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T R A N S A C T I O N S :

**Catalogue of One Thousand New Nebulae and
Clusters of Stars. By William Herschel, LL.D. F.
R. S.**

William Herschel

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XXVII. *Catalogue of One Thousand new Nebulæ and Clusters of Stars.* By William Herschel, LL.D. F. R. S.

Read April 27, 1786.

THE following Catalogue, which contains one thousand new Nebulæ and Clusters of stars, is extracted from a series of observations (or Sweeps of the heavens), which was begun in the year 1783, and which I am still continuing till the whole be completed. As I may, perhaps, find an opportunity hereafter to publish these observations at full length, I shall now only mention such circumstances, relating to the instrument and apparatus with which they were made, as will be necessary to shew what degree of accuracy may be expected in the determination of the places of these Nebulæ and Clusters of stars; and also to serve any astronomer, who wishes to review them, to form a judgment what instrument will suffice for this purpose.

The telescope I have used, as has been observed on a former occasion*, is a Newtonian reflector of 20-feet focal length, and $18\frac{7}{16}$ inches aperture. The sweeping power has been 157, except where another is expressly mentioned. The field of view $15' 4''$.

My eye-glass is mounted on that side of an octagon tube, which, in the horizontal position of the instrument, makes an angle of 45° with the vertical; having found, by experience, that this position, resembling the situation of a reading desk, is

* Philosophical Transactions, vol. LXXIV. p. 437.

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preferable to the perpendicular one commonly used in the Newtonian construction.

In the present improved state of the apparatus this telescope will, in general, give the relative place of an object by a single observation true to within $1\frac{1}{2}$ or 2 minutes of polar distance, and 4 or 6 seconds of time in right ascension. But when there is an opportunity of repeating the observation, it will hardly differ a single minute in the former, and seldom so much as 3 or 4'' in the latter. My apparatus, however, has not been equally perfect from the beginning; for, being from time to time adapted to the different views I had in sweeping, it could only arrive to its present degree of perfection by many experiments and gradual improvements.

To begin a short history of this 20-foot telescope. In the month of October of the already mentioned year I began to use it, being then mounted on its present stand, but with a lateral motion under the point of support of the great speculum, by which its direction could be changed about 15 degrees. It had also a kind of moveable gallery in front, about nine feet long, which permitted me to follow a celestial object near 15 degrees more; by which means I obtained a range of 30 degrees without moving the stand. The Newtonian form has the capital advantage of rendering observations equally commodious in all altitudes; I had therefore placed the instrument in the meridian, that I might view the stars in their most favourable situation.

When I had seen most of the objects I wished to examine, I proceeded to the work of a general review of the heavens. The first method that occurred was, to suffer the telescope to hang freely in the center; then, walking backwards and forwards on the moveable gallery, I drew the instrument from
that

that position by a handle fastened to a place near the eye-glass, so as to make it follow me, and perform a kind of very slow oscillations of 12 or 14 degrees in breadth, each taking up generally from 4 to 5 minutes of time. At the end of each oscillation I made a short memorandum of the objects I chanced to see; and when a new nebula or cluster of stars came in my way, I made a delineation of the stars in the field of view, both of the finder and of the telescope, that it might serve me to find them again. This being done, the instrument was, by means of a fine motion under my hands, either lowered or raised about 8 or 10 minutes, and another oscillation was then performed like the first. Thus I continued generally for about 10, 20, or 30 oscillations, according as circumstances would permit; and the whole of it was then called a *Sweep*, and as such numbered and registered in my journal.

When I had completed 41 Sweeps, the disadvantages of this method were too evident to proceed any longer. By going into the light so often as was necessary to write down my observations, the eye could never return soon enough to that full dilatation of the iris which is absolutely required for delicate observations. The difficulty also of keeping a proper memorandum of the parts of the heavens which had been examined in so irregular a manner, intermixed with many short and long stops while I was writing, as well as the fatigue attending the motion, upon a not very convenient gallery, with a telescope in my hands of no little weight, especially at the extremes of the oscillations, where it made a considerable arch upwards, were sufficient motives to induce me to look out for another method of sweeping. And it is evident, that the places of nebulae hitherto determined, which was till the 13th of December, 1783, must be liable to great inaccuracy. I therefore

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began now to sweep with a vertical motion; and as this increased the labour of continually elevating and depressing the telescope by hand, I called in the assistance of a workman to do that part of the business, by which means I could observe very commodiously, and for a much longer time than before.

Soon after I removed also the only then remaining obstacle to seeing well, by having recourse to an assistant, whose care it was to write down, and at the same time loudly to repeat after me, every thing I required to be written down. In this manner all the descriptions of nebulae and other observations were recorded; by which I obtained the singular advantage that the descriptions were actually writing and repeating to me while I had the object before my eye, and could at pleasure correct them, whenever they disagreed with the picture before me without looking from it.

In about half a dozen sweeps, done according to this new way, I found that the stars of FLAMSTEED'S Catalogue entered nearly at the time when they were expected; this suggested the possibility of converting my telescope into a transit instrument. By way of trial, Dec. 18, 1783, I began to use a watch, and noted the times of the transits of stars and nebulae to the nearest minute; and, this succeeding, Dec. 24, a sidereal time-piece was introduced.

I found also that, by the turns of the handle which gave motion to the telescope, it was practicable, in a coarse way, to ascertain the difference of altitude between any two objects that passed the field of view; on which account, Dec. 30, I began to use an index-board, divided into inches, and marked with numbers, which, being placed behind the rope that moved the telescope, would point out at what altitude a certain index, affixed to the rope, was situated. My tackle of ropes and

pullies was such that, while the telescope traversed an arch of two degrees, the mark on the rope passed over about 24 inches of the index-board: but the exact measure was always to be determined experimentally, as it varied according to the situation of the instrument. I perceived immediately that the quantity of rope used in the motion of the telescope would be much better observed by the assistant, if the index were brought within doors near the writing desk: to effect this, I used a small cord, which, being led off from the great one, was carried over a pulley into the observatory, so as to pass over a set of numbers, which I now divided into such parts as, in an equatorial situation of the instrument, would give nearly each equal to one minute.

It would exceed the limits of this Paper to enumerate the various trials I made to bring the right ascension to greater perfection; such as causing the tube sometimes to hang inclining or rubbing against a perpendicular plane; at others, drawing it against the same by a small weight, fastened to a cord, passing over a side pulley, &c. I shall also pass over the several changes in the form of the machine shewing the polar distance, which, for convenience sake, was soon brought to an index moving over a dial, in the manner of a clock.

By way of directing the person who gives motion to the telescope, a small machinery was added, which strikes a bell at each extreme of the breadth of the sweep, and is adjustable to any required number of turns of the handle.

In June, 1784, I introduced a small quadrant of altitude, the use of which became soon after of the greatest consequence in determining the value of the numbers of the polar distance piece. Hitherto I had settled this value by causing a star to pass vertically through the field of the finder, which was very

accurately limited to two degrees; but now I found, by many comparisons between the degree determined by the quadrant and by the finder, that I had generally under-rated the value of the numbers. Fortunately so many stars of FLAMSTEED'S Catalogue had been taken, that the numbers between their different polar distances were sufficient to recover the value of the degree; but this occasioned a laborious re-calculation of the places of all objects taken in near 300 sweeps. The quadrant being once introduced, I carried the refinements of the determination, in high sweeps where the ropes acted very unequally, so far as to ascertain by it separately the value of every 20 or 30 minutes throughout the whole breadth of a sweep of two degrees, and the numbers were then accordingly cast up by so many different tables calculated on purpose.

Being still disappointed in many instances, when, on a review of a nebula whose place I had before determined, I perceived a difference of 4 or 5 minutes in polar distance, I began at last intirely to new model the machinery of the polar distance piece, and on Sept. 24, 1785, completed one with the following capital improvements. My former piece shewed a set of numbers whose value differed in every situation of the telescope, and therefore required different and very extensive tables to cast them up in degrees and minutes. This shews at once both the degree and minute of the polar distance of every celestial object, without requiring any tables to cast up numbers. In the next place, the considerable inaccuracy arising from the unequal tension of the great ropes, and their expansion or contraction by moisture or dryness, is intirely taken away; for now my index cord is contrived so as to go off from the front of the telescope itself, in the direction of a tangent to the arch it describes when moving; by which means this cord will even
serve

serve as an hygrometer to shew the variations of the ropes that suspend the telescope. If a shower of rain, for instance, should shorten them so as to elevate the telescope 2, 4, or 6 minutes, which has happened sometimes, notwithstanding they have all been well saturated with oil, the index cord will immediately make the polar-distance-clock shew this effect of the rain, by pointing out an equal change on the dial. As to the variations of the cord itself, they are in the first place very trifling, since it consists merely of a few threads of hemp, very loosely twisted, well oiled, and always equally stretched; but especially these variations are of no consequence, as they are so easily to be discovered by the check of the quadrant of altitude affixed to the telescope, or the successive transits of known stars, and may either be immediately corrected by the adjustable hand of the polar distance dial, or be left to be accounted for afterwards.

The improvement of the right ascension has not been less attended to; and the Royal Society having kindly intrusted me with an excellent time-piece, I succeeded at last by means of the addition of the following apparatus. Against the side of the tube is fixed a vertical iron plate, and the point of suspension of the telescope is disposed so as to permit this plate to be just in contact with a roller which remains fixed during the time of a sweep. There is also a considerable spring applied on the opposite side, in such a manner as, by always exerting a pressure nearly uniform, to cause the iron plate to rub against the fixed roller as the telescope sweeps up and down. By this means I have frequently, in very stormy weather, observed many hours without finding my time materially affected, and the corrections will seldom, in accurate observations, exceed a few seconds.

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To those who are accustomed to the accuracy of transit instruments in regular observatories, this telescope, notwithstanding the above-mentioned improvements, may perhaps appear far from being brought to perfection; but they should recollect the size of the instrument as well as its extensive use, since I can not only follow any object for near a quarter of an hour, without disturbing the situation of the apparatus, but can at pleasure, in a few minutes, turn it to any part of the heavens, and view a celestial object wheresoever it may chance to be situated, even the zenith not excepted.

From this account it will be understood, that the places of a few of the nebulae and clusters of stars, determined before the 13th of December, 1783, may be faulty in right ascension as far as 1' of time, and in polar distance to 8 or 10' of space. Afterwards the errors will be found to become gradually less considerable till the latter end of the year 1784, when, I suppose, they will seldom exceed half that quantity. From that period to Sept. 24, 1785, they will diminish, and probably not often amount to so much as 3 or 4' in polar distance, and 10 or 12'' in right ascension. And now I flatter myself that all places, determined since the last mentioned time, will generally be true to a very small quantity; such as 4 or 6'' in right ascension, and 1½ or 2' in polar distance, and often much nearer.

Some of the nebulae in that part of the heavens which, in a former Paper, I have called the stratum of Coma Berenices, are indeed so crowded that there was no possibility of taking them all in the center of the field of view, and a somewhat less degree of accuracy may therefore be expected; but having used myself by very frequent estimations of the parts of the field of view to judge of their value in time as well as in space,

I corrected

I corrected this defect at the moment of observation by affixing to the transits of these excentric nebulæ such proper marks of *plus* or *minus* in right ascension and polar distance as I judged would bring them to a central observation. A similar method, well known to good astronomers in estimating their tenths of seconds by the proportional space over which the stars move in their meridian passage, makes it unnecessary to expatiate on the degree of accuracy that long practice enables us herein to obtain.

If, however, I had been willing to delay giving this catalogue till, by a repeated review of the heavens, the places had been more accurately determined, the work would undoubtedly have been more perfect; but whoever considers that it requires years to go through such observations will perhaps think with me, that it is the best way to give them in their present state, if it were but to announce the existence of such objects by way of inducing other astronomers also to look out for them. Another motive for not delaying this communication is to shew that my late endeavours to delineate the construction of the heavens have been guided by a careful inspection of them; and, probably, a catalogue which points out no less than one thousand instances of such systems as those are into which I have shewn the heavens to be divided, will considerably support what has been said on this subject in my two last Papers.

When the diurnal motion of the earth was first maintained, it could not but greatly add to the reception of this opinion when the telescope exposed to our view Jupiter, Mars, and Venus, revolving on their axes*; and if these instances of

* To these may now also be added Saturn, on whose body I have, in the year 1780, seen several belts, with spots that changed their situation in the course of a few nights.

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the similar condition of other planets support the doctrine of the diurnal motion, the view of so many sidereal systems, some of which we may discern to be of a most surprising extent and grandeur, will in like manner add credit to what I have proposed with regard to the condition of our situation within a system of stars: for, to the inhabitants of the nebulae of the present catalogue, our sidereal system must appear either as a small nebulous patch; an extended streak of milky light; a large resolvable nebula; a very compressed cluster of minute stars hardly discernible; or as an immense collection of large scattered stars of various sizes. And either of these appearances will take place with them according as their own situation is more or less remote from ours.

In the distribution of the nebulae and clusters of stars into classes, I have partly considered the convenience of other observers: thus, in the first class, the degree of brightness of the nebulae has been the leading feature, as most likely to point out those which their several instruments may give them expectation to reach. The first class, therefore, contains the brightest of them; the second, those that shine but with a feeble light; and in the third are placed all the very faint ones. Besides this general division, I have added a fourth and a fifth class, which contain nebulae that, on different accounts, seemed to deserve a more particular description than I had allotted to the three former divisions.

The clusters of stars are sorted by their apparent compression, in the manner of my former Catalogues of double, treble, and multiple stars; so that the closest and richest clusters take up the first class; the brightest, largest, and pretty much compressed ones, the second; and those, which consist only of scattered and less collected large stars, are put into the last.

In every class the order of time when the nebulæ and clusters of stars were discovered, or first observed with my 20-foot telescope, has been followed; and that I might describe all these objects in as small a compass as could well be done, I have used single letters to express whole words, an explanation of which, with an example of the manner of reading those letters, is given. It should be observed, that all estimations of brightness and size must be referred to the instrument with which the nebulæ and clusters of stars were seen; the clearness and transparency of the atmosphere, the degree of attention, and many more particular circumstances, should also be taken into consideration; so that probably some of the nebulæ which I have called very bright, and very large, may only be just perceivable, as very small faint patches, in many of our best common telescopes.

The Identity of each nebula in this catalogue has been well ascertained by a projection on a proper map, made on purpose, which pointed out all other nebulæ near its place, and thus afforded the means of a rigorous examination. When, therefore, several nebulæ are found within the limits of the accuracy with which my telescope can discriminate them, in different nights, it may be concluded, that they were seen either at once in the same field of view, or otherwise in immediate succession during the same sweep.

In the same manner these nebulæ have been compared with those that are contained in the two volumes of the *Connoissance des Temps*, for the years 1783 and 1784, of which none have been inserted in this catalogue. It was indeed easy enough to distinguish the nebulæ of that excellent collection from those of mine which in several places are very near them: The quantity of good light in my telescope having enabled me,

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even in bright moon-light nights, to see occasionally some of the most feeble of the former, when the latter could not by any means be perceived.

Perhaps it will not be displeasing to those who may look out for some of the objects contained in this catalogue, to know that the pictures which were given in a former Paper, representing the various shapes and appearances of several nebulae, have been actually taken from nature, by Drawings made of them while I had them in view; I have therefore added a reference to these figures, as the descriptions of the originals which they represent occur in their order in the catalogue.

Arrangement of the columns, and explanations of the abbreviations.

The first column contains the class and number of the nebulae.

In the second are the dates when the nebulae were first observed.

The third column contains the star, or other object, by which the place has been determined.

In the fourth column the letter p or f shews that the nebula is either preceding or following the star.

In the fifth is the time, in sidereal minutes and seconds, by how much it precedes or follows the same star.

The letter n or s, contained in the sixth column, denotes that the nebula is north or south of the determining star.

In the seventh is the quantity, in degrees and minutes, by how much the nebula is more north or more south than the same star.

The eighth column contains the number of observations that have been made of each nebula; and it is to be noted, that

the determination of the place is generally taken from the last observation, on account of the more perfect state of the telescope.

The ninth column, or remaining space, contains the description of the nebulæ, by means of single letters, or now and then a few words added to them.

The abbreviations are to be understood as follows.

B. Bright.	v. very.
F. Faint.	c. considerably.
L. Large.	p. pretty.
S. Small.	e. extremely.

Of these letters I have composed vB. cB. pB. pF. vF. eF. vL. pL. pS. vS. eS.; all which require no farther explanation.

R. Round.	l. a little.
E. Extended.	i. irregularly.
M. in the middle.	g. gradually.
b. brighter.	f. suddenly.
m. much.	

When these are joined we have iR. mE. IE. bM. gBM. fBM. mbM. lbM. glbM. gmbM. fmbM., and by taking in some of the former letters BM. vBM. cBM.; where no other remark will be necessary than that writing for instance bM, or brighter in the middle, it is intended to express, that a nebula, which is faint at the borders, is less so towards the middle. And these degrees of brightness happening sometimes to be so well united from the most imperceptible border to a very luminous center, I have, on such occasions, used the expression vgmbM, or very gradually much brighter in the middle.

r. resolvable.	m. milky.
er. (joined) easily resolvable.	
iF. (joined) of an irregular figure.	
C. Cometic, or resembling a telescopic comet.	

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N. having a Nucleus, or bright compressed spot.

l, b, or d. (joined to minutes) long, broad, or diameter.

ft. a star. stars.

n. north. north of.

f. south. south of.

p. preceding. np. north preceding. fp. south preceding.

f. following. nf. north following. ff. south following.

betw. between. ver. 240. verified by a power of 240.

bran. branches.

che. chevelure.

mer. in the direction of the meridian.

par. in the direction of the parallel of declination.

np ff. in a direction from north preceding to south following.

fp nf. in a direction from south preceding to north following.

Example. I. 13. 22. 69 Leon. p. 7. 57. n. o. 2. 3. vB. mE.
mer. smbM. 7 or 8' l.

13th nebula of the 1st class. Feb. 22, 1784. It precedes the 69th Leonis of FLAMSTEED's Catalogue $7' 57''$ in time, and is $0^{\circ} 2'$ more north than that star. 3 observations. Very bright, much extended in the direction of the meridian of the nebula, suddenly much brighter in the middle 7 or 8' in length.

I. 32. . . . p. 5. 11. n. o. 28. 3. cB. S. BN. and 2vF bran.
32d nebula of the first class. April 13, 1784. It precedes the 31st (or 1st d) Virginis of FL. Cat. $5' 11''$ in time, and is $0^{\circ} 28'$ more north than that star. 3 observations. Considerably bright, small, having a bright nucleus, and two very faint branches.

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First class. Bright nebulæ.

I.	1783	Stars.		M. S.	D.M.	Ob.	Description.	
1	Dec. 19	82 (δ) Ceti	f	2 17 n	0 8	7	cB. cL. iF. bM.	
2	—	3 Leonis	p	18 7 f	1 12	5	cB. cL. vgbM. N. R.	
3	—	34 Sextant	p	28 55 f	0 13	4	cB. pL. C. mbM.	
4	—	—	p	28 27 f	0 10	4	cB. pL. C. mbM.	
5	—	30 81 Leonis	p	2 42 n	0 7	2	B. pS. iR. bM. r.	
	1784							
6	Jan. 19	64 Virginis	f	33 56 f	0 1	3	vB. pL. gmbM.	
7	—	23 49 Leonis	f	126 45 f	0 40	1	vB. L. R. The place inac.	
8	—	32 (2.) Virg	f	2 50 n	0 48	5	cB. pL. iR. mbM. r.	
9	—	24 10 (γ) Virg	f	3 12 f	0 35	4	cB. E np ff. N and 2 bran. 3'l.	
10	—	—	f	33 37 n	0 4	4	vB. pL. iE. gmbM. 2'l. 1½'b.	
11	Feb. 15	5 Comæ Be.	p	1 30 f	2 11	1	B. pL. iE. bM. m.	
12	—	19 6 Comæ	f	9 12 f	0 9	2	B. pS. R. BM. r.	
13	—	22 69 Leonis	p	7 57 n	0 2	3	{ vB. mE. mer. fmbM. 7 or 8'l. Fig. 11.	
14	—	29 (γ) Virg	f	0 43 n	1 23	2	cB. cL. mE. near par. 3 or 4'l.	
15	—	—	f	3 23 n	0 58	2	cB. mE. fp nf. fbM. 4 or 5'l.	
16	—	—	f	10 34 n	0 13	2	cB. vL. iF. vgbmB.	
17	} Mar. 11	46 (i) Leo	{	f	15 50 f	1 32	5	{ The 2 p of 3 Both vB. cL. mbM. C II 41. Fig. 4.
18				f	16 18 f	1 29	5	
19	—	14 11 Comæ	p	10 30 n	0 40	1	vB. pL. gbM.	
20	—	15 73 (n) Leonis	f	8 52 f	1 57	2	vB. mE. nearly par.	
21	—	—	f	25 31 f	1 49	3	vB. cL. R. gmbM.	
22	—	34 Virginis	p	22 24 f	0 17	2	cB. pS.	
23	—	—	p	18 24 f	0 19	2	B. S. mE.	
24	—	30 (ξ) Virg	p	1 42 f	0 5	2	vB. pL. r. near 2 Bft.	
25	—	34 Virginis	f	4 45 f	0 40	1	B. S. in a line with 2 ft.	
26	—	19 52 (K) Leonis	p	3 45 f	2 9	1	cB. pL. not R. mbM.	
27	Apr. 8	46 (i) Leonis	f	18 47 f	0 43	3	vB. 3NM. and 2 F bran. np ff.	
28	—	34 Virginis	p	19 36 n	1 8	2	{ One of two, at 4 or 5'. dist. B. cL.	
29	—	12 73 (n) Leonis	p	1 9 f	0 30	3	vB. cL. E. par. mbM.	
30	—	13 31 (1 d) Virg	p	17 41 n	0 32	2	vB. cL. iE. iF.	
31	—	31 (1 d) Virg	p	8 0 n	0 37	1	vB. E mbM. r. betw. 2 Bft.	
32	—	—	p	5 11 n	0 28	4	cB. S. BN and 2 vF. bran.	
33	—	15 9 (σ) Virg	f	3 12 n	1 39	1	B. L. mE. mbM. r.	
34	—	59 (τ) Virg	f	20 42 f	0 34	2	vB. cL. E np ff. SBN.	
35	—	17 34 Virginis	p	31 42 n	1 5	1	B. vmE. vBM. 9 or 10' l.	
36	} —	—	p	11 24 n	0 20	1	{ Two. Both B.	
37								{ S. iE.
38	—	18 32 (2 d) Virg	p	11 36 n	0 0	1	B. vL. mE. mbM.	

I.	1784	Stars.		M. S.	D.M.	Ob.	Description.		
39	Apr. 24	51 (θ) Virg	P	21 36	f	○ 14	1	vB. vL. fmbM. rN.	
40	—	—	P	5 48	n	○ 2	1	cL. vBSNM.	
41	25	28 Virginis	f	9 24	n	1 2	1	B. L. iR. lbM.	
42	—	26 (χ) Virgini	f	30 27	n	○ 8	2	cB. L. iR. vgbM.	
43	May 9	49 (g) Virgini	P	28 6	f	○ 51	1	E. vBM. 5 or 6' l.	
44	21	51 (e) Ophiu	f	7 18	n	○ 0	2	cB. pL. N.	
45	24	43 Ophiuchi	P	6 36	n	○ 4	2	B. R. vgbmB.	
46	—	—	f	0 54	n	1 46	1	pB. cL. R. BM. r.	
47	June 16	1 (m) Aquilæ	f	17 48	f	○ 33	1	B. vL. iF. er. ft visible.	
48	17	43 (d) Sagit	P	114 6	n	1 44	1	B. L. R. gbM. er.	
49	24	10 (γ) Sagit	P	2 18	n	○ 23	1	B. pL. bM. r.	
50	—	19 (β) Sagit	f	3 0	f	○ 33	1	cL. R. vBM. m.	
51	July 12	22 (λ) Sagit	f	3 12	f	○ 13	1	cL. R. vBM. er.	
52	Aug. 21	17 Delphini	f	6 0	n	2 24	4	vB. S. R. gmbM. r.	
53	Sept. 5	66 (ν) Cygni	f	78 6	f	○ 51	2	vB. cL. mE. mbM. r.	
54	Oct. 5	35 (ν) Andr	f	12 44	f	2 50	1	B. cL. R. mbM. Place inacc.	
55	19	66 Pegasi	P	17 59	n	○ 2	3	cB. mE. mer. gbM. 4' l. 2' b.	
56	Nov. 16	4 (λ) Leonis	f	0 46	f	1 29	1	{ Two, at 1' distance. Both cB. cL. appear like one mE.	
57		17	19 Eridani	f	5 9	f	1 22		2
58		20	15 (ι) Navis	f	64 18	n	○ 21		1
59	Dec. 9	19 Eridani	P	6 51	n	○ 16	1	vB. S. lE. mbM.	
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61	Jan. 6	6 Sextantis	P	8 42	n	○ 31	2	vB. S. iF. 1' nfcBft.	
62	10	55 (ζ) Ceti	P	0 25	n	○ 37	2	cB. pL. E. bM.	
63	—	80 Ceti	f	5 12	f	○ 25	1	B. R. mbM. 1' d.	
64	—	8 (1 ρ) Erid	P	15 9	n	○ 2	2	vB. pL. lE. mbM.	
65	Feb. 7	31 Crateris	f	23 30	n	○ 52	1	vB. pL. iR. bM. like 2 N.	
66	8	12 Hydræ	f	25 2	f	1 7	1	B. vS. iF. mbM.	
67	—	8 (η) Corvi	P	37 17	n	2 10	3	cB. pL. iF. mbM. 2 or 3' d.	
68	—	53 Virginis	P	12 40	n	1 4	1	cB. iR. mbM.	
69	—	—	P	11 4	n	1 34	1	cB. pL. iR.	
70	Mar. 5	106 Virginis	f	1 2	n	○ 54	1	vB. cL. iF. vgbM.	
71	—	19 (δ) Libræ	P	0 3	n	1 4	2	cB. vS. b towards f side.	
72	13	23 Leonis min	f	13 7	n	○ 13	1	cB. cL. E. mbM.	
73	—	13 Can. vena	P	50 17	f	○ 22	1	vB. S.	
74	—	13 Can. vena	P	43 5	f	1 11	1	cB. R. mbM.	
75	—	—	P	40 35	f	1 9	1	vB.	
76	—	—	P	38 3	f	○ 52	1	cB. L. E.	
77	—	—	P	34 15	n	○ 23	1	vB. L. broadly E. bM.	
78	April 3	27 Ursæ	f	7 46	n	○ 4	1	vB. cL. vfmB.	
79	—	—	f	33 52	n	1 17	1	cB. pL. R. vgbM.	
80	—	—	f	67 10	n	○ 46	1	cB. S. i elliptical.	
81	6	41 Leonis min	P	0 6	n	1 40	2	cB. cL. m. just p 2 ft.	

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I.	1785	Stars.		M. S		D.M.	Ob.	Description.
82	Apr. 6	14 (b) Comæ	p	37 40	f	0 14	2	cB. pL. lE. mer. vgbM.
83	—	21 (g) Comæ	f	0 10	n	1 12	1	cB. pl. iR. mbM.
84	—	—	f	19 34	n	0 55	1	cB. iR. fBM. m. 7 or 8' d.
85	10	40 Comæ	f	5 9	n	0 18	1	cB. pL.
86	11	39 Leonis min	p	13 14	n	0 59	1	cB. pL. mbM. brightness lE.
87	—	44 Leonis min	f	9 30	n	1 1	1	vB. vL. gbM.
88	—	—	f	13 30	n	0 1	1	cB. cL. iR. mbM.
89	—	14 (b) Comæ	p	8 18	n	0 55	1	vB. S. lE.
90	—	—	p	6 30	n	1 57	1	The np of 2 cB. pL R. II. 377.
91	—	15 (c) Comæ	t	1 10	n	0 19	1	vB. E. par. pBLN. and 2 bran.
92	—	—	f	9 8	f	0 19	1	{ vB. vL. mE. np ff. 10 or 12'
93	—	31 Comæ	f	2 56	n	1 24	1	{ 1. 4 ft. in it. cB. pL.

Second class. Faint nebulae.

II.	1783	Stars.		M. S		D.M.	Ob.	Description.
1	Oct. 28	41 Aquarii	p	15 ::	f	$\frac{1}{2}$::	1	F. cL. mE. bM. er.
2	30	24 (α) Pif. auct	f	14 40	n	1 2	3	pB. S. iF. mbM.
3	Dec. 13	17 (1 φ) Ceti	p	9 ::	n	2 ::	2	F. L. mE. between 2 cBft.
4	—	41 Ceti	f	15 13	n	0 37	6	pB. pS. R. mbM. C.
5	18	82 (β) Ceti	p	0 5	n	0 46	8	pB. S. lE. bM.
6	—	—	p	1 ::	n	$\frac{1}{2}$::	1	S. C, between 2 L and 1 S ft.
7	19	45 Eridani	p	1 13	n	0 54	3	F. pL. iR. vlbM.
8	—	44 Eridani	f	2 11	f	0 41	4	{ Two. The first. F. S. r.
9	—	—	f	2 18	f	0 42	4	{ The second, F. vS. r.
10	24	88 (γ) Pegasi	p	13 38	f	0 23	2	F. pL. E. fp nf. bM. r.
11	30	6 Comæ	f	1 24	n	0 24	2	F. pL. nearly R. r.
12	—	27 Comæ	p	3 15	f	0 9	2	pB. cL. lE. mbM. r.
	1784							
13	Jan. 18	78 (1) Leonis	f	6 18	f	1 10	2	pB. pL. mbM. r.
14	—	3 (ν) Virginis	f	2 20	n	1 22	1	lE. not C.
15	—	20 Virginis	f	4 12	f	0 42	2	F. pL. pR.
16	23	56 Leonis	p	0 32	n	1 32	4	F. vS. nearly R.
17	—	9 (o) Virginis	f	11 54	f	1 33	3	F. pl. E. followed by III. 91.
18	—	31 (1 α) Virg	p	12 28	n	1 1	2	F. S.
19	—	1. Class 7 Neb.	p	0 0	f	0 12	1	F. pS. R.
20	—	31 Bootis	p	118 45	f	0 38	2	vS.
21	—	32 (2 d) Virg	f	9 28	n	0 22	4	pB. pL. b towards the p side.
22	—	31 Bootis	p	80 15			1	F. vS.
23	24	75 Leonis	f	70 0	n	0 26	2	F. mE.
24	—	—	f	97 0	n	0 7	2	F. pL.
25	—	78 Virginis	p	7 50	f	1 34	4	pB. cL. nearly R. mbM.

II.

Dr. HERSCHEL's Catalogue of One Thousand

II.	1784	Stars.		M. S.		D.M.	Ob.	Description.	
26	Jan. 28	11 (<i>s</i>) Virg	f	18	0	n	0 45	1	pB. cL. b towards the f side.
27	30	31 Bootis	p	9	6	f	0 2	3	F. pL. R. lb not M.
28	Feb. 15	41 (<i>γ</i>) Leonis	f	3	45	n	0 18	1	{ Two, about 2' afunder. Both F. cL. R. Fig 3.
29		—	68 (<i>δ</i>) Leonis	f	6	30	f	2 23	
30	—	22 29 (<i>γ</i>) Virg	p	2	31	n	0 55	2	pB. cL. lE. par. r.
31	—	23 84 (<i>τ</i>) Leonis	p	6	30	n	0 7	1	pB. vS. bM.
32	—	—	p	6	0	n	0 20	1	pB. pL. R. bM.
33	—	60 (<i>σ</i>) Virgin	p	51	23	f	1 27	4	F. S.
34	—	16 (<i>c</i>) Virgin	f	8	45	n	0 15	2	pB. mbM.
35	—	60 (<i>σ</i>) Virgin	p	46	5	f	1 29	3	F. vL. iR. bM. 6' 1 4' b.
36	—	16 (<i>c</i>) Virgin	f	13	15	f	0 40	2	pB. E. np ff. mbM.
37	—	35 Virginis	p	5	30	f	0 53	2	pB. pL. iF. r.
38	—	—	p	3	0	f	0 20	1	pB. contains 2 ftM.
39	—	—	p	3	0	f	0 20	1	pB. contains 2 ftM.
40	Mar. 11	6 (<i>b</i>) Leonis	f	1	43	n	0 27	3	F. pL. lbM.
41	—	46 (<i>i</i>) Leonis	f	16	30	f	1 35	4	The f of 3. F. E.
42	—	78 (<i>ν</i>) Leonis	p	14	0	n	0 12	1	F. S.
43	—	12 36 (<i>ζ</i>) Leonis	p	3	10	f	0 40	2	pB. cL. iF.
44	}	—	f	28	15	n	0 48	1	Two. Both. F. E. lbM. r.
45		—	20 Leonis	f	28	15	n	0 48	
46	—	68 (<i>δ</i>) Leonis	p	37	30	n	1 29	1	pB. S. r.
47	—	54 Leonis	p	2	26	f	1 49	2	pB. pL. lE. r. 3 or 4 ft in it.
48	14	85 (l) Gemin	f	56	45	f	0 42	1	pB. pL. lbM. contains 1 ft.
49	—	86 Leonis	p	15	0	f	0 19	1	vgbM. r.
50	}	—	p	13	30	f	0 22	1	{ Of three that M. pB. cL. R. bM. That to the n. S. R. bM. III. 27.
51		—	—	p	13	30	f	0 22	
52	—	—	p	10	0	f	0 5	1	pB. S. lE. bM.
53	—	81 Leonis	p	1	36	n	1 19	2	F. E. r.
54	—	85 Leonis	p	1	24	n	1 29	2	F. S. R.
55	—	11 Comæ	f	4	45	n	0 24	1	The f. of 2. r. See Note.
56	—	25 Comæ	p	8	30	n	0 1	2	pL. iR. bM. 2 or 3' d.
57	}	15 5 (<i>ξ</i>) Leonis	p	7	15	n	0 18	1	{ Two, distant 1' np ff. The p. pS. lbM. r. The f. pL. lbM. r.
58		—	—	f	26	30	f	0 53	
59	—	—	f	26	30	f	0 53	1	vS. C. in a row with 2 F and 1 Bf.
60	—	12 (<i>t</i>) Virg	p	5	15	n	0 10	1	F. S.
61	}	—	p	26	12	f	0 31	2	{ Two. nearly par. The first F. pL. E. The second F. pL. R.
62		—	34 Virginis	p	26	12	f	0 31	
63	—	—	p	24	42	f	0 9	2	F. pL. mE.
64	—	12 (<i>t</i>) Virg	f	11	45	n	0 57	1	F. vS.
65	—	—	f	14	45	n	0 50	1	pB. not vS.
66	—	30 (<i>ε</i>) Virg	p	9	30	n	0 56	1	pB.
67	—	—	p	8	30	n	1 6	1	pB. vS.
68	—	34 Virginis	p	10	24	f	0 36	2	pB.
69	—	30 (<i>ε</i>) Virg	p	0	48	f	0 4	2	pB. pL. R. mbM. r.

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II.	1784	Stars.		M. S.	D.M.	Ob.	Description.
70	Mar. 15	30 (ε) Virg	f	0 45	n	1 7	I A nebula.
71	—	—	f	2 0	n	1 0	I S.
72	—	34 Virginis	f	0 15	f	0 54	I S. IE.
73	—	—	f	4 0	f	1 3	I F. not vS.
74	}	—	f	5 30	f	0 42	I { Two, nearly par. The p pB
75							
76	—	20 (χ) Serp ^s	p	3 12	f	0 42	2 pB. pL. IE. gbM. r.
77	19	52 (K) Leonis	p	4 42	f	0 27	2 pB. pL. E. b. M. r. f. pBft.
78	—	—	p	0 12	f	0 27	2 pB. pL. r.
79	—	15 Bootis	f	18 30	f	0 15	I F. L. R. lbM. r. 4 or 5' dia ^r
80	21	47 (δ) Cancr ⁱ	f	4 45	n	0 55	I pB. pL. E. r. 2 or 3 ft in it.
81	—	51 (m) Leon	f	1 15	f	1 41	I pB. pL. not R. r.
82	—	—	f	8 15	f	1 35	I F. S. IE. r. f. pBft.
83	—	3 Comæ	p	0 15	f	0 43	I F. pL. r.
84	—	—	f	12 30	f	0 59	I F. S. R. r. Note.
85	}	—	p	13 0	f	0 21	I { Two. The p. pB. S.
86							
87	—	—	p	11 15	f	1 33	I S. bM. r.
88	—	—	p	10 45	f	0 53	I S. bM. r.
89	—	6 Comæ	f	11 12	n	0 31	2 S. bM. r. near Bft.
90	—	25 Comæ	p	7 30	f	0 3	I pB. bM. r. near Bft.
91	—	—	p	6 0	f	0 18	I vS.
92	—	—	p	5 30	f	0 24	I S.
93	—	—	p	4 0	f	0 51	I F. vS.
94	—	—	p	2 0	f	1 35	I F. S.
95	—	27 Comæ	f	2 45	f	1 23	I pB. vmE. nearly mer.
96	—	15 Serpentis	f	1 0	f	1 5	I pB. pL. not R. bM. r.
97	—	26 Serpentis	f	2 30	n	0 35	I pF. S. r. p. 2 pBft.
98	23	8 Leonis	f	15 45	n	0 20	2 F. cL. iR. mbM. 4 or 5' dia ^r
99	April 8	52 (K) Leo	f	0 42	f	0 12	I pB. S.
100	—	—	f	13 30	n	0 42	I F. pS. r.
101	—	—	f	14 0	f	0 20	I pB. S. mbM.
102	—	70 (θ) Leonis	f	0 48	f	0 38	I F. pS. R. lbM. r.
103	—	94 (β) Leonis	p	9 12	n	0 47	I F. S. E. r. 2 or 3 ft visible in it.
104	—	—	p	3 18	f	0 48	2 pB. S. R. r. pLrN.
105	—	34 Virginis	p	35 6	n	1 17	2 pB. pL. R. vgmbM. r.
106	—	—	p	33 18	n	1 28	2 F. pL.
107	—	6 Comæ	p	0 24	f	1 0	I pL.
108	—	—	p	0 6	f	1 2	I mE. r.
109	—	—	f	0 24	f	1 54	I r.
110	—	—	f	3 12	f	0 3	I S. r.
111	}	—	f	5 18	f	0 18	I { Two, about 2' distant. The
112							

II.	1784	Stars.		M. S.	D.M.	Ob.	Description.
113	April 8	6 Comæ	f	10 54	n	0 9	1 E. r.
114	—	34 Virginis	p	16 54	n	1 28	2 F. r.
115	}	— 6 Comæ	f	14 0	f	1 21	1 {Two.
116							1 {Both r.
117	—	—	f	14 24	f	0 54	1 r.
118	—	—	f	15 36	f	0 28	1 S. Note.
119	—	—	f	18 54	n	0 35	1 pL. r.
120	—	—	f	19 6	f	0 25	1 L. r.
121	}	12 34 Virginis	p	17 54	n	1 21	1 Two. Both pF. S. bM.
122							
123	}	— — —	p	16 24	n	0 29	2 {The two p. of 3. - Both F. S.
124							
125	—	—	p	4 18	n	1 25	1 not vF. S. r.
126	—	—	p	3 0	n	1 11	2 pB. L. E. r.
127	—	—	p	2 30	n	1 39	1 F. vS. R. lbM. r.
128	—	—	f	0 42	n	1 54	3 L. R. bM. r.
129	—	41 Virginis	f	19 0	n	0 11	1 F. pL. lbM. R. r.
130	—	20 (χ) Serp ^s	p	12 30	n	0 12	1 F. not S. iF. r.
131	—	13 56 Leonis	p	3 48	f	0 26	1 pB. vL. nearly R. lbM.
132	—	8 (π) Virgin	p	4 48	n	0 7	1 pL. E. pBM. r.
133	—	1 (σ) Virginis	f	7 46	f	1 41	2 not vF. S. E. mer.
134	—	11 (ζ) Virgin	f	4 24	f	0 0	1 F. mE.
135	—	—	f	5 54	n	0 38	1 S. E. pBM.
136	—	—	f	6 30	n	1 39	1 F. S. iF. r.
137	—	9 (θ) Virginis	f	12 32	f	2 2	2 F. pL. r.
138	—	11 (ζ) Virgin	f	9 6	n	0 20	3 F.
139	}	— — —	f	9 30	n	0 0	3 {Two. The 1st is the largest.
140							
141	}	— — —	f	13 18	n	0 18	3 {Three nebulae. The last is the
142							
143	—	31 (1 d) Virg	p	17 9	n	0 42	2 F. pL. the largest of 2.
144	—	60 (σ) Virg	p	50 28	n	0 30	2 vF. S. E.
145	—	31 (1 d) Virg	p	14 6	f	0 34	1 F. pL.
146	—	—	p	7 36	f	0 20	1 pB. pL. mE. r.
147	—	—	p	0 18	n	0 31	1 not F. R. vgbM.
148	—	—	f	0 9	n	0 53	4 F. pL. iF. r.
149	—	24 (α) Serp ^s	p	73 42	n	1 10	1 F. pL. nearly R. er.
150	—	12 Herculis	f	4 18	f	0 26	1 not vF. pL. iR. bM. r.
151	—	15 78 (1) Leonis	f	4 24	f	1 1	1 F. mE. r.
152	}	— 2 (1 ξ) Virgin	p	3 0	n	2 2	1 {Two, about 5' distant. Both
153							
154	—	20 Virginis	p	6 6	f	0 40	1 F. pL. lE. lb. towards p. side.
155	—	—	p	4 36	f	0 26	1 F. pL. lE. r.
156	—	—	p	4 36	f	0 26	1 F. pL. lE. r.

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II.	1784	Stars.		M. S.	D.M.	Ob.	Description.	
157	April 15	20 Virginis	p	3 36	f	1 29	1 F. pL. mE. bM. r.	
158	---	31 (1 d) Virg	p	8 38	n	1 51	3 pT. pL. nearly R. r.	
159	17	81 Leonis	f	0 36	n	0 24	1 pB. S. bM. almost stellar.	
160	---	---	f	1 0	n	0 45	1 cL. R. vgbM.	
161	---	90 Leonis	f	5 36	n	0 53	1 F. not S. R. bM.	
162	---	34 Virginis	p	51 54	n	0 0	2 not vF. pL. iR. lb. towards f. fide.	
163	---	---	p	33 6	n	1 13	1 pS.	
164	---	---	p	32 48	n	0 13	1 pS. vmE.	
165	---	---	p	32 30	n	1 13	1 F. vmE.	
166	---	---	p	27 36	n	0 53	1 pB. vS.	
167	}	---	p	21 30	n	0 49	1 { Two nebulae.	
168		1 { The most f. E.						
169	---	---	p	20 30	n	0 40	1 S.	
170	---	---	p	19 42	n	0 49	1 F.	
171	}	---	p	19 6	n	0 20	1 { Three nebulae.	
172								1 { The two first vS.
173								1 { The third S.
174	---	---	p	17 48	n	1 16	1 F.	
175	---	---	p	12 36	n	1 9	1 pF. L.	
176	---	---	p	3 48	f	0 37	1 F.	
177	---	20 Bootis	f	3 30	f	1 42	1 pF. not S. lbM. r.	
178	}	---	p	12 6	f	0 7	2 { Two, very close. Both S. stel-	
179								1 { lar. The f. is largest.
180	22	15 (n) Virg	f	8 59	f	1 18	3 pB. L. iR. er.	
181	---	29 (γ) Virg	f	5 18	f	0 58	1 pF. pL. E. r.	
182	---	---	f	6 24	f	1 54	1 pF. pL. E. r.	
183	24	51 (θ) Virg	p	30 36	n	0 14	1 pB. cL. E. vfmB.	
184	---	---	p	28 30	n	0 26	1 not F. L. lE. lbM. r.	
185	---	---	p	11 0	n	0 10	1 F. S. iF. near pBf.	
186	25	28 Virginis	f	12 6	n	0 51	1 pF. cL. R. r.	
187	---	---	f	12 42	n	0 37	1 pF. pL. r.	
188	---	---	f	22 54	n	0 57	1 F. cL. E. r.	
189	---	72 (1 l) Virg	p	21 54	f	0 18	1 pB. R. vfmB. near Bf.	
190	---	26 (x) Virg	f	23 44	f	0 6	2 F. pL. iR. lbM. r.	
191	May 9	49 (g) Virg	p	4 6	f	0 46	1 pF. pS. R. r. near some Sft.	
192	---	18 Libræ	f	10 36	f	0 16	2 pF. pL. lE. mer. nearly.	
193	11	100 (λ) Virg	p	59 30	n	0 48	2 The most n. of 3. pB. vS. bM.	
194	19	12 (d) Bootis	f	7 42	f	0 2	2 F. pL. R. mbM.	
195	21	39 Ophiuchi	p	12 54	n	1 42	2 pB. cL. iR. lbM. r.	
196	22	54 Hydræ	p	6 42	f	1 2	1 pB. S. nearly R. bM. r.	
197	---	51 (e) Ophiu	f	35 36	f	1 13	1 pB. pL. iR. r.	
198	24	3 (p) Sagitt	f	18 42	f	0 4	1 pF. not L. crookedly E. er.	
199	June 16	64 (v) Ophiu	f	2 48	n	0 48	1 pB. pL. R. gbM. r.	
200	24	10 (γ) Sagitt	p	1 6	n	0 22	1 F. pS. r. unequally B.	

II.	1784	Stars.		M.	S.		D.M.	Ob.	Description.	
201	July 13	18 Sagittarii	p	7	54	f	0 55	1	F. pL. lbM. r.	
202	17	12 (ϕ) Cygni	f	17	36	f	0 53	1	A resolvable nebulous patch of st.	
203	—	65 (ξ) Cygni	p	9	30	f	0 16	2	pB. pL. iE. bM.	
204	Aug. 7	24 Sagittarii	p	9	18	n	0 50	1	pB. S. stellar. not verified.	
205	—	—	p	1	42	n	0 33	1	pB. cL. iE. bM.	
206	Sept. 7	52 (<i>k</i>) Cygni	f	5	36	n	1 22	1	F. S. crookedly E. r.	
207	—	44 (<i>n</i>) Pegasi	p	34	27	n	1 15	1	cL. R. gmbM. er.	
208	10	84 (ψ) Pegasi	p	13	48	n	1 0	1	F. cL. R. vgbM. ff. st.	
209	—	34 (ζ) Andr	p	5	57	n	1 12	2	F. pL. iR. equally B. r.	
210	11	31 (δ) Andr	f	18	12	f	0 26	1	F. pL. unequally B. near pBst.	
211	—	13 Triang	f	5	24		0 35	1	F. pL. iE. bM. n. 2 ft.	
212	12	63 Pegasi	p	19	42	f	0 15	1	pB. pL. iE. mbM. r. f. 2 Fft.	
213	—	79 Pegasi	p	2	36	n	0 42	1	F. pL. ER. lbM.	
214	—	40 Androm.	p	7	18	f	0 15	1	F. E. p. Bst.	
215	}	—	—	—	—	—	—	—	{ Three. mer. Nearly equal in size. All. F. vS. R. proportion of dist. f to n. 2 to 1.	
216		—	f	4	30	n	0 41	1		
217		—	—	f	5	30	n	1 22		1
218	—	—	f	5	30	n	1 22	1	{ Two. The p: F. vS. The f. pL.	
219	—	—	f	7	36	n	1 22	1		
220	—	—	—	—	—	—	—	—		
221	—	3 (ϵ) Triang	p	6	12	f	0 15	1	F. pL. mE. r. $1\frac{1}{2}$ l.	
222	—	—	p	5	12	f	10 0	1	F. pL. mE. r. $1\frac{1}{2}$ l.	
223	—	—	p	2	12	f	1 52	1	pB. pS. R.	
224	13	43 (β) Andr	p	0	18	n	0 5	1	pB*. cL. R. bM. { *Though β And. in the field	
225	—	9 (γ) Triang	f	4	18	f	0 39	1	F. vS. R.	
226	15	71 (γ) Pegasi	p	4	54	f	0 5	1	F. pL. bM. elliptical.	
227	—	89 (χ) Pegasi	p	10	18	n	0 32	2	F. cL. mE. r.	
228	}	—	—	—	—	—	—	—	{ Two. Both F. pS. iR.	
229		—	6 (β) Arietis	p	5	12	n	1 7		1
230	18	81 (ϕ) Pegasi	p	1	27	n	1 4	1	F. pL. R. bM. r.	
231	—	—	p	1	3	n	0 59	1	F. pL. E. par. contains a stell. or st.	
232	—	—	f	6	45	n	1 35	1	F. S. R. or large stellar.	
233	}	—	—	—	—	—	—	—	{ Two. The p. pB. iE. nearly mer. The f. F. E. nearly par. $1\frac{1}{2}$ l.	
234		19	47 (λ) Pegasi	p	9	3	n	0 12		3
235		20	11 Piscium	p	13	43	f	0 36		2
236	—	90 (ϕ) Aqua	f	3	53	n	1 22	4	pB. pL. iR. mbM.	
237	—	79 Ceti	p	4	48	n	0 36	1	F. E. mer. 2' l.	
238	Oct. 6	26 (β) Persei	p	28	34	f	0 10	2	pB. mE. near par. mbM. 4' 1' b.	
239	7	27 (κ) Persei	p	8	27	n	0 2	1	The 1st of 2. pB. pS. r.	
240	8	—	—	—	—	—	—	1	pF. pL. iR. er.	
241	—	—	—	—	—	—	—	1	pS. C.	
242	11	48 (μ) Pegasi	p	39	50	f	0 54	2	F. S. iR. near and p. 2 or 3 ft.	
243	—	—	f	6	27	f	0 54	2	F. S. iR.	

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II.	1784	Stars.		M.	S		D.M.	Ob.	Description.
244	Oct. 14	54 (α) Pegasi	f	30	48	n	0 6	2	F. S. IE.
245	—	58 Piscium	p	3	36	n	2 16	4	pB. pL. R. lbM.
246	—	19 Arietis	f	4	54	f	0 49	1	F. pL. E. 4 or 5' f. cft.
247	15	13 Pegasi	f	10	0	n	0 28	1	pB. R. bM. 1' d.
248	—	54 (ω) Pegasi	p	38	0	n	0 59	2	F. pS. a quartile with 3 Sft.
249	—	—	p	3	36	n	1 11	2	F. pS. E. f. pBft.
250	—	47 Piscium	p	67	12	f	0 37	1	F. IE. p. vBft.
251	16	54 (ω) Pegasi	p	4	36	n	0 44	1	pB. cL. E. r.
252	—	102 (π) Pisc	p	12	48	n	0 45	1	F. pL. oval. lbM. p. pBft.
253	—	—	f	5	54	n	1 30	1	pB. pL. E. bM. r.
254	—	38 Arietis	f	8	48	n	0 34	1	F. S. iR. r.
255	18	82 Pegasi	p	8	21	f	0 11	2	pB. pS. R. gbM. r.
256	—	77 Pegasi	f	1	0	f	0 25	1	F. R. gbM.
257	—	34 Piscium	f	12	6	f	0 39	2	F. pL. iR. mbM.
258	20	15 Eridani	p	8	54	n	1 54	3	F. vL. lbM. R. 7 or 8' d.
259	Nov. 16	43 (γ) Cancr	p	20	58	n	1 2	1	F. S. iF.
260	—	4 (λ) Leonis	f	3	22	f	1 16	1	F. pS. IE.
261	17	12 Pegasi	f	2	8	i	0 46	1	F. iR. less than 1' d.
262	—	27 Eridani	p	11	51	f	1 40	1	F. I and iE. above 1' d.
263	—	—	p	9	28	f	1 15	1	not vF. bM. 1' $\frac{1}{2}$ d.
264	—	47 (δ) Cancr	p	67	42	n	2 20	1	F. S.
265	20	4 (1 χ) Can	p	19	20	n	1 28	1	pF. pS. iF. IE. bM.
266	—	15 (ι) Nav	f	25	33	n	1 25	1	F. E. bM. r. 1' $\frac{1}{2}$ d.
267	Dec. 9	27 Eridani	p	6	1	n	0 40	1	F. vS. R. lbM.
268	—	8 (ι) Crateris	p	63	16	f	0 16	1	F. S. R. SB point M. C.
269	—	10 Crateris	f	4	26	n	1 22	1	pB. pL. IE. mbM.
270	13	106 (ν) Pisc	f	11	56	f	1 11	1	pB. S. iR. mbM.
271	}	—	f	14	54	n	0 11	3	Two, very close nearly par. The f. smallest and most n.
272		—	f	14	54	n	0 11	3	
273	—	86 (γ) Ceti	p	0	14	n	1 44	1	F. S. iR.
274	—	92 (α) Ceti	p	3	54	f	0 47	1	F. vS. iE. er.
275	20	32 (2 τ) Hyd	f	9	55	n	1 32	2	pB. cL. iR.
276	—	10 (ν) Virgin	p	6	58	n	0 5	3	F. pL. R. lbM.
277	—	—	p	5	14	f	0 1	3	F. S.
278	1785	75 Ceti	p	1	38	f	0 5	1	pB. S. E.
279	Jan. 6	35 Eridani	f	2	55	n	0 38	2	F. mE. vlbM. about 4' l.
280	—	14 Hydræ	f	5	2	n	0 21	1	F. vS. IE. ver. 240.
281	—	28 (A) Hydr	p	29	27	n	1 40	2	F. vS. E.
282	10	41 Ceti	f	17	28	n	0 20	2	pB. cL. IE. mbM.
283	—	—	f	21	26	n	0 10	2	pB. S. mbM.
284	—	80 Ceti	f	3	34	i	0 19	1	F. mE. about 3' l and $\frac{3}{4}$ b.
285	—	55 (ζ) Ceti	f	74	50	a	1 2	2	pE. E. sp nf. about 1' $\frac{1}{2}$ l.
286	—	—	p	4	34	f	0 9	1	F. pL. R. lbM. f. Sft.

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287	Jan. 27	17 Eridani	p	10 24	f	1 12	2	F. vS. 1E. er. unequally B.	
288	28	21 Eridani	p	1 55	n	0 35	3	F. pL. iR. r.	
289	31	7 (ν) Lepor	f	2 32	n	0 51	1	F. pL. i triangular F. r.	
290	Feb. 1	89 (π) Ceti	f	49 17	n	0 21	3	F. pL. R. lbM. f. pLft.	
291	—	26 (π) Erid	p	3 39	f	1 25	1	pF. mE. mer. 3 or 4' l and 1' b.	
292	—	45 (μ) Lepor	p	0 50	n	0 29	1	pB. iR. mbM. sp. pcst.	
293	—	76 (3 ^b) Crater	p	52 51	n	0 23	1	pB. S. iR. bM.	
294	—	31 Crateris	p	6 45	n	0 6	1	F. S. E. r.	
295	—	—	p	1 48	n	1 18	1	F. vS. iF. bM.	
296	—	—	p	0 12	n	0 24	1	pB. pL.	
297	—	89 Virginis	p	11 47	n	0 18	1	pF. L. mbM.	
298	—	8 (η) Corvi	f	18 44	n	1 51	1	{ F. pL. lbM. $\frac{1}{2}$ p. is a S sus- pected stellar.	
299	—	53 Virginis	p	12 30	n	0 48	1	pB. pL. mbM.	
300	—	—	p	11 0	n	2 8	2	pF. eL.	
301	—	—	p	3 8	n	0 34	1	pB. pL. iR. mbM.	
302	—	2 (ι) Cancri	p	3 5	f	1 40	1	pF. vS. bM. er.	
303	—	19 (λ) Cancri	p	2 22	f	0 35	1	F. S. mbM. r.	
304	Mar. 4	11 Monoc	f	30 53	f	0 37	3	Some Sft with pB nebuloſity.	
305	—	5 20 Sextantis	p	7 14	n	0 49	1	F. S. 1E. er.	
306	—	88 Virginis	f	0 52	f	0 24	1	F. vS. iF. r.	
307	—	—	f	3 58	n	0 43	1	F. eL. iF. bM.	
308	—	82 (m) Virg	f	12 28	n	1 6	2	F. S. iR. lbM.	
309	}	—	99 (ι) Virg	p	12 31	f	0 1	1	{ Two. nearly mer. diff. 4' Sft. betw. che. touch. { n. pB. cL. mbM. f. F. S.
310									
311	—	10 6 (3 ^b) Crate	p	68 34	f	1 18	2	cB. S. mbM.	
312	—	45 (ν) Hydr	f	9 41	n	2 0	1	F. L. iR. vgbM.	
313	—	—	f	10 53	n	1 16	1	pB. 1E. par. b towards f. & c.	
314	—	—	f	17 57	n	1 55	1	F. S. iF. bM.	
315	—	11 23 (2 ϕ) Can	f	0 29	f	1 0	2	F. S. R. bM. C. N.	
316	}	—	12 64 (1 b) Gem	p	4 16	n	1 17	1	{ Two. sp nf. diff. 1' che. mix. Both F. S. equal. N.
317									
318	—	—	22 (1 ϕ) Can	f	8 38	n	0 36	1	F. pL. 1E. mbM. r.
319	—	—	48 (1 ι) Canc	p	9 10	f	0 5	1	F. S. bM. r.
320	—	13 23 Leonis min	p	12 38	n	1 50	1	F. pS. R. lbM.	
321	—	—	13 Can. ven.	p	51 31	f	0 50	1	pB. L. gbM.
322	}	—	—	p	40 19	f	1 28	1	{ The two first of 3 in a line. of unequal ſize and brightneſs.
323									
324									
325	—	—	—	p	38 3	n	0 17	1	F. S.
326	—	—	—	p	26 51	f	0 30	1	F. pL. E. bM.
327	—	—	—	p	14 11	f	0 4	1	F. mE. mer.
328	—	—	—	f	19 43	f	0 35	1	F. pS.
328	—	—	—	f	23 43	n	0 38	1	pB. pS. nearly R. mbM.

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II.	1785	Stars.		M. S.	D.M.	Ob.	Description.
329	Mar. 13	49 (δ) Bootis	p	48 50	n 0	5 3	pF. S. R. r. n. 2 pBf.
330	—	—	p	45 45	f 2	2 1	pB. pL. R. bM.
331	16	11 Urfæ min	p	60 36	f 0	2 1	F. pS. er.
332	—	—	p	20 10	f 0	2 1	pB. cL. b towards p. fide.
333	} April 3	27 Urfæ	f	20 14	f 0	2 1	{ Two. Nearly mer. Most n. pB. pS. bM. Most f. F. S. bM.
334							
335	—	—	f	73 0	n 1	41 1	pF. cL. iE.
336	—	—	f	88 16	n 0	30 1	pB. vS. iR.
337	—	—	f	94 42	n 0	48 1	pF. pS. bM.
338	6	44 Leonis min	f	31 8	f 0	59 2	F. cL. iR. gvlbM.
339	—	53 Leonis min	f	19 26	n 1	0 1	pF. pS. iF.
340	—	72 Leonis	f	25 8	n 1	35 2	F. vS. stellar. short ray p. fide.
341	—	4 Comæ	p	29 46	n 0	35 1	F. stellar.
342	—	—	p	22 2	n 0	37 1	F. pL.
343	—	21 (g) Comæ	f	4 36	n 1	56 1	not L.
344	—	—	f	20 56	n 1	11 1	F. pL. iE.
345	—	—	f	23 34	n 2	28 1	just f. pBf.
346	—	31 Comæ	f	4 54	f 0	34 2	F. pL. iF.
347	10	36 (ζ) Leonis	f	11 14	f 0	33 1	pB. S. bM. r.
348	—	41 Leonis min	p	3 34	n 0	51 1	F. S. iE.
349	—	72 Leonis	f	14 12	n 1	1 1	F. pL. i triangular F.
350	—	—	f	16 2	f 0	17 1	F. S.
351	—	—	f	18 2	n 1	22 1	F. S.
352	—	92 Leonis	p	3 9	n 1	16 2	F. pS.
353	—	7 (b) Comæ	p	4 37	n 0	11 1	pB. cL. iF. bM.
354	—	—	p	0 43	n Q	2 1	F. vS.
355	—	22 Comæ	p	4 32	f 1	28 1	pF. L. broadly E.
356	—	40 Comæ	f	5 38	n 1	25 1	pB. S.
357	—	12 (d) Bootis	f	18 46	f 1	53 1	F. S. iF. lbM.
358	11	39 Leonis mi	p	8 4	n 0	8 1	F. pL.
359	—	—	p	7 38	n 1	1 1	pB. pS. nearly R. bM.
360	—	44 Leonis mi	p	1 46	n 0	39 1	F. pL. iF.
361	—	—	f	0 50	n 0	30 1	F.
362	—	—	f	1 18	n 0	1 1	pB. pL.
363	—	—	f	1 32	n 0	8 1	F. S.
364	—	—	f	4 35	f 0	44 1	pF. pL. iE. b towards ff. fide.
365	—	—	f	14 2	n 0	56 1	F. mE. $1\frac{1}{2}$ l. but v. narrow.
366	—	—	f	14 24	n 0	4 1	pF. pL.
367	—	—	f	42 12	n 0	14 1	F. vS.
368	—	14 (b) Comæ	p	28 42	n 0	59 1	pF. bM.
369	—	—	p	27 58	n 0	12 1	F. pL. E. b towards f. fide.
370	—	—	p	20 16	n 0	55 1	pB. cL. mb towards nf. fide.
371	—	—	p	17 40	n 1	55 1	One of three. F. iF.

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372	Apr. 11	14 (b) Comæ	p	74 24 n	1 55	1	{ One of 4. The most n. of the p. side of a quartile. F. S.
373	—	—	p	13 28 n	1 16	1	F. L. bM.
374	—	—	p	12 22 n	1 12	1	F. S.
375	—	—	p	11 4 n	1 14	1	F. pS.
376	—	—	p	6 38 n	0 22	1	pF. S. almost R. bM.
377	—	—	p	6 30 n	1 57	1	{ About 6' ff l. go. pB. S. the place is that of the np.
378	—	—	p	4 10 n	1 57	1	F. cL. lE.
379	—	—	p	1 36 n	1 18	1	F. S.
380	—	15 (c) Comæ	f	9 8 f	1 22	1	F. pL.
381	—	31 Comæ	p	3 46 f	0 20	1	F. S.
382	—	—	f	3 16 f	0 9	1	F. pS.
383	—	—	f	4 26 n	0 12	1	F. pL.
384	—	—	f	5 2 f	0 23	1	F. pL.
385	—	—	f	5 40 n	0 4	1	F. pL.
386	—	—	f	5 54 f	0 6	1	F. pL.
387	—	—	f	5 48 n	0 55	1	F. pL.
388	}	41 Comæ	p	7 46 n	0 22	1	{ Two. The time taken between them.
389							
390	—	—	p	7 10 f	0 43	1	F.
391	—	—	p	7 18 n	0 23	1	F.
392	}	—	p	5 46 n	0 14	1	{ Three. The 2 f. p near each other. The sp. about 8' dist. The time is that of the 2.
393							
394							
395	—	—	p	3 26 n	0 33	1	F. S.
396	—	—	p	2 16 n	1 29	1	F. S.
397	—	—	p	2 2 f	0 4	1	F. S.
398	—	—	p	1 30 n	0 8	1	F. S.
399	—	3 (β) Coron	f	6 54 f	0 27	1	pF. pL. iR. bM. r.
400	—	13 26 Bootis	f	47 12 f	1 33	1	F. pL. er.
401	—	14 11 Serpents	p	2 14 f	1 35	1	pF. pL. vlbM. r. p. 3 Sft.
402	—	12 Ophiuchi	p	14 32 n	0 4	1	F. cL. E. sp nf. r. 3' l 2' b.

Third class. Very faint nebulae.

III.	1783	Stars.		M. S.	D.M.	Ob.	Description.	
1	Nov. 3	36 (v) Orion	f	3 39 n	1 57	2	vF. S. mE. In the L. neb.	
2	Dec. 21	60 Ceti	f	13 :: n		1	eF. vS. R. lbM.	
3	—	30 95 (e) Leonis	f	4 15 n	0 36	2	vF. vS. lE. r.	
4	1784	Jan. 18	6 (b) Leonis	f	6 4 f	0 9	3	eF. vS. iE. sp. a triangle of Bft.
5	—	—	47 (e) Leonis	f	10 0 n	0 9	1	eF. eS. viewed also with 240.
6	—	—	59 (e) Virgin	p	28 ::		1	vS.

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III.	1784	Stars.		M. S.	D.M.	Ob.	Description.
7	Jan. 23	3 (β) Can. mi	f	36 30	n	o 19	I Stellar. 240 left some doubt.
8	—	3 Leonis	f	1 6	f	o 28	3 E. er. 3 of the ft. visible.
9	}	— 32 (2 d) Virg	f	46 54	f	o 25	2 Two. Both vF. and vS.
10							
11	—	— 31 Bootis	p	38 15	f	o 1	I vF. stellar.
12	—	— —	p	21 15	f	o 34	I vF. forming an arch with 3 ft.
13	28	11 (δ) Virg	f	27 30			I eF. not verified.
14	30	31 Bootis	p	12 30	f	o 9	I eF. vL. not verified.
15	}	Feb. 15 68 (δ) Leonis	f	7 30	f	o 24	I { Two. The p. vF. L. 5 or 6'
16							
17	23	16 (c) Virgin	f	6 0	f	o 47	I vF. pS. r.
18	—	— —	f	11 45	n	o 38	I vF. cL. r.
19	Mar. 11	2 (ϵ) Can. mi	f	5 16	n	o 28	I { 2vS and close ft. with nebule-
20	—	— 53 (l) Leonis	f	1 45	f	o 26	I vF. r.
21	—	— 73 (n) Leonis	p	15 36	f	i 11	2 vF. S. C. ver. 240.
22	—	— 53 (l) Leonis	f	14 0	n	o 31	I vF. vS. with 240 cL.
23	—	— 73 (n) Leonis	p	9 6	f	i 56	2 vF. vS. 1E. ver. 240.
24	12	20 Leonis	f	11 30	n	i 19	I vS. 240 left some doubt.
25	—	— —	f	26 15	n	o 0	I vF. S.
26	—	— 20 Comæ	f	4 30	f	o 37	I eF. L. left doubtful.
27	14	86 Leonis	p	13 30	f	o 22	I The most f. of 3.vF.vS.II.50.51.
28	—	— —	p	2 30	f	i 10	I vF. L. r.
29	—	— —	f	7 15	f	o 34	I vF. eS. stellar. ver. 240.
30	—	— —	f	10 0	f	o 40	I vF. pS. f. 2 vBft.
31	—	— 11 Comæ	f	3 15	f	o 10	I eF. forms a triangle with 2 Sft.
32	—	— 8 (n) Bootis	f	16 0	f	o 56	I vS. or nebulous double ft. ver. 240.
33	—	— 5 (r) Hercules	f	3 30	n	i 30	I eF. pL. partly ver. 240.
34	15	5 (ξ) Leonis	f	13 0	f	o 10	I eF. vS. completely ver. 240.
35	}	— 78 (ι) Leonis	f	20 30	f	o 15	I { Two. par. 3 or 4' dist.
36							
37	—	— 12 (t) Virgin	p	8 15	n	o 40	I eF. vS. with 240. cL.
38	—	— —	f	11 15	n	o 20	I vF. vS.
39	—	— —	f	12 45	n	o 15	I vF. near some Bft.
40	—	— 30 (ϵ) Virg	p	11 15	n	o 31	I eF. pL. easily overlooked.
41	—	— —	p	10 45	n	i 14	I vF.
42	—	— —	p	10 15	n	i 23	I vF.
43	—	— 34 Virginis	p	6 6	f	o 4	2 vF. pL. 1E, contains two ft.
44	—	— —	p	3 30	f	o 25	2 The p. of 2. vF. S. Note.
45	}	— 71 Virginis	f	0 37	n	o 12	I { Two. mistaken for one; but 240
46							
47	—	— 32 Bootis	p	25 0	f	o 47	I vF. r. 2 or 3 ft in it.
48	—	— —	f	3 30	n	o 27	I eF.
49	19	62 (i o) Can.	p	14 33	f	i 5	2 F. cS. 1E. np ff. like 2 joined.

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50	Mar. 19	45 (1A) Can	f	3 15	f	0 4	I	eF. ver. 240. and cL. R.
51	}	27 (v) Leonis	p	7 0	n	0 21	I	{ Two. np. ff. 6 or 7' dist. Both eF. p is the largest.
52								
53	—	34 Leonis	f	1 0	f	0 41	2	eF. S. 1E. r. 3 or 4 ft in it.
54	—	52 (K) Leon	p	10 45	f	1 27	1	eF. cL. R. r. no N.
55	—	46 (i) Leonis	f	4 18	n	0 3	2	vF. vS. iR. r. some ft. in it.
56	—	15 Bootis	p	13 0	f	0 40	I	eF. vS. E. r.
57	—	—	p	10 30	f	0 28	I	eF. S. ver 240.
58	—	—	p	8 30	f	0 43	I	eF. S. ver 240 and 1E.
59	—	—	p	6 15	f	1 10	I	eF. S. ver 240.
60	21	47 (δ) Cancr	f	20 0	n	0 23	I	vF. S. with 240 near Sft.
61	—	—	f	26 30	f	0 18	I	eF. 240 shewed 5 Sft with nebulos.
62	}	—	f	31 30	n	0 50	I	{ Two. nearly mer. Both vF. pS. R. lbM. r. with 240 cL.
63								
64	—	—	f	36 0	n	0 52	1	eF. 240 shewed some Sft with neb.
65	—	51 (m) Leon	p	38 15	f	0 33	I	vS. E. r. better with 240
66	—	—	p	9 15	f	0 44	I	vF. S. E. r. the same with 240
67	—	—	f	11 45	f	1 45	I	vF. nebul. betw. 2 ft. 2' l. ver. 240
68	—	3 Comæ	p	1 45	f	0 40	1	2 vSft with fusp. neb. 240 doubtf.
69	—	25 Comæ	p	5 0	f	0 18	I	vF. S.
70	—	27 Comæ	f	6 0	f	0 42	I	vF. not S.
71	—	42 Comæ	f	19 30	f	0 41	I	{ 3 Sft with fusp. nebul. 240 left some doubtf.
72	—	4 (τ) Bootis	p	10 15	f	1 26	I	eF. vS. ver 240 and cL.
73	—	5 (r) Herc	p	4 0	f	1 50	I	eF. vS. easily ver. 240.
74	—	48 Serpenti	p	1 15	n	0 5	I	vF. S. ver. 240
75	Apr. 8	70 (θ) Leonis	p	12 24	f	1 7	I	eF. not S.
76	—	—	f	4 0	f	0 41	I	eF. pL. easily ver. 240.
77	—	94 (β) Leonis	f	12 12	f	1 12	I	eF. pL. R. r.
78	—	6 Comæ	f	17 18	f	0 19	I	vF. r. by moon-light.
79	12	73 (n) Leonis	p	5 6	f	1 25	I	eF. not L. 1E. r.
80	—	—	f	18 36	f	0 48	I	vF. vS. R. bM. stellar. ver. 240
81	—	—	f	22 35	f	1 11	2	vF. vS. R. stellar.
82	—	41 Virginis	p	1 42	n	1 7	I	vF. S. E. r.
83	—	—	f	6 18	n	0 0	1	vF. S. iF. r.
84	—	70 Virginis	p	3 42	f	0 4	I	eF. vS. stellar. ver. 240.
85	}	—	f	6 12	n	0 1	I	{ Three. The two p. vF. S. R. The last vF. pL. R. Plase of the 2d not taken.
86								
87								
88	13	56 Leonis	p	5 42	f	0 23	I	eF. no time to ver.
89	—	63 (χ) Leon	f	6 24	f	1 29	I	eF. a little doubtful.
90	—	3 (v) Virginis	f	4 54	n	0 1	L	vF. vS. vlbM.
91	—	11 (s) Virg	f	7 48	n	1 19	I	The f. of 2. eF. II. 17.

new Nebulae and Clusters of Stars.

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III.	1784	Stars.	M. S.	D.M.	Ob.	Description.	
92	} April 13	9 (ρ) Virginis	f	16 15	f	2 4 2	{ Two. One vF. vS. The other just by. eF. eS. left doubtful.
93							
94							
95							
96	}	— — —	f	18 22	f	1 46 2	{ Three. All. eF. vS. R. In the 2d observation two of them were overlooked.
97							
98							
99							
100	}	— — —	f	50 42	f	1 8 1	eF. E.
101							
102							
103							
104	}	31 (1 δ) Virg	p	17 9	n	0 42 2	The smallest of 2. eF. II. 144.
105							
106							
107							
108	}	— — —	p	3 6	n	0 0 1	eF. eS. The place not accurate.
109							
110							
111							
112	}	32 (2 α) Virg	f	47 36	f	0 33 1	eF. S.
113							
114							
115							
116	}	— — —	f	51 0	f	0 23 1	eF. pL. R. er. The st almost visible
117							
118							
119							
120	}	15 2 (1 ξ) Virgin	p	1 48	n	1 54 1	eF. pL.
121							
122							
123							
124	}	— — —	f	0 24	n	0 58 1	vF. r.
125							
126							
127							
128	}	4 (2 ξ) Virgin	p	2 12	n	0 19 1	vF. vS. left doubtful. Twilight.
129							
130							
131							
132	}	31 (1 δ) Virg	p	1 52	n	1 35 2	eF. vL. lbM.
133							
134							
135							
136	}	33 Virginis	f	7 30	n	0 8 1	vF. pL. vlbM. r.
137							
138							
139							
140	}	17 48 Leonis	f	6 54	f	0 8 1	eF. pL. a little doubtful. Twil.
141							
142							
143							
144	}	63 χ) Leonis	p	13 18	n	1 7 1	eF. eS. r.
145							
146							
147							
148	}	90 Leonis	f	5 18	n	0 49 1	{ 8 or 10' sp. II. 161. vS. stellar. not ver.
149							
150							
151							
152	}	20 Bootis	f	1 54	f	2 29 1	vF. vS. lE. ver. 240.
153							
154							
155							
156	}	18 { 58 (δ) Leon 84 (τ) Leon	f	8 36	n	1 43 1	{ vF. vS. r. ver. 240.
157							
158							
159							
160	}	24 74 (ϕ) Leonis	f	10 6	f	1 52 1	eF. eL. R. r. near vBst. D light.
161							
162							
163							
164	}	— — —	f	34 18	f	1 3 1	eF. eS. with 240. 2 vSst and nebu.
165							
166							
167							
168	}	25 28 Virginis	p	14 18	n	1 35 1	{ 2 vSst with nebulosity with 240 left doubtful.
169							
170							
171							
172	}	May 9 67 (α) Virg	f	1 12	f	1 10 1	vS. vF. stellar. ver. 240.
173							
174							
175							
176	}	31 (ϵ) Libræ	p	8 48	n	0 15 1	vF. eL. nearly R. lm.
177							
178							
179							
180	}	11 100 (λ) Virg	p	59 30	n	0 48 1	The two most f. of 3. That M. vF. vS. The most f. eF. eS. ver. 240. II. 193.
181							
182							
183							
184	}	— — —	p	55 42	n	0 29 1	eF. vS. stellar. ver. 240.
185							
186							
187							
188	}	— — —	f	6 24	n	0 9 1	eF. pL. iR. lb towards f. side:
189							
190							
191							
192	}	14 9 (α) Libræ	p	27 0	f	0 36 1	Two np ff. The f. eF. 1' d. nearly R. The p. vF. vS. R. dift. 5'.
193							
194							
195							
196	}	15 18 Herculis	f	40 30	f	0 47 1	vF. pL. R. lbM.
197							
198							
199							
200	}	— — —	f	43 30	f	0 47 1	vF. stellar. ver. 240.
201							
202							
203							
204	}	16 25 (ρ) Bootis	p	33 12	f	1 10 1	vF. S. iR. lbM. almost stellar.
205							
206							
207							
208	}	— — —	p	2 18	f	0 24 1	{ 2 Sst. with suspected nebul. al- most ver. 240.
209							
210							
211							
212	}	— 28 (σ) Bootis	f	3 48	n	0 45 1	{ Two. 3' dift. par. The f. vF. vS. iR. The p. eF. vS. ver. 240.
213							
214							
215							

III.	1784	Stars.		M.	S.		D.M.	Ob.	Description.
129	} May 16	28 (σ) Bootis	f	17	48	n	0	3	} Two. about 6' dist. Both eF. vS. R. ver. 240.
130									
131	—	—	f	22	54	n	0	11	} vF. E. close to a ft. contains 2 ft. eF. S. 1E. the same with 240.
132	17	36 (ϵ) Bootis	p	16	54	n	0	26	
133	—	—	p	2	36	n	1	35	} cF. cL. iR. lbM.
134	19	12 (d) Bootis	f	4	28	n	0	12	
135	—	—	f	12	30	n	1	5	} vF. pL. E. par. r. eF. vS. stellar. ver. 240.
136	—	—	f	14	8	f	0	30	
137	—	76 (λ) Hercu	p	2	54	n	0	22	} vF. not S. iE.
138	} 21	20 ($\Gamma\gamma$) Libr	f	13	36	n	1	9	
139									
140	June 11	27 (β) Hercu	p	23	30	f	0	51	} vF. vS. r. ver. 240. np. pBft.
141	July 12	16 (Ψ) Capri	p	20	42	n	0	33	
142	21	70 Aquilæ	p	3	39	n	0	31	} vF. E. about 2' 1.
143	Aug. 7	35 (2ν) Sagit	p	0	0	f	0	3	
144	Sept. 5	39 (b) Cygni	p	21	18	n	1	20	} 3 vSft with suspected nebuloſity. Some eSft. with neb. iE. ver. 240.
145	10	10 (\ast) Pegasi	p	25	48	n	0	53	
146	—	69 Pegasi	f	11	24	n	1	53	} vF. E. ſome Sft. with nebuloſity. 2 or 3 ft. with ſeeming nebuloſity.
147	—	85 Pegasi	f	7	54	f	1	13	
148	11	28 Androm	p	4	12	f	0	32	} vF. pL. lbM.
149	—	31 (δ) Andr	f	4	24	f	0	15	
150	—	2 (ω) Trang	p	18	48	n	1	4	} Near V. 18. vF. SR. bM.
151	—	5 (ι) Trang	p	7	0	f	1	18	
152	—	39 Arietis	p	8	12	n	0	49	} vF. vS. stellar. betw. vL. and Sft. vF. pS. of equal light.
153	12	40 Andr	p	13	0	n	0	29	
154	} —	—	f	9	18	n	0	20	} Two. Both eF. vS. The f is the laſteſt.
155									
156	} —	43 (β) Andr	f	13	6	f	2	8	} Three forming a rect. triangle. In the legs eF. vS. at the rectangle vF. pL.
157									
158	} —	40 Androm	f	20	6	n	1	30	} Two. Both eF. S. but unequal.
160									
161	—	17 (r) Perſei	p	14	30	f	1	47	} vF. S. iE. r.
162	—	21 Perſei	p	13	42	n	0	30	
163	—	—	p	13	18	n	0	32	} Two. Both vF. pS. R. lbM.
164	—	—	f	15	36	f	1	19	
165	13	66 (ν) Cygni	f	43	0	n	0	4	} eF. vS. 240 left a doubt. } 5 or 6 ft. forming a parallelogr. with mixed nebul. ver. 240.
166	—	—	f	78	18	f	0	47	
167	} —	43 (β) Andr	f	15	30	f	2	12	} Two. Both stellar.
168									
169	—	—	f	15	12	f	1	46	} stellar.
170	—	—	f	16	30	f	1	31	

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III.	1784	Stars.		M. S.		D.M.	Ob.	Description.
171	Sept. 13	43 (β) Andr	f	17 30	f	0 56	I	stellar.
172	}	- - -	f	18 0	f	2 8	I	} Two. Both vs. stellar. a little doubtful.
173		- - -						
174		3 (ϵ) Triang	p	25 24	n	0 22	I	
175	- - -	- - -	p	12 48	n	2 29	I	stellar.
176	- - -	- - -	p	6 6	n	1 0	I	eF. stellar. 240 left some doubt.
177	-	9 (γ) Triang	f	9 36	f	0 17	I	vF. cL. iR. r. 2 or 3' d.
178	-	17 (γ) Persei	f	9 6	n	0 13	I	vF. pL. R. SB place M.
179	15	6 (β) Arietis	p	3 0	n	1 30	I	vF. pL. IE.
180	18	40 Pegasi	p	3 0	n	0 47	I	eF. vS. R. n. cLst.
181	-	65 Pegasi	p	6 48	f	1 49	1	vF. vS. R. ver. 240.
182	-	40 Pegasi	f	38 24	f	0 51	2	4 or 5 Sft. with nebul. 240 doubtful.
183	-	89 (χ) Pegasi	f	0 30	f	1 38	I	eF. S. iE.
184	20	11 Piscium	p	17 44	f	0 22	2	eF. vS. stellar. ver. 240.
185	-	- - -	p	12 59	f	0 32	2	vF. E. er. 3 Fft. visible in it.
186	-	20 Piscium	p	29 15	f	1 41	I	eF. vS.
187	-	- - -	p	14 39	n	0 1	I	eF. stellar. ver. 240 and cL.
188	-	- - -	p	13 33	f	0 9	1	eF. stellar. just like 187.
189	-	- - -	p	8 15	f	1 52	I	eF.
190	-	29 Piscium	f	4 54	f	0 40	I	vF. vS.
191	-	34 Ceti	p	9 12	f	1 53	2	vF. mE.
192	-	72 Ceti	p	17 24	f	1 43	1	eF. S. ver. 240; with difficulty.
193	-	- - -	p	12 12	f	2 6	1	eF. ver. 240. with difficulty.
194	-	81 Ceti	f	38 6	n	0 55	I	eF. eS.
195	-	- - -	f	42 42	n	0 49	I	eF. eS. ver. 240.
196	}	- - -	f	47 0	n	0 36	I	{ Two. Both eF. ver. 240 but just suspected with 157.
197		- - -						
198		Oct. 6	12 (g) Persei	p	3 3	n	0 40	
199	7	27 (u) Persei	p	8 27	n	0 2	2	The f of 2. vF. iF. pS. II. 239.
200	14	53 Piscium	f	4 24	n	1 13	2	2 Sft with nebulosity ver. 240.
201	-	19 Arietis	f	4 6	f	0 47	I	vF. vS. E. f. pcst.
202	15	47 Piscium	p	83 54	f	1 15	I	eF. vS. stellar. ver. 240.
203	-	- - -	p	78 18	n	0 18	I	vF. cL. E. 2' l.
204	-	59 Piscium	f	0 42	n	0 2	I	vF. S. sp. 2 vSft.
205	-	92 Piscium	p	5 30	f	0 10	I	eF. ver. 240. discovered in gaging.
206	-	- - -	p	3 30	f	1 20	I	eF. S.
207	-	8 (ι) Arietis	f	5 12	n	0 32	I	eF. vS. stellar. plainly. ver. 240.
208	-	- - -	f	6 30	f	1 49	I	eF. vS. iR. just f. pBft.
209	16	17 Delphini	f	18 6	f	0 11	I	vF. S. R.
210	}	- 54 (α) Pegasi	p	2 48	n	0 46	I	{ Two. The p. vF. S. IE. The f. vF. vS. stellar.
211		- - -						
212	-	- - -	f	21 6	f	0 59	I	{ eF. eS. ver. 240. completely though with difficulty.
213	-	- - -	f	27 36	n	0 40	I	eF. cL. ver. 240. betw. 2 Bft.

III.

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III.	1784	Stars		M.	S.		D.M.	Ob	Description.
214	Oct. 16	31 Arietis	p	36	48	n	1 24	1	vF. stellar, ver. 240.
215	—	—	p	36	6	n	0 6	1	eF. stellar, discovered by 240.
216	}	18 46 (ξ) Pegasi	f	3	15	f	0 37	3	} Two. The p. vF. pS. R. vlbM. The f. vF. pS. R. vibM.
217			f	3	25	f	0 32		
218			f	13	51	n	0 4		
219	19	15 Delphini	p	5	24	n	0 2	1	eF. vS. stellar, ver. 240. with dif.
220	—	66 Pegasi	p	10	10	n	0 23	4	F. R. bM. 1' $\frac{1}{2}$ d.
221	—	—	p	7	10	n	1 0	2	vF. S.
222	—	—	p	7	7	n	0 54	2	vF. S. R.
223	20	7 (<i>b</i>) Ceti	f	23	12	f	1 1	1	vF. 1E. or oval. 1' d. np. 2 pBft.
224	—	1 (<i>r</i>) Erid	p	21	42	f	2 11	2	vF. S. iR.
225	—	15 (δ) Lepor	f	6	24	n	0 49	1	eF. E. r. near 1' l. ver. 240.
226	—	70 (<i>q</i>) Pegasi	p	1	50	f	0 18	2	vF. vS. stellar ver. 240.
227	Nov. 7	64 Ceti	p	2	24	f	0 37	1	2 or 3 Sft. with neb. nearly ver. 240
228	}	— 73 (2 ξ) Ceti	f	12	54	n	0 17	1	} Two about 1' dist. The p. eF. vS. ver. 240. The f. eF. eS. 240. doubtf.
229									
230	12	55 (<i>l</i>) Pegasi	p	3	36	f	0 29	1	eF. eS. 240 left some doubt.
231	}	— 31 (<i>i</i> c) Pise	p	9	0	f	1 0	1	} Two. Both vF. stellar.
232									
233									
234	16	43 (γ) Canc	p	11	24	n	1 6	1	vF. stellar.
235	—	—	p	3	20	n	2 4	1	eF. S. ver. 240.
236	—	4 (λ) Leonis	p	23	22	f	1 37	1	eF. 1E. betw. 2 pBft. ver. 240.
237	17	33 Pegasi	f	12	54	n	0 46	1	eF. vS.
238	—	66 Pegasi	p	6	6	n	1 10	1	eF. eS. ver. 240. with difficulty.
239	—	4 Eridani	p	32	26	f	1 1	1	vF. S. 1' dia. or more.
240	20	12 Leporis	p	7	55	f	0 59	1	vF. vS. stellar.
241	—	—	f	3	39	n	0 23	1	eF. vS. 1E. par.
242	—	15 (ι) Nav	f	68	16	n	0 53	1	vF. 1E. S. 1' d.
243	Dec. 2	56 Pegasi	p	9	16	n	0 42	1	vF. S. er.
244	—	948 Ceti	p	48	34	n	0 27	1	eF. vS. E.
245	—	15 Eridani	p	15	49	f	0 27	1	vF. cL. iE. r. unequally B.
246	—	19 Eridani	p	1	38	n	0 50	2	vF. E. equally B.
247	—	—	f	6	5	f	1 4	1	eF. vS.
248	—	27 Eridani	p	4	23	n	1 7	1	vF. vS. 1E.
249	—	—	p	2	19	n	1 18	1	vF. vS.
250	}	13 89 (<i>f</i>) Pisci	f	2	25	f	0 14	1	} Two. nearly par. 4 or 5' dist. Both vF. vS. R.
251									
252									
253	—	—	f	3	42	n	1 38	1	vF. pL. iR. lbM.
254	—	—	f	6	48	n	0 11	1	eF. cL. E.
255	—	15 Sextantis	p	14	34	n	1 52	2	vF. E. np ff. 5' l $\frac{1}{4}$ b.
256	—	7 Sextantis	f	20	27	n	0 42	1	vF. vS. p. triangle of Bft.
256	20	13 (ξ) Can. mil	f	26	5	f	0 48	1	vF. vS. ver. 240.

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III.	1784	Stars.		M.	S		D.M.	Ob.	Description.
257	Dec. 20	13 (ζ) Can. mi	f	44	59	f	0 55	1	eF. pL. iF.
258	—	10 (r) Virgin	p	5	2	f	0 7	2	vF. S. E.
	1785								
259	Jan. 6	70 Ceti	p	10	34	f	0 38	1	eF. eS. iF.
260	—	—	p	7	10	n	0 4	1	eF. vS. stellar.
261	—	75 Ceti	p	3	46	f	0 6	1	vF. cL.
262	—	94 Ceti	p	1	16	f	1 15	1	eF. ver. 240. with difficulty.
263	—	24 Eridani	p	3	22	f	0 11	1	eF. stellar. or 1E. almost ver. 240.
264	—	28 (A) Hydr	p	26	48	n	1 19	2	vF. vS. R. ver. 240.
265	—	10 45 (θ) Ceti	f	32	28	f	0 46	1	eF. stellar. ver. 240.
266	—	—	f	31	6	f	0 43	1	vF. 1E. ver. 240.
267	Feb. 4	14 (ζ) Lepor	f	0	1	f	1 56	1	vF. pS. iE. bM.
268	—	6 11 (α) Lepor	p	27	51	f	0 31	1	eF. vS. stellar. ver. 240. easily.
269	—	19 Leporis	p	32	23	n	1 11	1	eF. vS. stellar. ver. 240. easily.
270	—	—	p	20	0	n	1 28	1	vF. eS. stellar. ver. 240. difficulty.
271	—	8 (3 v) Can ^s	f	8	0	n	0 4	1	3 or 4 Sft with neb. vF. ver. 240.
272	—	7 6 (3 b) Crater	p	58	39	n	1 21	1	vF. pS. iF. vlbM.
273	—	—	p	55	43	n	0 39	1	eF. vS. iF.
274	—	31 Crateris	p	4	40	f	0 14	1	vF. pL. iF.
275	—	8 12 Hydræ	f	20	30	f	1 49	1	vF. vS. bM. $\frac{1}{2}$ f. Sft.
276	—	38 (x) Hyd	p	9	20	f	0 26	1	vF. vS. stellar. 240. the fame.
277	—	39 (1 v) Hyd	p	5	0	n	0 30	1	{ Two. 3 or 4' dist. The most n. vF.
278	—	—	p	—	—	—	—	—	{ S. The f. vF. vS. Both stell.
279	—	8 (n) Corvi	p	31	26	n	0 16	1	eF. pL. better with 157 than 240.
280	—	—	f	18	44	n	1 51	1	{ $\frac{1}{2}$ p. II. 298. eF. eS. stell. 240.
281	—	—	f	20	38	n	0 46	1	{ doubtful.
282	—	53 Virginis	f	7	12	n	1 12	1	vF. pS. r.
283	—	17 41 (w) Bootis	p	27	54	n	0 27	1	vF. mE. ff np. v narrow.
284	Mar. 5	25 (f) Virg	p	54	12	f	0 19	1	vF. vS.
285	—	88 Virginis	f	8	45	n	1 17	1	vF. S. iE. lbM.
286	—	99 (s) Virg	p	9	22	n	0 31	1	eF. vS.
287	—	—	p	7	58	f	0 7	1	vF. L. b towards n.
288	—	6 15 (t) Navis	f	11	16	f	1 7	1	vF. pS. iF.
289	—	10 6 (3 b) Crat	p	69	14	f	0 25	2	vF. cL. er. some of the ft. vif.
290	—	2 (s) Corvi	p	16	1	n	2 3	1	F. vS. large stellar. lbM.
291	—	11 75 Cancr	p	2	53	f	1 13	1	eF. pL. broadly E. nearly par.
292	—	12 46 Cancr	p	11	46	f	1 14	2	vF. pL. R. bM.
293	—	23 Leonis	p	17	46	f	0 22	1	vF. pL. R. lbM. r.
294	—	13 57 (2 s) Canc	p	2	44	n	0 15	1	eF. eS. ver. 240.
295	—	72 (τ) Canc	f	5	47	n	0 24	1	vF. vS. R. bM. large stellar.
296	—	—	f	8	42	n	1 17	1	vF. vS. R. nf. 2pBft.
297	—	15 (f) Leon	p	13	8	f	0 34	1	vF. S. R. lbM.
298	—	18 Leonis min	p	20	56	f	0 44	2	eF. eS. 240 left a doubt.
									vF. vS. iR. lbM.

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III.	1785	Stars.		M. S.	D.M.	Ob.	Description.
299	Mar. 13	13 Can. ven.	p	40 51	f	0 27	I eF.
300	—	—	p	40 19	f	1 28	I The most f of 3. vF. II. 322. 323.
301	—	—	p	28 58	f	1 41	I vF. vS. R.
302	—	—	p	27 40	f	1 2	I eF. vS.
303	—	—	f	5 43	f	1 43	I eF. vS. ver. 240.
304	—	—	f	6 26	f	1 47	I eF. vS. ver. 240.
305	—	—	f	11 0	f	1 9	I vF. vS. IE.
306	}	—	f	16 12	n	0 6	I { Two. The p. vF. vS. The f.
307							
308	—	—	f	17 29	n	0 13	I vF. S.
309	—	—	f	18 31	n	0 34	I eF. vS.
310	—	49 (δ) Bootis	p	43 12	f	1 32	I vF. vS. iF.
311	16	11 Urfæ min	p	24 18	n	1 18	I vF. S. iR. between 2 pSft.
312	—	—	p	19 9	n	2 6	I eF. vS. IE. 2 vSft in it.
313	—	13 (γ) Ur. mi	f	27 8	n	0 12	I vF. vS. IE.
314	—	—	f	49 18	n	0 24	I eF. vS. IE. er.
315	Apr. 3	27 Urfæ	f	3 42	n	0 46	I eF. vS. ver. 240.
316	—	—	f	51 42	n	1 43	I eF. pS mE. r.
317	—	—	f	65 18	n	1 19	I vF. vS.
318	—	—	f	69 10	n	0 20	I vF. pL. r.
319	—	7 (β) Urf. mi	p	32 2	n	2 26	I eF. not verified.
320	6	72 Leonis	f	26 8	n	1 44	2 vF. vS. stellar.
321	—	4 Comæ	p	22 54	n	0 15	I vF. pS.
322	—	—	p	19 8	n	0 18	I vF. stellar.
323	}	—	p	14 43	f	0 40	I { Two. The sp. vF. IE. The nf.
324							
325	—	—	p	13 46	f	0 45	I eF. vS.
326	—	—	p	5 47	f	0 17	I { eF. vS. ver. 240. discovered in gaging.
327	—	—	p	1 45	n	0 33	I vF. pS.
328	—	31 Comæ	p	6 28	f	0 25	2 F. S.
329	—	21 (g) Comæ	f	14 45	n	2 26	2 vF. S.
330	10	36 (ζ) Leonis	f	4 54	n	0 29	I vF. pS. vlbM. iR.
331	—	41 Leonis mi	p	12 16	n	1 36	I vF. vS. vlbM.
332	—	54 Leonis	f	2 46	f	0 34	I vF. i' n. Sft.
333	—	72 Leonis	f	2 48	n	0 18	I vF. vS. ver. 240.
334	—	—	f	3 17	n	0 23	I vF. S.
335	}	—	f	7 12	n	1 12	I { Two. 2 or 3' distant. Both vF.
336							
337	—	—	f	9 34	n	0 52	I vF. S.
338	—	—	f	25 56	f	0 38	I vF. vS. 240. the fame.
339	—	—	f	26 30	n	1 44	I vF. vS. 240. the fame.
340	—	—	f	28 36	f	0 19	I { vF. vS. pL. two stellar. sus- pected near it.

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III.	1785	Stars.		M.	S.		D.M.	Ob.	Description.
341	Apr. 10	7 (b) Comæ	p	26	41	n	0 56	I	vF. vS. ver. 240. easily.
342	—	—	p	22	55	f	0 32	I	vF. vS. 1E.
343	—	—	p	20	7	f	0 4	I	vF. vS. 240. the same.
344	}	—	p	18	31	f	0 43	I	{ Two. 5 or 6' distant. Both cF. vS. ver 240.
345									
346	—	40 Comæ	f	1	38	n	2 8	I	cF. pL. 1E. ver. 240.
347	—	12 (d) Bootis	f	7	40	f	1 17	I	vF. 1E. S.
348	11	23 Leonis min	f	3	12	f	1 38	I	cF. 1E. a little doubtful.
349	—	39 Leonis min	p	9	28	n	1 18	I	{ cF. 240 shewed a few Sft. with neb. but doubtf.
350	—	44 Leonis min	f	17	36	n	0 35	I	vF. S.
351	}	—	f	20	58	n	0 51	I	{ Two. Both vF. vS. the most f. is the faintest.
352									
353	—	—	f	53	4	n	0 26	I	cF. 240 left it doubtful.
354	—	14 (b) Comæ	p	28	29	n	0 43	I	vF. vS. discovered in gaging.
355	—	—	p	21	41	f	0 16	I	vF. S. pmE.
356	}	—	p	17	40	n	1 55	I	{ Two of 3. the place is that of II. 371. Both vF. mE. A 4th suspected.
357									
358	}	—	p	14	24	n	1 55	I	{ Three of a quartile. The place is that of II. 372. All vF. vS. and all within 3'.
359									
360	—	—	p	0	40	n	0 18	I	vF. vL.
361	—	15 (c) Comæ	f	3	2	f	1 3	I	cF. cL. 4 or 5' l. 2' b.
362	—	41 Comæ	p	6	16	n	0 23	I	vF.
363	—	—	p	5	24	n	0 25	I	vF.
364	—	—	f	1	8	n	0 41	I	vF.
365	—	—	f	2	26	n	1 18	I	vF. pS.
366	—	43 Comæ	f	1	24	f	0 2	I	vF. pL.
367	—	—	f	11	2	f	0 53	I	vF. mE. $1\frac{1}{2}$ ' l. r. discov. gaging.
368	—	—	f	25	41	f	0 29	I	cF. vS. 240 left a little doubt.
369	—	—	f	28	8	n	0 31	I	vF. S. mE. nearly mer.
370	—	14 (i) Coron	p	13	52	f	1 8	I	vF. S. R. ver. 240 easily.
371	—	13 93 Leonis	p	1	25	n	0 25	I	vF. cL. moon-light.
372	14	11 Libræ	f	1	18	f	0 12	I	vF. just n. Sft.
373	—	11 Serpentis	p	12	8	f	1 18	I	cF. pL. r.
374	25	93 Leonis	p	7	28	n	0 7	2	vF. vS. r.
375	26	—	p	5	57	n	0 5	2	cF. vS.

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Fourth class. Planetary nebulæ.

Stars with burs, with milky chevelure, with short rays, remarkable shapes, &c.

IV.	1782	Stars.		M.	S.		D.M.	Ob.	Description.
1	7	13(<i>v</i>) Aquarii	p	5	24	n	0 2	11	vB. nearly R. planetary not well defined disk.
	1783								
2	Dec. 26	13 Monocer	f	6	4	n	1 27	4	cB. fan-shaped. about 2' l. from the center. Fig. 7.
	1784								
3	Jan. 16	15 Monocer	p	8	18	n	0 15	4	pB. m. like a ft. with an electrical brush. Fig. 8.
4	Feb. 22	69 Leonis	f	10	3	f	1 3	2	eF. S. like an ft. with a vF. brush sp. 240 shews the ft.
5	—	29 (γ) Virg	p	9	0	n	1 33	2	A pBt. with a m. ray f. par. 15 or 20' l. Fig. 6.
6	23	59 (<i>c</i>) Leonis	p	9	0	f	0 18	1	F. L. C. A central B. point with eF. m. chev.
7	Mar. 14	51 (<i>m</i>) Leon	f	17	0	f	0 39	2	F. pL. m. between 2 Bft. like an electrical brush to the most n. but is not connected. R.
8	} 15	34 Virginis	p	10	12	f	0 51	2	A double Nebula. The chev. run into each other. close. not vF.
9									
10	21	51 (<i>m</i>) Leo	p	21	15	f	1 48	1	A pcf. with a vF. brush nf. with 240 2 vSft. visible in it, but not connected.
11	May 21	51 (<i>e</i>) Ophiu	p	1	42	n	0 14	2	pB. R. p. well defined planetary disk. 30 or 40" d.
12	24	3 (<i>p</i>) Sagittæ	f	22	0	n	1 47	1	F. L. iR. inclining to m. 3 or 4' d. like a brush to a np. ft. but probably unconnected.
13	July 17	39 (<i>b</i>) Cygni	p	8	6	f	1 35	2	[pF. exactly R. of equal light. the edges p. well def. 1' d. See note.
		21 Vulpecu	f	2	6	n	1 51	2	
14	21	27 (<i>d</i>) Aquilæ	p	6	6	f	1 45	2	vF. of equal light. r. 1' d. in the midst of numberless ft. of the milky way.
15	Sept. 8	21 (α) Andr	f	2	6	f	1 21	1	A Fft. with S. chev. and 2 burs.
16	16	16 (<i>n</i>) Sagittæ	f	17	12	n	0 1	2	pB. perfectly R. pretty well defined. $\frac{3}{4}$ ' d. r.
17	20	81 Ceti	f	36	30	n	0 36	1	A Sft. with a vF. nebulous brush. $1\frac{1}{2}$ or 2' l. discovered with 240.

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IV.	1784	Stars.		M. S.	D.M.	Ob.	Description.
18	Oct. 6	14 Androm.	p	6 11 n	3 16 4		B. R. a planetary p. well defined disk. 15'' dia' with a 7 feet reflector.
19	16	5 Monoc.	p	7 6 f	0 10 1		A ft. of the 9 magnitude, with m. chev. i elliptical.
20	—	—	p	3 42 n	0 3 1		A ft. of the 11 or 12 mag. affected like the foregoing, but vF.
21	Nov. 20	12 Leporis	p	8 48 n	0 24 1		vS. stellar. vBN. and vF. chev. not quite central.
22	Dec. 9	7 (ξ) Navis	f	3 10 f	1 28 2		L. pB. R. er. 6 or 7' d. a faint red colour visible. A ft. 8 mag. not far from the center, but not connected. 2d ob. 9 or 10' d.
	1785						
23	Jan. 6	75 Ceti	p	4 40 f	0 6 1		cB. a vBN. with a chev. of 3 or 4' d.
24	—	50 (ζ) Orio	f	0 57 f	0 17 1		A Bft. with m. chev. 5' l. 4' b.
25	31	19 Navis	p	67 0 n	1 15 1		A pcft. with vF. and vS. m. chev. iF.
26	Feb. 1	34 (γ) Erid	f	16 16 n	0 49 2		vB. perfectly R. or vl. elliptical. planetary but ill defined disk. 2d obf. r. on the borders, and is probably a very compressed cluster of stars at an immense distance.
27	7	6(3b) Crater	p	28 39 n	1 25 2		Beautiful, brilliant, planetary disk ill defined, but uniformly B. the light of the colour of Jupiter. 40'' d. 2d obf. near 1' d. by estimation.
28	—	31 Crateris	f	1 0 n	0 47 1		pB. L. opening with a branch, or two nebulae very faintly joined. The f. is smallest.
29	8	4 (ν) Crateris	f	3 36 n	0 16 1		A Sft. with an eF. brush p. perceived in gaging. ver. 240.

Fifth class. Very large nebulae.

V.	1783	Stars.		M. S.	D.M.	Ob.	Description.
1	Oct. 30	18(*) Pif. aufst.	f	128 17 n	1 39 6		cB. mE. fp nf. mbM. Above 50' l. and 7 or 8' b. C. H. See note.
2	1784 Jan. 24	10 (r) Virgin	f	24 46 n	0 17 4		cB. mE. np ff. mbM. er. 9 or 10' l with a branch towards the np.

S f f 2

V.

V.	1784	Stars.		M. S.	D.M.	Ob.	Description.
3	Jan. 24	75 Leonis	f	104 0	f	0 24	1 eF. vL. er. R. 7 or 8' d.
4	Feb. 23	7 (b) Virgin	f	8 15	f	0 45	2 vF. R. 5 or 6' d.
5	Mar. 14	11 Comæ	f	0 45	n	0 32	1 L. E. r. 6 or 7' l.
6	21	4 (τ) Eotis	p	0 45	f	1 6	1 vL. eF. r.
7	Apr. 8	52 (K) Leonis	p	3 0	n	0 41	1 vL. F. r. almost R.
8	—	73 (n) Leonis	f	4 34	n	0 18	3 B. E. almost par. but l. np ff. near 15' l.
9	May 22	51 (e) Ophiu	f	32 48	f	0 40	1 L. E. broad. m. F.
10	} July 12	5 (i) Sagitt	f	2 42	n	0 49	1 Three nebulae, faintly joined, form a triangle. In the middle is a double st. vF. and of great extent.
11							
12							
13	—	—	f	4 54	n	0 39	1 Extensive m. neb. divided into 2 parts. the most n. above 15'. The most f. followed by stars.
14	Sept. 5	52 (k) Cygni	f	11 24	n	0 44	2 Branching nebulosity, extending in R.A. near 1½ deg. and in P.D. 52'. The f. part divides into several streams uniting again towards the f.
15	7	—	f	0 0	n	0 0	3 Extended; passes thro' k Cygni. By the Newtonian view above 1 degree l. By the <i>Front-view</i> near 2 deg. l. See note.
16	11	28 Androm.	p	11 12	n	0 17	1 eF. 5 or 6' d.
17	—	2 (α) Triang	p	18 48	n	0 55	2 m. nebulosity. not less than ½ deg. broad. perhaps ¾ degree long, but not determined.
18	Oct. 5	35 (ν) Andr	p	9 11	n	0 37	4 vB. mE. 30' l. 12. b. C. H.
19	6	26 (β) Persei	p	45 11	n	1 16	3 cB; mE. above 15'. 3' b. a black division 3 or 4' l. M.
20	20	7 (b) Ceti	f	33 9	f	1 48	1 A streak of light, nearly mer. 26' l. 3 or 4' b. pb.
21	1785 Jan. 31	18 (μ) Canis	f	22 18	n	1 2	2 A broad E nebulosity. forms a parallelogram with a ray fourthwards; the parall. 8' l. 6' b. vF.
22	Feb. 7	61 Virginis	f	10 59	n	0 17	1 mE. ff np. 5 or 6' l. pF.
23	Apr. 3	27 Urse	f	13 18	n	0 0	1 L. F. lE. r. 6 or 7' l. 5 or 6' b.
24	6	21 (g) Comæ	f	5 20	n	1 25	1 A lucid ray, 20' l. or more. 3 or 4' b. np ff. vBM. a beautiful appearance.

Sixth class. Very compressed and rich clusters of stars.

Additional	}	Cl. Cluster.	com. compressed.
abbreviations		fc. scattered.	co. coarsely.

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VI.	1783	Stars.	M. S.	D.M.	Ob.	Description.				
1	Nov. 19	63 (ρ) Gemi	f	11	0	n	0	12	3	A beautiful Cl. of many L. and com. S. ft. about 12' d.
2	Dec. 30 1784	18' (γ) Gemi	f	27	10	f	2	9	3	A v. com. Cl. of eSft. iF. 5 or 6' d.
3	Jan. 24	12 Monocer	f	11	30	f	0	18	1	A Cl. of v. com. and eS. ft. E.
4	Jan. 24	4 Sextantis	f	5	30	f	0	5	1	A Cl. of v. com. S. ft.
5	Feb. 11	31 (2 ξ) Gemi	p	3	0	f	0	15	1	A Cl. of v. com. S. 7 or 8' d.
6	Mar. 8	67 Gemin	p	18	0	f	1	57	1	A Cl. of ft. of various sizes pm. com. M. p. rich.
7		1442 Comae	f	8	30	n	0	8	1	An eF. Cl. of eS. ft. with r. neb. 8 or 10' d. ver. 240. beyond doubt.
8	Apr. 25	26 (χ) Virg	f	23	44	i	0	6	1	A v. com. Cl. of ft. 8 or 9' d. e rich. iR. or IE.
9	May 17	11 Bootis	f	4	18	n	1	7	1	A Cl. of eS. and com. ft. 6 or 7' d. many of the ft. visible, the rest so S. as to appear nebulous.
10		2221 (α) Scorp	p	1	48	n	0	24	1	A v. com. and cL. Cl. of the smallest stars imaginable. all of a dusky red colour. the next step to an er. neb.
11		39 Ophiuchi	p	13	24	f	0	26	1	A fine miniature of the 19 nebula of the Connoiff. des Temps (which is a Cl. of v. com. ft. much accumulated M. 4 or 5' d. all the ft. red.) 2 or 2 $\frac{1}{2}$ ' d. the ft. F. red.
12		2443 Ophiuchi	p	12	42	n	1	36	1	Another miniature Cl. like the preceding, but rather coarser.
13	June 24	10 (γ) Sagitt	p	14	48	n	0	18	1	A Cl. of S. and p. com. ft. of several mag. 5 or 6' d. not v. rich.
14	July 11	9 Vulpec	p	4	0	n	0	33	1	A Cl. of eS. and v. com. ft. a parallelogram of 4' l. 2' b. mer.
15	July 12	34 (σ) Sagitt	p	6	54	n	0	27	1	A suspected Cl. of v. ft. of considerable extent. not ver.
16	Aug. 18	12 (γ) Sagittae	p	4	18	f	1	32	1	A vS. Cl. of com. ft.
17	Nov. 16	42 (1 ω) Gemi	p	54	53	f	0	29	2	A v. rich Cl. of v. com. and eSft. 4 or 5' d. A miniature of the 35 Cl. of the Conn. des T. which it precedes 1' 13" and is 2' n.
18	1785 Mar. 4	11 Monocer	f	27	15	f	0	2	4	A v. com. and rich Cl. of vSft. iF. 8 or 9' d.
19		1024 (1ft.) Libr	f	5	0	f	1	16	1	A beautiful L. Cl. of the most minute and most com. ft. of different sizes. 6 or 7' d. iR. F. red colour.

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Seventh class. Pretty much compressed clusters of large or small stars.

VII.	1784	Stars.		M. S.	D.M.	Ob.	Description.
1	Jan. 18	90 (ιc) Tauri	f	11 0 f	1 30	2	A Cl. of L. scat. st. 10 or 12' in extent, with a vacancy M.
2	24	8 Monocer	f	8 17 n	0 23	3	A beautiful Cl. of sc. st. chiefly of 2 sorts, the first L. the second arranged in winding lines. contains the 12th Monoc.
3	Feb. 8	3 Leporis	p	72 30 f	0 30	1	A S. Cl. of com. st. some pL.
4	19	15 (2γ) Orio	f	3 6 n	1 10	2	A Cl. of pL. and p. com. st. c. rich. 20 or 25' d. iR.
5	23	13 Monocer	p	3 15 f	0 28	1	A Cl. of com. st. of various mag. p. rich in Sst. not R.
6	Mar. 16	50 Gemino	f	3 55 f	2 9	1	A p. rich and com. Cl. of st.
7	May 24	3 (ρ) Sagitt'	f	15 54 f	0 8	1	A c. rich, but p. co. sc. Cl. of st. l. more com. M.
8	July 17	41 (i) Cygni	f	5 42 f	2 1	5	A v. rich Cl. of pS. sc. st. most of the same size. 20' d.
9	19	12 Velpecu	p	0 5 n	0 30	2	A L. Cl. of p. com. st. most of one size.
10	Nov. 20	7 (ξ) Navis	f	5 56 n	0 40	3	A vL. Cl. of sc. st. c. rich and com. more than 15' d.
11	1785						
11	Jan. 31	19 Navis	p	0 40 n	0 5	1	A c. rich Cl. of co. sc. st. above 20' d.
12	Feb. 4	6 Navis	p	31 59 n	1 25	4	A beautiful Cl. of p. com. st. near $\frac{1}{2}$ deg. d. C. H.
13	6	2 (β) Canis	p	7 10 f	0 44	1	A Cl. of sc. Sst. not v. rich above 15' d.
14	8	18 (μ) Canis	f	3 17 n	0 20	1	A Cl. of co. sc. st. 20' d.
15	Mar. 6	26 Canis	f	1 22 n	1 52	1	A S. Cl. of p. com. st. not v. rich.
16	—	—	f	1 56 n	0 16	1	A Cl. of sc. st. c. rich. 20' d.
17	—	—	f	6 26 n	1 1	2	A v. beautiful Cl. of pL. st. v. rich. contains the 30 Canis.

Eighth class. Coarsely scattered clusters of stars.

VIII	1783	Stars.		M. S.	D.M.	Ob.	Description.
1	Dec. 3	14 Navis	p	4 0 n	0 40	2	A Cl. of co. sc. st. The place is that of the most com. part which is not M.
2	26	58 (α) Orion	p	8 28 n	1 16	2	A S. Cl. of vS. sc. st.
3	—	13 Monocer	f	1 30 n	1 2	2	An E. Cl. of L. sc. st.

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VIII	1784	Stars.		M.	S.		D.M.	Ob.	Description.
4	Jan. 16	112(β) Tauri	p	0	51	n	0 38	3	A Cl. of co. and i. fc. pLft.
5	18	15 Monocer	p	0	0	n	0 0	3	Double and attended by more than 30 cLft.
6	24	8 Monocer	p	14	20	n	0 4	2	A Cl. of co. fc. ft. not rich.
7	Feb. 10	4 Orionis	p	4	0	f	1 7	1	A Cl. of L. and S. fc. ft. not rich.
8	15	97 (i) Tauri	p	5	28	n	0 13	2	A Cl. of cL. v. co. fc. ft. perhaps a projecting point of the m way.
9	19	24 (γ) Gemi	p	8	15	n	0 15	1	A Cl. of vm. fc. ft. of various magnit. near $\frac{1}{2}$ deg. not rich.
10	Mar. 15	50(2A) Canc	f	3	0	f	0 44	1	A Cl. of v. co. fc. ft. not rich.
11	16	50 Gemini	f	15	55	f	2 19	1	A Cl. of fc. ft.
12	June 16	1 (m) Aquilæ	f	1	42	n	0 2	1	A Cl. of v. co. fc. ft.
13	—	20 Aquilæ	p	12	48	f	0 56	1	A Cl. of co. fc. ft. not rich.
14	18	43 (d) Sagitt'	p	44	48	n	1 54	1	A Cl. of fc. pLft.
15	July 15	63 Sagittarii	p	103	36	n	2 1	1	A Cl. of co. fc. ft.
16	17	12 (ϕ) Cygni	f	13	6	f	0 44	1	A Cl. of not v. com. ft. closest M. It may be called (if the expression be allowed) a forming Cl. or one that seems to be gathering
17	18	33 Vulpec	p	24	18	n	0 4	1	A Cl. of many L. fc. ft.
18	Sept. 4	61 (ρ) Aquilæ	p	2	54	n	0 18	1	A S. forming Cl. of ft.
19	—	—	p	0	42	n	0 40	1	A Cl. of co. fc. L. ft. not rich.
20	9	18 Vulpec	f	1	0	f	0 27	1	A Cl. of co. fc. ft. not rich.
21	10	6 Vulpec	p	2	27	n	0 29	2	A Cl. of cL. co. fc. ft.
22	—	18 Vulpec	f	1	12	f	0 12	1	A Cl. of co. fc. ft.
23	Oct. 15	12 (γ) Delph	p	5	18	n	0 33	1	A Cl. of co. fc. ft.
24	—	67 (ν) Orion	f	1	0	f	0 46	1	A SCl. of pL. white ft.
25	16	10 Monocer	f	0	0	f	0 0	1	The 10 Monoc. surrounded by many Bft.
26	Nov. 16	1 (H) Gem	p	2	16	n	0 3	1	A Cl. of ft. of various magnit. not v. ric. . 6 or 7' d.
27	20	11 (e) Navis	p	36	41	n	0 46	1	A S. Cl. of fc. ft. not rich, nor v. com.
28	Dec. 5	54(1 λ) Orion	p	11	53	f	0 15	1	A Cl. of pL. fc. ft. not rich.
29	9	101(4 b) Aqu	f	32	30	u	0 11	1	A Cl. of a few co. fc. L. ft.
30	—	25 (δ) Canis	f	57	10	f	1 15	1	A vL. Cl. of many co. fc. L. ft.
	1785								
31	Jan. 6	19 Monocer	p	15	36	n	1 3	1	A L. Cl. of fc. ft. not v. rich.
32	10	26 Monocer	p	34	32	f	0 41	1	A Cl. of co. fc. ft. of many magn. p. rich. above 15' d.
33	—	—	p	32	50	f	1 15	1	A Cl. of fc. L. ft.
34	—	—	p	26	36	i	0 52	1	An extensive Cl. of fc. ft.
35	31	2 Navis	p	21	23	n	1 21	3	A Cl. of pL. fc. ft. p. rich. about 20' l. crooked fig.

VIII.	1785	Stars.		M. S.		D.M.	Ob.	Description.
36	Jan. 31	19 Navis	p	43 20	n	1 0	1	A forming Cl. of co. fc. ft. 20 or 30' dia.
37	Feb. 4	6 Navis	p	16 47	n	1 43	2	A S. Cl. of p. com. ft. of various sizes. not v. rich.
38	—	2 Navis	p	8 55	n	0 10	2	A Cl. of p. com. L. and S. ft. R. above 15' d.
39	Mar. 4	11 Monocer	f	23 36	n	0 3	3	An extensive Cl. of fc. ft. of various sizes.
40	11	47 Geminor	p	4 2	n	0 18	1	Clustering L. fc. ft. many of equal size.

Notes to some Nebulæ and Clusters of Stars.

I. 7. This remarkable appearance being no longer in the place it has been observed, we must look upon it as a very considerable telescopic comet. It was visible in the finder and resembled one of the bright nebulae of the *Connoissance des Temps* so much, that I took it for one of them till I came to settle its place; but this not being done till a month or two after the observation, the opportunity of pursuing and investigating its track was lost.

I. 13.. The figures referred to, in the description of this and some other nebulae, may be found in the *Philosophical Transactions*, vol. LXXIV. tab. XVII. p. 450.

I. 28. The numbers annexed to some of the nebulae refer to the class and number of the preceding Catalogue: thus, II. 41. denotes that the 41st in the second class is the third nebula, following the two here described.

I. 28. Near the 84. and 86. neb. of the *Connoissance des Temps*.

II. 6. This has probably been a telescopic comet, as I have not been able to find it again, notwithstanding the assistance of a drawing which represents the telescopic stars in its neighbourhood.

II. 55. The preceding is the 85 of the *Connoissance des Temps*.

II. 84. 6 or 8' following the 100 of the *Connoissance des Temps*.

II. 118. Just following the 88. of the *Connoissance des Temps*.

II. 123. 124. The third is the 87th of the *Connoissance des Temps*.

III. 44. The following is the 60th of the *Connoissance des Temps*.

IV. 13. Before the value of the degree was more strictly ascertained, the two observations were thus :

new Nebulæ and Clusters of Stars.

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21 Velpeculæ	f	2' 6''	n	1° 51'
39 (b) Cygni	p	8 6	f	1 35

which, if there be no error in the place of the stars in FLAMSTEED'S Catalogue, differ about 14' in polar distance, for which reason in the second Paper on the Construction of the Heavens this nebula was put down twice, whereas it now appears, that both observations belong to the same.

V. 1. This nebula was discovered Sept. 23, 1783, by my sister CAROLINE HERSCHEL, with an excellent small Newtonian *Sweeper* of 27 inches focal length, and a power of 30. I have therefore marked it with the initial letters, C. H. of her name. See also V. 19, discovered Aug. 27, 1783, and VII. 13, discovered Feb. 26, 1783.

V. The *Front-view* is a method of using the reflecting telescope different from the Newtonian, Gregorian, and Cassagrain forms. It consists in looking with the eye glass, placed a little out of the axis, directly in at the front, without the interposition of a small speculum; and has the capital advantage of giving us almost double the light of the former constructions. In the year 1776 I tried it for the first time with a 10 feet reflector, and in 1784 again with a 20 feet one; but the success not immediately answering my expectations, it was too hastily laid aside. By a more careful repetition of the same experiment I find now, that several other considerable advantages, added to the brilliant light before mentioned, make it so valuable a construction that a judicious observer may avail himself of it at least in all cases where light is more particularly wanted; and from the experience of 30 sweeps, which I have already made with it, I may venture to announce it to be a very convenient and pleasant, as well as useful, way of observing. With regard to the position of objects, it differs from other constructions, by inverting the north and south, but not the preceding and following.

Errata of the Catalogue.

The following nebulæ should stand thus.

I. 54.	35 (v) Andr.	f	18 36	f	1 26	1	pB. S. R. vgbM.
II. 1.	41 Aquarii	p	11 45	n	0 17	2	F. cL. mE. bM. cr.
II. 239.	In the description read						The 2 ^d . of two.

