	18.9	3.8	14 Nov. 1969
11b		3 45.9	25 30	20.0	4.5	16 Dec. 1968
12b		3 ^h 47.3 ^m	+ 25° 38'	18.3	3.1	14 Jan. 1969

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- 1 Haro, G. and González, G. 1970. Bol. Obs. Ton. v Tac. 34, 191.