ANNUAL REPORTS

OF THE

BOARD OF DIRECTORS

OF THE

Chicago Astronomical Society

TOGETHER WITH THE

REPORT OF THE DIRECTOR

OF THE

DEARBORN OBSERVATORY,

FOR

1885 AND 1886.

WITH PAPERS BY

PROFS. SAFFORD (NEBULÆ), COLBERT (LUNAR APSIDES AND SIRIUS), AND HOUGH (DOUBLE STAR CATALOGUE AND PRINTING CHRONOGRAPH).

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APPENDIX C.

Nebulæ found at the Dearborn Observatory, 1866-8.

The following is an extract from my journals of observation of 1866-8, or rather from a copy of a portion of these journals. It was drawn up at the request of Mr. Colbert, in order to complete the record of observed nebulæ.

As I have had no access to the original journals, and here at Williamstown have no copies of the principal catalogues of nebulæ, I must simply rely upon my remembrance that the positions were carefully determined (by circle-readings after placing the objects in the centre field), and that in most cases the zero-points of the circles, including chronometer-correction, was immediately secured by a neighboring bright star.

I can not, of course, guarantee the accuracy of the positions; but at the time took pains immediately to reduce the observations, and, if I remember rightly, to assure myself that the nebulæ in question were not in Herschel's general catalogue. The numbers are current,* from the beginning of the work upon the nebulæ till 1868, when I began the use of the meridian circle.

During those early years I was much troubled with sight-seers, and more with the faulty construction of the old dome and its shutters. These blundering contrivances greatly restricted the work which it was possible to do, and especially conditioned the declinations in which, from time to time, I found it practicable to work.

Before undertaking these labors, I had given my time chiefly to observations of precision, and took up this subject of the nebulæ mainly to gain a practical acquaintance with

* Nos. 1, 4, 17 were afterwards found identical with known nebulæ.

* Nos. 86, 88, 95, 100, and 101 were found by Mr. A. N. Skinner, then assistant at Dearborn Observatory.

these very interesting bodies. In 1868, I began the Zone 35° to 40° with the meridian circle, in order not to be without solid scientific work, and continued it until interrupted by the great fire of 1871. It was only some years afterward that the great dome was taken down and replaced by one of a more practicable construction. Family cares made it necessary for me to attend to a more practical department of astronomy from 1871 to 1876, in which year I accepted the Field memorial professorship in Williams College.

TRUMAN HENRY SAFFORD.

Nebulæ found at the Dearborn Observatory, 1866-8.

No.	AR. 1870·0.	Decl. 1870·0.	Description.	Date.
	h m s	° ′ ″		
842 - 2	12 54 23·4	+29 44·7	pF	1866, May 3
843 - 3	55 23	29 44	FbN	3
Ic 1008 5	14 19 18	28 55·4	pF —	4
Ic 1030 - 6	28 10	32 16·0	pF —	4
Ic 1127. 7	15 30 16	23 54·8	pF ~	4
1012 - 8	14 21 36	31 33·9	no description	9
1132 - 9	15 34 09	21 05·1	no description	9
Ic 1148 -10	15 51 15	22 47·2	neb.*	9
11	12 35 09	26 44·5	F	11
12	12 35 15	26 46·2	F	11
Ic 1026 -13	14 25 40	31 48	pB —	11
Ic 949 -14	13 46 06	23 11	pF	14
I 1006-15	14 16 59	24 23	F —	14
16	14 25 08	29 48	bN	14
777 - 18	12 13 00·5	29 01·3	vF	14
779 - 19	12 13 16·8	30 36·6	F	16
20	12 16 10·7	30 37·7	vB probably well known	16
21	12 31 57·2	29 39·1	F	16
Ic 832 - 22	12 47 48·0	27 09·0	neb.* 12m —	16
23	12 52 02·5	27 06·2	pB	16
24	15 23 41	13 26·5	pB diam 30″	June 1
25	15 41 03	18 19·3	pB see good nucl.	1
Ic 791 — 26	12 20 29	23 21·2	bN (12m) —	6
Ic 916 - 27	13 36 28	25 08·0	nucleus 13m —	6
Ic 909 - 28	13 34 41	25 09·8	no description —	6
Ic 1253-29	17 14 06	16 48·0	F	6
30	18 06 28	21 25	pB	6
31	18 07 00	21 24	pF	6
32	18 33 24	25 15	pB pL	6
33	18 06 03·5	31 05·8	bN (12m) diam. 20″	7
34	18 32 54·5	25 13	pF	9
35	18 36 02·4	36 08	vmbM 40″ diam. nucl. 12m	9
Ic 1302 - 36	19 26 02·4	35 29	vF undefined	9
Ic 1303 - 37	19 26 37·8	35 35	vF 30″ diam. w. small cluster	9
—	14 56 13	26 30·3	doubtful	15
38	16 52 04	28 03	vF vS iF	July 11
39	16 52 18	28 03	FSbM	11
40	16 52 48	28 02·5	pB S vmb M	11
41	17 46 27	24 30·0		11
42	19 06 05	30 19·7	SpB FmbM	12
43	19 49 47·8	28 56·2	pS F bMR	12
Ic 1236 - 44	16 52 52	20 16·0	vF nearly R not vmb M pS	Aug. 1
45	17 22 06	+26 36·2	SbM pF	1

34. Same as 32?

—. Not numbered; place probably in error.

45. Precedes another H 111·137 by 11ˢ.

No.	AR. 1870·0.	Decl. 1870·0.	Description.	Date.
	h m s	° ′ ″		
46	17 56 11·5	+19 45·9	pB vmb M pS	Aug. 1
47	18 23 33	22 49·2	pS pB vmb M	9
48	17 38 20	25 52·8	pB pL vmb M (bi N ?)	28
49	17 19 25	29 31·2	neb.* 11m	Sept. 5
50	21 30 08	34 49·1	neb.* pB vmb M	12
51	20 50 50	30 33·9	possibly connected with h 2093	13
52	21 57 03	14 29·3	vF vS neb M	14
53	22 32 47	33 18·6	no description	14
54	18 33 14	39 56·7	pB pS gbM	28
55	21 20 52	18 05·5	pS pF iF	29
56	22 22 10	16 07·4	pS neb M N pF	Oct. 1
57	22 39 23	20 23·0	vS RbM N 13m	1
58	23 04 55	28 55·3	F pS F gbM	1
59	23 08 57	29 50·2	a small cluster ?	1
60	0 24 28	30 06·0	probably a small cluster	8
61	1 26 09	35 01·2	S pF R bM	10
62	1 05 49	38 03·9	pS pB gar bM	29
63	1 26 11	30 00·8	pF vS probably a well-known outlier of M 33	Nov. 1
64	1 52 49	30 40·7		5
65	0 31 33	28 47·7	neb.* 13m	5
66	0 54 21	30 22·4	F iF lb M	8
67	1 51 15	35 58·6	pF neb M N = 13m	8
68	1 52 03	30 17·3	S pF iF gbM	9
69	1 13 07	28 59·2	pS pB vmb M N = 12m.13	Dec. 1
70	3 36 24	31 43·2	vL vgbM pB	1
71	1 59 53	30 33·0	pB pL RbM	4
72	1 42 10	20 04·4	pB pS bM N = 13m	27
73	3 56 06	21 47·6	F S R N = 13m.5	1867, Jan. 1
74	7 25 54	33 05·8	pS pB vmb M N = 12m.13	Feb. 5
75	15 44 34	19 19·4	no description	Apr. 24
76	16 09 55	19 46·3	double nebula pF dist 40″	24
77	15 59 28	15 22·9	S pF bM N = 12m.5	26
78	14 22 05	+14 21·7	pL F vgbM R	27
79	20 13 56	−12 45·5	pB S R N = 12m	Aug. 24
80	20 13 38	−12 44·5	no description	24
81	18 09 10	−19 46·4	* 10m pF nebulosity	28
82	18 47 34	− 8 57·3	pL pB gb M	28
83	20 29 28	− 5 01·2	no description*	29

48. Position not certain.

49. Decl. 29°.41′.2 ?

64. Don't understand *copy* of notes.

70. A loose cluster with nebula.

83. Position doubtful [5966]. I suppose those numbers [5966] refer to a continuation of G.C. not within my reach. They were inserted by some one since I left Chicago. The numbers of G.C. end with 5079, and contains all nebulæ then (1866) known to me.

83.* From this point on the descriptions have not been copied from the observing book into the book sent me. T. H. S.

No.	AR. 1870·0.	Decl. 1870·0.	Description.	Date.
	h m s	° ′ ″		
84	22 21 35	− 3 33·4		Sept. 19
85	21 17 50	− 6 18·0		21
86	22 49 00	− 6 12		21
87	23 52 51	− 4 52·7		23
88	23 58 25	− 7 50·5		23
89	0 12 21	− 4 00·6		23
90	0 20 26	− 2 29·8		23
91	0 20 44	− 2 29·3		23
92	0 21 19	− 2 31·8		23
93	22 49 35	+ 3 14·6		27
94	0 36 43	− 0 51·2		27
95	1 26 17	− 1 20·8		27
96	0 11 00	+10 42·6		30
97	0 28 58	+ 8 24·7		Oct. 22
98	2 00 47	− 2 00·7		22
99	23 47 31	− 0 20·6		23
100	1 24 12	− 2 41·3		23
101	2 03 02	−10 17·4		23
102	3 00 15	− 1 17·5		31
103	2 31 41	+ 1 33·0		Nov. 1
104	13 13 28	−11 52·3		1868, May 20
105	13 56 55	− 9 30·6		20
106	14 44 58	− 6 42·1		23
107	12 15 32	+30 47·8		June 11
108	11 51 42	+10 43·1		12

84. Position doubtful [6053].
85. Probably = G.C. 4654. NGC 7051.
99. [6230.]
103. [5266.] My own note is that this nebula possibly = G.C. 581.
104. G.C. 3489?
105. [5785?]
107. See No. 20.
108. [5598.]