Correction of an Error in the Account of Mr. Thomson's MS. Tables.

By J. W. L. Glaisher, Esq.

I owe to Professor Winnecke, Director of the University Observatory of Strasburg, the correction of an error in the account of Mr. Thomson's MS. Table of Logarithms. On page 462 (*Notices*, vol. xxxiv), referring to a certain table contained in Borda and Delambre's *Tables trigonométriques décimales*, I have said that there was no information to be found regarding it, so that there could be no doubt that it was calculated by Borda himself. Professor Winnecke has kindly called my attention to p. 77 of the *Préface de l'éditeur*, where occurs the following passage, which I had failed to notice: "C'est par ces formules, mais en me bornant aux Δ^3, que j'ai calculé les logarithmes à 11 décimales, depuis 100,000 jusqu'à 102,000. Ces logarithmes étaient annoncés dans la préface de Borda, et même il paraît qui'il les avait fait calculer, puisqu'il les suppose, dans l'exemple qui'il donne, pour trouver à 10 décimales le logarithme d'un nombre quelconque." I may here mention that the blanks in the first column opposite the numbers 89,182, 89,185, on p. 470 are due to the printer; the spaces should be occupied, as is evident from the last column but one, by the figures 7 and 6.

A Preliminary Catalogue of Nebulæ observed at Upsala.

By Dr. Herman Schultz.

For the purpose of forming an exact and somewhat extensive Catalogue of Nebulæ, I have during the last ten years employed a considerable time in making micrometrical measures of the distances between celestial objects of this kind and properly selected comparison-stars, in the carrying out of which the 13-feet Steinheil refractor belonging to the Observatory has been always employed. As, however, great and unanticipated difficulties presented themselves in the prosecution of the original plan for the work, the hitherto obtained results of the observations are far less extensive than I had hoped. A detailed account of this work is newly published in the *Memoirs* of the Royal Society of Upsala.

Definite positions for the Nebulæ cannot be given until after some few years, when I shall have had sufficient time for

revising and controlling my own observations, and, through friendly co-operation of other astronomers, shall have received reliable positions for all the stars of comparison employed. As, however, only a very limited number of exact positions of Nebulæ have up to the present time been published, I think the circumstances make it proper that I should in the meantime publish the following Preliminary Catalogue. Some of the positions will indubitably reappear more or less sensibly modified in the Definitive Catalogue, but the existence of considerable errors in the positions I look upon as quite improbable. A detailed Catalogue of the known positions of the 440 stars of comparison is for publication presented to the Royal Academy of Sciences in Stockholm. For the details of my work I refer besides to the above indicated communication to the Royal Society of Upsala (*Micrometrical Observations of* 500 *Nebulæ*).

The mode of description for the Nebulæ by means of numbers, here employed, was first proposed by Sir John Herschel in the *Results of Astronomical Observations made at the Cape of Good Hope*; and to this work I consequently have to refer my readers for the principles of the descriptive system in question, as well as for the corresponding classification of Nebulæ—in *regular* and *irregular nebulæ* and *irregular clusters*—there proposed by Sir John.

For convenience sake I nevertheless here below insert the descriptive scheme actually employed by me with additional notes from my *Micrometrical Observations of* 500 *Nebulæ*. This scheme for one especial reason ought not to be omitted here, namely, because I have in the details somewhat modified the original Herschelian terminology in the work referred to, with a view to assimilating it as nearly as possible to that adopted by Sir John in his last great work on Nebulæ—the *General Catalogue*. The mode of description proposed in the *Cape Observations* is, however, much more summary than that of the *General Catalogue*, and for facilitating its employment I have even more simplified it, to a system which, as far as my experience enables me to judge, is quite sufficiently precise for the purpose.

Such cursory descriptions as those I here have in view, as a supplement to Catalogues of the co-ordinates of Nebulæ, are evidently quite a different thing from monographical descriptions, in which no perceptible details ought to be omitted. Monographical descriptions cursorily made are worthless; but descriptions which are intended only to be of use as cursory, would lose much in perspicuity by intruding into them monographical details. Should such interesting details accidentally be obtained, they may, in a catalogue of positions of nebulæ, most conveniently be appended in the form of notes.

Sub-Classification of Regular Nebulæ.

(Sir John Herschel's Class I.)

Sub-classes in respect of }	Magnitude.	Brightness.	Roundness.	Condensation.	Resolubility.
1	Extremely or very large.	Extremely or very bright.	Nearly circular.	Nuclear.	Resolved.
2	Large or considerably large.	Bright or considerably bright.	Irregularly round.	With a strong central condensation.	Partially resolved.
3	Pretty large.	Pretty bright.	Oval.	With a fainter or a faint central condensation.	Resoluble.
4	Pretty or considerably small, or small.	Pretty or considerably faint, or faint.	Elongated.	Without a central condensation.	Granulate or Spotted.
5	Very or extremely small.	Very or extremely faint.	Much elongated.	Annular.	Milky.
				*	

For the understanding of this scheme, the few following elucidative remarks on its respective columns will probably be sufficient:—

Magnitude (col. 1).

$1 = > 4'$. $\quad 2 = \begin{matrix} < 4' \\ > 2' \end{matrix}$. $\quad 3 = 1'$ to $2'$. $\quad 4 = \begin{matrix} < 1' \\ > \frac{1}{3}' \end{matrix}$. $\quad 5 = < \frac{1}{3}'$.

In the case of "much elongated" nebulæ the magnitude is not indicated.

Brightness (col. 2).

1 = only a few of the brightest nebulæ of *Sir William Herschel's* Class I. and Class VI.

2 = the brighter nebulæ, Class I.

3 = the middle-bright and fainter nebulæ, Class I.; and the brightest Class II.

4 = the faintest nebulæ, Class II.

5 = Class III.

So far as an immediate comparison of the brightness of nebulæ with that of the stars is possible, I assume the nebulæ of the 1st class of brightness to be brighter than a star of the 9th magnitude (Besselian scale); those of the 5th class to be fainter than a star of 12·5 magnitude; and the middle-bright (cl. 3) to correspond in brightness to stars from about the 10·5 to about the 11·5 magnitude. But as those estimations in many cases must become extremely difficult, it is evident that here nothing like a high degree of precision can be expected.

Roundness (col. 3).

3 = length not more than double the breadth.

4 = length not exceeding 5 times the breadth.

5 = length 5 times the breadth or more.

Condensation (col. 4).

In this column of our scheme a * is inserted in the 6th line to remind the reader of the following notation:—

If the nebulæ of the degrees of condensation 2, 3, 4, have a star in the middle, and which in such cases is of course the point observed, I put in the 4th place of their description respectively, *2, *3, *4; and, if nothing is said of the condensation, simply a *.

Resolubility (col. 5).

2 = resolved part of the nebula quite or nearly free from nebulosity.

3 = single stars steadily visible on nebulous ground, or only momentarily seen glimmering through the nebulosity.

Lastly, it is to be remarked that a zero in any of the descriptive places always indicates that no description in that respect could be obtained. After the 5 places of description the magnitude of the nucleus of the central star (*) is indicated according to the Bessel-Argelandrian scale. When the object observed is a star, its magnitude merely is given in the descriptive column.

This may be illustrated by a few examples:—

321 1 3 (10) = nebula, on an average 1′ to 2′ in diameter; of the brighter ones of *W. Herschel's* Class I.; nearly circular; with a nucleus of the 10th mag.; nebulosity with more or less evident traces of resolubility.

242 *2 4 (12) = nebula, on an average 2′ to 4′ in diameter; of the faintest of Class II. (W. H.); irregularly round; strongly condensed; with a central star of 12th mag.; light not equable.

433 * o (11-12) = nebula, on an average $\frac{1}{3}'$ to 1′ in diameter; middle-bright; a little elongated; with a central star, 11–12 mag.; respecting condensation and resolubility, nothing remarked.

The description of a Nebula ought in all cases also to indicate to which of Sir J. Herschel's three classes it belongs; and as, in observations such as the present, objects of the third class do not occur, the simplest course appears to be only to indicate the class when the object belongs to the second class, it being understood that, where no class is mentioned the Nebula is of the first class. In the few here occurring objects of the second class I have thought it best, in so summary descriptions as the present, simply to state the brightness of the stars within them observed.

It is indubitable that it would insure many advantages if the Herschelian mode of description here in question were generally adopted in the Catalogues of Nebulæ.

Catalogue of the Nebulæ.

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.
G.C. 1	0 0 19·33	+26 57 21·6	451 * 5 13
h 1	0 1 49·14	+ 3 51 29·6	452 3 0
h 2	0 1 50·36	+32 40 53·3	541 0 5
h 4	0 2 7·21	+26 58 40·4	431 * 4 11
Nova I	0 2 26·15	+26 58 51·3	542 *4 5 12
* *a* (Nova II)	0 2 35·95	+32 33 30·2	10
h 6	0 3 47·68	+32 36 3·3	443 * 5 13
h 7	0 5 19·49	+30 20 22·4	452 3 0
h 9	0 6 1·64	+30 11 49·6	550 *3 0
h 13	0 8 33·00	+16 34 40·0	431 1 3 11–12
h 16	0 14 10·31	+21 36 28·8	441 1 3 12
h 17	0 14 22·08	+21 41 5·2	442 *2 3 12–13
G.C. 40	0 14 50·94	+21 39 1·8	452 * 5 13
G.C. 41	0 14 51·27	+21 37 8·2	551 * 5 12–13
G.C. 42	0 15 2·56	+21 39 31·9	442 * 5 12
h 21	0 18 55·75	+28 27 50·7	432 1 4 11–12
h 23	0 21 54·77	+ 2 5 31·7	541 *3 3 13
h 25	0 22 19·83	+ 27 5·3	432 1 5 12
h 26	0 23 15·05	+ 1 20 45·9	442 *3 3 13
h 32	0 28 58·14	+23 12 48·8	541 * 4 12–13
G.C. 80	0 29 3·39	+23 13 12·7	551 4 5
G.C. 82	0 29 45·69	+23 14 44·7	441 *3 3 13

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.
h 33	0 30 16·87	+ 1 11 52·1	452 *3 5 13
h 39	0 32 18·61	+ 0 7 20·9	443 * 5 11–12
h 40	0 32 22·24	+ 2 17 40·2	432 1 5 12–13
h 37	0 32 22·35	+ 2 35 19·5	542 * 5 12–13
h 41	0 32 23·44	+ 0 10 15·5	542 1 5 11–12
II 857	0 32 27·14	+ 2 3 20·3	442 1 5 12–13
II 858	0 32 38·39	+ 2 8 38·6	542 4 5
h 42	0 32 48·16	+ 2 33 27·8	400 * 0
h 44	0 33 2·37	+40 56 35·1	0
G.C. 5058	0 35 16·10	+ 0 9 51·1	551 * 5
h 51	0 35 20·75	+40 7 28·5	411 1 0 8–9
G.C. 119	0 35 20·93	+ 0 6 18·4	441 1 5
h 50	0 35 22·98	+40 31 40·4	0
h 59	0 40 48·60	+26 53 10·6	442 * 5 13
h 65	0 42 30·39	+31 32 28·1	541 *4 2 12–13
h 78	0 50 13·96	+29 32 59·3	451 * 0 12–13
h 79	0 50 29·76	+29 37 17·2	441 * 0 12
h 84	0 59 50·16	+31 47 52·2	432 3 0
h 85	0 59 52·06	+31 45 37·9	031 0 0
G.C. 205	0 59 58·29	+31 40 56·5	541 1 0 13
h 86	0 59 59·26	+31 41 26·2	031 1 0 11–12
G.C. 207	0 59 59·43	+31 34 15·1	551 4 5
G.C. 208	1 0 1·49	+31 35 51·5	551 4 5
h 87	1 0 56·23	+32 24 43·6	541 1 5 12–13
h 88	1 1 1·00	+38 55 20·2	452 * 3 13–14
G.C. 217	1 1 47·12	+32 1 50·9	453 2 0
h 89	1 1 55·83	+34 59 49·4	432 * 3 11–12
Nova III	1 3 8·06	+32 24 25·7	452 2 5
II 219	1 3 22·67	+32 25 57·7	550 * 5
II 220	1 3 30·34	+32 25 57·7	442 1 4 12
Nova IV	1 3 48·91	+32 23 40·1	452 2 5
h 90	1 4 41·78	+31 24 14·7	441 2 5
G.C. 250	1 8 6·40	+32 21 8·1	442 * 5
I 108	1 12 12·25	+ 2 35 22·2	442 *3 3 12–13
III 250	1 12 46·77	+ 2 41 57·6	343 1 5
III 251	1 13 8·77	+ 2 42 21·2	531 1 5 11
h 102	1 14 21·77	+32 48 48·0	452 * 4 12–13
h 103	1 14 46·87	+ 4 32 55·4	030 1 0 12

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.	
G.C. 274	1 14 49·49	+ 8 30 0·8	443 2 5	
h 104	1 15 21·26	+32 27 59·4	343 3 4	
III 156	1 15 21·36	+32 45 49·4	552 * 0	12
II 151	1 15 29·64	+32 43 48·4	050 * 0	13
III 158 = *h* 106	1 15 36·92	+32 45 12·8	432 1 4	11–12
G.C. 293	1 15 51·64	+ 8 20 33·0	441 1 5	12
G.C. 291	1 15 54·25	+32 29 56·2	541 1 5	12
h 108	1 16 5·77	+32 33 2·2	431 1 5	11–12
h 109	1 16 6·22	+32 34 32·0	542 2 5	
Nova V	1 16 20·73	+32 47 29·6	543 * 0	12
h 113	1 17 3·12	+32 46 5·3	442 2 5	
h 114	1 17 9·19	+32 43 29·6	442 * 5	12
h 117	1 17 42·57	+ 8 50 1·7	432 1 3	11–12
G.C. 308	1 17 47·97	+ 8 59 51·0	552 1 5	13
h 118	1 18 2·61	+34 0 34·3	441 2 2	
h 120	1 18 43·72	+34 0 16·2	443 3 4	
G.C. 348	1 25 10·50	+29 57 9·5	443 *3 5	13
G.C. 349	1 25 37·20	+29 56 58·2	443 *3 3	12
D.'A. Nova	1 25 58·52	+29 59 52·7	442 *3 5	
h 131 (* *a*)	1 26 18·14	+29 58 35·9	Class II.	11–12
h 133	1 26 56·78	+30 5 25·0	433 1 3	
h 142	1 29 27·53	+15 5 30·4	432 3 4	
II 253	1 35 49·85	+12 57 43·5	345 1 5	
h 147	1 36 38·11	+28 1 8·1	542 * 0	12
h 149	1 39 48·86	+27 12 32·6	443 1 0	
h 150	1 40 16·55	+26 45 26·3	244 1 5	
II 228	1 41 58·45	+21 19 27·6	444 3 0	
II 229	1 42 20·80	+21 17 53·2	432 1 3	12
h 152	1 42 37·93	+26 58 17·5	444 * 0	12–13
h 169	1 48 52·42	+32 22 54·9	541 * 0	12
h 175	1 49 42·42	+32 32 50·0	443 * 3	13
G.C. 461	1 51 49·33	+18 17 49·3	441 1 5	12
h 181	1 51 55·47	+18 21 0·4	331 1 5	11–12
h 182	1 52 27·34	+30 46 25·5	441 * 4	12
h 194	2 0 36·00	+38 8 1·3	443 3 5	
h 193	2 1 8·62	+10 21 9·2	531 * 0	12
h 197	2 1 58·15	+38 33 3·4	450 * 4	12–13
h 208	2 9 50·26	+13 55 2·1	444 3 5	

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.	
h 210	2 10 39·33	+13 55 5·0	442 3 4	
h 217	2 14 0·77	+32 38 48·0	443 1 4	12
h 226	2 22 33·07	+36 31 58·2	434 1 5	
h 231	2 26 1·91	+32 21 7·0	442 1 0	12
h 233	2 26 19·63	+32 21 30·3	450 3 0	
h 234	2 26 41·73	+32 15 8·7	441 * 4	12–13
h 242	2 31 57·79	+38 28 46·8	530 1 0	11–12
h 257	2 35 7·55	+31 50 52·7	441 1 3	12
h 260	2 35 41·96	+31 53 56·0	452 * 0	12–13
II 619	2 51 48·74	+24 41 50·2	350 3 5	
h 315	4 21 22·75	+34 58 47·7	042 3 3	
h 316	4 23 43·80	+ 0 21 55·1	442 1 0	12
h 317	4 23 47·44	+ 0 22 5·4	551 * 0	12–13
h 318	4 23 48·09	+ 0 34 5·9	030 1 0	
h 355 (* *a*)	5 22 31·34	+34 8 21·8	Class II	11
h 359	5 29 1·19	+31 54 5·2	442 *3 3	12
h 365	5 34 42·55	+ 9 0 53·6	532 1 3	
h 368 (* *a*)	5 39 48·63	+ 0 1 18·9	Class II	
h 368 (* *b*)	5 39 49·92	+ 0 2 7·5		
h 368 (* *c*)	5 39 50·79	− 0 0 36·5		
h 393	6 25 14·69	+10 15 16·1	020 * 0	
h 399 (* *a*)	6 31 47·50	+ 8 51 8·2	Class II	10
Dunér, Nova	6 37 56·09	+60 59 25·6	442 * 4	12–13
h 406	6 38 24·72	+33 42 8·5	540 * 0	
h 407	6 38 25·43	+33 44 8·9	052 1 5	
h 434	7 0 25·98	+18 59 15·4	351 3 3	
h 444	7 17 2·98	+29 44 59·9	0	
h 445	7 17 5·07	+29 45 16·1	0	
h 447	7 19 40·64	+34 6 24·7	551 0 5	
h 448	7 20 5·58	+34 5 20·5	541 1 5	
h 449	7 20 16·74	+34 7 54·0	441 1 5	13
h 450	7 21 11·23	+21 11 5·7	411 * 0	8–9
G.C. 1537	7 22 55·89	+ 0 3 51·0	552 1 0	
G.C. 1538	7 23 0·89	+ 0 3 43·5	552 1 0	13
h 456	7 28 4·09	+35 32 17·0	541 3 4	
h 457	7 28 59·34	+39 10 47·7	332 3 4	
II 616	7 35 37·56	+32 58 6·1	443 *3 3	12
h 481	7 53 57·29	+16 4 44·3	442 1 4	12

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.	
h 483	7 55 3·45	+ 9 47 7·2	431 * 0	12
h 482	7 55 5·09	+23 45 54·5	442 2 3	
h 489	8 1 35·80	+34 20 56·6	542 *3 4	
h 494	8 6 18·99	+21 45 40·2	440 2 0	
h 495	8 8 2·29	+58 13 1·6	433 1 3	11
h 497	8 9 52·91	+23 53 13·4	542 1 3	11–12
h 500	8 12 30·50	+21 33 9·7	541 * 0	12–13
h 501	8 12 42·81	+21 29 23·5	541 * 0	12–13
II 259	8 14 56·48	+22 58 51·2	432 1 5	11–12
h 507	8 24 15·67	+23 0 46·9	542 * 4	12
h 526	8 41 39·76	+19 34 16·7	432 1 0	11–12
h 530	8 43 49·67	+51 49 7·9	422 1 5	10–11
h 532	8 44 17·33	+33 55 30·6	224 1 0	
h 550	8 56 52·44	+61 0 54·3	354 3 3	
h 557	9 0 32·36	+21 59 2·2	442 2 4	
h 565	9 3 1·88	+ 9 14 41·7	352 3 4	
h 564	9 3 9·49	+ 7 35 6·1	431 * 0	10–11
h 566	9 4 2·53	+35 34 39·2	442 3 3	
h 567	9 4 22·95	+35 28 25·8	452 3 3	
h 577	9 9 10·68	+20 45 35·2	541 1 5	12
h 578	9 9 27·82	+20 37 51·7	551 * 5	12–13
h 584	9 12 41·20	+51 32 49·9	432 1 0	
h 593	9 16 3·32	+35 5 22·5	432 1 0	12
h 597	9 18 24·05	+12 0 44·8	431 * 5	11
h 598	9 18 28·95	+12 0 13·6	442 * 5	12
h 596	9 18 59·09	+63 4 29·2	441 1 4	12
I 56	9 24 30·96	+22 5 35·9	233 1 4	11
I 57	9 24 32·82	+22 6 40·5	233 1 4	13
h 608	9 26 31·29	+10 44 55·1	443 3 3	
h 609	9 26 48·15	+10 42 19·8	442 * 4	12–13
h 622	9 34 53·69	+32 27 40 3	333 3 3	11–12
h 624	9 35 11·27	+32 32 35·6	432 * 4	11–12
h 627	9 35 30·70	+32 35 35·4	552 *3 5	12–13
h 630	9 35 44·36	− 3 5 3·8	432 * 0	12
G.C. 1916	9 39 4·43	+22 36 54·0	452 * 0	13
h 634	9 39 13·55	+22 38 10·5	552 * 4	12–13
h 636	9 39 39·40	+22 42 46·1	452 2 3	
h 645	9 42 56·01	+34 10 55·8	442 3 2	

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ″	Description.
h 650	9 44 17·91	+29 52 3·7	541 * 0 12
h 649	9 44 20·99	+69 41 56·0	322 * 0 10
h 656	9 48 15·41	+ 4 54 23·6	043 1 2 12–13
h 659	9 50 54·59	+11 0 4·7	431 * 0 12–13
h 658	9 52 23·53	+69 22 56·6	030 2 4
h 663	9 54 39·34	+25 21 39·9	443 * 4 11–12
h 668	9 58 30·64	− 7 3 53·8	224 1 0 9–10
h 682	10 6 1·17	+23 24 10·8	452 3 3
h 684	10 6 45·42	+ 4 5 29·2	031 * 0 10–11
h 685	10 7 14·62	+ 4 8 3·4	432 * 0 11–12
G.C. 2054	10 10 11·16	+22 21 44·3	042 * 3 13
h 692	10 10 38·36	+22 30 20·2	334 * 0 11–12
h 693	10 10 57·31	+22 34 3·7	431 * 0 11–12
G.C. 2084 (1)	10 15 10·97	+20 33 39·6	551 * 5 13
G.C. 2084 (2)	10 15 11·52	+20 34 1·6	541 * 5 12
II 28	10 16 3·88	+20 34 44·7	331 * 0 11
II 29	10 16 7·65	+20 32 45·6	331 * 0 11
h 711	10 19 42·91	+29 11 35·0	332 * 0 11
h 713	10 20 19·25	+23 32 2·3	442 * 5 11–12
h 714	10 21 43·47	+30 10 49·7	433 1 4 12
Nova V	10 24 14·37	+29 9 38·3	542 * 4 12-13
h 721	10 25 22·32	+29 12 17·9	332 1 4 11–12
h 724	10 28 27·60	+38 1 21·1	334 1 4
h 728	10 29 34·17	+22 34 50·3	432 * 0 11-12
h 737	10 34 57·52	+14 26 58·9	343 3 3
h 739	10 36 6·55	+25 37 46·4	442 *3 4 12
h 743	10 36 49·83	+12 24 37·4	31 * 5 10–11
h 748	10 39 25·46	+14 27 35·0	331 1 4
h 749	10 39 37·94	+12 31 43·6	020 1 0 9–10
h 754	10 40 32·87	+14 41 47·4	530 * 0 11
h 757	10 40 41·35	+13 17 30·1	421 1 2 9–10
h 758	10 41 8·69	+13 20 25·6	420 1 0 10
h 761	10 41 18·96	+13 14 22·8	0
h 765	10 42 17·64	+33 41 43·9	443 1 4 12
h 766	10 42 22·89	+33 42 12·0	541 * 0 12
h 774	10 43 44·56	+14 7 34·4	400 1 0 10–11
II 493	10 43 49·42	+33 28 55·7	341 1 5
h 773	10 43 51·22	+28 41 23·4	431 1 4 11

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.	
h 775	10 43 58·60	+28 49 37·6	442 1 4	12–13
II 494 (∗ *a*)	10 44 17·88	+33 36 55·0	444 3 0	12
I 118	10 44 40·06	+33 39 57·9	343 *3 4	
h 784	10 44 59·33	+ 4 30 27·5	441 * 0	13
h 805	10 53 1·41	+29 41 55·2	332 *2 3	11–12
h 806	10 53 11·49	+14 37 25·3	030 0 0	
h 810	10 55 51·32	+28 41 54·0	433 1 5	11
h 813	10 56 22·51	+29 36 47·0	344 3 4	
h 815	10 56 43·25	+28 45 43·4	441 1 3	12–13
h 818	10 58 53·57	+ 0 41 31·4	020 1 0	10–11
h 838	11 6 57·72	+55 45 3·5	241 4 4	
h 840	11 7 33·32	+13 33 9·6	333 * 5	12
h 843	11 8 19·46	+18 50 41·3	431 * 0	11–12
h 844	11 9 39·34	+18 45 10·2	441 * 0	12–13
h 845	11 9 47·48	+18 47 15·4	431 1 0	10
h 846	11 9 51·75	+18 53 4·3	431 1 0	11–12
h 847	11 10 30·90	+59 31 22·9	433 1 3	10–11
h 854	11 11 52·73	+13 49 47·6	124 1 3	11
h 856	11 12 57·47	+19 5 40·7	431 1 0	11
h 857	11 13 12·09	+13 43 47·3	233 1 3	11
h 859	11 13 12·93	+14 19 57·1	035 2 5	
h 861	11 13 20·24	+ 3 42 12·7	533 1 5	11–12
h 864	11 14 10·07	+ 3 58 29·1	433 1 3	10–11
h 871	11 15 19·08	+38 30 15·5	443 2 4	
h 881	11 17 24·88	+39 30 15·4	432 1 0	11–12
h 891	11 19 25·85	+17 36 17·5	432 1 5	12
h 890	11 19 38·50	+67 19 56·9	043 * 0	12
h 892	11 19 53·16	+57 37 9·2	445 3 4	
h 893	11 20 7·10	+17 46 17·6	442 *3 4	12–13
h 894	11 20 39·93	+17 57 57·4	342 *3 3	12–13
h 897	11 21 3·65	+26 24 11·1	443 1 5	
h 898	11 21 5·39	+17 39 47·1	453 1 5	12–13
h 902	11 23 8·16	+10 1 15·2	433 1 3	11–12
h 933	11 32 46·64	+18 27 31·8	542 0 0	
h 938	11 33 10·43	+25 26 40·5	443 1 3	12
h 939	11 33 16·56	+18 28 25·3	442 3 3	
h 940	11 33 17·80	+18 30 47·2	552 * 0	13
h 943	11 34 0·09	+12 13 7·9	442 2 3	

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.
h 944	11 34 4·47	+25 34 10·1	542 *3 4 12
h 945	11 34 9·76	+37 17 40·4	443 2 4
h 946	11 34 36·46	+25 32 53·4	053 1 5 13
h 988	11 42 8·95	+27 46 17·9	433 *2 0
h 1005	11 45 53·39	+37 44 18·3	422 1 0 10–11
h 1017	11 49 24·89	+55 52 34·8	432 2 3
h 1029	11 50 32·70	+56 12 36·2	443 *3 3 12
h 1031	11 50 54·17	+56 12 19·2	432 1 3 10–11
h 1047	11 52 26·38	+51 42 47·9	035 1 4 11
h 1049	11 53 37·30	+20 49 33·7	343 *2 3 12
h 1050	11 54 28·93	+62 38 50·6	334 1 4 11–12
h 1054	11 55 15·45	+62 53 18·6	432 *2 3 12
I 224	11 58 30·18	+51 6 10·5	344 3 0
I 206	11 58 40·21	+51 17 33·4	234 3 0
h 1087	11 59 56·17	+67 54 51·2	442 3 0
h 1088	12 0 11·22	+43 49 0·7	035 1 3 11
h 1091	12 0 55·25	+43 52 43·0	551 0 0
Hind, Nova	12 1 19·10	+65 55 36·8	432 1 0 11–12
h 1106	12 3 13·22	+19 17 38·1	421 1 3 10
h 1115	12 4 17·35	+20 55 36·3	442 *3 3 12
h 1125	12 5 51·53	+11 37 42·5	255 3 0
h 1132	12 6 55·70	+15 39 3·5	035 *2 3 12
h 1140	12 8 16·27	+33 56 52·1	431 1 3 11–12
h 1146 α	12 8 51·87	+37 4 43·4	330 *2 5 11–12
h 1147 β	12 8 53·45	+37 4 17·9	000 * 0 12–13
h 1147	12 9 1·09	+ 7 9 6·2	442 1 3 12
h 1148	12 9 1·77	+13 54 1·5	224 1 2 10
h 1153	12 9 40·65	+ 8 12 42·5	443 * 0 13
h 1161	12 10 14·15	+ 8 22 28·1	432 1 0 12
h 1159	12 10 16·81	+ 7 56 28·1	033 * 0
h 1162	12 10 19·92	+16 4 28·2	443 3 0
h 1168	12 10 48·27	+30 21 27·2	332 1 3 11–12
h 1171	12 11 19·63	+28 55 32·1	434 1 0 10–11
h 1173	12 11 58·06	+15 10 0·6	332 1 3 11–12
h 1178	12 12 28·73	+ 6 7 31·6	541 * 0 13
h 1177	12 12 28·96	+ 6 50 57·3	443 1 2 13
h 1176	12 12 29·73	+ 6 34 29·2	333 1 2 11
h 1179	12 12 39·06	+15 37 43·5	521 1 0 10–11

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.
h 1180	12 12 42·67	+ 6 35 46·6	040 * 3 13
h 1178 *a*	12 12 53·67	+ 6 1 59·2	432 1 5 12
G.C. 2849	12 12 55·89	+ 6 45 53·0	443 * 0 13
h 1178 *b*	12 12 56·13	+ 6 12 46·5	432 1 0 12
h 1183	12 13 2·61	+ 6 5 34·5	332 1 3 11–12
h 1185	12 13 3·20	+30 21 48·0	333 1 3 11
h 1187	12 13 28·26	+ 6 8 8·9	332 1 3 11
h 1196	12 14 22·71	+ 5 20 39·8	443 * 0 12–13
h 1204	12 14 46·25	+30 38 44·8	335 1 3
h 1201	12 14 48·48	+ 6 7 58·6	442 *2 5 12–13
h 1202	12 15 1·53	+ 5 13 21·3	231 1 0 11
G.C. 2892	12 16 12·78	+ 5 59 54·7	432 * 5 11–12
h 1213	12 16 18·55	+ 6 49 17·7	452 * 0 13
h 1215	12 16 28·95	+ 6 47 20·4	452 * 0 13
k 1222	12 16 41·89	+ 6 49 50·4	442 * 4 12
h 1212	12 16 45·44	+17 28 13·9	442 *3 0 12
h 1221	12 17 8·22	+17 26 29·6	334 *2 0 11
h 1232	12 17 35·89	+ 8 3 59·0	431 1 3 10 11
h 1237	12 18 13·22	+13 38 5·3	322 1 3 10
h 1239	12 18 21·90	+15 30 37·7	432 1 4 11
h 1228	12 18 24·74	+ 5 40 23·4	432 1 3 11–12
h 1242	12 18 35·44	+18 56 20·5	323 1 3 10–11
h 1250	12 18 51·33	+13 33 29·1	442 1 3 12
h 1244	12 18 56·09	+13 24 34·7	343 1 0
h 1251	12 19 7·03	+18 57 41·1	443 * 0 12
h 1253	12 19 21·27	+13 41 38·6	321 1 0 10–11
h 1258	12 19 43·56	+31 58 16·3	035 1 0 11–12
h 1267	12 20 23·31	+13 29 2·8	443 * 0 12–13
h 1271	12 20 35·56	+11 5 18·2	432 2 3
h 1268	12 20 37·14	+13 2 3·8	453 0 0
h 1274	12 20 50·36	+13 49 34·1	431 * 0 10–11
h 1272	12 20 50·79	+13 3 53·8	451 * 0 13–14
h 1275	12 20 55·37	+13 45 21·3	433 * 0 12
h 1276	12 21 3·33	+13 2 27·4	432 * 0 12
h 1279	12 21 12·55	+10 33 6·8	433 1 3 10–11
h 1286	12 22 5·61	+ 4 19 4·8	030 1 0 11–12
h 1287	12 22 7·56	+13 59 21·2	443 * 0 12–13
h 1288	12 22 10·35	+14 43 32·1	331 1 4 11–12

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.
h 1290	12 22 13·30	+13 55 51·1	433 1 0 II–12
h 1292	12 22 29·79	+ 8 54 14·0	531 1 5 12
Struve, Nova	12 22 39·26	+ 8 44 21·3	552 0 0
II 630	12 22 41·31	+14 47 43·5	453 * 5 13
h 1293	12 22 46·12	+ 8 34 12·2	442 1 4 13
h 1294	12 22 55·20	+ 8 44 49·7	221 1 2 10
II 114	12 22 59·10	+14 10 33·7	332 1 3 II–12
h 1295	12 23 4·11	+14 48 55·1	433 1 4 12
h 1296	12 23 9·03	+13 5 42·3	432 * 0 12–13
II 115	12 23 12·47	+14 22 57·0	332 1 3 II–12
h 1298	12 23 27·37	+13 4 31·6	432 * 2 II
II 116	12 23 28·77	+14 19 22·1	453 1 5 13
h 1301	12 23 59·59	+13 8 16·2	211 1 2 10
h 1305	12 24 8·56	+ 8 49 25·4	441 * 4 12–13
h 1307	12 24 40·26	+26 31 15·2	432 1 3 II–12
h 1312	12 25 10·39	+15 9 57·9	035 1 0 II
h 1313	12 25 16·11	+11 55 18·7	433 1 0 II
h 1322	12 26 20·40	+ 8 35 50·5	542 *3 5
h 1329	12 27 11·59	+ 8 26 40·6	224 1 3 II
h 1331	12 27 16·48	+12 4 1·4	532 1 0 II–12
h 1345	12 28 38·09	+15 14 33·4	333 1 3 II–12
h 1343	12 28 41·34	+12 57 53·3	433 * 5 II
h 1349	12 28 48·97	+13 0 29·2	433 * 5
h 1348	12 28 50·83	+13 18 2·2	422 1 4 10
h 1356	12 29 37·70	+12 11 0·4	433 *2 3 II–12
h 1357	12 29 38·59	+26 43 51·6	135 1 4 12
h 1358	12 29 42·86	+12 0 10·0	343 2 5
h 1359	12 29 44·62	+11 59 0·9	443 2 5
M. 90	12 30 1·00	+13 54 25·7	135 1 5 II
h 1361	12 30 2·22	+ 7 59 25·8	335 1 3 10–11
h 1368	12 30 54·46	+12 33 42·3	322 1 3 10–11
h 1371	12 31 35·70	+ 5 3 40·4	442 *2 0 II–12
h 1378	12 33 6·31	+10 55 7·4	432 1 4 II
h 1383	12 34 23·59	+10 53 50·8	432 1 3 II–12
h 1384	12 34 42·15	+ 8 3 25·9	441 * 4 12
h 1386	12 35 13·57	+12 23 18·8	322 1 2 10
h 1399	12 35 56·49	+ 3 25 43·7	231 1 3 II–12
h 1402	12 35 58·72	+12 10 59·8	534 * 0 II–12

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.
h 1404	12 36 26·73	+ 2 43 5·4	333 1 3 II
h 1405	12 36 44·15	+12 19 20·8	342 *2 3 12–13
h 1408	12 36 51·63	+12 17 33·7	222 1 2 9–10
h 1409	12 36 57·01	+17 7 54·9	433 1 0 11–12
h 1414	12 37 24·48	+32 54 36·9	234 3 5
h 1419	12 38 13·49	+ 3 47 40·9	332 1 3 11–12
h 1436	12 42 7·58	− 5 3 50·3	433 1 0 II
h 1441	12 42 54·06	+15 54 4·4	035 1 3
h 1451	12 43 49·47	+26 14 10·7	432 1 3 10–11
h 1466	12 46 9·10	+11 57 52·8	035 1 0 II
h 1469	12 46 36·38	+ 2 54 5·9	432 1 0 12
h 1462	12 47 3·01	+12 9 1·4	431 1 0 10–11
h 1475	12 48 8·63	+29 40 16·0	433 2 3
h 1486	12 50 5·70	+22 24 50·5	223 1 3 10
h 1500	12 52 41·83	+28 42 24·5	452 * 0 13
h 1498	12 52 43·19	+14 54 3·1	344 * 0 12
h 1502	12 53 3·94	+28 41 20·2	442 0 0
h 1507	12 53 36·65	+28 42 22·5	441 1 0 12
h 1522	12 57 19·83	+28 54 46·7	543 * 0 12–13
h 1547	13 4 39·17	+37 46 45·6	334 1 0 II
h 1601	13 19 27·10	+ 2 48 16·2	432 *3 0 11–12
h 1622	13 24 10·89	+47 53 35·5	222 1 4 10–11
h 1623	13 24 17·90	+47 57 50·0	422 * 4 10–11
h 1650	13 30 49·3	+ 9 34 27·7	030 1 0 12
h 1664	13 37 7·46	+36 20 10·2	432 1 3 11–12
h 1684	13 44 44·10	+60 51 41·6	332 1 4 10
h 1701	13 48 11·50	+ 5 59 48·3	453 3 0
h 1703	13 49 20·35	+ 5 55 1·8	332 *2 3 II
h 1705	13 49 24·96	+ 5 40 44·5	342 3 0
h 1748	14 0 0·39	+55 32 23·4	030 * 0
h 1776	14 12 46·29	+37 7 1·9	030 1 0 11–12
h 1778	14 13 17·13	+ 4 36 49·8	453 1 5
h 1779	14 13 32·87	+ 4 33 18·1	531 1 0 II
h 1782	14 14 7·87	+ 3 51 28·7	443 *3 0 12
h 1783	14 14 15·60	+ 3 53 28·3	422 1 0 10–11
h 1854	14 32 27·83	+ 5 56 52·5	432 1 0
h 1857	14 33 16·76	+ 0 17 35·9	333 2 3
h 1863	14 34 1·49	+ 0 15 46·5	543 * 0 12

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.		
h 1874	14 38 5·47	+ 2 31 36·7	135	1 3	12
h 1875	14 39 16·75	+ 0 20 51·1	433	2 3	
h 1894	14 53 10·27	+ 2 25 49·1	443	1 0	12–13
h 1896	14 54 20·74	+ 2 14 16·7	431	1 3	11–12
II 541	14 58 36·82	+ 2 9 39·8	442	1 4	12–13
II 542	14 58 36·87	+ 2 37 33·7	432	1 3	11
III 511	14 59 10·42	+ 2 9 32·2	531	1 5	11
h 1901	14 59 38·73	+ 2 7 46·3	331	1 3	11
h 1902	15 0 16·76	+ 2 3 57·9	442	1 4	12
II 751	15 1 19·52	+20 7 8·8	542	1 5	12–13
II 752	15 1 27·02	+20 6 12·6	453	2 0	
II 647	16 23 2·35	+39 41 5·3	542	1 0	12–13
h 1961	16 24 0·99	+39 51 1·2	443	3 3	
II 753	16 26 26·83	+20 6 55·8	443	1 3	
h 1967	16 31 45·88	+36 28 30·5	452	* 5	13
h 1966	16 31 54·18	+39 18 0·6	052	* 0	13
h 1969	16 38 16·66	+37 5 21·5	443	* 0	12–13
h 1970	16 38 50·21	+24 3 10·5	513	3 3	
IV 50	16 43 11·16	+47 46 7·5	431	1 0	11–12
M. 92	17 12 59·79	+43 17 4·8	112	1 1	
IV 37	17 58 36·76	+66 38 16·9	413	4 3	
II 902	18 1 10·49	+17 35 8·1	452	3 0	
h 2000	18 5 33·05	+ 6 49 29·9	512	* 5	7–8
II 907	18 25 12·78	+39 46 26·3	452	1 4	
h 2023	18 48 34·23	+32 51 43·7	323	5 3	
G. C. 4473	19 4 19·82	+ 0 48 42·8	342	4 2	
h 2037	19 11 52·32	+ 6 17 38·3	332	3 4	
h 2043 **b*	19 25 7·34	+ 8 56 34·6	442	4 5	
h 2043 **a*	19 25 8·26	+ 8 56 44·7			
h 2050	19 41 9·53	+50 11 56·8	421	*4 0	10
h 2062	19 56 35·90	+33 9 10·9	442	4 5	
h 2072	20 10 57·25	+30 9 3·5	040	5 2	
h 2075	20 16 22·00	+19 40 29·9	441	*3 4	13
Nova VII	20 27 1·41	+ 6 55 43·6	530	* 5	11–12
h 2081	20 27 34·83	+ 6 56 42·6	321	3 1	
h 2086 **a*	20 37 30·85	+12 1 39·0	10	11	
h 2097	20 55 11·18	+15 39 33·0	431	*3 2	11
h 2102	20 57 50·84	+29 21 52·5	443	* 3	12–13

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.		
III 209	21 7 19·79	+13 1 13·0	452	3 3	
h 2112	21 12 36·40	+25 52 47·1	542	*3 4	13
h 2120	21 23 26·95	+11 34 39·0	310	1 2	
h 2121	21 24 33·37	+ 1 53 56·4	552	3 0	
h 2125	21 26 30·41	− 1 25 11·6	213	1 2	
h 2132	21 41 57·84	+21 32 5·8	452	3 2	
h 2135	21 47 43·08	+ 2 18 23·6	452	3 4	
h 2139	21 54 15·23	+17 5 28·3	431	* 0	12
h 2149	22 1 49·98	+30 42 3·1	331	1 2	12
h 2160	22 19 54·03	+15 27 44·6	541	1 4	12–13
h 2168	22 27 18·25	+ 4 52 32·8	532	1 5	11–12
h 2169	22 29 25·64	+19 37 24·3	441	*2 4	12
h 2170	22 29 59·56	+20 55 27·7	453	3 4	
Nova VIII	22 30 38·62	+33 40 7·1	542	* 0	13
h 2171	22 30 46·41	+ 9 49 52·9	453	3 5	
h 2172	22 30 54·15	+33 42 59·7	020	1 0	10
h 2173	22 30 58·40	+23 5 54·9	234	1 0	11–12
Nova IX	22 31 1·34	+33 44 14·2	552	* 0	
h 2174	22 31 9·29	+33 44 50·3	452	0 0	
Rosse, C.	22 31 12·55	+33 46 47·6	553	4 5	
Rosse, E.	22 31 17·22	+33 40 23·7	542	* 0	
h 2175	22 31 20·33	+23 5 11·5	453	4 2	
Rosse, D.	22 31 34·15	+33 42 36·4	542	* 0	12–13
h 2183	22 43 10·53	+10 53 41·6	542	*3 4	12–13
h 2184	22 43 18·58	+10 59 3·7	442	*3 5	12–13
h 2189	22 45 29·01	+ 0 22 34·1	443	2 3	
h 2199	22 53 22·57	+15 15 25·6	443	1 3	12–13
II 249	22 54 25·67	+15 39 51·1	442	* 0	13
h 2201	22 54 32·72	+29 25 14·4	330	*2 5	11–12
h 2200	22 54 34·87	+ 1 1 44·0	442	*3 0	12–13
h 2202	22 55 10·46	+15 15 23·4	453	1 0	13
D.'A. Nova	22 55 11·91	+15 14 56·2	553	1 0	13–14
h 2203	22 55 19·51	+15 14 22·4	441	1 0	12–13
h 2204	22 56 27·74	+ 8 8 54·3	542	1 5	12
h 2205 * *c*	22 58 8·71	+11 35 22·4			13
h 2205 * *b*	22 58 11·40	+11 35 43·7	334	1 0	12–13
h 2205 * *a*	22 58 11·75	+11 37 0·2			11–12
h 2214	23 6 2·30	+11 56 45·1	441	1 4	12

Nebula.	Mean Right Ascension, 1865·0. h m s	Mean Declination, 1865·0. ° ′ ″	Description.
h 2215	23 7 42·44	+ 3 45 54·0	452 * 5 13
h 2217	23 7 50·90	+22 56 58·6	541 * 0 12
h 2216	23 7 51·56	+ 3 47 57·9	344 3 0
h 2218	23 8 20·89	+18 14 13·6	452 *3 5 13
h 2219	23 8 33·70	+18 13 30·8	443 * 4 12
D.'A. Nova	23 8 34·66	+18 18 20·3	452 3 4
G.C. 4917	23 8 48·41	+ 5 58 20·9	450 0 0
h 2222	23 9 0·59	+12 33 16·4	451 * 5 12–13
Nova X	23 9 1·80	+ 3 45 39·6	542 * 5 12–13
Nova XI	23 9 5·77	+ 3 47 11·1	542 * 0 12–13
h 2224	23 9 6·36	+ 5 57 9·2	431 1 5 11–12
h 2223	23 9 9·76	+12 27 38·8	441 * 0 12
III 238	23 9 58·28	+12 44 47·4	452 2 5
G.C. 4934	23 12 46·61	+ 7 19 31·3	043 1 0 12–13
D.'A. Nova	23 12 54·59	+ 7 50 17·5	542 1 4 11–12
D.'A. Nova	23 13 18·72	+ 7 25 43·8	551 1 0 13
h 2230	23 13 24·39	+ 7 28 5·3	431 *2 4 11–12
h 2231	23 13 40·21	+ 7 39 26·5	542 * 5 12
h 2232	23 13 45·50	+16 29 14·7	442 *3 3 12
h 2233	23 13 52·38	+17 28 42·4	431 *2 4 12–13
G.C. 4943	23 14 37·04	+ 7 28 41·0	453 3 0
h 2241	23 19 25·61	+41 47 36·3	421 5 3
h 2242	23 20 31·29	+11 43 30·1	541 * 3 12
G.C. 4967	23 20 42·66	+11 38 26·7	542 * 5 13
h 2257	23 29 19·94	+ 1 24 29·0	541 1 5 11–12
h 2264	23 37 23·96	+10 1 6·0	431 * 3 11
h 2265	23 37 29·04	+ 9 11 6·7	431 1 3 11–12
h 2274	23 44 12·83	+19 23 59·1	431 * 5 12
G.C. 5021	23 44 31·58	+19 20 45·7	552 * 5 13
h 2275	23 44 33·90	+19 21 38·7	444 1 5 12–13
h 2290	23 52 31·64	+19 59 58·0	441 * 3 12–13
h 2297	23 56 19·90	+15 23 35·1	442 2 3
Nova XII	23 56 29·91	+19 57 9·0	443 * 3 13
h 2300	23 57 3·83	+19 59 52·2	344 *3 4