ANNALS OF HARVARD COLLEGE OBSERVATORY. VOL. LX. NO. VI.

NEBULAE DISCOVERED AT THE HARVARD COLLEGE OBSERVATORY.

TWENTY-EIGHT new nebulae were found by George P. Bond, Sidney Coolidge, Horace P. Tuttle, and Truman H. Safford, during the determination of the positions of very faint stars with the 15-inch Equatorial, in the years 1848 to 1863. This list was increased by thirteen during the administration of Joseph Winlock. From 1880 to 1883, a somewhat extensive examination of the spectrum of the stars was made by Edward C. Pickering, using a direct-vision prism placed in front of the eye-piece of the 15-inch Equatorial. This led to the discovery of several gaseous nebulae closely resembling stars.

Many departments of astronomy have been revolutionized by the application of photographic methods. Among them may be included the discovery of nebulae by means of their spectra. Many such objects have been found by Mrs. W. P. Fleming during the years 1891 to 1907. Nearly all the objects thus detected have a spectrum showing the characteristic bright lines of gaseous nebulae. The photographs on which they were found were made with an objective prism placed in front of the lens of the telescope.

The positions in the following tables are given only to tenths of a minute of time in right ascension, and to whole minutes of arc in declination, since no greater precision seemed to be necessary in the case of objects which are often large and ill-defined. This is especially true, since the published positions of nebulae are often in error by a large amount in one or both coordinates. Professor Herbert A. Howe, who has redetermined the positions of a large number of nebulae, states in the Monthly Notices, 61, 29, "When the position of a nebula is given below it is to be understood that the position previously published in the N. G. C. or Index Catalogue, or in some later list sent out by the discoverer, is erroneous by at least ten seconds in right ascension or two minutes in declination. Usually the errors are much larger than these."

Nebulae Announced, 1848 to 1907.

The letters H. V., followed by a number indicating the order of discovery, have proved a convenient designation for the variable stars discovered at the Harvard College Observatory. The letters H. N., followed by a number, will be used in the same way to indicate the nebulae discovered here. A list of those discovered and announced before August, 1907, is given in Table I, with the exception of those announced in Circular 38, and discovered by Dr. Stewart. These are given in Table III. The H. N. number is given in the first column of Table I. The number in Dreyer's New General Catalogue of Clusters and Nebulae, Mem. Roy. Astron. Soc., 49, or in his Index Catalogue of Nebulae found in the years 1888 to 1894, Mem. Roy. Astron. Soc., 51, 185, is given in the second column. The numbers taken from the second work are distinguished from those in the first, by placing them in Italics. The remaining columns contain the date of discovery, or year of announcement, the right ascension for 1900, the declination for 1900, the name of the discoverer, and a reference to the announcement. H. A. and H. C. are here used to refer to the Harvard Annals and Circulars, respectively.

TABLE I.

NEBULAE DISCOVERED AT HARVARD.

H. N.	N. G. C.	Date.	R. A. 1900.	Dec. 1900.	Discoverer.	Reference.
1	7150	1848, Feb. 10	21 46.7	+49 17	G. P. Bond	A. N. **61**, 193
2	7692	" Oct. 23	23 27.6	− 6 9	" "	" "
3	2054	1850, Oct. 6	5 40.1	−10 7	" "	" "
4	7793	" Nov. 7	23 53.4	−33 8	" "	" "
5	2515	1852, Sept. 1	7 57.6	+20 28	" "	" "
6	6859	" Nov. 24	19 58.7	+ 0 10	" "	" "
7	219	1853, Jan. 5	0 37.1	+ 0 21	" "	" "
8	391	" " 8	1 2.3	+ 0 24	" "	" "
9	2399	" Feb. 26	7 24.7	− 0 0	" "	" "
10	2400	" " "	7 24.8	0 0	" "	" "
11	5632	" May 9	14 24.2	0 0	" "	" "
12	5651	" " "	14 26.1	+ 0 7	" "	" "
13	5658	" " "	14 26.8	+ 0 4	" "	" "
14	5366	1855, June 8	13 51.4	+ 0 17	" "	" "
15	3123	1859, March 31	10 1.9	+ 0 33	S.Coolidge	" "
16	3229	" " "	10 18.3	+ 0 34	" "	" "

H. N.	N. G. C.	Date.	R. A. 1900.	Dec. 1900.	Discoverer.	Reference.
17	5404	1859, April 29	13 56.0	+ 0 34	S. Coolidge	A. N. **61**, 193
18	5200	" " 30	13 26.6	+ 0 29	" "	" "
19	5310	" " "	13 44.7	+ 0 34	" "	" "
20	4582	" May 3	12 33.1	+ 0 44	" "	" "
21	6643	" Sept. 1	18 22.6	+74 31	H. P. Tuttle	" "
22	7403	" Nov. 15	22 48.0	+ 0 57	S. Coolidge	" "
23	1312	" Dec. 16	3 18.5	+ 0 50	" "	" "
24	1251	1860, Jan. 25	3 9.0	+ 1 5	" "	" "
25	2189	1863, March 19	6 7.2	+ 1 9	T. H. Safford	" "
26		" " "	6 7.2	+ 1 9	" "	" "
27	2198	" " "	6 8.7	+ 1 1	" "	" "
28	219	" Sept. 16	0 37.1	+ 0 21	G. P. Bond	" "
29	3355	1866, April 12	10 38.7	−22 41	S. P. Langley	H. A. **13**
30	5872	1867, July 30	15 5.5	−11 5	J. Winlock	" "
31	5883	" " "	15 9.6	−14 15	" "	" "
32	570	" Oct. 21	1 23.9	− 1 28	G. M. Searle	" "
33	548	" Nov. 2	1 20.9	− 1 45	" "	" "
34	565	" " "	1 23.1	− 1 50	" "	" "
35	4247	1868, Feb. 25	12 12.8	+ 7 51	" "	" "
36	5487	" March 22	14 4.7	+ 8 32	" "	" "
37	4058	" " 24	11 58.7	+ 4 6	" "	" "
38	1170	1869, Dec. 31	2 56.5	+26 41	C. S. Pierce	" "
39	3097	1870, March 24	9 57.2	+60 36	E. P. Austin	" "
40	3315	" " "	10 32.6	−27 14	" "	" "
41	3317	" " "	10 32.9	−27 0	" "	" "
42	6565	1880, July 14	18 5.6	−28 12	E. C. Pickering	A. J. S. **120**, 305
43	6620	" Sept. 3	18 16.6	−26 53	" "	" "
44	6881	1881, Nov. 25	20 7.2	+37 7	" "	Dun Echt Circ. 43
45	6537	1882, July 15	17 59.3	−19 51	" "	Obs. **5**, 295
46	6790	" " 16	19 17.9	+ 1 19	" "	" "
47	6578	" Aug. 18	18 8.9	−20 19	" "	" "
48	6439	" " "	17 42.5	−16 29	" "	" "
49	6567	" " "	18 7.8	−19 6	" "	" "
50	6741	" " 19	18 57.5	− 0 35	" "	" "
51	6807	" Sept. 4	19 29.6	+ 5 29	" "	" "
52	6803	" " 17	19 26.6	+ 9 52	" "	Obs. **5**, 342
53	6766	1883, May 8	20 7.2	+46 10	" "	A. N. **105**, 335
54	6833	" " "	19 46.9	+48 42	" "	" "
55	6879	"	20 5.9	+16 38	" "	Mem. R. A. S. **49**, 8
56	*424*	1888, June 27	5 28.6	− 0 23	W. P. Fleming	H. A. **18**, 115
57	*426*	" " "	5 31.7	− 0 18	" "	" "
58	*423*	" " "	5 28.3	− 0 41	" "	" "
59	*435*	" " "	5 38.0	− 2 21	" "	" "
60	*432*	" " "	5 35.9	− 1 32	" "	" "
61	*431*	" " "	5 35.2	− 1 30	" "	" "
62	*434*	" " "	5 36.1	− 2 27	" "	" "

H. N.	N. G. C.	Date.	R. A. 1900.	Dec. 1900.	Discoverer.	Reference.
63	*420*	1888, June 27	5 27.3	− 4 34	W. P. Fleming	H. A. **18**, 115
64	*428*	" " "	5 31.8	− 6 34	" "	" "
65	*430*	" " "	5 33.7	− 7 8	" "	" "
66	*421*	" " "	5 27.5	− 8 9	" "	" "
67	*427*	" " 28	5 31.7	− 6 43	" "	" "
68	..	1889	5 ..	0 ..	W. H. Pickering	Sid. Mess., **9**, 1
69	*418*	1891	5 22.9	−12 46	W. P. Fleming	A. N. **128**, 11
70	..	1893	10 6.1	−62 5	" "	" "
71	..	"	15 22.2	−50 14	" "	" "
72	..	1894	16 55.6	−21 40	" "	A. A. P. **13**, 502
73	*1297*	"	19 10.5	−39 47	" "	A. N. **135**, 195
74	*1292*	"	18 38.4	−27 55	" "	A. N. **137**, 72
75	..	1895	7 19.5	+ 9 7	" "	A. N. **138**, 175
76	..	"	7 42.0	−34 8	" "	" "
77	..	1896	18 39.3	−33 27	" "	H. C. 9
78	..	"	20 15.6	+16 25	" "	"
79	..	1898	6 17.1	−12 56	" "	H. C. 32
80	..	"	9 6.1	−69 32	" "	"
81	..	1899	18 56.2	−13 18	" "	H. C. 42
82	..	1901	19 15.3	− 0 19	" "	H. C. 56
83	..	"	1 6.2	−73 44	" "	H. C. 60
84	..	"	4 49.9	−69 21	" "	"
85	..	"	4 52.6	−69 33	" "	"
86	..	"	4 55.1	−69 21	" "	"
87	..	"	4 56.8	−66 32	" "	"
88	..	"	4 57.3	−66 33	" "	"
89	..	"	4 57.5	−68 35	" "	"
90	..	"	5 22.2	−68 3	" "	"
91	..	"	5 22.5	−68 4	" "	"
92	..	"	5 41.4	−69 43	" "	"
93	..	"	13 26.4	−65 28	" "	"
94	..	"	14 16.1	−43 41	" "	"
95	..	"	16 58.1	−40 44	" "	"
96	..	"	17 3.5	−55 16	" "	"
97	..	"	17 38.1	−44 52	" "	"
98	..	"	18 11.1	−46 2	" "	"
99	..	"	18 27.9	−22 43	" "	"
100	..	"	19 11.0	− 9 14	" "	"
101	..	1904	9 35.9	−59 38	" "	H. C. 76
102	..	"	22 19.9	+50 28	" "	"
103	..	1905	1 50.2	+62 49	" "	H. C. 98
104	..	"	21 28.7	+44 10	" "	"
105	..	1906	5 48.9	+46 6	" "	H. C. 111
106	..	1907	10 56.5	−64 42	" "	H. C. 124
107	..	"	13 2.2	−67 6	" "	"
108	..	"	16 7.0	+12 20	" "	"

Nebulae Discovered by Delisle Stewart.

An examination of photographs taken with the Bruce Telescope was made by Dr. Delisle Stewart at the Arequipa Station of the Harvard Observatory, during the years 1898 to 1901. The work was undertaken for the special purpose of discovering new nebulae and clusters, but other objects, such as asteroids and meteors, were incidentally observed. The large number of objects found rendered desirable some rapid and sufficiently accurate means of determining the positions. The method described below was devised by Dr. Stewart, and was employed by him in determining the positions given in Tables III, IV, and V.

Photographic plates were exposed at different declinations, with the telescope on the meridian, and at rest, so that the stars formed trails across the plates. The shutter was closed once a minute, breaking the trails so as to indicate the minutes in right ascension. Reading scales, graduated to conform to these trails, have the advantage of having been traced by the telescope itself. The trail plates were fastened, film up, on a table, and a wooden strip, pivoted at one end, was made to swing horizontally over them. The direction of the table and its distance from the pivot were adjusted until the fine point of a pencil would follow the middle of the trails on the plates without sensible deviation. Celluloid films were then placed over the plates, and the corresponding curves of declination were traced on them. Intermediate curves were drawn corresponding to every two minutes of declination. The lines corresponding to each minute in right ascension were also drawn on them. Such charts were prepared for all declinations examined.

For the determination of the positions of the objects on a Bruce photograph, the bright stars on the plate were first arranged in a list and reduced to the epoch 1900. The film was then adjusted over the portion of the plate which it covered, so that these stars closely fitted their known positions, and was fastened at the edges so that it could not be misplaced. All the objects in the New General Catalogue of Dreyer, which might appear on the plate, were then reduced to the epoch 1900, and identified when found. When any corrections to the positions or descriptions were noted, they are given in Table IV. The positions of all new objects, that is, all objects not found in the New General Catalogue, were then read off directly, and their character described.

Altogether, 722 plates were examined, although only 103 of these had exposures of about four hours. A list of these is contained in Table II, in which the

first column gives the number of the plate in Series A, the second, the date, the third, the Julian Day and decimal of the middle of the exposure, and the fourth, the duration of the exposure. The fifth and sixth columns give the right ascension and declination of the centre of the plate, and the last column, the number of nebulae and clusters found on the plate, which are not contained in the New General Catalogue of Dreyer. Dots, in this column, indicate that the region is covered by another plate. Since the plates overlap, and the objects are only given once, the number given in the last column is that of the objects whose positions were determined from the plate in question, and not the complete number which may appear on the plate.

TABLE II.

LIST OF BRUCE PLATES.

Plate.	Date.	J. D.	Expos.	R. A. 1900.	Dec. 1900.	Neb.	Plate.	Date.	J. D.	Expos.	R. A. 1900.	Dec. 1900.	Neb.
	y. m. d.		*m.*	*h. m.*	°			*y. m. d.*		*m.*	*h. m.*	°	
3339	98 10 14	4577.708	240	3 31	−52.5	44	4412	00 5 29	5169.594	270	13 40	−67.7	0
3346	98 " 20	4583.796	240	3 24	−51.0	..	4466	" 6 19	5190.587	240	14 0	−77.6	1
3386	98 11 3	4597.578	240	0 41	−25.3	17	4468	" " 20	5191.593	270	14 20	−72.5	1
3517	99 5 8	4783.791	242	17 29	−22.0	..	4476	" " 22	5193.587	270	14 20	−67.6	0
3519	" " 9	4784.785	230	17 28	−22.2	..	4493	" " 27	5198.630	240	15 0	−67.5	0
3522	" " 10	4785.794	270	17 28	−22.2	0	4533	" 7 18	5219.602	240	15 0	−72.6	2
3554	" " 30	4805.577	180	13 53	−10.3	5	4534	" " 19	5220.600	240	15 40	−67.7	5
3630	" 6 12	4818.694	240	16 14	−20.8	0	4535	" " 20	5221.581	270	15 0	−77.5	1
3632	" " 13	4819.681	240	16 11	−21.1	..	4536	" " 21	5222.584	259	15 40	−72.6	1
3635	" " 15	4821.774	180	16 10	−20.8	..	4537	" " 23	5224.588	270	16 4	−77.8	2
3690	" 7 7	4843.587	270	16 9	−22.3	2	4539	" " 24	5225.591	270	16 20	−67.5	0
3810	" 8 4	4871.596	300	18 50	−37.6	1	4545	" " 25	5226.591	270	16 20	−72.6	0
3816	" " 7	4874.624	240	21 8	−17.6	1	4550	" " 26	5227.581	270	17 0	−67.5	0
3913	" " 25	4892.554	186	17 2	−22.0	0	4562	" " 30	5231.589	270	17 0	−72.7	2
4179	" 12 5	4994.603	240	3 10	−52.8	5	4595	" 8 17	5249.573	240	17 2	−77.8	6
4181	" " 6	4995.710	240	3 31	−47.6	15	4598	" " 18	5250.576	270	17 52	−67.5	3
4183	" " 7	4996.738	241	4 10	−52.6	23	4599	" " 20	5252.584	240	17 50	−72.5	5
4184	" " 8	4997.747	240	3 50	−57.7	24	4601	" " 21	5253.715	270	22 20	−67.5	33
4248	00 3 26	5105.604	240	9 22	−57.0	0	4604	" " 22	5254.706	270	21 42	−67.8	9
4257	" " 29	5108.578	223	8 50	−57.8	0	4606	" " 23	5255.679	240	21 0	−67.5	4
4259	" " 30	5109.598	240	7 50	−57.5	1	4607	" " 24	5256.570	241	18 0	−77.5	0
4265	" 4 2	5112.600	240	8 22	−57.8	0	4609	" " 25	5257.569	241	18 22	−72.8	2
4266	" " 3	5113.623	240	9 50	−57.5	0	4611	" " 27	5259.572	217	18 20	−67.5	4
4320	" " 21	5131.579	240	10 20	−57.5	0	4615	" " 29	5261.741	270	23 0	−67.5	11
4342	" 5 1	5141.583	240	10 10	−32.6	24	4724	" 9 17	5280.570	240	19 0	−72.5	6
4398	" " 22	5162.564	240	12 0	−77.5	3	4726	" " 18	5281.582	240	19 2	−77.5	0
4400	" " 23	5163.588	240	12 20	−72.5	0	4728	" " 19	5282.574	240	19 0	−67.5	10
4401	" " 24	5164.594	270	12 18	−67.8	0	4733	" " 20	5283.576	240	19 40	−67.5	2
4402	" " 25	5165.589	270	13 4	−77.6	0	4738	" " 21	5284.574	240	19 40	−72.8	18
4406	" " 26	5166.593	240	13 0	−72.5	0	4740	" " 22	5285.569	240	20 0	−77.5	7
4407	" " 27	5167.589	240	13 4	−67.4	0	4742	" " 24	5287.583	240	20 22	−67.5	9
4408	" " 28	5168.583	270	13 20	−62.9	0	4747	" " 25	5288.574	240	20 20	−72.5	..

Plate.	Date.	J. D.	Expos.	R. A. 1900.	Dec. 1900.	Neb.	Plate.	Date.	J. D.	Expos.	R. A. 1900.	Dec. 1900.	Neb.
	y. m. d.		*m.*	*h. m.*	°			*y. m. d.*		*m.*	*h. m.*	°	
4749	00 9 26	5289.580	240	20 20	−72.5	18	5373	01 6 17	5553.623	240	14 20	−62.5	0
4759	" " 28	5291.572	240	21 0	−72.5	15	5376	" " 18	5554.635	240	14 50	−62.8	0
4803	" 10 15	5308.577	240	21 0	−77.5	0	5398	" " 22	5558.617	200	16 30	−82.5	0
4816	" " 22	5315.574	220	21 42	−72.5	0	5447	" 7 12	5578.646	240	15 20	−62.5	0
4881	" 11 17	5341.705	240	4 0	−77.5	2	5449	" " 13	5579.634	240	15 50	−62.5	0
4897	" " 27	5351.596	225	1 40	−72.4	10	5451	" " 15	5581.636	240	16 20	−62.5	0
4923	" 12 18	5372.714	240	6 0	−77.5	8	5453	" " 16	5582.629	240	16 50	−62.5	0
5044	01 3 20	5464.655	240	10 20	−67.5	1	5458	" " 19	5585.640	241	17 50	−62.5	4
5049	" " 23	5467.638	180	9 40	−67.5	1	5459	" " 20	5586.595	265	18 20	−62.5	39
5102	" 4 11	5486.620	240	10 20	−72.5	0	5546	" 8 13	5610.669	240	18 50	−62.8	25
5104	" " 12	5487.616	240	9 40	−72.5	0	5548	" " 14	5611.633	240	19 20	−62.5	5
5106	" " 13	5488.601	217	9 0	−72.5	0	5550	" " 15	5612.677	240	19 50	−62.8	8
5202	" 5 23	5528.589	270	11 0	−67.5	0	5653	" 9 13	5641.591	270	20 20	−62.5	0
5349	" 6 11	5547.624	210	11 42	−67.5	0	5654	" " 14	5642.586	255	18 20	−57.5	16
5355	" " 12	5548.623	210	11 40	−72.5	1	5655	" " 16	5644.583	240	18 50	−57.5	27
5362	" " 13	5549.620	180	15 0	−82.5	3	5656	" " 17	5645.576	195	19 20	−57.5	12
5363	" " "	" .810	210	20 20	−62.5	0	5695	" 10 3	5661.597	240	19 50	−57.7	17
5365	" " 14	5550.617	210	15 0	−87.5	0	5712	" " 10	5668.569	180	18 57	−13.3	0
5370	" " 15	5551.626	240	13 50	−62.5	0	5731	" 12 4	5723.712	450	5 31	− 5.3	0
5371	" " "	" .819	240	20 50	−62.5	0							

The following plates, generally having an exposure of one hour, were also examined. 3303, 4, 6–8, 10, 12, 14–25, 27–38, 40–45, 47, 82–85, 87, 88, 90–92, 94–97, 3400–5, 21, 25, 26, 34, 43, 48, 50–53, 55, 56, 59–63, 65, 68, 75–79, 96, 97, 3502–4, 7, 12–16, 24, 50, 55–59, 3634, 36–39, 49, 54–57, 59, 64, 65, 71, 76, 85, 96, 97, 3701, 3–20, 65, 66, 75–77, 79, 80, 82–84, 95, 96, 98, 99, 3811–15, 17–20, 22, 33, 35, 36, 40–42, 45, 46, 72, 3901, 3, 7–9, 14, 25–35, 37, 39–42, 44, 46–49, 51, 54, 55, 57, 59, 70–76, 4000–2, 4–12, 15, 19, 20, 22–27, 29–32, 34–40, 52–55, 72, 75, 86–94, 97, 4130–35, 38, 39, 41–53, 86–88, 96, 98, 99, 4205–9, 14, 15, 17–24, 26, 29, 38, 40–42, 49, 55, 61–64, 67–69, 72–75, 77, 78, 93, 97, 98, 99, 4303, 6–13, 22–24, 28–31, 33, 35, 36, 39–41, 79, 80, 82–84, 89, 90, 92, 95, 96, 99, 4403–5, 10, 11, 13, 17, 19–22, 61, 63, 69–71, 94–97, 4521, 22, 55, 56, 64, 74, 91, 4600, 2, 3, 5, 8, 10, 12, 14, 18, 24, 91, 4700, 13, 15, 22, 27, 54, 62, 97, 4822, 26, 27, 77, 96, 99, 4902, 27, 32, 33, 37, 5000, 23, 29, 33, 34, 38, 41, 42, 45, 52, 53, 99, 5100, 11, 13, 14, 17–19, 21, 24–26, 29, 30, 32–34, 37, 38, 57, 58, 60, 61, 71, 72, 77, 81–85, 90–92, 94–97, 5203–9, 12–18, 38, 39, 65, 5306, 28, 36–39, 43–47, 51, 56–58, 66–68, 74, 78–80, 83–85, 90, 91, 93, 94, 99–5406, 40, 42, 45, 55, 5514, 15, 18, 44, 51, 54–58, 67, 68, 78, 5619, 21–32, 34–41, 44–52, 57–66, 71, 87–90, 92–94, 96–5700, 2, 3, 5–11, 14–26, 28–30, 33, 34, 51–56, 58, 59, 61.

The 103 plates given in Table II, and having exposures of about four hours, cover 97 different regions. In these regions no objects, not given in the N. G. C., were found in 43, and one or more objects, in each of 54 regions. The whole

number found on the plates was 521, an average of 5.4 per region of about 25 square degrees, or one to about 4.6 square degrees. 619 plates, having exposures of about one hour, and covering 441 regions, were also examined, on which 186 nebulae, not given in the N. G. C., were found. This gives an average of 0.4 per plate, or about one object to 62 square degrees. These were all found, however, on 68 plates, no new object having been found in 373 regions on the plates having an exposure of one hour. Nearly fourteen times as many new nebulae were found, on the average, on the plates of four hours exposure as on those of one hour exposure. It appears, therefore, that the N. G. C. contains, in general, nearly as faint nebulae as can be photographed with the Bruce Telescope, with an exposure of one hour. Since, however, as many as 10 new objects are sometimes found on a Bruce plate of one hour exposure, it is evident that the N. G. C. is lacking in homogeneity. Also the number of the nebulae appears to increase rapidly with decreasing magnitudes, and for a study of the distribution of these very faint objects, photographs having long exposures are needed, taken with a telescope of large aperture.

Table III contains a list of the nebulae and clusters found by Dr. Stewart. It includes all objects described by him, with the exception of those given in the New General Catalogue of Dreyer, but Harvard numbers have not been given to such as have been published by Dreyer in the Index Catalogue of Nebulae found in the Years 1888 to 1894, as well as objects which have been announced in the following publications, up to the end of the year 1906:—Astronomical Journal, Astronomische Nachrichten, Bulletin of the Astronomical Society of the Pacific, Comptes Rendus, Journal of the British Astronomical Society, Monthly Notices, and The Observatory. The Astrophysical Journal, Bulletin de la Société Astronomique de France, Memoirs of the Royal Astronomical Society, Popular Astronomy and the annals and other publications of the principal observatories were also consulted, but, with the exception of the Index Catalogue, none of these objects were found in them. When the Harvard number is not given, a reference to the announcement of the discovery of the object, enclosed in parenthesis, will be found in the description. Although the list includes clusters as well as nebulae, the number of faint resolvable nebulae not found in the N. G. C. is so small as to be almost negligible. Only three objects, which were surely resolvable, were found by Dr. Stewart, and three others, whose resolvability was doubtful. In the following table, the Harvard number is given in the first column, the numbers forming a continuation of those in Table I. The right ascension and declination for 1900 are given in the second and third

columns, and the plate number, in the fourth column. These are followed by a description of the object. Herschel's abbreviations, as explained by Dreyer in his introduction to the New General Catalogue, have been employed, to which have been added:—A. N. for Astronomische Nachrichten, desc. for description, ellip. for elliptical, ext. for extends or extending, I. C. for Index Catalogue, plan. for planetary, magn. for magnitude, M. N. for Monthly Notices, pos. for position, poss. for possibly, prob. for probably, Rem. for remarks at the end of the table, and sp. for spiral. For the names of observers the following abbreviations have been used:—Bi. for Bigourdan, Fr. for R. H. Frost, In. for Innes, Ho. for Howe, J. for Javelle, I. R. for Isaac Roberts, Sch. for Schwassmann (Königstuhl-Nebelliste, No. 2), O. S. for Ormond Stone and his associates, Sf. for Safford, Sw. for Swift, D. S. for Delisle Stewart, and M. W. for Max Wolf. For further reference to the extensive lists of the Königstuhl-Heidelberg Observatory, see page 193. Only one of these lists, No. 2, covers the regions examined on the Harvard plates, and even in this case only a small region is duplicated.

An isolated object has, in general, been regarded as identical with one already announced, when the positions agree within 5′, and in a few cases, where the description is sufficiently conclusive, even when less accordant. When the object has been examined on two plates, the description is often given for both plates, but the number has not been repeated. The remarks at the end of the table contain a description of a few objects which were examined later by Mr. Frost. Several objects have been included in the table which were marked "suspected," since they had been seen on only one plate. All such objects have been recorded in the description as "susp.," although in most cases they are undoubtedly genuine.

Numerous hazy objects, somewhat resembling stars, but bright at the centre and shading off by insensible degrees towards the edge, are found on the Bruce plates. In some cases, Dr. Stewart, and in many cases, Mr. Frost described such objects as "Nebulous stars". They are seldom nebulous stars, however, in the sense in which that term was originally used. Sir William Herschel, who first made use of it, applied the term to a star surrounded by a relatively faint nebula or atmosphere. It seems best to confine the use of the term to objects of this class, which appear to be rare. The hazy objects found on the Bruce plates are probably, in general, small white nebulae, in many cases doubtless spiral nebulae or globular clusters. In the description, therefore, the objects recorded originally, by Messrs. Stewart and Frost, as nebulous stars, have been regarded as small nebulae, brighter in the centre, and are accordingly described by the letters bM.

TABLE III.

LIST OF NEBULAE AND CLUSTERS FOUND BY DELISLE STEWART.

H. N.	R. A. 1900.	Dec. 1900	Plate.	Description.
	h. *m.*	° ′		
109	0 27.6	−26 9	3386	vF, vmE at 10°
110	27.9	−32 35	3955	vF, vS, eeE at 170°–175°, sbM
111	30.9	−25 56	3386	Star n, poss. sp., E at 160°
112	33.5	−24 53	3386	Star n, E at 105°
113	33.6	−24 49	3386	S, R, psbM
114	37.2	−24 5	3386	eF, eS, vE at 60°
115	38.1	−22 47	3386	vF, vmE at 0°, gbM
116	39.3	−25 39	3386	vF, vS, cE at 135°, bet. 2 St.
117	39.5	−25 37	3386	vF, vS, vmE
118	40.7	−27 7	3386	eF, eS, cE at 15°, gbM
119	41.2	−26 27	3386	eF, eS, pmE at 45°, pgbM
120	41.3	−24 50	3386	eF, eS, pmE at 45°, * in M
121	43.8	−24 6	3386	eF, eS, alm.R
122	46.1	−24 6	3386	vF, vS, pmE at 155°
123	47.2	−23 13	3386	vF, vS, pmE at 95°, pmbM
124	49.1	−48 11	4030	eF, eS, cE at 130°, * N
125	49.2	−45 44	4030	eF, S, vE at 10°, * N
126	49.2	−58 39	4026	eF, eS, cE at 165°, cbM
127	49.7	−24 2	3386	vF, vS, pmE at 100°
128	50.2	−24 4	3386	vF, vS, pmE at 95°
129	50.7	−24 42	3386	vF, vS, vlE at 105°
130	52.4	−45 58	4030	eF, eS, cE at 115°, cbM
131	53.1	−49 27	4030	vF, eS, R neb.
132	56.4	−72 53	4897	vF, bM
133	56.7	−72 55	4897	eF, vS
134	59.7	−51 41	4088	eF, S, cE at 140°, cbM
135	59.9	−51 34	4088	eF, S, cE at 130°, cbM
..	1 1.5	−30 43	4035	eF, cS, R, susp. (N. G. C. 378)
136	1.9	−47 15	4030	eF, eS, vE at 0°, cbM
137	2.1	−72 34	4897	vF, S, R
138	3.2	−47 27	4030	cF, vS, R, susp.
139	3.2	−73 50	4897	vF, cS, R
140	3.8	−46 48	4030	cF, S, veE at 135°, vcbM
141	3.9	−47 18	4030	eeF, eS, E at 60°, susp.
142	4.3	−47 0	4030	eF, S, R, susp.
..	5.5	−46 28	4030	cF, vS, R, susp. (A. N. **147**, 209, Sw. XI, 13)
143	6.2	−72 18	4897	eF, eS, R
144	6.3	−30 58	4035	cF, S, R, near edge of plate, susp.
145	7.8	−56 24	4026	eF, cS, E at 140°, cbM
146	8.0	−50 55	4088	cF, S, vE at 55°, cbM. R. A. may be 7^m.5, susp.
147	8.8	−71 52	4897	eF, vS, close cl.

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
148	1 9.6	−72 17	4897	eF, vS, R, * N inv. in neb., or vF *
149	9.8	−73 59	4897	vF, eS, neb., or vS group of st.
150	11.1	−70 20	4897	2 F st. inv. in eeF neb.
151	14.8	−51 10	4088	eF, eS, bM, 2 traces of sp. wisps
152	22.1	−71 42	4897	vF, vS, R, * magn. 9 sf 4′
153	29.5	−68 3	3974	eF, eS, vE at 25°, * N
154	38.4	−34 42	4036	F, S, cE at 45°
155	38.7	−34 43	4036	F, S, cE at 175°
156	43.2	−34 6	4036	F, S, E at 160°, cbM
..	44.7	−33 14	4036	F, S, E at 100°, cbM (A. N. **147**, 209, Sw. XI, 25)
157	46.0	−34 33	4036	cF, cS, R, cbM
..	53.4	−33 44	4036	cF, S, vE at 45°, cbM (A. N. **147**, 209, Sw. XI, 31)
158	56.5	−32 24	4036	eF, eS, vE at 80°
..	2 5.8	−33 26	4036	cB, cL, vmE at 0°, cbM (A. N. **147**, 209, Sw. XI, 35)
159	18.8	−41 50	4932	vF, vS, R. Found on plate 4138
160	25.6	−43 32	4932	vF, * N, R. Found on plate 4138
161	25.7	−43 16	4932	vF, bM. Found on plate 4138
..	31.7	+20 40	4039	eF, vS, cE at 10°, cbM (N. G. C. 992)
162	34.7	−27 53	4937	vF, S, prob. R, eF * 1′.5 sp, susp. (A. N. **147**, 209, Sw. XI, 42, p 0^m.6, n 1′)
163	44.8	+23 11	4147	eB, S, R, neb. or defect, susp.
164	58.0	+17 12	4143	eB, R, cbM, neb. or defect, susp.
165	3 0.0	−50 54	4179	eF, vS, E at 170°, prob. neb., susp.
166	0.6	−52 30	4179	eeF, eS, cE at 5°, prob. neb., susp.
167	0.8	−52 30	4179	eeF, eS, vE at 135°, * N
168	2.6	−33 14	4037	vS, vF, vmE at 140°, gbM
169	5.1	−54 37	4179	eeF, eS, cE at 10°, * N
170	6.0	−22 47	4011	Neb. line at 60°, 1.3 mm. long, susp.
171	10.0	−50 58	3339	2 F neb., E
172	10.8	−31 4	4037	eF, vS, mE at 80°, * N
173	12.1	−34 44	4037	vF, vS, vmE at 60°, gbM
174	12.4	−55 12	4179	vF, vS, 1 sp. branch seen
175	13.3	−34 3	4037	vF, vS, cE at 45°, * N
176	13.5	−21 48	4011	2 eF, eS, neb. spots, susp.
177	13.7	−51 1	3339	E n to s, S
178	15.5	−32 50	4037	vF, vS, eE at 155°, cbM
179	16.0	−49 57	3339	Sp.?
180	16.7	−51 3	3339	E n to s
181	17.2	−49 24	4181	eF, vS, R, 2 st s p
182	19.4	−53 33	3339	E n to s
183	21.4	−53 4	3339	Stell.
184	21.7	−51 3	3339	Stell.
185	21.7	−51 5	3339	Stell.
186	21.8	−50 55	3339	Stell.
..	22.0	−21 42	4011	No desc. Also on A 4075 (I. C. 324, Bi. 142)

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h *m.*	° ′		
187	3 22.1	−52 3	3339	E, stell.
188	22.3	−51 37	3339	E np to sf, stell.
189	22.3	−52 3	3339	E, stell.
190	22.3	−52 5	3339	vF
191	22.5	−51 37	3339	E np to sf
192	22.9	−51 41	3339	E n to s
193	22.9	−53 8	3339	E sp to nf, ellip.
194	23.1	−21 54	4052	vF, vS, vE at 20°, cbM
195	23.1	−50 22	3339	Stell., E, sp. ?
196	23.5	−51 40	3339	Stell., E np to sf
197	23.7	−49 3	4181	vF, vS, R, bM
198	24.4	−53 22	3339	Perhaps dbl. *
199	24.8	−51 25	3339	E p to f
200	24.8	−52 29	3339	bM
201	25.2	−53 1	3339	Stell., E n to s
202	26.3	+24 5	4148	vF, S, vmE at 0°, prob. neb., susp.
203	26.5	−48 21	4181	eF, eS, lE at 20°
204	26.5	−52 59	3339	Stell.
205	26.6	−52 58	3339	Stell.
206	27.6	−50 40	3339	Stell.
207	27.7	−48 19	4181	eeF, eS, R
..	27.7	−50 38	3339	* p (N. G. C. 1356)
208	27.8	−48 20	4181	cF, vS, sp. cbM
209	28.1	−50 46	3339	E np to sf
210	28.3	−53 29	3339	E sp to nf
..	28.6	−52 15	3339	Fine S sp. (M. N. **59**, 339. In.)
211	29.0	−57 34	4184	eF, vS, R
212	29.1	−24 3	4052	cF, S, eE at 140°, * 1′ sf
213	29.3	−21 49	4052	vF, cL, sp. or ring neb
214	29.4	−52 47	3339	E sp to nf
215	29.9	−51 47	3339	Stell.
216	30.2	−50 45	3339	E np to sf
217	30.2	−57 32	4184	eF, vS, R
218	30.5	−49 17	4181	eF, vS, cE at 20°
219	30.8	−56 53	4184	eF, vS, R, cbM
220	30.9	−53 30	3339	E p to f
221	31.2	−21 38	4052	eF, S, vE at 175°, gbM
222	31.2	−51 39	3339	Stell.
223	31.8	−50 58	3339	Stell.
224	32.9	−45 31	4181	eF, vS, cE at 50°, cbM
..	33.1	−44 17	4933	cF, vS, eE at 75° (A. N. **147**, 209, Sw. XI, 57)
225	33.2	−52 58	3339	E p to f
226	33.6	−52 18	3339	E
227	33.6	−52 19	3339	E
228	33.7	−49 54	3339	E np to sf

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
229	3 34.0	−47 46	4181	eF, eS, R
230	34.1	−50 29	3339	E n to s
231	34.5	−58 16	4184	eeF, eS, eE at 20°
232	34.7	−58 18	4184	eF, cS, eE at 25°
233	35.4	−58 6	4184	cF, eS, R
234	36.7	−47 24	4181	eeF, eS, vE at 150°
235	37.3	−45 41	4181	eF, vS, cE at 135°
236	37.8	−55 23	4184	eF, vS, R
237	39.1	−51 17	3339	Stell.
238	41.9	−51 51	3339	Stell. E sp to nf
239	42.3	−51 19	3339	Stell.
240	42.8	−57 38	4184	eeF, vS, eeE at 95°
241	42.8	−59 26	4184	eF, vS, R, cbM, * N
242	43.0	−51 58	3339	E n to s
243	45.4	−57 16	4184	eeF, vS, cE at 140°
244	46.2	−49 10	4181	cB, L, eE at 80°, vmbM
245	47.9	−48 56	4181	eF, vS, R, 3 st. nr.
246	48.9	−49 43	4181	eF, S
247	50.2	−60 13	4184	eF, S, E at 70°
248	50.4	−57 47	4184	eeF, vS, R
249	50.6	−49 17	4181	eF, S
250	50.8	−58 56	4184	eeF, eS, cE at 0°
251	52.2	−17 24	4217	cB, cL, vE at 170°, cbM, susp.
252	53.2	−57 2	4184	eeF, vS, R
253	54.5	−40 44	4139	eF, S, R, bM, susp.
254	54.8	−59 41	4184	eF, vS, R
255	55.3	−53 4	4183	eF, vS, R
256	56.5	−54 20	4183	eF, vS, R
257	56.8	−52 57	4183	eF, vS, R
258	56.8	−59 19	4184	eeF, eS, vE at 5°, cbM
259	57.1	−52 58	4183	eF, vS, R
260	57.6	−53 39	4183	eF, vS, cE at 35°
261	57.8	−53 21	4183	eF, vS, cE at 135°
262	58.7	−52 59	4183	cF, vS, R
263	58.7	−53 5	4183	eF, vS, R
264	4 0.5	−19 30	4217	cF, vS, eE at 135°, susp.
265	4.7	−55 35	4184	eF, vS, R
266	4.7	−58 13	4184	eeF, vS, cE at 115°
267	4.8	−53 57	4183	eF, vS, cE at 130°
268	5.0	−84 8	4902	! ! vF, vS, * N, pos. approximate. Ellip. ring neb.
269	6.5	−59 0	4184	eF, vS, eE at 90°, cbM
270	6.7	−56 15	4184	eF, vS, eE at 145°
271	6.8	−56 16	4184	eF, vS, R
272	8.8	−53 57	4183	eF, vS, eE at 5°, vmbM
273	8.9	−54 47	4183	eF, vS, R

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. *m.*	° ′		
274	4 9.1	−54 56	4183	vF, vS, R
275	10.2	−58 48	4184	eF, vS, R
276	11.5	−53 43	4183	F, vS, cE at 60°
277	11.7	−78 31	4881	eeF, eS, vF * 1′ nf., susp.
278	12.7	−54 35	4183	vF, vS, vE
279	13.0	−49 37	4199	eF, S, cE at 140°, susp.
280	15.0	−49 10	4199	F, S, cE at 0°, susp.
281	15.7	−56 10	4184	cB, cL, eE at 10°
282	15.8	−56 51	4184	F, S, bM
283	18.1	+20 51	4053	F, cS, R, indistinct, nr. edge of plate, susp.
284	19.5	−56 10	3425	vF, vS, vmE at 45°, pmbM
285	21.3	−54 58	4183	eeF, vS, R
286	23.0	−58 11	3425	vF, vS, cbM
287	23.1	−48 26	4199	eeF, S, R, susp.
288	23.8	−53 22	4183	eeF, vS, cE at 80°
289	24.1	−48 36	4199	cF, S, R, susp.
290	24.2	−53 25	4183	vF, vS, eE at 60°, * N
291	25.3	−48 27	4199	vF, vS, cE at 130°, susp.
292	26.2	−53 57	4183	eF, vS, E at 130°
293	26.7	−53 50	4183	eF, vS, R, bet. 2 F st.
294	26.8	−54 3	4183	cF, S, R
295	28.4	−54 11	4183	eF, vS, R
296	29.2	−54 38	4183	eF, vS, eE at 110°
297	29.3	−48 30	4199	F, S, R, susp.
298	29.3	−53 51	4183	eeF, vS, R
299	35.6	−75 45	4881	eeF, vS, R, F * 1′ f, susp.
300	43.4	−77 1	4881	cF, vS, eE at 80°, * N
301	5 26.4	−75 32	4923	cF, vS
302	36.6	−75 26	4923	eF, vS, may be eF, eS, cl.
303	38.4	−78 4	4923	eF, vS, lE at 25°, lbM
304	40.8	−74 50	4923	vF, cl, bet. 2 F st.
305	42.7	−75 37	4923	vF, vS, bM
306	56.5	−33 55	4272	eF, vS, dbl., susp.
307	57.2	−34 1	4272	cF, vS, R, susp.
308	6 0.0	−76 55	4923	vF, vS, * N inv. in neb.
309	0.5	−75 8	4923	eF, vS, bM, susp.
310	10.1	−75 20	4923	eF, eeS, R, * N inv. in neb.
311	7 11.6	−20 14	4323	neb. like wisp, extends 2′ in dec., 3 st. to n, susp.
312	25.9	−51 3	4223	cB, S, R, bM, susp.
313	27.1	−62 8	4207	eF, eS, eE at 65°, bet. 2 st., susp.
314	27.8	−67 21	5029	eF, eS, R. Also on plate 4298
315	55.0	−58 51	4259	! ! Neb. inv. A. G. C. 10531, extends 2′ in Dec. and 1′ in R. A. 2 B and 2 F sp. wisps, sp. in form
316	9 0.8	−18 46	4383	eF, S, hazy *, susp.
..	1.0	−18 48	4383	eF, S, hazy *, susp. (M. N. **58**, 523, Ho. 13)

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. *m.*	° ′		
317	9 23.2	−38 51	4240	eF. vS, R, like several st. inv. in neb., susp.
318	29.1	−37 28	4240	cF, vS, R, B * 1′ np, susp.
319	36.8	−68 38	5049	eF, vS, eE at 170°, lbM, susp.
..	40.3	−31 20	4313	eB, cL, E at 55°, susp. (A. N. **147**, 209, Sw. XI, 96), Rem.
320	43.4	−32 23	4313	eF, vS, cE at 140°, bM, susp.
..	45.1	−32 23	4313	eF, vS, cE at 20°, bM, susp. (A. N. **147**, 209, Sw. XI, 97)
..	45.7	−32 26	4313	pB, S, bM, E at 60° (A. N. **147**, 209, Sw. XI, 100)
321	48.4	−33 16	4313	eeF, eS, R, susp.
322	50.8	−32 40	4313	vF, cL, R, * 8 magn. n, susp.
323	50.8	−32 45	4313	vF, vS, cE at 20°, susp.
..	52.7	−31 47	4313	cB, S, R, poss. defect, susp. (A. N. **147**, 209, Sw. XI, 101)
324	55.7	−33 45	4342	cB, S, * N
325	56.1	−30 46	4313	cB, S, R
326	57.1	−33 38	4313	cB, S, R
327	59.1	−33 28	4342	F, S, E at 50°, cbM
328	59.6	−34 20	4342	vF, vS, R, cbM
329	59.8	−30 53	4342	cF, vS, eE at 30°, vmbM
330	10 1.1	−16 57	4384	F, eE at 5°, vmbM
331	2.2	−33 22	4342	eF, eS, cE at 25°, *d* 2 f st.
332	2.7	−32 46	4342	vF, vS, R, bet. 2 st.
333	3.6	−34 45	4342	eF, vS, R, hazy, bM
334	6.2	−66 32	5044	cF, S, 2-branch sp., N, cE at 10°
335	6.4	−34 21	4342	cB, S, R, bM
336	7.2	−31 9	4342	eF, vS, eE at 45°, cbM
337	8.2	−34 14	4342	eF, S, * N inv. in neb.
..	10.2	−80 23	5114	eF, eS, D neb. (Dumb-bell), 2 N, eF * 0′.6 p (N. G. C. 3195?)
338	10.3	−33 50	4342	cF, vS, cE at 10°, cbM
339	10.4	−33 34	4342	cF, S, lE at 10°, cbM
..	11.8	−33 4	4342	F, S, cE at 20°, ellip. oval form (A. N. **147**, 209, Sw. XI, 106)
340	14.4	−32 6	4342	eF, vS, eE at 110°, eF * s
341	17.1	−33 7	4342	eF, eS, vE at 150°, 3 st. sf
342	19.1	−34 57	4342	eF, vS, cE at 0°
343	20.9	−32 8	4342	eF, vS, R
344	21.5	−32 24	4342	F, S, R
..	22.1	−39 26	4229	cB, S, R, susp. (N. G. C. 3250)
345	22.9	−33 22	4342	eF, vS, eE at 135°
346	23.7	−31 0	4342	cB, S, bM
347	24.6	−29 50	4342	bM, indistinct, corner of plate
348	25.3	−34 24	4342	cB, bM
349	25.9	−34 51	4342	cB, bM
350	26.4	−34 3	4342	cB, bM
351	30.7	−43 11	3636	F, pL, cE at 15°, oval or sp.?
352	11 6.7	−76 4	4398	* 9 magn. inv. in neb. of 2′ radius
353	23.3	−12 20	4390	vF, vS, cE at 30°, cbM, susp.
354	24.4	−79 11	4398	eeF, eS, cE at 145°, susp.

H. N.	R. A. 1900.		Dec. 1900.		Plate.	Description.
	h.	*m.*	°	′		
355	11	25.5	−12	32	4390	eF, vS, cE at 165°, bM, susp.
356		52.4	−73	8	5355	eeF, eS, R, cbM. Also on A 4400
..	12	0.6	−27	24	3703	F, cL, ellip. sp. form, E at 125° (A. N. **147**, 209, Sw. XI, 133)
357		0.6	−29	25	3703	F, vS, E at 20°, b * sp
..		0.7	−28	44	3703	F, S, R, bM (I. C. 760, O. S.)
358		1.0	−29	7	3703	F, indistinct, * like, but poss. defect, susp.
359		2.1	−29	28	3703	F, S, eE at 160°, * N
..		5.0	−29	10	3703	Neb. streak, F, cL, vE at 175° (I. C. 764, O. S.)
360		5.4	−29	22	3703	vF, vS, vE at 40°, bet. 2 st. (I. C. 764, O. S., p 0^m.3, n 11′)
361		9.8	−43	55	4264	cF, S, R, neb. or defect, susp.
362		12.7	−79	9	4398	eeF, cS, or gr. of eF st., 12 magn. * 0′.5 sp, neb. or cl.
363		18.5	−34	4	5205	eF, vL, vE at 20°, lbM
364		44.6	−	6 11	3779	eeF, eS, cE at 15° (I. C. 833, Sw., f 6^m.9, same dec.)
365		50.1	−	7 36	3779	eF, eS, vE at 5°
366		51.5	−	7 2	3779	eF, eS, eeE at 160°, poss. a F trail
367		56.9	−	7 4	3779	eeF, eS, cE at 10°
..		59.0	−	9 48	3708	F, S, bM, edge of pl. (N. G. C. 4939)
368		59.2	−	5 26	3776	eeF, cS
369		59.8	−	5 44	3776	eeF, cS, vE at 140°
370	13	1.2	−13	2	3708	vF, vS, R, susp.
371		5.4	−	6 38	3776	eF, eS, cE at 100°
372		6.8	−	3 48	3796	eF, eS, cE at 55; may be identical with N. G. C. 5015, at 13^h. 7^m.2, susp.
373		7.3	−	6 14	3776	eF, eS, cE at 20°
374		11.8	−10	15	3708	vF, cL, cE at 40°
375		11.9	−	1 44	3796	eF, eS, cE at 170°, susp.
376		11.9	−12	37	3708	eF, eS, R
377		12.6	−13	5	3708	eF, eS, cE at 130°
378		13.1	−14	6	3708	cF, S, vE at 165°, cbM
379		14.0	−	1 59	3796	eF, S, cE at 110°, pos. approximate, susp.
380		17.4	−	1 53	3796	eF, eS, R, susp.
381		18.6	−12	14	3708	eF, vS, R (I. C. 884, Sw., p 1^m.0, n 2′)
382		49.0	−83	47	5362	eF, vS, eeE at 40°, pos. approximate, susp.
383		53.2	−12	6	3554	eF, vS, eE at 110°
..		58.3	−	9 41	3554	eeF, vS, cE at 110° (A. N. **168**, 75, M. W.)
..		58.6	−	9 40	3554	vF, vS, 2-branch sp. (A. N. **168**, 75, M. W.)
384		58.8	−	9 17	3554	eF, vS, cE at 150°
385		58.8	−10	56	3654	eF, eS, E at 35°
386		58.9	−	9 10	3554	eF, vS, cE at 150°
387		58.9	−	9 31	3654	eF, vS, R
388		59.1	−44	48	3637	eF, eS, E at 170°, bet. 2 F st., Rem.
389		59.2	−41	20	3637	vF, vS, vE at 175°, Rem.
390		59.3	−33	17	3638	vF, vS, cE at 170°
391		59.4	−	9 29	3654	F, S, R, bM
392	14	0.4	−10	25	3654	eF, eS, E at 75°

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
393	14 2.2	−32 50	4275	eF, eS, eeE at 15°, * N, cB, * sp
394	5.0	−30 20	3638	F, S, eE at 40°
395	6.2	−33 47	3638	vF, vS, E at 150°
396	6.2	−33 48	3638	vF, vS, E at 90°
397	7.2	−75 10	4468	eeF, vS, vE at 180°, vmbM
398	10.2	−31 18	3638	vF, vS, R, sbM
399	10.5	−12 39	3709	eF, vS, vE at 80°, F * sf, susp.
400	10.6	−31 14	3638	vF, vS, R
401	10.7	−44 31	3637	eF, eS, vE at 5°, * N, Rem.
402	12.0	−30 53	3638	cF, S, eE at 75°
..	12.2	−13 24	3709	cF, cS, cE at 95°, cbM, susp. (I. C. 991, J. 280)
403	16.0	−43 42	3637	2 neb. st. make dumb-bell, Rem.
404	19.0	−34 34	3638	F, S, eE at 45°
405	23.4	−33 10	3638	cF, cS, indistinct
406	23.6	−39 5	3639	vF, vS, vE at 85°
407	25.3	−42 58	3637	vF, vS, * M, sp. or ring neb., Rem. (A. N. **147**, 209, Sw. XI, 171, p 0^m.3, s 6′)
408	28.5	−35 51	3639	vF, vS, R, * n 0′.5
409	28.5	−78 23	4466	! ! F, vS, ring neb. with * in M
410	29.0	−14 12	3705	eF, eS, cE at 30°
411	30.9	−39 2	3639	eF, eS, E at 100°
412	13.7	−36 27	3639	vF, S, N, R, wisp at 45°
413	32.8	−21 57	3659	F, pL, cE at 160°, cbM
414	37.8	−72 53	4533	eF, eeE at 140°, neb. like streak or trail, susp.
415	39.0	−13 18	3705	F, S, eE at 0° (I. C. 1055, J. 318, f 3^m.0, same dec.)
416	41.7	−21 58	3659	vF, S, indistinct
417	45.0	−20 19	3671	vF, vS, i, R, indistinct, susp.
418	45.0	−81 49	5362	vF cl., 4′ diam., 3 F st. inv. in cl., pos. approximate, susp.
419	46.6	−20 19	3671	F, S, vE at 80°
420	15 0.2	−75 28	4533	vF, vS, cbM, sev. st. inv.
421	20.2	−70 14	4534	eF, vS, vE at 150°, susp.
422	26.0	−81 19	5362	eeF, eS, vE at 145°, bet. 2 v F st., pos. approximate, susp.
423	34.6	−77 21	4535	vF, vS, eE at 55°, bM. Also on A 4537
424	39.4	−67 0	4534	cF, eS, vE at 155°
425	41.4	−74 31	4536	eF, eS, cE at 140°, bet. 2 vF st.
426	50.6	−66 5	4534	eF, S, shape i
427	50.7	−66 2	4534	eF, S, shape i
428	16 10.1	−22 22	3690	F, S, vE at 40°, mbM, * N, prob. sp.
429	10.3	−69 54	4534	F, S, eE at 55°
430	12.3	−22 32	3690	eF, eS, R
431	14.5	−19 50	3308	B, eL, neb. wisps, inv. A. G. C. 22138–9 and 22150–1; ext. 1^m in R. A. and 12′ in Dec.
432	32.3	−77 18	4537	vF, vS, cE at 85°, bM
433	43.4	−76 49	4537	! ! eF, eS, 2-branch sp.
434	46.4	−16 4	3795	cF, S, i, D

H. N.	R. A. 1900.		Dec. 1900.		Plate.	Description.
	h.	*m.*	°	′		
435	16	50.4	−16	33	3795	vF, vS, eE at 75°, R. A. may be 51^m.0, susp.
436		56.1	−77	28	4595	eF, eeS, barely poss. ring neb., susp.
437		58.8	−77	23	4595	! vF, cL, cbM, poss. sp.
438	17	0.7	−77	20	4595	vF, eS, cbM
439		6.9	−79	57	4595	vF, eS, cbM
440		7.0	−80	2	4595	eF, vS, bM
441		12.0	−73	50	4562	eF, eS, vE at 135°
442		17.8	−60	49	5455	eeF, eS, bM, eF * v nr., susp.
443		18.7	−80	5	4595	bM
444		24.3	−74	18	4562	eF, eS, R, vmbM
445		25.5	−60	39	3706	eF, eS, vE at 170°
446		28.1	−63	40	5455	eeF, vS, eE at 90°, cbM
..		37.3	−64	36	5455	F, S, i, 2 st. inv. (M. N. **62**, 470, In.)
		37.4	−64	36	4034	cF, vS, R
447		38.1	−73	59	4599	eF, vS, R, cbM
448		39.4	−63	13	5455	eF, vS, cE, cbM
449		49.6	−10	16	3664	Looks like sp., edge of plate
450		52.9	−62	50	5458	eeF, eS, vE at 45°, cbM
451		58.8	−62	25	5458	eF, vS, eE at 80°, cbM, * N
452	18	2.9	−56	17	5654	cF, S, R, vmbM, susp.
453		3.6	−64	30	5458	eF, vS, eE at 85°, cbM
454		4.6	−71	37	4599	vF, cS, cE at 140°, * N
455		6.0	−58	43	5654	F, S, i, susp.
456		6.7	−58	14	5654	F, S, eE at 20°, lbM, Rem.
457		8.6	−58	57	5654	eF, vS, R, bM, sev. st. v nr., susp.
458		10.4	−64	47	5458	Surely a neb., but desc. not noted, susp.
459		11.5	−63	24	5459	eF, vS, eE at 45°, * N
460		14.2	−59	17	5654	eF, eS, * inv. in neb. disc, ellip. ring neb., susp.
461		15.9	−56	15	5654	eF, vS, vE at 0°, * N, susp.
462		16.0	−71	39	4599	cB, bM
463		16.2	−71	44	4599	eF, eS, R
464		18.2	−65	0	5459	eF, eS, eE at 125°, * N crossed by neb. line
465		18.3	−67	2	4598	vF, cL, R, lbM
466		19.2	−71	45	4599	vF, vS, R, bM
467		19.5	−67	17	4598	vF
468		20.6	−66	43	4598	vF
469		24.2	−57	2	5654	eeF, eS, lE at 90°, susp.
470		24.6	−58	2	5654	F, S, eE at 95°, * N
471		24.7	−56	48	5654	eF, vS, 2 hazy patches together, susp.
472		24.8	−58	28	5654	cF, S, eE at 165°, cbM
473		24.8	−60	11	5654	cB, S, E at 125°, B * N
474		25.7	−58	34	5654	F, cL, E at 150°, form of Andromeda neb.
475		25.9	−57	51	5654	F, vS, 2−branch sp.
476		26.3	−63	27	5459	vF, vS, R
477		27.4	−70	12	4611	eF, eS, cE at 170°

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
478	18 27.5	−62 56	5459	eF, vS, R, eF ∗ 0′.5 nf
479	28.4	−62 47	5459	vF, eS, R
480	28.5	−62 37	5459	eF, S, cE at 170°, ∗ N, bM
481	29.2	−63 1	5459	vF, vS, eE at 88°, ∗ N
482	29.2	−63 26	5459	eeF, eS, eE at 0°, ∗ 9 magn. 2′ s
483	29.5	−67 30	4611	vF, vS, R, d 0′.7, ∗ N
484	29.8	−57 34	5654	vF, vS, lE at 130°
485	30.0	−57 58	5654	eF, eS, R
486	30.3	−63 2	5459	eF, vS, bM
487	30.5	−62 41	5459	eF, vS, cE at 10°, bet. 2 F st.
488	31.1	−61 59	5459	eeF, eS, eF ∗ 0′.5 sf
489	31.5	−61 59	5459	eeF, eS, eF ∗ inv.
490	32.0	−64 2	5459	cF, vS, lE at 20°, ∗ N, 4 F st. inv.
491	32.1	−61 51	5459	vF, bM
492	32.2	−63 57	5459	cF, vS, R, bM, F ∗ inv.
493	32.3	−63 19	5459	eeF, eS, R, eF ∗ inv.
494	32.4	−68 27	4722	eeF, vS, R, lbM, 2 eF st. nr.
495	32.7	−65 2	5459	eF, vS, vF ∗ 0′.4 p
496	33.0	−64 10	5459	eF, vS, R, F ∗ 1′ sf
497	33.4	−63 18	5459	eeF, eS, 3 F st. nr.
498	33.6	−63 3	5459	eeF, eS, R, ∗ 11 magn. 1′.5 np
499	33.7	−72 46	4609	eF, eS
500	33.8	−72 43	4609	vF, eS, cE at 75°
501	33.9	−62 12	5459	vF, vS, R, bM
502	34.1	−64 11	5459	eF, vS, R, vF ∗ 1′ sf
503	34.2	−62 12	5459	vF, vS, R, bM
504	34.6	−62 5	5459	eF, S, R, d 0′.7, poss. ring neb., ∗ N
505	35.4	−63 47	5459	vF, vS, eE at 90°, ∗ N
506	35.5	−57 16	5654	eF, eS, cE at 50°
507	36.2	−63 11	5459	eF, eS, R
508	36.3	−63 3	5459	eF, vS, R, F ∗ 1′ np
509	36.4	−65 51	4611	vF, S, R
510	37.5	−63 35	5459	eeF, eS, bM
511	37.7	−63 26	5459	vF, S, R, bM
512	38.0	−63 23	5459	eF, eS, bM
513	38.1	−63 31	5459	eF, eS, vE at 25°, cbM
514	38.2	−63 15	5459	eF, vS, vE at 170°, cbM
515	38.6	−63 29	5459	eeF, eS, bM
516	38.8	−63 21	5459	eF, eS, R, bM
517	39.6	−58 2	5655	eF, S, i, mbM
518	40.0	−57 17	5655	eF, eS, vE at 15°, susp.
519	40.2	−70 2	4724	eF, hazy neb.
520	40.8	−61 49	5459	cF, vS, cE at 35°
521	41.1	−63 7	5459	eeF, eS, eF ∗ 0′.3 p
522	41.2	−59 21	5655	eF, vS, lE at 120°

H. N.	R. A. 1900.		Dec. 1900.		Plate.	Description.
	h.	*m.*	°	′		
523	18	42.3	−62	54	5459	3 eeF st. inv. with neb.
524		42.6	−55	36	5655	eeF, eS, susp.
525		42.8	−58	55	5655	eF, vS
526		43.4	−63	32	5459	cF, S, R, bM
527		44.2	−59	22	5655	eF, vS, i, * N
528		44.3	−56	49	5655	eeF, eS, vE at 0°
529		45.2	−63	34	5459	eeF, eS, eE at 35°
530		45.4	−68	48	4722	eF, hazy patch
531		45.7	−68	41	4611	eF, eS, R
532		46.8	−65	3	4722	cB, S, R, bM
533		47.3	−56	32	5655	eeF, eS, vE at 160°, bet. 2 st., susp.
534		47.8	−61	30	5546	eF, vS, cE at 130°
535		47.9	−62	12	5546	F, S, R, bM
536		48.1	−61	43	5546	eeF, eS, eE at 40°
537		49.1	−62	14	5546	F, S, R, bM
538		49.3	−63	16	5546	vF, S, * N inv. in oval ellip. ring, d 0′.3 to 0′.4; neb. wisps at 170° and 350°
539		49.3	−64	3	5546	vF, S, * N inv. in ring neb., d 0′.4; neb. wisps at 55° and 235°
540		49.8	−64	48	5546	cF, S, R, bM
541		51.4	−62	12	5546	eeF, eS, R
542		51.9	−61	57	5546	eeF, eS, cE
543		52.6	−63	11	5546	eF, vS, eE at 25°, bM
544		52.9	−57	40	5655	eeF, eS, eE at 10°, 2 st. v nr., susp.
545		53.7	−45	27	4469	vF, cL, cE at 45°, lbM, susp.
546		53.8	−57	4	5655	vF, vS, ellip., uniform density, poss. plan. neb., susp.
547		54.3	−37	12	3810	A. G. C. 25981, not given in N. G. C., is inv. in same neb. as N. G. C. 6726–7 and 6729. Whole region covered ext. 2^m.2 in R. A., and 20′ in Dec. It may also ext. from st. half a degree sf
548		54.6	−56	18	5655	eF, S, eeE at 140°, lbM, susp.
549		54.8	−62	19	5546	eF, vS, lE at 20°
550		55.6	−67	16	4722	eeF, eS, R, alm. *
551		55.7	−66	40	4722	vF, S, R
552		56.3	−58	53	5655	eeF, eS, cE at 100°, susp.
553		57.6	−61	50	5546	cF, vS, R, bM
554		57.8	−55	15	5655	eF, eS, cE at 90°
555		57.8	−56	18	5655	eF, vS, cE at 0°
556		58.3	−59	37	5655	vF, S, eE at 130°
557		59.8	−63	37	5546	eeF, eS
558	19	1.3	−55	10	5655	vF, vS, eE at 10°
559		2.7	−64	9	5546	vF, vS
560		3.0	−72	36	4724	F, S, R
561		3.9	−57	22	5655	eF, eeS, R
562		4.0	−62	15	5546	eF, eS, D neb.
563		4.2	−56	42	5655	eeF, eS, vE at 20°

H. N.	R. A. 1900.		Dec. 1900.		Plate.	Description.
	h.	*m.*	°	′		
564	19	4.3	−61	1	5546	F, cS, eE at 170°, * N
565		4.5	−62	14	5546	vF, vS, cE at 60°
566		5.1	−59	27	5655	eF, eS, R, lbM
567		5.3	−72	55	4724	eF, eS, R
568		5.5	−62	26	5546	! cF, vS, eE at 150°, 2-branch sp.
569		5.7	−56	47	5655	vF, vS, eE at 145°, * N
570		6.4	−62	30	5546	eeF, eS, R, bM
571		6.8	−58	24	5655	eF, eS, cE at 0°
572		7.0	−64	11	5546	eF, vS, lE at 140°
573		7.2	−54	50	5655	F, cS, R, bM
574		7.3	−60	22	5546	F, cL, i, 2 st. inv.
575		7.4	−54	48	5655	F, S, * inv. in neb.
576		7.5	−56	23	5655	cF, vS
577		7.7	−61	47	5546	cF, S, eE at 45°
578		9.1	−72	24	4724	eF, S, R, cbM
579		10.5	−60	49	5546	cF, vS, R
580		10.6	−59	29	5655	eF, eS, cE at 90°
581		10.7	−56	12	5655	vF, vS
582		11.5	−60	34	5546	cF, bM, * 11 magn. 0′.4 sp
583		13.7	−65	42	4722	vF, eS, R, * magn. 8–9 sf 4′
584		14.5	−56	58	5655	eF, eS, R
..		15.2	−60	7	5656	eF, eS, cE at 175° (N. G. C. 6788)
585		16.2	−63	6	5548	vF, vS
586		17.1	−57	51	5656	cF, vS, eE at 15°, vmbM, susp.
587		17.6	−60	32	5546	cF, bM
588		18.7	−59	30	5556	vF, cS, R
589		18.8	−59	30	5656	eF, vS, R, susp.
590		19.4	−55	6	5656	eF, eS, D neb., susp.
591		19.7	−71	17	4724	eeF, eS, lE at 170°
592		20.0	−58	58	5556	vF, cS, R
593		20.1	−58	57	5656	eeF, eS, prob. 2 br. sp., susp.
594		20.8	−57	46	5656	vF, eS, cE at 25°, susp.
595		20.9	−66	31	4722	eF, S, cbM, alm. * N
596		21.3	−67	34	4722	eF, S, R
597		21.5	−67	32	4722	eF, S, cbM, lE at 0°
598		25.7	−61	22	5548	cF, S, R, bM
599		25.8	−77	47	4740	eF, vS, eE at 70°, vF * 1′ sp
600		27.3	−57	44	5556	vF, S, eE at 15°
601		27.3	−61	25	5548	F, S, R, bM, F * 1′ sp
602		27.4	−57	44	5656	vF, S, eeE at 5°
603		27.8	−66	2	4722	vF, S, F * inv. in neb.
604		30.4	−58	26	5656	eF, eS, vE at 40°
605		32.3	−55	25	5656	eF, eS, R
606		32.3	−56	5	5656	eF, vS, R
607		32.3	−56	38	5695	eF, vS, R

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
608	19 33.9	−55 46	5656	vF, vS, vE at 170°
609	34.3	−58 21	5656	eF, eS, cE at 170°
610	35.5	−60 53	5548	vF, eS, eE at 85°, * N
611	37.3	−54 26	3649	cB, S, R, bM
612	37.3	−56 46	5695	eeF, eS, R, F * s 1′
613	37.8	−69 50	4733	cB, S, R, bM
614	38.7	−70 29	4724	eF, S, eE at 10°
615	39.1	−72 46	4738	eF, vS, R, bM
616	40.6	−59 13	5695	eeF, eS, R, bet. 2 eF st.
617	43.6	−70 51	4738	eeF, eS, vF * 1′ sp
618	46.0	−58 58	5556	cF, S
	46.0	−58 58	5695	cF, S, vlE at 135°, sp.
619	46.3	−56 38	5695	eeF, eS, cE at 0°, susp.
620	47.4	−61 29	5550	eeF, eS, vE at 130°, nr. 2 eF st.
621	47.5	−70 43	4738	eF, vS, bet. 2 F st.
622	47.9	−70 27	4738	vF, S, R
623	48.2	−60 43	5548	F, S, R, am. 4 st., bM
624	48.9	−56 3	5695	eF, eS, R, susp.
625	49.7	−57 8	5695	eF, eS, cE at 130°, am. sev. st., susp.
626	52.1	−55 39	5695	eeF, eS, R, * 1′ f, susp.
627	52.7	−40 38	3701	vF, vS, R, susp.
628	52.9	−77 38	4740	eF, vS, F * np 1′, susp.
629	53.0	−41 49	3701	neb. like and hazy, but poss. defect, susp.
630	53.4	−68 7	4733	vF, S, R, cbM
631	54.6	−54 35	3649	cB, S, vE at 45°, susp.
632	55.5	−55 15	5695	eF, eS, 2-branch open sp.
633	55.6	−71 58	4738	F, S, cE at 15°
634	56.4	−57 52	5695	vF, vS, vE at 5°, * 1′ sp, susp.
635	56.5	−77 35	4740	eF, vS, eE at 25°, eF * n 1′, susp.
636	56.9	−69 45	4742	vF, vS, cE at 15°, lbM, susp.
637	57.2	−61 43	5550	eF, vS, eE at 20°, 2 F st. p, n 1′
638	57.3	−56 32	5695	eF, vS, eE at 0°, * N, susp.
639	57.7	−60 29	5550	! ! vF, vS, ring neb., d 0′.7, * N, vF * 0′.7 sf
640	58.6	−61 1	5550	eeF, eS, cE at 150°, F * 2′ s
641	58.7	−44 59	3701	F, S, E at 100°
..	59.5	−43 54	3701	F, S, R, bM (M. N. **59**, 568, Sw. XII, 16)
642	20 0.4	−56 27	5695	eF, vS, eE at 35°, lbM, Rem.
643	0.5	−71 18	4738	F, S, E at 5°, cbM
644	0.7	−55 44	5695	F, vS, cE at 10°, Rem.
645	0.7	−62 9	5550	vF, vS, eeE at 170°, vmbM
646	1.2	−63 5	5650	eF, eS, cE at 60°, bet. 2 eF st.
647	3.3	−53 23	3649	Hazy star
648	4.2	−55 32	5695	F, vS, R, Rem.
649	4.3	−73 0	4738	eF, bM
650	4.6	−53 54	3649	F, vS, E at 40°

H. N.	R. A. 1900.		Dec. 1900.		Plate.	Description.
	h.	*m.*	°	′		
651	20	4.8	−70	50	4738	eF, eS, bM
652		5.3	−71	18	4738	F, S, eE at 160°, vmbM
653		5.5	−65	5	5550	vF, S, B ∗ 3′ sf
654		5.8	−74	11	4738	F, S, cbM
655		5.9	−70	52	4738	vF, bM
656		6.4	−58	40	5695	eeF, eS, R, Rem.
657		6.4	−71	4	4738	bM, nr. N. G. C. 6872
658		6.5	−70	56	4738	eF, vS
659		6.7	−62	10	5550	2 neb., eF, eS, R, bM, close, ∗ 1′ sp
660		6.9	−62	11	5550	eF, eS, R, bM, ∗ 3′ np
661		7.1	−71	13	4738	eF, vS, eE at 15°
662		7.4	−58	12	5695	vF, vS, lE at 130°, ∗ 2′ s, Rem.
663		9.2	−71	9	4738	eF, eS, ∗ nr.
664		9.4	−55	20	5695	eeF, eS, cE at 0°, bet. 2 F st., Rem.
665		9.8	−71	19	4738	vF, bM
666		10.2	−71	18	4738	vF, bM
667		11.7	−69	42	4742	Hazy patch, may be only st., susp.
668		12.0	−67	13	4742	eF, eS, cE at 15°, bM, susp.
669		12.5	−67	19	4742	eF, vS, R, bM, susp.
670		12.8	−71	53	4738	vF, S, eE at 65°, ∗ magn. 9 nf 2′
671		21.8	−66	15	4742	vF, vS, cE at 20°, mbM
672		21.9	−72	30	4749	vF, vS, bM
673		21.9	−73	2	4749	eF, vS, lE at 90°, lbM
674		24.1	−73	48	4749	F, S, bM, bet. 2 F st.
675		24.7	−73	15	4749	eeF, eS, ∗ magn. 11 sp 1′
676		28.7	−76	48	4740	eF, S, R, cbM, susp.
677		28.8	−67	32	4742	F, S, cE at 130°
		29.0	−67	32	4606	eF, eS, indistinct, on edge of plate
678		29.9	−71	27	4749	eF, S, vE at 15°
679		32.2	−77	20	4740	vF, vS, cE at 125°, bM, susp.
680		34.4	−66	0	4742	vF, hazy patch, ∗ 10 magn. 2′ s, susp.
681		35.0	−78	26	4740	eF, vS, vE at 70°, lbM, susp.
682		36.0	−67	54	4742	eF, eS, R, susp.
683		36.1	−67	54	4742	eF, eS, R, susp.
684		38.1	−65	23	4606	vF, vS, R, alm. stell.
685		39.0	−65	27	4606	vF, vS, R, alm. stell.
686		40.0	−77	3	4740	cB, S, R, susp.
687		40.3	−72	19	4749	eF, eS, R
688		40.4	−72	20	4749	eF, eS, R
689		41.4	−72	10	4749	eF, vS
690		42.1	−72	9	4749	eF, vS
691		42.5	−39	33	3836	F, cL, eE at 150°, no ∗ N
692		42.6	−69	35	4606	F, L, eE at 140°, 4′ long
693		43.5	−68	49	4742	vF, bM, susp.
694		43.5	−71	31	4749	cF, vS, bM, ∗ magn. 11 n 2′

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h m.	° ′		
695	20 43.6	−71 24	4749	cF, vS, bet. 2 F st.
696	44.5	−72 0	4749	eF, eS, bet. 2 F st.
697	46.5	−73 32	4749	vF, vS, bM
698	49.9	−72 11	4749	eF, S, R
699	51.0	−73 2	4749	cB, S, eE at 20°, * N
700	51.6	−73 22	4749	eF, eS, R
701	53.1	−73 5	4749	eF, S, R
702	54.5	−72 15	4749	vF, S, cbM
703	57.0	−17 13	3816	Neb. streak, nr. middle * of 3, susp.
704	58.5	−74 3	4759	eF, eS, * magn. 10 np 2′
705	21 0.9	−63 42	4024	F, S, eE at 155°, cbM, Rem.
706	2.9	−74 31	4759	vF, vS, R
707	4.0	−74 11	4759	vF, vS, * magn. 11 np 3′
708	8.3	−71 4	4759	eF, vS, R
709	9.4	−66 51	4604	vF, vS, R, * 0.′5 np
710	9.4	−71 3	4759	eeF, vS, R, susp.
711	10.2	−64 10	4024	F, S, eE at 145°, * N, Rem.
712	12.5	−71 25	4759	vF, S, lE at 10°
713	13.4	−66 22	4604	F, S, cE at 110°
714	13.6	−66 16	4604	cF, S, * inv. in neb.
715	16.4	−73 45	4759	eF, eS, vF, bM
716	19.2	−74 31	4759	eF, vS, R
717	19.5	−71 16	4759	F, S, R, bM
718	20.0	−66 10	4604	eF, vS, cE at 10°
719	23.2	−73 6	4759	eF, vS, cbM
720	23.9	−74 33	4759	vF, bM
721	28.0	−71 26	4759	cF, S, R, * N
722	31.2	−71 50	4759	vF, S, cE at 35°, * magn. 10 sp 2′
723	35.0	−53 14	4029	F, eS, R, bM
724	35.7	−72 53	4759	cF, vS, cE at 15°, * magn. 12 p 1′
725	39.9	−65 51	4604	No desc. noted
726	41.1	−74 28	4759	vF, vS
727	43.8	−66 3	4604	eF, S, R, * N, may be 2-branch sp., susp.
728	45.2	−69 25	4604	eF, eS, R, susp.
729	46.2	−67 48	4604	eF, vS, vE at 135°
730	47.6	−65 59	4604	eF, vS, R, bet. 2 st. each 4′ distant, susp.
731	51.8	−65 56	4601	eF, eS, R, F * f 2′
732	56.2	−51 46	4029	F, cL, cE at 150°, cbM
733	56.9	−66 36	4601	vF, bM
..	57.5	−35 25	3840	bM (M. N. **59**, 568, Sw. XII, 31)
734	58.7	−68 0	4601	eeF, eS, bM
735	22 1.6	−53 12	4029	eF, eS, vE at 95°
736	2.7	−65 4	4601	eF, eS
737	4.2	−36 34	3840	eF, eS, * N, sp. or oval
738	6.7	−38 39	3840	eF, eS, cE at 150°

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
739	22 6.8	−38 37	3840	eF, eS, R, bM
740	6.9	−69 51	4601	eF, S, vE at 75°
741	7.5	−67 20	4601	vF, S, eeE at 30°, * n
742	8.8	−65 57	4601	eF, eS, bM
..	10.3	−37 19	3840	cB, S, cE at 40°, Sp. ? (M. N. **59**, 568, Sw. XII, 36)
743	10.4	−66 21	4601	eF, vS, bM
744	11.6	−60 9	4025	F, S, R, cbM, Rem.
745	12.9	−65 54	4601	eF, eeS, eE at 105°, * N
746	13.6	−38 1	3840	eF, eS, cE at 160°
747	15.0	−66 15	4601	eeF, eS, R, F * 1′ n p
748	15.7	−66 18	4601	! ! eF, vS, * N, 2-branch sp.
749	16.8	−67 21	4601	eF, vS, R, * N
750	17.2	−38 29	3840	F, eS, R, 2 st. n p
751	17.4	−65 43	4601	eeF, eS, vE at 65°, * N
752	17.6	−38 33	3840	eF, eS, cE at 40°
753	19.8	−66 27	4601	eF, vS, R, * 2′ nf, susp.
754	21.6	−66 23	4601	eF, eS, cE at 15°, susp.
755	21.8	−66 24	4601	eF, bM, susp.
756	22.8	−66 9	4601	!! eF, eS, * N, 2-branch open sp., d 1′.5
757	27.2	−65 12	4601	F, S, * N inv. in neb.
758	28.9	−62 3	4025	eF, eS, cE at 35°, cbM
759	30.5	−69 23	4601	eF, eeS, bM
760	33.3	−66 20	4601	eF, eeS, cE at 165°, cbM
761	34.5	−67 6	4601	eeF, bM
762	34.6	−67 8	4601	eF, eeS, cE at 60°, bM
763	37.6	−64 33	4025	eF, eS, eE at 0°, * N, Rem.
764	38.3	−65 52	4601	eF, eS, R, F * 0.′5 np
765	39.9	−65 25	4601	eF, S
766	40.2	−65 48	4601	vF, vS, vE at 125°, mbM
767	40.5	−65 21	4601	eF, vS, eeE at 15°, vlbM
768	40.6	−65 36	4601	cB, S, R, F * 0′.5 f
769	41.2	−69 26	4601	F, S, R, cbM
770	42.8	−69 13	4601	vF, vS, cE at 25°, cbM
771	45.5	−67 57	4601	eF, eeS, * N inv. in neb.
772	51.3	−69 36	4601	cF, S, R, * inv. in neb.
773	51.8	−65 39	4601	eF, vS, eeE, * N
..	52.5	−34 16	3954	F, S, cE at 145°, * N, cbM (M. N. **59**, 568, Sw. XII, 43)
774	53.1	−65 43	4601	eF, vS, R
775	55.5	−65 44	4615	vF, S, R, alm. *, susp.
776	56.4	−69 45	4615	vF, vS, cE at 40°, * N
777	57.4	−65 45	4615	eF, vS, eE at 5°, * N, bet. 2 st., susp.
778	23 3.4	−68 48	4615	eeF, eS, vE at 130°, 2 st. s, susp.
779	5.3	−68 38	4615	eF, eS, alm. *, susp.
780	12.5	−70 7	4615	eeF, eS, vF * 1′ f, susp.
781	12.5	−65 7	4615	vF, vS, 2 st. nr., susp.

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
782	23 21.7	−68 23	4615	F, S, bM, Rem.
783	22.3	−68 23	4615	F, S, Rem.
..	23.3	−41 53	4602	F, S, R, gbM, * 1′ sp (A. N. **147**, 209, Sw. XI, 230)
784	29.3	−65 58	4615	cB, S, edge of plate, indistinct, susp.
785	30.0	−67 58	4615	F, S, susp.

REMARKS.

388. Observed by Fr. on A 6765 as F, R, bet. 2 st., diam. 0′.3.
389. Observed by Fr. on A 6765 as ellip., 0′.8 by 0′.2 in pos. angle 150°, lbM.
401. Observed by Fr. on A 6765 as bM, magn. 15.
403. Observed by Fr. on A 6765 as planetary nebula, l ellip., mbM, diam. 0′.6.
407. Observed by Fr. on A 6765 as bM, magn. 13.
456. Observed by Fr. on A 6840 as bM, magn. 15.
642. Observed by Fr. on A 6770 as streak, F, 1′.0 by 0′.2 at 210°.
644. Observed by Fr. on A 6770 as R, diam. 0′.3.
648. Observed by Fr. on A 6770 as bM, magn. 15.
656. Observed by Fr. A 6770 as eF, R, diam. 0′.2.
662. Observed by Fr. on A 6770 as sp., 1′.0 by 0′.2 at 135°, F * at centre.
664. Observed by Fr. on A 6670 as ellip., 1′.0 by 0′.2 at 215°, lbM.
705. Observed by Fr. on A 6585 as elong. 2′, bM.
711. Observed by Fr. on A 6585 as elong. 3′, mbM.
744. Observed by Fr. A 6810 as R, diam. 0′.8, poss. a * of magn. 15, vmbM.
763. Observed by Fr. on A 6810 as 13 magn. * with wisps at 0° extending 1′ in each direction.
782. Observed by Fr. on A 6604 as bM, magn. 14.
783. Observed by Fr. on A 6604 as bM, magn. 13.

The nebulae, Sw. XI, Nos. 96, 97, 100, and 101, have been assumed to be identical with nebulae found on the Bruce plate A 4313, exp. 1^h, as given on page 161, though the positions are not very accordant in some cases. Sw. XI, Nos. 98 and 99, were not seen on A 4313.

As already stated, in addition to the discovery of new objects, corrections were made by Dr. Stewart in the positions of N. G. C. objects, when these appeared to be in error, and remarks were added, when the appearance on the plate did not conform to the description given in Dreyer's Catalogue. Table IV contains the objects thus corrected. The first four columns give, respectively, the N. G. C. number, the right ascension and declination in that catalogue, carried forward to 1900, and the plate number. The fifth column contains the corrections which were noted in the position and character, and a description of the object as it appeared on the photograph.

TABLE IV.

N. G. C. OBJECTS, CORRECTIONS AND REMARKS.

N. G. C.	R. A. 1900.		Dec. 1900.		Plate.	Description.
	h.	*m.*	°	′		
150	0	28.8	−28	22	4094	Fine S sp. at $29^m.3$, not at $28^m.8$ as given in N. G. C., dec. same
167		31.5	−23	56	3386	Not seen, but vF, vS, R, neb. at R. A. $30^m.4$, dec. same
362		58.9	−71	23	4897	R. A. $59^m.9$, not $58^m.9$
371	1	0.2	−72	36	4897	Field of st., lCM, cl.?
376		0.7	−73	22	4897	Dbl. * only, components 10″ apart at 270°
395		2.1	−72	32	4897	Gr. of ab. 10 st., not a neb.
406		4.0	−70	25	4897	BN with eE wisps through it at 165°
411		4.7	−72	18	4897	As in N. G. C., but R, S, stell., cB
422		5.7	−72	18	4897	Only 3 eF, st., close together, not a neb.
456		11.0	−73	50	4897	Sev. cB st., inv. in neb.
458		11.9	−73	4	4897	Prob. a cl., eS, close, no neb. seen
460		11.9	−73	50	4897	Sev. st. inv. in neb.
465		12.8	−74	52	4897	Many st., but no neb., perhaps open cl.
628		31.3	+15	16	4142	Identified as pL, 2-branch sp.
1187	2	58.4	−23	16	4011	cF, S, 2-branch sp., 2 st. sp, also on A 4075
1249	3	7.1	−53	43	4179	sp., 1 branch mb than other, E at 80°
1288		13.2	−32	57	4037	Close 2-branch sp., d 1′, stell. N
1313		17.8	−66	51	4826	As in N. G. C., but may be a 2-branch sp.
1327		20.6	−26	2	4092	3 vF st., close together, no neb.
1341		24.2	−37	30	4040	vE at 140°
1350?		25.6	−34	4	4037	Not seen, but a ring neb. at $27^m.3$, −33° 58′
1365		29.8	−36	28	4040	! open, 2-branch sp., DN
1414		36.5	−22	3	4052	E at 165°
1422		38.0	−22	1	4052	E at 65°, R. A. $3^h\ 37^m.1$
1433		38.9	−47	33	4181	! ! vB, vL, ellip. sp.
1438		40.4	−23	19	4052	R. A. $3^h\ 40^m.9$
1448		40.4	−44	58	4134	Not seen, error for 1457 which is identified
1452		41.0	−18	53	4217	Not seen, but a hazy * at $40^m.8$, −18° 56′
1495		54.9	−44	46	4139	E at 105° instead of 90° as given in N. G. C.
1512	4	0.6	−43	38	4139	Identified as eF ring neb. Long exp. needed
1520		0.8	−77	6	4881	No cl. seen, only 10 sc. st.
1523		3.8	−54	22	4183	Triangle of 3 vF st., not a neb.
1535		7.6	−13	0	4221	Not seen, but poss. a pB, R, neb. spot at $10^m.0$, −12° 47′
1549		13.0	−55	50	4084	R. A. $13^m.5$
1556		15.0	−50	24	4183	E at 165°
1559		16.4	−73	2	4899	!! 3-branch sp., 2 branches together, giving D appearance
1566		17.8	−55	11	4183	! L 2-branch sp.
1655		41.3	+20	45	4053	Not seen, but a hazy * p N. G. C. pos. by 1^m at same dec.
1672		44.2	−59	26	4904	!! 2-branch sp., iF
1730		55.0	−16	58	4218	As in N. G. C., but cE at 105°
1956	5	24.6	−77	50	4923	vF, hazy star inv. in neb.

N. G. C.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
2061	5 40.3	−34 0	4272	Not seen, sc. st., but no cl.
2089	43.5	−17 38	4219	As in N. G. C., hazy *
2090	43.4	−34 17	4272	As in N. G. C., but not a cl., cE at 10°, stell. N
2132	53.9	−59 56	4238	Only half dozen sc. st.
2203	6 8.1	−75 25	4923	F cl., not a neb.
2207	12.1	−21 20	4306	2 hazy st., surrounded by trace of ring neb., d 2′
2243	25.8	−31 13	4303	As in N. G. C., but F, open cl., st. 9 to 11 magn.
2267	37.0	−32 23	4303	As in N. G. C., 2 neb. close together
2358	7 12.3	−16 52	4220	No cl. seen, many sc. st.
2442	36.6	−69 18	4298	D, vF, vL, 2 st. inv. in vL sp. neb. 2443, included
2448	40.4	−24 27	4307	Only sc. st.
2455	44.6	−20 3	4307	Only sc. st.
2663	8 41.1	−33 28	4274	As in N. G. C., but dec. at −33° 26′ instead of −33° 28′
2835	9 13.4	−21 58	4309	!! vF, 2-branch open sp.
2867	18.6	−57 53	4248	Plan. neb., d 0′.3, also on A 4252 and 4254
2972	36.7	−49 52	4226	No cl., but S st. nr.
2997	41.3	−30 44	4313	!! sp. neb., d 6′ or more
3059	49.0	−73 28	5102	eF * inv. in circular neb., poss. ring neb.
3103	57.1	−31 12	4342	Not seen, poss. an error of 1^m for N. G. C. 3308
3124	10 1.9	−28 45	4384	As in N. G. C., poss. a ring neb.
3257	21.1	−57 23	4263	As in N. G. C., but at $20^m.3$, −57° 18′
3620	11 12.7	−75 38	4398	eF, S, cE at 80°, 12 magn. * s 0.′5
3621	13.4	−32 16	5213	! L, close, sp.
4304	12 17.0	−32 55	5205	eF, R, looks like ring neb.
4594	34.8	−11 4	3811	Peculiar blank space with neb., seen also on A 3765
4995	13 4.5	− 7 18	3776	! S ring neb. with * at centre
5367	51.7	−39 18	5328	B *, magn. 8, inv. in neb.
5408	57.3	−40 56	3637	R. A. correct, but dec. at −40° 54′
5427	58.2	− 5 33	3780	prob. a ring neb., d 1′
5442	59.4	− 9 14	3554	Curved wisp np
5483	14 4.2	−42 51	3637	! S sp.
5833	15 1.6	−72 29	4533	As in N. G. C., vE at 135°
5844	2.2	−64 18	5447	As in N. G. C., 3 vF neb. only
5979	38.3	−60 44	5447	Not seen
6156	16 26.1	−60 23	5451	As in N. G. C., but poss. a sp.
6300	17 7.6	−62 42	5453	! L 2-branch sp., D N
6328	13.9	−64 54	5455	eF pair of st. only, 1 * hazy
6352	17.8	−48 22	4411	A cl., not a neb.
6398	33.5	−61 38	5455	eF, hazy * only
6403	34.0	−61 38	5455	eF, hazy * only
6588	18 11.8	−63 51	5459	Not seen, sev. vF st., no neb.
6699	43.5	−57 25	5654	eF, close, 2-branch sp.
6706	47.4	−63 17	5459	vF, vS, eE at 120°, stell. N
6719	52.3	−68 44	4722	!! a vS, 2-branch sp.
6725	53.7	−54 4	5239	eF, eS, stell. N with straight wisp at 40 °

N. G. C.	R. A. 1900.		Dec. 1900.		Plate.	Description.
	h.	*m.*	°	′		
6744	19	0.3	−64	1	5546	!! sp., complex in structure, d 10′
6769		10.5	−60	40	5546	Pos. in R. A. $9^m.5$, not $10^m.5$
6770		10.7	−60	41	5546	Pos. in R. A. $9^m.7$, not $10^m.7$
6771		10.7	−60	43	5546	Pos. in R. A. $9^m.7$, not $10^m.7$
6776		14.2	−64	4	5546	Pos. in R. A. $12^m.6$, not $14^m.2$
6779		15.4	−71	42	4724	Not seen, 2 st. nr. magn. 8 or 9, but no neb.
6788		17.8	−55	9	5656	Not seen in N. G. C. pos., but at $18^m.7$ a neb., F, S, eE at 70°, B stell. N
6810		35.1	−58	53	5556	cF, S, eE at 170°, stell. N
6862	20	0.9	−56	41	5695	S, 2-branch sp.
6875		6.1	−46	28	4762	7 magn. * sp 3′, not nf as in N. G. C.
6872		6.3	−71	5	4738	2-branch sp., the f branch shows condensation into hazy st., also deviates from its course near another F *
6943		35.0	−69	6	4606	Sp. appearance, stell. N
7021	21	3.0	−63	56	5371	Not seen
7219	22	5.8	−65	20	4601	Ellipse of uniform neb., B stell. N, E at 55°
7329		33.4	−67	0	4601	!! Ellip. and sp. form
7358		38.9	−65	33	4601	Stell. N with wisps at 175°
7582	23	12.9	−42	40	4602	Pos. in dec. 42° 54′, not 42° 40′
7655		20.7	−68	35	4615	Gr. of st., not a neb.
7697		32.1	−66	6	4615	Not seen, but a triangle of 3 st. in that pos.
7793		53.4	−33	7	4877	vF, E, stell. N, * inv. in circular neb. with neb. dots

Many trails due to asteroids appear on the Bruce photographs. Some of these were noted during the examination of the plates for the discovery of nebulae. These are given in Table V, in which the first column contains the plate number, the second column, the date, and the third, the Greenwich Mean Time of the middle of the exposure. The position for 1900 is given in the fourth and fifth columns, and the length and direction of the trail, in the sixth column. The brightness, found in the seventh column, is expressed on a scale of 10, in which 1 indicates excessively faint, and 10, excessively bright, as shown by the appearance of the trail on the plate. The letters used in the last column are not intended as permanent designations for the asteroids to which they are applied, but simply to call attention to the fact that, in some cases, the same asteroid appears several times in the list. A few of the asteroids which have been thus marked with a letter may be identical with objects not thus designated on other plates; for, when a number of days elapsed before the following plate was taken, the identification of the different trails often became doubtful without an ephemeris. In this column, also, an interrogation point has been employed

to indicate that the existence of the object was doubtful, owing to uncertainty in the character of the trail. All early determinations of the positions of Ocllo, by Dr. Stewart, have been included, although many of these have already been published in the Harvard Circulars. Ocllo is indicated in the table by the letter O.

TABLE V.

ASTEROID TRAILS.

Plate.	Date.			G.M.T.	R. A. 1900.	Dec. 1900.	Trail.		Brt.	Des.
							Lgth.	Dir.		
	y.	m.	d.	h. m.	h. m.	° ′	′	°		
3308	98	9	16	12 40	16 10.9	−20 36	1.5	98	8	a
"	"			"	16 21.3	−17 58	2.0	95	1	b
3312	98	9	17	12 40	16 12.0	−20 38	1.5	95	8	a
"	"			"	16 23.2	−18 2	1.7	98	1	b
3386	98	11	3	13 52	0 39.1	−23 13	2.4	140	7	.
3387	"			16 16	0 39.1	−23 12	0.3	140	7	.
3517	99	5	8	19 2	17 26.6	−23 9	1.1	115	3	c
"	"			"	17 35.6	−22 31	1.1	80	7	d
3519	99	5	9	19 1	17 26.1	−23 6	1.2	115	3	c
"	"			"	17 35.2	−22 32	1.0	80	2	d
3522	99	5	10	19 3	17 25.6	−23 3	1.5	115	3	c
"	"			"	17 34.7	−22 33	1.3	80	4	d
3524	99	5	11	20 34	17 25.0	−23 0	0.8	110	1	c
"	"			"	17 34.2	−22 33	0.7	80	2	d
3550	99	5	29	13 1	13 42.4	−13 1	0.5	100	4	e
"	"			"	13 47.4	−10 4	0.6	95	4	f
"	"			"	13 49.7	−10 15	0.7	85	3	g
"	"			"	13 50.9	−10 5	0.8	125	7	h
"	"			"	13 54.4	−10 44	1.1	75	7	i
"	"			"	13 58.1	− 9 14	0.7	105	4	j
"	"			"	13 58.3	−10 6	0.5	135	3	k
3554	99	5	30	13 51	13 42.0	−13 1	0.6	90	4	e
"	"			"	13 46.9	−10 4	0.8	85	4	f
"	"			"	13 49.3	−10 16	0.8	85	3	g
"	"			"	13 50.4	−10 0	0.7	125	7	h
"	"			"	13 53.8	−10 46	1.2	75	7	i
"	"			"	13 57.7	− 9 12	0.7	105	4	j
"	"			"	13 57.9	−10 0	0.6	135	1	k
3630	99	6	12	16 38	16 9.2	−23 0	..	115	.	l
"	"			"	16 12.3	−20 4	..	112	.	m
"	"			"	16 25.0	−22 59	..	95	.	n
3632	99	6	13	16 21	16 8.6	−22 56	..	..	.	l
"	"			"	16 11.5	−20 1	..	..	.	m
"	"			"	16 24.1	−22 58	..	..	.	m
3634	99	6	14	16 15	16 7.9	−22 50	..	..	.	l
"	"			"	16 10.8	−19 57	..	..	.	m
"	"			"	16 23.2	−22 56	..	..	.	n
3635	99	6	15	18 35	16 7.2	−22 46	..	..	.	l
"	"			"	16 10.1	−19 52	..	..	.	m
"	"			"	16 22.2	−22 55	..	..	.	n
3659	99	6	27	15 56	14 27.5	−24 22	..	..	.	?
3671	99	7	1	15 54	14 49.3	−23 31	..	0	.	?
"	"			"	14 49.7	−23 11	..	165	.	?
3690	99	7	7	14 7	16 7.5	−24 48	0.5	70	2	.
"	"			"	16 8.9	−22 32	0.7	95	7	.
"	"			"	16 13.8	−21 2	..	170	.	?
"	"			"	16 19.7	−20 12	0.8	120	3	.
"	"			"	16 25.2	−24 49	1.2	85	7	.
3708	99	7	12	13 21	13 9.8	−12 33	..	130	4	.
3712	99	7	13	14 2	19 28.6	−12 27	0.5	88	.	?
3717	99	7	14	14 31	19 45.4	−14 9	0.2	100	.	.
3776	99	7	27	12 56	12 58.2	− 7 29	..	..	.	o
"	"			"	13 11.5	−10 6	0.4	95	1	.
"	"			"	13 17.2	− 9 43	0.5	130	7	.
3779	99	7	28	12 15	12 39.7	− 5 45	0.7	120	2	.
"	"			"	12 45.6	− 9 55	1.0	135	7	.
"	"			"	12 52.6	− 9 6	1.5	130	1	?
"	"			"	12 59.7	− 7 39	0.8	125	6	o
3780	"			13 32	14 12.6	− 8 14	0.6	130	7	.
3795	99	8	1	16 5	16 49.2	−17 14	0.2	110	1	.
"	"			"	16 49.4	−17 12	0.2	140	2	.
"	"			"	16 51.9	−16 25	0.7	150	.	?
3796	99	8	2	12 9	13 7.6	− 3 54	0.3	125	6	.
3816	99	8	7	14 59	21 0.8	−18 51	2.	70	1	.
"	"			"	21 3.3	−18 5	0.4	120	.	?
"	"			"	21 13.7	−18 9	2.4	50	1	.
"	"			"	21 22.4	−18 6	2.	90	4	.
"	"			"	21 25.0	−17 17	2.	90	7	.

Plate.	Date.			G.M.T.		R. A. 1900.		Dec. 1900.		Trail. Lgth.	Trail. Dir.	Brt.	Des.
	y.	m.	d.	h.	m.	h.	m.	°	′	′	°		
3840	99	8	14	16	0	22	4.3	−37	21	1.	95	.	?
4039	99	10	12	19	16	2	27.9	+22	11	0.4	90	.	.
4086	99	10	25	13	4	19	0.5	−11	41	2.5	90	7	p
"	"			"		19	4.0	−14	9	2.7	77	7	q
4091	99	10	26	12	58	19	2.3	−11	43	2.5	95	.	p
"	"			"		19	5.9	−14	8	2.4	85	.	q
4148	99	11	21	14	41	3	32.8	+20	49	0.7	30	7	.
4215	00	2	23	15	20	5	20.6	−28	39	0.6	80	4	?
4223	00	2	26	16	28	7	42.4	−54	25	0.4	80	.	?
4240	00	3	21	13	24	9	22.2	−38	54	0.4	140	4	.
4293	00	4	10	20	24	8	24.8	−25	38	0.8	89	9	r
4297	00	4	11	20	51	8	25.4	−25	38	0.7	89	9	r
4395	00	5	19	15	28	11	45.6	−12	3	0.3	95	.	?
4404	00	5	25	19	27	16	3.7	−12	15	0.3	95	7	s
4410	00	5	28	18	59	15	46.3	−12	32	0.5	100	8	.
"	"			"		15	47.4	−14	29	0.4	110	4	.
"	"			"		15	59.3	−11	17	0.5	100	8	.
"	"			"		16	1.4	−12	10	0.4	95	3	s
4417	00	5	31	19	6	16	5.8	−	5 38	0.3	87	8	.
4463	00	6	18	13	54	11	42.8	−	8 4	0.4	125	9	.
"	"			"		11	46.1	−	7 21	0.3	85	8	.
"	"			"		11	46.8	−	7 50	0.3	105	2	.
4691	00	9	11	13	12	17	53.2	−23	14	0.9	85	7	t
4700	00	9	12	13	3	17	53.8	−23	12	0.8	80	8	t
4713	00	9	13	13	15	17	54.7	−23	12	0.9	85	8	t

Plate.	Date.			G.M.T.		R. A. 1900.		Dec. 1900.		Trail. Lgth.	Trail. Dir.	Brt.	Des.
	y.	m.	d.	h.	m.	h.	m.	°	′	′	°		
4827	00	10	23	20	39	3	59.5	−78	39	0.9	112	7	?
4881	00	11	17	16	56	3	17.2	−77	7	1.5	170	.	?
"	"			"		3	19.2	−75	46	1.0	0	.	?
5137	01	4	24	14	22	9	7.4	−	6 44	0.4	102	9	.
5548	01	8	14	15	12	19	27.4	−61	30.0	1.3	162	7	O
5550	01	8	15	16	15	19	27.2	−61	20.2	1.2	172	4	"
5554	01	8	17	14	25	19	27.1	−61	0.5	0.6	175	3	"
5556	01	8	20	14	33	19	27.2	−60	26.7	..	..	.	"
5578	01	8	23	14	47	19	28.2	−59	48.5	0.4	15	4	"
5619	01	9	2	12	54	19	35.1	−57	17.5	1.0	25	4	"
5648	01	9	11	16	11	19	46.3	−54	29.4	0.7	30	3	"
5658	01	9	18	13	59	19	57.1	−52	6.7	0.6	36	4	"
5671	01	9	30	12	54	20	19.2	−47	34.0	1.2	38	3	"
"	"			13	46	20	19.2	−47	33.2	0.5	38	3	"
5689	01	10	1	14	41	20	21.3	−47	8.1	1.1	41	3	"
5693	01	10	2	15	9	20	23.4	−46	43.7	0.7	40	3	"
5696	01	10	4	13	14	20	27.2	−45	56.3	2.4	42	3	"
5700	01	10	5	14	19	20	29.3	−45	30.7	..	..	.	"
5702	01	10	7	13	1	20	33.3	−44	41.8	1.7	41	2	"
5707	01	10	8	15	38	20	35.6	−44	14.2	2.2	38	2	"
5710	01	10	9	14	58	20	37.6	−43	50.0	..	41	2	"
5715	01	10	31	13	23	21	24.5	−34	9.0	2.0	46	2	"
5720	01	11	13	12	48	21	52.5	−28	14.5	1.3	47	1	"
5721	01	11	13	13	42	21	52.5	−28	14.0	0.8	48	1	"

An examination of 43 Bruce plates, having exposures of four hours each, by Mr. Royal H. Frost, at Arequipa, during the years 1902 to 1905, led to the discovery of 453 nebulae not contained in the New General Catalogue of Dreyer, in previous Harvard lists, nor in the various publications mentioned on page 154. The examination included clusters as well as nebulae, but no new resolvable clusters were found. The area covered by a Bruce plate is about 40 square degrees, but where plates cover adjacent regions this is reduced by the overlapping of the regions to about 25 square degrees. The plates included in this examination, however, are pretty well scattered, so that the overlapping is small, and the whole area covered is probably about 1500 square degrees. This gives an average of less than one new nebula to three square degrees, though the distribution is very uneven, as shown by the last column of Table VI. The number of objects, not given in the N. G. C., on a

single plate ranges from 0 to 143. The distribution of the regions is without system, except that, since the plates were made in Arequipa, no regions north of declination +36° were examined. For exposures of four hours with the Bruce Telescope, the night must be moonless; otherwise, the plates become too densely fogged. As may be seen by reference to Table VI, the majority of the plates were made in or near the borders of the Milky Way, where nebulae are, in general, few in number. On the other hand, several plates were taken in nebulous regions, especially in the constellation Virgo, probably the region richest in nebulae in the whole sky. The method employed by Mr. Frost in the determination of the positions is the same as that described on page 151.

TABLE VI.

LIST OF BRUCE PLATES.

Plate.	Date.	J. D.	Exp.	R. A. 1900.	Dec. 1900.	Neb.	Plate.	Date.	J. D.	Exp.	R. A. 1900.	Dec. 1900.	Neb.
	y. *m.* *d.*			*h.* *m.*	°			*y.* *m.* *d.*			*h.* *m.*	°	
6395	1903 5 22	6257.582	240	12 22	−57.8	0	6717	1904 5 6	6607.576	240	11 0	−72.5	1
6401	" " 29	6264.633	240	16 11	−42.4	0	6718	" " 7	6608.578	240	12 10	+12.6	143
6417	" 6 16	6282.561	240	16 50	−42.5	R	6719	" " 9	6610.570	240	12 31	+17.8	51
6419	" " 19	6285.561	240	13 32	−52.4	2	6720	" " 10	6611.553	227	12 31	+12.7	138
6420	" " 20	6286.565	240	16 10	−42.7	1	6750	" 6 3	6635.571	230	13 10	−52.5	2
6422	" " 23	6289.581	240	14 30	−52.5	0	6751	" " 4	6636.592	240	14 10	−52.5	0
6423	" " 24	6290.597	240	15 14	−52.5	0	6762	" " 10	6642.569	240	14 50	−52.5	0
6452	" 7 15	6311.556	240	16 18	−57.5	0	6763	" " 11	6643.580	240	14 30	+17.7	37
6453	" " 16	6312.615	240	16 16	−32.7	2	6764	" " 13	6645.567	240	14 30	−47.6	2
6454	" " 17	6313.583	240	16 53	+17.2	4	6765	" " 14	6646.557	240	14 10	−42.2	9
6455	" " 20	6316.608	240	17 20	−57.5	3	6766	" " 15	6647.587	240	14 50	−42.3	7
6504	" 8 13	6340.574	240	18 30	−52.8	6	6770	" " 17	6649.818	240	20 21	−57.5	24
6506	" " 15	6342.604	240	18 51	− 2.3	0	6805	" 7 9	6671.555	225	15 50	−52.5	0
6510	" " 19	6346.610	240	19 52	+32.6	0	6808	" " 12	6674.574	240	17 31	−17.5	3, R
6572	" 9 14	6372.610	240	21 9	+22.8	0	6809	" " 13	6675.587	240	16 50	−57.5	0
6585	" " 19	6377.597	240	21 20	−62.6	9	6810	" " 16	6678.806	240	22 20	−62.5	13
6586	" " "	6377.822	242	2 49	−62.6	0	6840	" 8 1	6694.571	210	17 52	−57.5	4
6604	" 10 12	6400.635	240	23 51	−67.4	9	6851	" " 9	6702.580	240	18 10	−52.5	0
6649	1904 4 9	6580.577	240	10 0	−77.5	0	6852	" 8 10	6703.579	240	18 30	−47.5	0
6657	" " 13	6584.579	240	10 50	−57.5	0	6909	" " 31	6724.580	225	19 51	−52.4	39
6714	" 5 4	6605.560	225	13 30	−27.5	53	6910	" 9 1	6725.581	235	19 31	−47.5	2
6715	" " 5	6606.564	240	11 52	−62.5	4							

REMARKS.

6417. Contains a large nebulous patch. This is H. N. 1148. It was later confirmed, by Mr. E. S. Manson, Jr., on a Bache plate, B 33767, having an exposure of four hours.

6808. Three nebulae were seen on the extreme edge of the plate, but their positions were not determined.

In Table VI the first three columns give successively the plate number, the date, and the Julian Day and decimal of the middle of the exposure. The duration of the exposure is given in the fourth column, and the position of the centre of the plate, for 1900, in the fifth and sixth columns. The last column contains the number of nebulae, not found in the N. G. C., whose positions were determined on the plate. R, in the last column, refers to a remark at the end of the table.

Table VII contains a detailed list of the nebulae found on the plates given in Table VI. The first column gives the current Harvard number continued from Table III. Objects which were found in the N. G. C. have not been included, but all other objects found on the plates are given in the list. The Harvard number has not been applied, however, to any object known to have been announced up to the end of the year 1906, as explained on page 154 for Table III. The second and third columns give the approximate right ascension and declination of the object for the epoch 1900. The Bruce plate on which the nebula was found is given in the fourth column. The last column contains a description of the nebula as it appeared to Mr. Frost. The magnitudes which are given are only estimates, and the terms planetary and spiral appear to have been used in many cases where the objects are faint and difficult, and their true nature somewhat doubtful. Where the same object was observed on two plates, the observations have been included, as made on each plate. These amount to independent observations, since at the time of the second measure it was not known that a previous observation had been made.

TABLE VII.

LIST OF NEBULAE FOUND BY R. H. FROST.

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
786	0 4.9	−64 55	6604	E 2′, mbM
787	10 31.8	−72 44	6717	d 0′.5, bM, magn. 15
788	11 23.9	−62 26	6715	bM, neb. ext. 2′ in R. A. and 5′.0 in Dec.
789	31.1	−62 28	6715	Neb. around A. G. C. 15848, ext. from $11^h\ 30^m$ to $11^h\ 31^m$, and from −62° 14′ to −62° 40′
790	34.1	−62 58	6715	Neb. patch ext. from $11^h\ 30^m.6$ to $11^h\ 38^m.1$, and from −62° 28′ to −63° 14′
791	45.5	−64 20	6715	bM, neb. ext. 0′.5 each side in R. A.
792	59.5	+11 36	6718	R, poss. plan., magn. 15

H. N.	R. A. 1900.	Dec. 1900	Plate.	Description.
	h. *m.*	° ′		
793	12 0.0	+11 11	6718	eF, E at 10°, S, bet. N. G. C. 4082 and 4083
794	0.4	+13 16	6718	R, bM, magn. 14.5
795	2.1	+13 49	6718	R, bM, magn. 15
796	2.3	+13 33	6718	R, bM, magn. 15
797	2.8	+14 8	6718	R, bM, magn. 13.5
798	3.3	+11 44	6718	R, poss. plan., magn. 15
799	3.3	+10 34	6718	bM, magn. 15
800	4.2	+11 59	6718	S, R, bM
801	4.3	+14 10	6718	R, bM, dif., magn. 14.5
802	4.4	+14 38	6718	R, lbM, magn. 13.5
803	4.4	+14 33	6718	R, bM, dif., magn. 14.5
804	4.5	+14 47	6718	R, bM, magn. 14
805	4.9	+13 36	6718	R, bM, v dif., magn. 14.5
806	5.0	+14 55	6718	R, bM, dif., magn. 15
807	5.1	+12 52	6718	R, bM, magn. 13.5
808	5.3	+10 44	6718	S, E, bM
809	5.4	+14 45	6718	bM, magn. 14
810	5.4	+12 19	6718	bM, magn. 15
811	5.6	+13 53	6718	E at 35°, magn. 13.5
812	6.0	+14 42	6718	R, bM, magn. 14
813	6.0	+13 52	6718	vF, wisp at 35°
814	6.1	+14 50	6718	R, bM, magn. 13.5
815	6.1	+14 8	6718	bM, wisps ext. N and S 0′.5, magn. 13.5
..	6.6	+12 42	6718	Poss. sp., surrounding 13.5 magn. * (I. C. 768, J. 210, Sch. 174)
816	6.8	+14 45	6718	vF, E, bM
817	7.2	+13 2	6718	vF, sp.
818	7.3	+10 33	6718	R, poss. plan., magn. 16
819	7.4	+11 55	6718	R, bM, poss. plan., magn. 16
820	7.5	+12 52	6718	R, bM, d 0′.3
..	7.5	+12 41	6718	pF, sp., d 1′.9. Angle to line of sight, 60°. Pos. angle 40° (I. C. 769, J. 211, Sch. 175)
821	7.5	+11 38	6718	R, poss. plan., magn. 16
822	7.6	+13 18	6718	Wisp, E 0′.3
823	7.7	+10 34	6718	E 0′.5 in Dec., magn. 15
..	7.8	+14 31	6718	R, bM, magn. 14 (Sch. 273)
..	8.1	+13 28	6718	Sp., edgewise, wisps ext. 0′.5 each side of central 14 magn. * at 130° (Sch. 225)
824	8.2	+13 32	6718	R, bM, magn. 14.5
825	8.5	+15 2	6718	R, poss. plan., magn. 16
826	8.8	+13 14	6718	R, poss. plan., magn. 16.5
827	8.9	+14 46	6718	R, bM, poss. plan., magn. 16
828	9.2	+14 5	6718	R, poss. plan., magn. 16.5
829	9.3	+12 38	6718	bM, magn. 15
830	9.5	+14 21	6718	Streak, E 1′ at 50°

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. *m.*	° ′		
831	12 9.8	+14 38	6718	R, poss. plan., magn. 16
832	9.9	+14 0	6718	Sp., vF, doubtful
..	10.0	+13 5	6718	bM, magn. 14.5 (Sch. 229)
..	10.1	+14 34	6718	Sp., edgewise, ext. 1′.5 at 135° (Sch. 274)
..	10.1	+14 8	6718	R, stell. point at centre, magn. 15 (Sch. 275)
833	10.1	+12 34	6718	bM, magn. 14.5
834	10.2	+14 58	6718	R, poss. plan., magn. 14
835	10.2	+14 1	6718	Sp., edgewise, ext. 1′.0 at 160°
..	10.2	+13 43	6718	Sp., stell. point with 2 wisps, d 0′.5 (I. C. 771, Spitaler)
836	10.3	+12 4	6718	bM, magn. 16
837	10.3	+10 44	6718	bM, magn. 15.5
838	10.6	+14 10	6718	bM, magn. 16
..	10.7	+11 16	6718	Ext. 2′ at 170° (Sch. 152)
839	11.0	+14 58	6718	bM, magn. 15
840	11.0	+13 13	6718	bM, magn. 14
841	11.0	+12 6	6718	bM, magn. 14
842	11.1	+14 43	6718	bM, magn. 14
843	11.1	+13 14	6718	bM, magn. 15
844	11.3	+13 9	6718	bM, magn. 15
845	11.5	+14 33	6718	bM, magn. 14
846	11.5	+10 37	6718	bM, magn. 15.5
847	11.7	+14 49	6718	bM, magn. 14
848	11.9	+15 3	6718	bM, magn. 14.5
..	11.9	+14 9	6718	bM, magn. 14 (Sch. 277)
..	12.0	+ 9 58	6718	bM, magn. 14.5 (Sch. 80)
..	12.1	+12 59	6718	bM, ext. 1′.5 at 170° (Sch. 235)
849	12.1	+12 49	6718	bM, poss. wisps at 45°, magn. 14.5
850	12.2	+12 29	6718	bM, magn. 15
..	12.5	+12 55	6718	Ext. 1′.5 at 30° (Sch. 177)
851	12.7	+13 55	6718	R, bM, magn. 14
852	12.7	+13 42	6718	bM, magn. 14
..	12.7	+11 25	6718	Ellip., mbM, magn. 13.5 (Sch. 153)
..	13.2	+10 4	6718	Ellip., magn. 15 (Sch. 131)
853	13.3	+14 16	6718	R, bM, magn. 14.5
854	13.3	+13 48	6718	Ellip., magn. 15
855	13.5	+14 22	6718	R, bM, magn. 15
856	13.5	+12 25	6718	R, bM, magn. 16
857	13.6	+12 17	6718	Ellip., poss. D, magn. 14.5
..	13.8	+13 28	6718	R, bM, magn. 13.5 (I. C. 775, Bi. 171)
858	13.9	+13 1	6718	Streak ext. 1′ at 45°
859	13.9	+12 59	6718	R, bM, magn. 15.5
860	14.0	+14 32	6718	R, bM, magn. 14.5
..	14.3	+12 51	6718	R, bM, magn. 14.5 (Sch. 179)
861	14.4	+ 9 58	6718	R, bM, magn. 13.5
862	14.7	+12 58	6718	R, bM, magn. 14

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
863	12 14.8	+12 13	6718	R, mbM, magn. 15
..	15.2	+10 5	6718	R, bM, magn. 13 (Sch. 134)
..	15.3	+ 9 58	6718	R, bM, magn. 13 (Sch. 91)
864	15.4	+11 53	6718	R, bM, magn. 13
..	15.4	+10 47	6718	R, bM, magn. 13.5 (Sch. 135)
865	15.4	+10 24	6718	R, bM, magn. 13
866	15.5	+14 41	6718	F streak, ext. 2′.5 at 45°
867	15.9	+11 43	6718	bM, slightly ellip., magn. 14.5
868	15.9	+11 34	6718	R, bM, magn. 13.5
869	16.0	+12 18	6718	Poss. plan., lbM, magn. 15
870	16.4	+12 18	6718	bM, magn. 14
871	16.6	+11 9	6718	R, bM, magn. 14
872	16.9	+12 31	6718	F streak, 1′.5 at 70°
873	17.0	+12 18	6718	Sp., edgewise, * at centre, ext. 1′.0 at 140°
874	17.3	+11 9	6718	R, bM, magn. 15.5
875	17.5	+12 43	6718	R, bM, magn. 14.5
876	17.8	+13 8	6718	R, bM, magn. 15
877	17.9	+14 6	6718	bM, ellip., magn. 15
878	17.9	+10 39	6718	R, bM, magn. 14
879	18.1	+15 0	6718	R, bM, magn. 14
880	18.1	+12 16	6718	bM, ellip., magn. 15
881	18.1	+10 54	6718	R, bM, magn. 15
882	18.2	+14 56	6718	R, bM, magn. 14
883	18.2	+ 9 41	6718	R, bM, 1′.5, magn. 13, poss. a defect
884	18.5	+20 1	6719	Plan., R, B, d 0′.4
885	18.5	+10 12	6718	R, bM, magn. 13
..	18.6	+13 1	6720	R, lbM, d 0.7 (Sch. 241)
	18.7	+13 1	6718	vF, prob. sp., stell. centre
886	18.8	+12 2	6718	Sp., F * at centre, d 1′, doubtful
887	19.2	+10 59	6718	R, bM, magn. 14.5
888	19.3	+13 46	6720	vF, R, d 0′.2
	19.4	+13 47	6718	R, bM, magn. 15.5
889	19.5	+11 23	6718	R, bM, magn. 14
	19.5	+11 22	6720	vF, R, lbM, d 0′.2
890	19.8	+18 46	6719	R, F, bM, d 0′.2
891	19.8	+18 0	6719	Plan., R, F, d 0′.1
892	19.8	+12 34	6718	R, bM, magn. 14
893	20.0	+17 36	6719	Ellip., bM, 0′.5 by 0′.1 at 150°
894	20.1	+14 43	6720	vF, R, d 0′.2
..	20.1	+13 15	6720	bM, magn. 14 (Sch. 244)
	20.2	+13 15	6718	bM, ellip., magn. 14
895	20.2	+12 24	6718	bM, ellip., magn. 15
	20.2	+12 23	6720	F, bM, slightly ellip.
896	20.3	+14 43	6718	R, bM, magn. 15 4380)
..	20.3	+10 33	6720	Sp., ellip., 2′.5 by 1′.0 at 160°, stell. centre (Sch. 138 = N. G. C.

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
..	12 20.4	+12 48	6720	Streak, 1′.2 by 0′.2 at 135° (Sch. 185)
	20.4	+12 48	6718	Sp., edgewise, bM, ext. 1′.5 at 135°
897	20.5	+16 24	6719	Plan., R, F, d 0′.2 (C. R. **124**, 65, Bi. 297, p 0′.4, s 10′)
898	20.6	+12 52	6718	bM, ellip., magn. 15
899	20.9	+15 27	6719	bM, magn. 15
..	20.9	+10 36	6718	R, bM, magn. 14.5 (Sch. 141)
	20.9	+10 35	6720	lbM, d 0′.4
..	21.0	+12 21	6720	bM, magn. 15 (Sch. 186)
	21.1	+12 21	6718	R, bM, magn. 14.5
900	21.4	+17 25	6719	Ellip., 0′.2 by 0′.1 at 200°
901	21.5	+14 7	6720	bM, magn. 14.5
	21.6	+14 8	6718	R, bM, magn. 15
902	21.6	+11 55	6720	F, R, d 0′.1
	21.6	+11 55	6718	bM, R, magn. 15.5
903	21.6	+11 27	6720	bM, magn. 15.5
	21.6	+11 27	6718	R, bM, magn. 15
904	21.7	+13 0	6720	R, lbM, d 0′.2
	21.7	+13 0	6718	R, bm, Magn. 15
..	21.8	+13 44	6718	Streak, ext. 1′ at 170° (Sch. 251)
	21.8	+13 44	6720	Streak, 1′.0 by 0′.2 at 160°
..	21.8	+12 12	6720	bM, magn. 14 (Sch. 188)
	21.8	+12 12	6718	R, bM, magn. 14.5
905	21.8	+12 6	6718	R, bM, magn. 16
906	21.8	+10 19	6718	R, bM, magn. 15
907	21.9	+11 12	6718	R, bM, magn. 15.5
908	22.0	+13 6	6720	bM, magn. 15
	22.0	+13 6	6718	bM, ellip., magn. 15
..	22.1	+16 53	6719	Ellip., stell. centre, 1′.0 by 0′.2 at 230° (I. C. 792, J. 750)
909	22.1	+16 28	6719	Ellip., 1′.0 by 0′.2 at 240°
910	22.2	+16 59	6719	Plan., slightly ellip., d 0′.2
911	22.2	+16 36	6719	bM, magn. 14
912	22.3	+11 25	6718	F streak, ext. 1′ at 225°
	22.3	+11 24	6720	Streak, 1′.0 by 0′.1 at 225°
913	22.5	+10 32	6718	R, bM, magn. 15.5
914	23.1	+17 52	6719	2 neb., separated 1′.0, magn. 15.5
..	23.1	+12 39	6720	bM, magn. 14 (I. C. 794, J. 215, Sch. 191)
	23.1	+12 39	6718	R, bM, magn. 14
915	23.2	+14 7	6720	F, ellip., 0′.8 by 0′.2 at 150°
..	23.2	+12 20	6720	bM, magn. 14 (Sch. 192)
	23.2	+12 19	6718	R, bM, magn. 14
916	23.2	+10 50	6718	R, bM, magn. 15
	23.2	+10 50	6720	bM, magn. 15
917	23.3	+13 45	6720	vF, ellip., 0′.7 by 0′.3 at 90°
918	23.4	+13 22	6720	R, lbM, d 0′.2
	23.4	+13 22	6718	R, bM, magn. 15

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
919	12 23.5	+18 58	6719	Poss. sp., slightly ellip., d 0′.7, F * M
920	23.6	+15 34	6719	Poss. sp., ellip., 1′.5 by 0′.3 at 225°, B * M
	23.6	+15 32	6720	B, ellip., 1′.5 by 0′.3 at 225°, mbM
921	23.6	+13 28	6720	Ellip., 0′.5 by 0′.2 at 125°, bM
	23.8	+13 28	6718	Ellip., bM, magn. 14
922	24.2	+19 33	6719	bM, magn. 15.5
923	24.2	+15 21	6719	bM, magn. 15
..	24.3	+16 57	6719	Ellip., 0′.5 by 0′.1 at 135°, mbM (1. C. 796, J. 216)
..	24.3	+11 59	6720	bM, magn. 14 (Sch. 157)
	24.3	+11 58	6718	R, bM, magn. 14
..	24.3	+10 31	6720	R, d 0′.5 (Sch. 144)
924	24.5	+11 20	6720	Ellip., 0′.6 by 0′.2 at 250°
925	24.6	+15 35	6719	vF, R, magn. 16
926	24.6	+11 57	6720	Wisp, vF
927	24.7	+15 15	6719	bM, magn. 15
928	24.9	+11 10	6720	bM, magn. 14
..	25.1	+11 19	6720	bM, magn. 13 (Sch. 158)
929	25.3	+14 42	6720	B, R, d 0′.3
930	25.3	+12 9	6720	R, d 0′.2
931	25.4	+17 51	6719	bM, magn. 14.5
932	25.5	+19 21	6719	bM, magn. 15
933	25.5	+15 41	6719	Ellip., 0′.4 by 0′.1 at 135°, stell. centre
934	25.6	+20 13	6719	bM, magn. 14
935	25.7	+11 53	6720	bM, magn. 15
..	26.1	+12 35	6720	R, F, d 0′.1 (Sch. 198)
936	26.2	+14 40	6720	F, R, lbM, d 0′.2
937	26.2	+12 53	6720	bM, magn. 15.5
938	26.3	+13 17	6720	F, R, d 0′.1
939	26.3	+12 2	6720	bM, magn. 14
940	26.3	+11 14	6720	F, R, d 0′.1
941	26.4	+17 45	6719	Slightly ellip., vF
942	26.5	+15 25	6719	F streak, 0′.6 by 0′.1
	26.5	+15 25	6720	Ellip., 0′.6 by 0′.2 at 160°, lbM
..	26.7	+15 41	6719	2-branch sp., F, * at centre (I. C. 797, J. 217)
943	26.8	+13 12	6720	R, lbM, d 0′.3
..	26.9	+12 43	6720	vF, R, d 0′.3 (Sch. 200)
944	27.0	+15 51	6719	vF, R, d 0′.1
..	27.0	+12 27	6720	bM, magn. 14.5 (Sch. 201)
945	27.1	+12 37	6720	F, bM, magn. 16
946	27.1	+12 21	6720	bM, magn. 15
947	27.2	+12 20	6720	Ellip., 0′.8 by 0′.1 at 255°, * at centre
948	27.2	+10 48	6720	bM, magn. 13.5
949	27.3	+16 35	6719	F, R, d 0′.2
950	27.3	+11 49	6720	bM, magn. 13.5
951	27.4	+18 47	6719	R, lbM, d 0′.3

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
..	12 27.6	+14 44	6720	bM, magn. 15 (Sch. 289)
..	27.6	+14 36	6720	Fan-shaped, 1′.0 by 0′.5, bM (Sch. 288)
952	27.6	+13 19	6720	vF and dif., R, d 1′.0
953	27.8	+11 57	6720	bM, magn. 13
954	28.1	+17 57	6719	R, lbM, d 0′.3
955	28.1	+11 54	6720	bM, magn. 14
..	28.2	+13 24	6720	bM, magn. 15 (A. N. **143**, 344, I. R.)
956	28.2	+12 48	6720	bM, magn. 13
957	28.2	+11 29	6720	Streak, vF, 0′.6 by 0′.1 at 240°
..	28.3	+13 24	6720	bM, magn. 14, E at 45° (A. N. **143**, 344, I. R.)
958	28.7	+14 30	6720	Ellip., 0′.5 by 0′.2 at 90°, * at centre
959	28.7	+11 33	6720	bM, wisps ext. each side 0′.3 at 130°
..	28.8	+15 54	6719	Poss. sp., 1′.0 by 0′.2 at 160°, * at centre (I. C. 800, J. 219)
..	28.8	+13 52	6720	bM, magn. 14.5 (A. N. **143**, 344, I. R.)
960	29.1	+16 31	6719	F streak, 0′.5 by 0′.2
961	29.1	+13 17	6720	vF, R
962	29.2	+12 36	6720	bM, magn. 14
963	29.2	+11 38	6720	bM, magn. 15, 10 magn. * nf
964	29.5	+16 8	6719	vF, R, d 0′.2
965	29.5	+14 3	6720	vF, R
966	29.5	+10 10	6720	Ellip., 0′.8 by 0′.2 at 210°, bM
967	29.6	+15 45	6719	vF, ellip., 0′.6 by 0′.1 at 90°
968	29.6	+14 34	6720	vF, R
969	29.7	+10 43	6720	vF, R
970	29.8	+16 6	6719	bM, magn. 14
971	29.9	+18 21	6719	F, R, d 0′.3
972	30.2	+15 33	6719	vF, R, d 0′.7
..	30.4	+13 18	6720	Plan., B, d 0′.2 (A. N. **143**, 344, I. R.)
973	30.7	+12 13	6720	bM, magn. 14.5
974	30.9	+11 30	6720	vF, R, d 0′.1
975	31.1	+17 10	6719	bM, magn. 15.5
976	31.1	+12 24	6720	D, components equal, R, F, separated 0′.2 at 180°
977	31.2	+10 28	6720	Ellip., 0′.4 by 0′.1 at 220°
978	31.3	+19 51	6719	Sp., 1 branch B and 1, F, * at centre, and another * inv., d 0′.7
979	31.3	+14 9	6720	F, R, bM, d 0′.2
980	31.3	+11 43	6720	Com., head R, tail 1′.0 long at 110°
981	31.4	+12 18	6720	F, R, d 0′.2
982	31.5	+14 18	6720	vF, R, d 0′.2
983	31.6	+18 50	6719	F, R, d 0′.2
984	31.6	+11 39	6720	Ellip., 0′.4 by 0′.1 at 125°
..	31.7	+13 48	6720	Ellip., 1′.1 by 0′.2 at 185°, a 13 magn. * f 2 or 3 s (A. N. **143**, 344, I. R.)
..	31.9	+13 4	6720	bM, magn. 14 (Sch. 263)
985	32.8	+15 45	6719	bM, magn. 15

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. *m.*	° ′		
986	12 33.1	+10 38	6720	F, R, lbM, d 0′.1
987	33.2	+16 5	6719	bM, magn. 15
988	33.3	+20 4	6719	vF, R, d 0′.2
989	33.3	+12 16	6720	F, R, lbM, d 0′.2
990	33.4	+13 9	6720	F, slightly ellip.
991	33.5	+10 55	6720	F, R, d 0′.1
992	33.6	+14 54	6720	B, R, poss. plan., d 0′.2
993	33.6	+11 1	6720	R, d 0′.2, wisps ext. 1′.0 each side at 270°
994	34.1	+18 44	6719	Ellip., 0′.5 by 0′.2 at 185 °, bM
995	34.1	+15 16	6720	B, R, poss. plan., d 0′.2
996	34.1	+14 17	6720	F, R, lbM, d 0′.1
..	34.1	+13 54	6720	Ellip., 0′.4 by 0′.2 at 135°, B (Sch. 265)
997	34.2	+15 17	6719	bM, magn. 14
998	34.5	+16 2	6719	bM, magn. 14
999	34.5	+15 58	6719	vF, R, d 0′.3
1000	34.6	+12 32	6720	F, E 0′.4 at 180°
1001	34.6	+11 31	6720	vF, R
1002	34.8	+14 4	6720	Ellip., 0′.5 by 0′.1 at 245°, lbM
1003	34.9	+13 31	6720	bM, magn. 13
1004	35.2	+13 25	6720	F, R, bM, d 0′.2
1005	35.2	+10 26	6720	Plan., R, lbM, d 0′.2
1006	35.2	+10 23	6720	vF and dif., R
1007	35.3	+15 15	6720	vF and dif., R, d 0′.2
	35.3	+15 15	6719	F, R, d 0′.2
1008	35.3	+11 3	6720	B, R, lbM, d 0′.3
1009	35.7	+12 57	6720	F, v slightly ellip.
1010	35.8	+11 1	6720	F, ellip., 0′.8 by 0′.2 at 135°
1011	36.0	+11 43	6720	R, mbM, d 0′.3
1012	36.2	+11 56	6720	bM, magn. 13
1013	36.4	+15 15	6719	Slightly ellip., d 0′.4
	36.4	+15 14	6720	F, ellip., 0′.6 by 0′.2 at 240°
1014	36.7	+12 47	6720	F and dif., R, d 0′.3
1015	36.8	+12 2	6720	F and dif., R, d 0′.5
1016	36.9	+12 18	6720	R, bM, d 0′.2
..	37.0	+14 18	6720	F, R, * at centre, d 0′.2 (I. C. 805, Sw. VIII)
..	37.1	+12 22	6720	vF, R, d 0′.1 (I. C. 809, Sw. VII)
..	37.1	+12 18	6720	bM, magn. 13 (Sch. 213)
..	37.2	+13 8	6720	Poss. sp., * with wisps ext. 0′.5 on each side at 155° (I. C. 810, Sw. VII, Sch. 268)
1017	37.4	+12 16	6720	vF, R, d 0′.2
1018	37.5	+11 6	6720	F, R, d 0′.4
1019	37.8	+10 53	6720	B, R, 0′.2
1020	38.0	+11 13	6720	F, R, lbM, d 0′.2
1021	38.1	+11 45	6720	bM, magn. 13.5
1022	38.3	+11 45	6720	R, mbM, d 0′.3

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
1023	12 38.5	+11 35	6720	vF and dif., R, d 0′.2
1024	38.5	+11 24	6720	B, R, d 0′.2
..	38.7	+11 18	6720	Ellip., 1′.0 by 0′.2 at 225°, bM (Sch. 164)
1025	39.2	+12 39	6720	vF and dif., R, d 0′.6
1026	39.2	+11 43	6720	vF and dif., R, d 0′.2
1027	39.4	+10 43	6720	R, d 0.3
1028	39.8	+19 18	6719	bM, magn. 13.5
..	39.8	+12 53	6720	Ellip., 1′.4 by 0′.3 at 240°, mbM (Sch. 217)
..	39.8	+12 36	6720	vF and dif., R, d 0′.5 (Sch. 218)
1029	39.9	+10 49	6720	R, d 0′.3
1030	40.1	+11 26	6720	F, R, lbM, d 0′.5
1031	40.2	+12 58	6720	bM, magn. 14.5
1032	40.2	+10 51	6720	R, d 0′.2
..	40.4	+14 13	6720	R, lbM, d 0′.3 (Sch. 298)
1033	40.6	+13 52	6720	Ellip., 1′.3 by 0′.3 at 225°, bM
1034	41.2	+12 27	6720	bM, magn. 15
1035	41.4	+12 25	6720	bM, magn. 14
..	41.5	+12 26	6720	bM, magn. 14.5 (I. C. 815, J. 223)
1036	42.0	+10 43	6720	bM, vF, magn. 16
1037	42.3	+12 17	6720	bM, vF, magn. 16
..	42.3	+10 44	6720	bM, magn. 14 (Sch. 150)
1038	42.4	+12 42	6720	bM, magn. 15
1039	44.1	+15 27	6719	R, d 0′.2. Nr. edge of plate
	44.1	+15 26	6720	bM, magn. 13.5
1040	50.9	−49 47	6750	bM, magn. 14
1041	13 3.6	−51 26	6750	bM, magn. 14.5
1042	17.8	−25 47	6714	Neb. streak, 1′.5 long
1043	18.0	−25 35	6714	bM, magn. 14
1044	20.4	−27 7	6714	bM, magn. 14
1045	20.6	−26 9	6714	2 neb., separated 0′.3 in R. A.
1046	21.1	−29 50	6714	Ellip., 0′.5 by 0′.2, magn. 14
1047	21.2	−29 23	6714	F sp., central star magn. 13
1048	21.7	−27 26	6714	bM, magn. 13, nr. B *
1049	21.8	−28 57	6714	bM, magn. 14
..	22.0	−29 4	6714	bM, magn. 12 (N. G. C. 5150)
1050	22.1	−26 49	6714	bM, magn. 13.5
1051	22.1	−27 21	6714	bM, poss. sp.
1052	22.3	−26 43	6714	bM, magn. 14.5
1053	22.5	−26 51	6714	bM, magn. 13.5
1054	23.9	−27 46	6714	bM, magn. 14.5
1055	23.9	−29 37	6714	bM, magn. 14
1056	24.3	−27 30	6714	bM, magn. 14
1057	24.7	−27 46	6714	bM, wisps ext. 0′.1
1058	24.8	−27 25	6714	bM, magn. 14.5
1059	24.9	−25 15	6714	bM, magn. 14

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. *m.*	° ′		
1060	13 25.1	−25 45	6714	Wisp, 0′.7 long
1061	25.3	−24 49	6714	bM, magn. 14
1062	25.6	−29 27	6714	bM, magn. 14, poss. D
1063	25.8	−28 23	6714	bM, magn. 13
1064	26.1	−29 13	6714	bM, magn. 12.5
1065	26.6	−27 39	6714	bM, wisps ext. 0′.2 each side
1066	27.0	−26 37	6714	bM, poss. wisps ext. 0′.3
1067	27.1	−26 39	6714	bM, magn. 13.5
1068	28.1	−27 7	6714	bM, magn. 14
1069	29.0	−26 48	6714	bM, magn. 14
1070	29.3	−26 37	6714	bM, magn. 14
1071	29.8	−27 31	6714	Stell. N, surrounded by F ring 1′ d and alm. R
1072	30.2	−27 10	6714	bM, magn. 13.5
1073	30.6	−25 23	6714	bM, magn. 13
1074	30.9	−28 16	6714	bM, magn. 14
1075	30.9	−28 35	6714	Ellip., 0′.5 by 0′.2, magn. 14
1076	31.1	−26 3	6714	bM, poss. surrounded by sp.
1077	31.6	−28 9	6714	bM, magn. 13.5
1078	33.1	−29 10	6714	bM, magn. 14
1079	33.5	−25 20	6714	bM, magn. 13, wisps ext. 0′.3
1080	33.9	−50 32	6419	vF, poss. sp.
1081	34.2	−50 34	6419	bM, magn. 16 or 17
1082	34.5	−24 58	6714	Wisp 1′.3 long
1083	34.7	−28 23	6714	bM, magn. 14.5
1084	37.7	−28 28	6714	bM, magn. 14
1085	37.8	−29 18	6714	Ellip., 1′.5 by 0′.3, bM, magn. 13.5
1086	38.5	−26 44	6714	bM, magn. 13.5
1087	38.9	−29 38	6714	bM, magn. 15
1088	39.5	−28 9	6714	Wisp 0′.6 long and 0′.1 wide
1089	39.8	−29 44	6714	bM, magn. 13.5
1090	42.0	−28 56	6714	R, poss. plan., magn. 14
1091	42.7	−29 8	6714	R, poss. plan., magn. 14
1092	43.0	−29 44	6714	bM, magn. 12.5
1093	43.4	−29 27	6714	R, lbM, magn. 14
..	43.4	−29 48	6714	bM, magn. 12.5 (M. N. **60**, 611, Ho. 20)
1094	43.6	−27 49	6714	Ellip., 1′.0 by 0′.5, magn. 13.5
1095	14 8.5	−41 50	6765	R, lbM, d 0′.2
1096	8.8	−43 29	6765	F, R, d 0′.2
1097	8.8	−43 31	6765	F, R, d 0.′2
1098	10.6	−40 5	6765	vF and dif., R, d 0′.2
1099	14.7	−45 50	6764	Streak, 2′.9 by 0′.4 at 125°, tapers to sharp points
1100	17.4	+17 51	6763	vF, R, d 0′.2
1101	19.7	+17 5	6763	vF, R, lbM, d 0′.2
1102	20.1	+17 30	6763	vF, R, lbM, d 0′.2
1103	21.1	+17 5	6763	F, R, lbM, d 0′.2

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
1104	14 22.6	+17 16	6763	F, R, lbM, d 0′.2
1105	22.7	+16 39	6763	F, R, lbM, d 0′.1
1106	22.9	+17 20	6763	F, R, d 0′.2
1107	23.1	+16 39	6763	F, R, mbM, d 0′.2
1108	23.2	+16 40	6763	F, R, lbM, d 0′.2
1109	23.9	+17 47	6763	F, dif., R, d 0′.2
1110	24.0	+17 29	6763	F, R, mbM, d 0′.3
1111	24.2	+17 46	6763	bM, magn. 15
1112	24.6	+16 38	6763	Slightly ellip., lbM, d 0′.2
1113	25.4	−45 36	6764	F, ellip., 0′.8 by 0′.2 at 160°
1114	26.6	+15 41	6763	vF and dif., R, d 0′.2
1115	28.6	+18 9	6763	F, R, lbM, d 0′.1
1116	29.4	+16 37	6763	F and dif., R, d 0′.3
1117	29.8	+18 39	6763	F, R, lbM, d 0′.2
1118	31.1	+16 27	6763	F, R, d 0′.2
1119	31.2	+16 0	6763	vF, ellip., 0′.2 by 0′.1 at 180°
1120	32.1	+18 46	6763	F, slightly ellip., d 0′.2
1121	32.2	+18 48	6763	F, R, lbM, d 0′.2
1122	32.7	+18 40	6763	F, streak, 1′.2 by 0′.1 at 110°
1123	33.2	+16 17	6763	Com., head R, d 0′.2, wisps ext. at 170°
1124	33.6	−43 55	6766	Streak, 2′.0 by 0′.2 at 180°, connects 2 st., doubtful
1125	34.5	+16 18	6763	bM, magn. 15
1126	35.1	+18 55	6763	F and dif., R, * at centre, d 0′.4
1127	35.4	+16 34	6763	eF and dif., R, d 0′.2
1128	35.5	+19 22	6763	F, R, d 0′.4
1129	35.6	+17 6	6763	Ellip., 0′.6 by 0′.2 at 200°, lbM
1130	37.2	+19 0	6763	vF and dif., R, d 0′.2
1131	37.4	+19 3	6763	F, R, lbM, d 0′.1
..	37.7	+19 36	6763	F, R, lbM, d 0′.1 (I. C. 1047, J. 313)
1132	38.2	+19 2	6763	vF, R, lbM, d 0′.1
1133	38.6	+18 57	6763	vF, R, lbM, d 0′.1
..	39.4	+18 25	6763	bM, magn. 15 (I. C. 1050, J. 314)
1134	39.8	+15 57	6763	vF and dif., R, d 0′.2
1135	42.0	+16 33	6763	F, R, d 0′.2
1136	43.1	+18 52	6763	vF, R, d 0′.1
1137	45.7	−40 5	6766	Dif., R, lbM, d 0′.6
1138	51.1	−42 44	6766	R, d 0′.2. Also a streak, 1′.0 by 0′.2, at 100°
..	52.4	−41 37	6766	Sp., 2 vF branches, d 1′.2 (N. G. C. 5786)
1139	58.5	−43 8	6766	bM, magn. 14
1140	59.1	−42 4	6766	Ellip., 0′.6 by 0′.2 at 225°, bM
1141	59.7	−42 51	6766	bM, magn. 14
1142	16 11.3	−34 7	6453	bM, magn. 14
1143	11.9	−31 12	6453	Neb. streak of F st., 1′ in dec.
1144	12.4	−42 1	6420	Plan., magn. about 15
1145	39.8	+17 56	6454	F, R

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. m.	° ′		
1146	16 44.1	+19 28	6454	vF, R
1147	47.1	+17 36	6454	vF, R
1148	49.5	−40 18	6417	F, L, dif., ext. half a degree in R. A. and a fourth a degree in dec.
..	54.1	+20 11	6454	F, R, nr. edge of plate (I. C. 1236, Sf. 44, Sw. X)
1149	17 15.1	−59 55	6455	F, sp., d about 1′
1150	17.7	−59 38	6455	F, plan., magn. 15
1151	27.3	−59 31	6455	F, plan., magn. 15
1152	18 5.0	−57 46	6840	bM, magn. 14
1153	5.0	−57 45	6840	bM, magn. 14
1154	5.1	−57 47	6840	bM, magn. 14
1155	35.9	−52 57	6504	vF, bM, doubtful
1156	40.1	−53 15	6504	vF, plan., slightly E
..	47.2	−53 56	6504	vF, plan., E about 2′ (N. G. C. 6707)
..	47.5	−53 50	6504	R, plan., magn. 14 (N. G. C. 6708)
1157	48.2	−54 20	6504	bM, magn. 14, nr. edge of plate
1158	48.3	−54 25	6504	bM, magn. 14, nr. edge of plate
1159	19 27.6	−46 21	6910	F, R, F * at centre, d 0′.3
1160	29.0	−47 29	6910	F, R, F * at centre, d 0′.3
1161	29.8	−52 17	6909	F, R, lbM, d 0′.3
1162	29.9	−53 4	6909	F, R, lbM, d 0′.5
1163	30.1	−52 12	6909	F, R, lbM, d 0′.3
1164	31.9	−52 36	6909	F, R, lbM, d 0′.4
1165	35.6	−52 2	6909	F, R, mbM, d 0′.3
1166	36.9	−54 42	6909	F, R, lbM, d 0′.2
1167	37.2	−54 36	6909	bM, magn. 10
1168	39.3	−52 5	6909	bM, magn. 15
1169	41.7	−52 6	6909	bM, magn. 16
1170	42.7	−51 35	6909	bM, magn. 15
1171	48.5	−52 43	6909	bM, magn. 16
1172	49.4	−50 18	6909	bM, magn. 15
1173	50.1	−52 14	6909	bM, magn. 16
1174	50.6	−50 23	6909	F, R, d 0′.2
1175	50.8	−52 55	6909	bM, magn. 15
1176	51.0	−50 32	6909	F, R, F * at centre, d 0′.3
1177	51.2	−52 33	6909	bM, magn. 16
1178	51.6	−52 33	6909	bM, magn. 16
1179	52.4	−53 39	6909	vF, slightly E, lbM
1180	53.3	−52 54	6909	bM, magn. 14
1181	53.5	−53 8	6909	F, vE, 0′.5 by 0′.1 at 170°
1182	54.0	−54 12	6909	F, ellip., 0′.5 by 0′.2 at 170°
1183	54.6	−53 7	6909	bM, magn. 15
1184	59.1	−52 54	6909	F, R, d 0′.2
1185	59.1	−53 56	6909	F, v dif., R, lbM, d 0′.3
1186	59.3	−54 44	6909	bM, magn. 14

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. *m.*	° ′		
1187	19 59.7	−53 26	6909	bM, magn. 15
1188	20 2.8	−55 59	6770	bM, magn. 14
1189	3.7	−53 26	6909	F, dif., ellip., 1′.0 by 0′.2 at 90°
1190	4.3	−57 8	6770	bM, magn. 15
1191	5.1	−54 13	6909	F, R, d 0′.2
1192	6.4	−53 2	6909	bM, magn. 15
1193	6.8	−54 44	6909	bM, magn. 15
1194	6.9	−53 47	6909	vF and dif., R, d 0′.5
1195	8.6	−52 23	6909	vF and dif., R, lbM, d 0′.7
1196	8.7	−53 1	6909	vF and dif., R, d 0′.4
..	9.7	−53 7	6909	Ellip., 3′.0 by 0′.6 at 90°, hazy * at centre (N. G. C. 6887)
1197	9.8	−52 36	6909	F, R, lbM, d 0′.2
..	11.2	−54 17	6909	F, R, lbM, d 0′.5 (N. G. C. 6889)
1198	11.3	−58 52	6770	Sp., edgewise, 0′.8 by 0′.2 at 175°, F * at centre
1299	12.1	−53 46	6909	bM, magn. 15
1200	12.5	−52 56	6909	bM, magn. 14
1201	18.7	−55 5	6770	bM, magn. 15
1202	18.9	−55 7	6770	bM, magn. 13
1203	21.7	−57 4	6770	Ellip., 1′.0 by 0′.3 at 225°, lbM
1204	24.2	−57 55	6770	bM, magn. 14.5
1205	25.9	−54 51	6770	Disc-like, R, d 0′.2, magn. 14
1206	33.5	−55 50	6770	R, d 0′.2, magn. 15
1207	36.0	−57 23	6770	bM, magn. 14.5
1208	36.0	−57 41	6770	R, lbM, d 0′.2, magn. 15
1209	36.5	−57 30	6770	R, lbM, d 0′.2, magn. 15
1210	36.9	−57 59	6770	Ellip., 1′.0 by 0′.2 at 125°, F
1211	37.7	−58 48	6770	Ellip., 1′.0 by 0′.2 at 170°, F
1212	39.0	−57 21	6770	Ellip., 0′.5 by 0′.2 at 210°, F
1213	43.5	−58 3	6770	vF, and dif., R, d 0′.3
1214	44.2	−57 26	6770	bM, magn. 13
1215	44.8	−57 36	6770	bM, magn. 14
1216	52.6	−63 31	6585	R, plan., magn. 14
1217	21 7.9	−64 53	6585	E 1′.5, mbM
1218	9.6	−60 21	6585	E 1′
1219	23.1	−60 26	6585	vF, slightly E
1220	30.9	−64 48	6585	F, alm. R
1221	33.5	−64 51	6585	Plan., magn. 13
1222	46.0	−59 56	6585	Plan., magn. 15
1223	22 11.5	−60 7	6810	Disc-like, R, d 0′.2, magn. 14.5
1224	12.1	−60 23	6810	vF, 2-branch sp., 15 magn. * at centre
1225	12.9	−60 39	6810	bM, magn. 15
1226	15.8	−60 17	6810	bM, magn. 15
1227	16.0	−60 18	6810	bM, magn. 16
1228	16.7	−61 5	6810	bM, magn. 16
1229	18.2	−60 59	6810	bM, magn. 16

H. N.	R. A. 1900.	Dec. 1900.	Plate.	Description.
	h. *m.*	° ′		
1230	22 21.4	−60 54	6810	F, ellip., 0′.5 by 0′.1 at 195°
1231	21.5	−60 14	6810	F, ellip., 0′.7 by 0′.2 at 105°
1232	28.1	−61 54	6810	bM, magn. 15
1233	35.0	−61 17	6810	F, v slightly ellip., d 0′.2
..	23 17.0	−68 11	6604	bM, magn. 14 (N. G. C. 7633)
1234	21.4	−68 18	6604	bM, magn. 14
1235	21.5	−68 18	6604	bM, magn. 14
1236	32.4	−69 0	6604	bM
1237	57.6	−66 45	6604	Slightly E
1238	58.3	−65 45	6604	Alm. R, lbM

Table VIII contains a list of nebulae which are shown to be spiral on the photographs, although, with the exception of N. G. C. 4254, 4321, and 5236, they are not described as such in the N. G. C. In most cases, the spiral nature of these nebulae seems certain, and in all cases there are indications of such a structure. In addition to these, many other nebulae occur on the plates, which may be spiral but are seen edgewise, so that the spiral structure remains in doubt. Some of these objects consist merely of an elongated streak of nebulosity, some are more or less condensed at the centre, while others have a distinctly stellar nucleus. These objects have not been included, but only those which show indications of breaking up into branches. The N. G. C. number is given in the first column of Table VIII, and the right ascension and declination for 1900, in the second and third columns. The first nebula, however, is I. C. 769, and the designation is printed in Italics. The estimated angle between the line of sight and the plane of the spiral is given in the fourth column. This angle may vary between 0° and 90°, but when it is near 0° the nebula is seen edgewise, and, as stated above, the nature of such objects is doubtful, and they have been omitted. The fifth column gives the position angle of the line of intersection of the plane of the nebula with the plane at right angles to the line of sight. When the angle given in the fourth column approaches 90°, the angle in the fifth column becomes uncertain and cannot be estimated with accuracy. The direction of the spiral is given in the sixth column. The letter R denotes that the spiral is right handed, or that the apparent motion of a point receding from the centre along one of the spirals would be opposite to that of the hands of a clock. A left handed spiral is denoted by the letter L. It seems at first singular, that of the 20 spirals, 8 are certainly, and 8 are probably

TABLE VIII.

SPIRAL NEBULAE.

N. G. C.	R. A. 1900.	Dec. 1900.	Incl.	Pos. Angle.	Dir.	N. G. C.	R. A. 1900.	Dec. 1900.	Incl.	Pos. Angle.	Dir.
	h. m.	° ′	°	°			h. m.	° ′	°	°	
769	12 7.5	+12 41	60	40	R	4548	12 30.4	+15 3	80	75?	R?
4178	7.6	+11 26	40	30	R?	4567	31.5	+11 48	70	60	R?
4189	8.7	+13 59	80	90	R	4568	31.5	+11 47	45	30	.
4206	10.2	+13 36	15	5	.	4569	31.8	+13 43	45	25	.
4208	10.4	+14 27	70	50	.	4579	32.7	+12 22	70	50	L?
4216	10.8	+13 42	20	25	.	4639	37.8	+13 48	80	165	R?
4254	13.8	+14 58	90	..	R	4651	38.7	+16 56	45	40	.
4294	16.2	+12 4	30	150	.	4654	38.9	+13 40	45	120	L
4298	16.4	+15 10	45	135	.	4710	44.6	+15 43	10	35	.
4299	16.6	+12 4	80	140	.	5182	13 25.1	−27 38	90	..	R?
4321	17.9	+16 23	90	..	L	5236	31.4	−29 21	90	..	R
4388	20.7	+13 13	30	90	R?	5483	14 4.2	−42 51	90	..	R
4402	21.1	+13 40	30	90	.	5643	26.2	−43 45	..	..	.
4413	21.5	+13 10	90?	..	.	6215	16 42.5	−58 49	90	..	R
4429	22.4	+11 40	30	105	.	6221	44.1	−59 2	90	..	R
4438	22.7	+13 34	40	25	R?	7083	21 27.8	−64 21	75	30	R?
4440	22.8	+12 51	80	120	.	7125	41.9	−61 10	80	90	R
4498	26.6	+17 24	40	130	.	7733	23 37.0	−66 32	..	..	.
4501	26.9	+14 58	40	135	L	7734	37.1	−66 31	..	..	.

right-handed, and only 3 certainly, and 1 probably left-handed. It will be noticed, however, that a large part of the spirals are in a somewhat limited portion of the sky. The spiral character of N. G. C. 5643, 7733, and 7734 is not certain.

N. G. C. Nos. 4107, 4119, 4168, 4320, 4354, 4367, 4368, 4380, 4397, 4398, 4407, 4443, 4482, 4554, 4667, 6082, 7021, were not found on the Bruce plates of 4^h exposure, although the regions in which they occur according to that catalogue were covered by these plates.

Six lists of new nebulae have been issued by the Königstuhl-Heidelberg Observatory, containing in all nearly three thousand new objects. The greater part of these have been found by the Director, Dr. Max Wolf, on photographic plates made with the Bruce 16-inch refractor of that Observatory. A comparison of the results which have been obtained with this instrument with those which have been obtained with the Bruce 24-inch refractor of the Harvard Observatory at Arequipa, would have great interest. Unfortunately, however, the regions so far covered by the Harvard plates, since they are chiefly in the southern sky, coincide with only one of the regions examined at Heidelberg,

that of List No. 2, and this only in part. This list was made by Schwassmann from plates taken with a 6-inch refractor. A region extending from about 12^h 2^m to 12^h 42^m, in right ascension, and from 10° north to 15° north is common to both Schwassmann's list and to the present Harvard list. It should be borne in mind, also, in any discussion of the number and distribution of nebulae, as derived from an examination of photographic plates, as well as in the comparison of the results obtained by different instruments, that much fainter objects are shown near the centre, where the definition is more nearly perfect, than near the edges of the plates.

A comparison of the Königstuhl-Heidelberg List No. 2 with the present Harvard list, where the two regions overlap, shows 208 objects in the Harvard list, which are not given in Schwassmann's list. On the other hand, 57 objects are given in Schwassmann's list which do not appear in the Harvard list. Of these, however, 12 are really N. G. C. objects, or parts of N. G. C. objects, though not so stated by Schwassmann, and, hence, were intentionally omitted from the Harvard list, though they are well shown on the Bruce plates. 36 objects, given by Schwassmann, are distinctly stellar on the Bruce plates made at Arequipa, either double, or triple stars, or single stars, which seem to have been mistaken for nebulae in some cases when faint. In 6 cases nothing was found in Schwassmann's position, though there were faint stars near. Three objects found by Schwassmann were apparently overlooked by Frost, although they are well shown on the Bruce plates. It is probable, that these discrepancies are due to the difference in size of the instruments used.