CATALOGUES OF Ha-EMISSION STARS AND NEBULAE IN THE MAGELLANIC CLOUDS*

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ABSTRACT

Catalogues of 236 emission-line stars and 532 emission nebulae discovered on objective-prism photographs of the Magellanic Clouds are presented in four tables. A fifth table lists exciting stars involved in the Large Cloud nebulae. Finding charts are provided for both Clouds.

I. INTRODUCTION

Ha objective-prism photographs, taken with the Mount Wilson 10-inch camera at the Lamont-Hussey Observatory of the University of Michigan, reveal numerous emission-line stars and nebulae in the Magellanic Clouds. The results of a survey of the first plates taken were reported and discussed in 1950 by Henize and Miller (1951). Although these original data have been slightly revised and extended by subsequent examination of plates of unwidened spectra, the conclusions reached in 1950 remain essentially unchanged. Additional investigations of the Magellanic Clouds have been undertaken, notably the study of the surface brightnesses (Doherty, Aller, and Henize 1956) and electron densities (Aller 1956) of the Large Cloud nebulae. The primary purpose of the present paper is to set forth the discovery data on which these discussions have been based and to provide observers with catalogues and charts of the emission-line objects.

II. THE OBSERVATIONS

The instrument used in this investigation, the red-corrected Mount Wilson 10-inch camera equipped with a 15° objective prism, has a plate scale of 159"/mm and gives a dispersion of 450 A/mm at Ha. All exposures were taken on Kodak 103a-E emulsion with a red Plexiglass filter. Photometric calibration of the plates was made with a tube sensitometer. The limiting photored magnitude for continuous spectra is approximately 13.5, which, with the revised distance modulus of 19.0 for the Magellanic Clouds (Shapley and Nail 1954), corresponds to an absolute magnitude of -5.5. The survey covers an area 15° square centered on each Cloud. Two plates of widened spectra (width = 0.2 mm) and one plate of unwidened spectra on each region have been thoroughly searched and intercompared.

The material has been divided into five tables:

Table 1, "The Catalogue of Emission-Line Stars in the Large Cloud" Table 2, "The Catalogue of Emission Nebulae in the Large Cloud"

Table 3, "The Catalogue of Exciting Stars Involved in the Large Cloud Nebulae" Table 4, "The Catalogue of Emission-Line Stars in the Small Cloud"

Table 5, "The Catalogue of Emission Nebulae in the Small Cloud"

In the Small Cloud the objects are generally listed in the order of the X-co-ordinate defined by Miss Leavitt (1908). The Large Cloud has been divided into three zones of declination, and, with a few exceptions, the objects are listed consecutively in each zone according to the X-co-ordinate, beginning with the northernmost zone.

Positions are given in both the Harvard rectangular co-ordinate system (Leavitt

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1908) and the equatorial system. Because of the high declination of the Magellanic Clouds, the Harvard rectangular system is more convenient for work with wide-angle photographs, and, as a consequence, most of the Harvard data are published on this system. In a finding list, however, it is also necessary to give equatorial co-ordinates to facilitate the setting of telescopes. The Harvard co-ordinates were transformed to equatorial co-ordinates by standard procedures, the plate constants being based on data given by Miss Leavitt (1908, Tables I and II). Within the main bodies of the Clouds the probable error introduced by the transformation amounts to about $\pm 10''$. The probable errors of the rectangular co-ordinates given in the present catalogues are about $\pm 10''$ in the Small Cloud and $\pm 20''$ in the Large Cloud.

Inasmuch as this survey is closely linked with the Michigan–Mount Wilson survey of the Milky Way for Be stars, a system of nomenclature similar to that used for the galactic Be stars has been adopted for the Magellanic Clouds. In this system the serial number of the object is preceded by the number of the plate on which it appears. In the Magellanic Clouds it is necessary to distinguish stars from nebulae by adding an "S" or "N" to the designation. Consequently, emission star 15 in the Large Cloud will be referred to as LH α 120-S 15, while nebula 80 in the Small Cloud will be designated LH α 115-N 80. The same plate numbers—LH α 120 and LH α 115—will be used throughout this work for the Large and Small Clouds, respectively.

III. THE CATALOGUES OF EMISSION-LINE STARS

One hundred and seventy-one emission-line stars in the Large Cloud and 65 in the Small Cloud are listed and described. It should be noted that the data discussed in 1950 have been revised by the reclassification of the point sources of $H\alpha$ emission that show no underlying continuous spectrum. Whereas they were originally included among the emission-line stars, they will now be found in the list of nebulae. As a result, the present lists of emission-line stars contain only those objects that show a continuous spectrum underlying the $H\alpha$ emission.

The sixth and seventh columns of Tables 1 and 4 give the intensities of the continuous spectrum and of the H α emission, respectively. The intensity of the continuous spectrum is estimated on a scale from 1 to 5, in which 5 represents an overexposed spectrum and 3 a spectrum of optimum exposure. The additional symbol "T" denotes a trace of continuum too faint to be classed as intensity 1. The intensity of the H α emission, on a similar scale, is relative to the background continuum.

The eighth column gives an estimate of the diffuseness of the Ha emission. Here 0 denotes a very sharp line; 1, a line neither very sharp nor appreciably widened; 2, a line of appreciable diffuseness; and 3, a line which is very diffuse. In most cases diffuseness indicates actual broadening of the emission line and implies that the star may be a Wolf-Rayet star. In a few spectra, however, the diffuseness may be due to fuzziness of the star image and possibly indicates that the emission star is multiple or that the emission arises from a barely resolved nebulosity which surrounds the star.

The ninth column gives the photographic magnitude. For stars whose spectral type is given in the tenth column, this magnitude is taken from the *Henry Draper Catalogue* or from *Harvard Bulletin*, No. 801 (Cannon 1924); otherwise it is estimated from the intensity of the red continuum on a system calibrated by the available *Henry Draper* magnitudes of the B stars. The adopted magnitudes equivalent to each intensity estimate are:

Intensity
$$4 = 10.5$$
 Intensity $1 = 12$

Intensity $3 = 11$ $T = 12.8$

Intensity $2 = 11.5$

These may be considered as photographic magnitudes only in so far as they are applied to B stars of normal color. The data used for calibration indicate a maximum error of about ± 0.6 mag., but, in application, even greater errors are to be expected.

References to the *Henry Draper Catalogue* and to the Mount Wilson catalogue of Be stars are given in the notes at the end of the tables. One star from the Harvard lists, the variable P Cygni star HD 269582 = MWC 112, shows no emission on LHa plates. Since the existence of emission in the spectrum of star 83 of the Large Cloud is extremely doubtful, this number has been omitted from Table 1.

IV. CATALOGUES OF EMISSION NEBULAE

The catalogues of emission nebulae include a total of 415 nebulae in the Large Cloud and 117 in the Small Cloud. Many of these objects are bright knots that lie in fainter patches of nebulosity. In view of the impossibility of making a significant distinction between isolated nebulae and knots imbedded in a faint nebulous background, all bright knots, whether or not they are associated with larger fields of nebulosity, are described as separate objects. An attempt has been made to indicate the close relationship between a group of knots involved in a nebulous background by assigning the knots the same number as the background nebulosity and designating the individual knots by letters of the alphabet assigned in the order of the brightnesses of the knots. In some instances groups of knots which seem to be physically related, even though no connecting background nebulosity is visible, have been assigned a group number.

In the present catalogue the appearance of the nebulae has been described in terms of four characteristics: intensity of the Ha image, irregularity of shape, elongation, and amount of internal structure. This system is closely related to that employed by Sharpless (1953) to describe the galactic diffuse nebulae. Although the Bok-Wade system of classification (Nail, Whitney, and Wade 1953) offers certain advantages in statistical discussions of nebular types, it is felt that for the purpose of identification it does not describe the individual nebulae with the precision of the Sharpless system.

The sixth and seventh columns of Tables 2 and 5 give the east-west and north-south diameters of the nebulae in that order. The measures are made on the Harvard rectangular co-ordinate system, and it must be remembered that the orientation of the measure will not be true north-south for objects near the east or west edge of the field. Those nebulae for which no diameters are given appear as point sources on LHa plates.

The eighth column gives the intensity of the continuum on a scale similar to that used for the emission stars. Positive data are given only if the continuum appears closely related to the nebulosity; that is, continua from isolated stars within a nebulosity are not considered. In general, the presence of a continuum probably indicates the existence of a cluster or group of stars whose extent is about equal to that of the nebulosity. Notes concerning the occurrence of emission lines other than H_{α} will be found at the end of Table 2.

The Ha intensity (ninth col. of Tables 2 and 5), which corresponds to the surface brightness for the extended nebulae, is estimated on a scale from 1 to 5, where 5 represents a strongly overexposed image, and the additional symbol "T" denotes a perceptible but extremely faint nebula. For those nebulae designated by an asterisk in the first column, photometric measures of the surface brightnesses of extended nebulae and of the integrated brightnesses of the compact nebulae are available in "A Photometric Catalogue of Emission Nebulae in the Large Magellanic Cloud" (Doherty et al. 1956). The photometric catalogue gives data for selected regions in all nebulae for which significant measures could be made.

Irregularity of outline (tenth col. of Tables 2 and 5) is estimated on a scale from 0 to 3, where 0 indicates a smooth boundary. A 4 or 5 listed in this column designates crescent-shaped nebulae or ring-shaped nebulae, respectively. Elongation (eleventh col.) is estimated on a scale from 0 to 3, with 0 denoting no elongation, and 3 a ratio of axes of at

least 3 to 1. Structure (twelfth col.) is given on a scale from 0 to 3, 0 indicating a smooth nebula with no visible structure.

In Table 2, thirteenth column, the number of early-type stars involved in each nebula of the Large Cloud is given. These stars are listed in Table 3 and include O and B stars from the *Henry Draper Catalogue* as well as the emission stars of Table 1. References to early-type *Henry Draper* stars found in the Small Cloud nebulae are given in the notes.

The present catalogue of Small Cloud nebulae has been compared with the catalogue of 152 emission nebulosities in the Small Cloud published by Nail *et al.* (1953). This comparison leads to the surprising result that the two catalogues share only 33 objects in common. Evidently this discrepancy must be attributed to differences in observing techniques, the Michigan observations having been made on objective-prism spectrum plates and the Harvard observations by a comparison of red and blue direct plates.

References to the Nail, Whitney, and Wade catalogue, to the NGC, and to early Harvard lists of emission nebulae are given in the notes at the end of the tables. Of the early Harvard discoveries, one—HB 891-26 = HD 269848—is not visible on our plates.

V. CHARTS

Identification charts for the Magellanic Cloud emission stars and nebulae are reproduced in Figures 1–13. These are copied from 5-hour direct-exposure plates taken with the Mount Wilson 10-inch camera on 103a-E emulsion through a red Plexiglass filter. The dates of these exposures were: Large Cloud, January 4, 1951; Small Cloud, November 22, 1949. The scale of all charts is 52" per millimeter.

The approximate extent of faint nebulae is indicated on the charts by boundary lines, but these lines are not intended to define the limits of the nebulae or their shapes with great accuracy.

Small intense nebulae and point sources of $H\alpha$ emission are indicated by a single line pointing to or touching the object. In order to distinguish the stars from the nebulae, the stars are marked with a caret (\wedge) and their numbers are preceded by an "S."

In crowded regions and in dense nebulosity it was not always possible to point out the fainter objects on the chart with complete certainty. However, reference to the rectangular co-ordinates and to the notes at the ends of the tables will help to resolve these uncertainties in most cases.

The positions of two novae which were discovered on LHa plates—N Mensae 1951 and N Tucanae 1951—are marked on the charts.

VI. DISCUSSION

In order to examine the differences between the nebulae of the Large and Small Clouds, it is useful to refer to the Bok-Wade classification of nebulae. The relation between this classification and the present descriptions has been determined by examination of those Small Cloud nebulae in the present catalogue that are also listed by Nail et al. The following close correlation is found between the two classifications: Type V of the Bok-Wade system is equivalent to objects in the present list that are stellar or that have diameters of less than 20 seconds of arc. Type IV is made up of the rings and crescents; type III contains only the nebulae with no irregularity, no elongation, and no structure; type II is made up of those objects with intensities of T, 1, 2, or 3, that show appreciable irregularity or elongation; and type I consists of irregular nebulae with intensities of 4 and 5.

The distribution of the Magellanic Cloud nebulae among the equivalent Bok-Wade types is given in Table 6. For the Small Cloud the results from the Nail-Whitney-Wade catalogue, as well as those from the present catalogue, are tabulated. Notwithstanding the afore-mentioned differences between these catalogues, the frequency distributions of the nebular types are in satisfactory agreement.

When the Large and Small Clouds are compared, one striking difference, previously

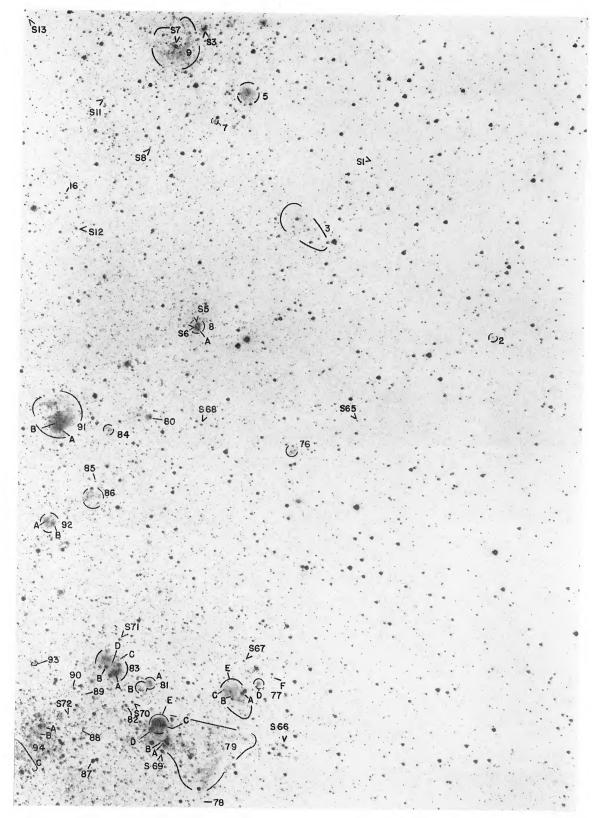


Fig. 1.—Emission stars and nebulae in the Large Magellanic Cloud. Plate center: $X=40,\ Y=11610.$ North is at the top, east at the left.

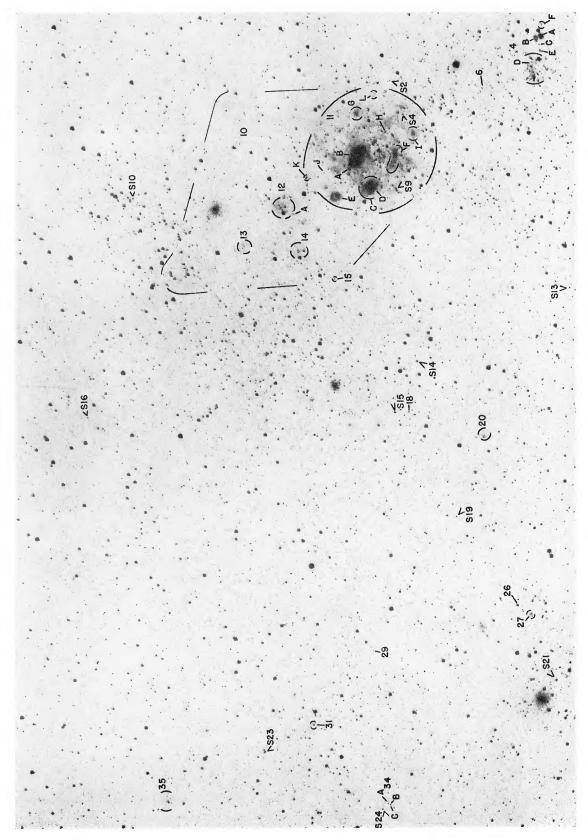


Fig. 2.—Emission stars and nebulae in the Large Magellanic Cloud. Plate center: X = 4760, Y = 19520. North is at the top, east at the left

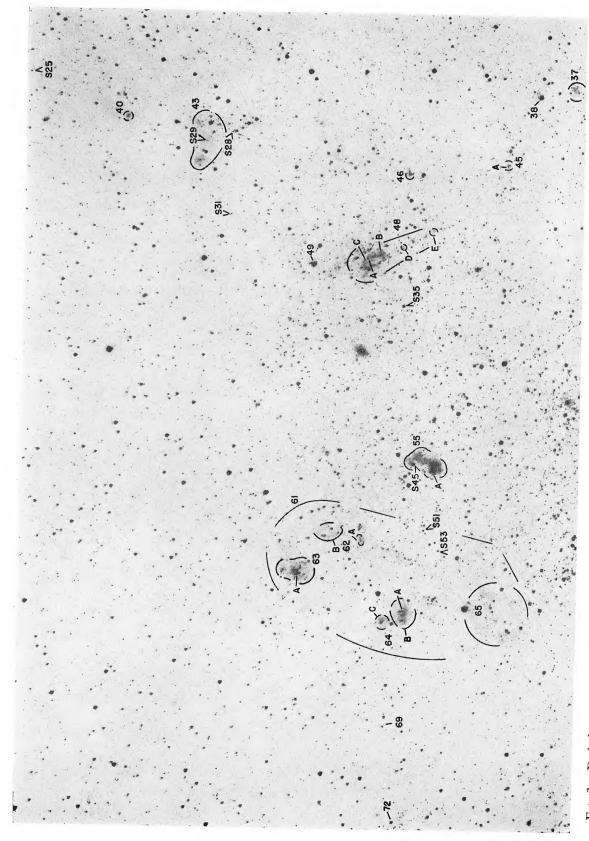
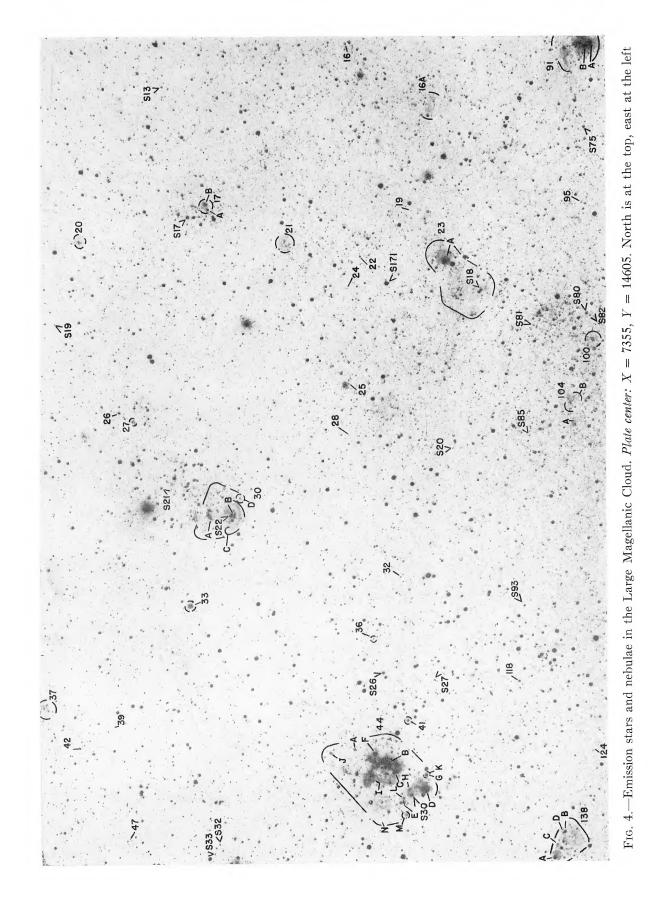


Fig. 3.—Emission stars and nebulae in the Large Magellanic Cloud. Plate center: X = 14010, Y = 21005. North is at the top, east at the left



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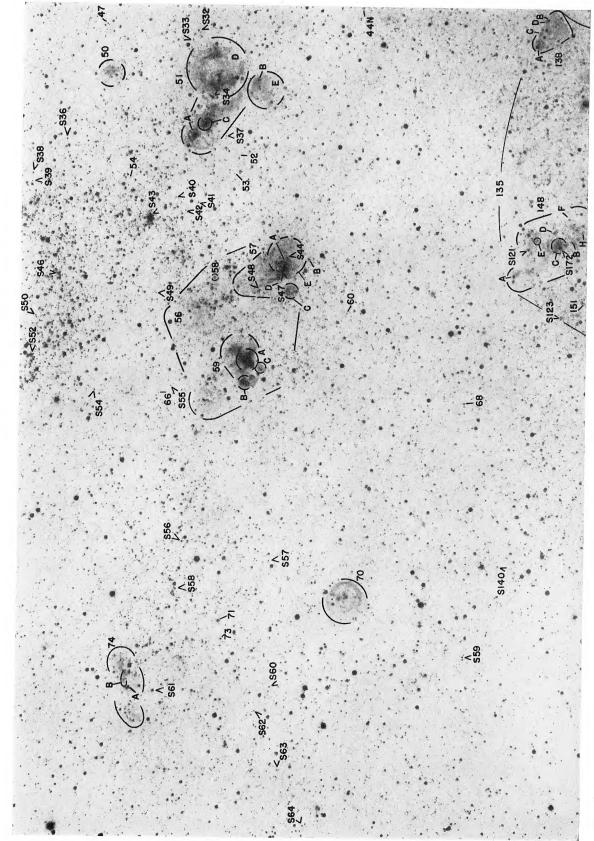


Fig. 5.—Emission stars and nebulae in the Large Magellanic Cloud. Plate center: X = 16220, Y = 14850. North is at the top, east at the left

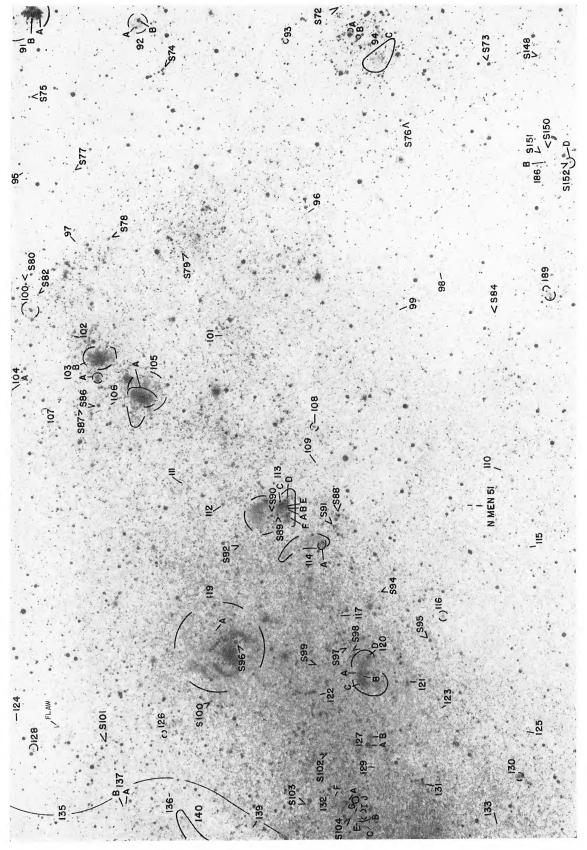


Fig. 6.—Emission stars and nebulae in the Large Magellanic Cloud. Plate center: X = 7425, Y = 8545. North is at the top, east at the left

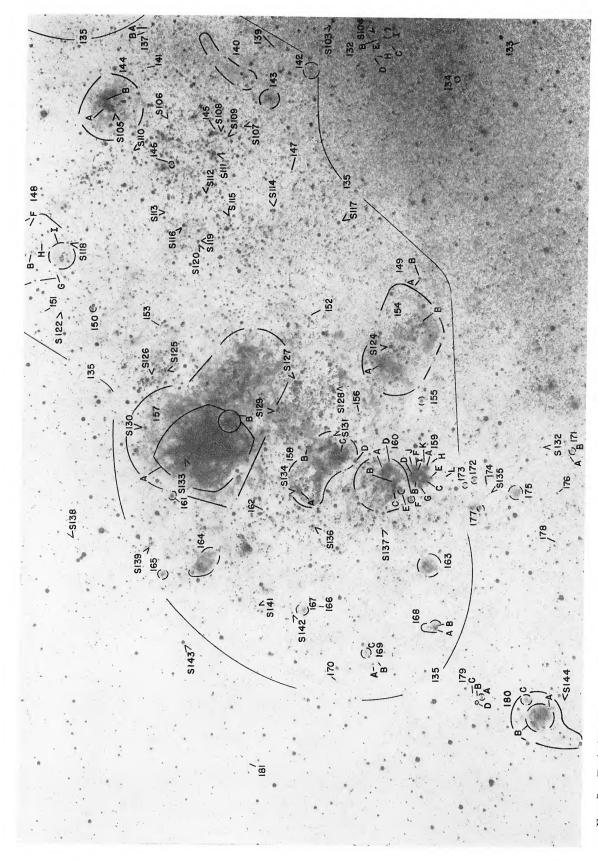


Fig. 7.—Emission stars and nebulae in the Large Magellanic Cloud. Plate center: X = 16285, Y = 8785. North is at the top, east at the left

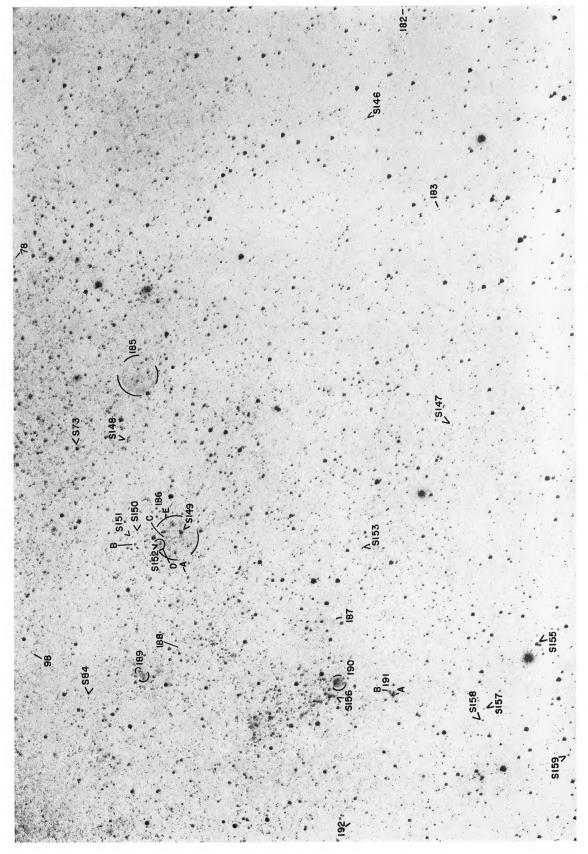


Fig. 8.—Emission stars and nebulae in the Large Magellanic Cloud. Plate center: X = 3110, Y = 4020. North is at the top, east at the left

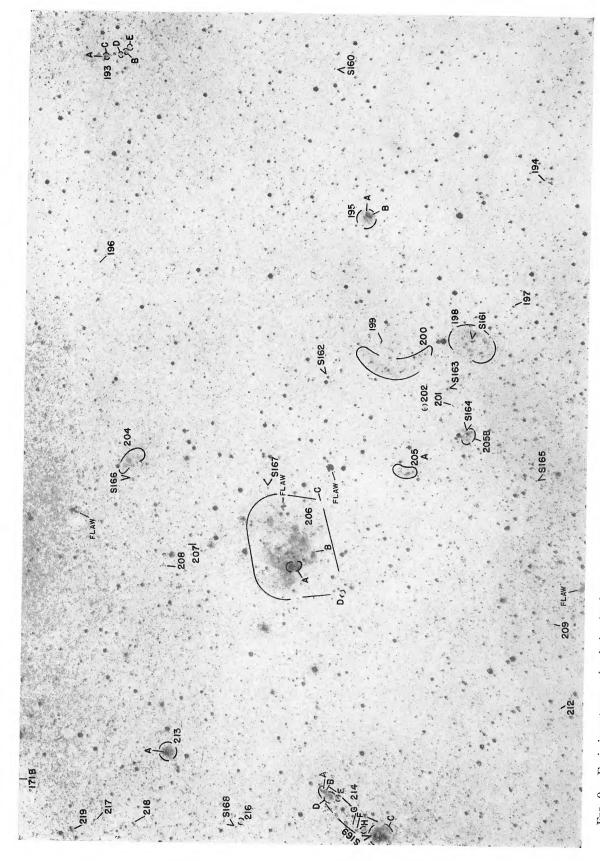
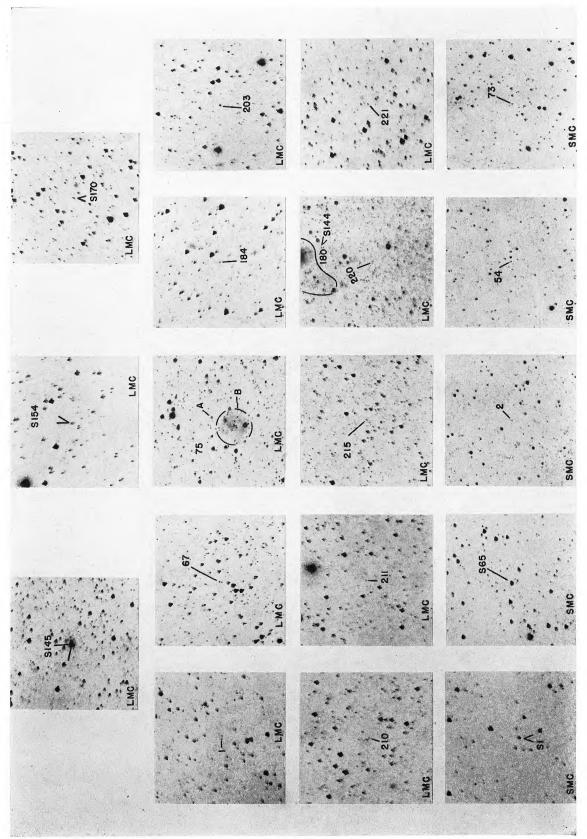


Fig. 9.—Emission stars and nebulae in the Large Magellanic Cloud. Plate center: X = 12540, Y = 2650. North is at the top, east at the left



Frg. 10.—Outlying emission objects in the Magellanic Clouds. LMC indicates objects in the Large Cloud; SMC, objects in the Small Cloud. North is at the top, east at the left.



Fig. 11.—Emission stars and nebulae in the Small Magellanic Cloud. Plate center: X = 8940, Y = 7430. North is at the top, east at the left

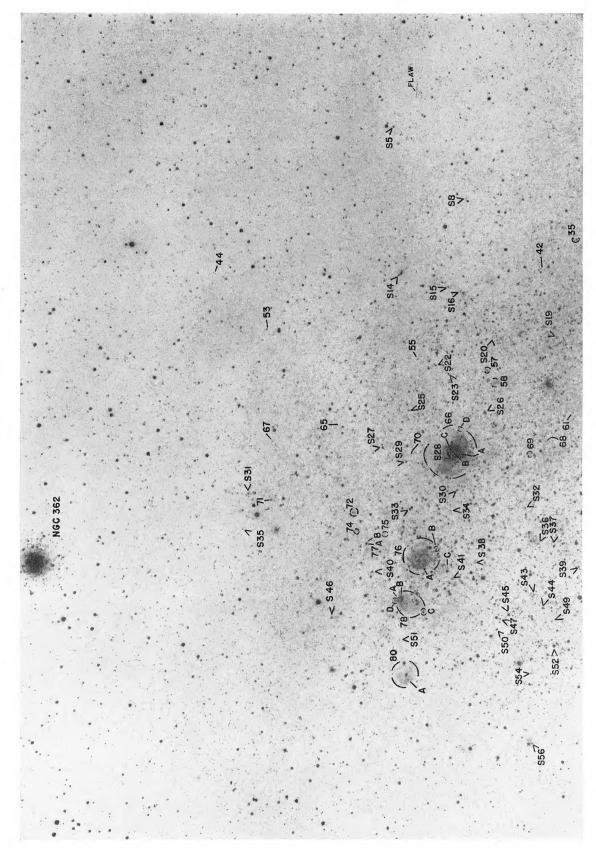
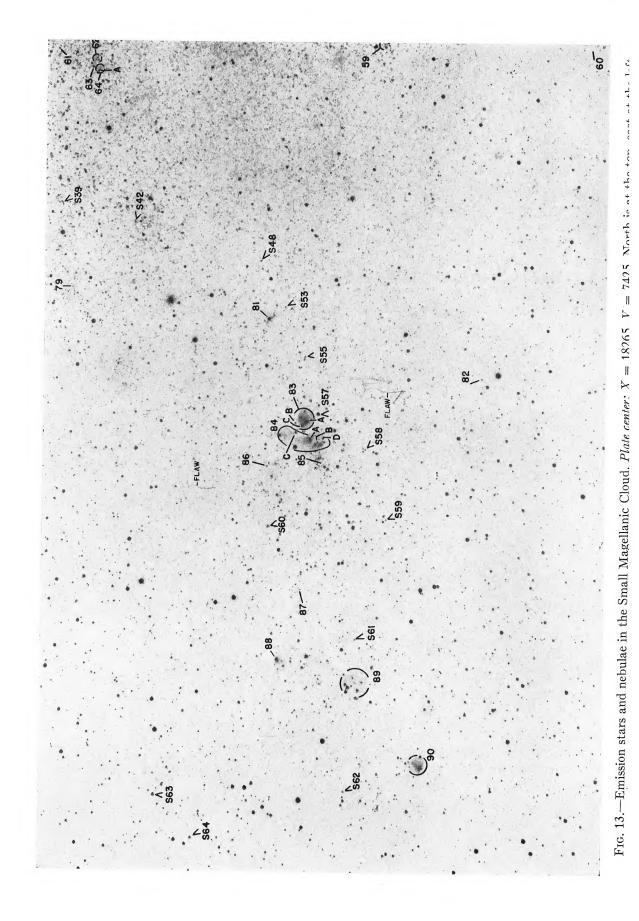


Fig. 12.—Emission stars and nebulae in the Small Magellanic Cloud. Plate center: X = 13775, Y = 13635. North is at the top, east at the left



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noted by Nail et al. (1953), is evident: whereas type I nebulae are abundant in the Large Cloud, they are almost entirely lacking in the Small Cloud. This is in contrast to the fact that the frequency of nebulae per unit area, irrespective of their types, is at least as great in the Small Cloud as in the Large. Thus it appears that nebulosity is as abundant in the Small Cloud as in the Large but that the surface brightnesses of the Small Cloud nebulae are not so great as those of nebulae of the Large Cloud. This phenomenon suggests that the interstellar medium of the Small Cloud does not attain such dense concencentrations as does the interstellar medium of the Large Cloud.

The relation of the emission stars and nebulae to the detailed structure of the Large Cloud was discussed by Henize and Miller (1951); the revised data do not change the conclusions reached in that paper. It should be pointed out that the outlying stars and nebulae show little correlation with the extended faint structure discovered by de Vaucouleurs (1954) in the outer regions of the Large Cloud.

TABLE 6
DISTRIBUTION OF MAGELLANIC CLOUD NEBULAE AMONG THE
BOK-WADE NEBULAR TYPES

	Equiva-	Large	CLOUD		Small	Crow	
LHa Description	LENT Bok- Wade	L	На	L	На	На	rvard
	Түре	No.	Per Cent	No.	Per Cent	No.	Per Cent
Stellar or diam. <20"	IV III II	108 20 45 165 77	26 5 11 40 18	45 3 12 57 0	38 3 10 49 0	62 3 7 79 1	41 2 5 51 1
Total		415		117		152	

The Large Cloud emission stars classed as type B or P Cygni in the Henry Draper Catalogue were also discussed by Henize and Miller (1951). It should be noted that revision of the distance modulus of the Magellanic Clouds to 19.0 increases the absolute magnitudes listed in Table 2 of that paper by 1.7 mag. Thus it is evident that the brightest emission B stars observed in the Large Magellanic Cloud are more luminous than the brightest stars so far observed among the galactic cB stars. The Henry Draper Catalogue assigns photographic magnitudes brighter than 10.0 (= -9.0 absolute magnitude) to four of the emission-line stars: LHa 120-S 86, -S 96, -S 155, and -S 171. One of these, LHa 120-S 96, is the variable star, S Doradus, which has strong hydrogen emission and an otherwise peculiar spectrum (Smith 1954). The remaining three stars are assigned to spectral class B and show moderate or weak emission. Their mean absolute magnitude is -9.4. Aside from their excessive luminosity, there is no reason at present not to class them as cBe stars. However, if these stars were found to vary in brightness, it might be possible to class them among the group of high-luminosity variables found by Hubble and Sandage (1953) in M31 and M33.

I wish to acknowledge my gratitude to Dr. Freeman D. Miller, who initiated this investigation of the Magellanic Clouds and has given me much advice and encouragement. The loan of the $10\frac{1}{2}$ -inch telescope by Dr. I. S. Bowen, director of the Mount Wilson and Palomar Observatories, and the generous financial support of the Horace H. Rack-

ham Fund of the University of Michigan made possible the observational program described here. I also wish to thank the National Science Foundation and the Carnegie Institution of Washington, whose fellowship grants have enabled me to complete the work.

REFERENCES

Aller, L. H. 1956, Gaseous Nebulae (New York: John W. Wiley & Son).

Table 1

EMISSION-LINE STARS IN THE LARGE MAGELLANIC CLOUD

Nr. LHα 120-	19 R.A.	50 Dec.	Rect. C		In C		Dif	. m	Sp.
			11	11					
12345678901 1234567890112345678901123145678901222222222222222333	R. A. M. 4.4.3.1.2.2.6.6.9.4.6.2.2.8.1.3.0.0.5.2.0.0.8.2.1.3.9.2.2.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4	Dec. -66.73.096.688.44.766.59.596.668.657.766.66.668.657.776.66.668.658.65	** - \$30 830 1140 1180 1200 1220 1460 1780 2040 2130 2600 3180 4640 4770 4680 55850 7760 8080 99920 10680 10780 11320 11610	Y 14720 18540 18350 127700 16280 127700 16030 14850 15460 18380 16380 16380 16380 16470 16680 17650 17650 17650 17650 17650 176680 176680 176680 176680 176680 176680 176680 176680 176680 176680 1768	TT1TT4T1TT1111T42TT12111311T21	Hα 222322123424232133222251222121	Dif 000001030110010000010312201211220	12.8 12.0 12.8 12.8 12.9 12.8 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0	Pec. Oa Oc B Pec.
\$33456 \$333333456 \$333333442 \$4456 \$4456	24.8 25.9 26.9 27.3 28.1 29.1 29.1 30.4 30.3 30.3 30.3 30.3 30.3 30.3 30.3	67 28 67 28 67 31 66 23 67 33 66 58 67 28 67 28 67 29 67 25 67 25 67 25	11830 11920 12560 12690 13010 12980 13390 13480 13670 13830 13860 14370 14500	15930 15960 15770 19880 17430 15610 17810 16190 16190 16500 14980 19720 17550	1	42232422211112534	20112111211100	12.0 12.8 11.7 11.5 12.8 12.8 12.8 12.8 12.8 11.5 12.8	В

Table 1 (Cont'd)

Table 1 (Cont'd)

Nr.	195		Rect. C		In		D: 0		
LHα 120-	R.A.	Dec.	<u>X</u>	Y n	<u> </u>	Ηα	Dif	. m	Sp.
S 94 S 95 S 96 S 97 S 98 S 99	5 ^h 16 ^m 5 5 18.2 5 18.7 5 18.6 5 18.7 5 19.3	-69°44' 69 54 69 19 69 40 69 40 69 34	9320 9890 9950 9980 10020 10180	7630 7060 9220 7950 7950 8300	T 45TTT	1 2 4 2 1	2 0 1 0 1	12.8 10.8 9.5 12.8 12.8	B Pec.
S 100 S 101 S 102 S 103 S 104 S 105 S 106 S 107 S 108 S 109	20.6 22.3 22.3 22.4 22.5 22.5 22.5 22.5 23.2 23.2 23.2 23.2	69 14 68 55 69 32 69 41 68 53 69 16 69 12 69 14	10560 11100 11130 11730 11860 12690 12780 12880 12970 13010	9510 10650 8200 8430 7930 10840 10210 9410 9640 9570	1 1 T T T T T T T T	211231122122315211211331	3 1 2 2 1 1 2 0	12.0 12.0 12.8 12.8 11.5 12.8 12.8 12.8	В
S 110 S 111 S 112 S 113 S 114	5 28.6 5 28.7 5 30.3 5 30.7 5 30.7	68 56 69 11 69 10 69 02 69 22	13130 13160 13670 13830 13800	10650 9700 9790 10240 9060	T 1 1 T 4	15211	1 1 2 1	12.8 12.2 12.0 12.8 11.2	Pec.
S 115 S 116 S 117 S 118 S 119	5 31.0 5 31.2 5 31.2 5 31.7 5 31.8	69 14 69 05 69 33 68 43 69 08	13900 13960 13960 14150 14150	9540 10050 8360 11380 9920	1 4 4 2 2	2 1 1 3 3	2 1 1 2 3 1	12.0 10.8 10.6 11.5 11.4	B: B
S 120 S 121 S 122 S 123 S 124	55555555555555555555555555555555555555	69 08 68 28 68 41 68 34 69 42	14160 14340 14950 15100 15360	9920 12280 11510 11920 7820	TTTT4	14114	3 1 1 1 1 1	12.8 12.8 12.8 12.8 10.5	Pec.
S 125 S 126 S 127 S 128		69 01 68 58 69 25 69 31	15610 15680 15740 15840	10300 10430 8840 8460	T 1 3	2 1 5 4	1 1 2	12.8 12.0 11.3 11.1	Pec.
S 129 S 130 S 131 S 132 S 133	5 3 7 · 2 8 2 7 7 · 5 3 3 8 · 2 7 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	69 21 68 56 69 31 70 09 69 03	16060 16250 16340 16470 16600	9060 10560 8460 6170 10110	2 2 3 1 T 3	1 3 1 3	3 2 1 0 1 2	11.5 11.3 12.0 12.8 10.6	B Oa
S 134 S 135 S 136 S 137	5 40.6 5 41.1 5 41.9 5 42.2	69 24 69 58 69 26 69 38	16950 17010 17360 17400 17490	8840 6740 8710 7950 11350	32T2TT	2131351131	0 1 2 2 1 1 1 0	12.0 12.8 11.5 12.8 12.8	Pec.
S 138 S 139 S 140	5 41.8 5 42.2 5 42.7	68 42 68 55 68 19	17550 17870	10530 12690	i T	1 2	1	12.0	

Table 1 (Cont'd)

Nr. LHα 120-	19 R.A.	50 Dec.	Rect. C	oords. Y	Int C H	α Dif	. m	Sp.
S 141 S 142 S 143 S 144 S 145	5 ^h 44.8 5 44.8 5 45.6 5 48.9 6 13.1	-69°15' 69 20 69 00 70 08 68 10	18220 18320 18640 19370 28070	9320 8970 10180 5980 11990	.1	1 0 3 0 1 1 2 3 2 2	12.8 12.0 10.6 12.8 12.0	Bo:
S 146 S 147 S 148 S 149 S 150 S 151 S 152	4 43.4 4 54.6 4 56.7 4 59.9 5 00.1 5 00.2 5 00.5	70 38 71 04 70 04 70 17 70 08 70 07 70 13	- 380 3140 3280 4360 4360 4390 4520	3230 2260 5920 5280 5790 5850 5530	3 T T	2 3 2 1 1 0 1 0 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1	12.8 12.8 10.4 12.8 12.8 12.8	Pec.
S 153 S 154 S 155 S 156 S 157 S 158	4 59.7 5 53.7 5 02.8 5 05.6 5 05.4 5 05.9	70 50 75 04 71 24 70 48 71 16 71 16	4520 4900 5660 6260 6360 6520	3240 -12240 1340 3590 1910 1910	T	1 1 2 1 3 1 1 1 1 1	12.8 12.8 9.2 12.0 12.8 12.8	В
S 159 S 160 S 161 S 162 S 163 S 164 S 165	5 07.1 5 12.8 5 23.1 5 24.8 5 25.0 5 26.8 5 28.6	71 32 71 10 71 38 71 12 71 34 71 38 71 50	6930 8480 11540 11990 12080 12590 13100	990 2390 830 2420 1080 860	1 1 2 7 2 7	1 1 1 1 2 1 2 1 1 0 3 0 1 3 0 1 3 1	12.0 12.8 12.3 11.5 12.8 11.5	Oa
S 166 S 167 S 168 S 169 S 170 S 171 S 172	5 28.7 5 29.0 5 41.7 5 42.3 5 55.3 5 06.1 5 32.1	70 37 71 01 70 54 71 19 73 01 67 57 68 34	13160 13230 17010 17080 20160 5500 14310	4550 3080 3370 1840 - 4550 13900 11920	T T T 5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12.8 12.8 12.8 12.8 12.8 9.3 10.4	B B

LHα 120-

- S 1 Presence of continuum doubtful because of overlapping spectrum.
- S 3 Lies on south edge of cluster NGC 1735 directly west of bright star on southeast edge of cluster.
- Lies on north edge of dense nebulosity.
- s 6 Lies on east edge of dense nebulosity.
- S 7 HD 32034. In cluster NGC 1747.
- HD 32109. The emission line is very broad.
- s 8 s 9 Western star of close pair.

Notes to Table 1 (Cont'd)

LHa 120-HD 269327. S 96 HD 35343. S Doradus. MWC 108. S 105 HD 269551. S 106 Western star of close pair. S 107 Lies slightly east of the arrow tip. S 111 HD 269599 = MWC 113. In cluster NGC 1994. S 114 HD 269649. S 115 Emission star is moderately bright and has two fainter stars slightly to the west. S 116 HD 269662. S 117 Emission is perhaps doubtful. HD 269661. S 119 HD 269687. S 121 Northern star of compact triangle. S 123 Brightest member of a faint cluster. S 124 HD 37836 = MWC 121.S 127 HD 37974 = MWC 123.S 128 HD 269858 = MWC 511.The emission line is broad. Central star of three in line. Eastern star of close pair. S 129 S 130 HD 269896. S 132 Emission doubtful. S 133 S 134 HD 38282. HD 38489 = MWC 126.In very bright knot of nebulosity. HD 270086. Emission doubtful. S 143 S 144 Probably the northern star of close pair. Presence of continuum doubtful because of overlapping spectrum. S 145 Patch of emission in cluster NGC 2214. The emission is superposed on a strong continuum and may arise from one or more closely grouped stars. S 148 Lies between two brighter stars. S 149 HD 32763 = MWC 97.S 153 Western star of faint pair. S 155 HD 269006. S 156 Probably a single emission-line star involved in a small group of stars. S 158 Probably northern star of close pair. S 161 HD 36063. S 162 Continuum appears reddish. Perhaps a late-type star? S 164 Emission perhaps doubtful. S 166 Western star of close pair. S 171 HD 33579. A note in the HDC indicates the class may be 0e5. HD 269700. S 172

Notes to Table 1 (Cont'd)

LHα 120-

- S 11 The emission is perhaps doubtful.
- S 14 HD 33133.
- S 15 Probably the fainter and southern star of close pair.
- HD 268939. S 17
- S 22 HD 34664 = MWC 105. Three faint emission lines which probably correspond to Fe II λ6456, [O I] $\lambda 6364$ and $\begin{bmatrix} 0 & 1 \end{bmatrix} \lambda 6300$ are visible.
- S 23 NGC 1887. Faint H α emission is visible on a diffuse continuous spectrum. The Ha emission is somewhat doubtful.
- S 24 The emission line and the continuum are somewhat diffuse. Perhaps a group of emission-line stars?
- S 25 The emission line is broad. Perhaps a Wolf-Rayet star?
- S 27 Northwest star of close pair. Ha emission somewhat doubtful.
- S 29 Emission is clearly visible on only one plate.
- S 30 HD 269445.
- S 34 HD 269540.
- Western star of close pair.
- S 35 S 36 The emission line is very broad. Probably a Wolf-Rayet star.
- S 39 Emission perhaps doubtful.
- Lies on western edge of cluster NGC 2004.
- HD 269722.
- S 43 S 45 S 47 Imbedded in dense nebulosity. About 42" north and slightly east of bright star.
- S 52 Faint star on southwest edge of small cluster.
- Probably the northern star of close pair.
- S 53 S 62 Emission perhaps doubtful.
- s 66 Continuous spectrum diffuse. Perhaps a compact group.
- S 69 HD 268718.
- S 72 Probably southern star of close pair.
- S 73 HD 268835.
- 5 74 5 85 5 86 HD 268840.
- Emission perhaps doubtful.
- HD 269128.
- S 88 HD 269216. Probably variable. The red continuum seen on LHa plates is definitely brighter than that of a normal B star of magnitude 11.0. Further, the continuum appears to be stronger in January 1951 than in December 1949.
- S 89 HD 269217 = MWC 106.
- S 90 HD 269219.
- S 91 HD 269227 = MWC 492.

Table 2

EMISSION NEBULAE IN THE LARGE MAGELLANIC CLOUD

Nr. LHα 120-	19 R.A.	Dec.	Rect.	Coords.	Diam X	eter Y	In C	t. Hα	Tr	E1	S+	Stars
			<u></u>	u		- tr			11.	٠١٠.	50.	
N 1	4 ^h 42 ^m 3	-66°17'	- 3657	18728				1	_	_	_	
N 2 N 3	4 43.1 4 50.0	68 01 67 46	- 2231 - 42	12606 13853	91 469	95 573		1 T	0 1	0	0 1	1
N 4A	4 52.1	67 00	250	16741		50			0	ő	Ŏ	1
N 4B	4 52.1	66 59	264	16800	53 60	50		5 3 1	0	Ō	1	
N 4C N 4D	4 52.3 4 53.2	67 00 66 59	346 635	16763 16836	24 250	31 189	T	l l	0	0	0 1	,
N 4E	4 52.5	67 00	415	16746	42	46		i	Ö	0	Ŏ	1
N 4F	4 51.7	67 00	128	16742	72	70		1	1	Ō	0	
N 5 N 6	4 52.6 4 54.0	67 22 66 50	628 862	15437 17411	199 17	202 13		2 1	0	0	1	
N 7	4 53.5	67 28	992	15126	54	61		2	ŏ	ŏ	ĭ	
N 8	4 53.1	68 08	1199	12704	85	116		2 5 2	1	0	2	2
N 8A N 9	4 53.0 4 55.2	68 09 67 13	1176 1474	126 7 3 16101	393	528		î	4	2	1	1
N 10								ı	~	~	3	2
N 11 N 11A	4 56.4 4 57.2	66 30 66 27	1541 1801	18760 18935	1277	1404	1	255534	2	1	3	4
N 11B	4 56.8	66 28	1659	18851	262	212	_	5	1	2	2	3
N 11C	4 57.7	66 32	2009	18700	191	158		5	1	ĩ	2	3 1
N 11D N 11E	4 57.7 4 58.1	66 33 66 25	2035 2120	18629 19096	119	127		3	5	0	2	
N 11F	4 56.5	66 25 66 36	1635	18394	199	97 69		4	5 3 1	3	2 3 1	
N 11G	4 55.4	66 27	1152	18868	79			4 3 3 1				
N 11H N 11I	4 55.8 4 55.8	66 33 66 39	1366 1387	18531 18204	27 110	26 51		3	1	0 2	1	
N 11J	4 57.4	66 23	1841	19230		-	T	í	_			
N 11K	4 57.6	66 19	1901	19436	61 67	52	1	1	0	0	0	
N 11L N 12	4 54.7 4 58.6	66 30 66 16	936 2226	18674 19672	238	60 288		ī 1	0 1	0	0 1	
N 12A	4 58.8	66 18	2329	1958 7	32	37 156		1	0	0	0	
N 13 N 14	5 00.1 5 00.0	66 09 66 19	2729 2754	20151 19523	132 168	156 172		T	0	0	0 1	
	5 00.7	66 27	3082	19088	18	20		2	0	Ö	Ŏ	
N 15 N 16	4 58.1	67 46	2727	14255				3 T	_	_	_	_
N 16A N 17	5 00.0 5 03.8	68 03 67 23	3467 4531	13305 15871	214 110	110 75		T	0 1	1	0 1	1
N 17A	5 03.8 5 03.9	67 23	4569	15845	23	22		T 5 4	ō	ŏ	ō	
N 17B	5 03.7	67 22	4504	15880	57	57		4	5	0	1	
N 18 N 19	5 04.7 5 03.5	66 44 68 01	4624 4632	18198 13536				4 T				
N 20	5 05.2	66 59	4893	17307	106	40		2	0	0	1	
N 21	5 04.9	67 38	4991	14983	221	139	1	l	1	0	1	
N 22 N 23	5 05.1 5 05.8	67 52 68 12	5145 5482	14123 12990	817	596	1	5 1 3 2	2	2	2	2
N 23A	5 05.1	68 08	5215	13163	82	107		3	ĩ	õ	ĩ	-
N 24 N 25	5 06.2 5 09.4	67 50 67 52	5501 6597	14300 14287								
N 25 N 26	5 10.7	67 09	6863	16911	27	30	1	2 4 3 2	0	0	0	
N 27	5 11.0	67 11	6972	16755	48	53	T	ž	0	0	0	
N 28 N 29	5 11.1 5 12.6	67 52 66 42	7185 7411	14303 18577			Т	2				
N 30	5 13.8	67 28	8018	15798	456	564	•	T	1	2	1	
N 30A	5 14.0	67 27 67 31	8081	15899	30	41		4	0	1	1	
N 30B N 30C	5 14.0 5 13.9	67 31 67 31	8081 8068	15640 15616	25 317	17 132		4 3 2 1 T	0 4	1 2 1 1	0	2
N 30D	5 13.3	67 32	7868	15547	66	62		ĩ	1	ĩ	1	~
N 31 N 32	5 15.1	66 31 68 02	8270 8830	192 7 5 13 <i>7</i> 90	60 16	90 19		T	0	1	0	
N 32 N 33	5 15.9 5 16.9 5 17.5	67 23	9091	16154	81	69		24322TT1	5	Ŏ	1	
N 34A	5 17.5	66 47	9188	18373				į	•	-	_	
N 34B N 34C	5 17.5 5 17.5	66 47 66 47	9207 9204	18351 18342				2				
N 35	5 17.8	66 04	9199	20945	109	134		Ĩ	1	0	0	
N 36	5 18.0	67 57	9528	14117	65	78		T	1	0	1	
N 37 N 38	5 20.3 5 20.6	66 56 66 50	10204 10295	17810 18209	230 64	137 52		1 5	2 0	2	2 1	
N 39	5 20.9	67 09	10451	17072		/~		ź	·	-	-	

Table 2 (Cont'd)

Nr. LHα 120-	19 R.A.	50 Dec.	Rect.	Coords. Y	Dian X	neter Y	In C	t. Hα	Tr.	El.	St.	Stars
			н			11						
N 40 N 41	5 ^h 21 ^m 5 5 20.7	-65°30 ' 68 04	10518 10463	23063 13 74 5	80 51	80 49		2 1	1	1	1	
N 41 N 42	5 21.6	67 03	10680	17420		49		2	U	U	U	
N 43	5 22.2 5 22.6	65 46 67 59	10779 11121	22060 14064	655	247 1163		1 4	1 2	2	1	2
N 44 N 44A	5 21.6	67 54	10775	14351	943	-		5	۷	2	,	2
N 44B	5 22.2 5 22.4	68 00 68 01	10956 11043	139 77 13929	67 47	57 67		55555	1	0	0	
N 44C N 44D	5 23.0	68 07	11247	13567	91	74		5	ì	1	ì	
N 44E	5 23.4 5 21.8	68 03 67 58	11387 10837	13826 14126	33 66	36 59		5	0 1	0	0 1	1
N 44F N 44G	5 22.5	68 07	11083	13555	00			4		U	1	
N 44H	5 23.0 5 22.7	68 04 67 57	11244 11128	13760 14145	44	47		4	0	1	0	
N 44I N 44J	5 21.8	67 49	10809	14625	43	41		2 4	0	0	0	
N 44K	5 22.5	68 07 68 03	11084	13567 13826	56 35	51 36		4	0 1	0	0 1	
N 44L N 44M	5 23.3 5 23.8	68 03	11337 11530	13800	49	40		2	ō	ŏ	ō	
N 44N	5 24.0	67 59 66 44	11580 11082	14072 18575	25 69	24 77		3 2 2 2	0 1	0	0	
N 45 N 45A	5 22.8 5 22.8	66 44	11096	18590					1	U	U	
N 46	5 23.1	66 25 67 12	11169	19707	59	64		2 3 1	0	0	1	
N 47 N 48	5 24.5 5 25.4	66 23	11 <i>7</i> 2 <i>5</i> 12010	1690 7 19840	739	913		i	1	3	2	
N 48A	5 25.8	66 18	12135	20179		-		4	0	-	,	
N 48B N 48C	5 25.6 5 25.8	66 20 66 17	12090 12152	20034 20218	35 20	52 25		4	1	1 0	1	
N 48D	5 25.4	66 24 66 30	12014	19777	56	50 36		4 2 1	0 1	0	0	
N 48E N 49	5 24.9 5 26.0	66 08	11824 12203	19431 20799	33 68	82		5 1	2	õ	2	
N 50	5 26.0	67 12 67 35	12254	16884	153	193			1	0	0	2
N 51 N 51A	5 26.9 5 28.0	67 28	12549 12961	15510 15960	11 <i>7</i> 1 18	11 <i>7</i> 9 25	1	2 4	3 0	1	3	2
N 51B	5 26.4	67 40	12376	15233	29	31	1	4	0 1	0 1	0 2	
N 51C N 51D	5 27.8 5 26.0	67 30 67 32	12867 12253	15837 15691	84 508	92 586		4 3 1	5	ō	3 2	2
N 51E	5 26.7	67 41	12502	15132	378	422			1	1	2	1
N 52 N 53	5 28.8 5 29.4	67 36 67 35	13218 13416	15463 15520			1	1 3 1				
N 54	5 29.5	67 16	13455	16685	279	121			2	2	2	1
N 55 N 55A	5 32.3 5 32.5	66 28 66 29	14496 14575	19549 194 7 0	278 65	434 60		3 4	3 1	3	3	1
n 56	5 34.3	67 36	15130	15426	1940	1452		1	2	2	2	6
N 57 N 57A	5 32.5 5 32.4	67 43 67 44	14486 14467	15022 14976	652 55	645 44		3 4	1	2 1	2	3 1
N 57B	5 32.3	67 48	14400	14712	26	25		4	ō	0	į	,
N 57C N 57D	5 33.3 5 33.0	67 44 67 43	14765 14657	14926 15034	94	94		2	5	0	1	1
N 57E	5 32.1	67 44	14343	14951	366	377		344322335	5 1	0	2	3
N 58 N 59	5 32.8 5 35.6	67 31 67 35	14598 15576	15760 15458	35 561	34 456		ر 3	3	0	1	
N 59A	5 35.5	67 36	15549	15437	152	174			-	1	3	
N 59B N 59C	5 36.3 5 35.8	67 35 67 38	15798 15625	15464 15273	117 90	87		4	0	. 0	2 1	
n 60	5 34.1	67 55	15017	14314	•	•		3 T				,
N 61 N 62A	5 34.6	66 15	15374	20292	108	41		1 3	0	3	1	1
N 62B	5 34.4	66 10	15276	20609	173	239		ź	4	3 1	0	1
N 63 N 63A	5 35.6 5 35.7	66 01 66 02	15755 15770	21150 21100	290 40	380 40		2 5	2	0	1	
n 64A	5 35.7 5 37.1	66 22	16235	19860	30	40		3225222T	0	0	1	
N 64B N 64C	5 37.1 5 37.3	66 21 66 17	16235 16330	19940 20130	350 100	260 120		2	1 5	1	1 0	
N 65	5 37·3 5 37·3	66 38	16280	18860	760	440			í	2	Ŏ	
n 66 n 67	5 36.5 5 38.9	67 19 64 41	15900 17187	16410 25949	15	15	Т	2 1	0	1	1	
n 68	5 37.2	68 15	16040	13038	21	20	Ť	3	ĭ	ō	ō	
n 69 n 70	5 40.5 5 43.5	66 17 67 51	17490 18235	20100 14390	410	420		3	5	0	2	
N 71	5 43.9	67 27	18452	15812	48	47		3	ó	ŏ	ĩ	

Table 2 (Cont'd)

Nr. LHα 120-	19 R.A.	50 Dec.	Rect. C	oords. Y	Diam X	eter Y	Int C i	• Ηα	Ir.	E1.	St.	Stars
N 72	5 ^h 43 ^m 6	-66°17'	18619	20034	" 32	" 32	1	5 T	0	1	0	
N 73 N 74	5 44.5 5 45.8	67 27 67 09	18667 19223	15789 16870	20 795	40 286	1	1	0	1 3 2	1	1
N 74A N 74B	5 45.8 5 45.4	67 10 67 09	19191 19080	16830 16864	32 128	17 20	1	4 3 2	1 2	3	1 2	
N 75A N 75B	5 55.9 5 56.2	68 07 68 12	22339 22411	13022 12736	31 334	32 286		2 1	0 1	0	0	
N 76 N 77A	4 49.2 4 49.7	68 29 69 17	103 697	11248 8411	111 30	100 32	1	1 5	1	0	0	
N 77B	4 50.0	69 18	804 907	8378	34	28	î	3	0	1	0	
N 77C N 77D	4 50.3 4 49.1	69 17 69 15	497	8447 8522	23 68	25 62	Τ.	3	Ō	0	1	
N 77E N 77F	4 50.0 4 48.7	69 18 69 13	804 354	8368 8588	299 19	370 22		3 2 2	1 0	1 0	1	
n 78 n 79	4 50.5 4 51.1	69 39 69 30	1166 1263	7153 7723	1038	814		2 1	1	2	2	
N 79A N 79B	4 52.1 4 52.3	69 29 69 29	1569 1623	7852 7846	78 21	75 20	1	5 5 4	1	1	0	
N 79C	4 52.3	69 26	1605 1744	8029 7986	51 75	46 61		4	0	Ŏ O	1	
N 79E	4 52.5	69 27 69 25	1657	8053	180	154		3	1	1	1	
N 80 N 81A	4 54.3 4 53.0	68 27 69 18	1758 1773	11636 8503	84 100	77 93 86		3 2 1	0	0	1	
N 81B N 82	4 53.3 4 53.8	69 19 69 23	1873 2045	8447 8256	101	86			0	1	0	
N 83 N 83A	4 54.5 4 54.3	69 16 69 17	2218 2160	8733 8612	340 61	297 55		535532	2 1	1	2 0	
N 83B	4 54.6	69 16 69 15	2269	8694	44	37	1	5	ō o	ī 1	ŏ	
N 83C N 83D	4 54.2 4 54.4	69 16	2129 2203	8772 8724	21 20	20 21	1	2	0	0	1	
N 84 N 85 N 86	4 55 .7 4 55 . 9	68 31 68 41	223 7 2399	11471 10857	113 23	108 23	T	2	0	0	1	
n 86 n 87	4 55.9 4 54.7	68 45 69 35	2423 2436	10653 7590	223 19	222 14		1	5 0	0	2	
N 88 N 89	4 55.1 4 55.3	69 29 69 25	2530 2548	7983 8215	36	21		4 2 4	Ŏ	ĭ	ì	
N 90	4 55.7	69 21	2641 2816	8441 11646	25 420	27	1	4	0	0	1	•
N 91A	4 57.5 4 57.3	68 29 68 31	2785	11487	41	384 32		4 3 5 4	3	1	3	2
N 91B N 92	4 57.4 4 57.3	68 31 68 50	2817 2923	11554 10383	47 169	48 163		4 1 4	1	0	2 1	1
N 92A N 92B	4 57.5 4 57.2	68 50 68 50	2966 2884	10391 10356	28 40	30 48	T	4	1	1	1	
N 93 N 94A	4 57.2 4 56.6	69 17 69 29	3096 2975	8730 7999	41 90	26 49		î 1	1	2	ī	
N 94B N 94C	4 56.8 4 57.2	69 31 69 35	3061	7923 7692	62 207	45		ī	2 2	ĩ 2	2 2 1	
N 95	5 02.8	68 33	3244 4601	11614	16	223 13		ı	ĩ	ĩ	ĩ	
N 96 N 97	5 03.2 5 05.1	69 26 68 44	5048 5423	8446 11004				2 3 2 1				
n 98 n 99	5 04.8 5 06.3	69 51 69 44	5694 6149	6965 7419				2 1				
N 100 N 101	5 07.5 5 07.8	68 37 69 13	6193 6450	11532 935 7	183	155		T 1	0	1	1	1
N 102	5 08.3	68 45	6477 6711	11042 10746	205	222	•	2	2	2	2	
N 103A N 103B	5 08.9 5 09.6	68 45 68 50 68 50	6944	10746	97	332 82		3	2 1	2 1	2 1	
N 104A N 104B	5 10.3 5 09.7 5 10.1	68 34 68 33	7090 6877	11746 11796	193	154		1 2 3 2 1 1	1	1	1	
N 105 N 105A	5 10.1 5 10.2	68 58 68 58	7135 7160	10298 10310	322 160	340 270		1	2	0	1 2 3	4
N 106 N 107	5 10.5 5 10.9	68 53 68 41	7247 7312	10620 11364		•		4 1 1		-	-	•
N 108	5 10.8	69 31 69 32	7476 7902	8340 8298	41 24	44 29		2	1	0	1	
N 109 N 110	5 12.1 5 11.8	7 0 06	7949	6248	24	47		1 2 1 2 1 4	J	J	1	
N 111 N 112	5 13.1 5 13.7	69 08 69 15	8129 8363	9792 9343	48	38		<u>1</u>	0	0	1	
N 113 N 113A	5 13.8 5 13.7	69 24 69 27	8419 8408	8800 862 7	371 21	556 29		3	1	1 0	2	4

Table 2 (Cont'd)

Nr. LHα 120-	19 R.A.	50 Dec.	Rect.	Coords. Y	Diam X	eter Y	In C	t. Hα	Ir.	El.	St.	Stars
	h .m.	4	11	11		n						
N 113B N 113C	5 ^h 13 ^m 7 5 13.6	-69°27 ' 69 26	8390 8366	8640 8691	81	65		4	1	0	1	
N 113D	5 13.5	69 27	8328	8638	65	73		4	0	0	1	
N 113E N 113F	5 13.6 5 14.0	69 2 7 69 2 7	8374 84 7 9	8648 8615	49	44		4	1	1	0	
N 114 N 114A	5 15.1 5 1/ 9	69 31 69 34	8862 8792	8446 8220	336 45	528 45		2	2 1	3 2	2 1	1
N 115	5 14.9 5 14.5	70 12	8812	5962	38	37		í	0	0	0	-
N 116 N 117	5 17.3 5 17.4	69 5 7 69 38	9611 9609	6885 8054	86 28	60 27		7	0	0	1	
N 118	5 19.3	68 24	10052	12494	.26	27		4	0	0	1	
N 119 N 119A	5 18.7 5 18.3	69 15 69 14	9954 982 4	9437 9474	800	932		34231144313555352	3	1	3	4
N 120 N 120A	5 19.3 5 19.5	69 43 69 41	10220 10259	7756 7855	520 38	365 43		3	1	3 1	2 1	
N 120B	5 19.5	69 42	10280	7834	37	51		5	0	1	0	_
N 120C N 120D	5 19.8 5 18.8	69 42 69 43	103 <i>7</i> 4 10062	7806 7750	86 65	97 60		5 3	2 1	1	2 1	2
N 121	5 19 .7	69 50	10358	7316	• /		T	5	_	_	_	
N 122 N 123	5 20.3 5 20.6	69 34 69 57	10504 10640	8302 694 7				2				
N 124	5 21.6	68 38 70 12	10842 10899	11692 6000				2 1				·
N 125 N 126	5 21.9	69 05	10972	10048	48	32		Ť	0	1	0	
N 127A N 127B	5 22.0 5 21.7	69 43 69 44	11059 10974	7747 7731	73 87	70 82		T 5 2	1	0	2	
N 128	5 22.5	68 41	11142	11517	75	53	_	T	1	1	0	
N 129 N 130	5 22.8 5 23.0	69 45 70 13	11317 11397	7641 5981	24 54	27 69	T 2	4	1	1 2	0	
N 131	5 23.3	69 54	11485	7135	53 43	32		3 4	0	1	1	
N 132A N 132B	5 24.1 5 24.7	69 40 69 42	11705 11908	7982 7872	38	44 31		3	ŏ	ĭ	1	
N 132C N 132D	5 24.9 5 25.5	69 43 69 40	11978 12141	7766 7937	32 32	35 24	T	2	0	0	1	
N 132E	5 24.8	69 42	11943	7877				1				
N 132F N 132G	5 23.9 5 24.5	69 38 69 41	11655 11830	8119 7892	32 41	32 37		1 1	1	0	0	
N 132H	5 25.3	69 41	12102	7919	30	23		1	0	0	1	
N 132I N 132J	5 24.5 5 24.0	69 43 69 41	11826 11665	7793 7893	103 70	75 86		1 T	0	ō	1	
N 133 N 134	5 24.8 5 26.2	70 07 69 55	11961 12393	6314 7057	27	26		2 T	0	0	0	
N 135					~ /	20		2		·	3	45
N 136 N 137A	5 23.8 5 24.3	69 07 68 58	11599 11 7 50	99 76 10488	27	23		1	0	1	1	
N 137B	5 24.5	68 58	11791 11877	10516 12021	42 391	32 363		T	0 1	2	0 1	1
N 138 N 138A	5 24.8 5 25.3	68 31	12050	12171	46	47	1	1 5	0	2	0	-
N 138B N 138C	5 24.4 5 24.9	68 32 68 31	11761 11903	12051 12138	26 35	26 41	Т	4	1	0	0	
N 138D	5 24.5	68 32	11770	12070	35 21	22	_	2 2	1	0	0	
N 139 N 140	5 25.1 5 25.5	69 22 69 14	12009 12152	904 4 9569	516	430		l T	1	3	1	
N 141 N 142	5 25.7	68 58 69 28	12199 12266	10522 8722	131	210		2	1	1	1	
N 143	5 25.9 5 26.8 5 26.9	69 21	12570	9098	127	164		1 2 4 5 4 2 2	0	1	1	
N 144 N 144A	5 26.9 5 27.0	68 52 68 51	12576 12627	10887 10955	528 43	479 46		4 5	2 0	1	3	4
N 144B	5 26.8	68 51	12555	10951	77			Á	-	-	-	
N 145 N 146	5 27.9 5 29.1	69 11 69 03	12919 13289	9715 10218	53	37		2	0	2	1	
N 147	E 20 1	69 25	13389 14617	8885 12 45 8	24	25	T	1	0	0	0	
N 148A N 148B	5 31.9	68 25 68 36	14244	11807	•		•	5 3 3				_
N 148C N 148D	5 32.0 5 31 6	68 34	14265 14133	11959 12003	125 26	117 28		3	1	0	1	1
N 148E	5 31.9	68 33 68 30	14216	12193	33	33		3 2 2	1	1	2	
N 148F N 148G	5 33.0 5 31.9 5 31.6 5 31.9 5 31.6 5 31.9 5 31.2 5 32.7 5 31.6	68 36 68 41	13990 14483	11834 11543	26	24		1	1	0	0	
N 148H	5 31.6	68 38	14133	11696	22	24	T	1	0	0	0	

Table 2 (Cont'd)

Nr. LHα 120-	19 R.A.	50 Dec.	Rect. (Coords.	Diam X	neter Y	С	Нα	Ir.	E1.	St.	Stars
	· · · · · · · · · · · · · · · · · · ·		11	11	11	Ħ						
N 148I N 149A	5 ^h 32 ^m 1 5 33.3	-68°42 ' 69 48	14298 14600	11467 7471	213 25	229 27		1	5 1	0	0 1	
N 149B	5 33.3	69 48	14583	7483				5 1				
N 150 N 151	5 34.0 5 34.0	68 47 68 38	14901 14929	11148 11 <i>7</i> 01	49	31		4 2 1	1	2	1	
N 152	5 34.5	69 28	15000	8682								
N 153 N 154	5 34.7 5 35.5	69 00 69 44	15105 15291	10362 7700	1054	888		2	1	2	3	4
N 154A	5 36.4	69 40	15568	7909	80	54		234323354354441534454421	ī	2 1	3 1	
N 154B N 155	5 34.9 5 37.7	69 48 69 47	15102 15974	7446 7481	51	51		3	0	0	1	1
N 156	5 38.1	69 47 69 36	16115	8174	27	36	1	3	1	1	1	,
N 157 N 157A	5 38.0 5 38.9	69 08 69 06	16161 16465	9826 9916	1849 922	1781 1063		ر 5	1 2	1 0	3	6 8
N 15 7 B	5 38.0	69 12	16167	9601	200	182		4	1	0	3 2 3 1	4
N 158 N 158A	5 39.9 5 40.6	69 28 69 24	16733 16963	8582 885 4	746 53	759 47		5 5	3 1 0	2	1	6 1
N 158B	5 39.1	69 25	16479	8757	26	22		4		1	0	2
N 158C N 158D	5 39.5 5 39.7	69 32 69 34	16571 16642	8394 8222	217 40	210 39		4	3	0 1	3 2 2	2
N 159	5 40.4	69 34 69 46	16816	7496	288	249		1	2	0	2 1	
N 159A N 159B	5 40.1 5 40.5	69 47 69 45	16728 16861	7439 7548	56	62		3		U	1	
N 159C	5 40.4	69 47	16829	7472	140	107		4	2 0	l l	2	
N 159D N 159E	5 40.4 5 40.5	69 45 69 48	16827 16835	7572 7389	131 35	· 97 35		5	1	Ŏ	2 0	
N 159F	5 40.1 5 40.8	69 46 69 46	16726	7551 7518	48 50	47 50		4	1 1	0	1	
N 159G N 159H	5 39.9	69 48	16935 16672	7386	90	50		2	_	U	_	
N 159I N 159J	5 40.2 5 40.0	69 46 69 44	16758 16703	7534 7598				1				
N 159K	5 40.0	69 47	16684	7469	25	22		2	1	1	0	
N 159L N 160	5 40.5 5 40.8	69 50 69 38	16850 16958	7260 7983	62 678	28 787		1	4 1	2 1	0 3	
N 160A	5 40.2	69 40	16765	7888	94	94		3555433313331224122	1	0	0	
N 160B N 160C	5 40.6 5 40.8	69 41 69 41	16893 16971	7796 7805	60 44	38 40		5	1	0	0	
N 160D	5 40.0	69 40	16707	7859	55 51	58		4	1	0	1	
N 160E N 160F	5 40.9 5 41.2	69 42 69 44	16980 17083	7720 7614	51 58	37 49		3	0	1	1	
N 161	5 40.5	69 00	17003	10260	65	62		3	ĭ	ĭ	ĩ	
N 162 N 163	5 41.3 5 43.6	69 17 69 46	17198 17811	9245 7436	217	213		3	1	0	2	
N 164	5 42.9	69 05	17758	9928	293	310		3	2	2	2 3 1	
N 165 N 166	5 43.2 5 44.7	68 58 69 25	17885 18253	10382 8666	103 14	93 30		1	2 5 0	2	0	
N 167	5 44.8	69 23 69 46	18301	8800	64	47		2	0	0	1	
N 168 N 168A	5 45.8 5 45.9	69 46 69 4 7	18507 18535	7409 7358	127 23	191 24		4	1	2 1	1	
N 168B	5 45.7	69 47	18492 18905	7346	64	64		1	1	0	0	
N 169A N 169B	5 46.9 5 46.8	69 34 69 35	18873	8077 8029	32	31		.2	ō	ŏ	ŏ	
N 1690	5 46.5	69 34	18786 19096	8133	80	80		1	1	0	1	
N 170 N 171A	5 47.4 5 39.9	69 27 7 0 13	19096 16605	8491 5866	21	21		3 2 1	0	0	0	
N 171B	5 39.8 5 40.6	70 14 69 56	16555 168 7 4	5845 6916	57 53	70 52		1	1	0	0	
N 172 N 173	5 40.8	69 54	16933	7023	49	54		2 1 1	0	0	0	
N 174 N 175	5 40.9 5 41.2	69 58 7 0 03	16936 1 <i>7</i> 020	6778 6450	22 118	25 107		1	0	1 0	0 1	
N 176	5 41.3	70 11	17026	6003	41	37	T	3	5 0	0	0	
N 177 N 178	5 41.6 5 43.1	69 55 70 10	17183 17581	6913 6019	102	175		3	1	1	1	
N 179A	5 48.4	69 53 69 53	19294	6877	47	48		ŝ	1	0	1	
N 179B N 179C	5 48.4 5 48.3	69 53 69 52	19291 19271	6928 6980	24 32	24 32		2	0 1	0	1 0	
N 179D	5 48.6	69 52	19358	6948	48	48		Ť	1	0	0	
N 180 N 180A	5 49.5 5 49.1	70 05 70 06	19573 19434	6153 6149	604 24	859 24		2332321T143	1 1	2 0	1 0	1
N 180B	5 49.1 5 49.4	70 03	19541	6296	286	318		3	ō	ĭ	3	2

Table 2 (Cont'd)

Nr. LHα 120-	R.A.	Dec.	X	Coords.	X	eter Y	In C	t. Hα	Ir.	El.	St.	Stars
N 180C N 181 N 182 N 183	5 ^h 48 ^m 7 5 49.9 4 39.0 4 46.4	-70°02' 69 09 70 41 70 55	19326 20002 - 1670 660	6376 9508 2813 2407	111	11 96		2 2 3 2 2 1	0	1	0	
N 184 N 185 N 186A	4 48.5 4 54.2 5 01.3	72 30 70 05 70 18	2194 2528 4801	- 3180 5779 5243	390	397			1	0	1	
N 186B N 186C N 186D	5 00.4 5 00.0 5 00.3	70 08 70 13 70 12	4454 4380 4452	5830 5475 5545	38 27 88	36 28 114		3 2 T T	0 1 5 5	0 0	0 0 0	1
N 186E N 187 N 188	5 00.1 5 02.5 5 04.1	70 15 70 46 70 18	4411 5348 5656	5375 3590 5338	538	510		1 2		0	0	1
N 189 N 190 N 191A	5 05.3 5 04.9 5 05.2	70 12 70 48 70 58	5970 6057 6203	5750 3547 2934	90 114 48	76 133 53	2	1 3 5	0 0	2 0 1 0	1 0 0	
N 191B N 192 N 193A N 193B	5 05.1 5 10.1 5 13.0 5 12.7	70 58 70 53 70 28 70 32	6168 7637 8386 8326	2983 3405 4944 4716	54 29 32	52 25 36	1	3522522	0	0	0	
N 193C N 193D N 193E	5 13.0 5 12.8 5 12.6	70 28 70 31 70 32	8385 8361 8294	4929 4756 4683	38 29	52 35		2 T T	Ŏ 1 1	î 0 0	î 0 0	
N 194 N 195 N 195A	5 16.5 5 18.4 5 18.2 5 18.3	71 50 71 18 71 18	9685 10138 10087	51 2008 2023	29 16 167 34	35 19 182 27		3 1 4	1 0 1	0 1 1	0	
N 195B N 196 N 197	5 20.7 5 21.6	71 18 70 28 71 45	10116 10722 11133	1977 5026 381	46 21	32 21	1	4 1 3 1	0	0	0	3
N 198 N 199 N 200	5 23.2 5 23.4 5 24.0	71 38 71 21 71 23	11549 11593 11767	856 1850 1722 1044	339 394	441 7 95		2 1	5 4	1 2	1	1
N 201 N 202 N 203 N 204	5 25.6 5 25.8 5 25.8 5 28.0	71 35 71 30 73 41 70 36	12262 12297 12360 12941	1349 - 6580 4596	53 242	59 193		3 T 2 3	1 1	0	0	
N 205A N 205B N 206	5 28.3 5 26.9	71 26 71 38 71 07	13019 12625 13895	1563 845 2692	100 230 1038	175 200 935		3 T 3 5 4	1 1 2	ī 1 0	1 1 3 1	2 3 1
N 206A N 206B N 206C	5 31.3 5 32.0 5 31.4 5 29.6	71 06 71 10 71 11	14101 13941 13388	2795 2559 2482	116 38 24	229 37 24		1	1 1 0	1 0	0	1
N 206D N 207 N 208	5 33.0 5 31.2 5 31.9	71 15 70 46 70 42	14400 13878 14118	2237 3968 4203	27	25		1 3 2 1	1	0	0	
N 209 N 210 N 211 N 212	5 34.3 5 35.7 5 36.6 5 37.7	71 53 74 18 73 54 71 54	14709 14820 15100 15662	- 101 - 8900 - 7430 - 181				1 1 1				
N 213 N 213A N 214	5 39.0 5 38.9 5 41.6	71 54 70 42 70 42 71 16	16222 16213 16878	4153 4160 2055	186 44 600	169 48 831	т	3 5 T	1 1 0	0 1 3	1 0 0	
N 214A N 214B N 214C	5 40.6 5 40.6 5 42.3	71 10 71 11 71 20	16612 16622 17079	2428 2395 1784	35 44 198	35 27 179		5 4 4	1 1 1	1 0	0 1 2	1
N 214D N 214E N 214F	5 40.8 5 40.8 5 42.1	71 12 71 13 71 16	16681 16682 17045	2349 2263 2048	90 35 41	87 38 47	1	1 1 1	1 1 0 1	0 1 1 0	1 0 0	
N 214G N 214H N 215	5 42.0 5 42.1 5 42.1 5 41.6	71 15 71 18 72 42 70 55	16997 17036 16730 16963	2093 1955 - 3121 3319	30 54 59	27 59 54		1 3 T	1 0	0	1 0	
N 216 N 217 N 218 N 219	5 41.3 5 41.5 5 41.7	70 29 70 35 70 24	16964 17000 17088	4923 4519 5194	28 40	28 36		2 5 4 T	0	1 0	0	
N 220 N 221	5 49.4 6 19.5	70 17 71 35	19462 27670	5422 - 250	20	14	T	Ť 2	Ō	1	Ö	

```
LHα 120-
              NGC 1714 = HD 31606 Pd.
 N
       4B
              NGC 1715.
 N
      4E
              Very faint nebula about conspicuous central star.
              Probably southern and brighter member of close pair. HDE 268680. Probably = NGC 1736. The NGC descripti
 N
      8
                                                                The NGC description suits the object but the
              position is 1.0 minutes in error.
 N
     10
              This region to the north and east of LHlpha 120-N ll contains several extremely faint
              patches of nebulosity whose boundaries are very indefinite. It is probable that
              this region is a continuous field of faint nebulosity.
                                                                                              The boundaries are too in-
              definite to record a position for the field.

Probably IC 2116 = HD 32340 P (see Harv. Bull. 891). The position previously
 N 11A
              given for this object appears to be somewhat in error. It is not NGC 1769 as is
              noted in the HDC.
              Includes NGC 1763 = HD 32256 P (see Harv. Bull. 891) and IC 2115 = HD 32279 Pc.
              NGC 1769.
NGC 1773.
NGC 1760.
 N
     110
     11E
 N
N
N
N
N
     11F
     16A
              This object is not related to N 16. NGC 1814.
     17B
              NGC 1829.
     23A
              On southwest edge of cluster NGC 1852. The continuum is diffuse.
     25
26
 N
 N
     30B
              A very small nebulosity enclosed in a triangle of stars. Probably in cluster NGC
              1871.
              Very faint nebula about two stars. H\alpha emission perhaps doubtful. NGC 1895.
 N
     31
 N
 N
              In cluster NGC 1919.
              NGC 1920 = Harv. Bull. 891-16 = HD 269372.
Includes NGC 1937. NGC 1934 is not visible on LHα plates.
 N
     38
 N
     44
             Possibly NGC 1923.

Harv. Bull. 891-17 = HD 269404.

NGC 1935 = IC 2126 = HD 35814 Pec.

NGC 1936 = IC 2127 = HD 35861 Pd.

Harv. Bull. 891-19 = HD 269443. Probably part of IC 2128, which also probably in-
 N
     ĠÒ.
     44A
 N
     44B
 N
     44C
     44D
              cludes 44E, 44H and 44L. NGC 1929 = Harv. Bull. 891-18 = HD 269407. NGC 1941.
 N
     44F
 N
              Includes NGC 1945.
              Lies at center of NGC 1945. [O I] \lambda6300 shows strong emission. Harv. Bull. 891-20 = HD 271255.
     48E
     49
              In cluster NGC 1974.
     53
55A
              The continuum is probably due to an overlapping spectrum. Harv. Bull. 891-21 = HD 269730.
 N
     57A
57C
 N
              In cluster NGC 2014. Probably Harv. Bull. 891-22 = HD 269725.
 N
              NGC 2020.
     59
59A
              Includes HD 269803 = NGC 2029.
 N
              Consists of two bright knots: NGC 2032 = HD 37731 Pd and NGC 2035 = HD 269824 = Harv. Bull. 891-24.
 N
              NGC 2040 = HD 269852.
 N
     59B
              This region, between LHa 120-N 63 and LHa 120-N 65, seems to have an extremely
 N
              faint background of nebulosity connecting the brighter knots. The boundaries are
              too indefinite to record a position.
             Probably HD 271389. Shows [O I] \(\lambda_{0}300\) in emission. A very faint nebula about a conspicuous central star. Central star possibly multiple.
 N
     63
 N
     63A
     73
             multiple.

NGC 2147.

IC 2105 = HD 31351 Pc.

Probably IC 2111 = HD 31673 Pc.

Possibly IC 2111?

Contains the cluster NGC 1727.

Strong [N II] %6584 visible.

Includes NGC 1745 and NGC 1737.

NGC 1743 = HD 31947 Pc.

NGC 1748 = IC 2114 = HD 32014 Pc.

A small emission patch on souther
 N
     75B
77A
 N
 N
     79A
79B
 N
N
      79E
 N
     82<sup>-</sup>
     83
     .83A
     83B
              A small emission patch on southeast edge of bright star image.
Lies 10" east of faint star.
     88
              The continuum is probably diffuse.
              NGC 1770.
              IC 2117 = HD 32364 Pd.
Possibly NGC 1767.
Strong [N II] \(\lambda 6584\) visible.
     91A
     94A
 N
     97
              Eastern member of very close pair. Strong [N II] N6584 visible.
 N 102
```

Notes to Table 2 (Cont'd)

```
LHα 120-
                  NGC 1850. Includes HD 34026 Cl, Con; and HD 34039 Neb., Con. The compact cluster is brighter than the nebulosity but wisps of {\rm H}\alpha emission are unmistakably visible
 N 103A
                  along the southern edge of the cluster.
Lies 20" southwest of faint cluster.
 N 104A
 N 105A
                  NGC 1858. Contains Harv. Bull. 891-11 = HD 269111.
                  Lies 15" west of star. Contains NGC 1872 which is a cluster without {\rm H}\alpha emission.
 N 107
 N 113
                  113A, B and E form a chain of three small intense knots of nebulosity.which, together, make up NGC 1877.
Contains NGC 1876 and HD 34679 Cl, Con. The HD object seems to refer also to
 N 113A
 N 113C
                  113A, B, D, E and F. NGC 1874. NGC 1880.
 N 113D
 N 113F
                 NGC 1880.
Part of NGC 1918.
Part of NGC 1918.
Harv. Bull. 891-13 = HD 269367.
NGC 1921 = Harv. Bull. 891-14 = HD 269379. A peculiar, small, ring-like object which shows no Hα emission lies 25" to the east.
Harv. Bull. 891-15 = HD 269390.
A fan-like nebula attached to the cluster NGC 1943. The continuum is probably due
 N 120A
 N 120B
 N 121
 N 122
 N 130
                  entirely to the cluster.
                 This is an extended region of about two square degrees in extent which is filled with faint nebulous wisps and filaments. The region is very complex and only the more conspicuous knots are listed. The associated stars listed for LHa 120-N 135
 N 135
                  are those not otherwise listed for the conspicuous knots. This region contains several conspicuous clouds of blue supergiant stars whose members are too faint to appear in the Henry Draper Extension. NGC 2050 appears to be a part of this
                  region.
NGC 1949 = HD 36301 Pc.
 N 138A
N 144
N 144A
                  Includes NGC 1962, NGC 1965, NGC 1970.
                  NGC 1966.
                  On southwest edge of cluster NGC 1984.
 N 151
                  Identification on chart uncertain. Maybe it is the object 20" to the north of the
                  marked object.
                  This is a very faint object 35" southwest of bright star.
 N 152
N 153
N 154A
N 1554B
N 156
N 157A
N 157B
N 158
N 158C
N 159A
N 159C
                 Probably northeast member of close pair. Harv. Bull. 891-25 = HD 269822.
                 On southwest edge of cluster NGC 2033.
The continuum is diffuse.
30 Doradus = NGC 2070 = HD 38268 Pd. Includes NGC 2069.
NGC 2060.
                 NGC 2000.

Contains NGC 2081.

NGC 2074. Harv. Bull. 891-27 = HD 269930.

NGC 2079 = HD 38437 Pc.

NGC 2084. Includes Harv. Bull. 891-28 = H
                                      Includes Harv. Bull. 891-28 = HD 269942 and Harv. Bull. 891-29 =
                  HD 269950.
                 NGC 2083.
NGC 2078.
NGC 2080 = HD 38436 Pd.
 N 159D
 N 159F
N 160A
                 NGC 2080 = HD 38436 Pd.
NGC 2085 = HD 269952.
NGC 2086. Probably = IC 2145 = HD 38540 Pc.
NGC 2077 = HD 38416 Pd = HD 269937.
In cluster NGC 2113.
Strong [N II] \( \lambda 6584 \) visible.
Listed in Harv. Circ. 271 as "Nebulous wisp about star." Contains NGC 1791.
 N 160B
    160C
    160D
 N
    168A
    181
    186E
 N
    190
                  NGC 1833.
                  Harv. Bull. 891-10 = HD 33540 P.
 N
    191A
    193A
195B
                  Harv. Bull. 891-12 = HD 269211.
 N
 N
                  NGC 1914.
 N
    201
                  Northwest member of close pair.
                 NGC 2018.
NGC 2075.
NGC 2103.
 N
    203
    206A
 N
 N
    213A
 N 214C
 N 217
                  Lies 20" south of bright star.
                  Probably is the faint object 20" east of faint star.
 N 220
```

Table 3

EXCITING STARS IN THE LARGE MAGELLANIC CLOUD NEBULAE

			7.0	^^		
Neb. Nr. LHa 120-	Star Nr.	Posi- tion	190 R.A.	Dec.	m	Sp.
N 3 N 4D N 8	HD 268605 HD 268653 LHα 120-S 5		4 ^h 50 ^m 3 4 53.4 4 53.2	-67°50' 67 05 68 12	11.0 10.5 12.8	B Bo
N 9 N 10	LHα 120-S 6 HD 32034 HD 270948	С	4 53.3 4 55.2 5 00.8	68 13 67 20 66 05	12.8 10.1 11.6	Pec. Con.
N 11	HD 270952 HD 32228 HD 268732 LHα 120-S 4	С	5 01.1 4 56.4 4 56.9 4 55.1	66 01 66 38 66 44 66 40	11.5 10.2 11.0 12.8	Con. Oa B
N 11B	LHα 120-S 9 HD 268715 HD 268721 HD 268726		4 57.5 4 56.5 4 56.8 4 56.9	66 41 66 34 66 33	12.0 11.5 11.8 11.3	B B B O
N 11C N 16A N 23	HD 268743 HD 268847 HD 33486 LHα 120-S 18		4 57.5 5 00.1	66 37 68 06 68 13 68 19	11.1 13.9 8.1 11.5	B O B9
N 30C	HD 34664 HD 269195	С	5 14.0 5 14.1	67 34 67 34	11.4	Pec. B
N 43	HD 271191 LHα 120-S 29		5 21.5 5 22.0	65 51 65 48	10.2 12.8	B B
N 44	HD 269412 HD 269445		5 22.2 5 23.3	68 00 68 07	11.4 11.6	B 0
N 44E N 51	HD 269449 HD 269540 LHα 120-S 37		5 23.5 5 27.0 5 28.2	68 06 67 34 67 36	14.1 11.7 12.8	O B
N 51D	HD 36402 HD 269525		5 26.3 5 26.4	67 35 67 35	10.8 11.5	0a B
N 51E N 55 N 56	HD 269545 HD 269722 HD 269702 HD 269713 HD 269726 HD 269841 HD 269845		55555555555555555555555555555555555555	67 44 66 28 67 33 67 35 67 36 67 30 67 31	11.4 11.6 11.9 11.9 9.5 12.3 11.6 11.2	B B Con. Con. B* Con. Con. Con.
N 57	HD 269698 LHα 120-S 47 LHα 120-S 48		5 32.0 5 32.6 5 33.4	67 42 67 45 67 41	11.7 11.5 12.0	0
N 57A N 57C N 57E	HD 269717 HD 269748 HD 269692 HD 269714	С	5 32.6 5 33.4 5 31.8 5 32.4	67 45 67 46 67 45 67 45	11.8 13.1 13.9 11.7	B O O B

Table 3 (Cont'd)

Neb. Nr.		Posi-	19	00		
LHα 120-	Star Nr.	tion	R.A.	Dec.	m	Sp.
N 61 N 62B N 74	LHα 120-S 44 HD 271363 HD 271366 HD 270149	C	5 ^h 32 ^m 2 5 34.0 5 34.1 5 46.9	-67°46' 66 18 66 13 67 11	12.8 11.5 11.8 13.8	Con. Con.
N 91	HD 268798 HD 268804	•	4 57.4 4 57.6	68 35 68 34	10.8 11.1	B: B:
N 91B N 100 N 105A	HD 32402 HD 269050 HD 34169 HD 34187 HD 269113 HD 269116	С	4 57.8 5 07.7 5 10.2 5 10.3 5 10.4 5 10.4	68 33 68 40 69 00 69 01 69 00 69 03	12.3 11.2 13.2 14.0 14.5 11.2	0a B 0a 0 B:
N 113	HD 34783 HD 269215 HD 269217 HD 269219	0	5 14.8 5 14.2 5 14.3 5 14.3	69 25 69 25 69 28 69 27	13.8 11.1 11.6 11.4	Oa B:* Pec. B
N 114A N 119	HD 269244 HD 35343 HD 269321 HD 269333 HD 269357	C	5 15.2 5 18.9 5 18.6 5 18.9 5 19.6	69 36 69 21 69 22 69 18 69 19	11.2 var. 10.9 11.2 12.1	B Pec. B: Oe Con.
N 120C N 135	HD 269382 HD 369382 HD 36930 HD 269578 HD 269582 HD 269582 HD 269604 HD 269618 HD 269619 HD 2696619 HD 269661 HD 269661 HD 269661 HD 2696651 HD 2696651 HD 269665 HD 269668 HD 269668 HD 269705 HD 269832 HD 269858 HD 269858 HD 269859	С	122633501891126556078855 555555555555555555555555555555555	15666666666666666666666666666666666666	11.5 11.5 11.5 11.5 11.6 10.2 11.0 11.0 11.6 11.6 11.6 11.9	Oa: Pec. OBPec. BOBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB

Table 3 (Cont'd)

N. J. N.		D	00			
Neb. Nr. LHα 120-	Star Nr.	Posi- tion	R.A.	OO Dec.	m	Sp.
	HD 269920 HD 269982 HD 269997 HD 269997 HD 270086 LHα 120-S 106 LHα 120-S 107 LHα 120-S 109 LHα 120-S 110 LHα 120-S 112 LHα 120-S 113 LHα 120-S 115 LHα 120-S 120 LHα 120-S 120 LHα 120-S 125 LHα 120-S 126 LHα 120-S 126 LHα 120-S 136 LHα 120-S 137 LHα 120-S 139 LHα 120-S 139 LHα 120-S 141		n.4730981458603135712548 9.42.9981458603135712548 9.555555555555555555555555555555555555	-69°26' 69°18' 69°51' 69°02' 69°05' 69°15' 69°16' 60°16' 6	11.3 11.1 11.1 10.6 12.8 12.8 12.0 12.8 12.0 12.8 12.0 11.5 11.5 12.8 12.8	B: B Con. B Bo:
N 138 N 144	LHα 120-S 142 HD 269485 HD 36521 HD 269546 HD 269548 HD 269551		5.28 5.28 24.13 27.33 27.49 27.4	69 21 68 37 68 55 68 55 68 55 68 55 68 45	12.0 14.3 11.4 10.4 13.6 11.5	O Oa B O B
N 148 N 148C N 154	LHα 120-S 118 LHα 120-S 121 HD 269700 HD 37680 HD 37836 HD 269784 HD 269786		5 35.9	68 30 68 37 69 49 69 44 69 47	12.8 10.4 12.6 10.5 14.2 11.0	B Oa Pec. O
N 154B N 157 N 157A	HD 269769 HD 38029 HD 269818 HD 269826 HD 269828 HD 269888 HD 269896 HD 38282 HD 38344 HD 269883 HD 269891 HD 269902		55555555555555555555555555555555555555	69 15 69 14 69 13 69 15 69 18 69 05 69 09 69 09	11.5 11.3 14.4 11.4 13.6 15.1 11.3 10.6 12.6 14.7 11.5	Con. Oa O B: Oc O B Oa O C B

Table 3 (Cont'd)

Neb. Nr. LHa 120-	Star. Nr.	Posi- tion	19 R.A.	Dec.	m	Sp.
N 158	HD 269919 HD 269926 HD 269928 HD 38448 HD 38472 HD 269908 HD 269936 HD 269956 LHa 120-5 131		5h39.4 539.4 539.6 540.7 540.9 540.2 541.0 539.1	-69°08' 69 03 69 09 69 27 69 27 69 33 69 30 69 27 69 32	13.7 12.5 11.8 13.1 13.4 14.8 11.2 11.6 12.0	0 0 0 0 0 0 0 0 0
N 158A N 158C	HD 38489 HD 269923 HD 269927		5 41.0 5 39.6 5 39.7	69 26 69 33 69 32	12.0 10.8 11.1	Pec. B B
N 180 N 180B	LHα 120-S 144 HD 270145 HD 270151		5 49.4 5 49.8 5 50.0	70 09 70 05 70 04	12.8 11.8 11.8	Con.
N 186D N 186E N 198 N 200	LHα 120-S 152 HD 32763 HD 36063 HD 36156 HD 269547	CCCC	5 00.9 5 00.3 5 23.9 5 24.6 5 27.6	70 17 70 20 71 43 71 26 71 38	12.8 10.4 12.3 12.2 11.5	Pec. Oa Oa B
N 205B N 206	LHα 120-S 164 HD 37248 HD 269656 HD 269660		5 27.5 5 32.0 5 31.9 5 32.1	71 40 71 06 71 06 71 08	11.5 12.2 11.7 11.4	0a B: B
N 206A N 214C	HD 269676 LHα 120-S 169		5 32.5 5 43.0	71 08 71 21	11.4	B

Table 4

EMISSION-LINE STARS IN THE SMALL MAGELLANIC CLOUD

_Nr. 19 LHα 115- R.A.	950 De c.	Rect.	Coords.		nt. Hα	Dif	. m	Sp.
0 h 261.38	-7377777777777777777777777777777777777	# 4621 983999103288846910388846111478200112158881111497111897111811211212121212121212121212121212121	200364 71844 1207386 718493 125976 125976 11983690 119836	22171117177111177711117132222772777311271113	222315212111122135211121311241311122131122221	121101001021111101223100032201101111111211230	11.55.08 12.08.00 12.08.08 12.00.08 12.	Oa

Table 4 (Cont'd)

Nr. LHα 115-	19 R.A.	50 Dec.	Rect.	Y		nt. Ηα	Dif	. m	Sp.
55555555555666666666666666666666666666	1h04 ^m 2 1 04.5 1 05.2 1 05.2 1 05.0 1 05.2 1 07.3 1 06.9 1 09.6 1 12.1 1 17.0 1 22.4 1 29.1 1 28.1 1 23.3	-72°02' 72°34 73°26 72°34 72°37 72°34 72°37 72°34 73°35 73°35 73°36	15948 15966 15992 15993 16087 16210 16268 16520 16589 17389 17389 17743 18152 18952 19042 20329 22070 22126 22614 24660	13269 11345 8179 10755 11384 12492 10728 7889 10978 7652 10978 76949 6697 8044 7031 7145 9299 8867 1661	17112741777477271323	32222322123122113334	0 1 1 0 1 0 1 0 2 0 0 0 0 0 1	12.0 12.8 12.0 11.5 12.8 10.8 12.8 12.8 12.8 12.8 12.8 11.5 12.8 11.5	В

LHa 115-

- S 3 A member of the close group NGC 242. This star lies at the extreme eastern edge of the group.
- S 9 Probably northern-most star of close trio.
- S 11 Emission perhaps doubtful.
- S 16 Emission visible on only one plate.
- S 19 Northern-most star of compact triangle of stars.
- S 22 Emission doubtful. Probably southeast star of close pair.
- S 26 The continuous spectrum is diffuse. Probably a cluster with one or more emission stars. Not in the NGC.
- S 28 HD 5980. The magnitude is estimated from LHa plates.
- S 31 Emission visible on only one plate.
- S 39 Spectrum variable? Unmistakable emission on earliest plate seems weaker on later plates.
- S 44 Northern star of close pair. Presence of continuum doubtful because of overlapping spectrum.
- S 50 A fainter star lies 15" to the southwest.
- S 52 HD 6884.
- S 57 HD 7583. Emission doubtful.
- S 58 Emission perhaps doubtful.
- S 60 Emission perhaps doubtful. Continuum is rather red. Perhaps a late-type star?
- S 61 Emission perhaps doubtful although strongly suspected on two plates.

Table 5

EMISSION NEBULAE IN THE SMALL MAGELLANIC CLOUD

Nr. LHα 115-	R.A.	950 Dec.	Rect.	Coords.	Diam X	eter Y	С	Нα	Tr.	El.	St.
1111 117=	п.п.		11						** •		
N 1	0 ^h 21 ^m 9	-73°54'	5045	6062				2			
N 2	0 30.5	71 58	6536	13288				2			
	0 29.7	74 O 4	7061	5691	48	28		2 2 1	0	1	0
N 3 N 4 N 5 N 6	0 32.4	73 30	7543	7824							
N 5 N 6	0 39.4 0 39.6	73 02 74 03	9255 9526	9642 5924				2			
	0 41.5	72 55	9787	10090				ź			
N 7 N 8	0 41.3	73 16	9802	8781	21	14		2 2 1	0	1	0
N 9	0 41.7	73 19	9916	8638	21	18		3	0	1	0
N 10	0 43.1	73 27	10294	8187	23	22	_	2 2 2 2	ļ	0	0
N 11	0 43.2	73 33 73 22	10340 10552	7799	24	22 228	T	2	1	1	0
N 12 N 12A	0 44.2 0 44.7	73 23	10686	8455 8434	395 112	113		2	2	2	2
N 12B	0 43.6	73 21	10417	8519	124	101		2 ~	3 5 1	ŏ	2 2 2
N 13A	0 43.6	73 39	10451	7421	35	27		2 3 2 1	0	1	0
N 13B	0 43.6	73 39	10439	7456	59	42		2	0	1	0
N 14	0 44.5	73 29	10650	8051	24	23		1	0	0	0
N 15 N 16	0 44.4 0 44.5	73 42 73 40	10657 10679	7276 7404	27 64	27 46		1	0	0	0
N 17	0 44.5 0 44.9	73 40 73 48	10807	6912	191	187		i	ŏ	ō	ŏ
N 18	0 45.2	73 06	10778	9468	-/-	101		ī	Ū	Ū	·
N 19	0 45.9	73 24	11008	8350	311	419		1	1	1	1
N 20	0 46.0	73 32	11056	7903				1	_	_	_
N 21	0 46.0	73 34 73 33	11056	7777	43 151	. 36		2	į	Ŏ	o o
N 22	0 46.2 0 46.2	73 33 73 34	11104 11110	7850 7763	151 56	118		2	1	0	1
N 23 N 24	0 46.4	73 34 73 36	11165	7640	70	41 71		223222222	5 1	ŏ	2 1
N 25	0 46.4	73 31	11147	7973	48	45		~ 3	ō	ŏ	ō
N 26	0 46.4	73 31	11146	7936	.,-	.,,		2			•
N 27	0 46.6	73 22	11191	8477	51	34		2	1	2	2
N 28	0 46.8	73 32	11252	7897	121	114		2	1	0	2
N 28A	0 46.7 0 46.8	73 32 73 14	11231	7865 8953	54	32		2	0	2	0
N 29 N 30	0 47.3	73 25	11231 11366	8335	152	156		2	1	0	1
N 30A	0 47.2	73 25 73 26	11344	8243	20	18		2	ō	ŏ	ō
N 31	0 46.9	73 43	11310	7259				1		-	
N 32	0 47.9	73 05	11495	9521 7244	33	27		2	0	0	1
N 33	0 47.7	73 43	11516	7244				2			
N 34 N 35	0 47.9 0 48.4	73 27 72 49	11546 11617	8204 10504	35	49		2 1 1 1	J.	1	0
N 35 N 36	0 48.8	73 09	11739	9285	263	238		i	4 1	ō	ì
N 37	0 49.0	73 03	11792	9630	319	291		ī	ī	ĭ	ī
N 38	0 48.2	<i>7</i> 4 01	11646	6176	-	•		2			
N 39	0 48.7	73 16	11722	8892				1			
N 40	0 48.9	73 59 73 10	11827	6261	0.3	3.0		1	_	_	,
N 41	0 49.2	73 10 72 43	11856 11942	9265 10896	21	17		2	0	0	1
N 42 N 43	0 49 .7 0 49 . 5	72 43 74 14	11942	5386				2			
N 44	0 50.1	71 41	11999	14626				2			
N 45	0 50.0	7 3 30	12064	8035	36	31 16		2 2 3 2	0	0	1
N 46	0 50.1	73 07	12067	9412	19	16		3	0	1	0
N 47	0 50.3	73 37	12150	7620	16	25			^	^	0
N 48	0 50.6 0 50.5	73 43	12240 12230	7224 6687	46 16	35 15		1	0	0	0
N 49 N 50	0 50.5	73 43 73 52 72 55 73 42 72 56 72 56 71 51 70 36 72 19	12326	10139	140	84		1 1 1	1	3	õ
N 51	0 50.9	73 42	12326	7280	54	38		2	ī	3 0 0	0 1 0
N 52A	0.51.9	72 56	12557	7280 10090	19	16		2	ō	Ō	Ó
N 52B	0 52.0	72 56	12565	10109	24	19		2 2 2 2 2 2 1 1 1 2	0	1 2	0
N 53 N 54	0 52.4	71 51	12655	14035	23	žĺ		2	0	2	0
N 54	0 54.2	70 36 70 10	13180 12981	18540 12300				2			
N 22 N 56	0 53.5 0 53.6	72 1.2	12981	701.5				2			
N 55 N 56 N 57	0 54.0	72 33	13111	11507	35	35	1	ĩ	0	1	0
N 58	0 54.5	72 34	13258	7245 11507 11433	35 60	35 70	_	ī	0	1 1 0	0
N 59	0 55.5	73 50	13486	9813	88	81		1	0	0	0
n 60	0 55.6	73 43 72 33 72 34 73 50 74 29 72 49 72 56	13478	4456 10530				2			
N 61	0 55.8	72 49	13593	10530 10112	65	EΩ		2 1	0	1	0
N 62	0 56.3	12 70	13709	TOTIZ	65	50		+	U	1	U

Table 5 (Cont'd)

Nr. LHα 115-	1950 R.A. Dec.		Rect.	Coords.	Diameter X Y		Int C	• Ηα	Ir. El. St.			
			11	Ħ	11	11						
n 63	o ^h 56 ^m 6	-72°55' 72 56 72 56	13801	10140	35	27 66	T	3	0	0	0	
N 64	0 56.7	72 56	13822	10072	80	66		3 1	0	0	1	
N 64A	0 56.8	7 2 56	13844	10077	24	17		3	0	1	0	
N 65	0 56.2	72 05	13729	13181				1				
N 66	0 57.5 0 57.6	72 27	14057	11863	584	491		3	2	0	3	
N 66A	0 57.6	72 27	14082	11818	0.5	10		2 2 2	_	_	•	
N 66B N 66C	0 57.5	72 26 72 26	14067	11885 11915	27	19		2	0	0	0	
n 66C n 66D	0 57.5 0 56.5	72 27	14078 13782	11915	19 32	11 11	1	2	0	1	0	
N 67	0 56.9	71 52	13924	13955	12	19	7	2	ő	2 1	1	
N 68	0 57.0	72 44	13926	10836	1~	-,		2	U	_	U	
N 69	0 57.5	$7\tilde{2}$ $4\tilde{1}$	14060	11015	27	24		2	0	0	1	
N 7Ó	0 57.6	72 18	14092	12366	~ '	~4		2	·	Ū	-	
N 71	0 59.3	71 52	14595	13969	22	13			0	1	0	
N 72	0 59.8	72 07	14736	13038	26	17	T	3 2 2	0	1	0	
N 73	1 03.4	76 04	15150	- 1310		•		2				
N 74	1 00.6	72 07	14948	12994	53 63	35		1	1	0	0	
N 75 N 76	1 00.8	72 13	14990	12667	63	41		1	0	2	0	
N 76	1 01.9	72 20	15274	12220	258	322		2	1	1	0	
N 76A	1 02.2	72 20	15355	12225	26	15		2	0	0	Ö	
N 76B	1 01.5	72 23 72 25	15161	12072	31	22		2	0	1	0	
N 76C N 77A	1 02.3 1 01.2	72 25 72 09	153 7 4 15099	11947 12874	29	19		2 2 3 1	0	0	٦.	
N 77B	1 01.1	72 10	15072	12862	19	19		1	0	ŏ	1 0	
N 78	1 03.8	72 17	15799	12376	260	365		2	3			
N 78A	1 03.5	72 15	15722	12509	19	19		2	ó	2 0	ñ	
N 78B	1 03.5	72 16	15721	12482	24	īź		2	ĭ	2	2 0 0 1 1	
N 78C	1 04.1	72 20	15887	12220	32	21	1	2 2 2	ī	2 0	ĭ	
N 78D	1 03.6	72 14	15757	12545	33	17		2	0	2	1	
N 79	1 06.1	72 51	16327	10317	18	8		1	2	2 3 0	l 1	
N 80	1 06.9	72 16	16667	12437	154	198		1	1		1	
N 80A	1 06.9	72 16	16669	12393	32	21	_	2	1	0	0	
N 81	1 07.8	73 28	16653	8076	30	29	1	3	1	0	0	
N 82 N 83	1 11.0 1 12.4	74 07	17315 17813	5640 7650	198	165		2	-	^	_	
N 83A	1 12.4	73 33 73 34	17834	7616	32	24		2	1	0	0	
N 83B	1 12.5	73 34 73 32	17853	7748	19	24		2	î	1	ŏ	
N 83C	1 12.7	73 33	17893	7670	29	28		2	ō	ō	ĭ	
N 84	1 13.3	73 34	18046	7584	198	355		2322322233221	3	3	1 2 0	
N 84A	ī 13.3	73 34	18039	7577	30	1 9		3	ó	3 2 1	õ	
N 84B	1 13.4	7 3 36	18075	7495	21	15		3	ŏ	ĩ	ŏ	
N 84C	1 12.9	73 32	17963	7741	33	32		2	0	0	0	
N 84D	1 13.4	73 37	18059	7438	23	9		2	0	2	0	
N 85	1 14.4	73 36	18325	7420			T	1				
N 86	1 14.4	73 26	18362	8066				2				
N 87	1 19.9	73 30	19764	7665			_	2				
N 88	1 22.9	73 24	20568	7918	0(3	242	T	2 2 3 1		_	_	
N 89	1 24.5	73 38	20862	7032	261	283			1	1	1	
N 90	1 28.3	73 49	21747	6282	199	147		2	1	T	2	

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LHa 115-
                Nail 1 (Nail, Whitney and Wade 1953).
Harv. Bull. 891-1. Lies 25" south of bright star.
Nail 15. Lies 25" southwest of bright star and 20" northeast of fainter star.
 N
 N
 N 10
                Nail 16.
 N 11
 N 12
N 12A
N 12B
N 13A
N 13B
N 18
                Includes Nail 21.

NGC 261. Harv. Bull. 891-4. Nail 25.

NGC 249. Harv. Bull. 891-3. Nail 18.

Harv. Bull. 891-2.
                13A and 13B make up NGC 248 = Nail 19.
Lies 20" northwest of bright star.
 N 19
N 22
N 25
N 36
N 30
N 31
N 32
N 33
N 35
                Nail 26.
Nail 28.
                                 Contains the cluster NGC 267.
                Nail 30.
Harv. Bull. 891-5.
                Includes Nail 34.
                Probably the eastern member of close pair.
                Nail 41.
Lies 30" northeast of bright star and 20" northwest of fainter star.
                Nail 42.
                Nail 45? Listed there as a "nebulous star." Shows unmistakable semicircle of
                nebulosity about central star on LH\alpha plates.
 N 36
N 39
N 45
N 47
N 50
N 52A
N 52B
N 53
                Nail 49.
                Somewhat doubtful.
                Nail 59.
                Possibly NGC 294.
Possibly excited by HD 5291.
Possibly Nail 75?
                Nail 76.
                Probably southwest member of close pair.

Shows a strong diffuse continuum. Probably a nebulosity about a bright cluster.

Not in the NGC.
 N 58
                Includes Nail 88.
                Part of Nail 93.
Nail 97.
Part of Nail 93.
 N 62
 N 63
 N 64
 N 64A
                Nail 99.
 N 66
N 71.
N 72
N 76
                NGC 346.
                                 Harv. Bull. 891-6. Nail 101. Excited by HD 5980.
                Nail 107
                Nail 110.
                Nail 116. Contains the cluster NGC 371. Contains NGC 395 = Nail 128 and IC 1624 = Nail 129. IC 1624, although well visible
               Onitating MGC 399 = Nail 128 and IC 1624 = Nail 129. IC 1624, although we on red direct plates, shows no Hα emission on objective-prism plates. Part of Nail 128 which also includes 78B and 78D. Shows a strong continuum. Possibly two Hα emission stars close together. IC 1644. Nail 136.
Nail 137. Includes Nail 142, an object not visible on our plates. Nail 148. The The Tail 148.
 N 78
 N 78A
N 78C
N 81
               Nail 137. Includes Nail 142, an object not visible on our plates.

Nail 148. The "triangular group" referred to probably includes 83A, B and C. This group is possibly excited by HD 7583.

NGC 456. Harv. Bull. 891-7.

Includes Nail 151.

NGC 460. Hery. Bull. 891-8
 N 80
 N 83
N 83A
N 84
 N 84A
                NGC 460.
                                 Harv. Bull. 891-8.
                Harv. Bull. 891-9. Part of Nail 150. This is not NGC 460 as reported by Nail et
 N 84B
                al.
 N 84C
                Nail 149.
                NGC 356. Possibly excited by 0 star at 1<sup>h</sup>28<sup>m</sup>52<sup>s</sup>, -73°56.1 (1900)(Harv. Bull. 891).
 N 90
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