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HII REGIONS OF THE NORTHERN MILKY WAY: MEDIUM-LARGE-FIELD PHOTOGRAPHIC ATLAS AND CATALOGUE*

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Nineteen Hα photographs and a catalogue of HII regions in the northern Milky Way are presented. This atlas reveals 85 new regions of faint emission.

Key words: galactic HII regions – medium-large-field – interference filter

1. INTRODUCTION

Campbell and Moore (1918) were the first to note the emission nature of a large number of bright nebulae of the Milky Way. Struve (1941) showed, some years later, that the phenomenon was even more general and that the interstellar emission extended well beyond the boundaries of known nebulae. Later, using relatively wide-band ($\Delta\lambda \sim 100$ Å) filters, Cederblad (1946), Courtès (1951 a, b), Gase and Shayn (1955), Sharpless (1953), Gum (1955), and Rodgers *et al.* (1960), detected and catalogued a large number of new Hα emission regions throughout the galactic plane. In the northern hemisphere, the Palomar Sky Survey photographs allowed Sharpless (1959) to compile his well known, relatively complete catalogue, and also made it possible for Lynds (1965) to catalogue both emission and reflection nebulae. More detailed, very local studies have been carried out by various authors – in particular by Dickel *et al.* (1969), in the Cygnus region. The use of very selective Hα filters (Courtès 1960) allowed Y.P. and Y.M. Georgelin (1970) to publish a photographic atlas of southern hemisphere HII regions with a detection limit comparable to that attained in the northern hemisphere.

Since 1969, we have undertaken a survey of that part of the galactic disk situated in the northern hemisphere, making use of the following optical properties: high spectral selectivity ($\Delta\lambda \sim 10$ Å), high luminosity ($\sim F/1$), and a medium-large field (20°). The detection limit attained here, thanks to long exposures, is better than that of the Palomar Sky Survey – i.e., about 30 $cm^{-6}pc$. A 20° field is useful because it shows the ensemble of emission regions of a given portion of the galactic plane at the same time as the details of these regions. Whereas Sivan (1974b) explored HII regions over the entire Milky Way up to high galactic latitude, using a wide-field camera so as to perceive the overall morphology, we "scrutinize" the northern galactic plane and the Orion region. Almost simultaneously with our work, Dottori and Carranza were making a photographic study of the emission regions of the southern galactic plane, following the above-mentioned principles (high selectivity, high luminosity, and 20° field).

Finally, we note that Marshalkova (1974) has recently presented a complete compilation of the whole of these results, except for the new regions detected by Sivan (1974 a, b) and for those described in the present article.

We publish here 19 monochromatic Hα photographs covering the northern Milky Way from $\ell = 10°$ to $\ell = 215°$; three photographs were necessary for the Orion region. We also publish a catalogue that gives the coordinates of the various regions.

*The observations were made at the Haute-Provence Observatory (CNRS).

2. THE PHOTOGRAPHS

The observations were made at the Observatoire de Haute-Provence at the end of 1969, throughout 1970, and then again in 1972. A 5 cm refractor was used with a very selective interference filter ($\Delta\lambda = 10$ Å) centered on Hα, and a focal reducer took the *f*/5 beam down to *f*/1.25. The design has already been described by Courtès (1972). This instrument was mounted on a small equatorial table. Exposures were made using flashed 103–aE plates developed in MWP2. The final *f*–ratio of 1.25 gives the needed extreme sensitivity for extended sources, while the interference filter provides the necessary contrast. This has permitted us to detect 85 weak extended HII regions previously unrecorded. We have not designated as HII regions these regions that are prominent as stellar objects on the red prints of the Palomar Sky Survey if they are not relatively more intense on our Hα exposures. We have not gone to our detection limit (8 hour exposures) in order not to loose the details of the intense regions. We estimate that our photographs have just about the same detection limit as those of Sivan (1974b), i.e., 30 $cm^{-6}pc$.

3. DESCRIPTION OF THE ATLAS AND CATALOGUE

The atlas is composed of 20 plates. Plate two is an enlarged part of plate 1, which includes the details of the complex new regions detected in Sagittarius. Each photograph is inscribed with galactic coordinates (ℓ, b) as well as right ascension. The equatorial coordinates of the field center are given in the captions. Also given in the caption is that part of the catalogue which corresponds to the photo, as well as remarks concerning the regions, especially when a new region incorporates one or more previously catalogued small, bright regions.

The HII regions discovered by Sivan (1974 a, b) are included in the catalogue although they do not appear in the Atlas either because they are too far south or because they are too far from the galactic plane. These can be seen in Sivan's Atlas (1974b) which is a mosaic of 14 very-wide-field Hα photographs covering the entire galactic plane between latitudes $-25°$ and $+25°$, thus giving an overall view of all the HII regions in the Galaxy. We have assembled all the HII regions that Sivan and Dubout have been able to observe north of declination $-40°$. This limit includes the entire domain of the Sharpless catalogue (1959), which we have updated, listing new galactic and equatorial coordinates for the epoch 1950. We have also included those regions catalogued by Courtès (1951 a, b) plus those north of declination $-40°$ in the catalogue of Rodgers *et al.* (1960), conserving the coordinates determined by these authors. In general, there is good agreement when a region has been catalogued several times.

The first column designates each HII region by a running number. The second column indicates previous designations according to the notation: CO-Courtès, SH-Sharpless, RCW-Rodgers *et al.*, SI-Sivan, DU-Dubout. The third and fourth columns give new galactic coordinates (ℓ, b) in degrees. The fifth and sixth columns give 1950 equatorial coordinates. The seventh column gives dimensions as determined by the various authors. We note that there are no. DU 24, 31, 51, 63, 70 and 72 regions, and that the DU 43 and DU 53 regions have been previously catalogued by Lynds (1965).

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Table 1 Catalogue of HII Regions

NUM		L2	B2	R.A.	DEC.	D'
001	SH 18	000°.1	-00°.8	$17^h45^m.6$	-29° 14'	4'
002	SH 17	000.1	-00.1	17 43.0	-28 50	25
003	RCW 138	000.1	00.2	17 41.7	-28 49	8X4
004	RCW 140	000.2	-00.4	17 44.2	-29 02	12X12
005	SH 19	000.3	-00.8	17 46.2	-29 06	12
006	RCW 141	000.4	-00.2	17 44.0	-28 46	6X4
007	SH 20	000.6	-00.5	17 46.1	-28 39	10
008	SH 21	000.7	-01.1	17 48.5	-28 53	5
009	CO 5	001.3	01.5	17 40.0	-27 00	180X200
010	RCW 143	003.5	02.1	17 42.5	-24 54	7X6
011	CO 10	004.0	-00.0	17 52.0	-25 30	50X40
012	SH 23	004.3	29.6	16 10.7	-08 14	50
013	SH 22	004.4	00.2	17 52.0	-25 01	60
***	RCW 144	004.4	00.5	17 50.7	-25 00	85X65
014	CO 11	004.6	00.0	17 53.0	-25 00	120X120
015	CO 12	004.9	00.2	17 53.0	-24 40	20X40
016	SH 24	005.1	30.8	16 08.4	-06 56	30
017	SH 25	006.2	-01.5	18 02.4	-24 24	90
018	SH 27	006.3	23.6	16 34.5	-10 28	480
019	SH 26	006.4	00.3	17 55.9	-23 19	20
020	SH 28	006.6	-00.6	17 59.7	-23 35	40
021	RCW 145	006.6	00.1	17 57	-23 15	90X35
022	CO 18	006.7	-02.4	18 07.0	-24 20	30X50
***	SH 29	007.1	-02.4	18 07.5	-24 00	40
023	CO 15	006.7	-01.4	18 03.0	-23 50	50X30
***	RCW 146	006.6	-01.5	18 03	-24 00	120X90
024	SH 30	007.1	-00.5	18 00.5	-23 01	20
***	RCW 147	007.2	-00.2	17 59.5	-22 54	16X16
025	SH 31	007.3	-02.4	18 08.3	-23 48	8
026	SH 32	007.4	-02.3	18 07.9	-23 39	8
027	CO 8	007.9	02.8	17 50.0	-20 40	250X250
028	CO 13	008.3	02.0	17 54.0	-20 45	100X70
029	SH 33	008.3	36.3	15 57.3	-01 28	35
030	CO 17	008.7	-00.5	18 04.0	-21 40	120X30
***	SH 34	008.6	-00.4	18 03.4	-21 39	90
***	RCW 149	008.7	-00.6	18 04.0	-21 45	120X30
031	CO 20	008.9	-02.0	18 10.0	-22 15	80X60
032	CO 26	009.0	-03.0	18 14.0	-22 40	180X180
033	CO 19	009.4	-01.2	18 08.0	-21 25	60X60
034	CO 24	009.8	-02.5	18 14.0	-21 40	80X80
035	SI 1	010.0	-02.5	18 14.2	-21 31	150X60
036	CO 23	010.9	-01.7	18 13.0	-20 20	35X100
***	SH 35	010.9	-01.6	18 12.9	-20 16	20
***	RCW 151	011.0	-01.8	18 13.5	-20 25	35X100
037	SH 36	011.4	36.3	16 03.0	00 31	45
038	CO 27	011.6	-01.7	18 14.6	-19 42	20X15
***	SH 37	011.7	-01.8	18 14.8	-19 41	20
039	SH 38	011.9	00.8	18 05.8	-18 16	3
040	CO 14	012.1	03.9	17 55.0	-16 30	250X250
041	RCW 153	012.2	-01.8	18 16.0	-19 20	60X20
042	SH 39	012.5	-01.1	18 13.8	-18 40	3
043	CO 21	012.5	-00.8	18 13.0	-18 30	150X100
044	SH 41	012.7	-00.7	18 12.9	-18 15	90
045	SH 40	012.7	00.3	18 09.1	-17 45	15
***	RCW 155	012.9	00.3	18 09.3	-17 41	10X10
046	RCW 154	012.7	02.0	18 03.0	-17 00	40X30
047	DU 1	013.2	-03.1	18 23.0	-19 00	150X150
048	SH 42	013.3	01.2	18 07.4	-16 49	3
049	SH 43	013.5	-00.4	18 13.5	-17 25	15
050	RCW 156	013.7	-00.8	18 15.0	-17 30	50X50
051	CO 25	014.2	-00.1	18 14.0	-16 40	40X40
***	SH 44	014.1	-00.1	18 13.6	-16 45	60
***	RCW 157	014.3	00.1	18 13.2	-16 36	60X60
052	CO 22	015.0	00.5	18 13.0	-15 40	200X180
053	SH 45	015.1	-00.7	18 17.9	-16 11	60
***	RCW 160	015.4	-00.8	18 18.5	-16 00	70X60
054	CO 16	015.1	03.3	18 03.0	-14 15	20X25
***	SH 46	015.2	03.3	18 03.3	-14 09	25
***	RCW 158	015.2	03.3	18 03.5	-14 12	23X23
055	SH 47	015.2	00.2	18 14.9	-15 38	5
056	RCW 159	015.3	-01.8	18 22.0	-16 36	15X15
057	RCW 161	016.1	-00.3	18 18.0	-15 09	80X40
058	DU 2	016.4	-02.5	18 27.0	-15 54	160X160
059	SH 48	016.7	-00.3	18 19.6	-14 36	10
***	RCW 162	016.7	-00.5	18 20.0	-14 40	22X10
060	RCW 163	016.9	-02.3	18 27.1	-15 24	10X9
061	RCW 164	016.9	-01.2	18 23.0	-14 51	8X6
062	SH 50	016.9	-01.1	18 22.7	-14 44	35
063	SH 51	017.0	-05.2	18 37.9	-16 36	35
064	CO 29	017.0	00.8	18 16.0	-13 49	90X30
***	SH 49	016.8	00.7	18 15.8	-13 59	90
***	RCW 165	017.0	00.8	18 16	-13 54	90X66
065	DU 3	017.2	-02.0	18 26.6	-14 54	15X20
066	DU 4	017.3	-02.4	18 28.4	-15 03	40X25
067	SH 52	017.5	-22.2	19 44.8	-23 12	2
068	SH 53	018.2	-00.3	18 22.4	-13 15	15
***	RCW 166	018.4	-00.3	18 22.6	-13 09	15X15
069	CO 30	018.4	01.3	18 17.0	-12 20	100X150
***	SH 54	018.7	02.0	18 15.1	-11 45	140
***	RCW 167	019.0	01.3	18 18	-11 54	90X180
070	CO 28	018.5	01.8	18 15.5	-12 00	35X70
071	DU 5	018.6	-02.2	18 30.0	-13 45	260X190
072	DU 6	018.7	-02.4	18 30.9	-13 50	30X60
073	DU 7	019.3	-01.9	18 30.1	-13 03	35X35
074	DU 8	019.6	-01.3	18 28.7	-12 31	30X60
075	SH 55	020.3	-01.1	18 29.4	-11 48	5

Table 1 *(continued)*

NUM		L2	B2	R.A.	DEC.	D'
076	CO 31	021.3	01.2	18 23.0	-09 50	100X80
077	SH 56	022.0	00.0	18 28.4	-09 45	7
***	RCW 169	022.0	00.1	18 28.2	-09 48	7X7
078	RCW 170	022.6	00.3	18 28.5	-09 09	7X5
079	SH 57	022.9	00.7	18 27.8	-08 39	2
080	SH 58	023.1	00.5	18 28.7	-08 30	8
***	RCW 171	023.2	00.6	18 28.6	-08 27	5X5
081	DU 9	023.8	-01.0	18 35.6	-08 36	35X60
082	SH 59	024.5	-00.3	18 34.3	-07 38	20
***	RCW 172	024.6	-00.1	18 33.8	-07 32	7X7
083	DU 10	025.2	-00.9	18 37.6	-07 21	60X40
084	SH 60	025.3	00.2	18 34.0	-06 44	20
***	RCW 173	025.4	00.2	18 34.0	-06 41	17X17
085	SH 61	026.4	01.8	18 30.3	-05 03	2
086	DU 11	026.6	-00.5	18 39.1	-05 55	10X10
087	DU 12	026.8	-00.2	18 38.3	-05 34	30X15
088	SH 62	026.8	03.5	18 24.9	-03 53	4
089	SH 63	027.3	-20.9	19 54.9	-14 15	55
090	DU 13	027.3	-02.0	18 45.8	-05 58	35X15
091	DU 14	028.3	-05.5	19 00.0	-06 43	140X60
092	SH 64	029.0	03.5	18 29.0	-01 57	25
***	RCW 174	028.8	03.4	18 29.2	-02 13	5X4
093	SH 65	029.1	-00.7	18 44.3	-03 47	7
***	RCW 175	029.1	-00.7	18 44.2	-03 48	7X5
094	SH 66	030.5	00.4	18 42.9	-02 03	8
***	RCW 176	030.5	00.4	18 42.7	-02 04	8X8
095	SH 67	030.6	-00.6	18 46.8	-02 24	10
096	SH 68	030.7	06.2	18 22.7	00 49	8
097	DU 15	031.7	-00.7	18 49.1	-01 27	35X25
098	SH 69	031.9	01.4	18 41.9	-00 20	20
***	RCW 177	031.9	01.4	18 41.8	-00 24	12X12
099	DU 16	032.1	-00.5	18 49.1	-01 04	40X10
100	DU 17	034.4	-02.6	19 00.9	00 00	40X70
101	SH 70	035.1	11.4	18 12.2	07 02	5
102	SH 71	036.1	-01.4	18 59.5	02 05	3
103	SH 72	036.4	-01.7	19 01.3	02 14	25
***	RCW 179	036.4	-01.7	19 01.2	02 09	20X15
104	DU 18	037.7	-01.8	19 03.9	03 19	40X70
105	SH 73	037.7	44.6	16 09.0	22 00	75
106	DU 19	038.3	-02.8	19 08.9	03 26	45X40
107	RCW 181	038.8	02.0	18 52.3	06 00	5X5
108	DU 20	039.7	-01.5	19 06.6	05 16	50X35
109	SH 74	039.9	-01.3	19 06.4	05 31	3
110	DU 21	040.2	-03.0	19 13.0	05 00	85X30
111	SH 75	040.2	01.5	18 56.8	07 02	10
112	SH 76	040.5	02.5	18 54.0	07 44	7
113	SH 77	040.6	-12.1	19 45.8	01 01	8
114	DU 22	040.7	-02.5	19 11.9	05 39	75X40
115	DU 23	042.0	03.3	18 53.9	09 29	60X55
116	SH 78	046.8	03.8	19 00.9	14 03	12
117	SH 79	049.0	-00.5	19 21.0	13 52	40
118	SH 80	050.2	03.3	19 09.2	16 46	2
119	SH 81	051.6	-09.7	19 58.9	11 39	10
120	SH 82	053.6	00.0	19 28.1	18 10	9
121	SH 83	055.1	02.4	19 22.4	20 41	2
122	SH 84	055.9	-03.8	19 46.8	18 16	15
123	SH 85	057.4	09.0	19 01.3	25 45	6
124	DU 25	058.2	-04.4	19 54.0	20 00	50X35
125	DU 26	059.1	00.5	19 37.9	23 16	50X20
126	CO 32	059.4	-00.1	19 41.0	23 12	30X25
***	SH 86	059.4	-00.2	19 41.0	23 09	40
127	DU 27	059.8	-01.3	19 46.2	22 54	35X70
128	DU 28	059.9	-00.1	19 42.1	23 38	20X10
129	DU 29	060.5	-01.4	19 47.9	23 29	25X35
130	SH 87	060.9	-00.1	19 44.3	24 30	10
131	SH 88	061.5	00.3	19 43.9	25 13	25
132	DU 30	061.7	-00.8	19 48.8	24 49	35X45
133	SH 89	062.9	00.1	19 48.0	26 21	5
134	SH 90	063.2	00.5	19 47.2	26 44	6
135	SH 93	064.1	-00.5	19 53.0	27 04	1
136	CO 33	064.1	01.5	19 45.5	28 05	20X30
***	SH 92	064.1	01.6	19 44.6	28 07	50
137	SH 91	064.1	04.4	19 33.6	29 29	120
138	DU 32	064.2	01.1	19 47.3	27 58	45X10
139	SH 94	064.9	06.8	19 25.9	31 21	25
140	DU 33	065.1	00.8	19 50.2	28 33	90X30
141	SH 95	065.9	00.6	19 53.0	29 09	1
142	SH 96	066.1	07.2	19 26.8	32 35	25
143	DU 34	066.4	-01.2	20 01.3	28 37	70X80
144	DU 35	066.6	04.2	19 40.0	31 34	115X40
145	SH 97	066.9	00.9	19 54.1	30 07	10
146	DU 36	067.6	03.6	19 44.9	32 10	50X15
147	DU 37	067.7	-04.8	20 18.0	27 41	60X60
148	DU 38	068.0	02.4	19 51.1	31 53	35X70
149	SH 98	068.2	01.0	19 56.8	31 17	15
150	DU 39	068.3	03.6	19 46.6	32 45	35X115
151	DU 40	069.2	02.3	19 54.0	32 50	80X50
152	CO 37	070.1	01.4	20 00.0	33 10	100X50
153	SH 99	070.1	01.7	19 58.9	33 21	5
154	SH 100	070.3	01.6	19 59.9	33 22	4
155	CO 38	070.8	01.4	20 02.0	33 40	100X120
156	SH 102	071.4	-05.3	20 29.7	30 26	40
157	CO 41	071.5	01.1	20 05.0	34 10	100X35
158	CO 35	071.6	02.8	19 58.0	35 08	20X10
***	SH 101	071.6	02.8	19 58.1	35 09	20
159	CO 46	071.7	-00.0	20 10.0	33 40	70X60
160	CO 34	072.4	04.1	19 55.0	36 30	150X100

Table 1 *(continued)*

NUM		L2	B2	R.A.	DEC.	D'
161	CO 47	072.7	00.4	20 11.0	34 45	30X40
162	CO 43	073.0	01.6	20 07.0	35 40	120X120
163	CO 40	073.9	02.6	20 05.0	37 00	60X35
164	CO 72	074.5	-07.7	20 47.0	31 25	30X40
***	SH 103	074.1	-08.3	20 48.5	30 44	210
165	CO 39	074.5	03.5	20 03.0	38 00	50X50
166	SH 104	074.8	00.6	20 15.9	36 35	7
167	CO 51	075.4	01.6	20 13.5	37 40	12X20
168	SH 105	075.5	02.4	20 10.2	38 11	18
169	SH 106	076.4	-00.6	20 25.6	37 13	3
170	CO 42	076.5	04.1	20 06.0	39 55	60X80
171	CO 56	077.0	01.6	20 18.0	39 00	60X35
172	CO 48	077.1	03.1	20 12.0	39 55	50X30
173	CO 44	077.2	04.1	20 08.0	40 30	200X120
174	SH 107	077.4	-03.7	20 40.8	36 09	5
175	CO 45	077.8	04.0	20 10.0	41 00	80X10
176	CO 55	078.0	02.6	20 17.0	40 25	35X25
177	CO 36	078.1	06.6	19 59.0	42 40	180X180
178	SH 108	078.2	01.8	20 20.8	40 05	180
179	CO 60	078.6	00.8	20 26.0	39 50	60X25
180	CO 58	078.7	01.4	20 24.0	40 15	50X25
181	CO 52	078.7	03.7	20 14.0	41 38	60X30
182	SH 109	079.5	00.1	20 31.8	40 10	1080
183	SH 110	079.6	-12.2	21 18.7	32 14	50
184	CO 66	079.7	-02.3	20 42.5	38 50	60X30
185	CO 50	080.1	05.1	20 12.0	43 30	20X30
186	CO 59	080.2	02.3	20 25.0	42 00	40X150
187	CO 53	080.5	04.7	20 15.0	43 35	25X40
188	SH 111	081.2	-17.0	21 39.7	29 52	90
189	CO 69	081.2	-01.7	20 45.0	40 25	100X30
190	CO 67	081.2	-01.2	20 43.0	40 40	35X35
191	CO 71	081.4	-02.0	20 47.0	40 20	50X25
192	CO 49	081.5	06.0	20 12.0	45 10	40X150
193	CO 57	081.6	04.4	20 20.0	44 20	300X300
194	CO 81	082.6	-06.9	21 10.0	38 00	30X180
195	CO 68	082.6	-00.6	20 45.0	42 10	60X100
196	CO 61	082.6	02.9	20 30.0	44 15	30X60
197	CO 54	082.7	05.7	20 17.0	46 00	354X0
198	CO 73	083.1	-00.9	20 48.0	42 21	30X30
199	CO 70B	083.2	-00.2	20 45.5	42 50	35X12
200	CO 74	083.6	-00.5	20 48.0	43 00	120X180
201	CO 70	083.6	00.3	20 45.0	43 30	30X40
202	SH 113	083.7	-08.3	21 18.8	37 52	15
203	CO 62	083.8	03.3	20 32.3	45 29	10X10
***	SH 112	083.8	03.3	20 32.2	45 29	15
204	CO 65	083.9	02.7	20 35.0	45 15	120X60
205	SH 114	084.2	-07.9	21 19.2	38 29	9
206	CO 77	084.3	-01.2	20 53.5	43 05	30X25
207	CO 75	084.6	-00.1	20 50.0	44 00	70X85
208	CO 63	084.8	03.9	20 32.5	46 40	40X60
***	SH 115	084.8	03.9	20 32.9	46 42	50
209	SH 116	085.0	04.5	20 30.7	47 11	2
210	SH 117	085.5	-01.0	20 57.0	44 07	240
211	CO 80	085.9	-03.1	21 07.0	43 00	120X150
212	CO 78	085.9	-00.9	20 58.0	44 30	120X200
213	CO 64	086.1	04.4	20 35.0	48 00	200X200
214	CO 76	086.6	01.6	20 50.0	46 40	180X180
215	SH 118	087.5	-08.9	21 35.0	39 59	480
216	SH 119	087.6	-03.8	21 16.6	43 43	160
217	CO 82	087.9	-02.4	21 12.0	45 00	70X120
218	CO 79	088.6	-00.4	21 06.0	46 50	120X120
219	SH 122	089.2	-41.1	23 06.3	14 39	40
220	SH 121	090.2	01.7	21 03.6	49 26	1
221	SH 120	090.2	02.0	21 02.1	49 40	1
222	DU 41	090.9	-04.6	21 32.8	45 29	30X85
223	SH 123	091.1	-06.4	21 40.4	44 18	13
224	DU 42	091.7	-02.9	21 29.6	47 17	120X20
225	DU 43	091.9	-01.4	21 24.4	48 27	35X45
226	DU 44	092.3	-03.3	21 33.9	47 19	155X45
227	DU 45	092.6	00.3	21 20.0	50 10	55X60
228	DU 46	093.0	-05.3	21 44.6	46 16	140X105
229	DU 47	093.7	-03.8	21 42.3	47 55	45X60
230	SH 125	094.4	-05.5	21 51.6	47 02	9
231	SH 124	094.5	-01.5	21 36.6	50 07	70
232	DU 48	094.7	-00.3	21 32.5	51 10	15X45
233	SH 126	095.4	-16.8	22 31.2	38 19	160
234	SH 127	096.3	02.6	21 27.1	54 24	2
235	SH 128	097.5	03.2	21 30.6	55 38	1
236	CO 85	097.9	01.1	21 42.0	54 20	100X100
237	CO 86	098.2	-01.5	21 55.0	52 30	70X90
238	SH 130	098.8	12.7	20 42.1	63 02	3
239	CO 83	099.0	07.5	21 16.0	59 45	30X90
***	SH 129	098.5	08.0	21 10.5	59 45	140
240	CO 84	099.1	03.6	21 37.0	57 00	240X200
***	SH 131	099.3	03.7	21 37.5	57 15	170
241	DU 49	100.6	08.2	21 21.2	61 23	85X45
242	DU 50	101.0	06.0	21 35.9	60 04	60X85
243	CO 88	101.7	01.9	22 00.0	57 20	200X120
244	CO 87	102.5	04.0	21 55.0	59 30	200X100
245	CO 92B	102.7	-01.6	22 20.0	55 00	100X60

Table 1 *(continued)*

NUM		L2	B2	R.A.	DEC.	D'
246	CO 92	103.0	-00.7	22 18.5	56 00	50X30
***	SH 132	102.8	-00.6	22 16.9	55 52	90
247	SH 133	103.1	09.6	21 27.9	64 05	80
248	SH 134	103.8	02.6	22 09.8	59 09	160
249	CO 91	104.0	01.7	22 15.0	58 30	100X40
250	DU 52	104.5	09.9	21 34.9	65 17	35X70
251	SH 135	104.6	01.3	22 20.4	58 29	15
252	CO 89	104.7	04.2	22 08.0	61 00	40X40
253	SH 138	105.6	00.4	22 30.8	58 13	1
254	SH 137	105.6	07.9	21 55.8	64 27	90
255	CO 93	105.7	02.0	22 25.0	59 40	60X60
256	CO 90	105.7	05.3	22 10.0	62 30	150X180
257	SH 139	105.8	-00.0	22 33.1	57 57	10
258	CO 95	106.1	-01.3	22 40.0	57 00	180X120
259	SH 141	106.8	03.3	22 26.8	61 23	5
260	SH 140	106.8	05.3	22 17.5	63 02	30
261	CO 96	107.0	-00.9	22 44.7	57 50	30X25
***	SH 142	107.1	-01.0	22 45.6	57 47	30
262	SH 143	107.3	-01.4	22 48.2	57 26	4
263	SH 144	107.7	00.8	22 42.9	59 37	4
264	DU 53	107.9	-00.2	22 47.9	58 49	75X20
265	CO 94	108.0	05.7	22 25.0	64 00	120X120
***	SH 145	107.9	05.8	22 23.9	64 03	90
266	SH 147	108.2	-01.1	22 53.4	58 11	2
267	SH 146	108.2	00.6	22 47.5	59 39	2
268	CO 100	108.4	-02.6	22 59.0	56 50	40X30
***	SH 151	108.6	-02.7	23 00.9	56 48	20
269	SH 148	108.4	-01.1	22 54.1	58 14	2
270	SH 149	108.4	-01.1	22 54.3	58 15	1
271	SH 153	108.8	-01.0	22 57.2	58 28	5
272	SH 152	108.8	-00.9	22 56.6	58 31	2
273	CO 97	108.9	01.8	22 48.0	61 00	30X20
274	SH 150	108.9	06.1	22 29.6	64 51	40
275	SH 154	109.0	01.6	22 49.5	60 54	60
276	DU 54	109.2	-01.5	23 01.7	58 11	35X40
277	DU 55	109.5	-00.8	23 01.2	58 58	80X25
278	SH 156	110.1	00.1	23 03.1	59 59	2
279	CO 99	110.2	02.7	22 55.0	62 25	45X45
***	SH 155	110.2	02.6	22 54.8	62 20	60
280	CO 98	110.3	02.9	22 55.0	62 40	110X60
281	CO 102	111.1	-00.7	23 13.0	59 40	60X70
***	SH 157	111.3	-00.7	23 13.9	59 46	90
282	SH 158	111.5	00.8	23 11.5	61 14	10
283	SH 159	111.6	00.4	23 13.6	60 52	7
284	CO 103	111.8	01.0	23 13.0	61 30	90X60
***	SH 161	111.9	01.1	23 13.3	61 35	55
285	SH 160	111.9	04.1	23 03.8	64 24	80
286	CO 104	112.2	00.1	23 18.5	60 45	25X25
***	SH 162	112.2	00.2	23 18.5	60 55	40
287	CO 101	112.5	03.8	23 10.0	64 20	100X90
288	DU 56	112.6	02.0	23 16.0	62 42	60X105
289	SH 163	113.5	-00.7	23 31.0	60 30	10
290	DU 57	113.5	02.2	23 23.5	63 11	45X35
291	SH 164	113.9	-01.6	23 36.1	59 41	3
292	DU 58	114.0	-02.5	23 38.8	58 50	95X15
293	SH 166	114.6	-00.8	23 39.8	60 41	10
294	SH 165	114.6	00.2	23 37.4	61 39	10
295	DU 59	114.8	-02.8	23 45.1	58 49	25X35
296	SH 167	115.0	03.2	23 33.1	64 34	2
297	SH 168	115.8	-01.6	23 50.6	60 11	7
298	SH 169	115.9	-01.7	23 51.5	60 05	5
299	SI 2	117.0	-11.7	00 12.0	50 28	330X180
300	DU 60	117.0	00.9	23 55.7	62 52	120X105
301	CO 105	117.4	06.0	23 49.0	67 55	60X30
302	DU 61	117.6	-02.1	00 05.5	60 01	45X35
303	CO 106	117.6	02.4	23 59.0	64 30	15X15
***	SH 170	117.6	02.3	23 59.1	64 20	20
304	CO 107	118.3	05.2	00 00.0	67 20	180X180
***	SH 171	118.4	04.7	00 02.1	66 52	180
305	CO 109	118.4	04.5	00 02.0	66 40	40X40
306	SH 172	118.6	-01.3	00 12.9	60 58	1
307	CO 108	118.7	06.1	00 02.0	68 20	60X25
308	DU 62	118.8	01.5	00 10.6	63 46	55X25
309	SH 173	119.4	-00.9	00 19.1	61 27	30
310	SH 176	120.2	-05.5	00 28.9	57 00	10
311	SH 174	120.3	18.4	23 44.7	80 39	10
312	SH 175	120.4	02.0	00 24.5	64 25	2
313	SH 177	120.6	-00.3	00 28.7	62 11	40
314	SH 178	121.4	25.4	22 28.2	87 30	420
315	SH 179	121.7	00.0	00 37.5	62 35	1
316	SH 180	122.6	00.1	00 45.8	62 39	15
317	SH 181	122.7	02.3	00 46.2	64 56	15
318	SH 182	122.8	01.9	00 47.2	64 28	2
319	SH 184	123.1	-06.3	00 49.9	56 20	40
320	SH 183	123.2	02.8	00 50.9	65 26	35
321	SH 185	124.0	-01.9	00 56.9	60 43	120
322	DU 64	124.0	00.6	00 57.8	63 11	145X105
323	SH 186	124.9	00.3	01 05.6	62 52	1
324	SH 187	126.7	-00.8	01 19.8	61 35	10
325	DU 65	127.9	01.7	01 33.5	63 54	40X45
326	SH 188	128.1	-04.1	01 27.4	58 06	9
327	SH 189	131.6	02.7	02 08.3	63 56	2
328	DU 66	132.7	-00.2	02 10.0	60 50	60X50
329	DU 67	132.9	-01.7	02 08.2	59 22	60X115
330	CO 110	133.9	01.2	02 23.5	61 50	40X30

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Table 1 *(continued)*

NUM		L2	B2	R.A.	DEC.	D'
331	SH 190	134.8	00.9	02 29.6	61 13	150
332	CO 111	134.8	01.1	02 30.0	61 20	15X15
333	CO 112	135.5	01.0	02 35.0	61 00	130X100
334	SH 192	136.1	02.1	02 43.3	61 46	1
335	SH 193	136.1	02.1	02 43.6	61 47	2
336	SH 194	136.1	02.1	02 43.4	61 43	2
337	SH 195	136.3	-00.4	02 36.3	59 26	3
338	SH 196	136.4	02.5	02 47.3	62 01	4
339	DU 69	136.9	-01.3	02 37.8	58 19	50X85
340	SH 198	137.4	00.2	02 46.2	59 29	9
341	CO 113	137.8	01.3	02 53.0	60 15	110X50
***	SH 199	137.6	01.1	02 50.7	60 12	120
342	SH 200	138.1	04.1	03 06.6	62 37	6
343	SH 201	138.5	01.6	02 59.2	60 17	5
344	SH 202	140.6	01.9	03 14.9	59 27	170
345	SH 203	143.5	-01.9	03 18.2	54 42	45
346	SI 3	145.0	13.8	04 52.6	65 24	450X240
347	SH 204	145.8	03.0	03 51.7	57 17	40
348	SH 205	148.5	-00.2	03 52.3	53 03	120
349	SH 206	150.6	-00.9	03 59.4	51 11	50
350	SH 207	151.2	02.1	04 16.2	53 01	4
351	SH 208	151.3	02.0	04 15.9	52 51	1
352	SH 209	151.6	-00.2	04 07.3	51 02	14
353	DU 71	152.1	03.9	04 29.0	53 38	215X180
354	SH 210	152.8	02.9	04 27.1	52 26	20
355	SH 211	154.6	02.5	04 33.1	50 50	2
356	SH 212	155.4	02.6	04 36.8	50 17	5
357	SH 213	157.1	-03.6	04 17.2	44 48	1
358	SH 214	157.6	-03.9	04 18.0	44 15	4
359	SH 215	158.3	-05.7	04 14.1	42 29	2
360	SH 216	158.6	00.8	04 41.3	46 43	80
361	SH 217	159.1	03.3	04 55.0	47 55	9
362	SH 219	159.3	02.6	04 52.4	47 19	3
363	SH 218	159.5	11.3	05 37.3	52 09	70
364	SH 220	160.1	-12.3	03 57.4	36 28	320
***	CO 114	160.2	-12.5	03 57.0	36 10	150X45
***	CO 114A	161.2	-12.1	04 02.0	35 50	330X60
365	SH 221	160.8	02.7	04 58.0	46 16	120
366	SI 4	161.5	-16.0	03 50.4	-32 45	540X420
367	SH 222	165.3	-09.0	04 26.9	35 09	6
368	SH 223	165.7	02.5	05 13.7	42 09	70
369	SH 224	166.2	04.4	05 23.7	42 55	30
370	SH 225	168.1	03.1	05 23.5	40 34	10
371	DU 73	168.3	03.0	05 23.6	40 21	45X35
372	SH 226	168.5	-01.0	05 07.7	37 56	3
373	SH 227	168.7	01.0	05 16.4	38 54	20
374	SH 228	169.2	-00.9	05 10.2	37 23	8
375	DU 74	169.3	04.1	05 31.2	40 09	35X70
376	DU 75	169.8	01.6	05 22.2	38 24	265X120
377	DU 76	171.1	01.3	05 24.4	37 06	20X50
378	SH 229	172.0	-02.2	05 13.0	34 24	65
***	CO 115	172.1	-03.0	05 10.0	33 50	30X90
***	CO 116	172.0	-02.1	05 13.5	34 25	25X35
379	CO 117	172.8	-01.7	05 17.0	34 00	180X200
***	SH 230	173.0	-01.3	05 19.2	34 05	300
380	CO 122	173.3	00.9	05 29.0	35 00	180X120
381	SH 234	173.4	-00.2	05 24.8	34 23	12
382	SH 233	173.4	02.4	05 35.4	35 46	2
383	SH 231	173.4	02.6	05 36.0	35 53	12
384	CO 118	173.6	-01.6	05 20.0	33 25	30X35
***	SH 236	173.6	-01.7	05 19.3	33 19	55
385	SH 235	173.6	02.8	05 37.7	35 49	10
386	CO 130	173.7	03.3	05 40.0	36 00	30X30
***	SH 232	173.5	03.2	05 39.1	36 10	40
387	SH 237	173.9	00.3	05 28.1	34 14	7
388	DU 77	177.6	-00.0	05 36.5	30 54	85X105
389	SH 239	178.9	-20.1	04 28.4	18 00	5
390	SH 240	180.2	-01.3	05 37.9	28 04	180
391	SH 241	180.9	04.1	06 00.9	30 15	10
392	SH 242	182.4	00.2	05 48.7	27 00	7
393	SH 243	184.1	-04.2	05 36.3	23 15	6
394	DU 78	184.1	-02.9	05 40.8	23 55	35X25
395	DU 79	184.5	00.9	05 56.1	25 31	110X145
396	SH 244	184.6	-05.8	05 31.5	21 55	5
397	DU 80	186.2	-03.8	05 42.5	21 37	45X60
398	SH 245	186.3	-34.3	03 59.9	03 59	720
399	CO 137	186.7	02.4	06 07.0	24 20	20X20
400	SH 246	187.0	-16.6	04 59.3	14 01	65
401	DU 81	187.2	05.4	06 19.5	25 23	50X35
402	DU 82	188.1	-02.3	05 52.0	20 49	75X70
403	CO 138	188.6	03.7	06 16.0	23 20	120X100
***	SH 249	189.0	04.0	06 17.9	23 06	80
404	SH 247	188.9	00.8	06 05.5	21 37	9
405	SH 248	189.1	02.9	06 13.6	22 31	50
406	SH 250	189.6	-24.8	04 37.5	07 16	10
407	SH 251	189.8	-27.2	04 30.2	05 45	35
408	CO 136	190.1	00.6	06 07.0	20 30	30X25
***	SH 252	190.0	00.5	06 06.7	20 30	40
409	DU 83	191.7	03.1	06 19.8	25 18	75X165
410	DU 84	191.9	00.8	06 11.8	19 00	35X60
411	SH 253	192.2	03.6	06 22.8	20 03	5
412	CO 121	192.4	-11.6	05 28.0	12 20	90X30
413	SH 254	192.5	-00.1	06 09.4	18 03	11
414	SH 257	192.6	-00.1	06 09.9	17 59	3
415	SH 256	192.6	-00.1	06 09.7	17 57	1

Table 1 *(continued)*

NUM		L2	B2	R.A.	DEC.	D'
416	SH 255	192.6	-00.0	06 10.2	17 59	3
417	SH 258	192.7	00.1	06 10.6	17 56	1
418	SH 259	192.9	-00.6	06 08.7	17 27	2
419	SH 260	193.4	-22.7	04 52.5	05 35	22
420	CO 135	194.2	-01.9	06 06.5	15 40	40X30
***	SH 261	194.1	-01.9	06 06.1	15 48	45
421	CO 120	194.4	-13.5	05 26.0	09 40	200X240
422	SH 262	194.6	-20.0	05 04.1	06 06	20
423	SH 263	194.7	-15.6	05 19.0	08 21	22
424	DU 85	194.9	03.4	06 27.3	17 36	265X35
425	SH 265	195.1	-16.8	05 15.9	07 23	70
426	CO 128	195.7	-11.4	05 36.0	09 40	450X480
***	SH 264	195.1	-12.0	05 32.5	09 54	390
427	SH 266	195.7	-00.1	06 16.0	15 18	1
428	DU 86	195.7	00.1	06 16.7	15 23	25X10
429	SH 267	196.2	-01.2	06 13.1	14 17	4
430	SH 268	196.4	-02.8	06 07.4	13 20	60
431	SH 269	196.5	-01.7	06 11.7	13 50	4
432	SH 270	196.8	-03.1	06 07.4	12 49	1
433	DU 88	197.0	-01.5	06 13.6	13 29	85X70
434	DU 87	197.0	00.5	06 20.7	14 23	85X45
435	SH 271	197.8	-02.3	06 12.1	12 22	2
436	SH 272	197.8	-02.3	06 12.2	12 21	1
437	CO 139	200.0	00.0	06 25.0	11 30	100X100
438	CO 143	200.6	02.2	06 34.0	12 00	80X50
439	CO 127	200.9	-14.3	05 36.0	03 50	150X30
440	CO 132	202.7	-11.8	05 48.0	03 30	120X200
441	CO 147	203.1	02.2	06 38.5	09 50	25X40
442	CO 148	203.1	02.2	06 38.5	09 50	240X150
***	SH 273	202.9	02.2	06 38.1	09 57	250
443	CO 145	204.3	00.9	06 36.0	08 10	130X30
444	CO 141	204.6	-01.0	06 30.0	07 00	50X140
445	SH 274	205.1	14.3	07 26.3	13 22	8
446	CO 123	205.3	-17.7	05 32.0	-01 30	40X60
447	CO 134	206.2	-12.8	05 51.0	00 00	550X60
448	CO 140	206.4	-01.9	06 30.0	05 00	70X90
***	SH 275	206.3	-02.1	06 29.1	04 58	100
449	SH 276	206.7	-20.5	05 25.0	-04 00	1200
450	CO 146	206.7	00.2	06 38.0	05 40	160X120
451	CO 129	206.9	-17.3	05 36.5	-02 40	100X120
***	SH 277	206.9	-16.8	05 38.2	-02 28	120
452	SH 278	207.4	-22.9	05 17.4	-05 42	50
453	CO 125	208.6	-19.2	05 33.0	-05 00	20X20
***	SH 279	208.5	-19.1	05 32.9	-04 49	20
454	CO 142	208.8	-02.6	06 32.0	02 30	40X25
***	SH 280	208.7	-02.6	06 31.7	02 34	40
455	CO 126	209.1	-19.2	05 33.6	-05 25	60X40
***	SH 281	209.0	-19.5	05 32.5	-05 29	60
456	CO 144	210.2	-02.2	06 36.0	01 30	20X25
***	SH 282	210.0	-02.3	06 35.4	01 33	35
457	SH 283	210.8	-02.6	06 35.9	00 45	3
458	CO 119	211.6	-22.6	05 25.5	-09 00	120X60
459	CO 149	212.0	-01.3	06 42.5	00 20	40X40
***	SH 284	212.0	-01.3	06 42.5	00 17	80
460	CO 133	212.4	-16.5	05 49.0	-07 00	100X250
461	CO 131	212.7	-19.1	05 40.0	-08 25	120X70
462	CO 124	213.1	-21.5	05 32.0	-09 50	200X30
463	SH 285	213.8	00.6	06 52.7	-00 26	1
464	SI 5	216.5	01.0	06 59.0	-02 39	120X60
465	SH 286	217.3	-01.4	06 52.1	-04 26	6
466	SI 6	218.0	-00.5	06 56.5	-04 40	90X60
467	SH 287	218.1	-00.4	06 57.1	-04 43	12
468	SH 288	218.7	01.8	07 06.1	-04 13	1
469	SH 291	220.5	-02.8	06 53.0	-07 57	8
470	RCW 1	223.0	-01.5	07 02	-09 30	150X150
471	SH 292	223.7	-01.9	07 02.1	-10 22	21
***	RCW 2	223.8	-01.9	07 02	-10 27	14X14
472	SH 293	224.2	-02.9	06 59.5	-11 14	11
473	SH 294	224.2	01.2	07 14.2	-09 21	7
474	SH 295	224.4	-02.7	07 00.4	-11 23	8
475	RCW 4	224.4	03.2	07 21.5	-08 30	60X60
476	SH 296	224.5	-01.9	07 03.5	-11 08	200
477	SH 297	225.5	-02.6	07 02.9	-12 15	7
478	SH 298	227.7	-00.1	07 16.3	-13 06	22
***	RCW 5	227.8	-00.2	07 16.1	-13 09	8X8
479	SH 299	231.0	01.5	07 28.4	-15 11	1
480	SH 300	231.1	01.5	07 28.8	-15 18	3
481	SH 301	231.5	-04.4	07 07.6	-18 23	9
***	RCW 6	231.6	-04.3	07 08.0	-18 24	12X10
482	SH 302	232.6	00.9	07 29.5	-16 52	21
***	RCW 7	232.6	00.9	07 29.5	-16 51	17X15
483	SH 303	233.4	-09.5	06 51.9	-22 21	90
484	SH 305	233.8	-00.2	07 27.9	-18 25	4
485	SH 304	233.9	-12.4	06 41.4	-24 04	200
***	RCW 9	234.4	-12.2	06 43	-24 20	90X30
486	SH 306	234.3	-00.4	07 28.4	-19 00	30
***	RCW 10	234.4	-00.2	07 29.0	-18 54	18X14
487	SH 307	234.6	00.8	07 33.3	-18 38	6
***	RCW 12	234.7	00.9	07 33.7	-18 42	6X3
488	SH 308	234.8	-10.1	06 52.1	-23 52	35
***	RCW 11	234.6	-10.0	06 52	-23 35	60X20
489	SH 309	234.8	-00.2	07 29.9	-19 19	12
***	RCW 13	234.8	-00.1	07 30.1	-19 18	12X10
490	RCW 14	235.6	-04.1	07 17.0	-21 50	6X4

Table 1 *(continued)*

NUM		L2	B2	R.A.	DEC.	D'
491	SH 310	237.3	-06.5	07 11.0	-24 29	480
***	RCW 15	237.5	-07.3	07 08	-25 00	300X300
492	SH 311	243.2	00.4	07 50.3	-26 18	45
***	RCW 16	243.3	00.6	07 51.2	-26 15	33X33
493	SH 312	251.2	13.1	08 57.0	-25 29	720
494	RCW 19	253.8	-00.5	08 13.5	-35 42	48X40
495	RCW 20	254.5	00.0	08 17.5	-36 00	10X10
496	RCW 22	258.1	12.1	09 13.5	-31 10	45X45
497	SH 313	303.6	40.0	12 50.9	-22 35	12
498	SH 1	347.2	20.2	15 55.8	-25 58	150
499	SH 2	347.5	02.0	17 00.7	-38 04	60
***	RCW 119	347.7	01.9	17 01.3	-38 00	180X145
500	SH 4	348.4	-01.2	17 16.4	-39 17	5
501	SH 3	348.4	00.2	17 10.3	-38 26	12
***	RCW 120	348.3	00.5	17 09.0	-38 24	6X6
502	SH 5	349.1	-00.7	17 16.6	-38 24	100
***	RCW 123	349.5	-00.8	17 17.8	-38 09	75X75
503	SH 7	349.8	22.3	15 57.4	-22 48	240
504	RCW 125	350.0	00.2	17 15.0	-37 09	8X8
505	RCW 126	350.6	01.0	17 13.5	-36 18	16X4
506	SH 8	351.3	00.4	17 18.1	-35 59	120
***	RCW 127	351.4	00.7	17 17.0	-35 48	50X25
507	SH 9	351.3	17.0	16 18.1	-25 28	80
508	RCW 128	351.4	-00.1	17 20.4	-36 15	10X10
509	RCW 129	351.9	12.7	16 34.0	-28 00	180X180
***	SI 9	351.5	12.0	16 35.5	-28 40	600X420
510	SI 10	352.0	24.0	15 58.1	-20 11	840X720
511	RCW 130	352.4	02.1	17 14.2	-34 06	30X20
512	SH 10	352.6	01.9	17 15.7	-34 02	60
513	CO 1	352.9	01.0	17 20.0	-34 20	35X25
514	RCW 131	353.2	00.7	17 22	-34 18	170X55
515	SH 11	353.4	00.6	17 23.2	-34 09	90
516	SI 11	354.0	05.5	17 05.9	-30 48	360X60
517	CO 9	355.6	-04.5	17 50.0	-35 00	300X300
518	CO 4	355.7	-00.3	17 33.0	-32 40	120X120
***	RCW 132	355.4	00.2	17 30	-32 42	110X80
519	SH 12	355.8	-00.2	17 32.7	-32 34	120
520	CO 3	356.0	01.4	17 27.0	-31 35	50X35
521	SH 13	356.0	01.4	17 27.2	-31 31	40
***	RCW 133	355.9	01.5	17 26.0	-31 36	45X40
522	SH 14	357.1	02.1	17 27.1	-30 13	2
523	CO 2	358.1	02.8	17 27.0	-29 00	200X180
524	CO 7	358.4	-02.0	17 46.3	-31 20	25X25
***	RCW 134	358.5	-01.9	17 46.1	-31 14	60X50
525	SH 15	358.6	-02.1	17 47.3	-31 15	30
526	CO 6	359.7	-00.3	17 43.0	-29 20	25X25
***	RCW 137	359.8	-00.2	17 42.6	-29 18	18X18
527	SH 16	359.9	-00.6	17 44.7	-29 17	2000

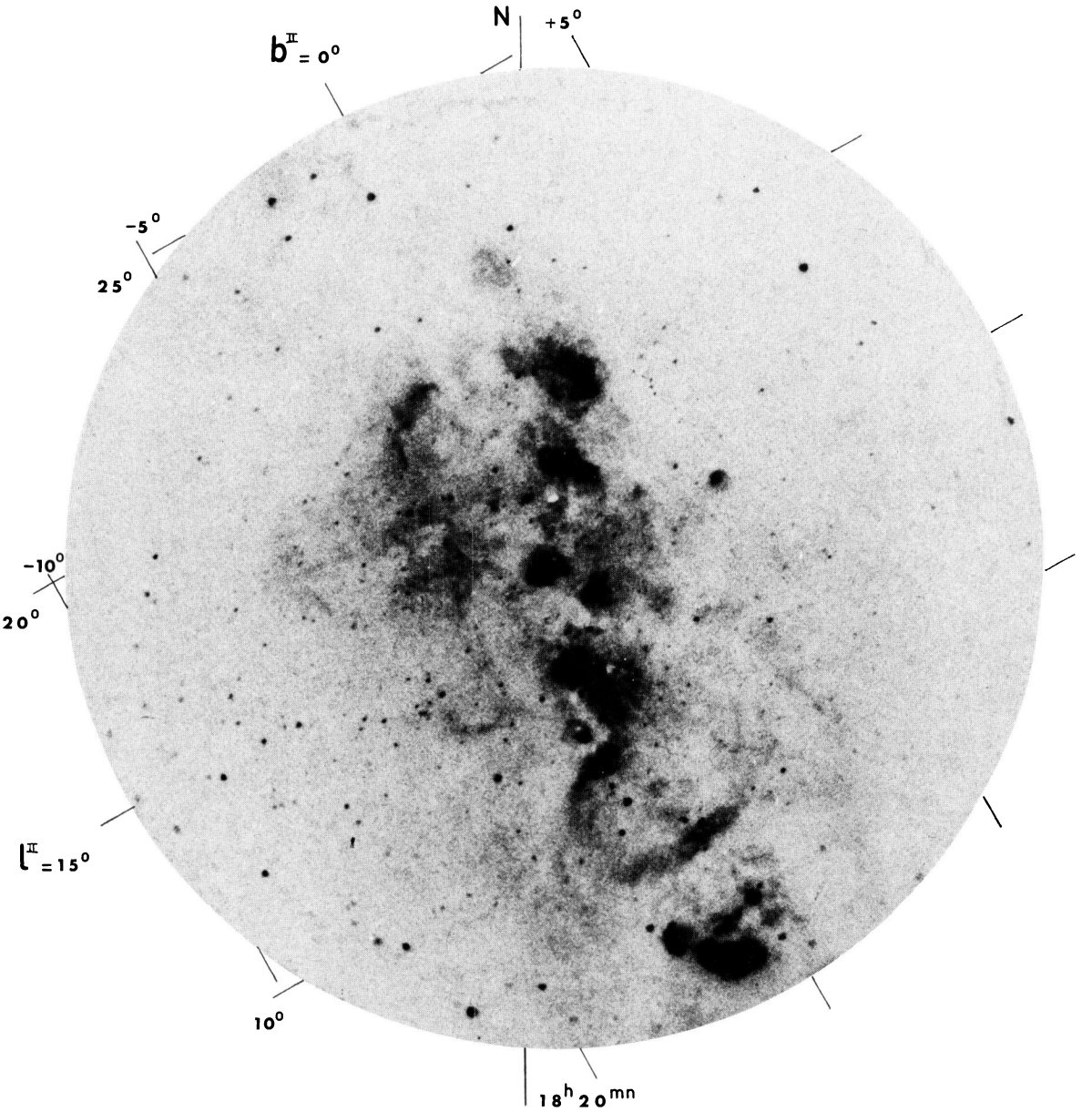

Plate 1 Sagittarius-Scutum $\alpha_{1950}=18^h15^m$ $\delta_{1950}=-16°$. Exposure time 4^h. HII regions no. 17 to 76. M 8 (SH 25), M 17 (SH 45), M 20 (SH 30), M 16 (SH 49). DU 2 contains RCW 153, DU 3, DU 4 and Lynds (16°41, −2°79, 80′ × 60′); DU 5 contains DU 6, 7, 8, SH 55 and Lynds (17°19, −3°2, 30′ × 10′) (20°36, −1°27, 20′ × 20′), (20°36, −1°27, 10′ × 6′). SI 1, imbedded in the weak region CO 26, contains the intense CO 20, 24.

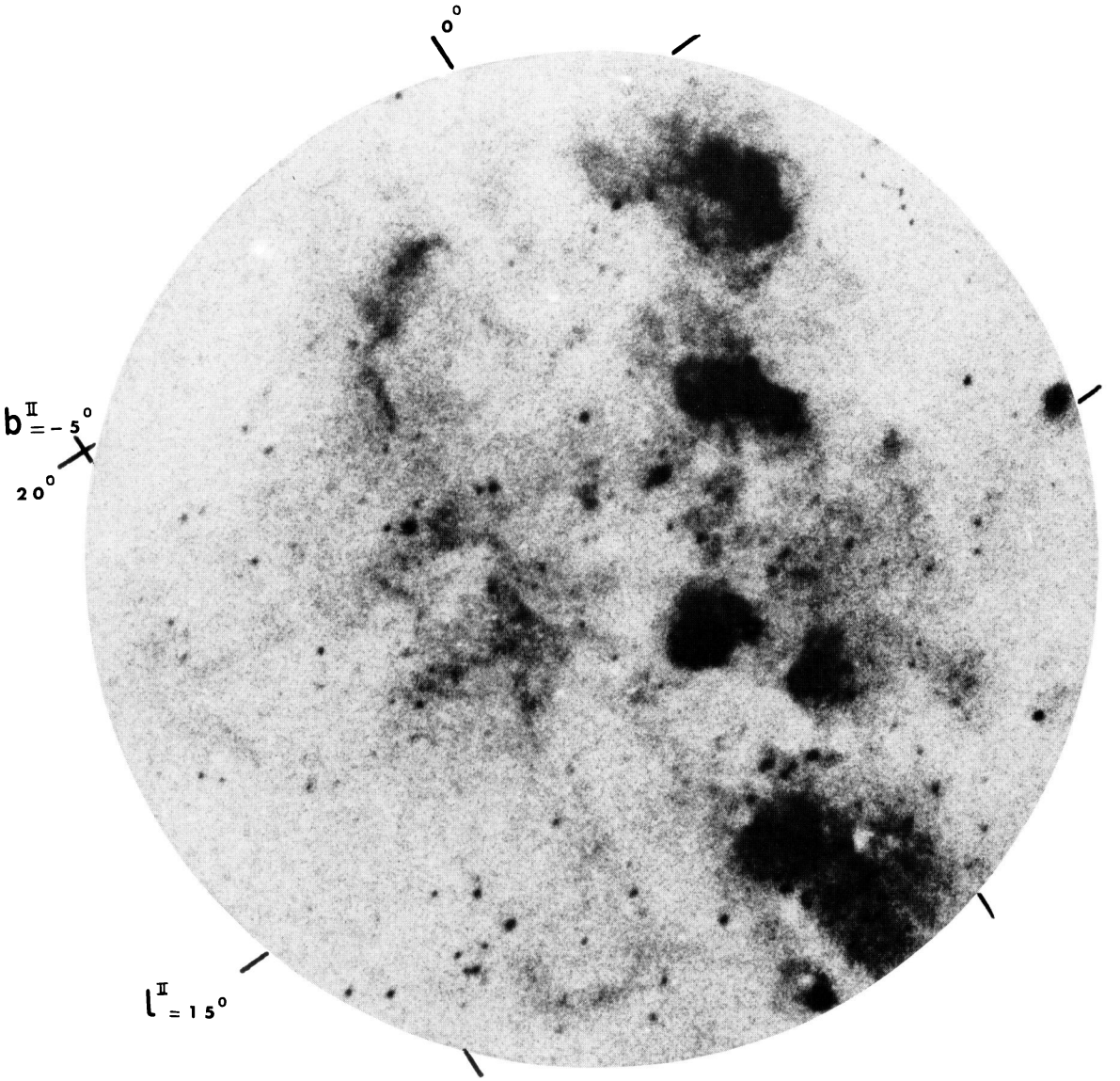

Plate 2 Detail of the new regions in Sagittarius-Scutum.

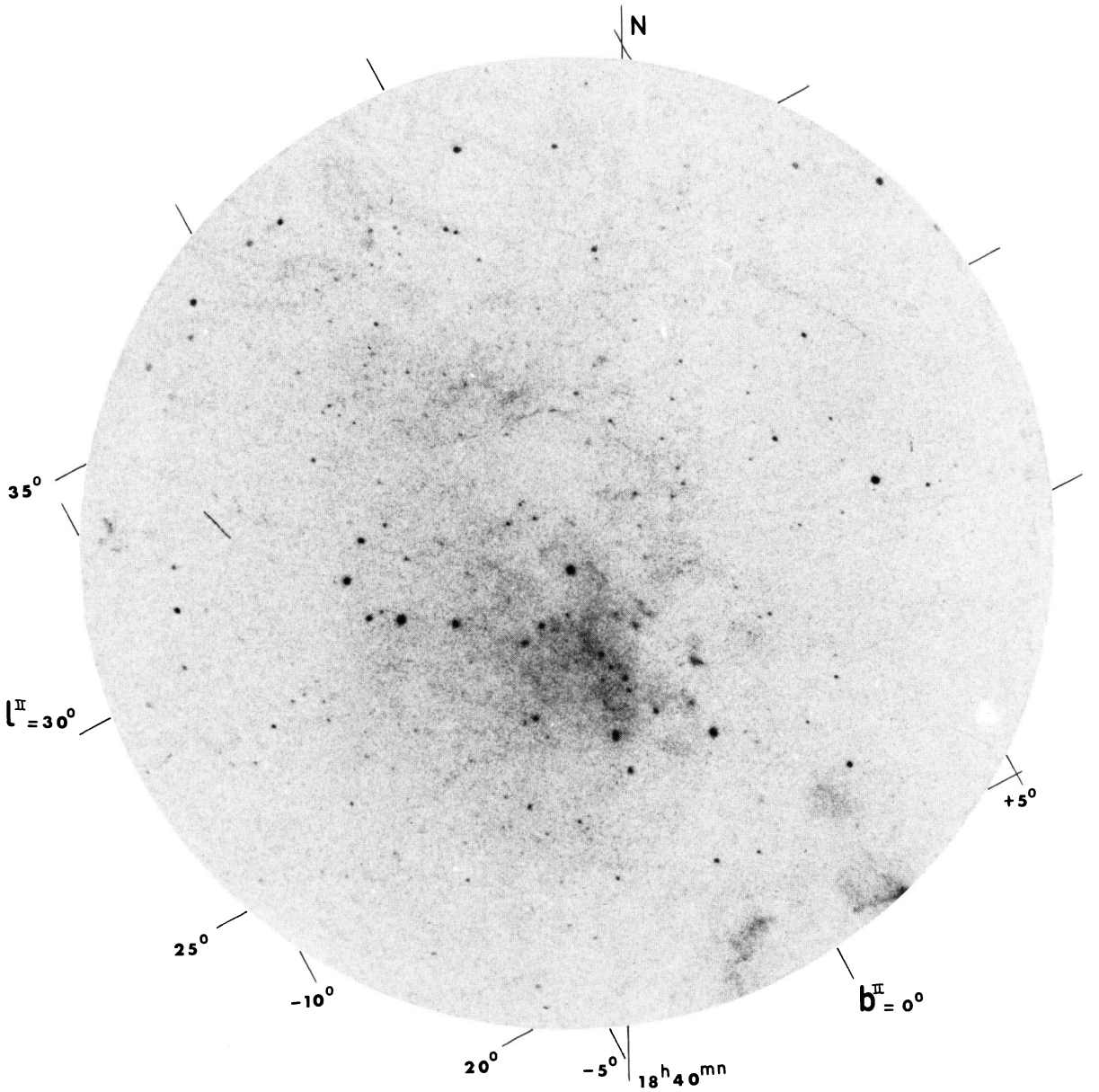

Plate 3 Scutum-Aquila $\alpha_{1950} = 18^h46^m$ $\delta_{1950} = -3°$. Exposure time 5h. HII regions no. 76 to 96.

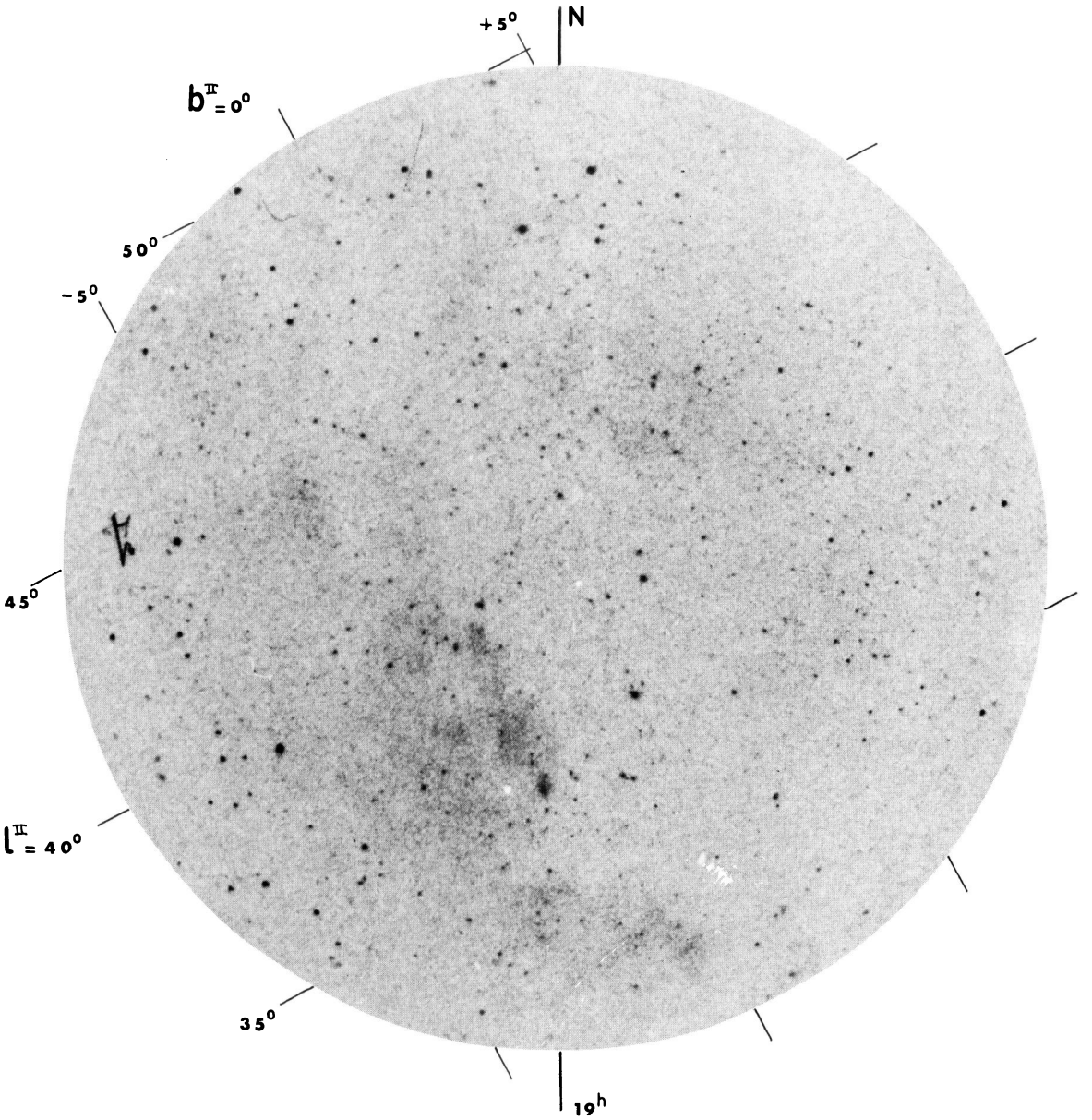

Plate 4 Aquila $\alpha_{1950} = 19^h$ $\delta_{1950} = +7°$. Exposure time 4^h40^m. HII regions no. 96 to 117. DU 20 contains SH 74.

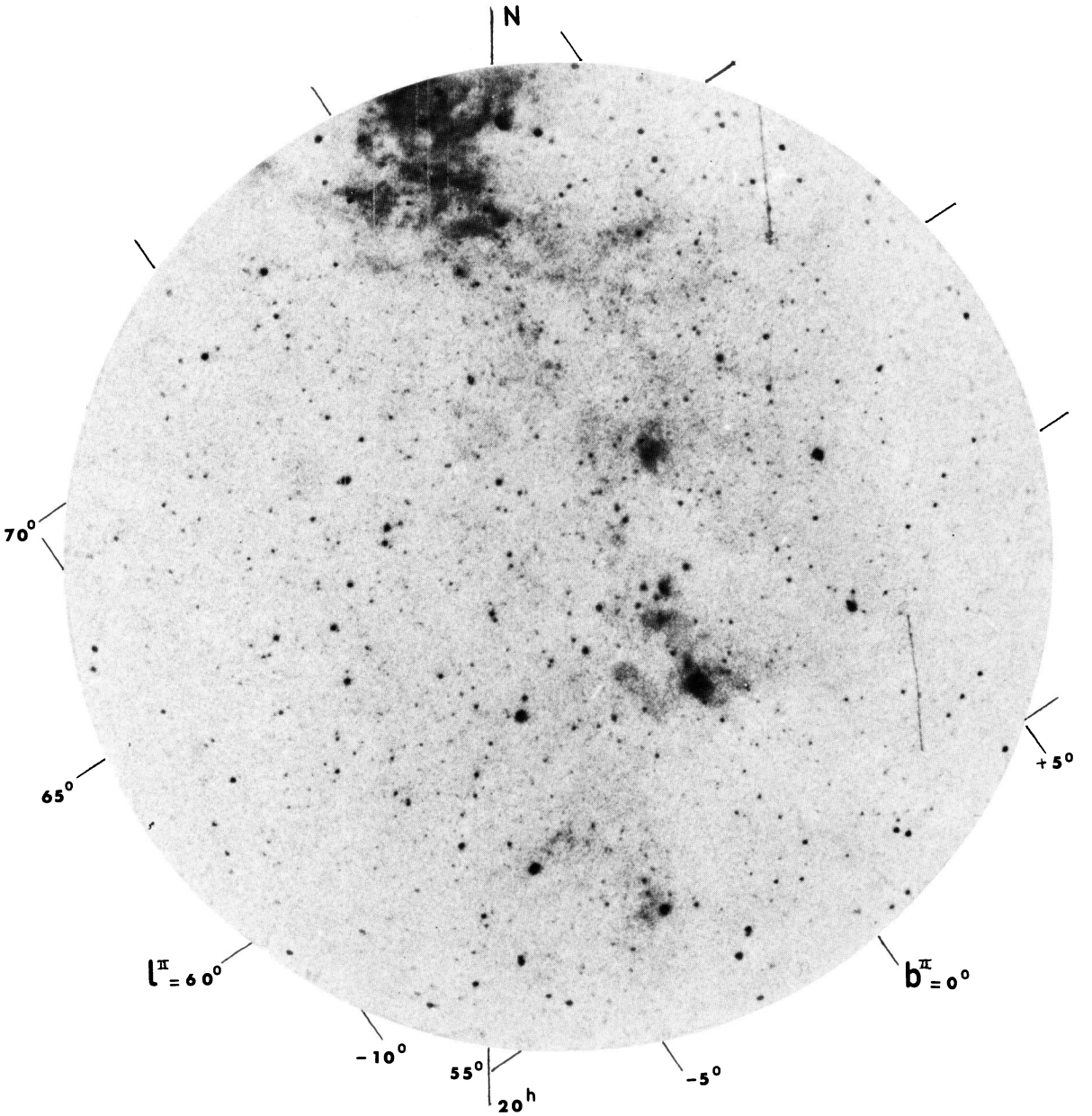

Plate 5 Vulpecula-Cygnus $\alpha_{1950} = 19^h55^m$ $\delta_{1950} = 27°$. Exposure time 4^h. HII regions no. 122 to 151. NGC 6820 (SH 86). DU 28 appears to be connected with SH 86 and SH 87 by a weak region. DU 34 contains Lynds (66°95, 1°30, 1′ × 3′), DU 40 contains Lynds (69°48, 2°29, 22′ × 3′).

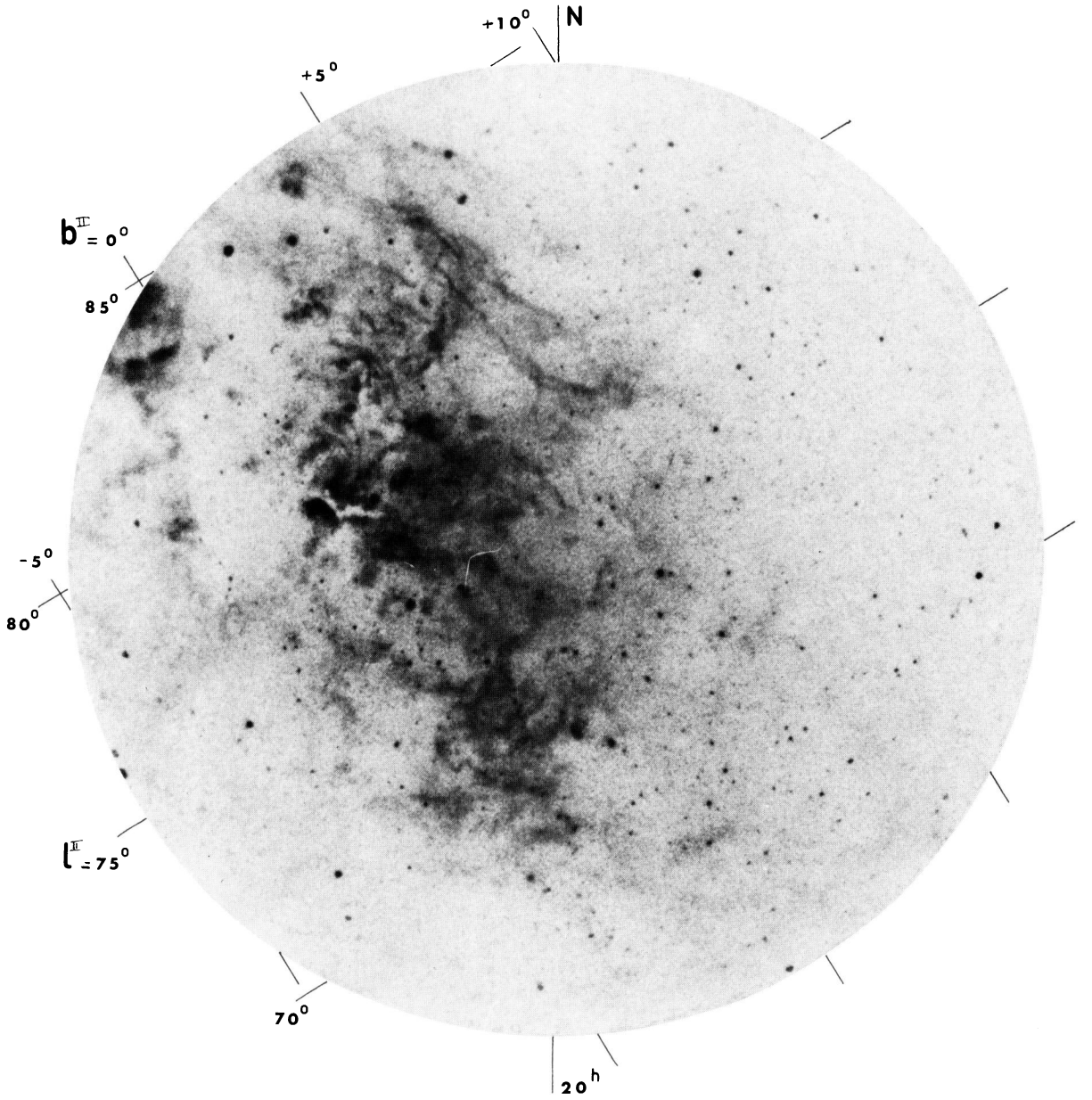

Plate 6 Cygnus $\alpha_{1950} = 20^h$ $\delta_{1950} = 39.3°$. Exposure time 3^h30^m. HII regions no. 145 to 191. γ Cygni and Cygnus nebulae (SH 108 and 109).

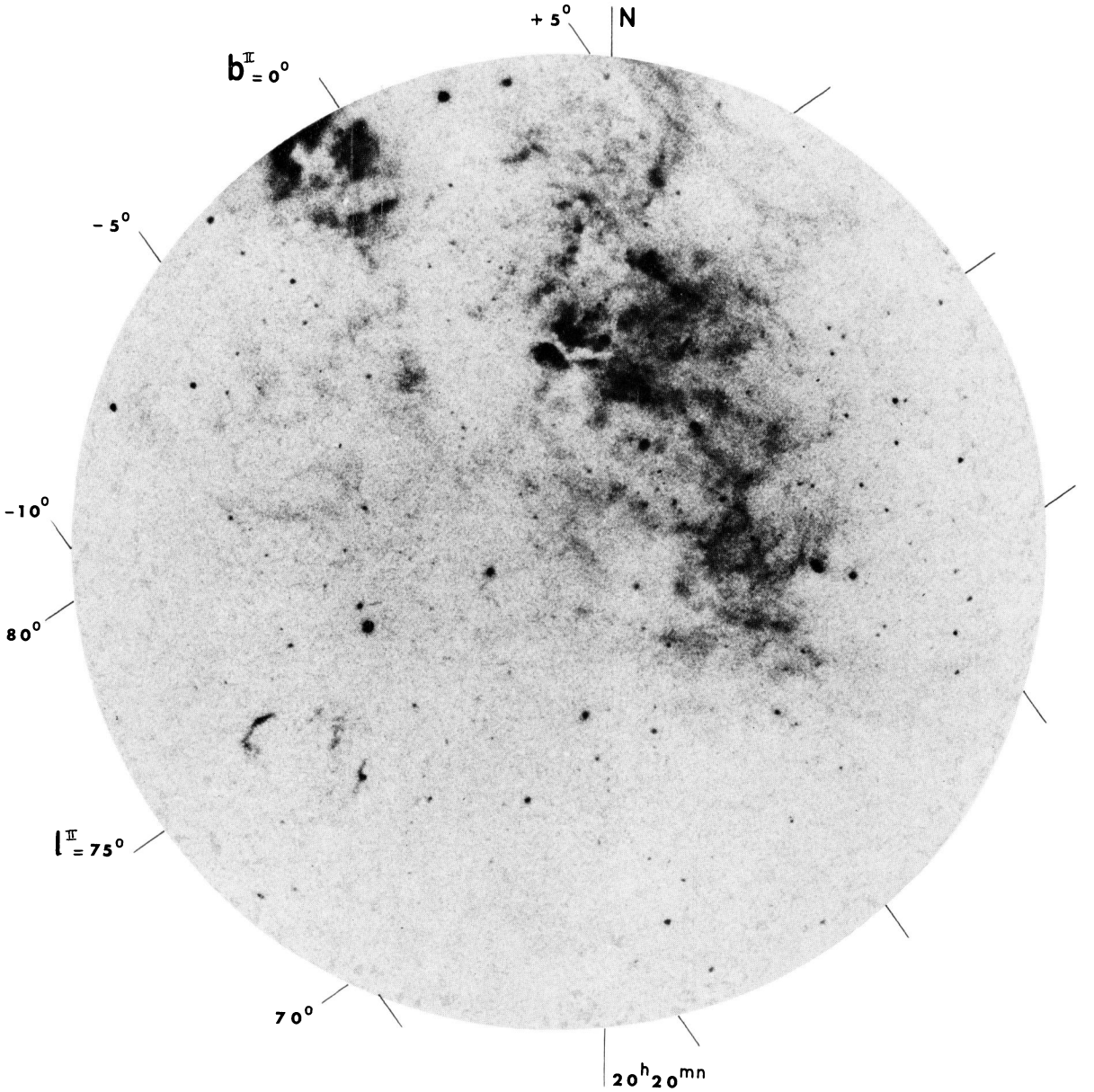

Plate 7 Cygnus $\alpha_{1950}=20^h25^m$ $\delta_{1950}=35.7°$. Exposure time 3^h50^m. HII regions no. 156 to 210. Network (SH 103), Cygnus (SH 109) and North America (SH 117) nebulae.

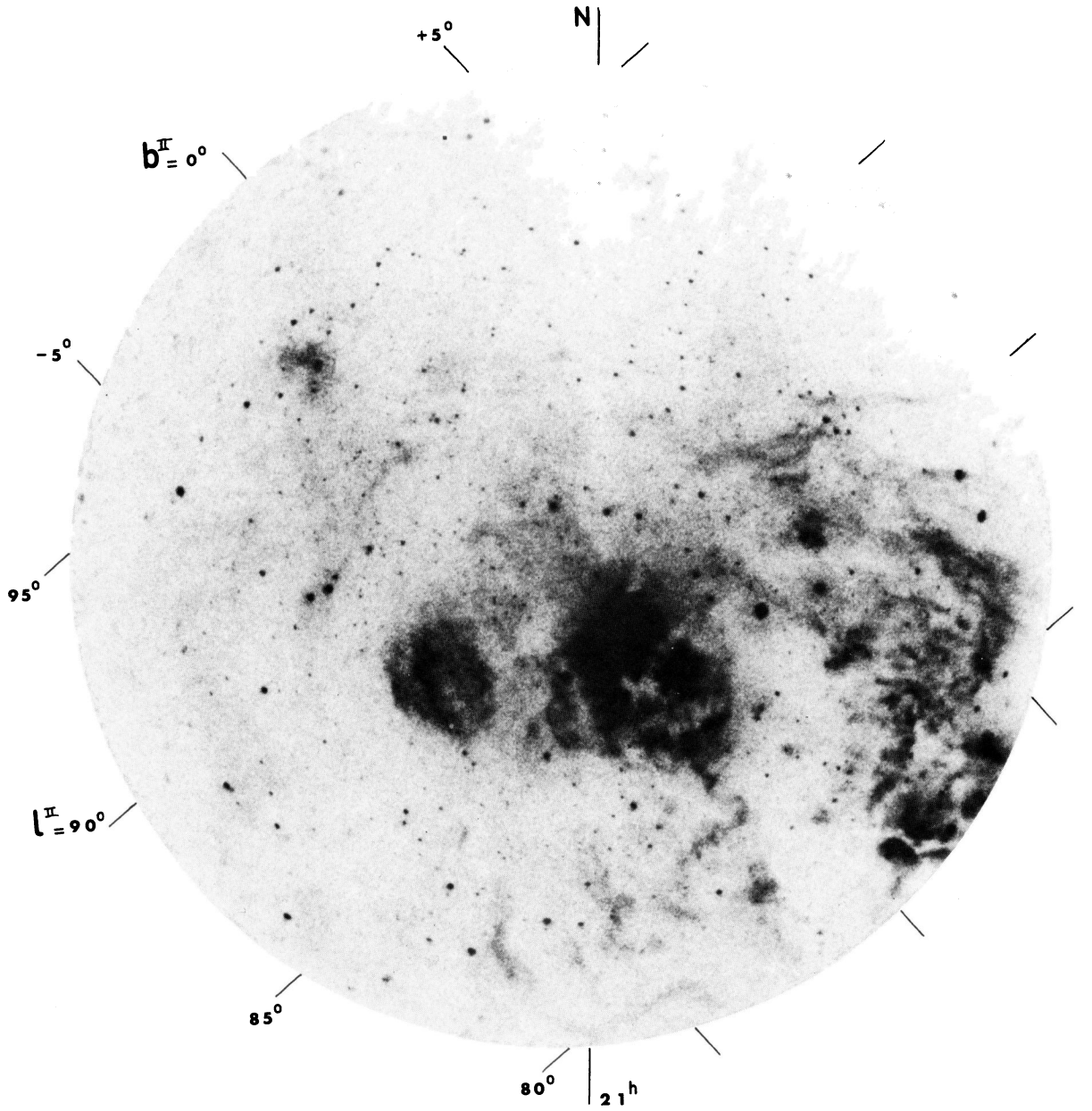

Plate 8 Cygnus-Cepheus $\alpha_{1950} = 21^h04^m$ $\delta_{1950} = 47°$. Exposure time 3^h30^m. HII regions no. 184 to 232. Cygnus (SH 109), γ Cygni (SH 108) and North America (SH 117) nebulae. DU 42 is an extension of Lynds (91°66, −2°54, 80′ × 10′), DU 46 contains SH 125.

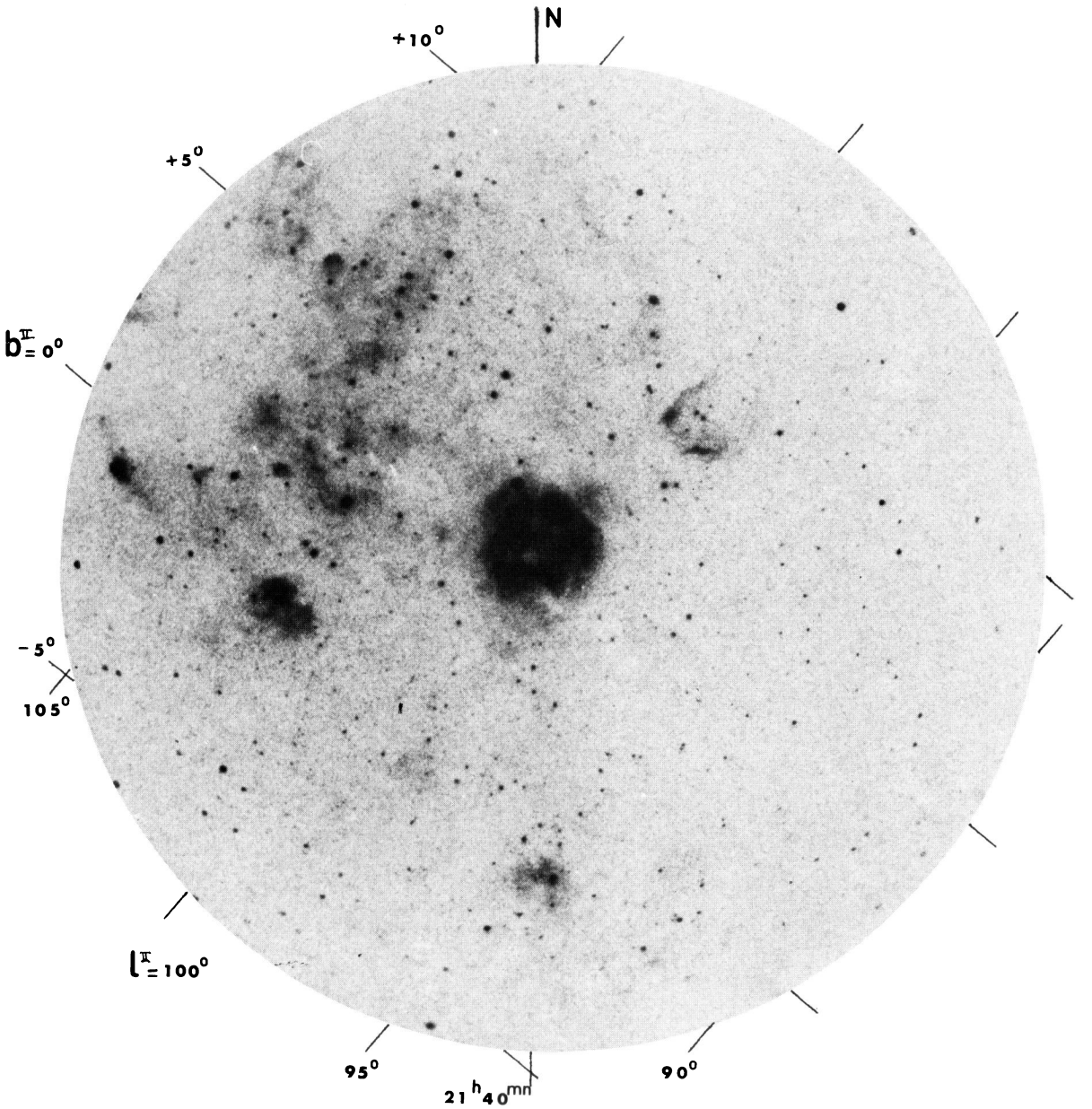

Plate 9 Cepheus $\alpha_{1950}=21^h40^m$ $\delta_{1950}=57°$. Exposure time 4^h. HII regions no. 231 to 250. IC 1396 (SH 131). CO 93, SH 139, CO 95, SH 140 appears to be connected by weaker regions. Lynds (105°30, 9°90, 2′ × 2′) is on the edge of DU 52.

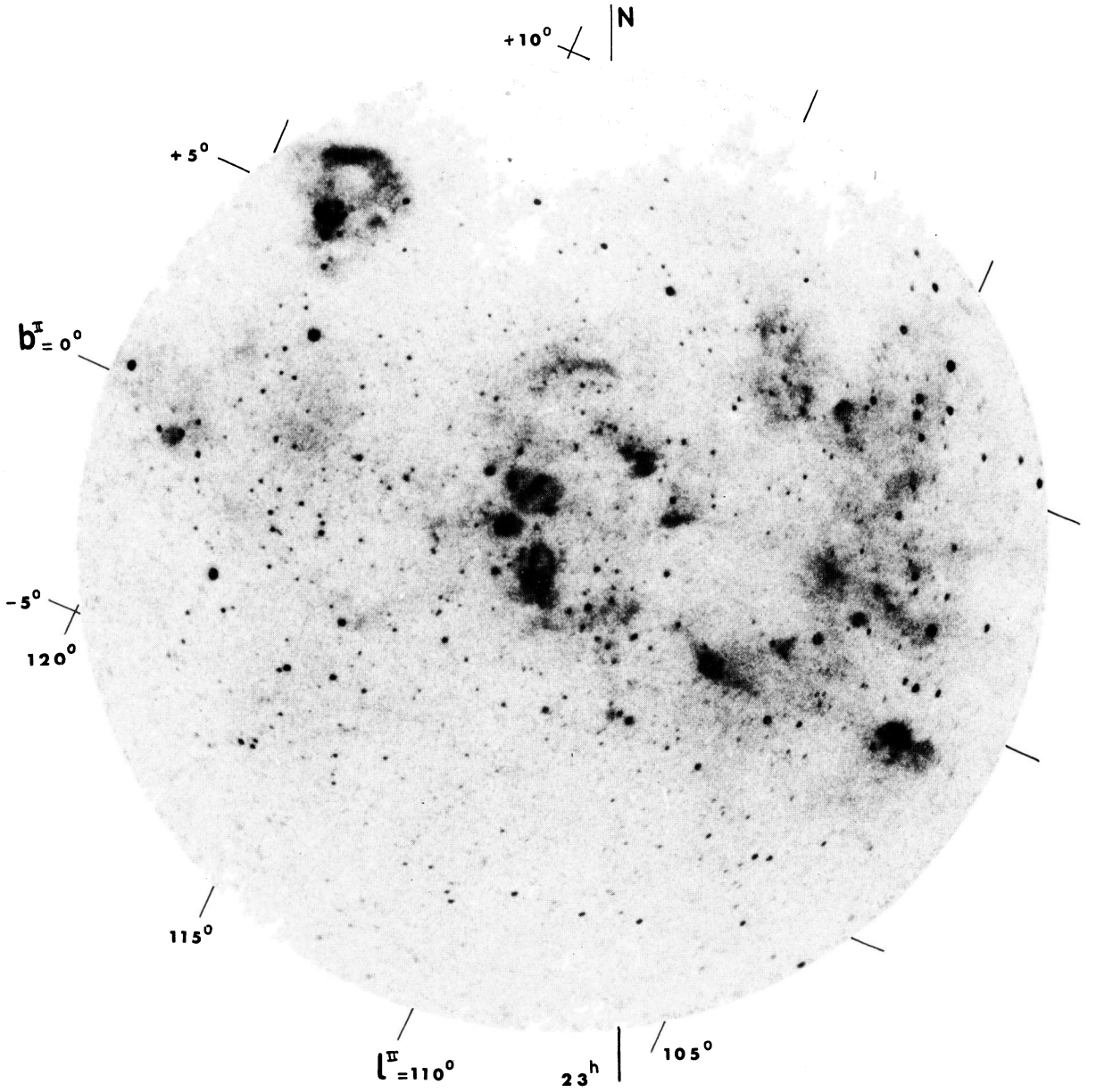

Plate 10 Cepheus-Cassiopeia $\alpha_{1950} = 23^h9^m$ $\delta_{1950} = 60.5°$. Exposure time 4^h. HII regions no. 246 to 308. NGC 7635 (SH 162), NGC 7822 (SH 171). DU 55 contains SH 152 and Lynds (116°81, 0°03, 30′ × 2′) is imbedded in DU 60.

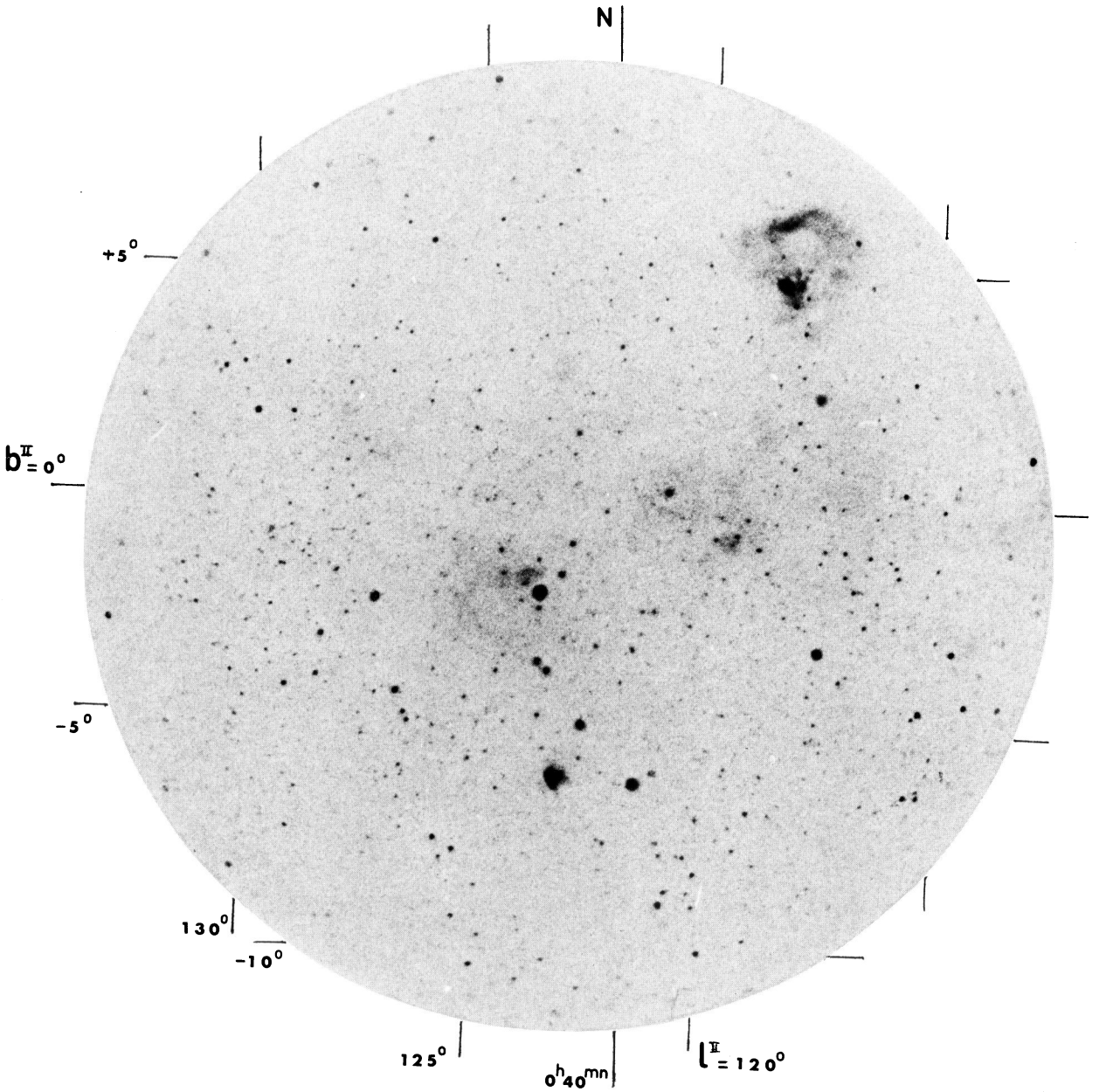

Plate 11 Cassiopeia $\alpha_{1950}=0^h50^m$ $\delta_{1950}=61.5°$. Exposure time 5^h30^m. HII regions no. 302 to 324. NGC 7822 (SH 171), NGC 281 (SH 284), γ Cas nebula (SH 185). DU 64 contains SH 186.

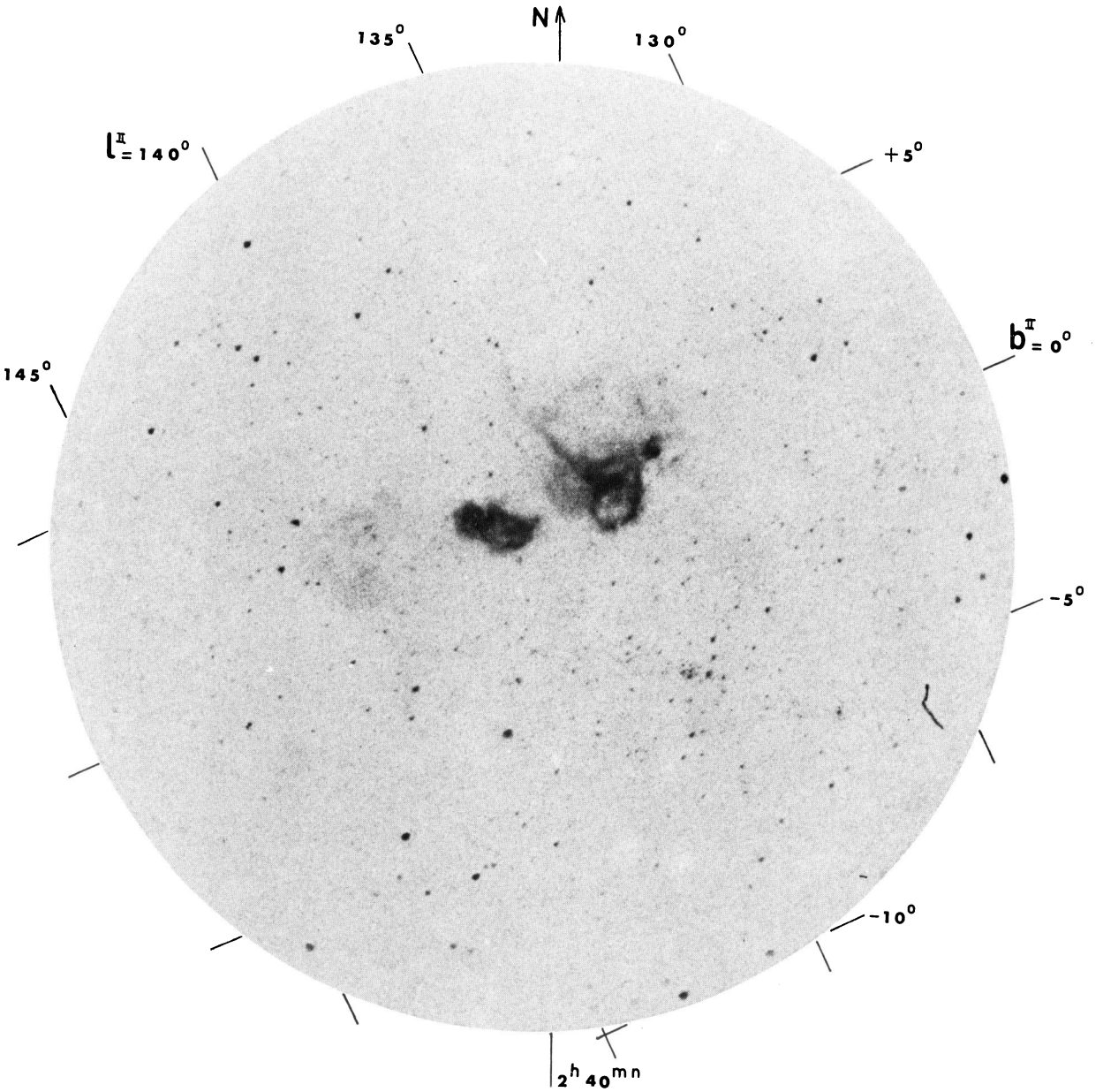

Plate 12 Cassiopeia-Perseus $\alpha_{1950}=2^h44^m$ $\delta_{1950}=59.8°$. Exposure time 7^h. HII regions no. 330 to 345. IC 1805 (SH 190), IC 1848 (SH 199).

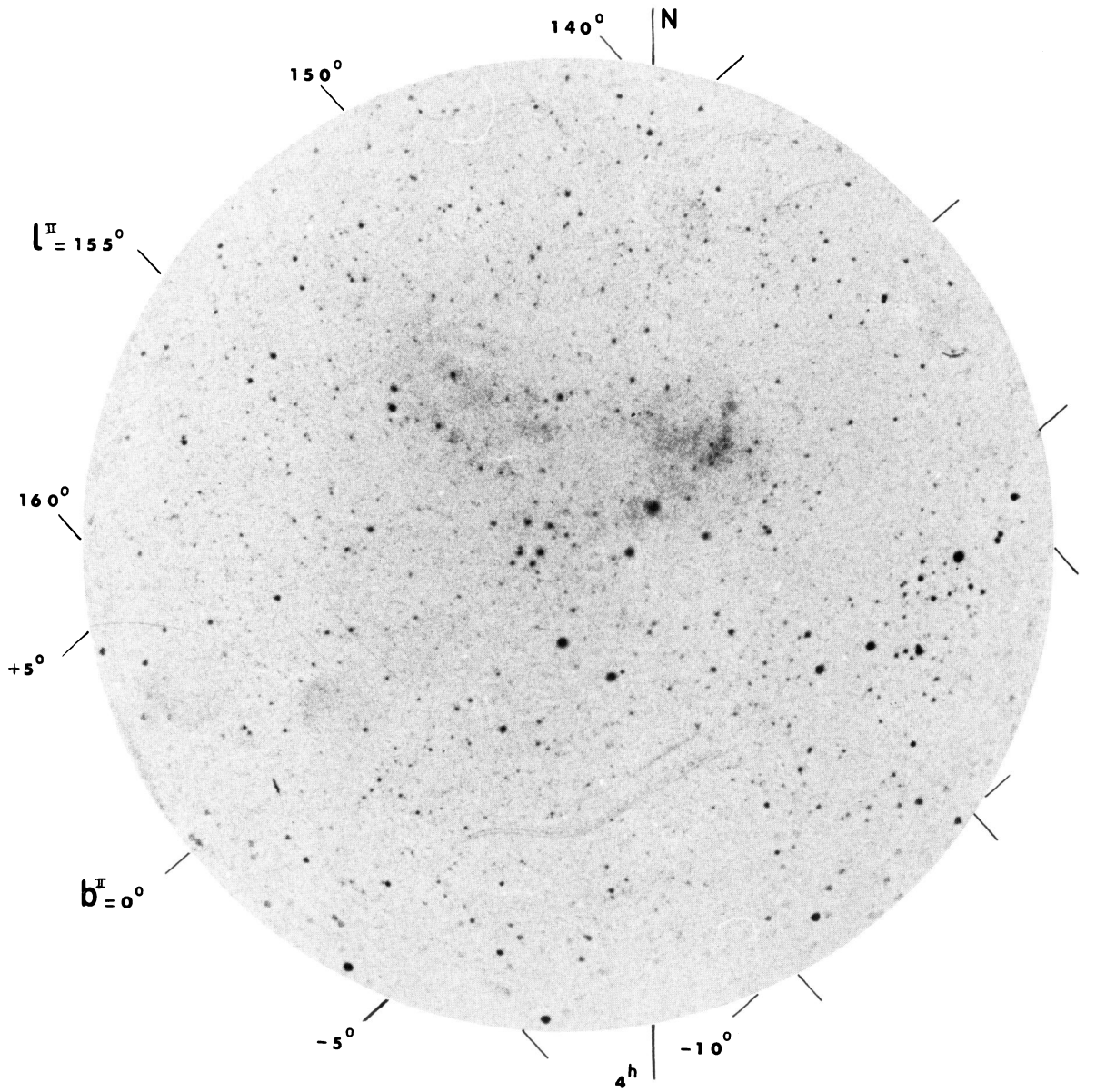

Plate 13 Perseus-Camelopardalis $\alpha_{1950}=4^h12^m$ $\delta_{1950}=50.3°$. Exposure time 5^h30^m. HII regions no. 344 to 363. SH 208 is on the edge of DU 75 which also contains SH 210 and SH 207.

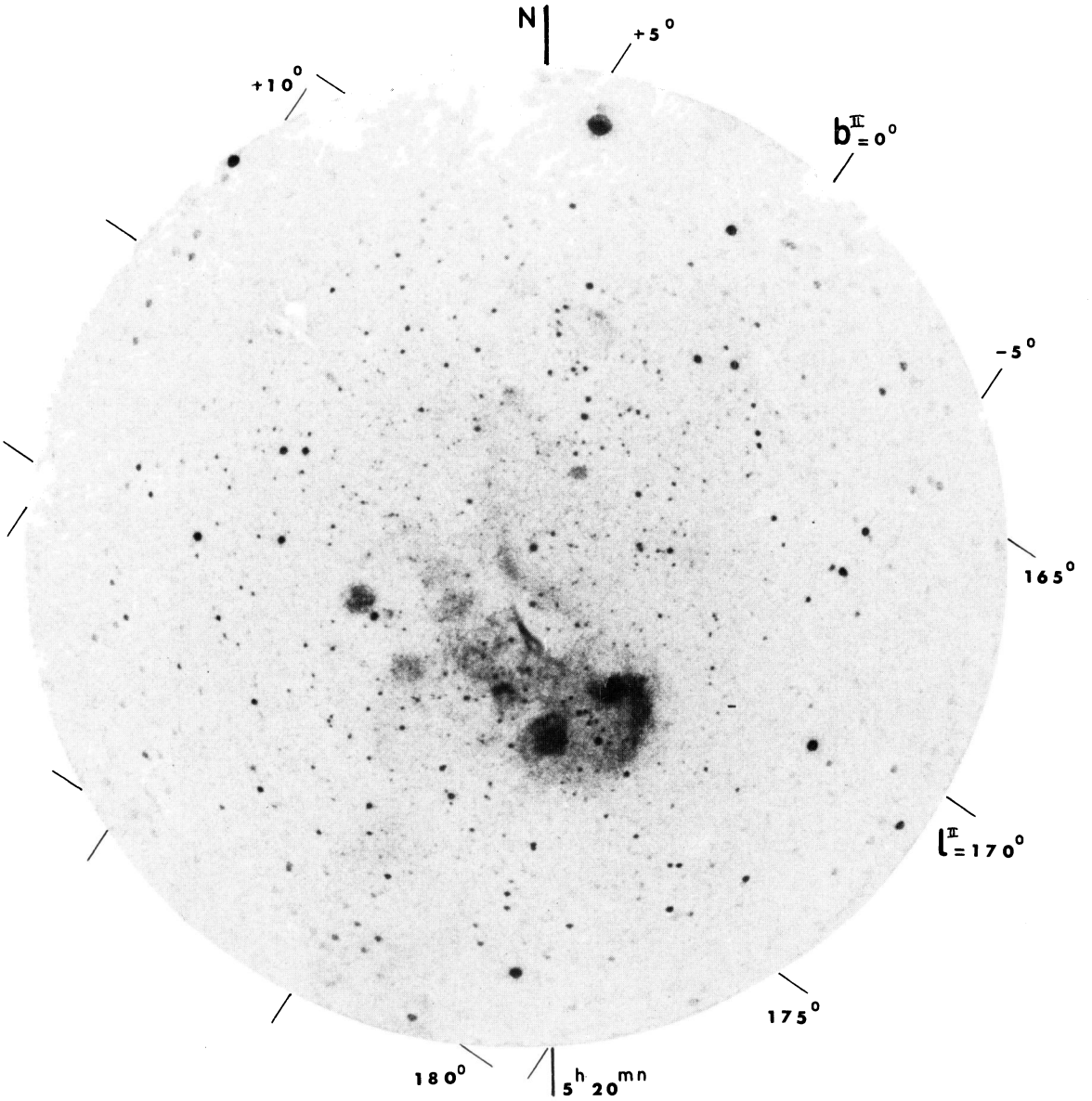

Plate 14 Auriga $\alpha_{1950} = 5^h24^m$ $\delta_{1950} = 37°$. Exposure time 3^h45^m. HII regions no. 366 to 386. IC 405 (SH 229), IC 410 (SH 236). CO 122 contains SH 231 and several weaker regions over 4°. DU 73 contains SH 225, DU 75 contains Lynds (171°10, 0°22, 180′ × 20′), DU 77 contains Lynds (177°8, −0°23, 22′ × 10′).

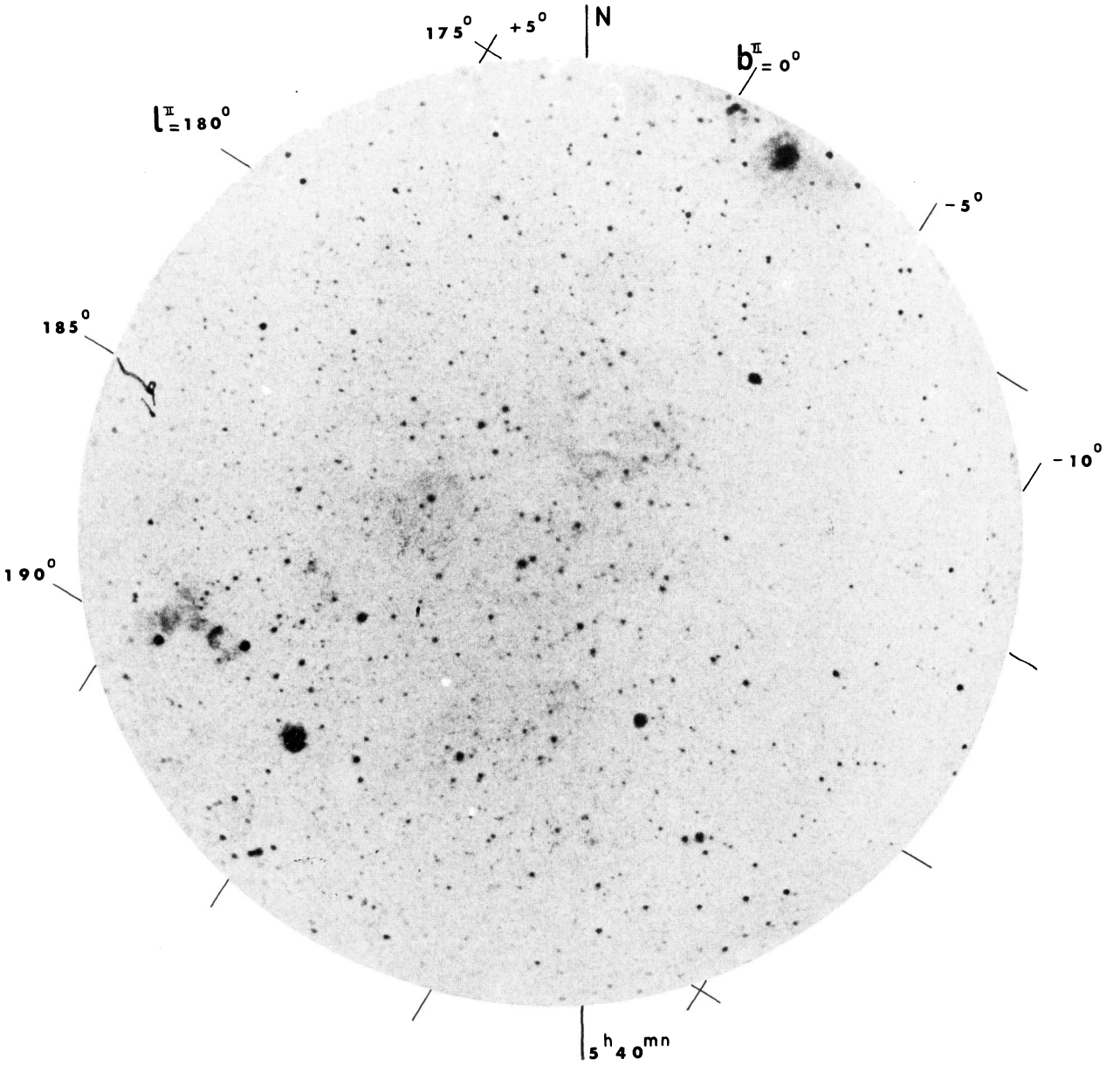

Plate 15 Taurus $\alpha_{1950}=5^h43^m$ $\delta_{1950}=+25.2°$. Exposure time 5^h40^m. HII regions no. 388 to 411. IC 443 (SH 248), NGC 2174–5 (SH 252).

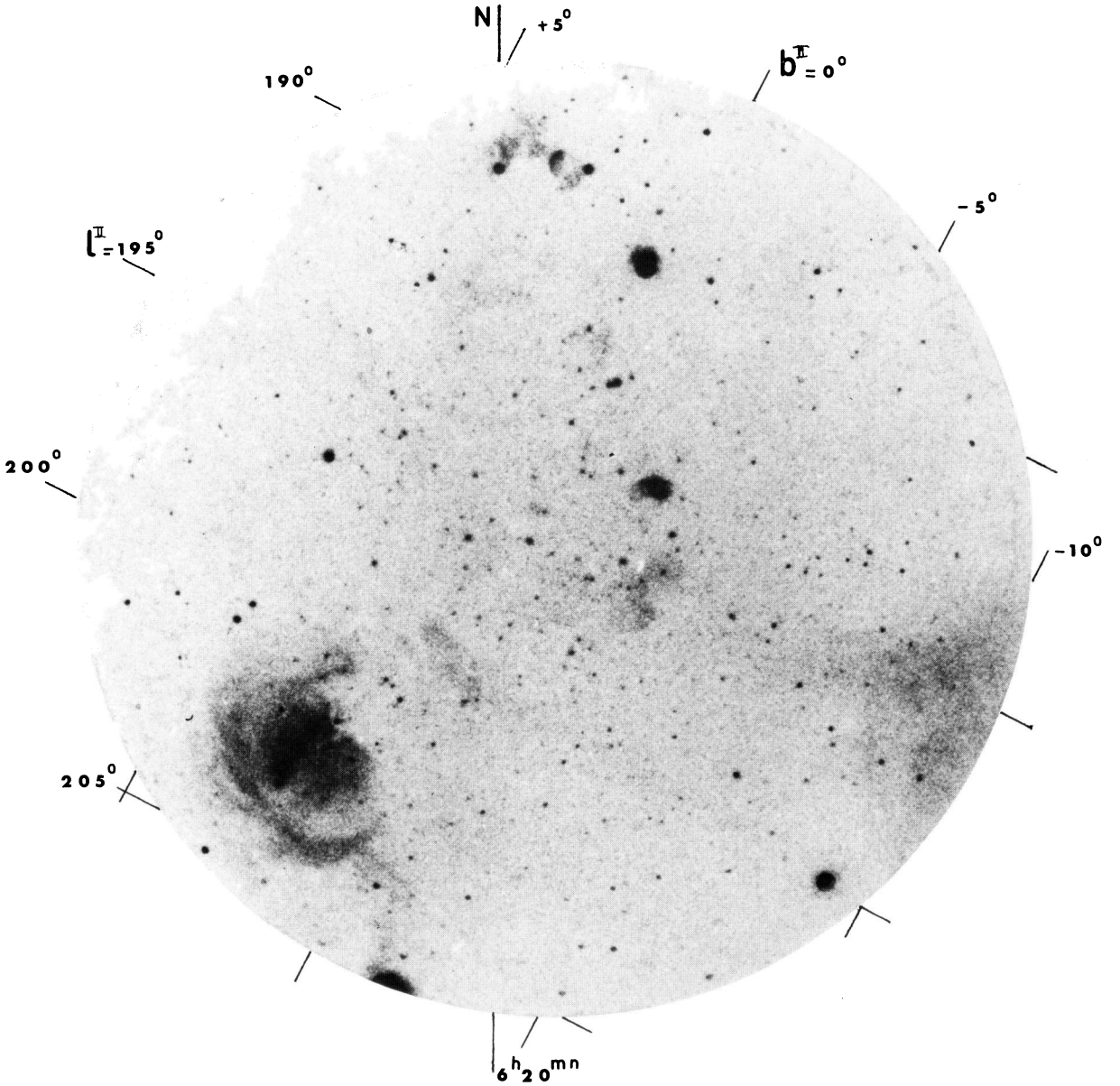

Plate 16 Orion-Monoceros $\alpha_{1950}=6^h16^m$ $\delta_{1950}=14.8°$. Exposure time 5^h25^m. HII regions no. 401 to 431. NGC 2264 (SH 273). Right, edge of eastern extension of λ Ori nebula (SH 264). DU 83 contains SH 253. DU 88 contains SH 269 and, at edge, SH 271, 272. SH 266 is on edge of DU 86.

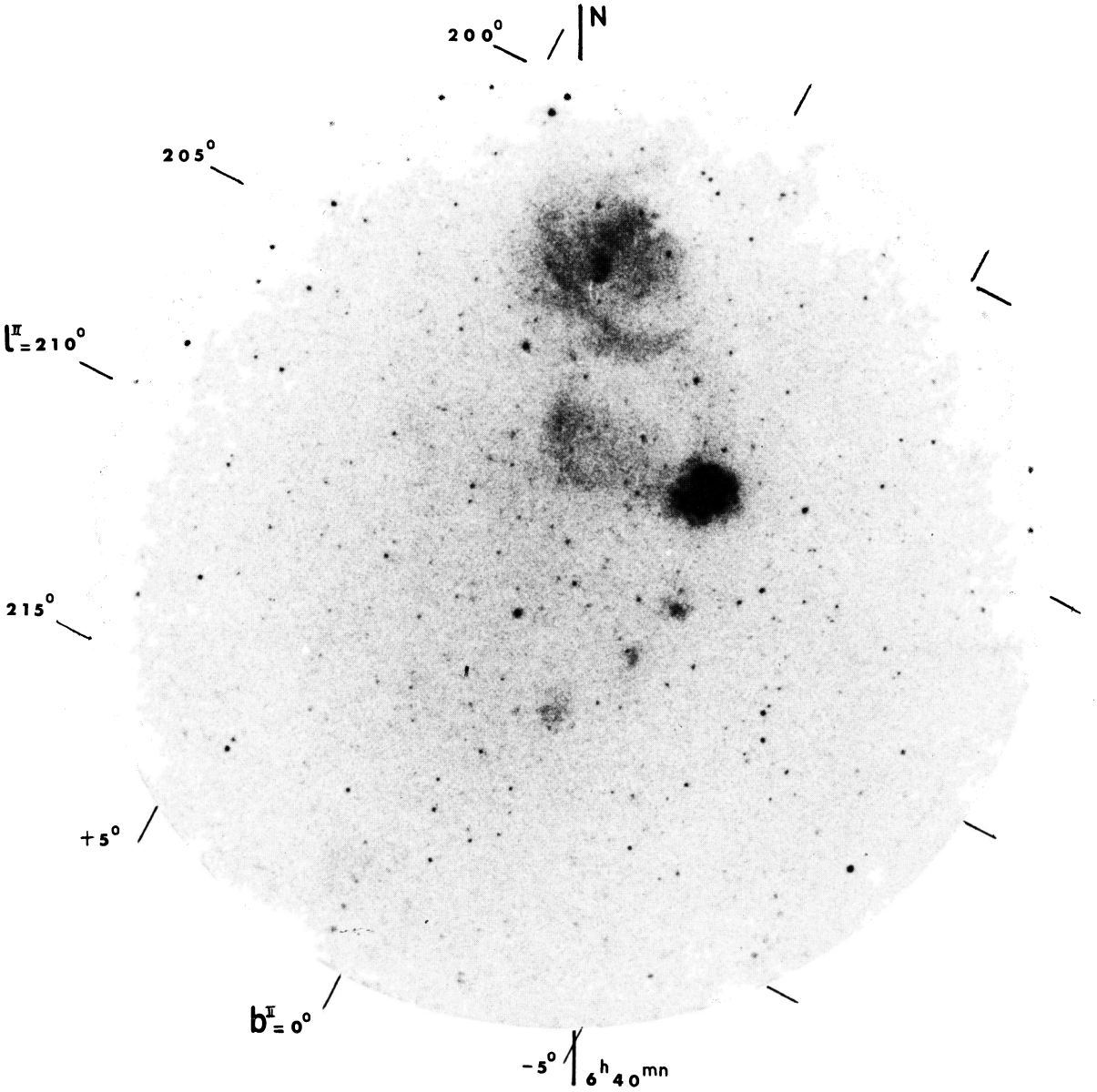

Plate 17 Monoceros $\alpha_{1950} = 6^h40^m$ $\delta_{1950} = 3.7°$. Exposure time 5^h20^m. HII regions no. 436 to 458. NGC 2264 (SH 273), NGC 2244 (SH 275).

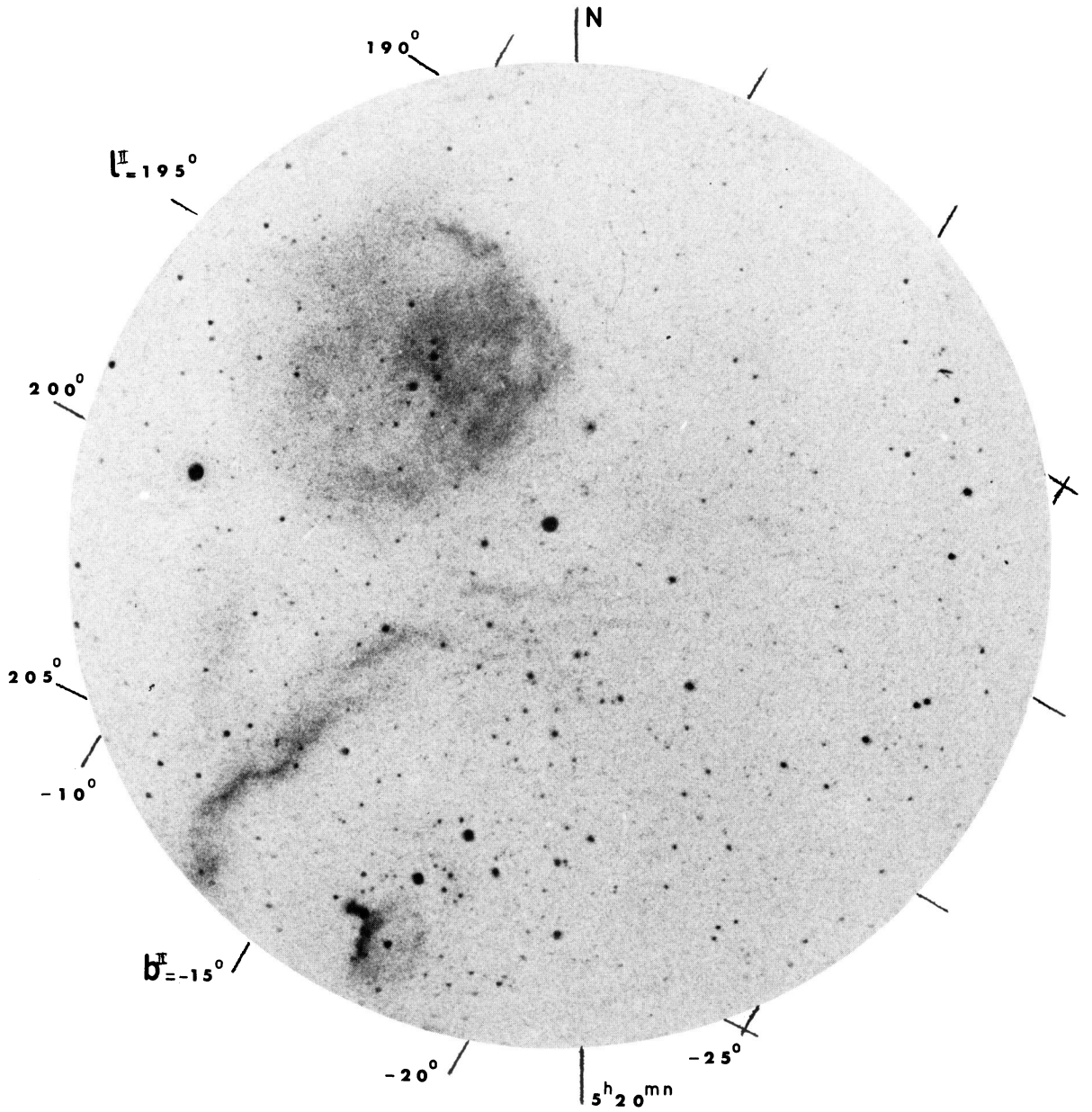

Plate 18 Orion $\alpha_{1950}=5^h22^m$ $\delta_{1950}=5.6°$. Exposure time 5^h. HII regions no. 410 to 438. λ Ori nebula (SH 264), northern extremity of the Barnard Loop.

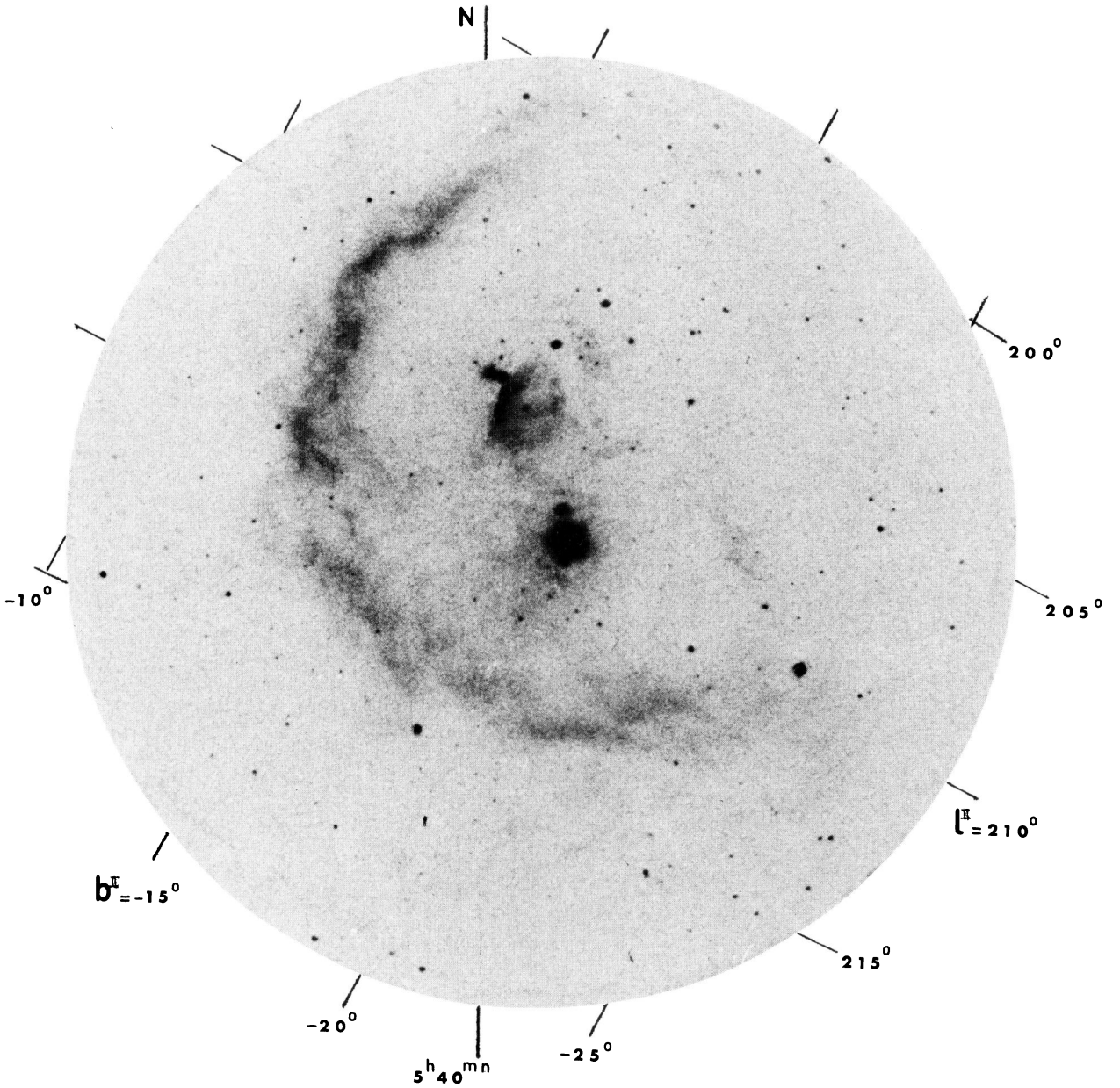

Plate 19 Orion $\alpha_{1950} = 5^h35^m$ $\delta_{1950} = -5.3°$. Exposure time 4^h20^m. HII regions no. 438 to 453. Barnard Loop (SH 276), Orion Nebula (SH 281). SH 276, 277, 281 appear connected by weak regions.

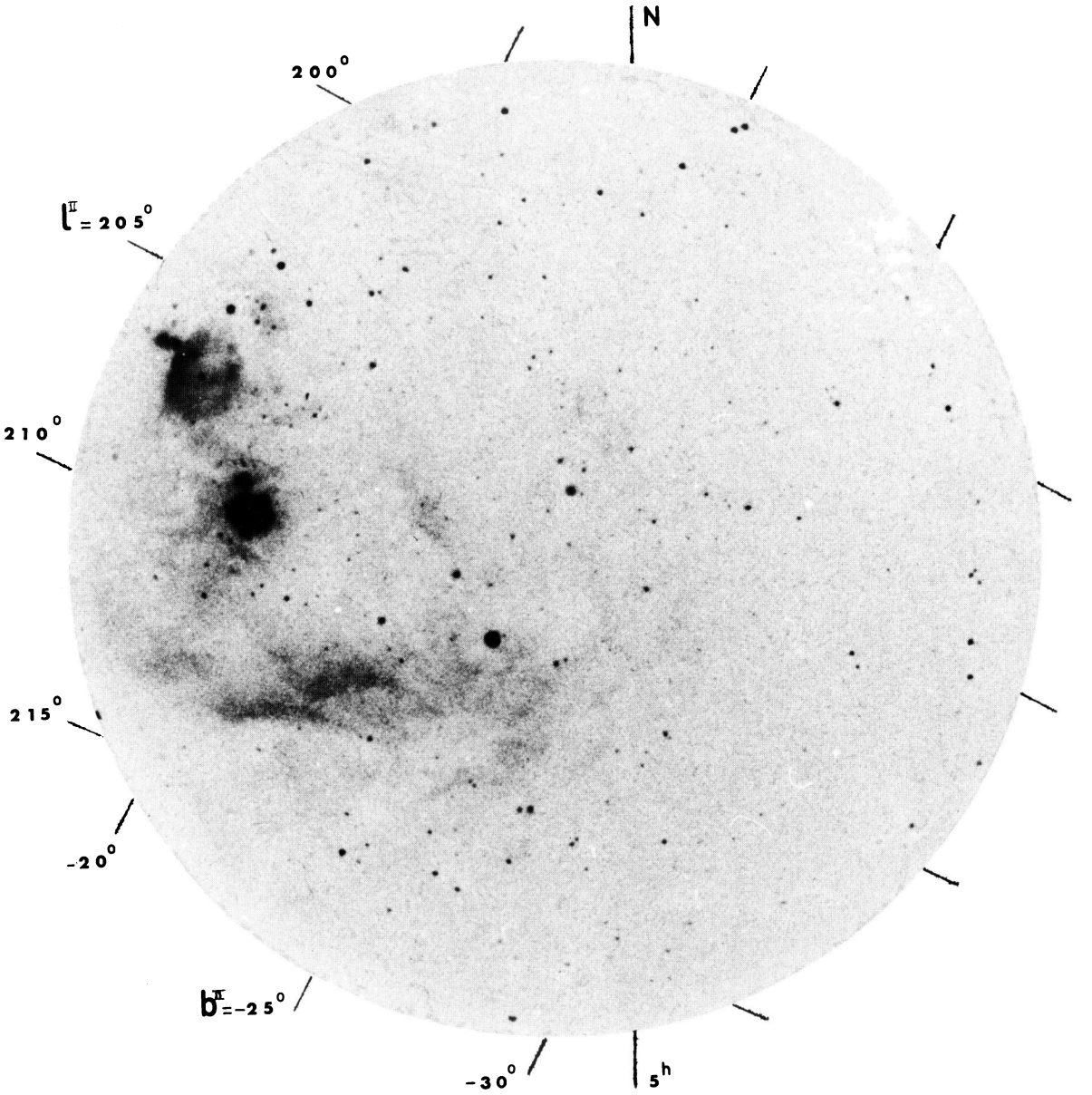

Plate 20 Orion $\alpha_{1950} = 5^h07^m$ $\delta_{1950} = -6.6°$. Exposure time 5^h30^m. HII regions no. 444 to 453. Western extremity of the Barnard Loop.