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SUPERGIANT AND GIANT M TYPE STARS IN THE LARGE MAGELLANIC CLOUD (*)

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Summary.- We present coordinates, finding charts, and near infrared magnitudes, I, for near 500 probable M supergiants and over 600 M giants in the field of the Large Magellanic Cloud. Photoelectrically observed colours, $R-I$, are given for 208 objects and $V-R$ for 144 objects. The catalogues give also the numbers of stars appearing in the Sanduleak-Philip list as well as various other designations.

Key words : supergiant and giant M stars - Large Magellanic Cloud - V, R, I photometry.

1. Introduction.- A survey of the Large Magellanic Cloud (LMC) was carried out in the late 50s by Westerlund with the 50/65/175 cm Schmidt telescope of Uppsala Southern Station at Mount Stromlo Observatory, using objective-prism techniques in the near infrared spectral region. Over 300 probable carbon stars were identified and several hundred M type stars were classified. Preliminary results were published (Westerlund 1960, 1961, 1964). Recently after a confirmation of the objective-prism identifications of some of the carbon stars by slit spectroscopy, a catalogue of the identified carbon stars was presented (Westerlund et al., 1978). In the mean time also a number of our identified M supergiants have been studied in higher dispersion (Humphreys 1974, 1979), and a large number of M giants in the LMC have been detected (Blanco et al., 1975, 1978). We have ourselves obtained slit spectrograms of several tens of M stars in the LMC and carried out photoelectric *VRI* photometry for about 200 of our objects. We find it, therefore, appropriate to present a catalogue of probable M supergiants in the LMC - this catalogue is believed to be rather complete. We present also a catalogue of probable M giants in the LMC. This catalogue should be looked upon as giving a good sample of the giant M stars in the region, brighter than $I = 13$, but it is far from complete even in this magnitude range.
The detailed discussion of our material is postponed until the analysis of our slit spectrograms of the M stars has been completed.

2. Observations.- The photographic material used for the survey and for the determination of the I magnitudes for stars not observed photoelectrically is identical to that used by Westerlund et al. (1978) for cataloguing the carbon stars in the region ; details may be found in that paper.

The photoelectric photometry in the *VRI* bands has been carried out by Westerlund, Olander and Lundgren in 1975-78 with the 1 m telescope at the European Southern Observatory (ESO) on La Silla, Chile, and to a limited extent, by Olander, with the 61 cm telescope of the Bochum University on La Silla. The photoelectric standards were taken from the Johnson et al. list (1966), and in 1978 also from the Kunkel and Rydgren *RI* standards (1978) among the Landolt equatorial *UBV* stars (1973). The observations have been carried out partly with an ITT FW 118 tube, partly with an RCA C 31034 tube. We have not encountered any difficulties in transferring our observations to the Johnson *VRI* system. However, the uncertainties discussed by Humphreys (1979) may exist in our investigations, too, for the reddest stars.

Many, may be most, of the M supergiants are variable, and we find it therefore difficult to give a meaningful value on the external accuracy of the catalogued data. The comparisons available in table III should suffice to give a feeling for the reliability of the magnitudes and colours for stars of these types.

We note also that our colour indices are in the range to be expected for M0-M4I stars with little or no reddening (Lee, 1970).

3. The Catalogues.- The classification of the M stars from the low-dispersion objective-prism spectra in the near-infrared, 2200 Å/mm at the A-band, follows closely the Case system (Nassau and Albada, 1949). All the probable M supergiants are of early subtypes and occupy a relatively limited interval of magnitude. The giant M stars are of later types and generally fainter ; we believe that all the bright stars are galactic foreground stars.

Table I gives the catalogued data for 532 possible M supergiant stars in the LMC. The columns contain in order : the star number, the number of the identification chart, the coordinates (1975), the spectral sub-type, the photometric data I, $R-I$, $V-R$. The column S and P gives the numbers used by Sanduleak and Philip (1977) in their table I. The final column gives other designations of the stars.

Photoelectrically measured I magnitudes are given with two decimals, photographically measured ones are given with one. The error in a photoelectric magnitude is estimated to be $\pm 0^m.05$ and the error in a photographic magnitude $\pm 0^m.2$.

(*) Partly based on observations collected at the European Southern Observatory, La Silla, Chile.

During the observations with the Bochum telescope a colour system V, R, R_2 was used, where R_2 is located between R and I. For these stars V-R is given with two decimals in the Catalogue, whereas I and R-I, as deduced quantities, are given with one.

Most of the stars in the catalogues having I and R-I but no V-R were observed photoelectrically by Mianes. We are grateful to him for having received these data in advance of publication.

Table II gives the catalogued data for 655 giant M stars in a similar way. We have, however, not included here spectral subtypes ; the majority of the objects are later than M4.

We wish to emphasize that the separation of the stars into supergiants and giants follows primarily from their spectral types. Stars classified M4 or earlier are consequently generally included in table I. In some cases their apparent magnitudes contradict a supergiant character by being too faint, or, occasionally, too bright, and table I may thus contain a few foreground stars, easily recognisable (see Notes to tables I and II).

Figure 1 gives the division of the LMC into "finding chart" fields, and the finding charts are presented in figure 2. Here, an M supergiant is identified by one line towards the stellar image ; an M giant has its stellar image in between two lines.

4. Comments.- 4.1. The distributions of the stars in magnitude.- Figure 3 gives the distributions of the stars from table I (full-drawn line) and from table II (dotted line) in magnitude. It appears certain that most of the early M stars with 8.5 - I - 12 are supergiant stars in the LMC. Those outside these limits are probably galactic foreground stars or, among the faint ones, giants in the LMC. Obviously, the late M stars brighter than I = 11 must be considered as galactic foreground stars.

A comparison with the results of Blanco et al. (1978) for the giant stars appears to indicate that the cut-off in our material comes just before the peak in their distribution is reached (provided our magnitude scales are comparable). The very steep increase in numbers at I = 12 is probably real in spite of the fact that our material is incomplete. We have previously concluded (Westerlund, 1960) that the absolute magnitudes of the detected red giant stars in the LMC, of about $M_I \sim -6$, indicate that they belong to Population II ; this is confirmed by ours as well as the Blanco et al. results.

4.2. Individual data.- Table III gives the individual photoelectric values and the dates (month) of their observations for M supergiants (Table IIIa) and M giants (Table IIIb) observed more than once. Here we include the observations by Mianes (October 76) and by Humphreys (1979). The latter are identified in our table by dates having asterisks. Many, perhaps most, stars are seen to be variables. Nevertheless, a reasonable agreement between the various series of observations may be noted.

For information, we give in table IV the dates (months) of the photoelectric observations of stars observed in V, R, I during one period, only.

4.3. The spectral classification.- Sanduleak and Philip (1977) give 609 suspected late-type supergiant stars in their table I. Of these we have identified 209 among our supergiants and 12 among our giant M stars. We believe that the remaining 388 of their stars are earlier than M0 in our classification system. It is not quite clear why over 300 of our stars do not appear in the Sanduleak-Philip list. The area searched by us is somewhat larger than that searched by them ; our survey extends from R.A. $\sim 4^h15^m$ to 6^h30^m and from Decl. $\sim$ - 64° to - 74°, whereas their survey covers the region between R.A. $\sim$ 4^h30^m and 6^h10^m and Decl. $\sim$ -65°5 and -74°. However, only 28 of the stars in our table I fall outside the Sanduleak- Philip bounderies, and of those we have listed 6 as likely foreground stars. It is true that our survey extends to fainter magnitudes and also includes about 50 foreground stars (cf. notes to table I and II), but the majority of our supergiant stars are in the interval 9 - I - 11 which should be covered by them. Possibly the identification of weak TiO bands in the near infrared is easier than the determination of a pronounced gradient in the continuum of these stars ; the crowding of images on the deep IIIa-J plates may also contribute to the difficulties in identifying them.

We have also compared our classification from the objective-prism plates with that by Humphreys (1979) based on slit spectra. The result is summarized in table V. The agreement is reasonable when considering the different techniques used ; our classification appears earlier than Humphreys' by about one subdivision.

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TABLE I.- *Supergiant M stars in the LMC.*

NO	CHART	R.A. (1975)	DECL.	SP	I	R-I	V-R	S&P	OTHER
1	3:12	4 17 58.9	-71 43 41.	0.5+	6.8				
2	3:8	4 19 27.0	-71 24 43.	4+	11.8				
3	3:12	4 19 42.4	-72 12 17.	0:	10.2				
4	3:16	4 21 1.6	-72 39 29.	1	11.01	1.25	1.52		
5	3:16	4 21 21.5	-72 23 46.	0:	9.50	0.82	1.33		
6	3:16	4 21 58.8	-72 37 26.	0.5	10.60	1.42	1.78		
7	3:4	4 23 24.1	-70 47 55.	0.5	8.1				
8	3:16	4 25 12.3	-72 36 24.	0	10.18	0.96	1.34		
9	3:16	4 25 14.4	-72 38 20.	4+	11.88	1.53	1.74		
10	3:4	4 25 44.5	-70 44 30.	0:	10.53	0.42			
11	3:19	4 28 7.9	-73 14 25.	2	8.8				
12	3:3	4 29 36.1	-71 0 17.	3	9.39	1.36			
13	3:15	4 31 49.2	-72 23 24.	0:	9.7				
14	2:3	4 32 10.3	-67 53 46.	0:	8.5				
15	3:3	4 33 30.8	-70 36 13.	0:	11.57	1.32			
16	2:14	4 35 25.7	-70 5 1.	3	6.8				
17	3:19	4 36 12.6	-73 14 1.	0	10.3				
18	2:11	4 36 28.2	-69 30 51.	0:	8.3				
19	2:8	4 37 3.3	-69 7 13.	1	9.3				
20	2:8	4 37 38.9	-69 14 12.	0:	9.8				
21	3:14	4 37 41.9	-72 44 22.	0:	8.9				
22	3:14	4 39 5.5	-72 48 36.	4	7.1				
23	2:3	4 39 32.3	-67 54 30.	0:	9.8				
24	3:10	4 40 44.1	-71 42 33.		11.7				
25	2:7	4 41 7.9	-68 40 28.	4:	11.0				
26	3:14	4 41 15.4	-72 22 39.	0:	9.2				
27	1:4	4 41 25.4	-65 8 27.	1	9.9				
28	2:2	4 41 53.2	-67 30 9.	1	9.8				
29	3:10	4 41 54.9	-72 13 14.	4+	12.2				
30	2:5	4 43 43.6	-68 0 47.	0:	10.8				
31	3:2	4 44 12.1	-70 31 13.	0:	9.23	0.78			
32	2:13	4 44 23.2	-70 22 4.	1	8.02	1.33			
33	2:7	4 44 50.6	-69 8 28.	0:	9.9				
34	2:7	4 45 1.2	-68 41 1.	0.5	9.0				
35	3:2	4 45 4.3	-70 29 27.	0:	10.20	1.08			
36	3:14	4 45 45.1	-72 32 49.	2	4.2				
37	3:18	4 45 48.4	-73 18 48.	0:	9.1				
38	3:5	4 49 0.2	-71 0 56.	4	11.85	1.52			
39	1:10	4 49 23.0	-66 52 24.	3+	5.25	2.14			
40	2:10	4 49 30.3	-69 27 6.	1	9.96	1.73			HV2236
41	2:7	4 49 31.9	-68 47 37.	1	10.2			22:10	HV12449
42	3:17	4 49 43.9	-72 56 38.	0:	9.2				
43	2:7	4 49 53.9	-68 45 1.	0	10.2			22:11	
44	2:7	4 50 9.3	-68 35 49.	1	9.3				
45	2:1	4 50 47.2	-67 53 21.	0	11.03	1.33			
46	2:9	4 51 6.0	-69 16 30.	0	10.26	1.02	1.47	31:5	
47	1:3	4 51 14.8	-65 24 25.	0:	10.6				
48	2:12	4 51 15.2	-69 56 35.	2:	11.5				
49	2:9	4 51 29.0	-69 31 41.	1	9.92	1.29	1.75		
50	2:9	4 51 33.7	-69 14 10.	0:	9.3				
51	2:9	4 51 38.4	-69 17 19.	0.5	10.38	1.48	1.81	31:6	
52	2:9	4 51 56.2	-69 21 29.	0.5	10.19	1.57	1.79		
53	1:10	4 51 56.6	-66 57 21.	2	7.76	1.71			
54	3:1	4 52 50.0	-70 43 6.	0.5	10.44	1.24			
55	1:10	4 52 52.1	-66 58 19.	0	8.85	1.04			
56	2:9	4 53 4.8	-69 28 10.	4	11.5				
57	2:9	4 53 22.2	-69 14 41.	0:	10.00	1.69			
58	2:9	4 53 23.5	-69 34 50.	0.5	11.1				
59	2:9	4 53 26.3	-69 19 26.	1	10.29	1.30		31:12	BE159
60	2:9	4 53 38.7	-69 20 12.	1	9.98	1.44			
61	2:6	4 53 51.3	-69 0 21.	0:	13.0				
62	2:6	4 53 57.1	-68 52 26.	0.5	10.2				
63	2:6	4 54 12.8	-69 7 49.	0:	10.6				
64	3:9	4 54 14.3	-72 13 25.	0:					
65	2:12	4 54 19.7	-70 8 45.	1	10.3			31:14	
66	2:6	4 54 20.0	-68 46 35.	2	12.3			30:6	
67	2:12	4 54 25.2	-70 19 28.	1	10.7				BE485
68	1:10	4 54 36.3	-66 52 57.	0::	11.2				
69	2:9	4 54 46.2	-69 13 37.	0.5	9.73	1.65	2.11		HV2242
70	2:6	4 54 46.5	-69 6 57.	0	10.6			31:15	HV12495
71	2:9	4 55 12.0	-69 31 32.	2	9.99	2.18			
72	2:9	4 55 24.3	-69 21 31.	0.5	9.38	1.24		31:18	
73	1:9	4 55 30.5	-66 52 59.	1	9.4			29:8	HV2239
74	2:9	4 55 31.8	-69 49 35.	1	10.17	1.81	2.15		
75	2:9	4 55 39.0	-69 31 29.	0.5	9.43	1.15		31:19	HV2247
76	2:9	4 55 43.9	-69 29 14.	0:	8.9				
77	2:9	4 55 45.8	-69 30 14.	0:	11.3				
78	2:9	4 55 50.5	-69 28 42.	0	9.40	1.39		31:20	HV12501
79	2:9	4 55 56.9	-69 26 24.	0	9.86	1.18		31:21	
80	1:7	4 55 58.1	-66 32 55.	1	9.87	1.22	1.54	29:11	HV5498
81	2:6	4 56 1.2	-68 41 13.	0.5	12.0				
82	2:9	4 56 11.6	-69 31 7.	0	10.42	1.11			
84	1:7	4 56 14.5	-66 29 50.	0	9.6				
85	1:1	4 56 19.5	-64 40 5.	4	9.2				
86	1:7	4 56 20.3	-66 29 32.	0:	9.64	1.35	1.63		
87	2:9	4 56 33.7	-69 44 27.	0	10.2			31:24	
88	3:1	4 56 37.1	-70 45 55.	1	10.7				
89	2:9	4 56 38.3	-69 42 53.	0	10.41	0.96	1.64	31:25	
90	3:17	4 56 54.4	-73 18 51.	3	12.6				
91	2:9	4 56 58.4	-69 42 10.	0	9.78	1.10	2.12	31:26	
92	1:7	4 57 23.3	-66 25 43.	0	9.91	1.56	2.00	28:2	
93	2:9	4 57 38.7	-69 23 51.	0:	10.9			31:27	
94	3:1	4 57 40.1	-70 54 26.		11.7				
95	2:12	4 57 45.6	-70 11 13.	1	9.86	1.64		31:28	
96	2:9	4 57 54.4	-69 32 49.	0.5					
97	2:12	4 57 55.4	-70 11 3.	1	9.20	1.62			
98	1:7	4 58 7.2	-66 19 48.	0:	9.92	1.64	1.75		HV12233
99	1:9	4 58 14.0	-67 11 51.	0	10.6			29:18	
100	2:1	4 58 20.4	-67 34 53.	1	10.9			29:19	HV5507
101	3:5	4 58 21.5	-71 11 23.	1:	12.3				
102	2:1	4 58 37.2	-67 35 54.	2	13.0				
103	3:5	4 58 41.5	-71 9 12.	2	12.7				
104	2:6	4 58 50.5	-68 53 8.	0	9.96	1.04		30:11	
105	1:9	4 58 54.1	-66 47 56.	1	10.64	1.69			HV5506
106	6:8	4 59 14.8	-71 15 24.	0.5	10.2			32:10	
107	3:13	4 59 25.3	-72 32 53.		10.5				
108	2:9	4 59 32.2	-69 45 35.	3	11.7				
109	2:12	4 59 35.5	-70 13 56.	0.5	9.62	1.00		31:36	BE497
110	2:1	4 59 59.6	-67 50 25.	0:	10.67	1.13		30:18	
111	2:1	5 0 2.2	-67 35 4.	0:	11.90				
112	1:7	5 0 3.4	-66 41 37.	1:	10.72	1.75	1.63		
113	1:5	5 0 7.7	-65 55 29.	0:	10.30	1.18		28:9	
114	2:4	5 0 8.7	-68 14 52.	0.5	7.68	1.30			P444
115	6:16	5 0 9.0	-72 36 53.	0+	9.3				
116	2:4	5 0 43.7	-68 33 1.	1:	12.1				
117	1:5	5 0 44.1	-65 53 7.	0.5	9.67	1.11		28:13	
118	2:4	5 0 44.8	-68 8 14.	0	9.91	1.34		30:22	HV12516
119	1:9	5 0 45.6	-66 56 14.	4+	11.7				
120	5:20	5 0 52.2	-70 25 26.	0	10.8				
121	5:20	5 0 53.9	-70 25 7.	1	10.84	1.24	1.45	32:12	
122	1:5	5 1 10.0	-65 48 26.	0	9.65	1.00			
123	5:8	5 1 36.0	-68 5 51.	2+	4.90	1.62			P465
124	5:20	5 1 36.2	-70 7 59.		11.9				
125	5:12	5 1 54.4	-69 1 24.	1	7.4				P473
126	5:20	5 1 56.1	-70 26 11.	0	10.2				
127	5:16	5 2 16.8	-69 47 36.	0:	11.3			31:40	
128	1:7	5 2 17.3	-66 8 51.	0:	6.9			28:15	
129	1:2	5 2 20.5	-65 11 9.	2	8.44				
130	5:20	5 2 23.4	-70 27 5.	1	10.1			32:14	
131	5:16	5 2 29.6	-69 39 8.	0	11.6				
132	4:4	5 3 6.0	-64 34 10.	0::	5.2				
133	1:5	5 3 13.0	-66 4 15.	2	11.7				
134	5:12	5 3 27.2	-68 56 7.	0.5	11.4				
135	1:9	5 3 40.3	-66 50 49.	0.5	9.7			29.30	
136	6:8	5 3 45.1	-71 26 52.	0	7.3				
137	1:7	5 3 46.4	-66 17 59.	2	12.7				
138	4:7	5 3 49.4	-65 2 46.	3+	7.0				
139	5:16	5 4 10.0	-69 40 15.	0.5	10.2				
140	1:9	5 4 14.7	-67 18 17.	1	8.8			29:33	HV888
141	4:9	5 4 18.6	-66 13 53.	0.5	10.0				HV12522
142	4:15	5 4 19.1	-66 16 51.	0:	8.4				
143	5:20	5 4 22.8	-70 14 18.	0	10.3			39:3	
145	6:8	5 4 28.9	-71 27 14.	1	8.4				
146	4:15	5 4 48.6	-66 10 11.	4	12.4				
147	6:4	5 4 57.7	-70 44 36.	0	9.9			40:4	HV5593
148	5:20	5 5 4.1	-70 11 37.	0	10.86	0.77	0.98		
149	6:4	5 5 8.4	-70 43 57.	4	9.6			40:7	
150	5:16	5 5 12.1	-69 20 31.	0:	10.1			39:4	HV2306
151	6:4	5 5 16.8	-70 35 41.	0	10.15	1.17	1.40	40:6	BE522
152	5:20	5 5 19.8	-70 8 9.	0.5	10.1				
153	6:8	5 5 23.8	-71 43 29.	0.5	9.8				
154	6:8	5 5 36.3	-71 48 12.	0	10.8				
155	5:4	5 5 36.9	-67 44 31.	0:	12.3				
156	6:4	5 5 48.2	-70 35 42.	1	9.5				
157	5:12	5 5 51.9	-68 40 52.	1+	11.6				
158	6:4	5 6 11.5	-70 37 18.	1	10.0				
159	4:11	5 6 13.7	-66 6 4.		12.0				
160	5:20	5 6 13.7	-70 31 11.	0.5	10.10	0.35	0.60	40:11	
161	6:4	5 6 16.1	-70 50 8.	1	11.88	0.89	1.31	40:13	HV897
162	6:4	5 6 16.7	-70 36 5.	0:	11.7				
163	6:16	5 6 27.6	-72 42 10.	0.5	7.2				
164	5:20	5 6 31.4	-69 58 3.	0.5	9.2				P557
165	6:4	5 6 51.6	-70 34 34.	0	10.3			40:15	
166	6:4	5 7 20.9	-70 34 39.	2	8.88	1.13	1.54	40:16	HV5618
167	5:4	5 7 44.6	-67 57 38.	0:	11.4			37:5	
168	6:4	5 7 47.9	-70 40 57.	1	10.11	1.43	1.77	40:17	HV903
169	4:7	5 7 48.7	-65 2 15.	4:	12.3				
170	4:11	5 8 3.4	-65 50 45.	0.5	7.4				P2088
171	5:20	5 8 6.9	-70 27 57.	0	10.32	1.11		40.18	NS80-70
172	4:15	5 8 8.0	-66 19 46.	4+	8.3			36:3	
173	5:8	5 8 44.4	-68 13 58.	1	11.3				
174	6:19	5 8 44.5	-73 28 47.	0.5	10.1				
175	5:15	5 9 8.7	-71 32 12.	4+	11.65	0.91			P609
176	5:15	5 9 26.8	-69 33 56.	0.5	8.0				
177	6:7	5 9 26.9	-71 44 49.	2+	8.4				
178	5:7	5 9 33.2	-68 33 31.	0	11.0			38:4	
179	4:7	5 9 38.0	-65 23 51.	1	8.4			35:1	HV12185
181	6:19	5 10 20.3	-73 2 43.	2	11.7				
182	5:19	5 10 28.9	-70 12 28.	0.5	7.53	1.08			P635
183	5:11	5 10 35.0	-68 54 58.	0.5	12.5				
184	6:15	5 10 36.2	-72 38 16.	1	8.5				
185	6:19	5 11 2.8	-73 11 23.	0	10.9				
186	4:15	5 11 46.3	-66 26 30.	3+	11.0				
187	6:7	5 11 58.6	-71 15 4.	0:	10.54	1.13		40:23	
188	6:15	5 12 9.0	-72 37 46.	0	11.0				
189	5:7	5 12 17.4	-68 6 40.	0.5	8.9				HV2362
190	4:19	5 12 25.1	-66 57 38.	0	9.90	1.36	1.52	37:20	HV2354
191	5:15	5 12 39.2	-69 32 52.	0	11.4				HV5661
192	5:15	5 12 42.1	-69 21 48.	0.5	10.5			39:15	HV5659
193	4:18	5 12 47.5	-67 21 23.	3	9.25	1.85	1.88	37:24	HV2360
194	5:19	5 13 15.3	-70 29 33.	2	9.82	1.71		40:26	HV12567
195	4:18	5 13 34.6	-67 22 23.	0:	9.48	1.10	1.45	37:28	HV5654
196	5:3	5 13 54.8	-67 28 35.	0.5	10.72				BE28
197	4:18	5 13 57.5	-67 6 14.	1					HV12983
198	5:15	5 14 2.3	-69 22 16.	0:	12.0				
199	5:15	5 14 4.8	-69 33 28.	0:	9.5			39:19	BE543
200	4:18	5 14 19.2	-67 22 14.	1	10.18	1.25	1.33	37:32	

TABLE I.- *(Continued)*

NO	CHART	R.A. (1975)	DECL.	SP	I	R-I	V-R	S&P	OTHER
201	4:6	5 14 23.5	-65 17 60.	1	8.3				
202	5:11	5 14 24.7	-68 40 47.	0.5	11.5				
203	6:11	5 14 26.1	-72 3 55.	0+	7.3				
204	5:3	5 14 51.6	-67 28 60.	1	9.28	1.66	1.82		HV916
205	5:19	5 14 55.3	-70 20 24.	0	10.79	0.49			P734
206	5:7	5 15 7.5	-68 7 45.	4+	12.0				
207	5:19	5 15 35.5	-70 0 42.	4	12.2				
208	4:18	5 15 38.1	-67 8 51.	0:				37:36	
209	4:18	5 16 0.6	-67 18 7.	0:	12.0				
210	4:14	5 16 10.9	-66 17 36.		11.9				
211	6:15	5 16 18.1	-72 39 14.	0.5	8.4				
212	6:11	5 16 26.7	-72 16 22.	2	9.0				
213	5:19	5 16 48.1	-70 31 49.	1	10.2			40:31	
214	6:7	5 16 52.7	-71 14 20.	0	10.56	1.12		40:29	HV2434
215	6:3	5 16 55.7	-70 47 16.	3	9.04	1.86			HV928
216	5:7	5 16 59.5	-68 22 46.	0.5	9.4				
217	5:15	5 17 8.1	-69 42 2.	0:	9.3				
218	5:15	5 17 19.8	-69 33 55.	0.5	9.1				HV5717
219	4:18	5 17 47.2	-67 8 11.	0:				37:40	
220	5:7	5 18 2.4	-68 10 13.	0:	10.7			38:18	
221	5:15	5 18 7.7	-69 41 59.	0.5	10.2			47:2	HV2440
222	5:15	5 18 8.1	-69 17 27.	1	7.5			47:1	BE241
223	5:3	5 18 13.4	-67 28 20.	4					
224	5:3	5 18 35.3	-67 34 2.	0+	7.5				P825
225	5:7	5 18 35.5	-68 7 58.	0.5	10.10	1.00	1.58	38:19	
226	4:6	5 18 44.2	-65 2 50.	0.5	9.2				
227	5:2	5 19 0.5	-67 57 44.	2	9.8				BE248
228	5:14	5 19 6.1	-69 40 52.	0	10.0				
229	5:14	5 19 14.8	-69 41 26.	0	8.7				
230	5:14	5 19 16.5	-69 40 54.	0	9.9				
231	5:2	5 19 36.8	-67 54 12.	0.5	8.0				P846
232	5:10	5 19 39.3	-68 55 11.	0	11.2				HV5746
233	6:11	5 19 55.9	-72 7 29.	4	12.4				
234	5:6	5 19 58.1	-68 5 31.	0.5	9.12	1.24	1.68	46:2	HV2450
235	5:6	5 20 3.2	-68 1 30.	0	10.13	1.23	1.60	46:3	
236	5:14	5 20 4.0	-69 29 2.	0	9.4			47:3	
237	6:2	5 20 21.8	-70 49 14.	0	10.3				P880
238	5:14	5 20 48.1	-69 35 11.	0.5	11.3				
239	6:18	5 20 53.9	-73 21 8.	0:	9.64	0.64	0.93		
240	5:2	5 21 35.0	-67 31 36.	1	12.2				
241	5:14	5 21 39.0	-69 31 41.	1	10.2			47:6	HV92017
242	4:9	5 21 52.5	-65 51 11.	0:	9.3			44:9	HV6106
243	5:6	5 21 52.8	-67 59 15.	0	10.44	1.03	1.61	46:5A	
244	6:2	5 21 55.4	-70 48 16.	0.5	10.8			48:5	
245	4:17	5 21 57.6	-67 14 8.	0	10.39	1.24	1.94	45:2	
246	4:13	5 21 58.2	-66 22 7.	0.5	10.55	1.20	1.54	44:8	
247	5:6	5 22 18.8	-68 4 26.	0:	11.28	1.56	1.94		
248	5:14	5 22 34.3	-69 24 15.	0	11.1				
249	5:2	5 22 42.0	-67 49 5.	0:	9.3				
250	4:13	5 22 46.8	-66 9 10.	1	9.91	0.92	1.37	44:13	
251	4:13	5 22 59.3	-66 19 33.	0:	11.47	1.61	1.09		
252	4:9	5 23 12.4	-66 7 28.	1	9.92	1.21	1.28	44:14	
253	5:14	5 23 13.2	-69 21 59.	0.5	10.2				
254	5:6	5 23 20.1	-68 1 2.	0	10.37	0.77	1.39	46:7	BE262
255	5:14	5 23 28.5	-69 29 13.	0				47:8	
256	6:2	5 23 34.5	-71 2 19.	0:	12.2				
257	4:9	5 23 39.8	-65 43 19.	1	9.4				HV12793
258	6:18	5 23 41.8	-73 7 49.	2	7.51	1.40	1.54		
259	5:2	5 23 49.9	-67 25 28.	0.5	10.71	1.46	1.47	45:4	
260	4:13	5 23 52.5	-66 42 47.	2	11.6				
261	5:18	5 24 8.3	-70 11 27.	0.5	11.2				HV2493
262	6:6	5 24 21.4	-71 10 54.	3	9.8			48:8	BE577
263	5:18	5 24 24.9	-70 2 25.	3+	5.4				P972
264	5:14	5 24 31.2	-69 40 8.	2	9.4				
265	4:17	5 24 32.8	-66 49 56.	0:	11.26	1.02	1.17		HV5801
266	5:18	5 24 34.8	-70 27 21.	0.5	10.1			48:11	
267	4:13	5 24 41.0	-66 38 5.	0	10.50	1.14	1.69	44:15	
268	4:13	5 24 48.8	-66 30 4.	0	11.11	1.78	2.59		
269	5:6	5 24 52.8	-68 30 51.	0	10.17	1.01	1.53	46:11	
270	5:14	5 24 56.0	-69 29 16.	0.5	9.8			47:11	
271	5:18	5 24 56.9	-70 1 20.	0.5	10.7				
272	5:10	5 25 19.6	-68 44 2.	3	11.9				
273	6:6	5 25 24.0	-71 16 8.	0:	10.9				
274	4:13	5 25 29.3	-66 18 13.	0.5	10.54	1.71	2.69		
275	4:13	5 25 31.7	-66 40 53.	0:	11.5				
276	5:6	5 25 44.6	-68 38 11.	0.5:	11.4				
277	5:10	5 25 54.2	-69 6 5.	0.5	9.7			46:12	HV957
278	6:14	5 25 58.3	-72 40 12.	0+	8.03	1.10			
279	4:13	5 25 59.3	-66 17 34.	1	9.87	1.44	1.70	44:19	
280	4:17	5 26 7.3	-67 16 41.	0:	11.3				
281	4:13	5 26 9.2	-66 13 25.	5+	10.2				
282	4:9	5 26 13.7	-66 8 13.	2	10.45	1.44	1.84		
283	6:6	5 26 23.2	-71 37 3.	0.5	10.1			48:13	HV12596
284	5:2	5 26 30.6	-67 24 58.	0:	12.3				
285	6:6	5 26 31.6	-71 35 57.	1	8.8				P1027
286	5:14	5 26 36.7	-69 53 40.	0	8.4				
287	5:10	5 26 37.3	-69 12 8.	2	9.68	1.52	1.90	46:16	
288	5:10	5 26 37.8	-69 9 10.	0.5	10.6			46:17	
289	5:10	5 26 43.4	-68 52 54.		9.34	1.34	1.60	46:19	
290	6:6	5 26 48.5	-71 8 9.	0.5	9.3				
291	5:10	5 26 54.3	-69 7 20.	0	9.4				
292	4:16	5 26 59.3	-66 52 33.	0:	10.52	1.33	1.60	45:13	
293	5:10	5 27 1.6	-68 51 13.		8.1			46:21	BE272
294	5:2	5 27 7.0	-67 27 18.	0	10.2				
295	5:14	5 27 20.7	-69 17 31.	0:	10.7				
296	6:2	5 27 22.1	-73 27 43.	0.5	9.22	1.11	1.31		
297	5:10	5 27 24.3	-69 12 24.	1	10.02	1.57	1.77	46:23	HV2544
298	6:2	5 27 25.9	-70 51 18.	0	9.82	0.71	0.97		
299	4:16	5 27 31.6	-67 15 23.	1	10.06	1.13	1.50	45:16	HV5845
300	6:14	5 27 34.6	-72 32 45.	4	11.3				

NO	CHART	R.A. (1975)	DECL.	SP	I	R-I	V-R	S&P	OTHER
301	4:16	5 27 34.9	-66 54 42.	0.5	9.66	1.48	1.68	45:18	HV963
302	5:13	5 27 39.2	-69 23 23.	0	9.1				P1049
303	5:18	5 27 46.8	-70 2 21.	1:	12.2				
304	5:14	5 27 50.0	-69 29 56.	0	9.8			47:13	HV2551
305	4:16	5 27 53.3	-67 19 14.	0	10.49	1.14	1.56	45:20	BE57
306	5:10	5 27 57.8	-69 14 32.	1	9.6			47:14	
307	5:9	5 28 0.5	-69 2 5.	0+	10.0				
308	6:6	5 28 7.6	-71 33 38.	1	11.2				
309	5:4	5 28 9.4	-67 38 59.	0	10.3				
310	5:10	5 28 9.9	-69 8 54.	0	10.5				HV2556
311	5:17	5 28 12.8	-70 23 33.	0:	12.3				
312	5:10	5 28 15.9	-69 8 24.	0	10.1			46:28	
313	4:16	5 28 16.3	-67 0 2.	1	9.90	1.52	1.68	45:23	HV5854
314	5:9	5 28 17.4	-69 3 22.	0	11.0				
315	5:10	5 28 18.3	-69 14 22.	0.5	10.0			47:15	
316	5:10	5 28 26.1	-69 13 11.	1	10.3			47:16	HV2559
317	5:14	5 28 27.6	-69 28 32.	4+	11.6				
318	5:10	5 28 28.5	-69 8 45.	0.5	10.01	1.24	1.76	46:29	
319	5:6	5 28 34.4	-68 8 17.	0	9.10	1.19	1.70	46:32	HV2561
320	4:12	5 28 36.2	-66 38 58.	0.5	10.79	1.18	1.35	44:27	
321	5:10	5 28 41.2	-69 6 40.	1	10.09	1.29	1.69	46:30	
322	5:6	5 28 42.9	-68 27 24.	0.5	9.81	1.34	1.72	46:34	HV2566
323	5:10	5 28 44.6	-68 43 47.	1	9.82	1.40	1.68	46:31	HV2567
324	5:1	5 28 45.4	-67 19 37.	0.5	10.5			45:24	
325	5:14	5 28 47.3	-69 21 13.	3	13.0				HV2572
326	4:12	5 28 48.2	-66 35 56.	0	11.0			44:28	
327	5:10	5 28 54.7	-68 59 11.	0:	9.0			46:33	
328	5:1	5 29 7.1	-67 42 24.	1	11.5				
329	5:1	5 29 7.7	-67 19 25.	0	10.45	1.05	1.54	45:27	
330	5:10	5 29 9.2	-68 47 42.	0	10.35	1.27	1.62	46:36	
331	5:10	5 29 13.3	-69 7 55.	0.5	9.99	1.68	2.02	47:17	HV5870
332	5:10	5 29 18.7	-69 13 26.	1	10.24	1.32	1.64	47:18	
334	4:16	5 29 26.9	-66 59 43.	0	10.3			45:31	
335	5:9	5 29 29.7	-68 45 18.	0.5	10.24	1.05	1.42	46:40	
336	5:9	5 29 30.6	-69 1 27.	0				46:38	
337	4:16	5 29 35.1	-66 56 35.	0.5	10.32	1.72	1.92		HV2586
338	5:9	5 29 37.7	-69 9 58.	1	9.11	1.16	1.60	46:39	
339	4:16	5 29 40.8	-66 51 24.	0:	10.65	1.06	1.34	45:35	
340	5:5	5 29 42.6	-68 31 52.	0.5	11.3			46:45	
341	5:9	5 29 51.5	-68 58 24.	1	8.60	1.19	1.59	46:44	
342	5:9	5 29 53.8	-69 6 57.	0.5	9.3			46:43	
343	5:1	5 29 57.7	-67 19 44.	1	10.3			45:34	
344	4:16	5 29 57.8	-66 51 33.	0:	10.72	1.16	1.49	45:37	
345	5:9	5 30 4.6	-69 5 22.	0	9.8			46:46	HV5879
346	5:9	5 30 11.3	-68 47 10.	0.5	10.2			46:49	
347	4:16	5 30 13.7	-66 57 7.	0.5	10.1			45:39	
348	6:17	5 30 20.4	-73 18 46.	0+	8.39	0.96			
349	5:1	5 30 23.8	-67 21 11.	1	10.0			45:38	
350	6:10	5 30 26.9	-71 58 23.	0.5	10.86	1.24		49:6	
351	5:1	5 30 36.2	-67 18 22.	0	10.2			45:41	
352	5:13	5 30 37.8	-69 31 30.	0.5	10.3			47:19	
353	6:5	5 30 42.6	-71 34 16.	0	10.9				
354	5:9	5 30 44.9	-69 0 29.	1	9.44	1.49	1.71	46:51	HV2602
355	4:12	5 30 47.0	-66 44 20.	0.5	9.6			45:49	
356	4:16	5 30 47.3	-67 9 5.	0	10.38	1.43	1.54	45:45	
357	4:12	5 30 47.9	-66 18 10.	0	9.8	1.1	1.43	51:2	
358	5:13	5 30 52.1	-69 16 39.	1	9.7			47:20	
359	4:16	5 30 54.5	-67 18 37.	0	10.4				
360	4:1	5 30 57.3	-64 35 19.	2	6.1				
361	6:5	5 30 57.4	-71 16 30.	4	10.00	1.46	1.57		
362	5:5	5 31 0.7	-68 14 12.	0:	11.9				
363	6:17	5 31 0.8	-73 27 29.	2+	5.96	1.31			
364	5:17	5 31 4.3	-70 18 24.	0.5	8.7				
365	6:1	5 31 9.1	-70 42 54.	0:	10.94	1.03	1.31		
366	4:12	5 31 10.1	-66 36 35.	0.5	9.2			51:4	
367	6:1	5 31 11.0	-70 56 31.	2	10.3			48:17	
368	5:1	5 31 12.5	-67 26 59.	2	10.7			45:48	
369	5:13	5 31 14.8	-69 20 6.	1	10.5			47:22	
370	5:9	5 31 25.1	-69 5 2.	1	10.5			46:54	
371	4:12	5 31 36.0	-66 31 11.	0.5	9.1	1.2	1.54	51:6	HV990
372	5:13	5 31 36.4	-69 22 20.	0.5	10.7			47:23	
373	5:1	5 31 37.8	-67 25 56.	0.5	11.3			45:52	
374	4:8	5 31 44.9	-66 4 42.	0	10.9				
375	4:12	5 31 53.2	-66 41 45.	0	9.2			52:1	
376	4:16	5 31 53.5	-66 51 40.	1+	10.1	1.2	1.48		
377	4:12	5 31 59.0	-66 39 41.	0	8.7				
378	6:17	5 32 8.9	-73 10 13.	0	9.70	0.70			
379	5:1	5 32 9.0	-67 32 48.	0.5	11.3				
380	4:16	5 32 10.7	-67 12 19.	0:	10.65	1.22	1.47		
381	4:16	5 32 14.1	-67 0 19.	0.5	10.28	1.32	1.46	52:4	HV5914
382	4:16	5 32 16.6	-67 3 32.	0.5	10.25	1.11	1.43	52:6	HV2648
383	5:1	5 32 23.9	-67 33 42.	0.5	9.7			45:61	
384	4:8	5 32 27.0	-65 38 18.	2	8.9			51:8	
385	4:8	5 32 28.9	-65 50 34.	4+	4.8				
386	5:1	5 32 32.5	-67 46 48.	0.5	9.1				
387	4:16	5 32 36.4	-67 1 33.	0	10.72	1.07	1.31		
388	5:5	5 32 40.6	-67 56 9.	2	10.4			46:59	
389	5:13	5 32 42.2	-69 21 25.	0	10.4			54:3	
390	5:9	5 32 45.2	-69 8 52.	0.5	10.5			54:4	
391	4:12	5 32 45.9	-66 22 53.	0	10.9	1.0	1.21	51:9	
392	6:13	5 32 48.1	-72 21 45.	0:	10.62	0.80			
393	5:1	5 32 53.6	-67 28 45.	1	10.6			52:12	
394	5:13	5 32 55.1	-69 17 10.	0:	11.4				
395	4:16	5 33 8.0	-66 49 5.	0	10.4	1.3	1.66		HV12437
396	4:16	5 33 15.9	-67 4 47.	0	10.24	1.11	1.47	52:16	
397	4:16	5 33 17.8	-67 8 9.	0	10.85	1.11	1.45		
398	4:12	5 33 23.6	-66 23 21.	0.5	10.0	1.1	1.37		
399	5:1	5 33 24.4	-67 31 31.	1	10.2			52:17	
400	5:17	5 33 25.0	-70 6 1.	0:	11.9				

TABLE I.- *(Continued)*

NO	CHART	R.A. (1975)	DECL.	SP	I	R-I	V-R	S&P	OTHER
401	4:16	5 33 28.2	-67 5 12.	0.5	9.99	1.45	1.68	52:18	HV5933
402	5:13	5 33 30.6	-69 22 38.	0.5:	11.4				
403	4:16	5 33 33.6	-66 57 38.	0	11.23	0.85	1.13	52:20	
404	4:8	5 33 35.3	-66 8 17.	0	10.45	1.12	1.39	51:12	
405	6:17	5 33 41.1	-73 28 12.	3	13.0				
406	5:1	5 33 47.3	-67 25 14.	0	10.4			52:23	
407	5:13	5 33 51.9	-69 19 54.	0.5	11.0				
408	5:17	5 33 57.5	-70 7 57.	1	10.5			54:13	HV2670
409	4:12	5 33 58.6	-66 34 53.	0	9.80	1.26	1.52	51:13	HV2678
410	5:9	5 34 2.4	-69 12 11.	1	10.5			54:12	HV2674
411	4:16	5 34 9.0	-67 3 38.	0.5	9.95	1.41	1.55	52:25	
412	4:12	5 34 14.2	-66 27 1.	0.5	10.49	1.25		51:14	
413	5:9	5 34 23.4	-68 59 40.	1	10.03	1.61	1.98	53:6	HV2677
414	5:13	5 34 36.9	-69 22 45.	0.5	8.8				
415	5:9	5 34 38.2	-68 41 40.	0.5	9.5				
416	8:9	5 34 39.3	-69 8 50.	0.5	11.3				
417	5:5	5 34 44.4	-68 14 48.	0	10.0				
418	4:12	5 34 50.3	-66 28 4.	0	10.10	1.20	1.54	51:15	
419	4:16	5 35 2.6	-66 55 23.	1	9.8			52:28	BE128
420	8:9	5 35 3.8	-69 8 57.	2	11.4				
421	8:3	5 35 18.5	-67 44 50.	1	10.3				HV1001
422	4:16	5 35 20.4	-67 3 13.	1	10.00	1.30	1.60	52:29	HV2700
423	4:12	5 35 21.4	-66 13 52.	1	10.9	1.2	1.57		
424	8:9	5 35 29.1	-69 17 25.	0:	11.58	0.97	1.37		
425	4:16	5 35 29.4	-66 56 56.	1	9.14	1.20	1.59	52:32	
426	8:12	5 35 37.9	-69 28 56.	0	9.9				
427	4:16	5 35 38.6	-67 6 12.	2	11.13	1.45	1.53		
428	4:16	5 35 44.6	-66 56 16.	0.5	9.3				
429	8:12	5 36 2.5	-69 38 2.	0:	10.3			54:23	
430	7:10	5 36 19.5	-66 18 18.	2	5.9	1.2	1.52		
431	8:9	5 36 20.0	-69 11 29.	2	10.8				
432	7:12	5 36 26.4	-66 56 30.	2	10.5	1.6	1.95		HV1004
433	8:9	5 36 29.6	-68 57 10.	0.5	10.7			53:13	
434	7:10	5 36 35.2	-66 28 30.		9.8			51:19	
435	8:9	5 36 37.0	-69 20 21.	0.5	10.79	1.20	1.65		
437	8:15	5 37 17.2	-70 4 25.	0.5	7.9				
438	8:9	5 37 23.6	-69 9 25.	1	10.6				
439	8:9	5 37 35.0	-68 48 29.	0	10.35	1.37	1.66	53:18	
440	8:12	5 37 48.6	-69 30 13.	0.5	10.27	1.18	1.64	54:24	HV2728
441	8:12	5 37 54.5	-69 25 49.A	0.5	9.5			54:24	HV2730
442	8:9	5 37 56.3	-69 21 38.B	0.5	8.7			54:24	
443	8:9	5 38 0.3	-69 19 54.	1	10.7				
444	20:2	5 38 12.9	-73 47 29.		9.2				
445	7:12	5 38 14.8	-67 14 8.	2:	12.1				
446	8:9	5 38 26.3	-69 10 59.	0	10.2			54:26	HV2740
447	8:12	5 38 27.0	-69 24 25.	0.5	9.62	1.10	1.33		
448	8:9	5 38 29.0	-69 18 30.	0:	10.3				
449	8:12	5 38 31.8	-69 52 20.	0.5	8.3				P1252
450	8:12	5 38 32.6	-69 38 21.	5	8.40	2.57	2.45		
451	5:17	5 38 36.2	-70 19 21.	0					
452	8:9	5 38 36.9	-69 9 41.	0::	10.6				
453	8:9	5 38 45.1	-69 21 19.	0.5	9.91	1.54	1.84		
454	8:12	5 38 46.7	-69 35 28.	4	11.3				
455	8:6	5 38 47.7	-68 28 59.	0	11.0			53:21	
456	7:12	5 38 52.3	-67 22 55.	2	9.2				
457	8:9	5 38 58.3	-69 6 20.	1+	7.8				
458	8:6	5 39 8.1	-68 25 56.	0	11.0			53:22	HV2754
459	8:12	5 39 44.7	-69 35 35.	1	9.36	1.46	1.84	54:28	
460	8:9	5 39 48.2	-68 57 34.	0	8.8				P1272
461	8:9	5 40 18.8	-69 20 49.	0.5	10.35	1.38	1.79		
462	8:6	5 40 20.9	-68 27 10.	0	10.9				
463	8:12	5 40 48.5	-69 27 4.	0	10.0			54:31	HV2770
464	8:9	5 40 55.1	-69 22 41.	1	9.8			54:32	HV5993
465	8:12	5 41 0.6	-69 34 18.	0	9.5				
466	8:12	5 41 6.8	-69 24 8.	0.5	10.0			54:33	
467	8:9	5 41 10.3	-69 19 18.	0.5	9.56	1.58	2.01	54:34	HV1017
468	8:12	5 41 10.9	-69 26 53.	0.5	9.3			54:35	
469	8:9	5 41 15.2	-69 5 25.	0.5	10.0			54:36	
470	8:9	5 41 18.0	-69 17 57.	0.5	9.77	1.27	1.75	54:39	HV2781
471	8:12	5 41 23.3	-69 38 46.	0	9.67	1.41	1.76	54:38	HV2778
472	8:12	5 41 33.0	-69 34 48.	0:	9.3				P1311
473	8:12	5 41 33.8	-69 32 31.	1	9.9			54:40	HV5999
474	8:9	5 41 40.1	-68 53 27.	0.5	7.0				
475	8:12	5 41 41.2	-69 27 58.	0	10.2			54:42	HV6005
476	8:15	5 41 44.2	-70 2 44.	2	3.5				P1318
477	8:12	5 41 46.7	-69 48 22.	0	10.08	1.13	1.63	54:44	
478	8:9	5 41 58.6	-69 12 46.	1	9.7				HV6002
479	8:9	5 42 1.4	-69 21 56.	0	10.4			54:47	
480	8:9	5 42 11.3	-69 12 17.	0	10.6				
481	8:9	5 42 15.3	-69 11 39.	0+	11.1				
482	8:3	5 42 15.7	-67 28 41.	0	9.6				
483	7:4	5 42 21.4	-65 17 32.	2	9.9				
484	7:12	5 42 23.8	-67 19 32.	0:	10.8			52:45	
485	8:3	5 42 38.3	-68 4 19.	0.5	8.3				P1332
486	8:9	5 42 45.8	-69 9 26.	0.5	9.71	1.34	1.59	54:53	HV2798
487	7:12	5 43 5.2	-67 20 30.	0	10.4			52:46	
488	7:12	5 43 16.7	-67 19 2.	0	10.2			52:47	
489	8:9	5 43 19.2	-69 4 0.	0	9.0				P1356
490	8:6	5 43 35.6	-68 28 47.	3	6.7				P1360
491	8:15	5 43 49.3	-70 24 36.		9.7				
492	8:3	5 43 51.1	-67 42 34.	5	3.1				HV2822
493	8:6	5 43 55.5	-68 15 16.	0	9.6				
494	7:10	5 44 12.6	-66 17 20.	0.5	9.97	1.69		59:2A	HV2834
495	8:8	5 44 48.8	-69 4 22.	0.5:	11.1			54:59	
496	8:15	5 44 50.0	-70 36 58.	1				55:20	
497	9:2	5 46 23.2	-70 45 32.	3	12.6				
498	9:4	5 46 32.1	-71 27 1.	1	12.3				
499	7:11	5 46 53.1	-67 15 16.	2	10.7				HV2849
500	8:2	5 47 26.8	-67 45 56.	4	2.9				
501	7:11	5 48 0.2	-67 24 23.	0	10.3			60:6	
502	8:14	5 48 55.1	-70 3 41.	4	8.73	1.99	2.03	62:4	
503	7:11	5 49 2.4	-67 19 43.	0:	12.0				
504	8:14	5 49 19.3	-70 35 44.	0.5	13.0				
505	9:4	5 49 40.4	-71 54 2.	0	8.9				
506	8:5	5 50 4.8	-63 17 8.	0	10.04	1.10	1.16	61:12	
507	8:5	5 50 13.4	-68 18 17.	0	10.83	1.09	1.86	61:14	
508	8:14	5 50 30.9	-70 18 36.	1	8.78	1.46	1.55		
509	7:11	5 50 59.3	-67 18 5.	0:	12.0				
510	8:14	5 51 16.6	-70 1 43.	4:	7.92	2.02	1.97		
511	8:5	5 52 15.2	-68 17 54.	0	10.46	1.08	1.94	61:22	
512	8:5	5 52 21.2	-68 12 33.	2	9.8			61:23	
513	9:1	5 52 27.6	-70 57 27.	3	11.8				
514	8:5	5 52 34.7	-68 19 40.	1	10.53	1.53	1.87	61:24	
515	8:8	5 52 39.0	-69 14 27.	2:	10.7				
516	7:9	5 52 45.7	-66 22 27.	2	8.6				
517	8:14	5 53 16.0	-70 11 18.	0.5	9.81	1.08	1.46		
518	8:2	5 53 59.3	-67 54 18.	2	9.4				
519	9:3	5 54 2.5	-71 32 18.	0	13.0				
520	7:5	5 54 59.4	-66 8 48.	0.5	10.93	1.37			
521	20:1	5 55 10.4	-73 51 32.		8.5				
522	9:1	5 56 42.7	-70 48 51.	1	10.3			63:14	
523	8:13	5 56 51.8	-70 6 46.	1	7.2				
524	8:7	5 58 20.2	-69 1 20.	2	7.4				
525	7:5	5 59 29.8	-65 46 48.	0.5	9.88	1.09			
526	8:10	6 0 33.0	-69 23 28.	0	9.1				
527	7:8	6 0 51.7	-66 44 40.	0	9.25	0.94			
528	8:10	6 1 55.3	-69 31 23.	1	8.5				
529	8:1	6 2 50.9	-67 28 35.	1	9.3				
530	8:10	6 3 59.0	-69 42 30.	2	4.7				
531	9:8	6 4 24.2	-72 55 1.	1	13.4				
532	9:8	6 6 27.0	-72 38 41.	4	12.1				
533	9:5	6 10 42.5	-72 0 9.	4	13.2				
534	9:5	6 12 37.7	-72 34 6.	0	13.2				
535	24:1	6 18 9.4	-71 11 39.	2	8.4				
536	24:3	6 20 30.3	-72 44 23.	2	13.2				
537	24:2	6 20 56.6	-72 0 12.		9.5				

Notes to tables I and II :

The following numbers have been deleted from the tables because of double identifications, etc. :
Table I : 83, 144, 180, 333, 446.
Table II : 310, 343, 417, 507, 521.

For a number of stars in table I no spectral type is given for various reasons such as partly overlapping spectra, over-exposed spectra, plate defects damaging part of a spectrum, etc. Likewise, for similar reasons, a number of stars in tables I and II have no *I* magnitudes.

Photographically determined magnitudes, *I*, brighter than *I* = 5, are coarse estimates derived by large extrapolations. They should be interpreted only as indicating that the stars are very bright in *I*.

We expect the following 52 stars in table I to be foreground stars :
1, 7, 16, 22, 32, 36, 39, 53, 114, 123, 125, 128, 132, 136, 138, 163, 164, 170, 172, 176, 182, 201, 203, 205, 222, 224, 231, 258, 263, 278, 285, 293, 360, 363, 385, 430, 437, 449, 450, 457, 472, 474, 476, 485, 489, 490, 492, 500, 510, 523, 524, 530.

Likely foreground stars in table II are, on the basis of their apparent brightnesses, the following 82 objects : 1, 3, 4, 5, 7, 8, 13, 17, 22, 23, 32, 61, 123, 130, 176, 226, 233, 243, 252, 281, 305, 313, 316, 317, 330, 331, 333, 340, 347, 352, 361, 364, 371, 376, 381, 385, 387, 396, 399, 401, 403, 405, 406, 409, 411, 412, 418, 420, 428, 431, 441, 450, 454, 466, 483, 488, 498, 502, 514, 518, 548, 549, 552, 556, 558, 560, 580, 587, 596, 608, 609, 611, 622, 623, 630, 634, 640, 642, 652, 653, 657, 658.

The references in the last column in both tables are

HV = Harvard variable	(Hodge, P.W. and Wright, F.W. : 1967, The Large Magellanic Cloud, Smithsonian Press, Washington, D.C.)
P = Foreground star	(Fehrenbach, Ch. and Duflot, M. : 1970, Astron. Astrophys. Spec. Suppl. No. 1)
BE = Hα emission-line star	(Bohannan, B. and Epps, H.W. : 1974, Astron. Astrophys. Suppl. 18, 47)
NS = Probably connected early-type star	(Sanduleak, N. : 1969, Contr. Cerro Tololo/Inter american Obs. No. 89).

TABLE II.- *Giant M stars in the LMC.*

NO	CHART	R.A. (1975)	DECL.	I	R-I	V-R	S&P	OTHER
1	3:12	4 19 7.0	-71 44 30.	9.7				
2	3:20	4 19 37.2	-73 6 15.	13.1				
3	3:8	4 20 15.1	-71 22 32.	10.4				
4	3:4	4 21 17.4	-71 0 11.	10.2				
5	3:8	4 23 43.3	-71 30 55.	7.9				
6	3:16	4 24 52.9	-72 46 45.	11.95	1.95	2.11		
7	3:3	4 27 10.9	-70 57 19.	6.08	2.67			
8	2:15	4 27 43.6	-68 57 19.	9.3				
9	3:11	4 28 26.9	-72 1 57.	12.1				
10	2:14	4 29 11.6	-70 23 8.	12.8				
11	3:19	4 29 56.3	-73 18 1.	12.5				
12	3:7	4 36 11.0	-71 2 50.	12.0				
13	2:14	4 36 57.1	-70 21 37.	10.3				HV8034
14	2:14	4 37 2.9	-69 56 44.	12.1				
15	1:11	4 38 6.9	-67 23 40.	13.2				
16	3:2	4 38 36.5	-70 59 36.	12.1				
17	3:18	4 39 50.7	-73 13 56.	7.9				
18	2:5	4 41 28.2	-68 14 32.	12.0				
19	2:10	4 42 25.6	-69 23 43.	11.3				
20	1:4	4 43 46.7	-65 30 20.	13.2				
21	3:2	4 44 35.2	-70 28 37.	11.90	1.20			
22	3:2	4 44 49.5	-70 45 42.	9.32	2.24	2.43		HV12463
23	3:2	4 45 14.9	-70 30 42.	10.32	1.12			
24	2:5	4 45 58.8	-68 26 15.	12.6				
25	3:2	4 46 16.0	-70 57 41.	12.3				
26	1:8	4 46 16.4	-66 32 26.	12.9				
27	1:10	4 46 17.1	-67 22 21.	13.2				
28	1:6	4 46 19.5	-66 4 43.	13.2				
29	1:10	4 46 35.8	-67 19 5.	13.24	1.32			
30	3:6	4 47 2.4	-71 29 31.	13.0				
31	1:10	4 47 16.1	-66 45 21.	12.9				
32	1:10	4 47 16.3	-67 11 5.	9.97	2.26			
33	1:3	4 48 0.1	-65 10 33.	12.9				
34	1:8	4 48 13.3	-66 42 19.	12.1				
35	2:7	4 48 14.3	-69 8 14.	11.4				
36	1:10	4 48 17.6	-66 49 25.	13.2				
37	2:7	4 48 35.3	-69 5 47.	12.7				
38	2:2	4 48 44.8	-67 41 14.	12.2				
39	1:6	4 49 9.3	-65 48 41.	13.09	1.08			
40	1:3	4 49 42.4	-65 24 50.	12.9				
41	1:8	4 50 0.6	-66 27 26.	13.3				
42	1:8	4 50 1.0	-66 30 54.	13.2				
43	1:10	4 50 21.3	-66 47 35.	13.51	0.48			
44	1:10	4 50 37.3	-67 0 33.	12.52	0.40			
45	1:10	4 50 57.4	-66 50 12.	12.3				
46	2:6	4 50 58.4	-68 58 51.	12.1				
47	1:10	4 51 28.2	-66 59 33.	13.1				
48	1:6	4 51 38.5	-65 45 53.	13.3				
49	1:10	4 51 46.6	-66 51 26.	12.0				HV12731
50	2:4	4 52 16.5	-68 3 56.	12.3				
51	1:6	4 52 25.0	-65 48 38.	13.5				
52	1:6	4 52 35.7	-65 33 54.	13.2				
53	1:8	4 52 40.2	-66 43 38.	13.1				
54	1:8	4 52 49.6	-66 43 43.	13.2				
55	2:9	4 53 10.5	-69 28 8.	12.8				
56	1:8	4 53 28.1	-66 42 58.					
57	3:1	4 53 45.7	-70 53 34.	12.3				
58	2:6	4 53 54.5	-68 45 3.	12.3				
59	2:4	4 54 9.6	-68 6 37.	12.4				
60	2:1	4 54 17.8	-67 50 3.	12.1				
61	2:9	4 54 21.8	-69 14 57.	8.9				
62	2:6	4 54 50.4	-68 41 31.	13.0				
63	2:9	4 55 9.2	-69 37 3.	11.47	1.38	1.68		
64	2:4	4 55 14.5	-68 22 50.	12.4				
65	3:5	4 55 27.7	-71 27 16.	12.9				
66	2:4	4 55 38.0	-68 28 45.	12.9				
67	1:3	4 55 45.0	-65 28 41.	12.8				
68	2:6	4 55 47.9	-68 45 36.	12.5				
69	3:17	4 55 59.5	-73 17 32.	12.9				
70	1:5	4 56 0.0	-65 47 50.	11.9				
71	2:9	4 56 2.7	-67 37 27.	12.8				
72	3:13	4 56 6.5	-72 49 49.	13.2				
73	2:12	4 56 12.7	-70 12 40.	11.30	1.06	1.65		
74	3:5	4 56 29.8	-71 31 50.	12.6				
75	2:6	4 56 32.6	-68 42 26.	12.5				
76	3:17	4 56 49.3	-73 6 40.	12.9				
77	2:12	4 57 10.9	-70 19 58.	12.0				
78	1:7	4 57 15.1	-70 34 9.	12.0				
79	2:6	4 57 15.5	-69 4 56.	12.5				
80	1:5	4 57 21.7	-66 0 60.	13.3				
81	6:8	4 57 24.9	-71 26 8.					
82	1:5	4 57 36.1	-65 53 20.	13.2				
83	3:1	4 57 42.4	-70 29 43.	11.7				
84	1:5	4 57 46.3	-66 0 2.	12.93	1.42			
85	2:6	4 57 52.9	-68 38 25.	12.7				
86	3:17	4 57 54.8	-73 18 8.	13.2				
87	2:6	4 57 57.5	-68 44 44.	12.7				
88	1:5	4 58 2.5	-65 35 10.	13.2				
89	2:6	4 58 11.9	-69 8 20.	13.2				
90	2:6	4 58 12.8	-68 51 9.	13.0				
91	2:6	4 58 25.0	-68 44 26.	12.9				
92	2:6	4 58 38.4	-68 58 58.	12.9				
93	2:12	4 58 38.6	-70 11 22.					
94	6:12	4 58 40.5	-72 16 36.	12.8				
95	1:7	4 58 40.9	-66 29 21.	12.9				
96	1:5	4 58 41.1	-65 37 11.	13.4				
97	6:12	4 58 43.0	-71 58 35.	13.1				
98	5:20	4 58 50.5	-70 23 31.	12.3				
99	1:9	4 58 54.0	-66 59 50.	12.7				
100	6:12	4 58 55.3	-72 18 13.	12.8				
101	1:9	4 58 59.7	-67 2 55.	13.3				
102	3:1	4 59 2.7	-70 31 41.	12.0				HV5560
103	3:1	4 59 5.9	-70 29 8.	13.2				
104	1:9	4 59 6.8	-67 1 18.	13.4				
105	1:7	4 59 10.0	-66 42 16.	13.1				
106	3:1	4 59 16.6	-70 25 25.	13.4				
107	2:4	4 59 22.2	-68 6 50.	13.0				
108	1:7	4 59 27.7	-66 19 23.	13.3				
109	6:4	4 59 30.6	-70 38 10.	12.9				
110	6:8	4 59 42.0	-71 27 0.	13.3				
111	1:5	4 59 52.7	-65 32 28.	13.4				
112	2:9	4 59 55.3	-69 37 34.	12.5				BE501
113	1:2	4 59 58.2	-65 16 42.	12.8				
114	6:4	5 0 10.5	-71 7 21.	11.36	1.78	1.97		
115	2:1	5 0 16.7	-67 32 43.	13.1				
116	2:9	5 0 16.8	-69 37 54.	11.3				
117	5:12	5 0 22.8	-69 12 50.	12.5				
118	5:12	5 0 41.6	-68 42 14.	12.6				
119	1:5	5 0 42.2	-65 32 45.	13.4				
120	5:20	5 0 44.3	-70 10 54.	12.2				
121	5:12	5 0 54.4	-69 6 12.	12.0				
122	1:9	5 0 56.8	-67 18 58.	13.6				
123	5:8	5 1 2.0	-68 15 58.	9.29	0.56			P458
124	1:2	5 1 2.8	-65 19 10.	11.7				
125	1:5	5 1 25.6	-65 37 41.	12.9				
126	1:1	5 1 30.3	-64 45 32.	13.3				
127	5:20	5 1 31.5	-69 57 25.	11.9				
128	5:16	5 1 34.8	-69 50 2.	13.5				
129	5:12	5 1 35.8	-68 44 52.	11.2				
130	5:8	5 1 38.5	-68 8 2.	9.2				HV884
131	6:8	5 1 56.3	-71 43 52.	13.1				
132	4:4	5 2 8.3	-70 5 55.	12.3				
133	5:20	5 2 9.3	-70 19 57.	12.2				
134	5:8	5 2 23.8	-68 23 37.	12.3				
135	5:8	5 2 29.5	-68 23 18.	12.0				
136	5:4	5 2 30.4	-67 33 43.	12.8				
137	1:7	5 2 31.2	-66 26 56.	13.0				
138	1:9	5 2 33.5	-66 52 50.	13.2				
139	1:7	5 2 34.7	-66 22 19.	13.1				
140	1:7	5 2 35.3	-66 38 13.	13.5				
141	1:5	5 2 51.5	-65 44 52.	13.0				
142	1:9	5 2 54.3	-66 52 13.	12.9				
143	5:4	5 2 58.6	-67 26 57.	12.3				
144	1:7	5 2 60.0	-66 36 56.	13.1				
145	1:7	5 3 1.6	-66 13 29.	12.3				
146	1:5	5 3 10.9	-65 44 44.	13.0				
147	1:7	5 3 18.4	-66 43 2.	13.0				
148	4:7	5 3 26.4	-65 27 2.	12.8				
149	5:16	5 3 38.4	-69 52 59.	13.1				
150	1:9	5 3 41.5	-67 8 55.	12.7				
151	6:4	5 3 49.4	-70 42 41.	12.1				
152	4:4	5 3 58.1	-64 29 33.	13.1				
153	4:15	5 4 7.3	-66 12 29.	12.8				
154	6:12	5 4 7.7	-72 25 51.	12.9				
155	6:4	5 4 11.0	-70 48 52.	12.9				
156	5:8	5 4 33.4	-68 20 37.	11.8				
157	5:20	5 4 37.0	-70 13 1.	12.5				
158	5:20	5 4 47.7	-70 20 9.	13.4				
159	4:11	5 4 49.3	-65 58 40.	12.7				
160	5:16	5 4 57.2	-69 18 57.	12.8				
161	4:11	5 4 58.3	-65 52 41.	12.7				
162	5:20	5 4 58.8	-70 23 37.	12.3				
163	5:16	5 5 8.5	-69 23 49.					
164	5:20	5 5 9.2	-70 27 7.	12.3				
165	4:4	5 5 10.1	-64 32 24.	12.8				
166	4:7	5 5 15.3	-65 9 10.	13.1				
167	4:11	5 5 17.6	-65 49 39.	12.9				
168	4:7	5 5 34.0	-65 27 16.	11.6				
169	5:20	5 5 36.3	-70 20 21.	12.2				
170	6:19	5 5 37.5	-73 7 44.	13.1				
171	6:8	5 5 38.5	-71 28 41.	12.9				
172	4:15	5 5 46.8	-66 41 51.	12.9				
173	4:19	5 5 51.9	-66 48 56.	11.3				
174	4:4	5 6 1.2	-64 46 4.	13.1				
175	4:11	5 6 9.4	-65 57 58.	13.0				
176	5:20	5 6 11.1	-70 34 34.	9.92	0.42	0.69		
177	4:7	5 6 20.5	-65 22 13.	13.0				
178	5:16	5 6 35.6	-69 28 44.	11.6				
179	5:12	5 6 48.3	-69 4 23.	12.0				
180	4:11	5 6 48.5	-66 1 47.	12.9				
181	6:4	5 6 54.9	-70 58 56.	12.7				
182	4:4	5 7 3.2	-64 40 10.	13.2				
183	5:12	5 7 9.3	-68 49 47.	11.5				
184	6:16	5 7 11.4	-72 39 17.	12.5				
185	5:16	5 7 22.4	-69 21 59.	12.5				
186	4:4	5 7 26.7	-64 48 4.	12.9				
187	5:16	5 7 27.9	-69 25 6.	12.7				
188	5:20	5 7 30.0	-70 30 38.	12.7				
189	4:15	5 7 30.2	-66 19 9.	13.4				
190	4:19	5 7 37.8	-67 10 27.	12.9				
191	5:16	5 7 39.5	-69 54 38.	12.0				
192	6:16	5 7 51.4	-72 43 38.	12.8				
193	4:15	5 7 55.3	-66 9 10.	13.0				
194	4:7	5 7 56.9	-64 53 46.	12.4				
195	4:11	5 8 3.8	-66 0 55.	12.0				
196	5:12	5 8 7.5	-68 53 33.	12.3				
197	6:4	5 8 23.5	-70 42 59.	12.1				
198	5:12	5 8 27.9	-69 3 23.	11.7				
199	4:15	5 8 41.6	-66 24 36.	12.9				
200	4:19	5 8 51.5	-67 16 31.	13.2				

TABLE II.- *(Continued)*

NO	CHART	R.A. (1975)	DECL.	I	R-I	V-R	S&P	OTHER
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202	5:15	5 9 8.5	-69 16 49.	12.7				
203	4:4	5 9 29.5	-64 41 16.	13.1				
204	5:3	5 9 44.6	-67 37 42.	11.9				
205	4:19	5 9 55.0	-66 47 47.	13.2				
206	4:11	5 10 13.6	-65 50 56.	13.1				
207	6:3	5 10 14.8	-70 57 29.	12.9				
208	4:7	5 10 23.2	-65 20 51.	12.6				
209	4:7	5 10 24.6	-65 18 7.	12.4				
210	5:15	5 10 28.1	-69 20 18.	12.6				
211	4:7	5 10 38.0	-65 21 8.	13.1				
212	6:11	5 10 38.7	-72 2 1.	12.5				
213	6:7	5 10 55.0	-71 20 30.	11.30	1.09		40:20	
214	4:15	5 11 6.3	-66 19 41.	13.1				
215	4:7	5 11 8.6	-64 55 29.	13.2				
216	4:19	5 11 22.4	-67 9 11.	12.7				
217	4:11	5 11 31.8	-65 57 38.	12.6				
218	4:15	5 11 36.6	-66 24 57.	13.3				
219	4:11	5 11 46.0	-65 30 33.	13.3				
220	4:15	5 11 53.8	-66 39 10.	12.8				
221	5:11	5 11 56.2	-69 0 28.	12.2				
222	5:3	5 12 5.6	-67 29 12.	13.2				
223	5:11	5 12 10.2	-68 44 57.	12.4				
224	5:11	5 12 11.6	-68 47 35.	12.6				
225	6:7	5 12 14.6	-71 28 53.	12.5				
226	4:3	5 12 23.0	-64 37 37.	9.2				
227	5:11	5 12 23.0	-69 3 3.	12.2				
228	5:19	5 12 33.6	-70 11 2.	12.2				
229	5:3	5 12 46.8	-67 30 24.	12.8				
230	4:6	5 13 0.3	-65 17 17.	12.0				
231	4:6	5 13 4.7	-64 52 44.	13.0				
232	6:15	5 13 29.5	-72 38 19.	13.2				
233	5:15	5 13 42.7	-69 23 24.	9.8			39:17	
234	5:15	5 13 45.2	-69 39 14.	12.3				
235	6:7	5 13 51.0	-71 12 10.	12.5				
236	4:14	5 14 24.0	-66 24 8.	13.0				
237	5:7	5 14 29.7	-68 22 53.	12.7				
238	5:15	5 14 50.3	-69 50 37.	12.5				
239	5:11	5 15 4.7	-68 38 51.	12.8				
240	5:15	5 15 8.3	-69 50 19.	12.8				
241	5:15	5 15 14.1	-69 37 19.	12.6				
242	5:15	5 15 14.9	-69 48 15.	13.1				
243	4:10	5 15 29.3	-65 34 16.	5.3				
244	4:14	5 15 36.4	-66 17 38.	12.7				
245	5:15	5 15 40.8	-69 37 24.	12.0				
246	4:6	5 15 56.6	-65 3 21.	13.1				
247	4:18	5 15 58.2	-66 47 29.	13.1			37:38	
248	5:15	5 16 4.2	-69 48 51.	12.4				
249	4:3	5 16 9.6	-64 32 29.	13.0				
250	5:11	5 16 12.6	-68 56 29.	11.9				
251	4:14	5 16 20.2	-66 45 28.	12.1				
252	4:18	5 16 20.6	-67 16 51.	9.1				
253	4:10	5 16 23.1	-65 34 44.	13.2				
254	5:11	5 16 31.7	-69 1 51.	11.9				
255	5:15	5 16 52.5	-69 25 38.	12.1				
256	4:3	5 16 55.5	-64 34 45.	12.0				
257	6:3	5 17 24.8	-70 35 59.	12.0				
258	6:3	5 17 47.3	-70 49 16.	12.0				
259	5:19	5 17 52.3	-70 14 39.	12.6				
260	5:19	5 18 0.6	-70 23 27.	12.5				
261	5:15	5 18 4.5	-69 35 5.	11.9				
262	4:6	5 18 56.9	-65 23 16.	13.2				
263	6:15	5 19 15.1	-72 40 14.	12.8				
264	6:3	5 19 23.1	-71 5 34.	12.5				
265	5:10	5 19 24.0	-68 57 33.	11.5				
266	6:11	5 19 37.8	-72 15 23.	12.3				
267	5:18	5 19 38.4	-70 9 56.	12.5				
268	6:3	5 19 47.3	-70 40 29.	12.0				
269	5:14	5 19 47.7	-69 47 0.	12.0				
270	4:6	5 19 53.2	-65 19 27.	12.2				
271	5:14	5 19 54.8	-69 32 22.	12.1				
272	5:2	5 19 58.9	-67 39 9.	12.4				
273	5:14	5 20 0.1	-69 18 16.	12.0				
274	5:2	5 20 4.3	-67 36 9.	13.1				
275	5:2	5 20 12.8	-67 25 21.	13.4				
276	5:14	5 20 19.7	-69 33 44.	12.0				
277	6:10	5 20 37.8	-72 14 11.	13.0				
278	4:14	5 20 44.5	-66 34 57.	12.1				
279	4:2	5 20 49.9	-64 39 16.	12.6				
280	6:2	5 20 51.4	-71 6 6.	12.9				
281	4:5	5 20 57.2	-64 58 4.	8.1				
282	4:2	5 20 57.8	-64 51 21.	12.9				
283	6:10	5 20 58.5	-72 15 14.	13.1				
284	4:2	5 21 4.7	-64 33 46.	12.7				
285	6:14	5 21 36.5	-72 56 42.	13.2				
286	5:18	5 21 43.0	-70 1 31.	12.4				
287	4:9	5 21 43.2	-65 40 7.	13.0				
288	6:2	5 21 53.0	-70 43 35.	12.5				
289	5:14	5 21 53.3	-69 22 54.	11.4				
290	6:18	5 22 1.6	-73 13 12.	11.8				
291	5:18	5 22 11.9	-70 0 23.	12.1				
292	4:2	5 22 18.2	-64 51 24.	13.3				
293	4:5	5 22 20.1	-65 5 40.	12.5				
294	4:13	5 22 25.6	-66 42 30.	12.9				
295	4:2	5 22 29.8	-64 36 26.	13.0				
296	4:9	5 22 35.7	-65 34 33.	13.2				
297	4:5	5 22 41.2	-65 6 29.	13.1				
298	4:5	5 22 50.4	-64 57 50.	13.1				
299	4:13	5 22 52.5	-66 40 53.	13.2				
300	6:6	5 23 1.2	-71 16 11.	12.1				
301	6:14	5 23 7.1	-72 53 31.	13.0				
302	4:17	5 23 12.1	-66 58 52.	12.1				
303	6:18	5 23 39.5	-73 3 16.	13.1				
304	5:14	5 23 41.5	-69 44 11.	11.1				
305	5:18	5 23 50.8	-70 8 32.	9.0				P963
306	5:18	5 23 51.6	-70 6 12.	11.5				
307	6:18	5 23 54.0	-73 22 53.	12.6				
308	5:18	5 23 54.4	-70 9 21.	12.2				
309	5:18	5 24 6.2	-70 3 45.	12.5				
311	4:9	5 24 19.7	-66 7 55.	13.5				
312	6:2	5 24 25.3	-70 39 26.	12.2				
313	4:9	5 24 58.6	-65 53 17.	9.6			44:17	HV2890
314	6:18	5 25 11.4	-73 14 21.	13.0				
315	6:18	5 25 13.6	-73 30 22.	13.2				
316	4:5	5 25 15.6	-65 6 5.	8.1				
317	4:1	5 25 29.3	-64 29 29.	8.1				
318	6:6	5 25 30.4	-71 15 50.	12.1				
319	5:1[illegible]	5 25 39.9	-70 25 3.	12.3				
320	5:18	5 25 55.4	-70 17 6.	12.1				
321	5:14	5 25 55.8	-69 28 57.	12.1				
322	5:14	5 25 57.5	-69 46 8.					
323	4:13	5 25 57.8	-66 33 53.	11.6				
324	5:18	5 26 8.9	-70 17 19.	12.4				
325	5:18	5 26 9.3	-70 29 27.	11.9				
326	6:2	5 26 9.9	-70 29 26.	11.9				
327	5:14	5 26 11.5	-69 35 10.	12.3				
328	6:6	5 26 24.6	-71 21 41.	12.9				
329	5:14	5 26 42.9	-69 49 13.					
330	5:10	5 26 43.6	-68 53 22.	10.29	0.35	0.55		
331	5:10	5 26 50.9	-68 57 50.	10.1				
332	5:18	5 26 54.2	-70 2 10.	12.3				
333	6:18	5 26 54.3	-73 4 16.	10.25	0.36	0.56		
334	5:10	5 26 59.0	-69 14 38.	12.4				
335	5:14	5 27 7.4	-69 33 12.	12.2				
336	5:14	5 27 12.1	-69 38 1.	12.6				
337	5:18	5 27 15.1	-70 0 58.	12.4				
338	6:18	5 27 16.8	-73 2 55.	13.3				
339	5:14	5 27 22.0	-69 37 38.	11.4				
340	5:2	5 27 25.8	-67 30 13.	10.85	1.56	1.00		
341	4:17	5 27 28.4	-67 23 13.					
342	5:10	5 27 28.5	-69 11 54.	12.4				
344	5:14	5 27 36.7	-69 39 24.	12.3				
345	5:18	5 27 46.8	-70 2 19.	11.6				
346	5:17	5 27 47.0	-70 2 22.					
347	5:9	5 27 50.2	-69 9 15.	7.7				
348	5:13	5 28 9.2	-69 20 40.					
349	4:12	5 28 18.4	-66 42 17.	12.0				
350	5:9	5 28 20.5	-69 7 57.	11.8				
351	5:18	5 28 25.5	-70 12 23.	12.4				
352	5:5	5 28 34.5	-68 8 16.	10.2				
353	5:13	5 28 43.7	-69 45 12.					
354	6:14	5 28 53.2	-72 32 4.	12.4				
355	5:17	5 28 59.4	-69 55 53.	11.8				
356	5:1	5 29 4.7	-67 43 23.					
357	5:17	5 29 5.8	-70 1 56.					
358	5:13	5 29 16.0	-69 49 15.	11.2				
359	4:17	5 29 19.0	-67 3 41.	12.6				
360	5:5	5 29 19.0	-68 0 2.	13.1				
361	6:2	5 29 21.4	-70 39 41.	8.59	1.43	1.40		
362	5:1	5 29 25.0	-67 30 39.	12.8				
363	6:2	5 29 27.4	-70 36 24.	12.3				
364	5:9	5 29 29.5	-68 48 39.	9.3			46:39a	
365	5:1	5 29 31.3	-67 33 57.	13.4				
366	6:10	5 29 33.8	-72 8 26.	12.5				
367	5:1	5 29 33.9	-67 19 55.	12.9				
368	6:10	5 29 52.4	-72 7 29.	13.0				
369	6:10	5 29 57.8	-71 55 8.	12.2				
370	5:17	5 30 1.7	-70 4 3.	12.7				
371	4:16	5 30 3.5	-67 3 51.	9.2				
372	5:13	5 30 6.7	-69 18 26.	12.5				
373	6:2	5 30 16.6	-71 40 13.	12.0				
374	6:2	5 30 18.9	-70 42 21.	12.9				
375	5:17	5 30 21.1	-70 8 27.	12.3				
376	4:16	5 30 23.8	-67 6 11.	9.9				
377	5:17	5 30 25.7	-69 58 52.	11.9				
378	5:17	5 30 39.9	-70 7 42.	12.1				
379	5:17	5 30 47.5	-70 2 39.	11.9				
380	5:17	5 30 47.8	-70 2 42.					
381	6:17	5 30 51.3	-73 3 12.	6.59	2.52			
382	4:16	5 30 51.5	-67 7 3.	12.5				
383	6:1	5 30 56.9	-70 24 14.	12.0				
384	5:17	5 31 0.9	-69 55 34.					
385	4:16	5 31 1.3	-67 1 31.	10.9				
386	5:17	5 31 4.8	-70 7 41.	12.7				
387	4:16	5 31 7.5	-67 0 26.	10.3				
388	6:1	5 31 11.6	-70 34 6.	12.4				
389	6:1	5 31 19.8	-70 28 33.	12.5				
390	5:17	5 31 39.6	-70 12 40.					
391	5:5	5 31 39.7	-68 28 29.	12.4				
392	5:13	5 31 40.6	-69 34 12.					
393	4:16	5 31 41.1	-67 20 9.	11.5				
394	5:17	5 31 44.6	-70 22 58.	12.2				
395	6:9	5 32 2.2	-71 55 20.	11.1				
396	5:13	5 32 14.9	-69 46 49.	10.4				
397	6:9	5 32 21.1	-72 5 19.	13.0				
398	6:9	5 32 28.8	-71 40 39.	12.3				
399	5:13	5 32 38.0	-69 17 53.	10.1			54:2	
400	6:17	5 32 57.5	-73 3 12.	12.2				

TABLE II.- *(Continued)*

NO	CHART	R.A. (1975)	DECL.	I	R-I	V-R	S&P	OTHER
401	5:1	5 33 2.2	-67 31 27.	10.1	1.3	1.60		
402	6:9	5 33 6.1	-71 55 27.	12.8				
403	5:5	5 33 14.0	-68 7 25.	10.4				
404	6:9	5 33 24.7	-72 2 54.	12.1				
405	6:9	5 33 26.5	-71 58 40.	7.53	2.77			HV12830
406	4:8	5 33 26.9	-65 57 43.	9.9				
407	5:9	5 33 54.7	-68 43 58.	11.9				
408	6:13	5 33 55.9	-72 31 56.	12.1				
409	4:16	5 34 0.4	-67 3 14.	9.17	0.96	1.22		P1162
410	4:16	5 34 6.0	-67 3 33.	11.2				
411	4:16	5 34 9.0	-67 3 39.	10.5				
412	8:9	5 34 28.8	-69 0 33.	10.49	1.29	1.55	53:8	BE368
413	8:9	5 34 48.6	-69 15 55.	12.3			54:17	HV2681
414	6:1	5 34 49.1	-70 45 40.	12.9			55:4	
415	6:1	5 34 57.3	-70 39 3.	12.2				
416	6:13	5 35 4.7	-72 21 41.	12.5				
418	8:12	5 35 34.5	-69 43 41.	9.7				
419	8:15	5 35 51.0	-70 25 18.	11.8				
420	8:3	5 35 54.1	-67 37 27.	10.7				
421	7:4	5 35 56.8	-65 8 54.	12.5				
422	5:17	5 36 5.2	-70 10 49.	12.9				
423	8:12	5 36 15.8	-69 41 14.	11.4				
424	5:17	5 36 22.9	-70 12 3.	12.5				
425	8:3	5 36 48.7	-67 56 37.	12.4				
426	8:3	5 36 51.5	-67 56 49.	12.6				
427	6:1	5 36 56.0	-70 40 37.	12.3				
428	8:9	5 36 59.1	-69 15 27.	10.89	1.26	1.55		
429	6:1	5 36 59.8	-70 45 13.	12.7				
430	7:12	5 37 2.4	-67 11 16.	11.7				
431	7:12	5 37 3.5	-67 16 33.	10.6			52:36	
432	6:1	5 37 21.9	-70 39 24.	12.8				
433	6:5	5 37 42.3	-71 8 28.	12.3				
434	6:1	5 37 45.7	-70 49 28.					
435	7:12	5 38 3.5	-67 7 37.	12.2				
436	7:12	5 38 8.3	-67 9 42.	11.6				
437	7:10	5 38 14.4	-66 33 47.	11.9				
438	7:4	5 38 18.0	-65 26 49.	12.2				
439	8:6	5 38 35.0	-68 44 2.	13.1				
440	6:9	5 38 37.8	-71 43 7.	12.5				
441	6:5	5 38 39.2	-71 37 43.	10.2				
442	7:10	5 38 50.9	-66 16 43.	12.9				
443	8:6	5 38 55.9	-68 43 4.	12.3				
444	6:5	5 38 56.3	-71 7 37.	12.5				
445	7:4	5 38 58.3	-65 24 20.	12.4				
446	8:3	5 39 15.3	-67 37 58.	13.1				
447	7:12	5 39 28.2	-67 17 51.	12.3				
448	7:12	5 39 30.2	-66 55 18.	13.4				
449	7:12	5 39 34.1	-66 57 23.	13.0				
450	7:1	5 39 36.4	-64 49 22.	10.8				
451	6:5	5 39 39.2	-71 30 11.	13.2				
452	7:10	5 39 41.8	-66 26 34.	13.2				
453	6:17	5 39 43.6	-73 6 54.	12.5				
454	7:7	5 39 48.7	-65 56 32.	9.2				
455	8:15	5 39 57.7	-70 18 1.	12.3				
456	6:13	5 40 22.7	-72 22 59.	13.1				
457	8:15	5 40 23.1	-70 9 47.	12.2				
458	7:12	5 40 30.9	-67 17 57.	12.8				
459	7:10	5 40 35.8	-66 26 9.	12.8				
460	7:4	5 40 48.9	-65 17 38.	12.9				
461	7:10	5 40 52.3	-66 26 7.	12.3				
462	8:3	5 40 53.7	-68 5 53.	13.1				
463	9:4	5 40 55.9	-71 32 40.	12.5				
464	8:3	5 40 56.7	-67 36 32.	11.8				
465	6:9	5 40 57.8	-71 45 34.	12.5				
466	8:9	5 41 1.3	-69 23 28.	9.1				
467	6:9	5 41 6.7	-72 3 47.	13.2				
468	9:4	5 41 11.9	-71 17 58.	13.1				
469	8:6	5 41 16.1	-68 31 31.	12.7				
470	7:4	5 41 18.9	-65 23 10.	13.0				
471	8:12	5 41 19.6	-69 46 32.	11.9				
472	7:12	5 41 21.5	-67 9 10.	12.5				
473	8:15	5 41 24.0	-70 10 25.	12.8				
474	8:6	5 41 24.8	-68 7 37.	12.8				
475	7:7	5 41 27.2	-65 39 51.	12.3				
476	6:17	5 41 27.5	-73 21 38.	13.2				
477	7:10	5 41 29.2	-66 29 21.	13.1				
478	8:15	5 41 35.3	-70 9 6.	12.4				
479	7:4	5 41 40.1	-65 28 11.	12.6				
480	7:12	5 41 42.2	-67 4 34.					
481	7:12	5 41 49.8	-67 21 45.	12.6				
482	8:15	5 41 54.4	-70 22 55.	12.9				
483	7:4	5 41 55.2	-69 11 57.	10.5				
484	8:6	5 41 56.8	-68 41 56.	12.5				
485	7:12	5 42 2.9	-67 22 40.	12.0				HV2793
486	8:3	5 42 10.0	-67 34 46.	11.5				
487	9:7	5 42 14.9	-72 7 35.					
488	7:1	5 42 18.0	-64 39 7.	10.4				
489	7:4	5 42 18.7	-65 11 10.	11.1				
490	8:12	5 42 20.6	-69 47 18.	11.7				
491	8:9	5 42 30.6	-69 17 1.	11.3				
492	7:4	5 42 35.4	-65 2 7.	12.8				
493	7:4	5 42 36.6	-65 25 58.	12.3				
494	8:12	5 42 44.1	-69 49 37.	11.8				
495	8:3	5 42 48.6	-67 52 43.	12.1				
496	7:7	5 43 4.3	-65 41 14.	12.9				HV2810
497	9:7	5 43 11.1	-71 58 17.	11.9				
498	9:7	5 43 12.9	-71 59 58.	9.2				
499	9:2	5 43 24.3	-70 57 54.	13.0				
500	9:4	5 43 25.9	-71 22 3.	13.2				
501	9:4	5 43 26.7	-71 21 56.	13.4				
502	8:15	5 43 35.3	-70 28 3.	6.8				
503	7:10	5 43 37.7	-66 33 43.	12.5				
504	7:10	5 43 42.1	-66 11 26.	12.1				
505	9:4	5 43 46.4	-71 25 30.	13.2				
506	7:12	5 43 48.8	-67 20 41.	12.1				
508	9:2	5 43 57.7	-71 1 15.	12.4				
509	9:12	5 44 3.4	-73 32 48.	13.4				
510	7:12	5 44 4.1	-67 11 54.	13.0				
511	8:15	5 44 4.8	-70 10 43.	11.5				
512	7:12	5 44 16.6	-66 57 53.	12.8				
513	9:4	5 44 16.8	-71 44 6.	13.3				
514	7:10	5 44 18.4	-66 18 29.	10.3				
515	8:8	5 44 29.9	-67 39 8.	12.5				
516	7:3	5 44 33.9	-64 58 52.	12.5				
517	9:4	5 44 34.4	-71 37 55.	13.4				
518	9:7	5 44 36.6	-72 28 10.	8.8				
519	9:4	5 44 46.1	-71 48 9.	13.2				
520	9:2	5 44 47.9	-70 51 16.	13.2				
522	7:3	5 44 54.6	-64 54 40.	12.7				
523	9:2	5 44 54.9	-71 4 39.	12.7				
524	7:3	5 45 7.0	-65 2 13.	12.8				
525	8:5	5 45 9.5	-71 41 52.	13.2				
526	7:12	5 45 14.7	-67 19 55.	12.4				
527	8:8	5 45 17.4	-69 5 19.	12.4				
528	8:5	5 45 22.7	-68 36 2.	12.4				
529	8:2	5 45 30.9	-67 44 28.	11.7				
530	9:7	5 45 30.9	-72 31 55.	11.8				
531	8:11	5 45 35.6	-69 32 40.	12.8				
532	7:6	5 45 40.9	-65 34 9.	11.3				
533	9:2	5 45 44.6	-70 46 17.	12.4				
534	7:6	5 45 48.0	-65 46 7.	12.6				
535	7:6	5 45 51.5	-65 57 4.	12.8				
536	8:11	5 45 54.1	-69 28 14.	12.1				
537	7:12	5 45 55.4	-67 9 19.	12.3				
538	7:9	5 45 56.2	-66 39 5.	12.9				
539	7:9	5 45 57.1	-66 40 31.	11.8				
540	7:3	5 46 4.8	-65 4 51.	12.5				
541	9:4	5 46 5.6	-71 42 6.	13.1				
542	8:14	5 46 7.3	-70 17 3.	12.1				
543	7:9	5 46 8.2	-66 22 8.	12.6				
544	8:5	5 46 10.6	-68 15 13.	13.1				
545	8:14	5 46 16.2	-70 24 50.	12.4				
546	9:4	5 46 25.0	-71 31 3.	13.2				
547	7:11	5 46 34.2	-67 13 37.	12.7				
548	9:9	5 46 46.1	-72 50 48.	10.52	1.04			
549	9:12	5 46 46.1	-73 32 5.	10.22	1.73			
550	8:19	5 46 46.8	-70 25 42.	12.4				
551	9:4	5 46 50.1	-71 35 53.	13.3				
552	8:19	5 47 2.8	-70 25 54.	9.73	1.37	1.77		
553	9:4	5 47 13.9	-71 18 43.	13.3				
554	9:4	5 47 23.4	-71 37 1.	13.4				
555	9:2	5 47 30.3	-70 42 6.	13.2				
556	9:9	5 47 32.7	-72 52 15.	6.8				
557	9:2	5 47 37.3	-70 49 4.	12.0				
558	9:12	5 47 41.0	-73 22 4.	9.73	0.56			
559	8:14	5 47 56.7	-70 37 49.	12.3				
560	9:9	5 48 9.7	-72 38 8.	6.21	1.74			
561	9:4	5 48 20.8	-71 30 4.	13.1				
562	8:11	5 48 28.1	-69 52 57.	12.2				
563	9:2	5 48 29.3	-70 42 35.	13.5				
564	9:9	5 48 31.5	-72 57 17.	13.4				
565	9:7	5 48 33.4	-72 13 29.	13.2				
566	9:2	5 48 36.9	-70 59 1.	12.4				
567	8:14	5 48 39.9	-70 25 14.	11.01	0.97			
568	8:11	5 48 41.3	-69 50 56.	11.7				
569	9:2	5 48 44.0	-71 6 21.	13.3				
570	8:5	5 48 47.5	-68 7 18.	12.2				
571	8:14	5 48 53.2	-70 29 54.	12.7				
572	8:14	5 48 54.2	-70 37 57.	13.1				
573	7:3	5 48 54.5	-64 56 17.	12.8				
574	7:3	5 49 2.1	-65 1 18.	12.7				
575	7:11	5 49 2.1	-66 56 30.	12.1				
576	8:14	5 49 10.1	-70 24 12.	12.7				
577	9:4	5 49 11.8	-71 20 7.	12.4				
578	8:14	5 49 12.5	-70 29 45.	13.3				
579.	8:14	5 49 12.7	-70 29 45.					
580	9:7	5 49 24.2	-71 58 28.	8.8				
581	8:2	5 49 28.6	-67 52 23.	12.2				
582	7:9	5 49 46.0	-66 17 51.	13.0				
583	7:3	5 49 46.5	-65 25 49.	13.8				
584	7:3	5 49 58.4	-65 16 10.	12.9				
585	9:2	5 49 58.8	-71 8 47.	12.8				
586	9:4	5 50 4.5	-71 48 4.	13.2				
587	8:14	5 50 20.0	-70 2 50.	10.8				
588	7:3	5 50 24.5	-65 9 1.	12.0				HV12851
589	9:4	5 50 28.1	-71 39 32.	13.1				
590	9:4	5 50 32.6	-71 35 20.	12.4				
591	7:6	5 50 33.4	-65 54 39.	13.1				
592	9:4	5 50 33.5	-70 45 22.	13.2				
593	9:4	5 50 47.5	-71 38 22.	13.4				
594	8:14	5 50 58.2	-70 34 48.	13.1				
595	7:3	5 51 4.8	-65 20 50.	12.8				
596	7:3	5 51 5.5	-65 15 9.	10.6				
597	9:1	5 51 11.0	-72 43 49.	13.0				
598	9:7	5 51 14.8	-72 29 47.	12.9				
599	7:6	5 51 34.7	-66 6 50.	12.9				
600	8:11	5 51 37.1	-69 27 37.	11.8				

TABLE II.- *(Continued)*

NO	CHART	R.A. (1975)	DECL.	I	R-I	V-R	S&P	OTHER
601	8:14	5 51 53.3	-70 36 22.	13.1				
602	8:2	5 51 53.4	-67 35 59.	12.4				
603	7:9	5 52 14.1	-66 29 37.	11.1			59:13	
604	9:3	5 52 15.9	-71 5 0.	12.0				
605	7:3	5 52 24.5	-64 53 2.	11.6				
606	7:6	5 52 28.4	-65 40 14.	13.0				
607	9:1	5 52 31.0	-70 57 26.	12.7				
608	7:3	5 52 38.7	-64 57 20.	10.1				
609	7:3	5 52 57.9	-65 2 38.	10.9				
610	7:11	5 52 59.1	-66 54 38.	12.4				
611	7:11	5 53 12.1	-67 4 22.	9.7				
612	7:6	5 53 18.0	-65 38 22.	11.0				
613	7:11	5 53 18.9	-66 53 35.	12.8				
614	8:14	5 53 37.7	-70 34 9.	13.48	0.61	0.30		
615	8:11	5 53 38.1	-69 35 23.	12.6				
616	7:2	5 53 42.6	-65 24 40.	12.7				
617	7:2	5 53 46.6	-65 13 36.	13.1				
618	9:3	5 53 49.9	-71 34 20.	12.2				
619	7:2	5 53 51.0	-65 17 6.	12.5				
620	7:9	5 53 59.3	-66 10 6.	12.8				
621	7:6	5 54 9.9	-66 8 53.	12.8				
622	7:2	5 54 33.2	-64 56 32.	7.7				
623	9:1	5 54 46.0	-71 2 29.	9.95	1.03			
624	7:5	5 54 51.3	-65 38 57.	13.1				
625	7:2	5 55 12.3	-65 4 52.	12.7				
626	7:2	5 55 19.9	-65 4 18.	12.0				
627	8:1	5 55 24.0	-67 30 58.	12.8				
628	8:7	5 55 36.1	-69 16 14.	13.0				
629	8:10	5 55 36.9	-69 35 25.	11.5				
630	7:8	5 55 47.7	-66 42 11.	9.5				
631	7:5	5 55 52.9	-65 35 28.	14.06	0.20			
632	8:10	5 56 0.5	-69 44 22.	12.2				
633	7:8	5 56 1.4	-66 14 23.	13.1				
634	8:1	5 56 4.8	-67 41 22.	10.0			61:39	
635	8:7	5 56 12.5	-69 11 14.	12.9				
636	8:7	5 56 12.9	-69 18 22.	13.3				
637	8:7	5 56 44.9	-69 6 4.	12.0				
638	9:6	5 56 45.9	-73 8 53.	13.0				
639	8:4	5 56 59.2	-68 27 34.	11.5				
640	9:11	5 57 29.4	-73 31 6.	8.96	1.76			
641	7:2	5 57 33.2	-65 25 25.	12.4				
642	7:8	5 59 21.0	-66 31 59.	10.4				
643	7:5	5 59 33.4	-65 56 58.	13.1				
644	9:6	5 59 34.2	-72 7 57.	12.7				
645	9:11	6 0 15.7	-73 17 47.	13.1				
646	8:1	6 1 23.1	-67 25 29.	11.7				
647	8:1	6 3 28.4	-67 47 8.	11.7				
648	9:6	6 3 39.5	-72 24 48.	13.0				
649	9:8	6 5 19.2	-73 0 53.	13.0				
650	9:8	6 5 53.5	-72 39 39.	13.1				
651	9:8	6 6 4.0	-73 0 13.					
652	9:11	6 6 26.8	-73 22 26.	9.2				
653	9:10	6 8 10.2	-73 30 49.	9.7				
654	9:5	6 9 30.8	-72 11 9.	13.1				
655	9:10	6 10 4.1	-73 41 9.	12.7				
656	9:5	6 11 41.1	-72 10 56.	13.1				
657	9:5	6 11 57.3	-72 13 16.	5.8				
658	9:5	6 13 59.7	-72 14 41.	7.0				HV2882
659	9:5	6 14 1.1	-72 14 30.	13.3				
660	24:3	6 20 18.6	-72 26 52.	12.5				

TABLE III a.- *Photoelectric observations of supergiant M stars in the LMC.*

No	I	R-I	V-R	Date
6	10.72	1.37	1.90	Dec. 76
	10.48	1.47	1.66	Jan. 78
8	10.21	0.95	1.30	Dec. 76
	10.14	0.96	1.37	Jan. 78
46	10.32	1.19		Oct. 76
	10.26	1.02	1.47	Jan. 78
49	10.09	1.22	1.75	Dec. 76
	9.74	1.35	1.75	Jan. 78
51	10.39	1.49		Oct. 76
	10.38	1.48	1.81	Jan. 78
52	9.94	1.52		Oct. 76
	10.20	1.54		Dec. 76
	10.19	1.57	1.79	Jan. 78
69	9.97	1.69	2.33	Dec. 76
	9.49	1.61	1.89	Jan. 78
74	10.16	2.06		Oct. 76
	10.53	1.85		Dec. 76
	9.81	1.76	2.15	Jan. 78
80	9.92	1.14		Oct. 76
	9.87	1.22	1.54	Dec. 76
86	9.71	1.29		Oct. 76
	9.64	1.35	1.63	Dec. 76
89	10.23	1.11		Oct. 76
	10.41	0.96	1.64	Dec. 76
91	9.57	1.19		Oct. 76
	9.78	1.10	2.12	Dec. 76
95	9.86	1.64		Oct. 76
	9.64	1.35	1.63	Dec. 76
	9.95	1.47	1.65	Dec. 76*
	9.88	1.71	1.92	Dec. 77*
161	10.03	1.69	2.01	Dec. 76*
	9.78	1.56	1.78	Dec. 77*
	10.10	1.92	1.84	Oct. 78
166	8.97	1.19		Oct. 76
	8.85	1.11	1.54	Dec. 76
	8.91	1.14	1.54	Jan. 78
168	9.99	1.28		Oct. 76
	10.12	1.25	1.71	Jan. 78
	10.11	1.61	1.83	Oct. 78
193	9.98	1.63	1.98	Dec. 76*
	9.38	1.37	1.64	Dec. 77*
	9.25	1.85	1.88	Oct. 78
194	9.82	1.71		Oct. 76
	9.89	1.69	1.87	Dec. 76*
	9.66	1.85	1.84	Dec. 77*
200	10.40	1.20	1.35	Dec. 76*
	10.14	1.36	1.61	Dec. 77*
	10.18	1.25	1.33	Oct. 78
234	9.08	1.36	1.66	Dec. 76
	9.26	1.26	1.73	Dec. 76*
	8.98	1.27	1.67	Dec. 77*
	9.16	1.11	1.69	Jan. 78
239	9.66	0.63		Oct. 76
	9.62	0.64	0.95	Dec. 76
	9.66	0.63	0.91	Oct. 78
245	10.39	1.24	1.94	Nov. 75
	10.18	1.17	1.55	Dec. 76*
	9.98	1.36	1.63	Dec. 77*
258	7.60	1.36		Oct. 76
	7.51	1.40	1.54	Dec. 76
289	9.54	1.34	1.54	Dec. 76*
	9.23	1.37	1.56	Dec. 77*
	9.34	1.34	1.60	Jan. 78
296	9.06	1.06		Oct. 76
	9.18	1.09	1.32	Dec. 76
	9.25	1.13	1.29	Oct. 78
297	9.92	1.62	1.69	Dec. 76
	10.16	1.51	1.84	Jan. 78
299	10.26	1.30	1.60	Dec. 76*
	9.93	1.19	1.52	Dec. 77*
	10.06	1.13	1.50	Jan. 78

TABLE IIIa .- *(continued)*

No	I	R-I	V-R	Date
319	8.89	1.17	1.61	Dec. 76
	8.99	1.14	1.68	Dec. 76*
	9.15	1.42	1.72	Dec. 77*
	9.31	1.20	1.78	Jan. 78
321	9.95	1.43	1.74	Dec. 77*
	10.09	1.29	1.69	Jan. 78
322	9.75	1.34	1.70	Dec. 76
	9.85	1.30	1.65	Dec. 76*
	9.76	1.54	1.80	Dec. 77*
	9.86	1.33	1.75	Jan. 78
323	9.72	1.39	1.66	Dec. 76
	9.96	1.33	1.71	Dec. 76*
	9.74	1.49	1.75	Dec. 77*
	9.92	1.40	1.70	Jan. 78
329	10.42	1.03	1.42	Dec. 76*
	10.31	1.10	1.42	Dec. 77*
	10.45	1.05	1.21	Oct. 78
330	10.25	1.40	1.64	Dec. 77*
	10.35	1.27	1.62	Jan. 78
331	9.70	1.66	1.94	Dec. 76
	10.16	1.83	2.09	Dec. 77*
	10.27	1.69	2.09	Jan. 78
338	9.06	1.18	1.62	Dec. 76
	9.24	1.17	1.65	Dec. 76*
	8.99	1.25	1.62	Dec. 77*
	9.16	1.13	1.58	Jan. 78
341	8.60	1.19	1.59	Dec. 76
	8.82	1.18	1.64	Dec. 76*
	8.61	1.24	1.58	Dec. 77*
354	9.44	1.49	1.71	Dec. 76
	9.66	1.38	1.80	Dec. 76*
	9.48	1.58	1.80	Dec. 77*
356	10.40	1.20	1.58	Dec. 76*
	10.22	1.33	1.58	Dec. 77*
	10.38	1.43	1.54	Oct. 78
381	10.28	1.32	1.46	Nov. 75
	10.20	1.26	1.54	Dec. 76*
	10.18	1.22	1.51	Dec. 77*
397	10.96	1.04	1.42	Nov. 75
	10.79	1.12	1.54	Dec. 76
	10.81	1.17	1.39	Oct. 78
401	9.99	1.45	1.68	Nov. 75
	11.99	0.73	1.12	Dec. 76*
	11.79	0.84	1.14	Dec. 77*
413	10.18	1.44		Oct. 76
	10.21	1.62	2.11	Jan. 78
	9.84	1.60	1.84	Oct. 78
422	10.23	1.47	1.78	Nov. 75
	9.85	1.26	1.53	Dec. 76
	9.97	1.25	1.62	Dec. 76*
	10.04	1.32	1.58	Dec. 77*
439	10.30	1.33		Oct. 76
	10.34	1.23	1.66	Jan. 78
	10.36	1.51	1.66	Oct. 78
467	9.76	1.52	1.98	Dec. 76*
	9.32	1.64	1.98	Dec. 77*
	9.56	1.58	2.01	Jan. 78
470	9.57	1.38	1.81	Dec. 76*
	9.62	1.35	1.73	Dec. 77*
	9.77	1.27	1.75	Jan. 78
471	9.44	1.52		Oct. 76
	9.67	1.41	1.76	Dec. 76
	9.65	1.50	1.88	Dec. 76*
	9.19	1.35	1.70	Dec. 77*
477	10.08	1.13	1.63	Dec. 76
	10.15	1.33	1.65	Dec. 76*
	9.86	1.23	1.59	Dec. 77*
486	9.71	1.33		Oct. 76
	9.64	1.38	1.65	Dec. 76
	9.78	1.25	1.67	Dec. 76*
	9.58	1.32	1.65	Dec. 77*
	9.78	1.29	1.53	Oct. 78
508	8.88	1.43		Oct. 76
	8.78	1.46	1.55	Dec. 76

TABLE IIIb .- *Photoelectric observations of giant M stars in the LMC.*

No	I	R-I	V-R	Date
22	8.76	2.22		Oct. 76
	9.32	2.24	2.43	Jan. 78
333	10.20	0.38		Oct. 76
	10.20	0.37	0.56	Dec. 76
	10.29	0.35	0.55	Oct. 78
409	8.73	0.55	0.84	Nov. 75
	9.60	1.37	1.59	Oct. 78
412	10.45	1.28		Oct. 76
	10.50	1.21	1.58	Jan. 78
	10.48	1.37	1.51	Oct. 78
552	9.80	1.29		Oct. 76
	9.73	1.37	1.77	Dec. 76

TABLE IV .- *Dates of photoelectric VRI observations of supergiant and giant (g) M stars in the LMC.*

1975	1976		1978		1978
Nov.	Dec.	Dec.	Jan.	Jan.	Oct.
252	5	459	4	453	121
265	83	502	9	461	148
267	92	506	225		160
268	98	507	235		190
274	112	510	243		204
279	151	511	247		298
282	292	514	254		320
382	301	517	269		411
387	313		287		
403	335		305		
404	337		318		
409	339		332	g 6	
418	344		424	g 63	
425	440	g 176	435	g 114	
427	450	g 614	447	g 428	

TABLE V .- *Comparison of the present (WOH) classification of M supergiants in the LMC with that by Humphreys (RH) from slit spectra.*

RH \ WOH	0	0.5	1	2
0	3	1		
0.5	1			
1	1	4	6	
2	2	3	3	
3		1		
4				1

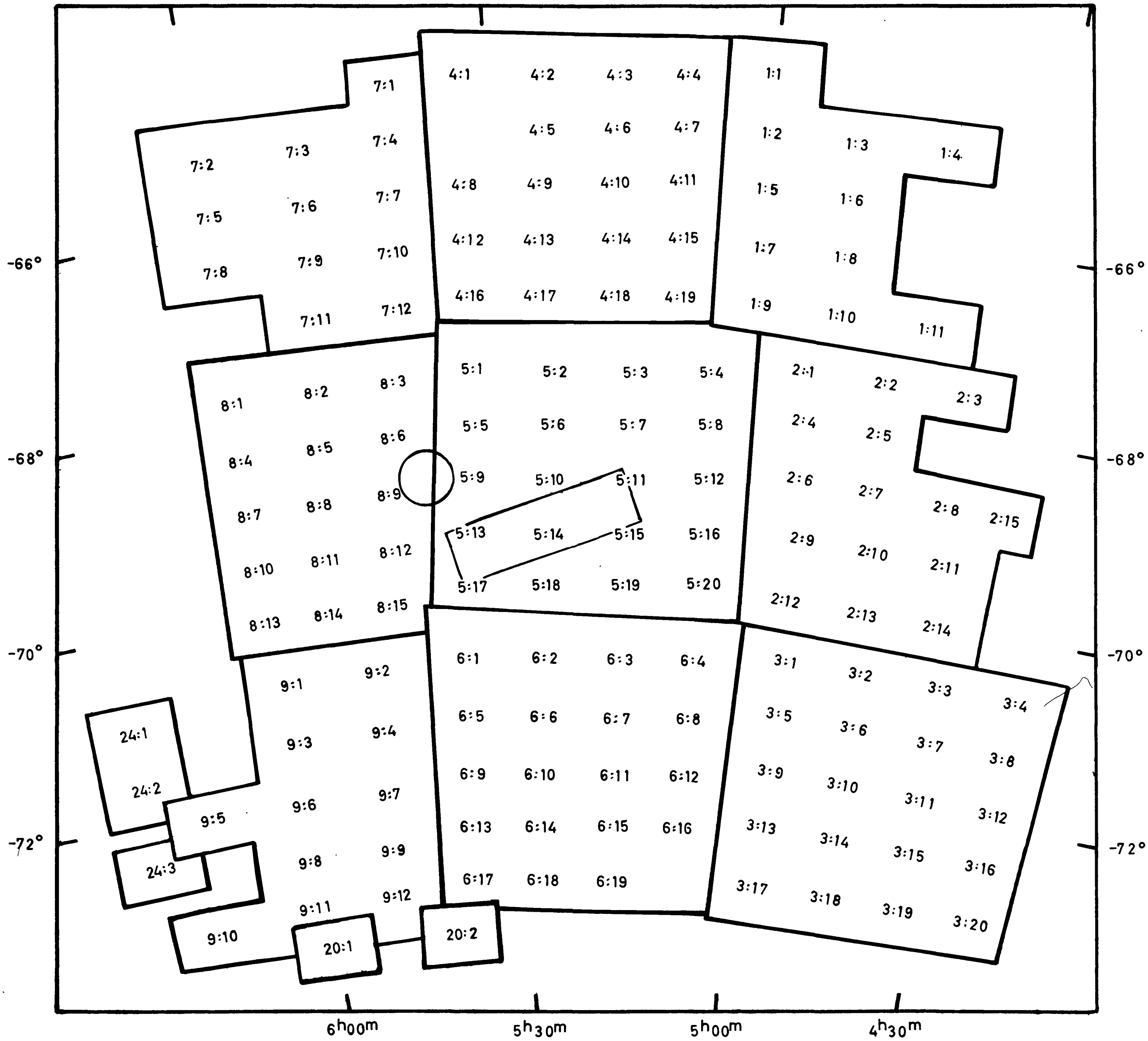


FIGURE 1.- The division of the region into finding-chart fields. For orientation the positions of the Bar (rectangle) of the LMC and of 30 Doradus (circle) are marked.

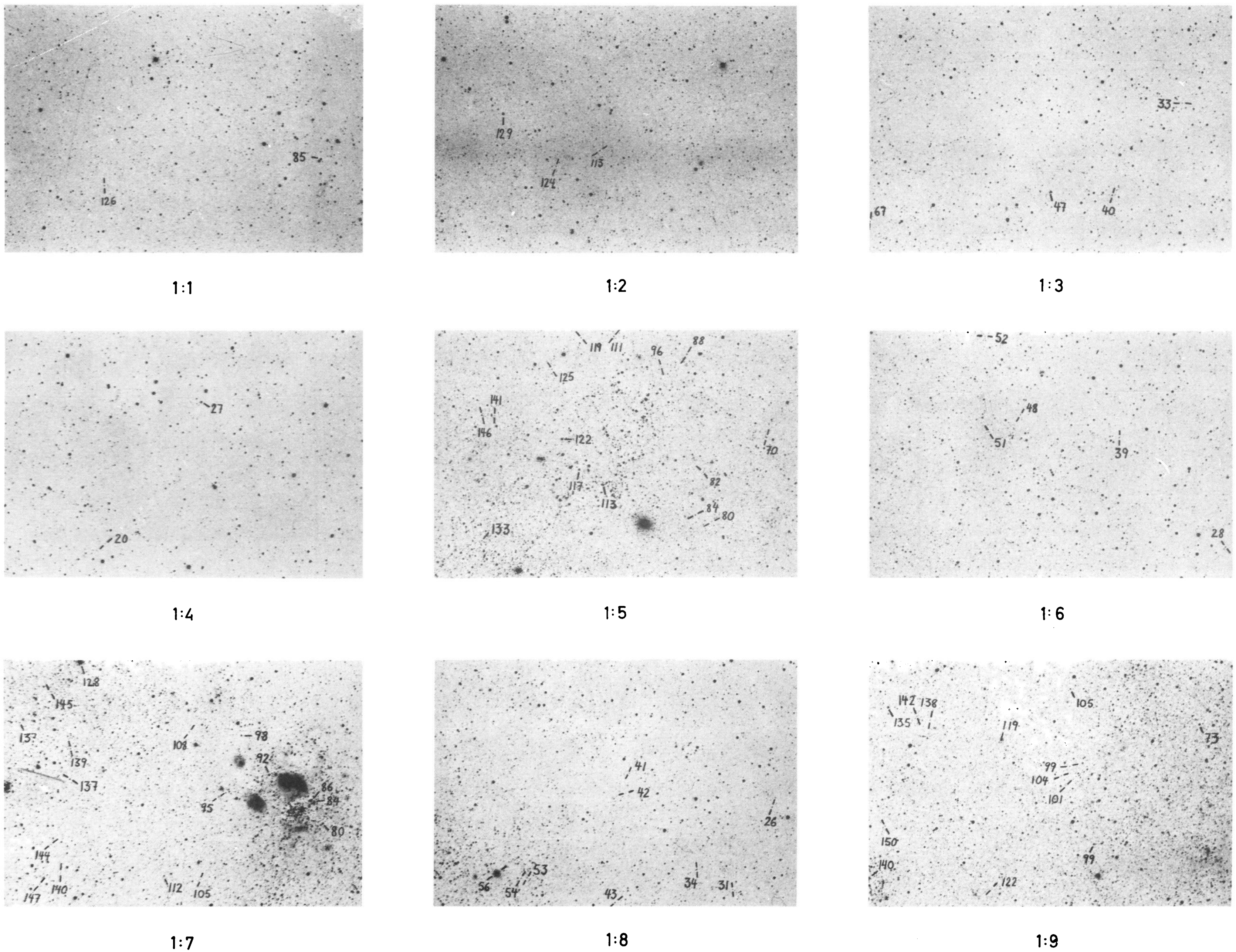
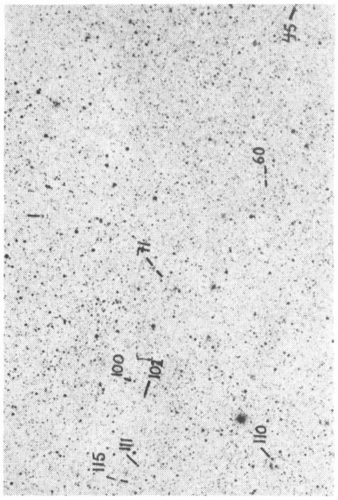
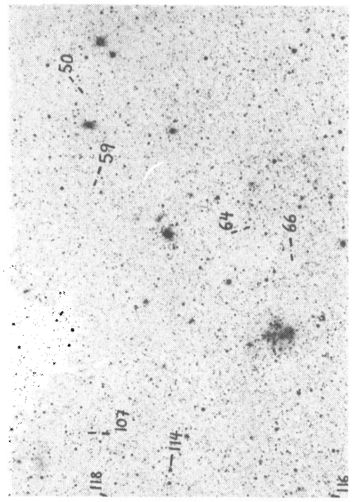


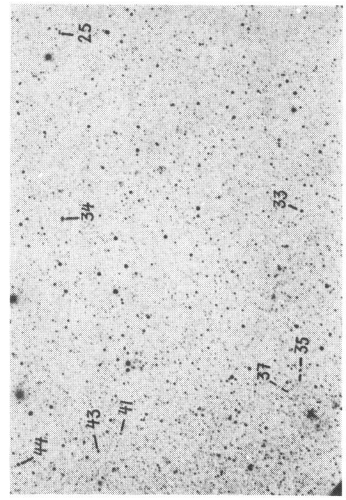
FIGURE 2.- Finding charts (in visual light) for the identified supergiant and giant M stars in the LMC. The former are identified by one line from the number to the star, the latter have an additional line on the other side of the star. - North is up. East is to the left. Each field is 37.8 x 54.7 minutes of arc.



2:1



2:4



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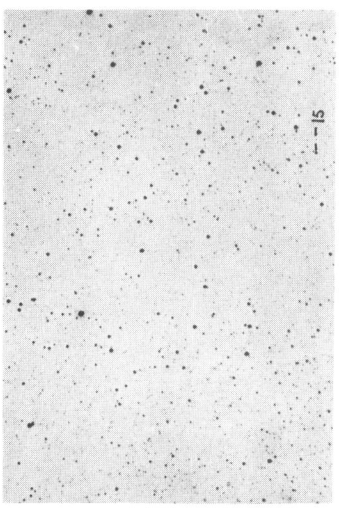

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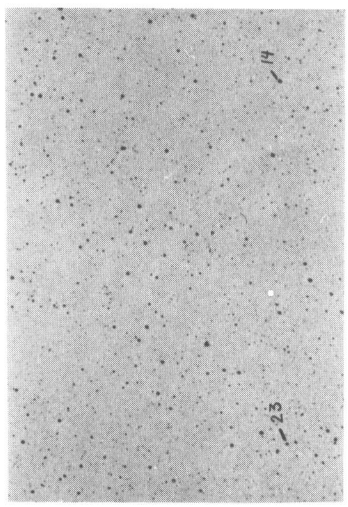

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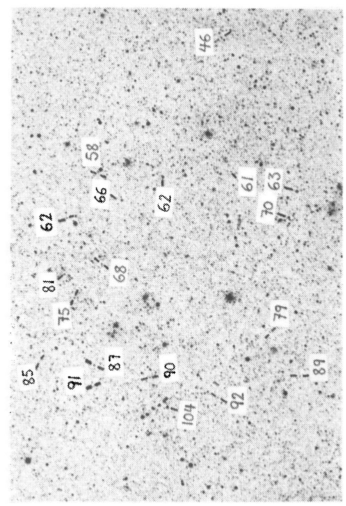

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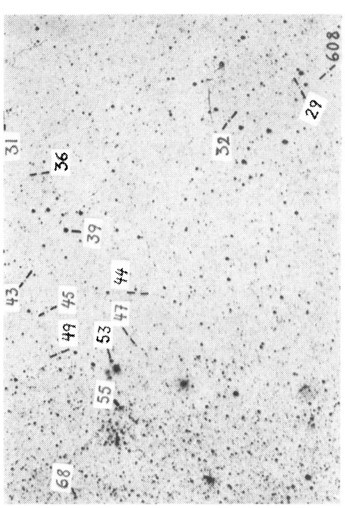

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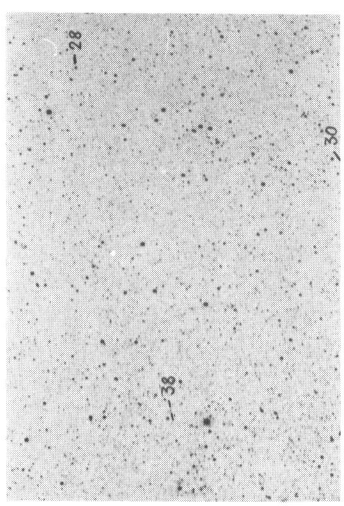

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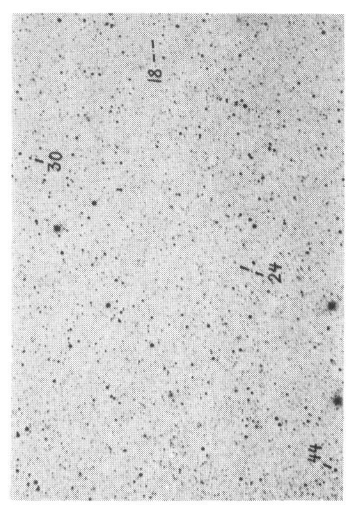

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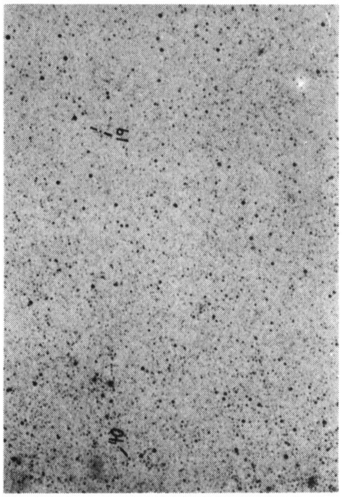

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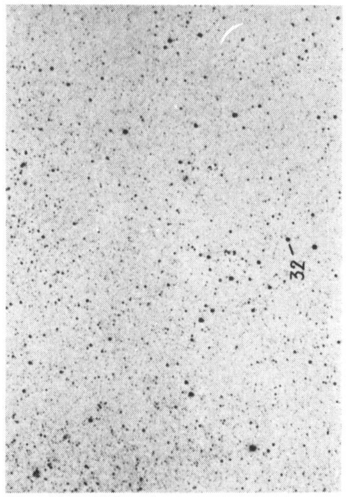

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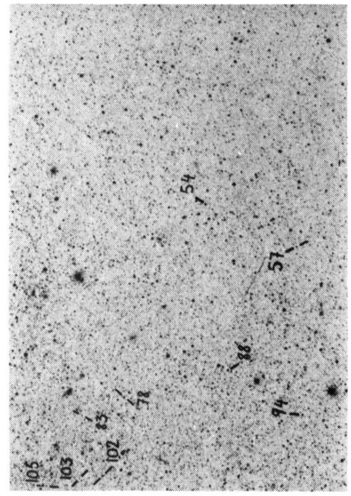

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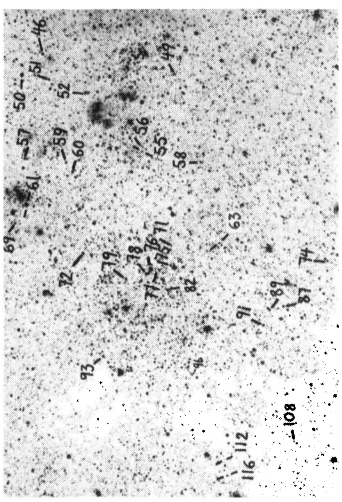

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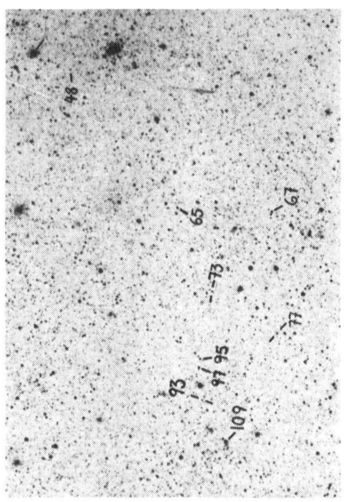

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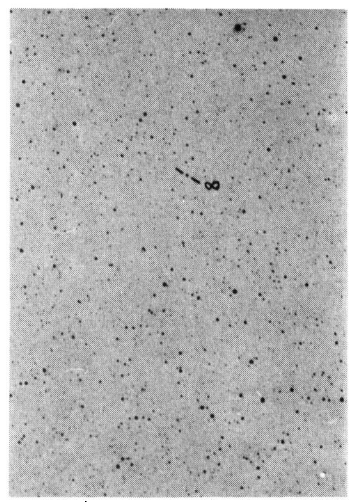

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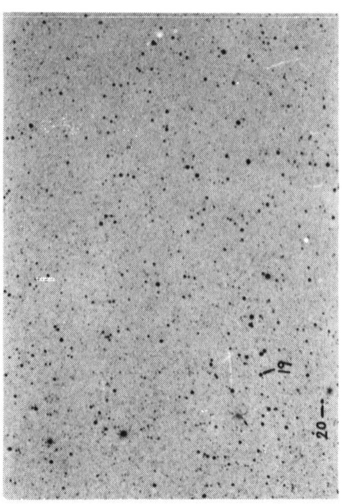

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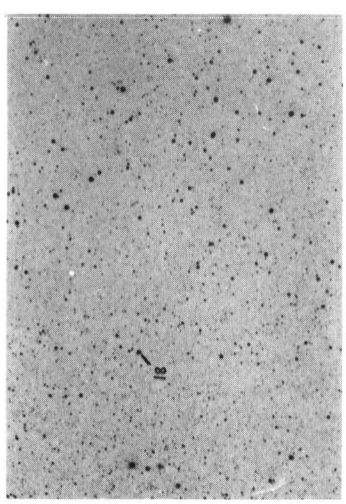

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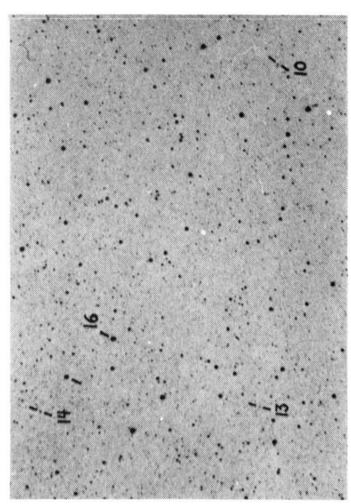

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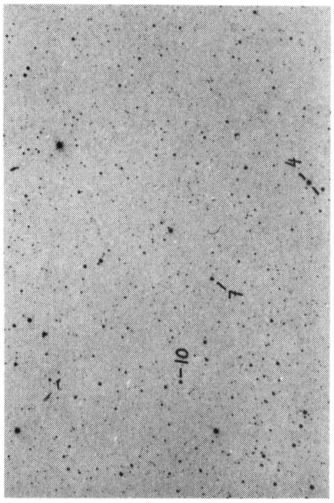

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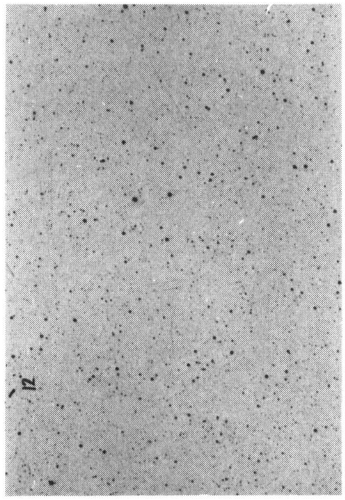

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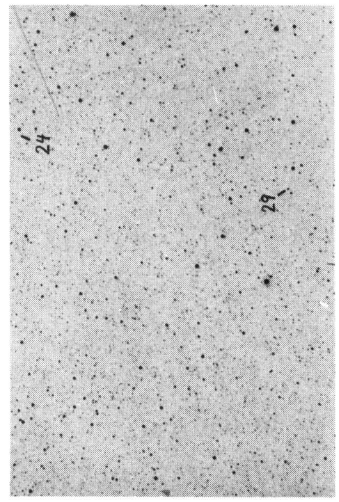

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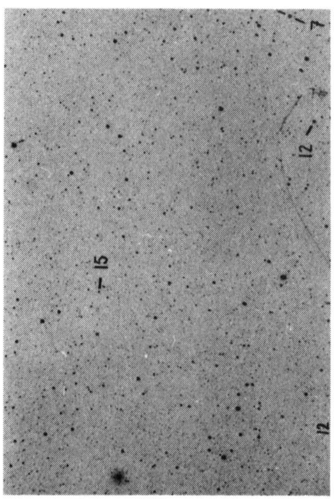

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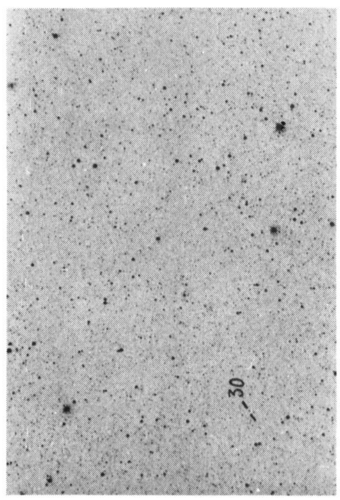

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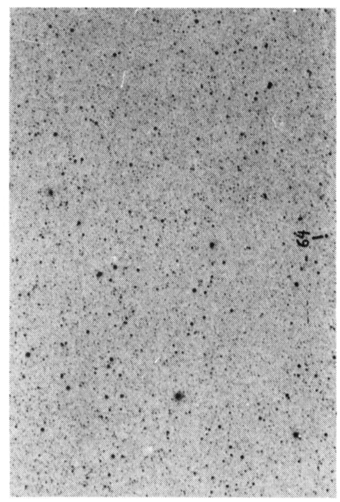

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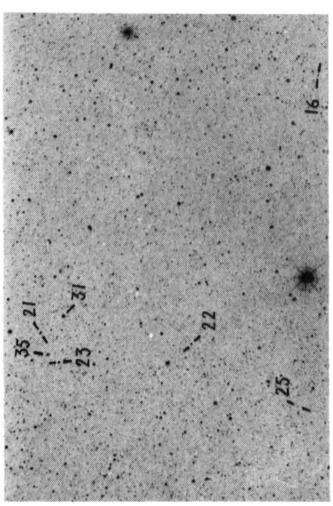

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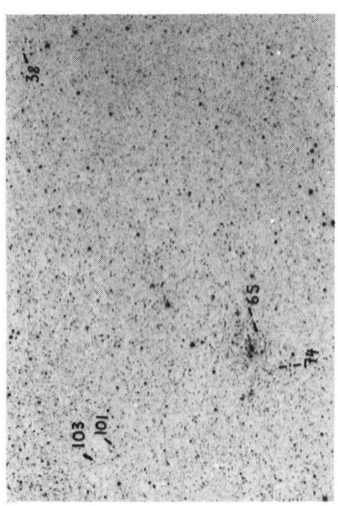

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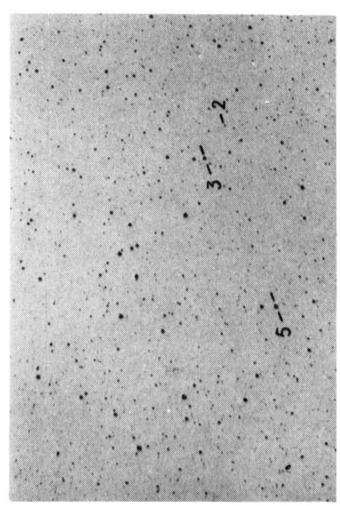

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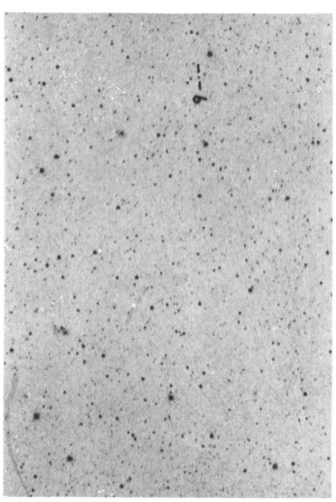
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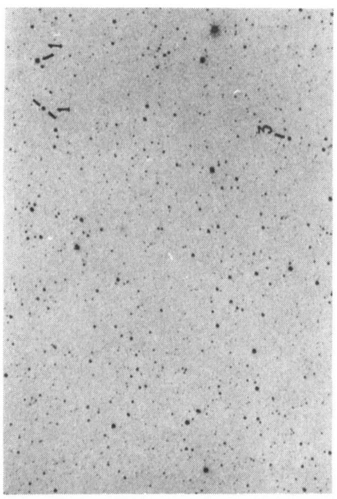
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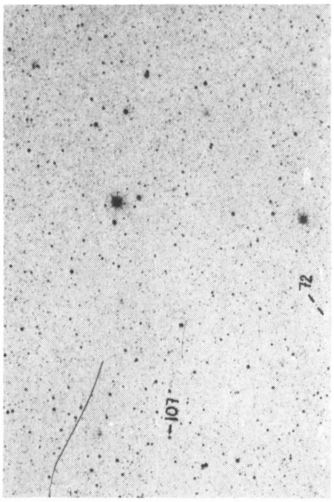
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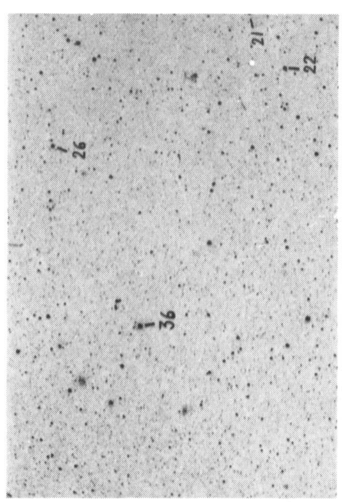
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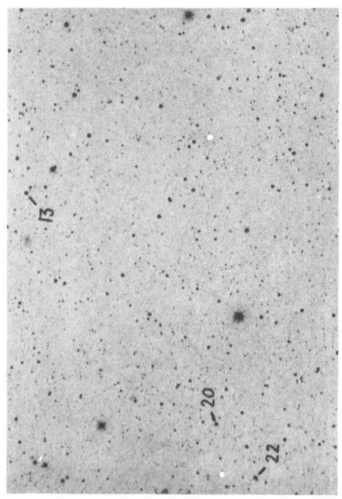
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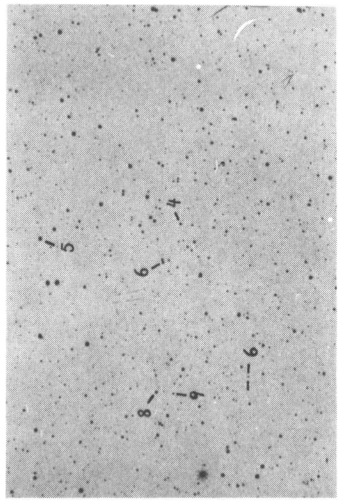
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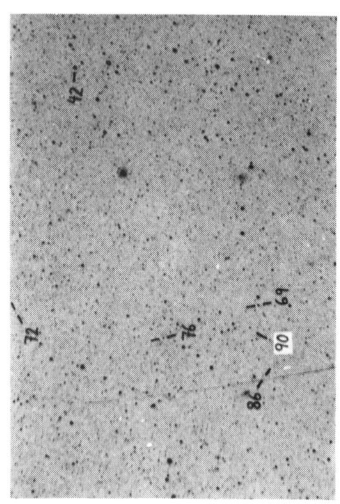
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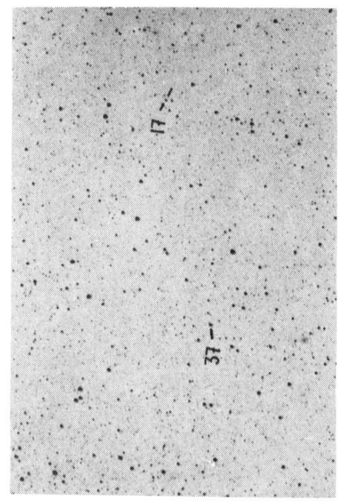
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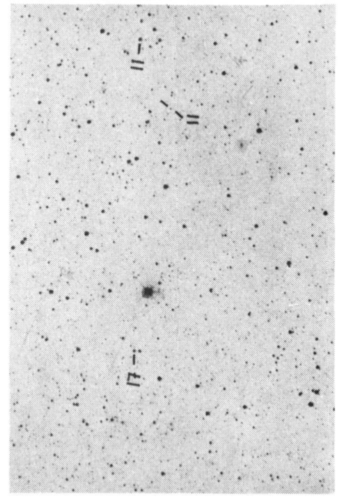
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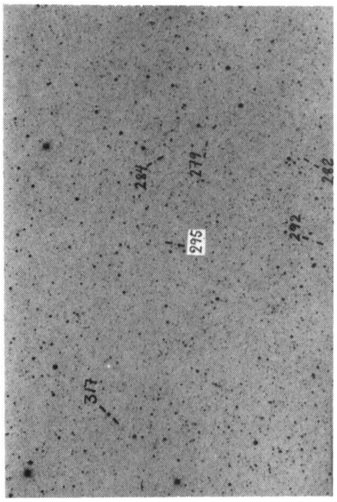

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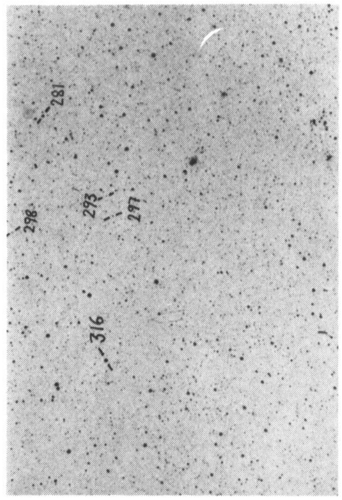

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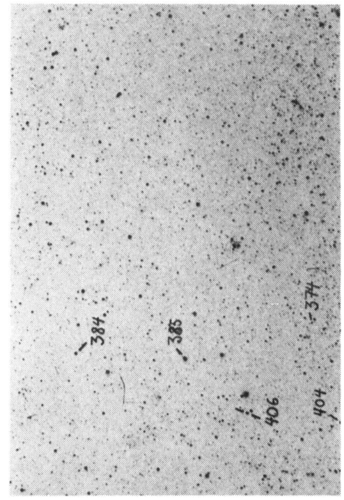

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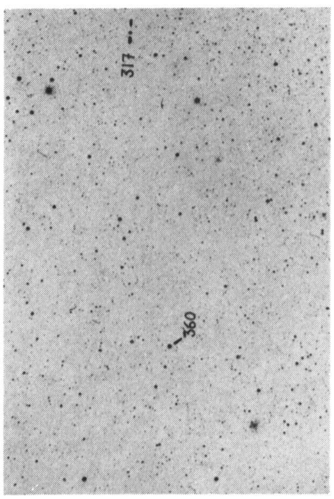

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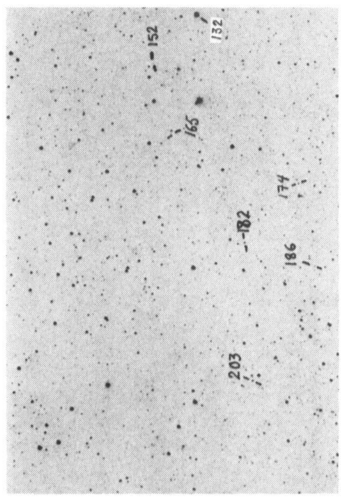

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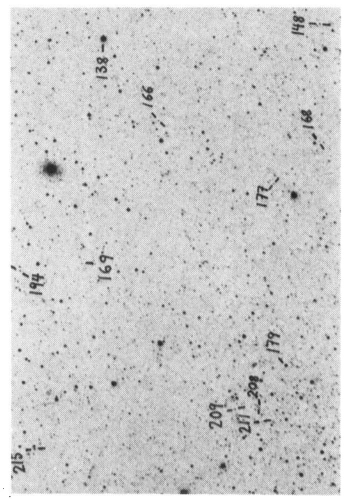

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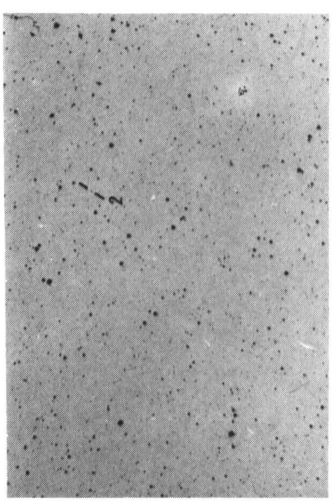

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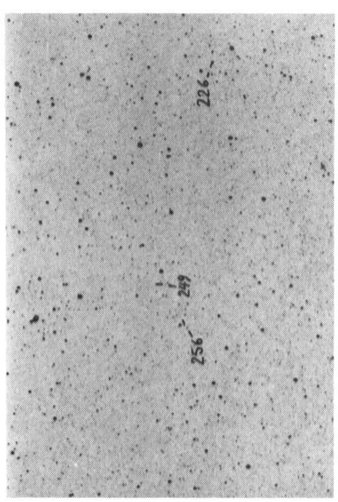

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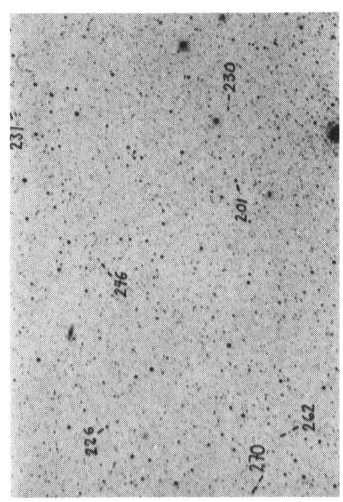

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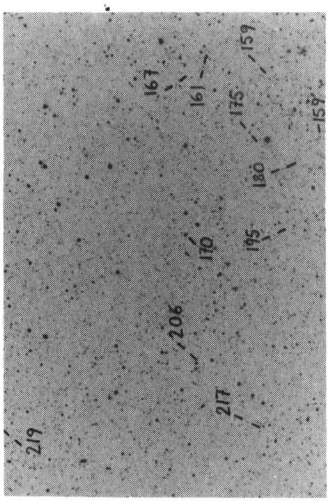

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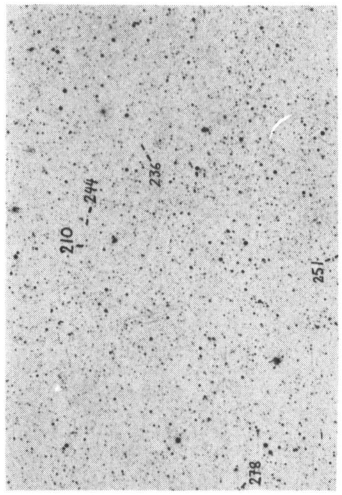

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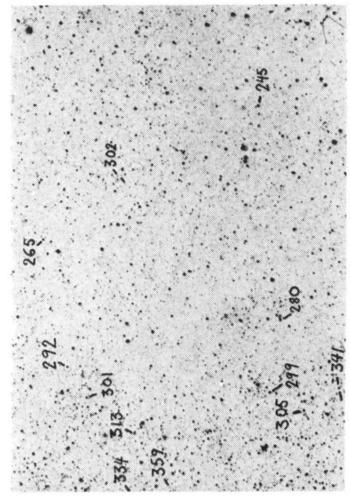

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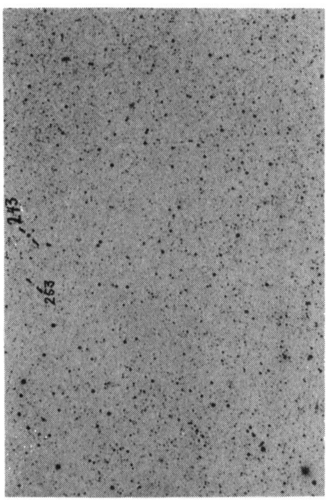

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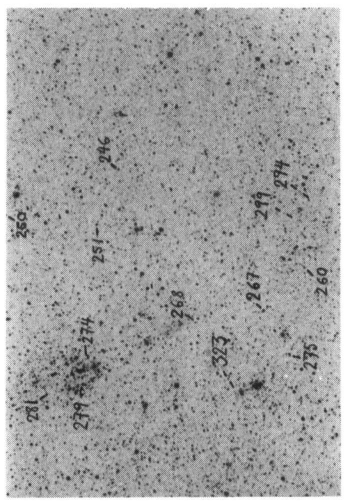

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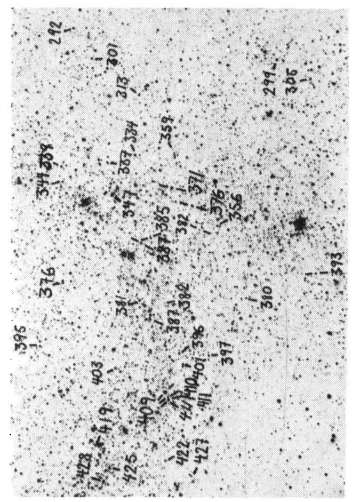

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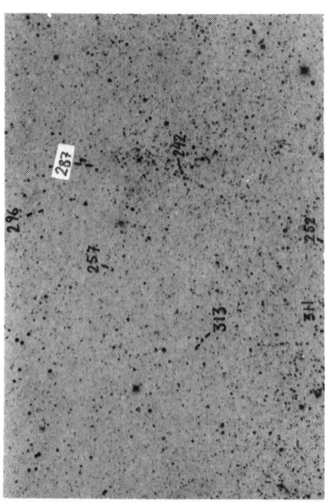

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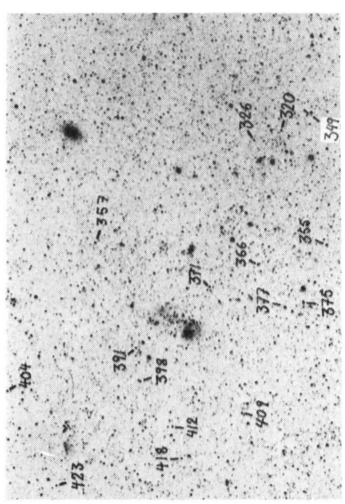

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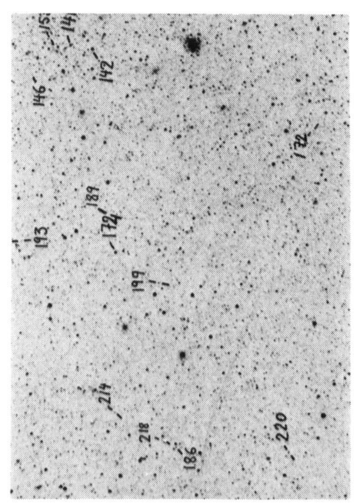

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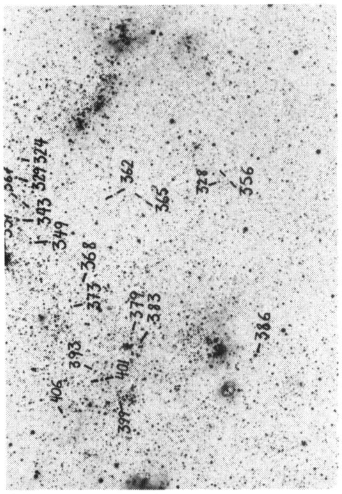

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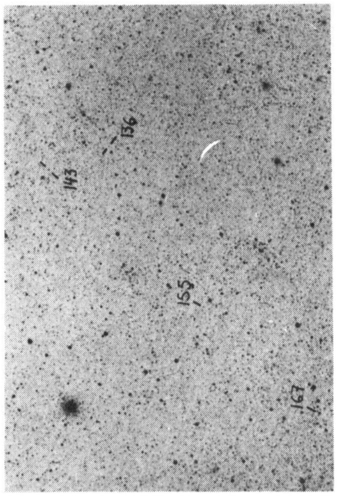

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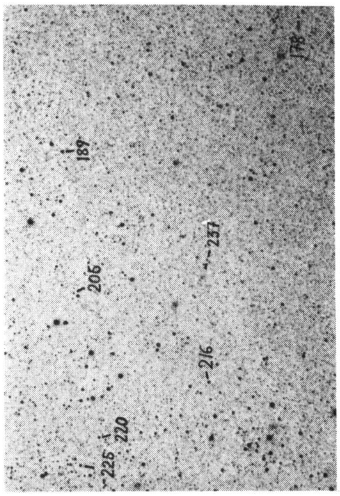

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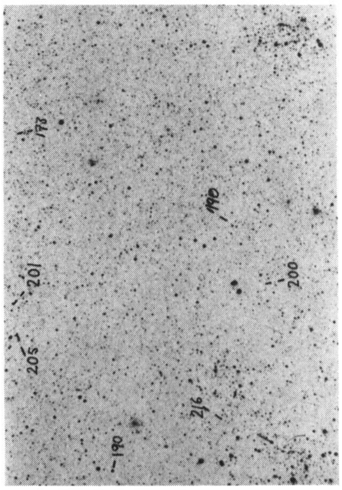

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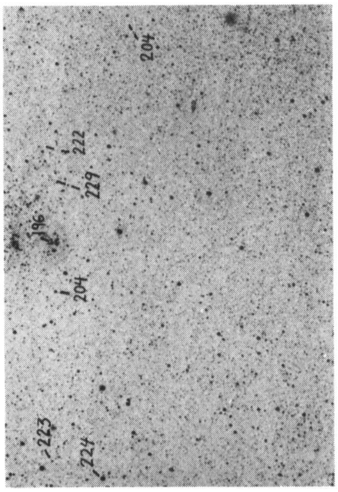

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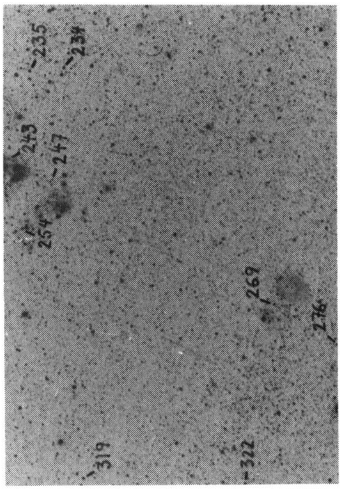

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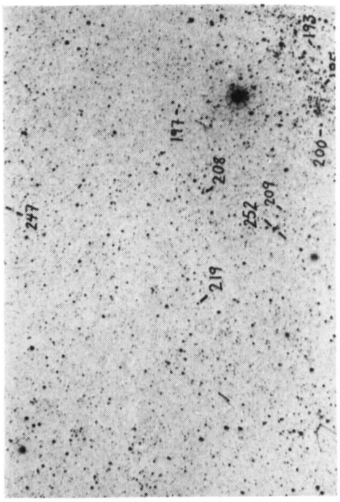

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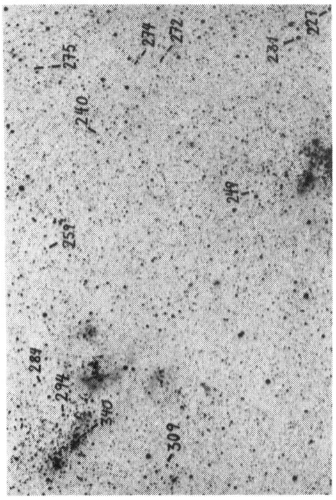

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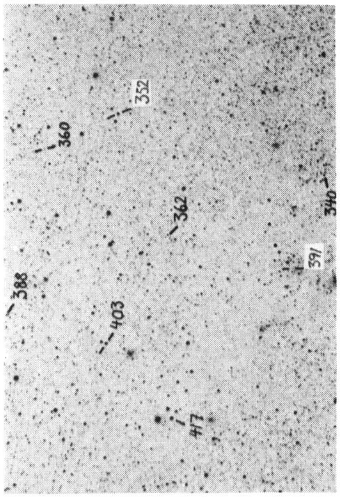

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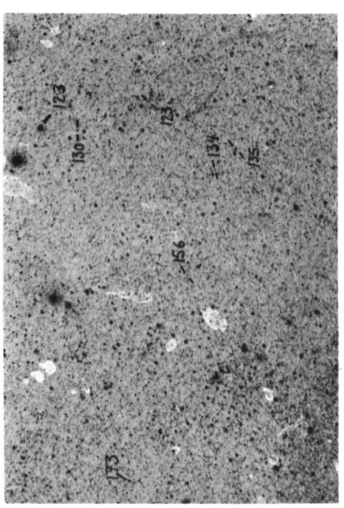

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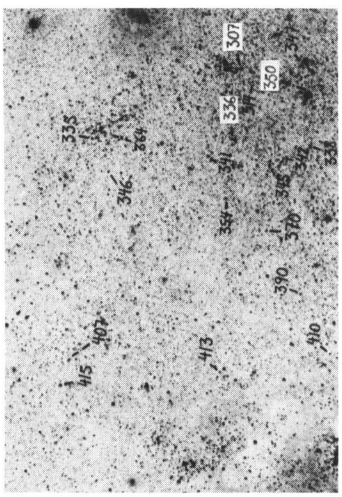

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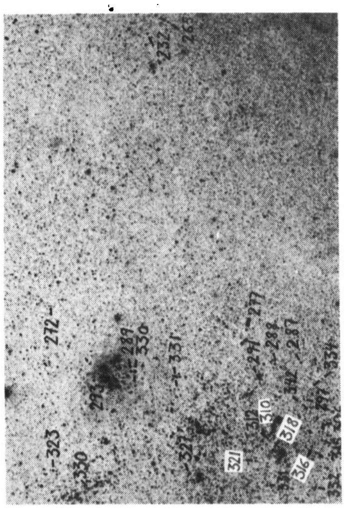

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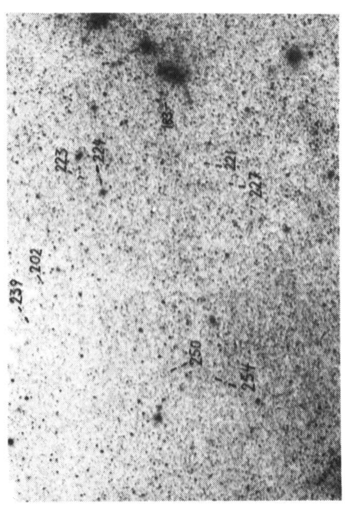

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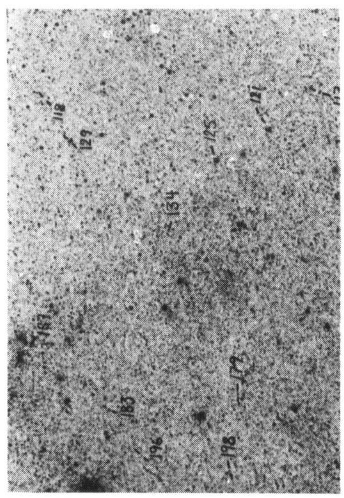

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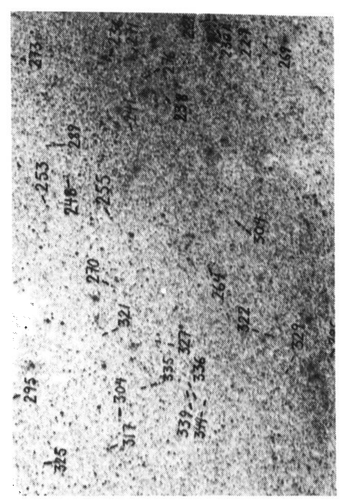

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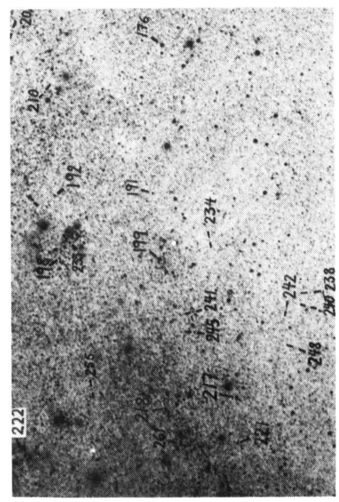

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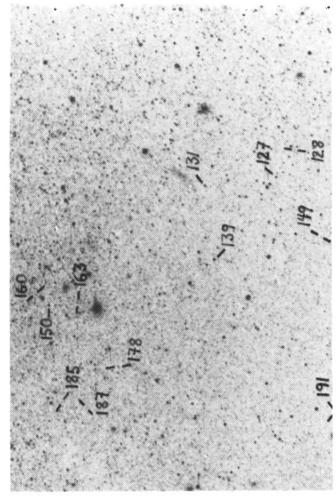

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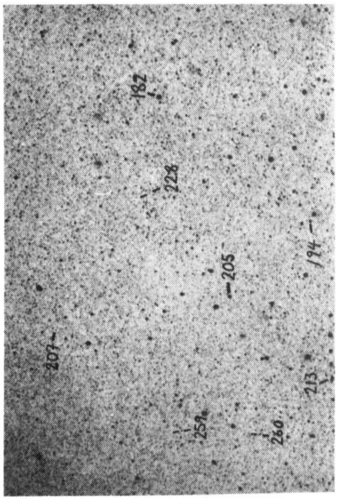

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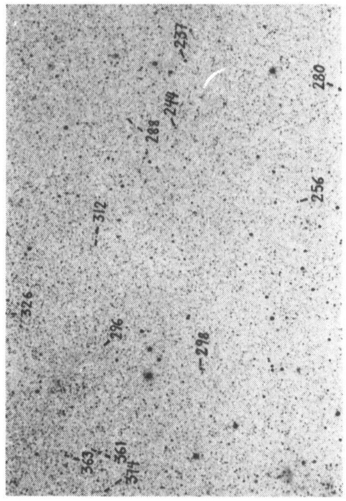

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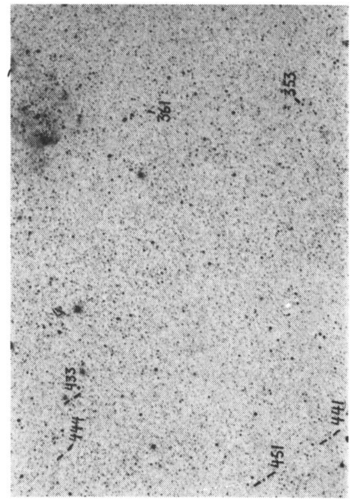

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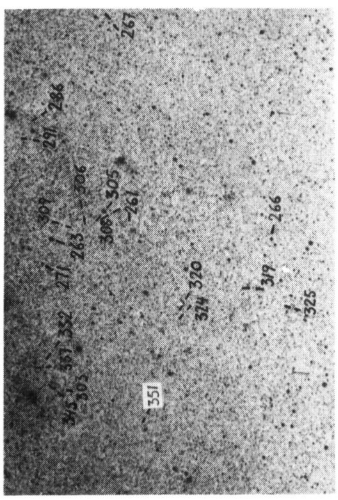

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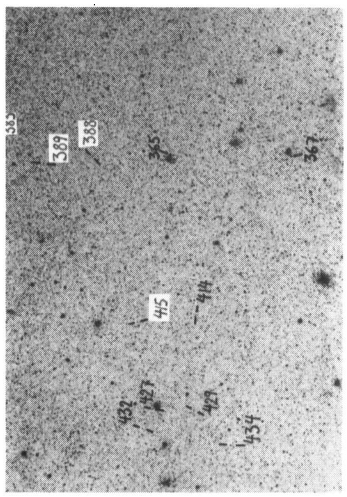

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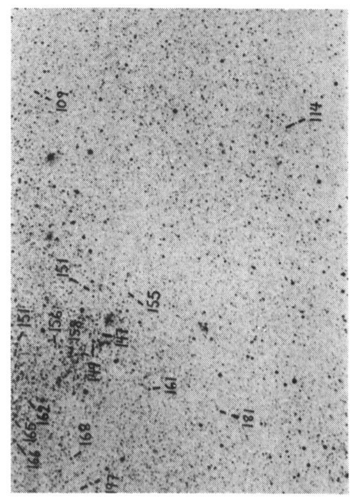

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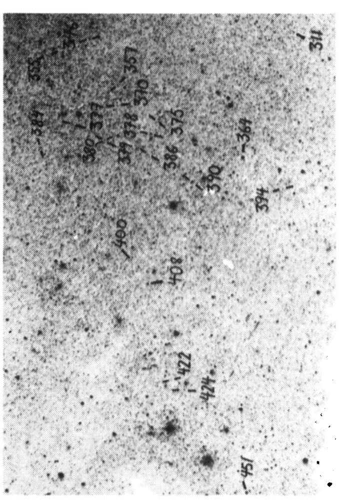

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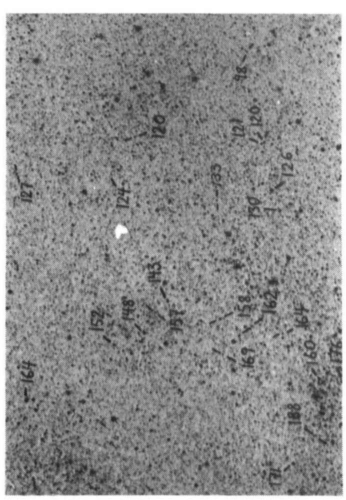

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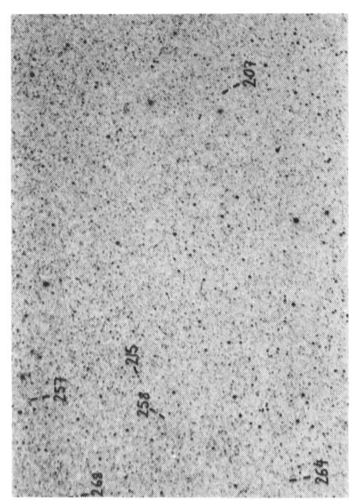

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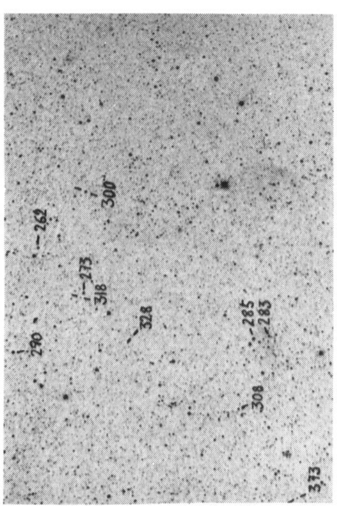

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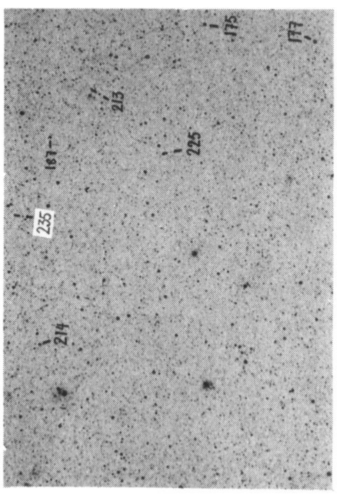

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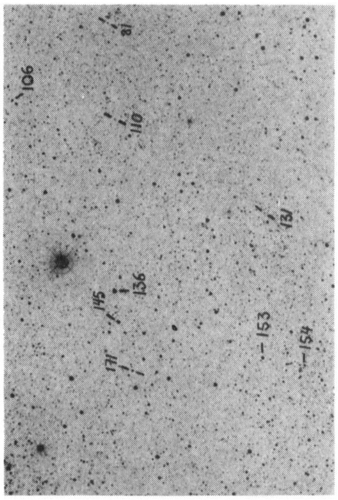

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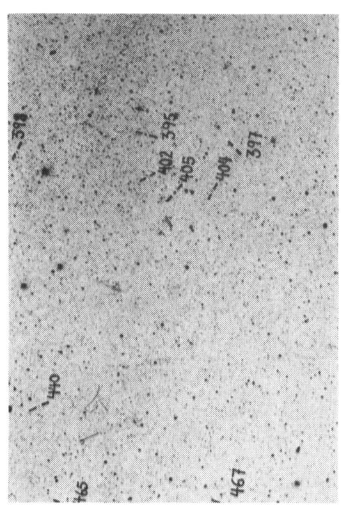

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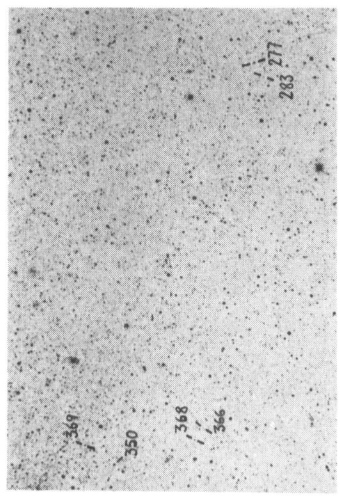

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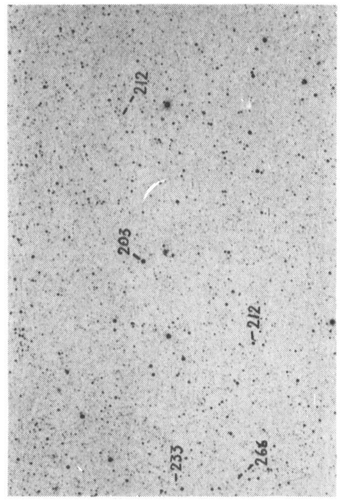

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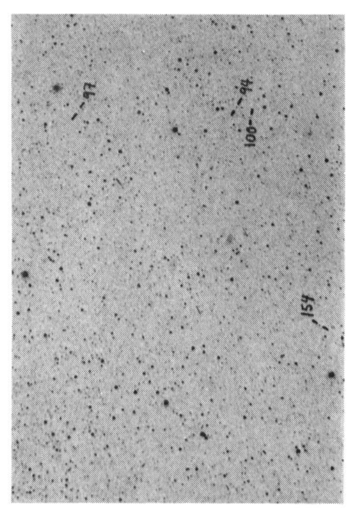

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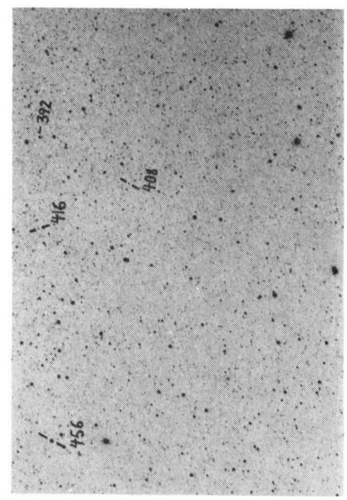

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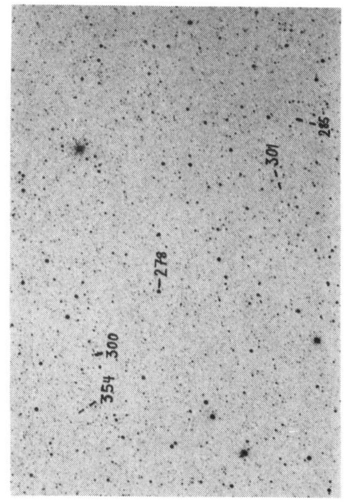

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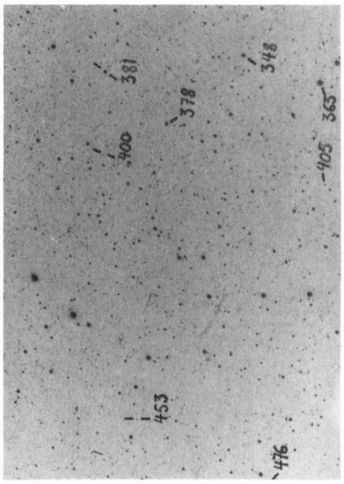

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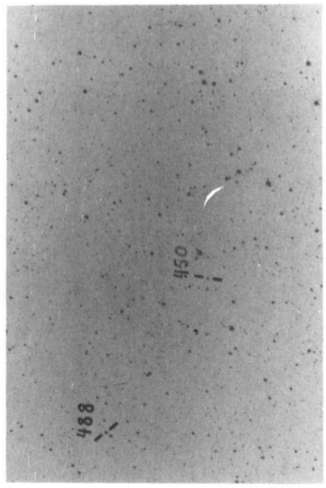

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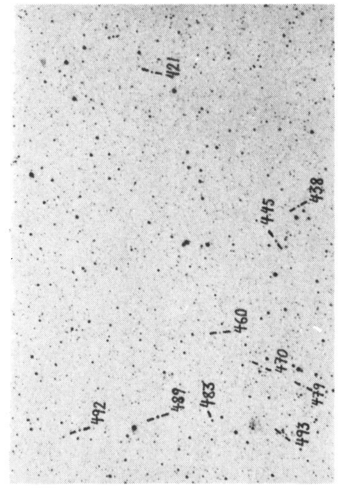

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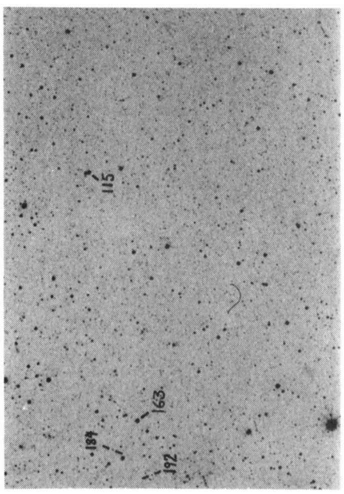

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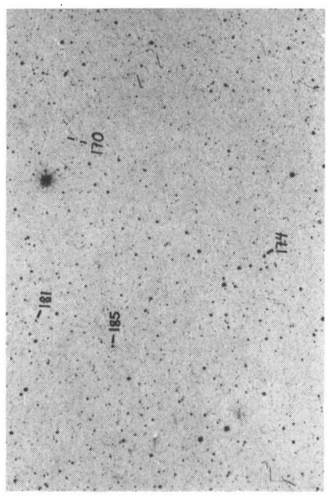

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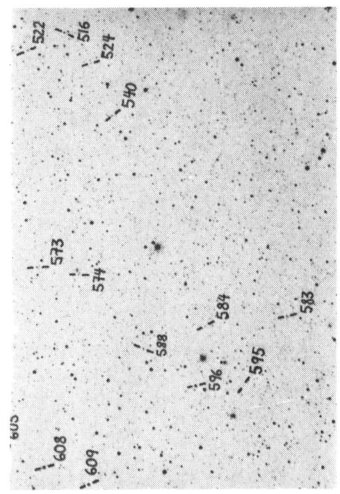

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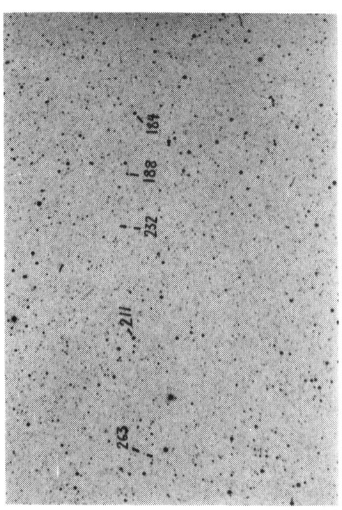

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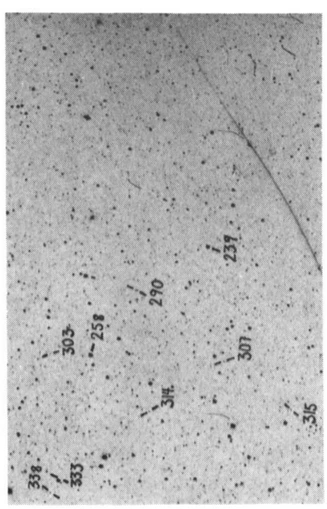

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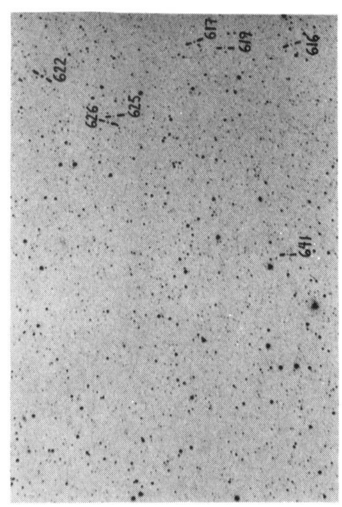

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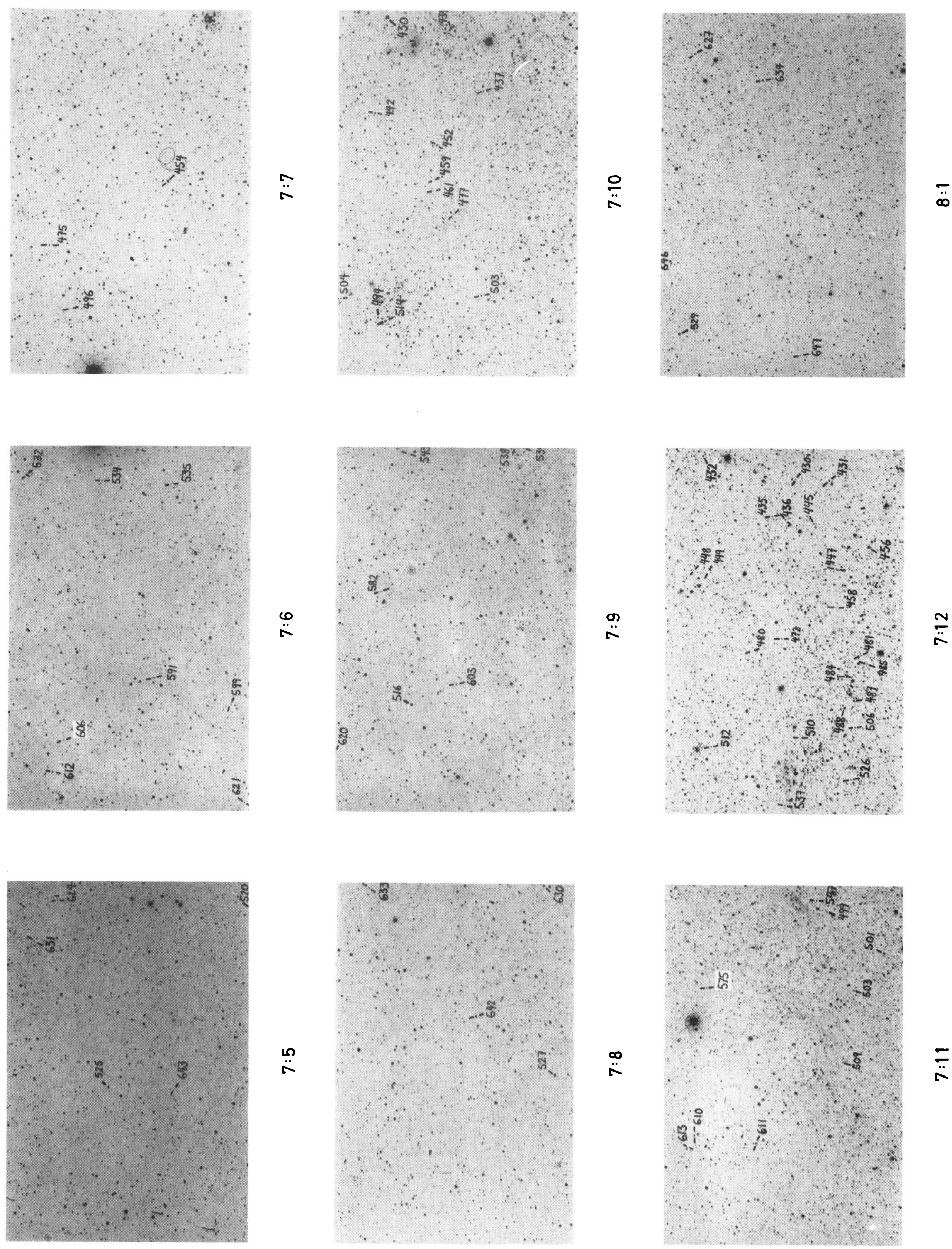
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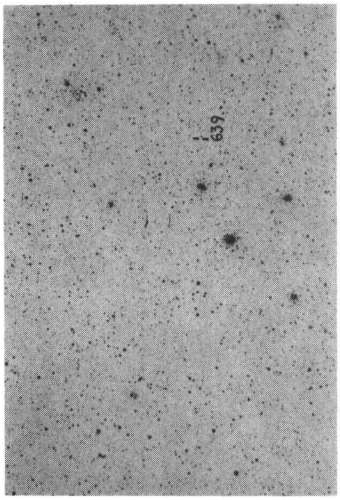
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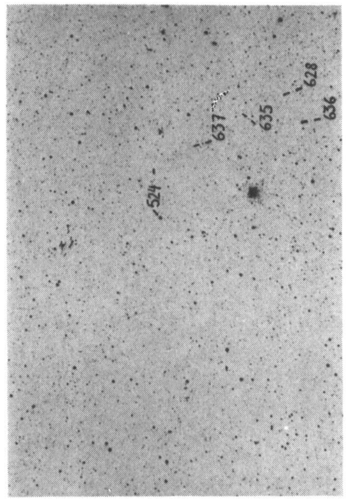
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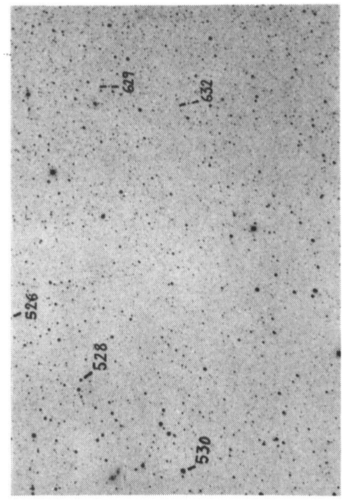
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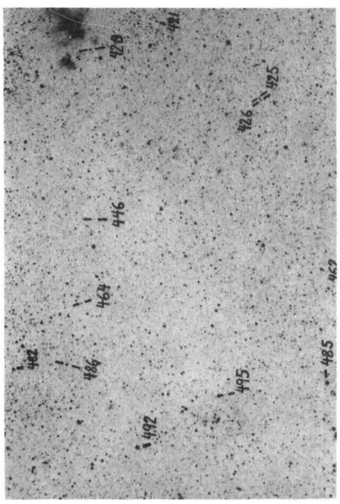
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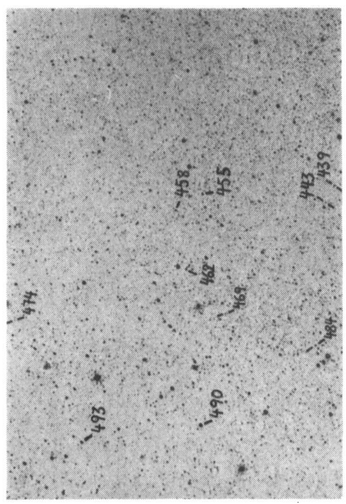
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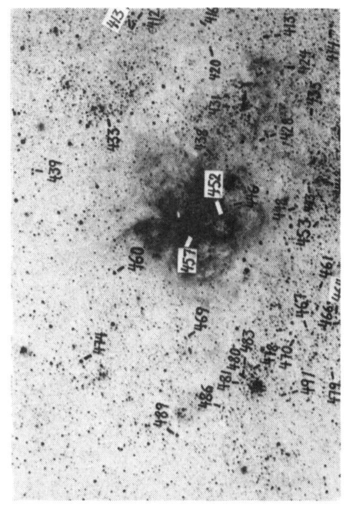
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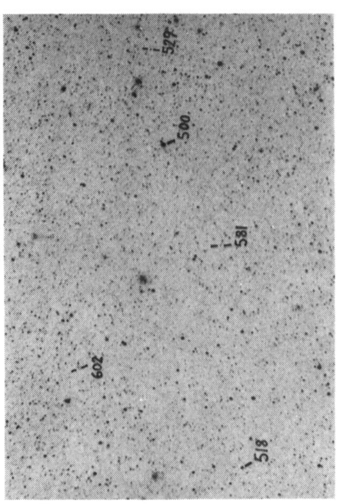
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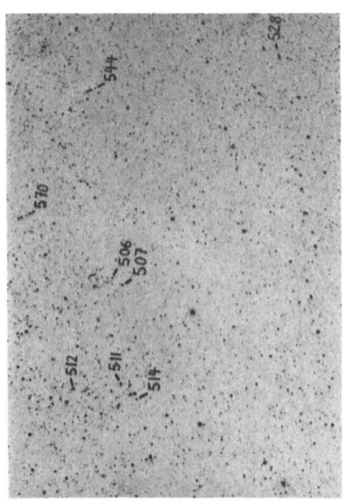
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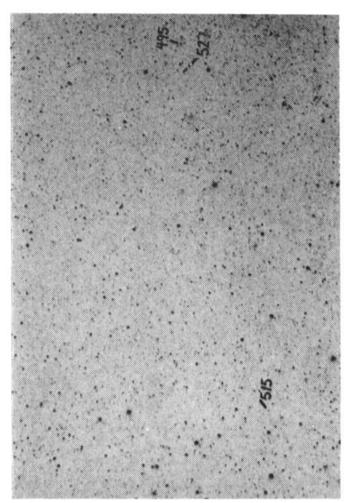
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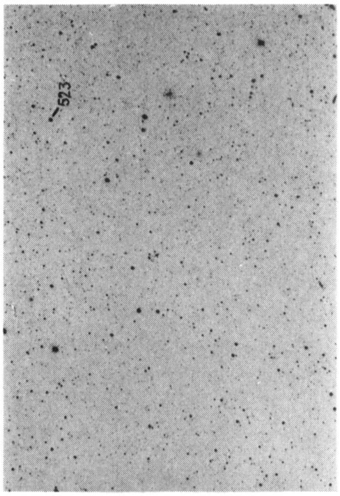
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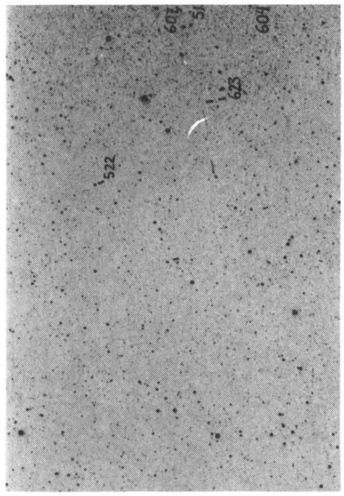
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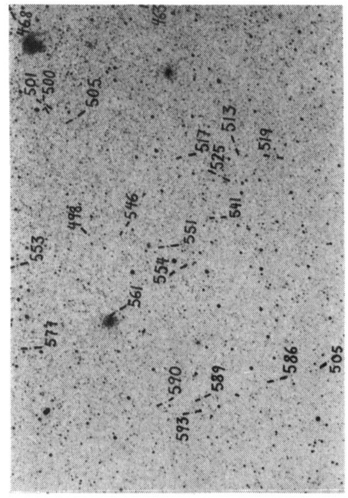
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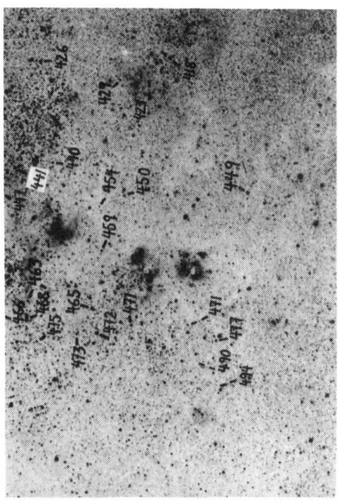
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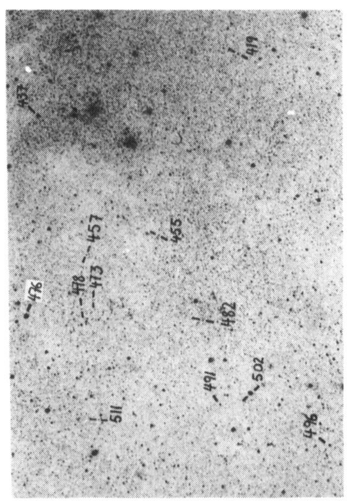
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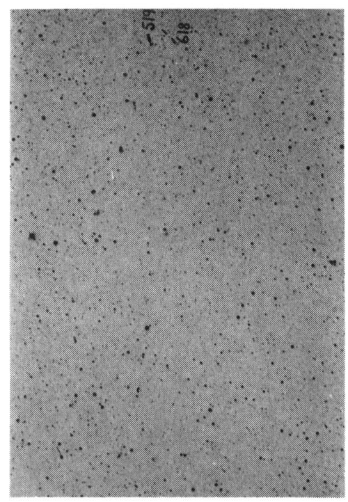
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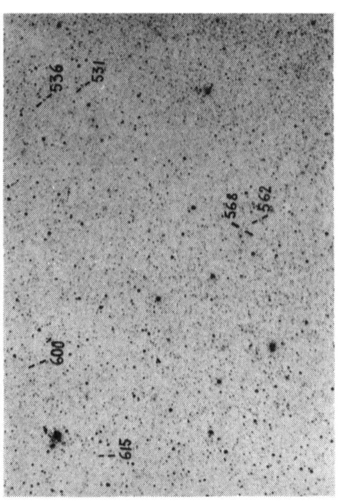
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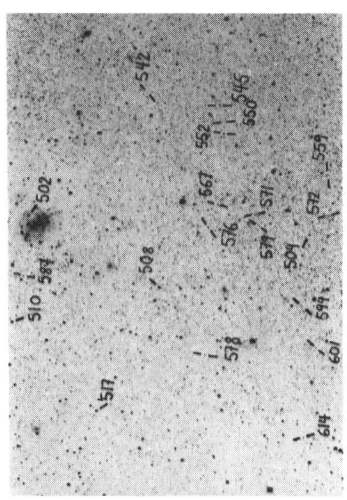
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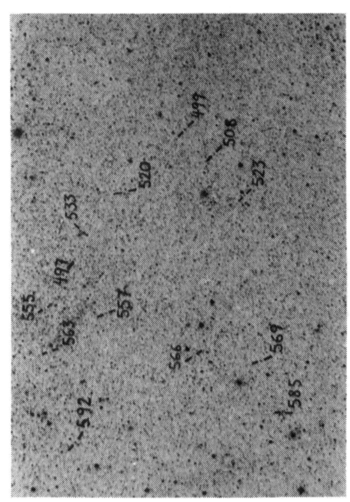
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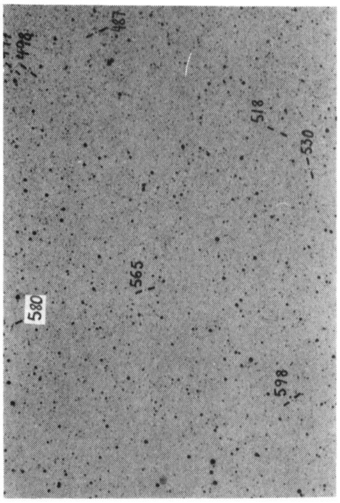

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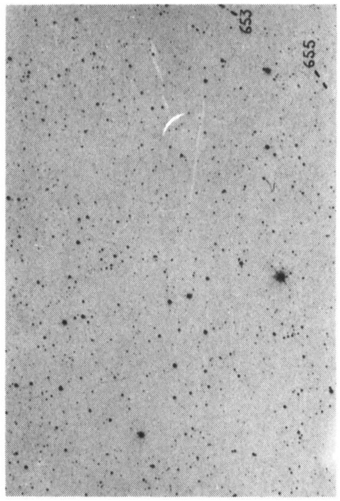

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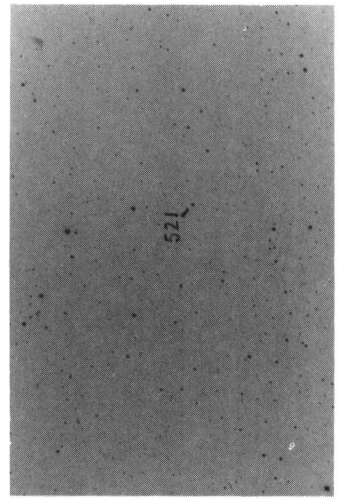

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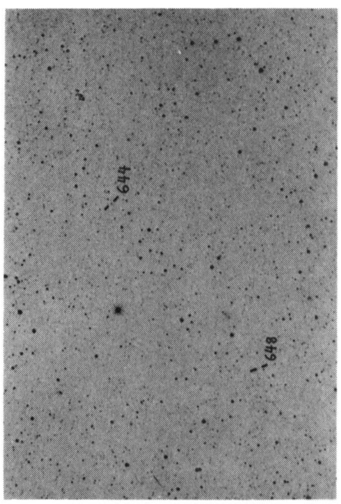

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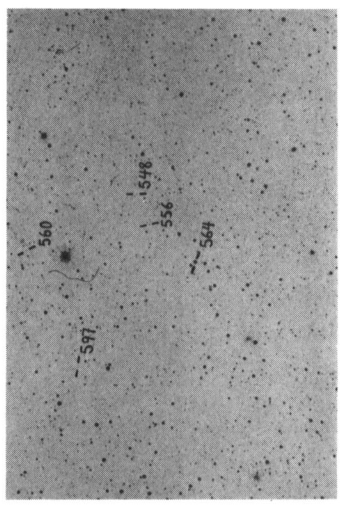

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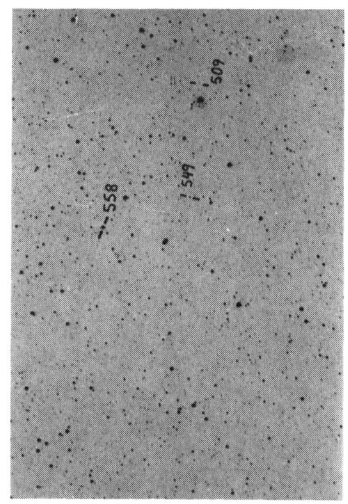

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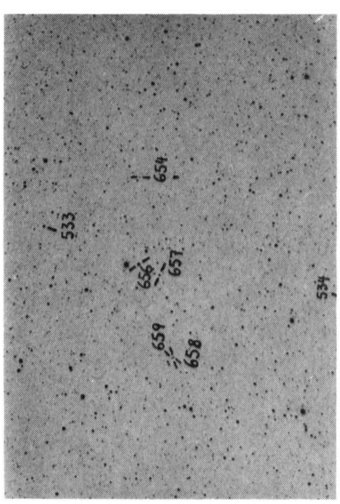

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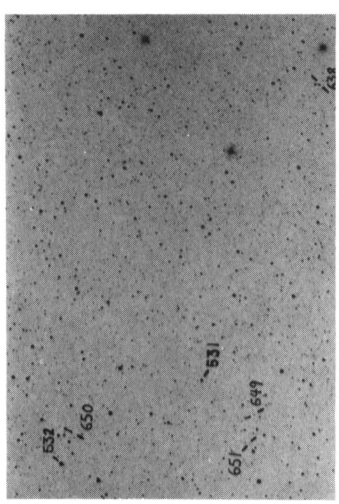

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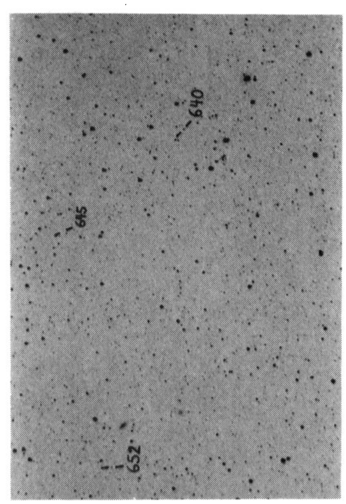

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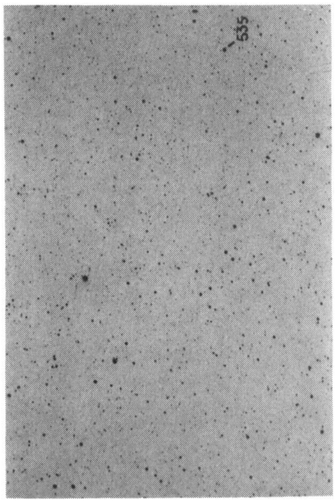

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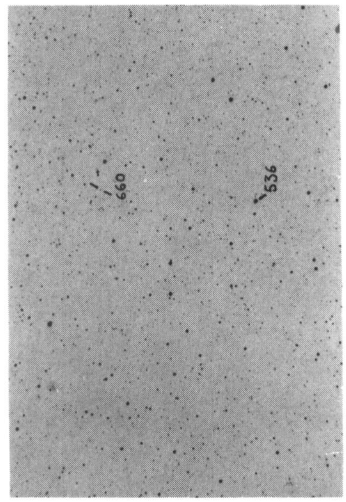

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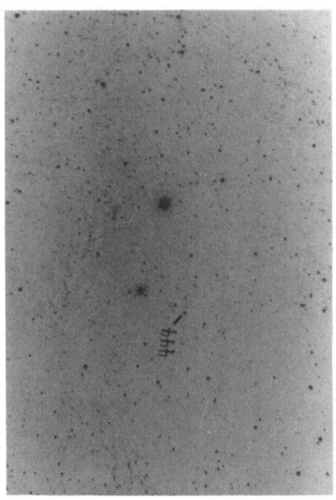

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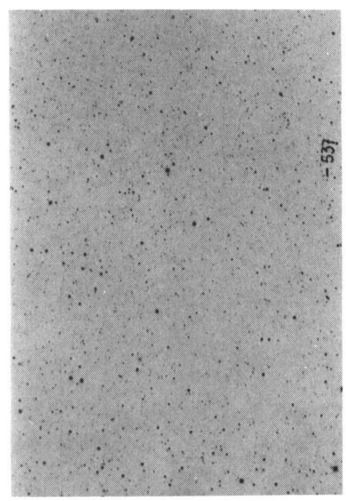

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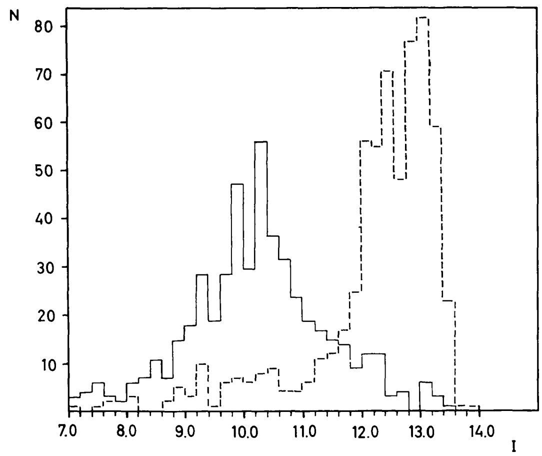

FIGURE 3.- The distributions of the supergiant and giant M stars in magnitude. The fulldrawn line gives the histogram for the supergiant M stars and the dashed line that for the giant M stars.