BOLETIN DE LOS OBSERVATORIOS DE TONANTZINTLA Y TACUBAYA, Nº 36, 6, 1971.

A FINDING LIST OF STARS OF SPECTRAL TYPE A5 AND EARLIER IN REGIONS AT HIGH GALACTIC LATITUDES. V. 1 HLF 3

A. G. Davis Philip† and Lawrence J. Relyea**

SUMARIO

Se ha realizado una búsqueda con prisma objetivo sobre una región de 19.3 grados cuadrados en el área 1 HLF 3 ($l^{II} = 76°$, $b^{II} = +45°$) continuando una investigación de la estructura galáctica en la dirección perpendicular al plano de la galaxia. Se presenta una lista con las coordenadas y tipos espectrales para 16 estrellas y para aquellas que son tan débiles que no aparecen en el catálogo Bonner Durchmusterung.

ABSTRACT

An objective prism survey has been made in a 19.3 square degree region in the 1 HLF 3 area ($l^{II} = 76°$, $b^{II} = +45°$) continuing an investigation of galactic structure perpendicular to the galactic plane. A finding list containing positions and spectral types for 16 stars is presented with finding charts for the stars too faint to be included in the Bonner Durchmusterung.

I. Introduction

1 HLF 3 is the fifth area to be surveyed in a study of galactic structure perpendicular to the galactic plane. The general plan of the program is presented in the first paper (Philip 1967). The 2HLF 3 area is located above the Cygnus spiral arm at $\alpha = 16^h16^m$ (1950), $\delta = 48°54'$ ($l^{II} = 76°$ $b^{II} = +45°$). The area is similar to 1 HLF 2 (Philip 1966) which is at the same galactic longitude, but 30 degrees below the galactic plane.

II. Observations

The survey was made with the 4° objective prism on the Tonantzintla Schmidt telescope at Tonantzintla Observatory and the 4° objective prism on the Schmidt telescope of the Warner and Swasey Observatory. One hour exposures on IIa-0 emulsion reached an average limiting magnitude of $V = 12.5$. The dispersion of the spectra is 280 Å/mm at Hγ. The plates were searched and all stars of spectral type A5 and earlier were classified according to the criteria set up by Nassau and Seyfert (1946).

The majority of the A stars in the area have been measured photoelectrically by one of us (AGDP) during several runs at Kitt Peak National Observatory. Photographic magnitudes have been obtained for all the A stars in the finding list.

III. The Finding List

The stars are listed in Tables 1 and 2. The stars that appear in the Bonner Durchmusterung are listed in Table 1; those that are too faint to be included in the Bonner Durchmusterung are listed in Table 2. In Table 1 the catalogue number is listed in column one, the BD and HD numbers are listed in columns two and three, the 1950 position in columns four and five, the spectrum in column six, and the photographic magnitude in column seven. The format for Table 2 is similar except that the BD and HD columns are missing and a number relating the catalogue star to a nearby BD star is substituted instead. An asterisk following the catalogue number indicates a note at the end of the table. A colon after the spectral type indicates that the classification is doubtful. Finding charts for the stars which are not listed in the BD will be found in Figure 1. The nearby BD star is marked by a single line, the catalogue star by two lines, one on either side. The charts are approximately 20 minutes of arc in declination, 20 to 30 minutes of arc in right ascension. North is up and East is to the left.

* Dudley Observatory and State University of New York at Albany.
† Visiting astronomer, Kitt Peak National Observatory, operated by AURA, Inc. under contract with NSF.

TABLE 1

BD Stars of Type A5 and Earlier in 1 HLF 3

Number	*BD*	*HD*	*α(1950)*	*δ(1950)*	*Spectral Class*	M_{pg}
1	49 2461	145145	16h 5.7	+49° 13′	A2	6.6
2	49 2513	148964	16 28.0	+49 22	A5	9.3
3	49 2514	149081	16 28.7	+49 4	A0	6.1

TABLE 2

Non-BD Stars of Type A5 and Earlier in 1 HLF 3

Number	*Name*	*α(1950)*	*δ(1950)*	*Spectral Class*	M_{pg}
1	47° 2324 WI	16h 13.0	47° 16′	A0	11.4
2*	47 2324 NI	16 14.1	47 25	A0	12.8
3	48 2365 WI	16 7.7	48 30	A3:	13.8
4	48 2370 NI	16 9.8	47 59	A2	11.9
5	48 2380 NI	16 13.7	48 29	A3	12.4
6	48 2389 NI	16 19.4	48 31	B8	11.2
7	48 2401 SI	16 26.4	48 27	A3	13.6
8	49 2471 EI	16 10.7	49 16	A3	11.1
9	49 2484 SI	16 13.8	49 42	A3	12.0
10	49 2497 WI	16 19.4	49 35	B8	14.0
11	50 2264 EI	16 14.8	50 24	A3	11.7
12	50 2266 NI	16 14.4	50 54	A3	11.8
13	50 2281 EI	16 21.4	50 6	A2	14.5

* Classified as a field horizontal-branch star, Philip 1968.

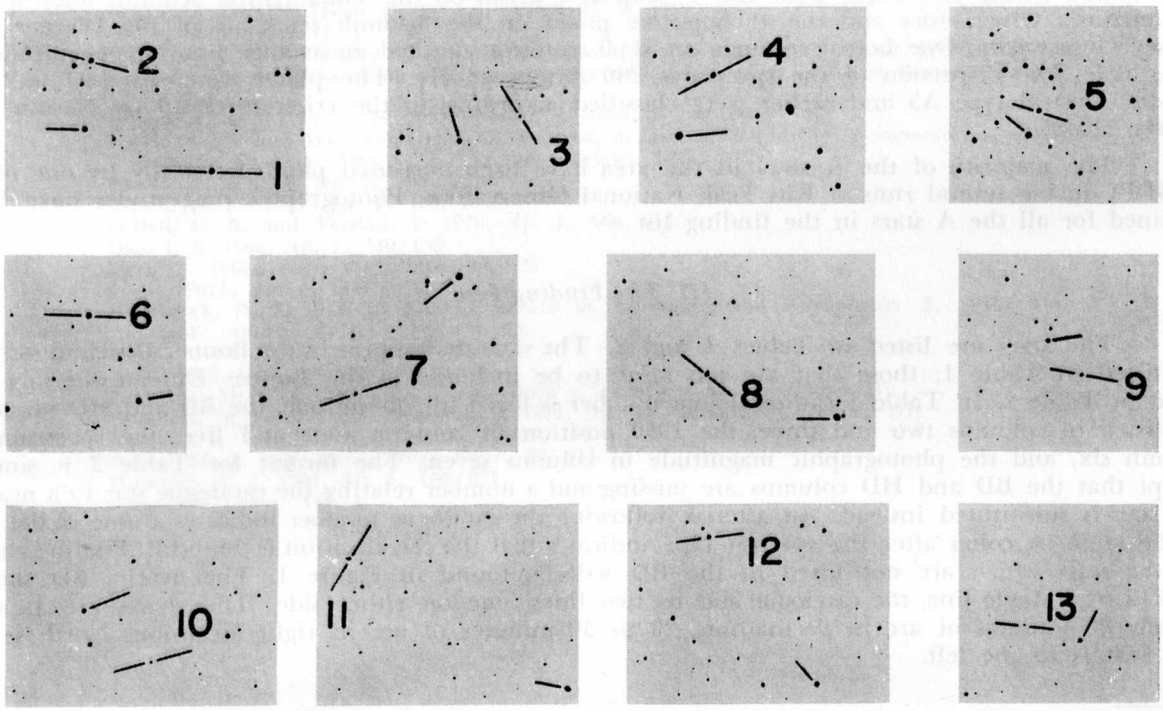

Fig. 1.—*Finding charts for stars too faint to be in the Bonner Durchmusterung. The charts are approximately 20′ of arc on a side, North is up and East is to the left. The catalogue star is marked by a dashed line on either side of the star.*

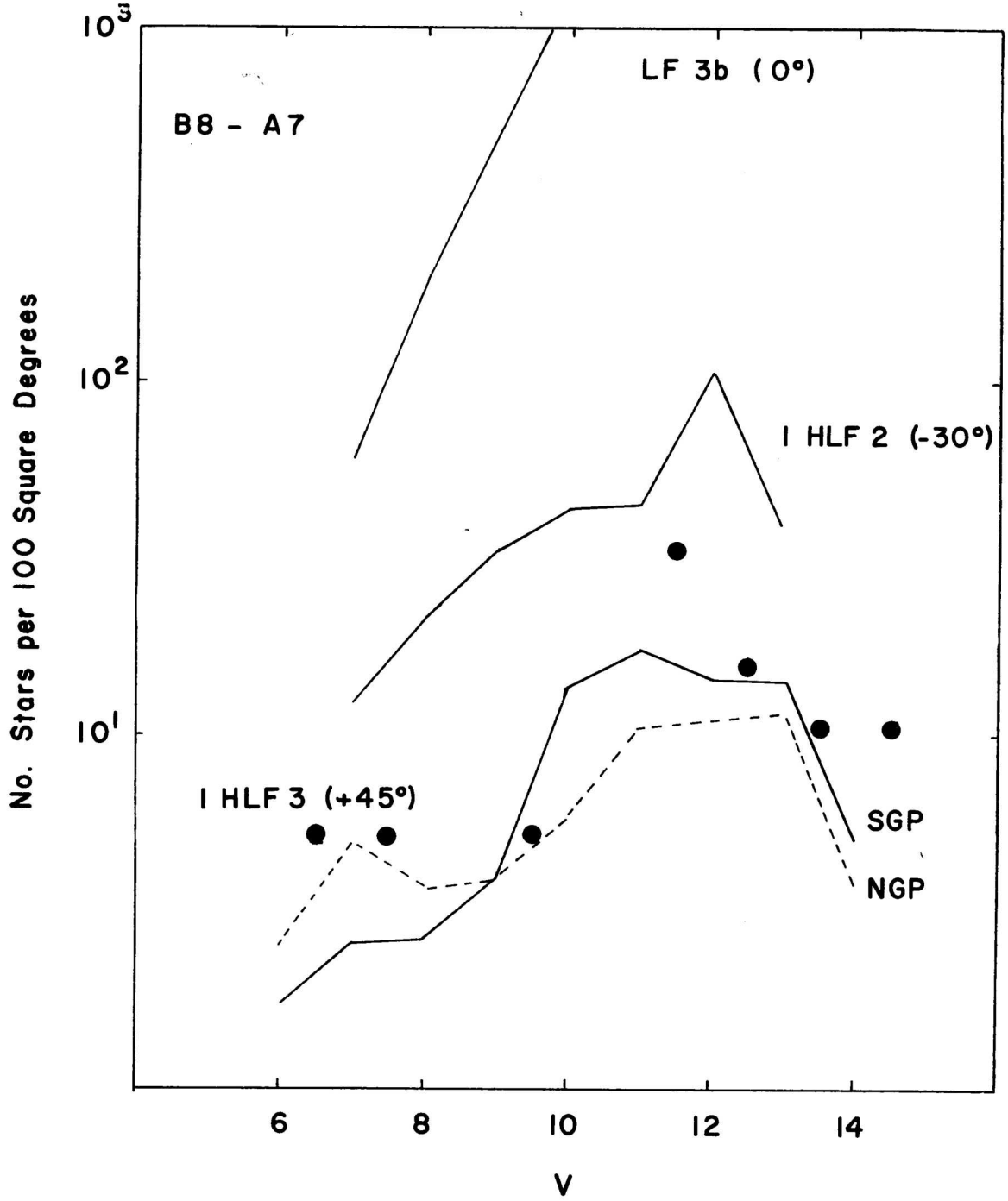

Figure 2.—*The distribution of the number of stars with apparent magnitude in the spectral range B8 — A7. Points represent the data for 1 HLF 3. Labelled lines indicate the distribution found in the SGP, NGP, LF3$_b$, and 1 HLF 2 regions.*

IV. Remarks

The distribution of spectral type with apparent magnitude is shown in Figure 2. Because the area is small and the number of A stars few, the B8 - A7 stars are shown together in one graph. Points represent the data from Tables 1 and 2. Lines represent the data from the NGP, SGP, LF3$_b$, and 1 HLF 2. The distribution in 1 HLF 3 is quite similar to those found for B8 - A7 stars in 4 HLF 4 (Philip and Drilling 1970) and 3 HLF 4 (Drilling and Philip 1970) at galactic latitudes of $b^{II} = -45°$. As expected, there are fewer A type stars per 100 square degrees than in 1 HLF 2, at $b^{II} = -30°$.

We wish to thank Tonantzintla Observatory for observing time on the Schmidt telescope, the Warner and Swasey Observatory for obtaining several Schmidt plates of the area, and Kitt Peak National Observatory for observing time on the 36″ telescopes. This work was supported by the National Science Foundation under grant GP 9455.

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