ASTRONOMISCHE NACHRICHTEN.

№ 2752.

Catalogue No. 4 of Nebulae discovered at the Warner Observatory.

No.	Date of discov.	α 1885.0	δ 1885.0	Descriptions and remarks
1	1886 Aug. 9	$0^h\,28^m\,30^s$	$-10°\,20'\,7''$	p F; p S; R; * near nf.
2	1886 Sept. 1	0 28 40	−11 23 25	p F; S; R.
3	1886 Aug. 9	0 30 25	−10 45 20	e F; v S; R; v diff.; only 1 * v near.
4	» » 9	0 36 0	−10 38 48	v F; p S; R.
5	1886 Sept. 2	1 9 30	− 2 13 33	p B; v S; l E.
6	» » 1	1 46 50	+11 28 54	e F; S; R; B * nr. f.
7	» » 2	2 1 40	+16 39 30	e F; v S; R; right angled with 2 st.
8	1885 Oct. 30	2 27 30	+31 59 21	e e F; S; v E; p B * nr. sp.
9	1886 Sept. 1	2 30 5	+11 8 56	v F; S; R; B M; forms trap. with 3 st.
10	» » 6	2 30 47	+20 35 53	p F; p S; c E; * nr. s.
11	1883 Aug. 31	2 56 55	+42 22 51	v F; p S; l E; in contact on p. side with a p B *; D * np. points to it ab. 4".5 = mag.
12	1886 Sept. 6	3 2 20	+ 3 39 44	p F; p S; R.
13	» » 1	3 12 50	− 2 23 24	v F; S; R; 4 st f. in a row.
14	1884 June 11	14 2 2	+66 14 59	e F; v S; R; nearly bet. 2 st.
15	1886 June 20	14 49 5	+19 7 4	e e e F; p S; R; p B * close f; e e diff.
16	» » 20	14 56 45	+19 8 49	e e F; p S; l E; p B * close f; easily overlooked.
17	1886 July 22	14 59 30	+29 57 20	e e e F; p S; l E; e e diff.
18	1886 June 28	15 51 20	+65 11 53	e e e F; S; R; D * points to it; e e diff.
19	» » 28	15 52 5	+65 15 38	p F; p S; R; B M; * close; forms a little right angle with 2 st.
20	» » 19	15 58 18	+17 32 30	e e e F; v S; R; e e e diff. N6034
21	» » 27	15 59 15	+18 0 40	e e e F; v S; R; sp. of 3 in a line; the other 2 being 2 of Stephan's; 3rd of 10. See note.
22	1886 June 27	15 59 38	+18 6 3	e e F; l E; p S; 4th of 10.
23	» » 27	15 59 40	+18 12 3	e e F; v S; R; v f * nr. p; 5th of 10.
24	» » 27	15 59 45	+18 5 3	e e F; v S; R; v diff.; 6th of 10.
25	» » 27	15 59 50	+18 2 33	e F; R; p S; F * close north; 7th of 10.
26	» » 27	16 0 0	+18 4 33	e e e F; S; R; e diff.; 8th of 10.
27	» » 27	16 0 15	+18 5 28	e e e F; p S; l E; f * v nr. sp.; 9th of 10.
28	1886 July 3	16 10 52	+ 1 9 22	e e F; v S; a B and a F * nr. np. point to it; an e e F * close p; e diff.
29	» » 6	16 17 0	+58 15 45	p F; v S; R.
30	1886 June 28	16 17 6	+58 16 20	p F; p S; R; B M.
31	» » 28	16 17 24	+57 54 5	p F; p L; R; B * nr. p.
32	1886 July 9	16 18 5	+65 10 30	v F; v S; c E; 2 st. nr.
33	» » 6	16 18 32	+56 15 3	e e e F; S; R; nearly bet. 5 p B st. in a curve n. and 3 F st. in a curve s; e e diff.
34	1886 June 28	16 23 16	+55 37 18	e e F; p S; R; v diff.
35	1886 July 9	16 25 5	+59 49 12	e e F; v S; R; in vacancy; many p B st. s; e diff.
36	» » 6	16 30 0	+59 2 30	p F; p L; E; 2 st. nr. p.
37	1886 June 28	16 33 35	+57 44 5	v F; v S; R; forms right angle with 2 st. f.
38	1886 July 9	16 34 50	+62 11 25	e e F; p S; * nr. f.
39	1886 Aug. 3	16 38 52	+66 15 25	e F; v S; R; forms a L equilatoral triangle with 2 p B st.
40	1886 July 3	16 45 1	+ 4 49 29	e e e F; p S; R; bet. a distant B * f. and a distant F * p; e e diff.
41	1886 June 28	16 45 55	+62 21 10	e e F; e S; e F * v close; e diff.; sp. of 2.
42	» » 28	16 46 55	+62 24 40	v F; v S; R; bet. 2 st.; nf. of 2.

No.	Date of discov.	α 1885.0	δ 1885.0	Descriptions and remarks
43	1886 June 28	$16^h 47^m 25^s$	$+55° 44' 32''$	e F; S; R.
44	» » 28	16 50 50	+60 43 8	e F; v S; R; a B * and a D * nr. p.
45	1886 Aug. 5	16 50 55	+63 54 30	e F; p S; R; near sf. are 4 or 5 st. in form of a curve.
46	» » 5	16 54 25	+63 25 16	e e e F; S; l E; e e e diff.; nearly in center of a L vacancy.
47	1886 June 9	17 1 55	+60 32 21	e F; S; c E; F * nr.
48	1886 Aug. 18	17 17 10	+60 44 5	v F; p S; e E; spindle, nearly bet. 2 p B distant st. nearer the p.
49	1884 Aug. 15	17 20 30	+62 16 15	e e e F; p L; i R; sev. e F st. involved; B * nr. sf.
50	1886 Sept. 1	17 23 40	+58 55 18	e e F; e S; R; e diff.; sf. of 2.
51	» » 1	17 23 45	+58 55 33	e F; e S; R; l b M; in center of equilatoral triangle; np. of 2. Ver. both with 200.
52	1886 July 22	17 26 4	+57 37 11	e F; S; R; B * nr. s; sp. of 2.
53	» » 22	17 26 24	+57 38 11	e F; S; R; nf. of 2; this and the p. point to the B * ab. 8 mag.
54	1886 Sept. 1	17 26 55	+58 56 33	e F; v S; R; nearly bet. 2 st.
55	1886 June 9	17 43 55	+67 38 4	e e F; S; R; v diff.; p of 2.
56	» » 9	17 44 30	+67 39 14	e e e F; v S; R; e e diff.; f of 2.
57	1886 July 22	17 45 0	+57 20 55	e e F; S; R; s of 2.
58	» » 22	17 45 0	+57 21 10	e F; p S; R; 3 st. in a line nr. and 3 others in a line point to it; e diff.; n of 2.
59	1886 Sept. 1	17 47 58	+62 15 45	p F; p S; E; bet. a pair of st. and a trio of st. in form of a semi-circle.
60	1884 June 27	17 51 5	+65 34 12	e e F; v S; R; bet. 2 pairs of coarse D st.
61	1886 May 30	17 53 0	+60 49 30	e e F; p S; l E; e diff.; in vacancy except one v F * nr.
62	» » 30	17 56 35	+73 25 31	e F; v S; l E; bet. 2 e F st.
63	1886 June 28	17 56 45	+64 18 42	e e F; p S; R; in center of a semi-circle of 4 st.
64	» » 6	17 56 45	+19 42 15	e e F; v S; R.
65	1886 July 22	17 58 25	+61 22 5	e F; S; e E; coarse D * sp. points to it.
66	1886 May 27	17 59 45	+66 35 25	v F; S; c E; H. 27 IV. in field.
67	1884 July 24	18 8 0	+49 53 30	e e F; p S; R; in vacancy, bet. 6 st. like sickle in Leo, and 4 like α, β, γ and δ Ursae majoris.
68	» » 23	18 22 0	+66 33 26	e e e F; p S; R; forms triangle with 3 st.
69	1884 June 18	18 25 40	+71 31 23	e e F; p S; l E; e diff.; bet. a F nr. *, and a distant B one.
70	1886 July 31	18 30 55	+67 3 53	p B; p S; v E.
71	» » 31	18 32 5	+59 48 15	e e F; S; c E; e diff.; bet. a F and a p B * nearer the former.
72	1886 May 30	18 33 0	+66 51 15	e e e F; p S; l E; l b M; e e diff.; 2 or 3 others in field.
73	1884 Aug. 16	18 36 55	+55 30 12	v F; p L; R; p B * nr. s.
74	1886 May 27	18 45 45	+66 35 55	e e e F; p S; e e diff.; sev. B st. nr. n.
75	1883 Aug. 30	19 15 40	+63 44 35	e e e F; p L; R; e e diff.
76	1886 Aug. 5	19 25 0	+54 8 30	e F; p S; R; F * nr. s.
77	1886 Sept. 3	19 45 25	+59 37 0	e F; p S; R; p B * close s; p of 2.
78	» » 3	19 46 10	+59 37 0	e F; S; R; f of 2.
79	» » 6	19 59 55	+65 55 0	p B; p S; R; B M.
80	1886 Aug. 31	21 20 40	+13 41 12	e e e F; e e e diff.; close sf. of M of 3 F st. in a curve, M * the brighter. Neb. nearly on same parallel as the s * of 4 in a row p.
81	1886 July 12	21 36 46	+12 3 31	e e F; S; R; p B * with distant companion close p; v diff.
82	1886 Sept. 1	22 9 55	+21 56 53	p F; S; R; m b M; 4 st. in form of a square nr. p.
83	» » 1	22 16 30	− 4 41 18	v F; p L; R; 4 st. nr. sf. point to it.
84	» » 1	22 26 30	+11 7 24	e F; S; R; in center of 4 F st. in form of a rhombus.
85	» » 2	22 38 0	+ 8 6 0	v F; S; R; l b M.
86	» » 2	22 40 45	+20 29 2	e F; v S; R; forms equilatoral triangle with 2 st. one the brighter.
87	» » 2	22 49 5	+12 36 20	e e F; p S; R; e diff.; 8 or 10 st. in an irregular line p; s of 2.
88	» » 2	22 49 5	+12 38 50	e e e F; S; R; e e e diff.; n of 2.
89	1886 Aug. 3	23 1 25	+27 34 0	v F; S; R.
90	» » 8	23 4 35	+10 24 24	e F; v S; R.
91	» » 8	23 6 30	+14 0 30	v F; S; R; bet. 2 st.
92	1886 Sept. 6	23 6 50	+13 6 22	e e F; S; R; 5 or 6 st. nf. in a line; e diff.
93	» » 6	23 10 55	+10 16 45	v F; v S; R; 3 F st. sf. form a small right angle triangle.
94	1886 Aug. 8	23 14 45	+26 41 13	p F; p S; c E; 3 st. in a line nr. p.

Nr.	Date of discov.	α 1885.0	δ 1885.0	Descriptions and remarks
95	1884 Nov. 9	$23^h 15^m 15^s$	$+25°16'18''$	e F; p S; R.
96	1886 Sept. 1	23 18 40	+13 20 36	e F; S; R; in vacancy.
97	» » 1	23 29 0	+15 26 15	v F; v S; R; 2 st. point to it.
98	1886 Aug. 8	23 33 45 23 37 00	+26 21 0 +26 42.6 (1950)	e e F; p S; R; e diff.; p B * nr. f; 6218 nr. nf. but is not little but very elongated.
99	1886 Sept. 7	23 39 20	— 2 19 5	e F; p S; R; * nr. s, which with one f and p forms a double triangle.
100	1886 Aug. 9	23 46 28	+10 50 10	e F; S; R; in center of equilatoral triangle of 3 st.; D * near np.

Note to No. 21. Three of the ten or more nebulae in this interesting group are M. Stephan's presumably G.C. 5799, and certainly 5800 and 5801. Two or 3 more are suspected. They are very difficult objects to see and especially to measure, atmospheric conditions seldom allowing them to be seen at all except Stephan's last two, which are quite interesting objects, but those he describes as faint and small and very small, I call pretty large.

Warner Observatory, Rochester N. Y., 1886 Sept. *L. Swift.*

Sternbedeckungen und Jupiterstrabanten-Erscheinungen

beobachtet am geodätischen Observatorium des Polytechnikums zu Budapest.

Sternbedeckungen.

Datum	M.Z. Budapest	Stern	Ph.
1883 Mai 17	$11^h 17^m 8^s.9$	χ Virginis	E
Aug. 15	9 11 21.3	ρ^2 Sagitt.	E

Datum	M.Z. Budapest	Stern	Ph.
1884 Mai 9	$10^h 47^m 0^s.3$	ν^1 Librae	E
» 9	11 51 26.3	» »	A

Die Beobachtungen sind mit einem 5 z. Dialyt von Plössl gemacht worden.

Jupiterstrabanten.

Datum	M.Z. Budapest	Erschein.	Bemerkungen
1884 Febr. 21	$9^h 32^m 12^s.4$	II Austr.	schwach aufgeblitzt; $24^s.3$ unverkennbar aus dem Schatten getreten.
März 18	9 59 45.0	I »	Beobachtung gut.
» 31	11 47 24.9	II »	Bild zitternd. Beobachter Stud. Bártfay.
1885 April 22	9 30 15.6	I »	
1886 März 26	10 13 24.9	I »	Beobachtung sehr gut, Trabant erscheint an der Scheibe plötzlich.

Die Beobachtungen im Jahre 1884 sind mit einem 5 z. Dialyten von Plössl angestellt; von 1885 an wurde ein 5 z. Refractor von Mangé, Montirung und Oculare von Reinfelder, benutzt.

Die geographische Breite des Observatoriums bestimmte ich im August-September 1884 aus 8 Sterndurchgängen im ersten Vertikal mittelst eines Theodolithen zu

$$\varphi = +47°29'34''.7 \pm 0''.12,$$

die geographische Länge wurde vorläufig zu

$$\lambda = 22^m 40^s.5 \text{ östl. von Berlin}$$

aus geodätischer Uebertragung angenommen.

Budapest 1886 August. Dr. *Fr. Lakits.*
