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**Catalogue of Double Stars. By William Herschel,
Esq. F. R. S.**

William Herschel

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VI. *Catalogue of Double Stars.*By William Herschel, *Esq. F. R. S.*

Read December 9, 1784.

I N T R O D U C T O R Y R E M A R K S .

THE great use of Double Stars having been already pointed out in a former paper, on the Parallax of the Fixed Stars, and in a latter one, on the Motion of the Solar System, I have now drawn up a second collection of 434 more, which I have found out since the first was delivered.

The happy opportunity of giving all my time to the pursuit of astronomy, which it has pleased the Royal Patron of this Society to furnish me with, has put it in my power to make the present collection much more perfect than the former; almost every double star in it having the distance and position of its two stars measured by proper micrometers; and the observations have been much oftener repeated.

The method of classing them is in every respect the same as that which has been used in the first collection; for which reason I refer to the introductory remarks that have been given with that collection * for an explanation of several particulars necessary to be previously known. The numbers of the stars are here also continued, so that the first class ending there at

* See Philosophical Transactions, vol. LXXII. p. 112.

24 begins here at 25, and the same is done with the other classes.

Most of the double stars in my first collection are among the number of those stars which have their places determined in Mr. FLAMSTEED's extensive catalogue; but of this collection many are not contained in that author's work, I have therefore adopted a method of pointing them out, which it will be proper to describe.

The finder of my reflector is limited, by a proper diaphragm, to a natural field of two degrees of a great circle in diameter. The intersection of the cross wires, in the center of it, points out one degree; and by the eye this degree, or the distance from the center to the circumference, may be divided into $\frac{1}{4}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{2}$, and $\frac{2}{3}$. Thus we are furnished with a measure which, though coarse, is however sufficiently accurate for the purpose here intended; and which, if more than two degrees are wanted, may be repeated at pleasure.

In such measures as these I have given the distance of a double star, whose place I wanted to point out, from the nearest star in FLAMSTEED's Catalogue. And since, besides the distance, it is also required to have its position with regard to the star thus referred to, I have used the neighbouring stars for the purpose of pointing it out.

The usefulness of this method is so extensive, that I shall be a little more particular in describing its application. When a star is thus pointed out, as for instance the 32d in the first class, where it is said, "About $\frac{1}{3}$ degree s. preceding the 44th Lyncis, "in a line parallel to θ Ursæ majoris and the 39th Lyncis;" we are to apply one eye to the finder, and placing the 44th Lyncis into the center of the field, we are to look at θ Ursæ majoris and the 39th Lyncis in the heavens with the other eye by the

side of the finder. The naked eye then will immediately direct us, by means of the two stars just mentioned, towards the place where, in the finder, the armed eye will perceive the double star in question about $\frac{3}{4}$ degree from the 44th Lyncis. I need hardly observe, that we must recollect the inversion of the finder, as those who are in the habit of using telescopes with high powers, always furnished with inverting finders, will of course look for the small star in the upper part of the field, as in fig. 1.

At the 45th star, in the first class, the description says, "About $1\frac{1}{4}$ degree s. preceding μ , towards ι Aurigæ." This double star will accordingly be found by placing μ Aurigæ first into the center of the finder; then, drawing the telescope towards ι , which the naked eye points out, the star we look for will begin to appear in the circumference as soon as μ is about $\frac{3}{4}$ degree removed from the center, as in fig. 2.

It will sometimes happen, that other stars are very near those which are thus pointed out, that might be mistaken for them. In such cases an additional precaution has been used by mentioning some circumstance either of magnitude or situation, to distinguish the intended star from the rest. After all, if any observer should be still at a loss to find these stars without having their right ascension and declination, he may furnish himself with them by means of FLAMSTEED's Atlas Cœlestis; for my description will be sufficiently exact for him to make a point in the maps to denote the star's place; then, by means of the graduated margin, he will have its R and declination to the time of the Atlas, which he may reduce to any other period by the usual computations.

Before I quit this subject I must remark, that it will be found on trial, that this method of pointing out a double star is not
only

only equal, but indeed superior, to having its right ascension and declination given: for, since it is to be viewed with very high powers, not such as fixed instruments are generally furnished with, the given right ascension and declination would be of no service. We might, indeed, find the star by a fixed or equatorial instrument; and, taking notice of its situation with regard to other neighbouring stars, find, and view it afterwards, by a more powerful telescope; but this will nearly amount to the very same way which here is pursued, with more deliberate accuracy than we are apt to use, while we are employed in seeking out an object to look at.

It will be required, that the observer should be furnished with FLAMSTEED'S Atlas Cœlestis, which must have the stars marked from the author's catalogue, by a number easily added to every star with pen and ink, as I have done to mine. The catalogue should also be numbered by an additional column, after that which contains the magnitudes. I hope in some future editions of the Atlas to see this method adopted in print, as the advantage of it is very considerable, both in referring to the catalogue for the place of a star laid down in the Atlas, and in finding a star in the latter whose place is given in the former.

I would recommend a precaution to those who wish to examine the closest of my double stars. It relates to the adjustment of the focus. Supposing the telescope and the observer long enough out in the open air to have acquired a settled temperature, and the night sufficiently clear for the purpose; let the focus of the instrument be re-adjusted with the utmost delicacy upon a star known to be single, of nearly the same altitude, magnitude, and colour, as the star which is to be examined, or upon one star above and another below the

same. Let the phænomena of the adjusting star be well attended to; as, whether it be perfectly round and well defined, or affected with little appendages that frequently keep playing about the image of the star, undergoing small alterations while it passes through the field, at other times remaining fixed to it during the whole passage. Such deceptions may be detected by turning or unscrewing the object-glass or speculum a little in its cell, when those appendages will be observed to revolve the same way. Being thus acquainted with the imperfections as well as perfections of the instrument, and going immediately from the adjusting star, which for that reason also should be as near as may be, to the double star which is to be examined, we may hope to be successful. The astronomical Mr. AUBERT, who did me the honour to follow this method with γ Leonis, which he did not find to be double when the telescope was adjusted by γ itself, soon perceived the small star after he had adjusted it upon Regulus. The instrument, being one of Mr. DOLLOND's best $3\frac{1}{2}$ feet achromatics, shewed Mr. AUBERT the two stars of γ Leonis in very close conjunction, or rather one partly hid behind the other. On comparing these appearances with my observations of that double star, we must not be surpris'd to find that I place them at a visible distance from each other: for the Newtonian reflectors, on the plan of my 7-foot one, as I have found, will give a much smaller image of the stars than the $3\frac{1}{2}$ feet achromatic refractors; wherefore the two stars, which in refractors as it were run into each other, will in the reflector remain separate. For this reason also, those who only use such refractors must not be disappointed if they cannot perceive the 26th, 30, 31, 36, 41, 44, 46, 47, 60, 75, 82, 86, and 87th stars of my first class to be double,

All the observations in the following catalogue on the relative magnitude, colour, and position of the stars, are to be understood as having been made with a power of 460, unless they are marked otherwise. This will account for the difference which observers may find in the relative magnitude; for should they use only a power of about 200, many of the small stars that are said to be very unequal and extremely unequal, must appear to them perhaps a degree lower in the scale, and become extremely and excessively unequal: and this will happen, though the quantity of light should be the very same which the reflector has that served me to settle these particulars. I need not say, that on other accounts, such as a real difference in the light of the telescope, the presence of the moon, twilights, auroræ boreales, or other causes, many of the small stars may be found to be of a different comparative lustre from what is assigned to them in the catalogue. The small star near Rigel, for instance, appears of a beautiful pale red colour, full, round, and well defined, with my 20-foot reflector; the 10-foot instrument shews it also very well in fine evenings; the 7-foot requires more attention, nor is the small star defined, but of a dusky pale red colour. A good $3\frac{1}{2}$ feet achromatic, of a large aperture, when Rigel is on the meridian, may, perhaps, also shew the small star, although I have not been able to see it with a very good instrument of that sort, which shews the small star that accompanies the pole-star; but the evening was not very favourable.

The measures of the distances were all taken with a parallel silk-worm's-thread micrometer, and a power of 227 only. They are not, as in the former catalogue, with the diameters included, but from the center of one star to the center of the other.

other. I have adopted these measures on finding that I could procure threads fine enough to subtend only an angle of about $1'' 13'''$, and that by this means there was no longer any great difficulty of judging when the stars were centrally covered by the threads. However, I do not know whether these measures, with stars at a considerable distance, may not be liable to an additional error of perhaps one second, owing to the remaining uncertainty in judging of their exact central position while the measure is taking.

The positions have all been measured (unless marked otherwise) with a power of 460, adapted to an excellent micrometer, executed by Mess. NAIRNE and BLUNT, according to the model given in the *Philosophical Transactions*, vol. LXXI. page 500. fig. IV.; but with a great and necessary improvement of making the wheel *d, d*, of that figure perform its whole revolution; by which means the two silk-worms-threads may be adjusted to a greater degree of exactness; for if they are not placed so as perfectly to bisect the circle, the two threads will not coincide exactly after having performed one semi-revolution, which they must be made to do with the utmost rigour. I found the absolute necessity of this precaution when I came critically to examine the positions of the *Georgium Sidus*, as they are given in table III. *Phil. Transf.* vol. LXXI. p. 497. The measures were affected with a small and pretty regular error, which I was at a loss to account for; and the distance of this star being then totally unknown, I looked for the cause of the deviation at first in a diurnal parallax of that heavenly body; but soon found it owing to the inconvenience before-mentioned, of not being able experimentally to adjust the moveable thread to that critical nicety which I
have

have now introduced and used in all the angles of the following catalogue*.

Datchet near Windsor, Nov. 1, 1784.

W. HERSCHEL.

CATALOGUE OF DOUBLE STARS.

FIRST CLASS.

- I. 25. A Orionis. FL. 32. Sub humero in consequentia.
 Jan. 20. Double. Considerably unequal. L. fine w.; S. w.
 1782. inclining to pale rose colour. The distance or black
 division between the two stars with 278 is about $\frac{1}{4}$ dia-
 meter of L.; with 460, near $\frac{1}{2}$ diameter of L. Posi-
 tion with 278, $52^{\circ} 10'$ f. preceding.
26. ω Leonis. FL. 2. Anteriorem pedem dextrum præcedens.
 Feb. 8. A very minute double star. Considerably unequal.
 1782. Both r. With 227 there is not the least suspicion of
 its being double; with 460 it appears oblong, and,
 when perfectly distinct, we see $\frac{1}{4}$ of the apparent dia-
 meter of a small star as it were emerged from behind a
 larger star; with 932 they are more clear of each other,
 but not separated; the focus of every power adjusted
 upon the 3d and 6th Leonis. November 6th, 1782, I

* The divisions on the moveable circular index (a) of this micrometer should be read off by means of a line drawn on a small plate fastened to the side t , and projecting with a proper curvature against the plane of the divisions towards r , so as to be nearly in contact; a coincidence of lines being by far the best method of ascertaining the situation of the index. A nonius of four sub-divisions may also be used, whereby the 60 divisions, already divided into halves upon the index-plate, will be had in eighths, each of which, on the construction of my present one, will be equal to three minutes of a degree of the circle.

I. first suspected a separation; and November 13th, fairly saw a division between them. April 4, 1783, with an improved reflector of 20 feet 3 inches focal length and 12 inches aperture, I saw them evidently divided. Position $20^{\circ} 54'$ f. following*.

27. FL. 90 Leonis. Infra eductionem caudæ.

Feb. 9. Treble. The two nearest—very unequal. L. w.;

1782. S. rw. With 278, $1\frac{1}{4}$ diameter of L; with 460, $1\frac{1}{2}$ diameter of L. Position with 278, $61^{\circ} 9'$ f. preceding. The two farthest—very unequal. S. dusky r. Distance from L. $53'' 43'''$. Position $35^{\circ} 12'$ f. preceding.

28. γ Leonis. FL 41. In collo lucida.

Feb. 11. A beautiful double star. Pretty unequal. L. w.;

1782. S. w. inclining a little to pale red. With 227 and 278 distinctly separated; with 460, $\frac{1}{6}$ diameter of S.; with 625, $\frac{1}{4}$ diameter; with 932, full $\frac{1}{4}$ diameter, or when

* I suspect these stars to recede from each other. It is, however, very possible, that the opening which I observed between them, at the latter end of the year 1782 and beginning of 1783, may be owing to very favourable weather, or to my being better acquainted with the object. Could we increase our power and distinctness at pleasure, we might undoubtedly separate any two stars that are not absolutely in a direct line passing through the eye of the observer, and the centers of both the stars. This will appear when we consider that perhaps 59 thirds out of one second, which the diameter of the star may subtend, are spurious; so that a double star seemingly in contact, or even partly hiding each other in appearance, may still be far enough asunder to admit of a fair and considerable separation by applying an adequate magnifying power. It would have been curious, if a considerable difference in the colours could have led us to discover which of the two stars is before the other! But the far greatest part of their apparent diameters being, as we have observed, spurious, it is probable, that a different coloured light of two stars would join together, where the rays of one extend into those of the other; and so, producing a third colour by the mixture of it, still leave the question undecided.

best

I. best $\frac{1}{2}$ diameter of S.; with 1504, $\frac{3}{4}$ diameter; well-defined, and the difference of colours still visible; with 2176, not quite a diameter of S, pretty well defined, but exceedingly tremulous; with 2589, less than 1 diameter; with 3168, still pretty distinct, and about $\frac{3}{4}$ diameter of S; with 4294, more than a diameter of S, but attended with the utmost difficulty of managing the motions; with 5489, the interval still somewhat larger, and if the object could be kept in the center of the field, the eye might adapt itself to the focus, and get the better of the violent aberration; but the edges of the glass being of a different focus, the eye is constantly disappointed in its endeavours to define the object; with 6652, I had but a single glimpse of the star quite disfigured; however, I ascribe it chiefly to the foulness of the glass, which, on account of its smallness, is extremely difficult to be cleaned; with a 10-foot reflector, 9 inches aperture, power 626, above $\frac{1}{2}$ diameter of S. very distinct; with a 20-foot reflector, power 350, too bright an object to be quite distinct, though I see it very well. Position $5^{\circ} 24'$ n. following. A third star preceding. Dist. $1' 51'' 23'''$, pretty accurate for so great a distance. Position $31^{\circ} 0'$ n. preceding. A fourth star preceding the third, and somewhat smaller.

29. Parvula juxta FL. 44^{am} Leonis,

Feb. 17. Double. About $4'$ following the 44th Leonis, which
 1782. being double in the finder, this is the least of the two.
 Extremely unequal. L. w. S. d. With 227, $1\frac{1}{3}$ diameter of L.; with 460, 2 diameters of L. Position $26^{\circ} 32'$ n. following.

I. 30. Secunda ad ϵ Cancri. FL. 57.

March 5. Double. Pretty unequal. Both pr. With 227,
 1782. about $\frac{1}{4}$ diameter; with 278, $\frac{1}{4}$ diameter; with 460,
 about $\frac{1}{2}$ diameter or less. Position $68^{\circ} 12'$ n. preceding.
 A beautiful minute object.

31. Inter FL. 41^{am} et 39^{am} Lyncis.

March 5. Double. Near $1\frac{1}{4}$ degree n. preceding the 41st Lyn-
 1782. cis; towards η Urfæ majoris. A little unequal. Both
 w. With 460, $\frac{1}{4}$ or at most $\frac{1}{3}$ diameter, Position 51°
 $21'$ f. preceding.

32. FL. 44^a Lyncis australior et præcedens.

April 3. Double. About $\frac{3}{4}$ degree f. preceding the 44th Lyn-
 1782. cis; in a line parallel to θ Urfæ majoris and the 39th
 Lyncis. Very unequal. L. r.; S. bluish r. With
 227, 1 diameter of L. or $1\frac{1}{4}$ when best; with 460, $1\frac{1}{4}$
 diameter, or when best, near 2 diameters of L. The
 diameters are so small that the length of the time, and
 attention of looking, makes a considerable difference in
 the estimation of the distance. Position $8^{\circ} 27'$ f. pre-
 ceding.

33. ξ Libræ. FL. 51. Primam chelam Scorpii attingens.

May 12. Treble. Without great attention, and a considerable
 1782. power, it may be mistaken for a double star; but the
 largest of them consists of two. Very little unequal.
 Both w. With 460, $\frac{1}{4}$ or at most $\frac{1}{3}$ diameter asunder;
 with 932, full $\frac{1}{2}$ diameter of L. or near $\frac{1}{2}$ diameter of
 S. Position, with 278, $82^{\circ} 2'$ n. following. For
 measures of the third star see the 20th of the second
 class.

34. FL. 55. Cassiopeiæ. ϵ Ptolemæi. In pedis extremitate.

- I. Treble. The two nearest very unequal. L. w.; S. June 11, colour of pale red blotting paper. With 278, $\frac{1}{2}$ diameter of S. Position with 227, $20^{\circ} 30'$ n. preceding. For measures of the third star see the fourth in the third class.
35. FL. 38. Serpentarii. Dextrum infra pedem. June 11, Double. Very unequal. L. w.; S. d. With 460, 1782. $1\frac{1}{4}$ diameter of L. As the situation is too low for 460, I tried 227, but it only shewed the star wedge-formed. Position $60^{\circ} 48'$ n. preceding.
36. ζ Herculis. FL. 40. In dextro latere. July 18, A fine double star. Very unequal. L. w.; S. ash- 1782. colour. With 460, less than $\frac{1}{2}$ diameter of S.; with 932, 1 full diameter of S.*. Position with 811, $20^{\circ} 42'$ n. following.
37. ϕ (FL. 11^a.) Herculis borealior et sequens. July 22, Double. About $\frac{1}{3}$ degree n. following ϕ ; in a line 1782. parallel to the 35th and 42d Herculis; the most south of two very small telescopic stars. Considerably unequal. Both reddish. With 227, they can but just be seen as two stars; with 460, near 1 diameter; with 932, not less than $1\frac{1}{2}$ diameter of L. Position $59^{\circ} 48'$ s. following.

The interval between very unequal stars, estimated in diameters, generally gains more by an increase of magnifying power than the apparent distance of those which are nearer of a size. Instances of the former may be found in the first class, the 1st, 7, 29, 35, 37, 39, 53, 59, 63, 64, 72d stars; of the latter, the 16th, 28, 33, 45, 46, 73, 81st stars. However, this only seems to take place when there is a difficulty of seeing the object well with a low power, which being removed by magnifying more, the distance is, as it were, laid open to the view.

I. 38. FL. 18^{am} Persei præcedens ad boream. In capite.

Aug. 20, Double. About $\frac{1}{2}$ degree n. preceding the 18th; in
1782. a line parallel to σ and τ Persei; of two stars that
next to the 18th. A little unequal. Both pr. With
278, a most minute and beautiful object; with 460,
 $\frac{1}{2}$ diameter of either. Position with 278, $9^{\circ} 42'$ n.
preceding.

39. β (FL. 11^{am}) Cassiopeiæ præcedens ad austrum.

Aug. 25, Double. About $\frac{3}{4}$ degree s. preceding β ; in a line
1782. parallel to η and α Cassiopeiæ; the following and largest
of two very considerable stars. Very unequal. L.
pr.; S. r. With 278, $\frac{1}{4}$ diameter of S.; with 460,
 $\frac{1}{2}$, or when best, $\frac{3}{4}$ diameter of S. Position $50^{\circ} 42'$ n.
preceding.

40. FL. 25^{am} Cassiopeiæ præcedens ad boream.

Aug. 28, Double. About $\frac{1}{2}$ degree n. preceding the 25th;
1782. towards α Cassiopeiæ; the first telescopic star in that
direction. Very unequal. Both r. With 460, $\frac{1}{4}$ dia-
meter of S.; difficult to be seen. Position $50^{\circ} 30'$ n.
following.

41. FL. 31^a Draconis borealior.

Aug. 29, A very minute double star. About $\frac{1}{4}$ degree n. of the
1782. 31st; in a line parallel to γ and ξ Draconis; the most
fouth and preceding of two. Considerably unequal.
Both pr. or r. With 227, they appear only as a
lengthened or distorted star; with 460, $\frac{1}{4}$ diameter of
S.; or in very fine nights $\frac{1}{2}$ diameter of S.; with a
new speculum and 500, near $\frac{1}{2}$ diameter when best;
with 932, $\frac{1}{2}$ diameter. Position $84^{\circ} 21'$ n. preceding.
Requires every favourable circumstance to be seen
double.

I. 42. δ Serpentis. FL. 13. In primo flexu colli.

Sept. 3, A beautiful double star. Considerably unequal. L.
1782. w.; S. greyish. With 227, $\frac{1}{3}$ diameter of S.; with
278, not quite $\frac{1}{2}$ diameter of S.; with 460, near $\frac{1}{2}$
diameter of S.; with 932, near 1 diameter of S.;
with 1504, above 1 diameter of S. Position $42^{\circ} 48'$ f.
preceding,

43. Ad FL. 48^{am} Draconis.

Sept. 3, A very minute double star. The most north of
1782. three, forming an arch; or that which is towards θ
Draconis. Considerably unequal. Both pale pink. In
fine nights, with 460, it has the shape of a wedge;
with 932, a fine black division just visible; in a very
clear dark night a division may be seen with 500, and
with 932, it will be about $\frac{1}{3}$ diameter. Position with
500, $88^{\circ} 24'$ n. preceding.

44. FL. 4. Aquarii. Supra vestimentum manus sinistrae.

Sept. 3, A minute double star. Very unequal. Both pr.
1782. With 460, almost in contact, or at most $\frac{1}{3}$ diameter
of S. Position $81^{\circ} 30'$ n. preceding. A third star of
the sixth class in view, n. preceding.

45. μ Aurigæ (FL. 11^{am}) præcedens ad austrum.

Sept. 5, Double. About $1\frac{1}{4}$ degree f. preceding μ , towards
1782. ι Aurigæ; a pretty considerable star in a minute tele-
scopic constellation. A little unequal. Both pr. or r.
With 227, $\frac{1}{3}$ diameter of S.; with 278, near $\frac{1}{2}$ dia-
meter of S.; with 460, about $\frac{1}{2}$ diameter, or near $\frac{2}{3}$
diameter of S. Position $47^{\circ} 33'$ f. preceding.

46. ν (FL. 13^{am}) Aquarii sequens ad boream.

Sept. 7. Treble. About $1\frac{1}{2}$ degree n. following ν , in a line
1782. parallel to β and α Aquarii; the middle of three that

are

I. are in the same direction. The two nearest very unequal. L. rw.; S. pr. With 460, about 1 diameter of L. or more. Position $62^{\circ} 27'$ n. preceding. The two farthest very unequal. S. pr. Distance with 227, $1' 22'' 42'''$. Position $35^{\circ} 51'$ n. following.

47. FL. 29^{am} Capricorni præcedens ad boream.

Sept. 27, A minute double star. About $\frac{3}{4}$ degree n. preceding
1782. the 29th, in a line parallel to γ and α Capricorni. A little unequal. Appears distorted with 227 and 278; nor will 460 shew it separated; with 657, two stars visible; 932 confirms it. Difficult to be seen distinctly on account of its low situation. Position $84^{\circ} 48'$ n. preceding. 20-foot reflector, 200. Both w.

48. FL. 6^{am} Cephei præcedens. In dextro brachio.

Sept. 27, A very minute and beautiful double star. Near $\frac{3}{4}$ de-
1782. gree preceding the 6th towards η Cephei; a pretty considerable telescopic star. A little unequal. Both pr. Almost in contact with 460; with 625, better divided; with 657 still better. Position $14^{\circ} 9'$ f. preceding.

49. λ Cephei (FL. 22^{am}) sequens ad boream.

Sept. 27, Double. About $1\frac{1}{4}$ degree n. following λ , in a line
1782. from ζ through λ Cephei continued. Extremely unequal. Both dw. Cannot be seen with 278, except with long attention; with 460, $1\frac{1}{2}$ diameter of L. Position $85^{\circ} 48'$ n. following; perhaps a little inaccurate.

50. λ Aquarii (FL. 73^{am}) præcedens.

Sept. 30, Double. About $2\frac{1}{3}$ degrees preceding, and a little
1782. south of λ Aquarii; a considerable star. Very unequal. L. w.; S. dw. With 278, less than 1 diameter of L.; with 460, $1\frac{1}{4}$ diameter of L. Position with 227,

I. $41^{\circ} 12'$ n. preceding. The measure inaccurate on account of the low power, and probably 3° or 4° too small.

51. Quæ sequitur, (FL. 32^{am}) Cephei.

Sept. 30. Double. About $2\frac{1}{4}$ degrees n. following ι , towards
1782. γ Cephei; a considerable star. A little unequal. Both pr. A pretty object with 227; with 460, $1\frac{1}{2}$ diameter nearly. Position $3^{\circ} 36'$ s. preceding.

52. Parvula FL. 25^{ae} Orionis adjecta.

Oct. 2. Double. A few minutes n. following the 25th
1782. Orionis, in a line parallel to b Eridani and ϵ Orionis. Very unequal. L. ash w.; S. dw. With 460, 1 diameter of L. Position $52^{\circ} 48'$ n. preceding.

53. Parvula FL. $30^{\text{mæ}}$ Orionis adjecta.

Oct. 2. Double. About $10'$ preceding the 30th, in a line
1782. parallel to λ and γ Orionis. Very unequal. L. w.; S. d.; with 460, 1 diameter of L. Position $43^{\circ} 24'$ n. following.

54. τ (FL. 20^{am}) Orionis præcedens. In malleolo finiftri cruris.

Oct. 4. Double. Near $\frac{1}{4}$ degree preceding τ , in a line from
1782. θ through τ Orionis continued. Very unequal. L. r.; S. dr. With 227, about 1 diameter of L.; with 460, about 2 diameters of L. Position $35^{\circ} 42'$ n. preceding; a little inaccurate.

55. FL. 8^{am} Tauri præcedens ad boream.

Oct. 9. Double. About $1\frac{1}{2}$ degree n. preceding the 8th
1782. Tauri, or near 2 degrees s. following the 65th Arietis, in a line parallel to the Pleiades and ϵ Tauri; a small telescopic star not easily found. A little unequal. L. r.; S. d. With 227, less than 1 diameter of S.;

with

- I. with 460, near two diameters. Position $82^{\circ} 48'$ f. following.
56. FL. 54^{am} Ceti sequens ad austrum.
 Oct. 12, Double. About $\frac{1}{3}$ degree f. following the 54th,
 1782. towards δ Ceti. Nearly equal. Both r. With 227,
 about 1 diameter; with 460, about $1\frac{1}{2}$ diameter. Position $87^{\circ} 39'$ n. following.
57. FL. 70^{am} et 67^{am} Orionis præiens.
 Oct. 12, Multiple. In a spot which appears nebulous in the
 1782. finder, and is about 50' from the 67th, and 45' from the 70th Orionis. More than 12 stars in view with 460; among them is a double star. The largest of the base of an isosceles triangle, n. preceded by four stars in a line. Considerably unequal. With 460, 1 full diameter of L. Position $19^{\circ} 48'$ f. following.
58. δ Lyræ (FL. 12^{am}) sequens. Inter educationem cornuum.
 Oct. 24, Double. About $\frac{1}{2}$ degree following the 12th, in a
 1782. line continued from the 11 through the 12th Lyræ; the last of a small telescopic triangle. Extremely unequal. L. r.; S. d. Not easily seen with 227; with 460, near 2 diameters of L. Position $13^{\circ} 0'$ n. preceding.
59. Ab ι (FL. 18^{a}) Lyræ β versus.
 Oct. 24, Double. The most south of two very small tele-
 1782. scopic stars, which are the second pair situated in a line from ι towards β Lyræ. A little unequal. Both d.; the faintest object that can be imagined. With 460, about 1 diameter. Position $75^{\circ} 0'$ f. preceding; the measure is liable to some error from the obscurity.
60. E telescopicis γ et λ Lyræ australioribus et sequentibus.

Double

I.

- Oct. 24, Double. About $\frac{3}{4}$ degree f. following λ , in a line
 1782. parallel to α and γ Lyræ; a very small telescopic star.
 Extremely unequal. Both dr. With 227, 1 full dia-
 meter of L; with 460, near 2 diameters of L. Posi-
 tion $16^{\circ} 48'$ n. preceding.
61. Præiens FL. 1^{am} Equulei.
- Oct. 26, A minute double star. About $\frac{3}{4}$ degree n. preceding
 1782. the 1st Equulei, in a line parallel to α Equulei and
 γ Aquilæ; a large star. Very unequal. Both pr.
 With 460, $\frac{1}{2}$ diameter of S. Position $18^{\circ} 24'$ n. pre-
 ceding. A pretty object, but requires fine weather.
62. Sequitur FL. 2^{am} Equulei.
- Oct. 29, Double. About $\frac{3}{4}$ degree f. following the 2d Equulei,
 1782. in a line parallel to δ Delphini and δ Equulei. Consi-
 derably unequal. Both r. With 460, $1\frac{1}{4}$ or $1\frac{1}{2}$ dia-
 meter of S. Position $35^{\circ} 9'$ f. preceding.
63. γ Equulei (FL. 5^a) australior.
- Oct. 29, Double. Full $\frac{1}{2}$ degree f. of γ , in a line from the
 1782. 5th through the 6th Equulei continued. Equal. Both
 dr. With 227, about $\frac{1}{4}$ diameter scarce visible; with
 460, about $\frac{1}{2}$ diameter. Position $5^{\circ} 57'$ f. preceding.
64. π Arietis. FL. 42. In poplite.
- Oct. 29, Treble. Excessively unequal. L. w; S. both mere
 1782. points. With 227, neither of the small stars can be
 seen, except with considerable and long continued atten-
 tion, when they also appear; the nearest with this
 power is $\frac{3}{4}$ or $\frac{4}{5}$ diameter of L.; with 460, $1\frac{1}{2}$ or $1\frac{3}{4}$
 diameter of L. The third is about $25''$ or $26''$ distant
 from L, by exact estimation. Position of both, being
 all three in a line $19^{\circ} 19'$ f. following; as exact as the
 obscurity will permit.

I. 65. In Nubecula β Sagittæ adjecta et sequenti.

Nov. 4, Double. $\frac{1}{2}$ degree n. following β Sagittæ, towards
1782. 29th Vulpeculæ; the largest and most south of a cluster
of small stars that appear cloudy in the finder. Very
unequal. L. rw.; S. pr. With 227, full 1 diameter
of L.; with 460, about $1\frac{1}{4}$ or 2 diameters of L. Po-
sition $14^{\circ} 0'$ n. preceding. A third star in view, of the
5th or 6th class.

66. β (FL. 23^a) Draconis australior et præcedens.

Nov. 4, Double. About $1\frac{1}{4}$ degree f. preceding β , in a line
1782. from ν continued through β Draconis. Pretty une-
qual. Both pr. With 460, $1\frac{1}{2}$ or $1\frac{3}{4}$ diameter of L.
Position $2^{\circ} 24'$ f. preceding.

67. Nebulam Aurigæ pedem dextrum sequentem, præcedens.

Nov. 4, Double. About $55'$ from the 37th Nebula of M.
1782. MESSIER; the largest and most preceding of two stars.
Very unequal. Both pr. With 460, near 2 diameters
of L. Position $23^{\circ} 57'$ n. following.

68. Parvula FL. 10^e Orionis quam proximè adjecta.

Nov. 5, Double. The small star not many minutes from the
1782. 10th Orionis. A little unequal. Both whitish. With
460, near 1 diameter. Position $84^{\circ} 54'$ f. following;
a little inaccurate on account of the difficulty of seeing
the stars well.

69. In Lyncis pectore.

Nov. 13, Double. About 3 degrees f. preceding the 19th
1782. Lyncis, in a line drawn from the 19th Lyncis to τ Au-
rigæ; the 24th and 19th Lyncis also point to it nearly:
in a very clear evening it may just be seen with the
naked eye. A little unequal. Both rw. With 227,
 $\frac{3}{4}$ dia-

I. $\frac{1}{2}$ diameter; with 460, $1\frac{1}{4}$ or near $1\frac{1}{2}$ diameter. Position $77^{\circ} 0' f.$ following.

70. ζ (FL. 123^a) Tauri borealior et præcedens.

Nov. 13, A very pretty double star. Near 1 degree n. preceding ζ Tauri towards Capella; the corner of a rhomboid made up of ζ , this, and two more, and opposite to ζ . Considerably unequal. L. pr.; S. a little deeper r. With 227, almost 1 diameter of L.; with 460, $1\frac{1}{4}$ diameter of L. Position $36^{\circ} 24' f.$ preceding.

71. FL. 44^{am} Urfæ majoris præcedens ad austrum.

Nov. 19, Double. Nearly in the intersection of a line from β Urfæ majoris to the 39th Lyncis, crossed by one from ψ to ν Urfæ majoris; the last line should bend a little towards ψ Urfæ majoris. A little unequal. Both whitish. With 460, near 2 diameters of S. Position $2^{\circ} 6' n.$ following.

72. FL. 65. Urfæ majoris.

Nov. 20, Double. Excessively unequal. L. pr.; S. a point. 1782. Not visible with 227, nor hardly to be suspected unless it has been first seen with a higher power; with 460, $1\frac{1}{4}$ diameter of L. or, when long viewed, full 2 diameters of L. Position $53^{\circ} 45' n.$ following. A third star in view. Equal to L. Colour rw. Distance $1' 0'' 4'''$. Position $22^{\circ} 21' f.$ following.

73. β (FL. 6^a) Arietis borealior et præcedens.

Nov. 22, Double. About $1\frac{1}{4}$ degree n. preceding β Arietis, 1782. towards β Andromedæ; a considerable star. Very unequal. L. r.; S. deeper r. With 227, about $\frac{1}{4}$ diameter of L.; with 460, full $1\frac{1}{4}$ or almost $1\frac{1}{2}$ diameter of L. when best. Position $77^{\circ} 24' f.$ following.

I. 74. FL. 39^a Arietis borealior et præcedens.

Dec. 22, Double. About $\frac{2}{3}$ degree n. preceding 39 Arietis,
 1782. towards γ Trianguli; a pretty large telescopic star. A
 little unequal. Both pr. With 227, near 1 diameter
 of L.; with 460, about $1\frac{1}{2}$ diameter of L. Position
 $20^{\circ} 36'$ n. preceding.

75. FL. 26^{am} Orionis præcedens ad austrum.

Jan. 9, Double. About $\frac{1}{4}$ degree f. preceding the 26th, in
 1783. a line parallel to δ and β Orionis; the farthest of two;
 or $\frac{1}{4}$ degree f. preceding the 30th in the same direction.
 Nearly equal. Both w. or rw. With 460, perhaps a
 diameter. Position $89^{\circ} 36'$ n. preceding; but not very
 accurate.

76. In pectore Lyncis.

Jan. 23, Double. Not easy to be found. A line from the 19th
 1783. Lyncis to ν Geminorum crossed by one from θ Urfæ-
 majoris to ϵ Aurigæ, points out a star but just visible in
 a fine evening; it is perhaps about three degrees from
 the 19th Lyncis; when that star is found, we have the
 double star about 1 degree n. following the same, in a
 line parallel to τ Geminorum and the 19th Lyncis.
 Considerably unequal. Both ash w. With 460, $\frac{1}{2}$
 diameter of S. Position $0^{\circ} 0'$ preceding. A third
 large star in view. Distance $1' 7'' 46'''$. Position
 $3^{\circ} 42'$ f. preceding.

77. α (FL. 7^a) Crateris borealior.

Jan. 31, Double. Near $2\frac{1}{2}$ degrees north of α Crateris; a
 1783. small telescopic star, about $\frac{1}{4}$ degree following the
 most north of two large ones. Pretty unequal. Both
 whitish. With 227, less than half diameter of S.;
 with

1. with 460, near 1 diameter; with 625, a little more than 1 diameter. Position $82^{\circ} 24'$ n. following.

78. FL. 11^a Libræ borealior.

Jan. 31, 1783. Double. Near $2\frac{1}{2}$ degrees north of the 11th Libræ, in a line parallel to μ Virginis and the 109th of the same constellation. Equal. Both inclining to r. With 460, full 1 diameter. Position $58^{\circ} 24'$ n. preceding, or f. following.

79. FL. 46 Herculis. In dextro latere.

Feb. 5, 1783. Double. Extremely or almost excessively unequal. L. w.; S. d. With 227, it is hardly visible; with 460, near 1 diameter of L. Position $66^{\circ} 36'$ f. following.

80. FL. 81 Virginis.

Feb. 7, 1783. Double. Equal. Both pr. With 227, near $\frac{1}{2}$ diameter; with 460, $\frac{2}{3}$ diameter. Position $41^{\circ} 12'$ n. following or f. preceding.

81. π Serpentis (FL. 44^{am}) præcedens ad austrum.

Mar. 7, 1783. Double. About $1\frac{1}{2}$ degree f. preceding π , towards α ; the most north of two. A little unequal. Both r. With 460, $1\frac{1}{2}$ diameter of L. Position $49^{\circ} 48'$ f. preceding. A third large star in view; paler than the other two. Distance from the two taken as one star $56'' 28'''$. Position, with L. of the two, $31^{\circ} 48'$ f. preceding.

82. FL. 49 Serpentis.

Mar. 7, 1783. Double. The most north and following of two stars. A little unequal. Both pr. With 227, $\frac{1}{4}$ or $\frac{1}{3}$ diameter, and a very minute and beautiful object; with 460, $\frac{3}{4}$ diameter. Position $21^{\circ} 33'$ n. preceding.

I. 83. λ Ophiuchi. FL. 10. In ancône finiftri brachii.

Mar. 9, A very beautiful and close double star. L. w. ; S.
1783. blue ; both fine colours. Considerably or almost very
unequal. With 460, $\frac{1}{4}$ or $\frac{1}{3}$ diameter of S. ; with
932, full $\frac{1}{3}$ diameter of S. Position $14^{\circ} 30'$ n. fol-
lowing.

84. FL. 50^{a} Aurigæ australior.

Mar. 18, Double. Near 1 degree f. of the 50th Aurigæ, in
1783. a line parallel to β and θ . Very unequal. L. r. ;
S. dr. With 227, about $\frac{2}{3}$ diameter of L. ; with
460, almost $1\frac{1}{4}$ diameter of L. Position $14^{\circ} 0'$ n.
following.

85. FL. 36^{am} Lyncis sequens ad austrum.

Mar. 24, Double. Near $\frac{1}{2}$ degree f. following the 36th Lyn-
1783. cis, in a line parallel to the 31st Lyncis and n Ursæ
majoris ; of two the nearest to the 31st Lyncis. Con-
siderably unequal. Both w. With 227, 1 diameter of
L. ; or when long kept in view, $1\frac{1}{4}$ diameter of L. ;
with 460, and after long looking, 2 diameters of L. ;
otherwise not near so much. Position $88^{\circ} 57'$ n. fol-
lowing.

86. FL. 105^{a} Herculis borealior.

Mar. 27, Double. One full degree n. of the 105th Herculis,
1783. in a line from the 72d Serpentarii continued through the
105th Herculis ; a small telescopic star. Considerably
unequal. Both dr. With 460, a little more than 1
diameter of L. Position $79^{\circ} 24'$ n. preceding.

87. η Ophiuchi. FL. 73.

April 27, A very minute double star. Considerably unequal. L. r.
1783. S. r. With 227, not to be suspected unless known to
be double, but may be seen wedge-formed, and with

I. long attention I have also perceived a most minute division; with 460, about $\frac{1}{4}$ or $\frac{1}{3}$ diameter of S. Position $2^{\circ} 48'$ f. preceding.

88. τ Ophiuchi. FL. 69. In dextra manu sequens.

April 28, 'The closest of all my double stars; can only be sus-
1783. pected with 460; but 932 confirms it to be a double star. Pretty unequal. Both pr. or wr. It is wedge-formed with 460; with 932, one-half of the small star, if not three-quarters seem to be behind the large star. Position of the wedge $61^{\circ} 36'$ n. preceding. ν Ophiuchi, just by, is perfectly free from this wedge-formed appearance.

89. Illas ad FL. 56^{am} Andromedæ præcedens ad boream.

July 28, Double. About $\frac{2}{3}$ degree preceding, and a little north
1783. of the two stars that are about the place of the 56th Andromedæ, in a line towards μ ; a considerable star; and of two in a line parallel to β and γ Trianguli that which is nearest to the 56th Andromedæ. Pretty unequal. L. drw.; S. dpr. With 227, near 1 diameter of L.; with 460, about $1\frac{1}{2}$ diameter of L. Position $75^{\circ} 30'$ f. following.

90. β Aquarii (FL. 22^{am}) præcedens ad austrum.

July 31, Double. About $4\frac{1}{2}$ degrees from β towards μ Aquarii.
1783. A little unequal. Both dw. or pr. With 460, $1\frac{1}{2}$ diameter or near 2. Position $77^{\circ} 36'$ f. following.

91. γ Aquilæ (FL. 50^{am}) præcedens ad boream.

Aug. 7, Double. About $\frac{1}{3}$ degree n. preceding γ , in a line
1783. parallel to γ and ζ Aquilæ; of two that nearest to γ . Very unequal. L. dpr.; S. d. With 227, hardly visible, and like a star not in focus; with 460, appears
nebulous

- I. nebulous on one side, but is a double star; with 932, about $1\frac{1}{2}$ diameter of L. Position $8^{\circ} 18'$ n. preceding.
92. π Aquilæ. FL. 52. Duarum in sinistro humero sequens.
 Aug. 27, A minute pretty double star. A little unequal.
 1783. Both pr. With 460, $\frac{1}{2}$ diameter of L. or near $\frac{3}{4}$ diameter of S. Position $34^{\circ} 24'$ f. following.
93. FL. 62^{am} Aquilæ præcedens ad boream.
 Sept. 12, A minute double star. About $\frac{3}{4}$ degree n. preceding
 1783. the 62d, in a line parallel to θ and ζ Aquilæ; a pretty considerable star. Very unequal. Both inclining to pr. With 278, almost in contact; with 460, near $\frac{3}{4}$ diameter of S.; when in the meridian, and the air fine, near 1 diameter of L. Position $19^{\circ} 9'$ n. preceding.
94. δ Cygni. FL. 18. In ancone alæ dextræ.
 Sept. 20, Double. Very unequal. L. fine w.; S. ash colour
 1783. inclining to r. With 278, about $\frac{1}{2}$ diameter of L.; with 460, $\frac{3}{4}$ diameter of L.; with 932, full $1\frac{1}{2}$ diameter of L. in hazy weather, which has taken off the rays of L. and thereby increased the interval. Position $18^{\circ} 21'$ n. following; perhaps a little inaccurate.
95. FL. 33^{am} Cygni sequens ad austrum.
 Sept. 22, Double. Full $1\frac{1}{2}$ degree f. following the 33d,
 1783. towards ζ Cygni; a pretty considerable star. Very unequal. L. w.; S. inclining to r. With 460, at first about $\frac{2}{3}$ diameter of L.; but, after looking a considerable time, and in a fine air, near $1\frac{1}{2}$ diameter. Position $72^{\circ} 15'$ n. preceding.
96. η (FL. 21^{am}) Cygni sequens ad austrum.
 Sept. 23, Treble. Full $1\frac{3}{4}$ degree n. following η , in a line
 1783. parallel to β and λ Cygni. The two nearest considerably unequal.

- I. unequal. Both pr. With 460, 1 diameter of S. or $\frac{1}{2}$ diameter of L. Position $89^{\circ} 18'$ f. following. The two farthest considerably unequal; the colour r. Dist. Position $56^{\circ} 3'$ n. preceding.

97. FL. 51^{am} Cygni sequens.

Sept. 24, 1783. A minute double star. About $2\frac{1}{2}$ degrees following the 51st, in a line parallel to δ and α Cygni; the largest and most south of an obtuse-angled triangle; a very considerable star. Pretty unequal. Both rw.; but S. a little darker r. With 278, $\frac{1}{2}$ diameter of S. and beautiful; with 460, $\frac{3}{4}$ diameter of S. Position $46^{\circ} 24'$ n. following.

SECOND CLASS OF DOUBLE STARS.

II. 39. Procyonem juxta.

Feb. 2, 1782. Double. About 2 degrees f. following Procyon, in a line from λ Geminorum continued through Procyon. Excessively unequal. L. pr.; S. not visible with 278; with 460, more than 3 diameters of L. Position, by the assistance of a wall* and micrometer $54^{\circ} 28'$ f. following.

40.

* When the small star is so faint as not to bear the least illumination of the wires, its position may still be measured by the assistance of some wall or other object; for an eye which has been some time in the dark, can see a wall in a star-light evening sufficiently well to note the projection of the stars upon it, in the manner

- II. 40. * *Secunda ad ϕ Cancri*. FL. 23.
 Feb. 2, Double. A little unequal. Both rw. With 227,
 1782. near 2 diameters; with 460, $2\frac{1}{2}$ diameters of L. Po-
 sition $56^{\circ} 42'$ n. following.
41. * *Prima ad ν Cancri*. FL. 24.
 Feb. 2, Double. Considerably unequal. Both pr. With
 1782. 227, $1\frac{1}{2}$ diameter of L.; with 460, 4 diameters of L.
 Position $32^{\circ} 9'$ n. following.
42. *E telescopicis δ Virginis precedentibus* †.
 Feb. 6, Double. About $1\frac{1}{4}$ degree f. preceding δ Virginis,
 1782. in a line parallel to ζ and θ ; the most south of three
 forming an arch. Extremely unequal. L. w.; S.
 hardly visible with 227 (but with a ten-feet reflector
 S. b.); with 460, above 2 diameters of L. Position
 $52^{\circ} 24'$ f. following.
43. FL. 43^{am} *Leonis præcedens ad austrum*. In dextro genu.
 Feb. 17, Double. Near $\frac{2}{3}$ degree f. preceding the 43d, in a
 1782. line parallel to α and the 14th Leonis. Very unequal.
 L. w.; S. d. With 227, near $2\frac{1}{4}$ diameters of L.
 when best. Position $85^{\circ} 2'$ n. following.
44. *o Virginis*. FL. 84. *Verfus finem alæ dextræ*.
 Feb. 17, Double. Extremely unequal. L. w. inclining to r.;
 1782. S. d. Requires attention to be seen with 227; with
 460, $2\frac{1}{2}$ diameters of L. Position, with 278, $29^{\circ} 5'$
 f. preceding.

which has been described with the lamp-micrometer, Phil. Trans. vol. LXXII. p.
 169 and 170. Then, introducing some light, and adapting the fixed wire to
 the observed direction of the stars on the wall, the moveable wire may be set to
 the parallel of the large star, which will give the angle of position pretty
 accurately.

† See note to IV. 51.

II. 45. FL. 54 Virginis.

April 3, Double. A little unequal. Both w. With 227,
1782. $1\frac{1}{2}$ or near $1\frac{3}{4}$ diameter. Position $57^{\circ} 0'$ n. following.

46. FL. 42^{am} Comæ Berenices sequens ad austrum.

April 15, Double. About $1\frac{3}{4}$ degree from the 42d Comæ
1782. towards ν Bootis; the most south of a telescopic equi-
lateral triangle. Excessively unequal. L. pr.; S. d.
With 278, $2\frac{1}{2}$ diameters of L.; not so well to be seen
with higher powers. Position $6^{\circ} 42'$ f. following. A
third star preceding, above $1'$.

47. FL. 2 Comæ Berenices.

April 18, Double. Considerably unequal. L. rw.; S. pr.
1782. With 278, 2 diameters of L.; with 460, above 2 dia-
meters of L. Position $27^{\circ} 42'$ f. preceding.

48. Prope FL. 16^{am} Aurigæ.

Aug. 28, A minute double star. Less than $\frac{1}{4}$ degree f. pre-
1782. ceding the 16th, in a line parallel to the 10 and 8
Aurigæ; the preceding star of a small triangle of which
the 16th is the largest and following. A little unequal.
Both pr. With 227, $1\frac{1}{2}$ or, when best, $1\frac{3}{4}$ diameter
of L. Position $15^{\circ} 48'$ n. following.

49. σ (FL. 110^a) Piscium borealior. In lino boreo.

Sept. 3, Double. About $\frac{1}{2}$ degree n. of, and a little pre-
1782. ceding 110th, towards η Piscium. A little unequal.
Both wr. With 460, about 3 diameters of L. Posi-
tion $59^{\circ} 6'$ n. preceding. A third star in view, about
 $1\frac{1}{2}$ min.

50. FL. 38. Piscium. In austrino lino.

Sept. 4, Double. Pretty unequal. Both pr. With 227,
1782. full 2 diameters of L.; with 460, about 4 diameters
of L. Position $25^{\circ} 3'$ f. preceding.

- II. 51. ρ Capricorni. FL. 11. Trium in rostro sequens.
 Sept. 5, Double. Very unequal. Both rw. With 460, 1782. diameter of L. Position $84^{\circ} 0'$ f. following. A third star in view.
52. σ (FL. 40^{am}) Persei præcedens ad boream.
 Sept. 7, Double. Almost $\frac{1}{2}$ degree preceding the 40th, in a 1782. line parallel to ζ and the 38th Persei. Equal. Both w. With 227, nearly 2 diameters. Position $8^{\circ} 24'$ n. preceding.
53. FL. 12^{am} Camelopardali præcedens.
 Sept. 7, Double. Less than $\frac{1}{4}$ degree preceding the 11th and 1782. 12th, in a line from the 1st Lyncis continued through the 12th Camelopardali. Extremely unequal. Both dr. With 227, it appears like a star with a tail; but 932 shews it plainly to be only a double star; with 227, not much above 1 diameter of L.; with 932, about $3\frac{1}{2}$ diameter of L. Position $18^{\circ} 33'$ f. following; a little inaccurate.
54. Quæ præcedit ϵ (FL. 74^{am}, oculum boreum) Tauri.
 Sept. 7, Double. Near $\frac{1}{2}$ degree f. preceding ϵ , in a line 1782. parallel to α and γ Tauri; a small star. Extremely unequal. L. rw.; S. d. With 460, above 3 diameters of L. Position $68^{\circ} 42'$ f. preceding.
55. FL. 4^a Ceti australior et sequens.
 Sept. 9, Double. About 1 degree f. following the 4th and 1782. 5th in a line parallel to η and τ Ceti; in the shorter leg of a rectangular triangle. Very unequal. L. r.; S. d. With 278, rather more than 2 diameters. Position $21^{\circ} 42'$ n. preceding.
56. β (FL. 6^{am}) Arietis præcedens ad boream.

- II. Double. Almost 1 degree n. preceding β Arietis, Sept. 10, towards ζ Andromedæ; a small star. A little unequal.
1782. Both reddish. With 227, full 2 diameters of L. Position $23^{\circ} 12'$ n. preceding. A third star $2'$ or $3'$ preceding, in the same direction with the two stars of the double star.
57. Ad FL. 72^{am} Aquarii.
- Sept. 27, Treble. About $2\frac{1}{2}$ degrees following κ , in a line parallel
1782. to α and η Aquarii. The nearest a little unequal. Both r. With 460, $2\frac{1}{2}$ diameters of L. Position $25^{\circ} 51'$ f. preceding. The two farthest a little unequal. Of the 5th class. About 50° or 55° f. following.
58. FL. 56^a Ceti australior et sequens.
- Sept. 27, Double. About $\frac{3}{4}$ degree f. following the 56th, in a
1782. line parallel to η and τ Ceti. Considerably unequal. Both dw. With 278, $1\frac{1}{2}$ diameter of L. Position $25^{\circ} 12'$ n. preceding; too low for accuracy.
59. ρ (FL. 46^{am}) Aquarii sequens ad austrum.
- Sept. 30, Double. About 2 degrees f. following ρ , in a line pa-
1782. rallel to β and δ Aquarii; there is a very considerable star between this and ρ , not much out of the line. Pretty unequal. Both dr. With 227, $2\frac{1}{2}$ or $2\frac{3}{4}$ diameter of L. Position $61^{\circ} 12'$ n. preceding.
60. ξ (FL. 5^{am}) Canis majoris sequens ad boream.
- Sept. 30, Double. About $\frac{1}{2}$ degree n. following the 2d ad ξ ,
1782. in a line from the 4th continued through the 5th Canis majoris nearly. Very unequal. L. rw.; f. d. With 227, $1\frac{1}{4}$ diameter. Position $67^{\circ} 36'$ n. preceding.
61. ϖ (FL. 47^{am}) Orionis sequens ad austrum.
- Oct. 2, Treble. About $1\frac{1}{2}$ degree f. following ϖ in a line
1782. parallel to ϕ and α Orionis; the smallest and most south of three forming an arch. The two nearest extremely unequal.

II. unequal. L. dw.; S. a mere point. With 227, $1\frac{1}{2}$ or $1\frac{3}{4}$ diameter of L. Position $4^{\circ} 54'$ n. following; too obscure for accuracy. The two farthest extremely unequal. S. a mere point. Of the fourth class. Position about 50° f. following.

62. FL. 3rd Pegasi adjecta.

08. 4, Double. In a line with, and north of, the two stars 1782. that are about the place of the third Pegasi. A little unequal. Both dusky r. With 227, about 3 diameters of S. Position $88^{\circ} 24'$ n. preceding; perhaps a little inaccurate.

63. FL. 2nd et 4th Navis præcedens.

08. 12, Multiple. Near 2 degrees preceding the 2d and 4th 1782. Navis; the middle one of three. One of the multiple is double. Nearly equal. Both w. or ash colour. With 227, about $2\frac{1}{2}$ diameter, and not less than 20 stars more in view; with 460, about 3 diameters. Position $30^{\circ} 12'$ n. preceding.

64. γ (FL. 81st) Geminorum ad austrum sequitur.

08. 13, Double. About $\frac{1}{2}$ degree f. following γ , in a line from 1782. ζ continued through γ Geminorum nearly; the nearest and largest of two. Very unequal. L. r.; S. bluish r. With 227, above 3 diameters of L. Position $4^{\circ} 9'$ n. preceding.

65. Pollucem sequens ad boream.

08. 13, Double. Full $\frac{1}{4}$ degree n. following β , in a line from 1782. δ continued through β Geminorum; the star next to the middle one of three, nearly in a line. Excessively unequal. L. rw.; S. d. With 227, above $2\frac{1}{2}$ or near 3 diameters of L. and 5 other stars in view; with 460, above 3 diameters of L. Position $89^{\circ} 12'$ n. following.

II. 66. Juxta γ Delphini.

Oct. 19, Double. Full $\frac{1}{4}$ degree f. preceding γ , towards δ
 1782. Delphini. Considerably unequal. L. pr.; S. r. With
 227, $1\frac{1}{2}$ diameter of L. Position $78^{\circ} 42'$ n. preceding.

67. β (FL. 10^{am}) Lyræ præcedens ad boream.

Oct. 19, Double. The 4th telescopic star about $1\frac{1}{2}$ degree n.
 1782. preceding β , in a line parallel to γ and α Lyræ. Ex-
 tremely unequal. L. r.; S. dr. With 227, $1\frac{1}{4}$ or
 almost $1\frac{1}{2}$ diameter of L. With 460, above 2 diame-
 ters of L. Position $68^{\circ} 6'$ f. following.

68. Proximè ρ Lyræ.

Oct. 24, Treble. About $2\frac{1}{4}$ minutes f. following ρ Lyræ.
 1782. The two nearest, a little unequal. Both dr. With
 460, 3 full diameters. Position $8^{\circ} 24'$ n. following.
 The farthest as large as L. of the two nearest at least.
 Colour dr. Position with L. $25^{\circ} 57'$ f. preceding.
 Distance of ρ Lyræ, which is in view, from the two
 nearest $2' 17'' 30'''$. Position $65^{\circ} 12'$, ρ being n. pre-
 ceding, or the double star f. following.

69. FL. 4^{am} Cygni sequens ad boream.

Oct. 24, Double. Near $\frac{1}{2}$ degree n. following the 4th Cygni,
 1782. in a line from γ Lyræ continued through the 4th
 Cygni. A little unequal. Both w. With 227, about
 2 diameters of L. or $2\frac{1}{2}$ when best. Position $29^{\circ} 12'$
 n. following.

70. τ_{uv} & telescopicarum \approx (FL. 15.) Sagittæ sequentium
 ultima.

Nov. 6, Double. About $1\frac{1}{4}$ degree f. following \approx Sagittæ, in
 1782. a line parallel to γ Sagittæ and γ Delphini. Extremely
 unequal. Both r.; S. deeper r. With 227, $1\frac{1}{2}$ dia-
 meter

- II. meter of L. ; with 460, above 2 diameters of L. Position $72^{\circ} 57'$ n. following.
71. FL. 58^a Aurigæ australior.
 Nov. 6, Multiple. About $\frac{1}{4}$ degree f. of the 58th Aurigæ, in
 1782. a line parallel to β and θ . A cluster of stars containing a double star of the second, and one of the third class. That of the second very unequal. Both r. With 460, about $2\frac{1}{2}$ diameter of L. Position $44^{\circ} 36'$ n. following; that of the third equal. Both r. With 227, above 20 stars in view. Distance $17'' 41'''$. The two double stars are in the following side of a small telescopic trapezium.
72. FL. 13^a Lyncis australior.
 Nov. 13, A pretty double star. About $1\frac{1}{4}$ degree f. of the 13th
 1782. Lyncis, towards θ Geminorum; a considerable star. Nearly equal. Both pr. With 227, full $2\frac{1}{2}$ diameters; with 460, almost 4 diameters. Position $11^{\circ} 0'$ f. preceding.
73. FL. 21^a Urfæ majoris.
 Nov. 17, Double. Very unequal. Both rw. With 227, $2\frac{1}{2}$
 1782. diameter of L. ; with 460, above 3. Position $36^{\circ} 45'$ n. preceding.
74. ν (FL. 4^a) Crateris borealior.
 Nov. 20, Treble. Near 1 degree n. preceding ν Crateris,
 1782. towards α Leonis. The two nearest equal. Both dw. With 227, $2\frac{1}{2}$ or 3 diameters. Position $71^{\circ} 33'$ n. following. The farthest larger than either of the two other stars. Of the sixth class. Position about 68 or 69° f. preceding the double star.

II. 75. FL. 118 Tauri.

Dec. 7, Double. A little unequal. L. w.; S. w. inclining
1782. to r. With 278, $2\frac{1}{2}$ diameter of L.; with the same
power by the micrometer $4'' 41'''$; more exactly with
625, $5'' 2'''$. Position $77^\circ 15'$. I could just see it
with an 18-inch achromatic, made by Mr. NAIRNE; it
was as close as possible, and a pretty object.

76. τ (FL. 63^a) Arietis australior et præcedens.

Dec. 23. Double. About 1 degree f. preceding τ Arietis,
1782. towards μ Ceti; the most south of two small telescopic
stars. Nearly equal. Both w. With 227, above 3
diameters; by the micrometer $5'' 47'''$. Position 15°
 $24'$ f. preceding.

77. * FL. 17 Hydræ.

Dec. 28, Double. The largest of two. A little unequal.
1782. Both w. With 227, $2\frac{3}{4}$ diameter of L.; with 460, $1\frac{3}{4}$
diameter. Position $90^\circ 0'$ north.

78. χ (FL. 63^{am}) Leonis sequens ad austrum.

Jan. 1, Double. About $\frac{1}{3}$ degree f. following χ , towards τ
1783. Leonis; the smallest of two. Very or extremely un-
equal. L. r.; S. d. With 227, 3 full diameters of
L. Position $75^\circ 21'$ f. following.

79. FL. 39 Bootis.

Jan. 8, A pretty double star. A little unequal. Both pr.
1783. With 227, near $1\frac{1}{2}$ diameter of L.; with 460, near 2
diameters of L. Position $38^\circ 21'$ n. following.

80. d (FL. 40^e) Eridani adjecta.

Jan. 31, Double. About $1\frac{1}{3}$ min. f. following d Eridani.
1783. Very unequal. Both dr. With 227, hardly visible;
with 460, very obscure. Position $56^\circ 42'$ n. preceding.

II. Distance of L. from *d* Eridani, with 227, $1^{\circ} 21' 47''$.
Position of L. $17^{\circ} 53'$ f. following *d* Eridani.

81. FL. 49^{am} Eridani sequens.

Jan. 31, Double. Near 1 degree following the 49th Eridani,
1783. towards δ Orionis. Very unequal. Both dw. With
227, full 1 diameter of L.; with 278, $1\frac{1}{2}$ or $1\frac{3}{4}$ dia-
meter of L.; with 460, $2\frac{1}{2}$ or 3 diameters of L. Po-
sition $51^{\circ} 36'$ n. preceding.

82. FL. 31^{am} Bootis sequens ad austrum.

Feb. 3, Double. Near 1 degree f. following the 31st, in a
1783. line from *v* continued through the 31st Bootis; the most
south of two. A little unequal. L. w.; S. dw. With
227, about $1\frac{3}{4}$ diameter of L.; with 460, about 3 dia-
meters of L. Position $1^{\circ} 0'$ f. following. A third star
in view, 20° or 30° n. preceding.

83. FL. 22^a Andromedæ borealior.

Feb. 26, Double. Within $\frac{1}{2}$ degree north of the 22d, in a
1783. line parallel to the 19th and 16th Andromedæ; the fol-
lowing and smallest of two. Considerably unequal. L. w.;
S. d. With 227, $1\frac{1}{4}$ or $1\frac{1}{2}$ diameter of L.; with 460,
more than 2 diameters of L. Position $5^{\circ} 48'$ n. following.

84. FL. 65 Piscium.

Feb. 27, Double. Nearly equal. Both pr. With 227, near
1783. $1\frac{1}{2}$ diameter of L.; with 460, full 2 diameters. Po-
sition $30^{\circ} 57'$ n. preceding.

85. *b* (FL. 36^a) Serpentis borealior et sequens.

Mar. 4, Double. About $1\frac{1}{2}$ degree n. following *b*, nearly in
1783. a line from the 32d continued through the 36th Ser-
pentis. Extremely unequal. L. w.; S. dw. With
227, 1 full diameter of L.; S. hardly to be seen; with
460, full 2 diameters of L. Position $46^{\circ} 9'$ n. preceding.

II. 86. FL. 49^{am} Serpentis præcedens ad austrum.

Mar. 7, Double. About $1\frac{1}{2}$ degree f. preceding the 49th, in
1783. a line with the 49th and another between this and the
49th Serpentis, each nearly at $\frac{1}{4}$ degree distance. Very
unequal. L. dw.; S. d. With 227, 2 diameters, or
 $2\frac{1}{4}$ when best. Position $53^{\circ} 9'$ f. following.

87. FL. 29^a et 30^a Monocerotis australior.

Mar. 8, Multiple. It makes nearly an equilateral triangle
1783. with the 29th and 30th Monocerotis towards the south.
Among many, the fourth from the south end of an
irregular long row is double. A little unequal. Both
pr. With 227, 1 diameter of L. and 16 more in
view. Position $86^{\circ} 12'$ f. following.

88. ω (FL. 51^{am}) Serpentis præcedens ad austrum.

Mar. 8, Double. About $\frac{1}{2}$ degree f. preceding the 51st,
1783. towards the 13th Serpentis. Very or extremely une-
qual. Both r. With 227, $2\frac{1}{4}$ diameter of L. when
best; with 460, near 3 diameters of L. Position
 $44^{\circ} 45'$ n. preceding.

89. Ad Genam Monocerotis.

Mar. 26, Double. About 1 degree n. preceding the 12th Mo-
1783. nocerotis, in a line parallel to α and λ Orionis; the
smallest and most north of two. Considerably une-
qual. L. r.; S. bluish r. With 227, near 4 diame-
ters of L. when best. Position $50^{\circ} 51'$ n. following.

90. FL. 100^{am} Herculis præcedens ad boream.

Mar. 27, Double. About $1\frac{1}{4}$ degree n. preceding the 100th,
1783. towards μ Herculis; a very small telescopic star; the
most towards μ and smallest of three forming an arch.
Considerably unequal. Both dw. With 227, about
2 diameters of L. Position $75^{\circ} 9'$ f. following.

II. 91. α (FL. 15^a) Sagittæ australior.

Apr. 5, 1783. Treble. About twice as far south of α Sagittæ, as α and the star near it are from each other; a small star. The two nearest very unequal. L. pr.; S. r. With 227, $1\frac{1}{2}$ diameter of L. Position $74^{\circ} 54'$ f. preceding. The third with L. extremely unequal. S. d. With 227, about 3 diameters of L. or more. Position about 40° or 50° n. preceding. With more light this would be a fine object.

92. In Camelopardali clune.

Apr. 30, 1783. Double. About four times the distance of the 10th and 12th Camelopardali, north of the 10th, and almost in the same direction with the 10th and 12th, is a star of between the 5th and 6th magnitude not marked in FLAMSTEED; naming that star A, we have the following direction. About $\frac{1}{2}$ degree preceding A Camelopardali, in a line from the 2d Lyncis continued through A; the second from A. Very unequal. L. w.; S. d. With 227, $1\frac{1}{2}$ or 2 diameters of L. Position $22^{\circ} 42'$ f. following. Very inaccurate.

93. ϵ (FL. 13^a) Aquilæ australior.

May 25, 1783. Double. Near $\frac{1}{4}$ degree south of, and a little following ϵ , towards λ Aquilæ, a very small star. Very unequal. L. dw.; S. dr. With 460, above 2 diameters of L. Position $16^{\circ} 0'$ n. preceding.

94. ι (FL. 17^m) Andromedæ præcedens ad boream.

Aug. 19, 1783. Double. About $1\frac{1}{2}$ degree n. preceding ι Andromedæ in a line parallel to α and β Cassiopeiæ; in the side of a trapezium of four small stars. Pretty unequal. Both r. With 460, $2\frac{1}{2}$ diameters of L. Position $34^{\circ} 24'$ n. preceding.

II. 95. η (FL. 55^a) Aquilæ australior.

Sept. 12, Double. About $\frac{1}{3}$ degree south of η , in a line from
1783. α continued through η Aquilæ; a small star. A little
unequal. Both dusky ash-coloured. With 460, near
3 diameters of L.; with 278, near 2 diameters of L.
Position $29^{\circ} 3'$ n. preceding.

96. θ (FL. 65^a) Aquilæ borealior et sequens.

Sept. 12, Double. About $1\frac{1}{4}$ degree n. following θ Aquilæ,
1783. towards ϵ Delphini; more accurate towards 29 Vulpeculæ;
a very considerable star. Nearly equal. Both
rw. With 278, about $1\frac{1}{4}$ diameter of L.; with 460,
full 2 diameters. Position $56^{\circ} 12'$ f. preceding.

97. ζ (FL. 64^{am}) Cygni præcedens.

Sept. 15, Treble. About 1 degree preceding ζ , towards the
1783. 41st Cygni; a large star. The two nearest extremely
unequal. L. w.; S. pr. With 460, $2\frac{1}{2}$ diameters of
L. Position $45^{\circ} 15'$ n. preceding. The third with L.
extremely unequal. Of the 5th or 6th class; about
 50° f. preceding.

98. FL. 49 Cygni.

Sept. 15, Double. Very unequal. L. r.; S. bluish r. With
1783. 278, $1\frac{1}{2}$ diameter of L.; with 460, $2\frac{1}{2}$ diameters of
L. Position $31^{\circ} 48'$ n. following.

99. β (FL. 6^{am}) Cygni sequens ad boream.

Sept. 15, Double. Near $\frac{1}{2}$ degree n. following β , towards ξ
1783. Cygni. Very unequal. Both dw. With 278, $1\frac{1}{2}$
diameter of L.; with 460, about 2 diameters of L.
Position $87^{\circ} 48'$ n. following.

100. FL. 51^a Cygni borealior et sequens.

Sept. 24, Double. Near two degrees n. following the 51st
1783. Cygni, in a line parallel to σ Cygni and α Cephei; a

II. pretty considerable star. Very unequal. L. w.; S. inclining to blue. With 278, extremely unequal. and $1\frac{1}{2}$ diameters of L. when best; requires attention to be seen well with this power; with 460, full 2 diameters of L. or $2\frac{1}{4}$ when best, otherwise much less. Position $15^{\circ} 51'$ n. following.

101. FL. 57^{am} :: Camelopardali præcedens ad boream.

Sept. 26, Double. About 2 degrees n. preceding the 57 ::,
1783. towards the 42d Camelopardali; a considerable star near three smaller, forming an arch. About 1 degree from the double star V. 135. Considerably unequal. Both pr. With 278, $1\frac{2}{3}$ diameter of L.; with 460, $2\frac{1}{2}$ diameters of L. Position $67^{\circ} 15'$ n. preceding.

102. *e* (FL. 29^a) Orionis australior et præcedens.

Sept. 27, Double. About $\frac{1}{2}$ degree s. preceding *e*, in a line
1783. parallel to ρ and β Orionis; the largest of several. Very unequal. L. pr.; S. inclining to garnet. With 278, near 2 diameters of L. With 460, $2\frac{1}{2}$ diameters of L. Position $52^{\circ} 24'$ s. following.

THIRD CLASS OF DOUBLE STARS.

III. 47. *e* Pollucis: FL. 38 Geminorum. In calce.

Dec. 27, Double. Extremely unequal. L. rw.; S. r. Dif-
1781. tance, with 460, $7'' 48'''$. Position $89^{\circ} 54'$ s. following. Two more in view, the nearest of them perhaps $40''$; they form a rectangle nearly.

- III. 48. γ (FL. 61^{am}) Geminorum præcedens ad boream.
 Dec. 27, Double. About $\frac{1}{2}$ degree n. preceding γ , in a line
 1781. parallel to α and the 60th Geminorum; near two de-
 grees from δ . A little unequal. Both pr. Distance
 6'' 15'''. Position 43° 54' n. following.
49. δ (FL. 4^{am}) Hydræ præcedens ad boream.
 Jan. 20, Double. About 1 $\frac{1}{4}$ degree n. preceding δ , in a line.
 1782. from η continued through δ Hydræ. Pretty unequal.
 L. r.; S. garnet. Distance 12'' 30'''. Position 62°
 48' n. following.
50. θ Virginis. FL. 51. De quatuor ultima et sequens.
 Feb. 6, Treble. The two nearest extremely unequal. L. w.;
 1782. S. d. Distance 7'' 8'''; but inaccurate on account of
 the obscurity of S. Position 69° 18' n. preceding.
 For measures of the two farthest see VI. 43.
51. FL. 88 Leonis. In dextro clune.
 Feb. 9, Double. Extremely unequal. L. rw.; S. r. Dif-
 1782. tance 14'' 38'''; a little inaccurate. Position 47° 33'
 n. preceding.
52. FL. 10^{am} Orionis sequens.
 Feb. 17, Double. Above $\frac{1}{4}$ deg. n. following the 10th, towards
 1782. ω Orionis. Considerably unequal. Both pr. Distance
 with 278, 13'' 40'''. Position 37° 3' n. following.
53. γ Virginis borealior et sequens.
 Feb. 17, Double. Near 2 $\frac{1}{2}$ degrees n. following γ , in a line
 1782. parallel to ε and α Virginis; a considerable star; a line
 from γ to this passes between two of nearly the same
 magnitude with this star. A little unequal. Both d.
 Distance 12'' 58'''. Position 79° 0' n. preceding.

- II. 54. Secunda ad σ Ursæ majoris. FL. 13. In fronte.
 June 2, Double. Extremely unequal. L. w.; S. r. Dis-
 1782. tance $7'' 56'''$. Position $13^{\circ} 0'$ n. preceding.
55. ν (FL. 18^{am}) Coronæ borealis sequens ad boream.
 June 14, Double. Considerably unequal. L. dr.; S. d.
 1782. Distance with 227, about 3 or 4 diameters of L. being
 too obscure for the micrometer. Position $53^{\circ} 48'$ f.
 preceding. Distance of the largest of the two from ν
 Coronæ $1' 18'' 8'''$. Position of the same with ν , 64°
 $24'$ n. following.
56. S (FL. 72^a) Serpentarii borealior.
 June 16, Double. About $2\frac{1}{2}$ degrees n. of the 72d Serpen-
 1782. tarii; a considerable star. A little unequal. Both r.
 Distance $7'' 37'''$. Position $9^{\circ} 42'$ f. preceding. A third
 star about $1'$ preceding.
57. In Anseris corpore.
 Aug. 11, A pretty double star. About $\frac{1}{2}$ degree n. of a cluster
 1782. of stars formed by the 4th, 5th, 7th, 9th Anseris; in
 a line parallel to the δ th Vulpeculæ and β Cygni; that
 of two which is farthest from the cluster. A little
 unequal. Both r. Distance $7'' 1'''$. Position $58^{\circ} 36'$
 f. following.
58. θ Persei. FL. 13. In sinistro humero.
 Aug. 20, Double. Extremely unequal. L. w. inclining to r.;
 1782. S. d. Distance with 932, $13'' 31'''$. Position $20^{\circ} 0'$
 n. preceding. A third star, very unequal, within $1'$;
 towards the south.
59. Ad FL. 19^m Persei. In capite.
 Aug. 20, Double. It is perhaps the 19th Persei removed, or
 1782. more likely a star not marked in FLAMSTEED'S Cata-
 logue; the 19th being either vanished, or misplaced by
 FLAMSTEED.

- III. FLAMSTEED. Pretty unequal. L. bw.; S. br. Distance $12'' 2'''$. Position $0^{\circ} 0'$ following.
60. Secunda ad ρ Persei. FL. 20. Illas in larva præcedit.
 Aug. 20, Double. Extremely unequal. L. rw.; S. d. Distance 1782. $14'' 2'''$. Position $30^{\circ} 30'$ f. following.
61. Sub finem caudæ Draconis.
 Aug. 29, Double. Of two considerable stars, about half-way 1782. between α and ι Draconis, that which is towards ι . The two stars are parallel to ζ and ϵ Ursæ majoris. Very unequal. L. pr.; S. db. Distance $12'' 30'''$; perhaps a little inaccurate. Position $87^{\circ} 42'$ n. preceding.
62. FL. 35 Piscium. In lino austrino.
 Sept. 4, Double. Considerably unequal. L. rw.; S. pr. 1782. Distance $12'' 30'''$. Position $58^{\circ} 54'$ f. following.
63. Prope FL. 65^{am} Sagittarii. Ad extremum paludamentum.
 Sept. 5, Double. Near $\frac{1}{2}$ degree f. following the 65th Sagittarii towards ζ Capricorni. Very unequal. Too low 1782. for colours; perhaps dw. Distance $14'' 20'''$. Position $73^{\circ} 48'$ n. following.
64. FL. 26 Aurigæ. In dextri cruris involucro.
 Sept. 5, Double. Very unequal. L. rw.; S. r. Distance 1782. $13' 25'''$. Position $2^{\circ} 36'$ n. preceding.
65. ϵ (FL. 58^a) Persei australior. In dextri pedis talo.
 Sept. 7, Double. About $10'$ south of the 58th Persei, in a 1782. line parallel to ζ and ι Aurigæ; a small telescopic star. Very unequal. L. r.; S. d. Distance with 625, $11'' 22'''$. Position $48^{\circ} 54'$ n. following. Very inaccurate: windy.
66. ϵ Tauri. FL. 30. In dextri humeri scapula.
 Sept. 7, Double. Extremely unequal. L. w.; S. r. Distance 1782. $11'' 16'''$; inaccurate on account of obscurity. Position $17^{\circ} 15'$ n. following.

III. 67. ι Leporis. FL. 3. Borea præcedentis lateris quadrilateri ad aures.

Sept. 7, Double. Excessively unequal. L. w.; S. d. With 1782. 227, there was not a possibility of measuring the distance, though the glass was carefully cleaned; on trying 625, I found the star so strong that it bore a very tolerable good light*. Distance with this power $12'' 20'''$. Position $89^{\circ} 21'$ n. preceding.

68. η (FL. 17^d) Arietis australior et præcedens.

Sept. 10, Double. Full 1 degree south preceding η , in a line 1782. parallel to α and γ Arietis. Very unequal. L. pr.; S. d. Distance $8'' 5'''$. Position $55^{\circ} 42'$ f. following.

69. Prope FL. 64^{am} Aquarii. In dextro femore.

Sept. 27, Double. Full $1\frac{1}{2}$ degree n. following the 64th ::, 1782. in a line parallel to λ and ϕ Aquarii; the largest of two that follow a very obscure triangle in the finder. Extremely unequal. L. rw; S. db. Distance $12'' 46'''$. Position $20^{\circ} 3'$ f. following.

70. α Cephei. FL. 1. In dextro crure.

Sept. 27, A beautiful double star. Extremely unequal. L. 1782. fine w.; S. r. Distance $5'' 47'''$. Position $32^{\circ} 30'$ f. following.

* With regard to small stars, that become visible by an increase of magnifying power, we may surmise, that it is partly owing to the greater darkness of the field of view, arising from the increased power, and partly to the real effect of the power; for, though the real diameter of a star, notwithstanding it be magnified a thousand times, should still remain smaller than the minimum visible, yet since a star of the seventh magnitude may be seen by the naked eye, we may conclude, that the light of a star subtends incomparably a larger angle than its luminous body; and this may be in such a proportion, with very small stars, that the power of the telescope shall be just sufficient to magnify the real diameter so as to bring it within the limits of this proportion, whereby the star will become visible.

III. 71. Tiaram Cephei præcedens.

Sept. 27, Treble. About $1\frac{1}{2}$ degree preceding the *garnet star**,
 1782. in a line parallel to ι and ζ Cephei. The two nearest
 very unequal. L. w.; S. db. Distance $11'' 35'''$.
 Position $35^\circ 24'$ f. following. The two farthest consi-
 derably unequal. S. db. Distance $18'' 37'''$. Posi-
 tion $73^\circ 57'$ n. preceding. The place of the *garnet*
star, reduced to the time of FLAMSTEED'S Catalogue, is
 about \mathcal{R} 21 h. 45'. P.D. $32^\circ\frac{1}{2}$.

72. Tiaram Cephei præcedens.

Sept. 27, Double. Within $\frac{1}{4}$ degree of the foregoing treble
 1782. star. Considerably unequal. L. rw.; S. pr. Distance
 $13'' 7'''$. Position $32^\circ 0'$ n. following.

73. FL. 25^a Ceti australior et sequens.

Oct. 2, Double. About $\frac{3}{4}$ degree f. following the 25th, in a
 1782. line parallel to θ and τ Ceti. Pretty unequal. Distance
 with 278, $14'' 50'''$. Position $89^\circ 12'$ f. preceding;
 perhaps a little inaccurate.

74. FL. 18^a Pegasi australior. Ad oculum finistrum.

Oct. 4, Double. About $\frac{3}{4}$ degree f. preceding the 18, in a
 1782. line parallel to η and ϵ Pegasi; the most north and largest
 of two. A little unequal. Both rw. Distance $14''$
 $29'''$ full measure. Position $31^\circ 33'$ n. following.

75. Ad Genam Monocerotis.

Oct. 4, Double. About 1 degree n. of, and a little preceding
 1782. the six telescopics in the place of the 12th, in a line
 parallel to the 12th Monocerotis and μ Geminorum.

76. $\tau\omega\nu$ quatuor telescopicarum, δ Orionis sequentium, penultima.

Oct. 4, Double. About $\frac{3}{4}$ degree n. following δ , in a line
 1782. parallel to τ and ι Orionis. Extremely unequal.

* Phil. Transf. vol. LXXIII. p. 257.

- III. L. r.; S. d. Distance with 278, 9'' 12'''. Position 13° 6' n. preceding.
77. FL. 65^{am} Arietis sequens ad austrum.
 Oct. 9, Double. About $\frac{3}{4}$ degree f. following the 65th Arietis, in a line parallel to the Pleiades and ϵ Tauri; the preceding of two. Very unequal. L. r.; S. bluish. Distance 8'' 32'''. Position 73° 18' f. following.
78. FL. 13^{am} Tauri præcedens ad austrum.
 Oct. 9, Double. About $1\frac{1}{4}$ degree f. preceding the 13th Tauri, in a line parallel to ϵ Tauri and δ Ceti. Nearly equal. Both pr. Distance 7'' 10'''. Position 87° 57' n. preceding.
79. ϵ (FL. 83^a) Ceti borealior.
 Oct. 13, Double. About $\frac{2}{3}$ degree n. of ϵ Ceti; the nearest of three forming an arch. Extremely unequal. L. rw.; S. darkish red. Distance with 278, 10'' 48'''. Position 45° 12' f. preceding.
80. σ (FL. 76^{am}) Ceti præcedens. In sinistro crure.
 Oct. 13, Double. Full $1\frac{1}{2}$ degree preceding σ , towards τ Ceti. 1782. Extremely unequal. L. rw.; S. br. Distance 11'' 16'''. Position 22° 24' n. preceding.
81. Parvula à ζ Lyræ ϵ versus.
 Oct. 19, Double. Above $\frac{1}{2}$ degree from ζ towards ϵ Lyræ. 1782. Extremely unequal. L. r.; S. dr. Distance 9'' 27'' full measure. Position 66° 18' n. following.
82. FL. 41 Aurigæ.
 Nov. 6, A pretty double star. Considerably unequal. L. w.; 1782. S. grey inclining to r. Distance 8'' 32'''. Position 80° 0' n. preceding.

III. 83. FL. 19 Lyncis.

Nov. 13, Double. A little unequal. L. rw.; S. bw. Distance 14'' 11'''. Position 46° 54' f. preceding.

84. FL. 40 Lyncis. In Ursæ majoris pede.

Nov. 13, Double. Very or extremely unequal. L. wr.; S. r. Distance 7'' 11'''. Position 48° 12' n. preceding.

85. FL. 2 Canum Venaticorum.

Nov. 13, Double. Very unequal. L. r.; S. bluish. Distance 12'' 12'''. Position 11° 0' f. preceding.

86. FL. 57 Ursæ majoris.

Nov. 20, Double. The largest of two stars. Excessively unequal. L. w.; S. a red point without sensible magnitude. With 227, S. is but just visible. Position 75° 36' n. following.

87. FL. 59^a Ursæ majoris borealior.

Nov. 20, A pretty treble star. Near 1½ degree n. of the 59th, in a line parallel to ψ and β Ursæ majoris nearly. The two nearest considerably unequal. L. pr.; S. r. Distance 12'' 30'''. Position 0° 0' preceding. The two farthest very unequal. S. dr. Distance 32'' 21''', Position 4° 0' n. following.

88. FL. 11^a Tauri borealior et sequens.

Nov. 25, Double. About ½ degree n. following the 11th Tauri, towards Aurigæ. Very unequal. L. w.; S. pr. Distance with 278, 13'' 37'''. Position 89° 51' n. following.

89. Ad 63^{am} Herculis. In linea per δ et ϵ ducta.

Nov. 26, Double. About 4 degrees from δ towards ϵ Herculis, near the 63d. Very unequal. L. r.; S. r. Distance 11'' 53'''. Position 47° 48' n. following.

III. 90. FL. 103^a Tauri borealior.

Nov. 29, Double. About three degrees directly n. of the 103
1782. Tauri; the largest of three, forming an obtuse angle.
Considerably unequal. L. rw.; S. pr. Distance with
278, 13'' 6'''. Position 64° 0' n. following.

91. FL. 62^a Arietis borealior et sequens,

Dec. 23, Double. Near 1 degree n. following the 62d Ari-
1782. etis, towards ε Persei. Nearly equal. Both dw. Dis-
tance 11'' 17'''; not very accurate. Position 12° 24'
n. preceding or f. following.

92. ξ (FL. 77^{am}) Cancri præcedens ad boream.

Dec. 28, Double. About 1 degree n. preceding ξ Cancri, in a
1782. line parallel to ε Leonis and the 41st Lyncis; a consi-
derable star. A little unequal. Both rw. Distance
8'' 50'''. Position 65° 12' f. preceding.

93. FL. 117 Tauri.

Dec. 31, Double. Almost equal. Both rw. Distance 12''
1782. 12'''. Position 52° 27' f. following.

94. ν (FL. 7^{am}) Leporis præcedens ad boream.

Dec. 31, Double. About 1½ degree n. preceding ν Leporis, in
1782. a line parallel to κ and ε Orionis; the second in that
line. Equal. Both rw. Distance 11'' 44'''. Posi-
tion 4° 0' f. following or n. preceding.

95. ν (FL. 48^{am}) Eridani præcedens ad austrum.

Jan. 2, Double. Near ½ degree f. preceding ν, in a line from
1783. the 51st continued through the 48th Eridani. Extremely
unequal. L. rw.; S. d. and hardly to be seen with
227. Distance with 278, 15'' 21'''; very inaccurate
on account of obscurity. Position 9° 18' f. preceding.

III. 96. FL. 17 Crateris.

Jan. 10, Double. Nearly equal. Both rw. Distance $9''$
 1783. $46'''$. Position $64^{\circ} 27'$ f. preceding.

97. FL. 54 Hydræ.

Jan. 10, Double. Very unequal. L. w.; S. bluish r. Dis-
 1783. tance $11'' 17'''$; too low for great accuracy. Position
 $38^{\circ} 15'$ f. following.

98. Ad Genam Monocerotis.

Jan. 13, Double. About $\frac{2}{3}$ degree f. preceding the most f. of
 1783. a cluster of six telescopic in the place of the 12th, in a
 line parallel to the 15th and 12th Monocerotis. Ex-
 cessively unequal. Position $61^{\circ} 57'$ f. preceding.

99. FL. 55 Eridani.

Jan. 31, Double. A very little unequal. L. pr.; S. rw.
 1783. Distance $9'' 9'''$. Position $44^{\circ} 9'$ n. preceding.

100. FL. 55^{am} Eridani præcedens ad austrum.

Jan. 31, Double. About $2\frac{1}{4}$ degrees f. preceding the 55th
 1783. Eridani, in a line parallel to Rigel and γ Eridani. Con-
 siderably unequal. L. pr.; S. db. Distance $11'' 53'''$.
 Position $16^{\circ} 24'$ f. preceding.

101. *k* Centauri. FL. 3.

Jan. 31, Double. Considerably unequal. L. dw.; S. dpr.
 1783. Distance $11'' 35'''$. Position $22^{\circ} 0'$ f. following.

102. *b* (FL. 29^{am}) Herculis præcedens ad austrum.

Feb. 3, Double. About $1\frac{1}{4}$ degree f. preceding *b* Herculis
 1783. towards ϵ Serpentis; a small star. Very unequal. Both
 r. Distance $14'' 2'''$. Position $67^{\circ} 12'$ n. following.

103. ϵ (FL. 37^a) Serpentis borealior et sequens.

March 4, Double. Near two degrees f. following ϵ , in a line
 1783. parallel to the 13th Serpentis and 10th Serpentarii.
 Very unequal. L. pr.; S. r.; but a *dry fog*, if I may

III. so call it, probably tinges them too deeply. Distance with 278, $12'' 34'''$; with 625, $12'' 23'''$. Position $50^{\circ} 12'$ n. preceding.

104. FL. 83^{am} Herculis præcedens.

Mar. 26, Double. About $\frac{1}{3}$ degree preceding the 83; the second star towards the 79th Herculis. Very unequal. L. r.; S. darker r. Distance $14'' 20'''$. Position $83^{\circ} 48'$ n. preceding.

105. γ (FL. 12^a) Sagittæ borealior et præcedens.

April 7, Double. About $2'$ preceding the double star V. 106. 1783. Pretty unequal. L. r.; S. d. Distance $14'' 29'''$; very inaccurate, on account of obscurity. Position $50^{\circ} 24'$ f. preceding.

106. FL. 5 Serpentis.

May 21, Double. Excessively unequal. L. rw.; S. db. Too 1783. obscure for measures. Of the third class, far. Position about 30° or 40° n. following.

107. Congerie Stellarum Sagittarii borealior.

June 6, Double. Above $1\frac{1}{4}$ degree n. of the 20th cluster of 1783. stars of the *Connoissance des Temps*, in a line parallel to γ Sagittarii and the cluster: the most south of many. Considerably unequal. Distance with 278, $15'' 10'''$. As accurate as the prismatic power of the atmosphere, which lengthens the stars, will permit. Position $54^{\circ} 48'$ f. preceding*.

108.

* What I call the prismatic power of the atmosphere, of which little notice has been taken by astronomers, is that part of its refractive quality whereby it disperses the rays of light, and gives a lengthened and coloured image of a lucid point. It is very visible in low stars; FOMALHAND, for instance, affords a beautiful prismatic spectrum. That this power ought not to be overlooked in delicate

III. 108. FL. 19^{am} Aquilæ præcedens ad boream.

July 7, Double. Above $\frac{1}{4}$ n. preceding the 19th, in a line 1783. parallel to β and ζ Aquilæ. Very unequal. L. r.; S. dr. Distance 12'' 58'''. Position 58° 27' f. following.

109. FL. 19^{am} Aquilæ præcedens ad Boream.

July 7, Double. About $1\frac{1}{3}$ degree n. preceding the 19th, in 1783. a line parallel to ϵ and δ Aquilæ. Pretty unequal. Both rw. Distance 10'' 13'''. Position 22° 6' n. preceding.

110. FL. 77^a Cygni borealior et præcedens.

Sept. 17, Quadruple. Full $\frac{1}{4}$ degree n. preceding the 17th, in 1783. a line parallel to σ and α Cygni; a small star. The two nearest extremely unequal. L. r.; S. d. Distance with 625, 13'' 54'''. Position 67° 36' f. following. The two largest a very little unequal. Both r. Distance with 278, 25'' 58'''. Position 40° 33' n. fol-

and low observations, is evident from some measures I have taken to ascertain its quantity. Thus I found, May 4, 1783, that the perpendicular diameter of ϵ , FLAMSTEED's 20th Sagittarii, measured 16'' 9''', while the horizontal was 8'' 35'''; which gives 7'' 34''' for the prismatic effect: the measures were taken with 460, near the meridian, and the air remarkably clear. And though this power, which depends on the obliquity of the incident ray, diminishes very fast in greater altitudes, yet I have found its effects perceivable as high, not only as α or γ Corvi in the meridian, but up to Spica Virginis, and even to Regulus. Experiments on these two latter stars I made November 20, 1782; when Regulus, at the altitude of 49°, shewed, the purple rather fuller at the bottom of the field of view than when it was at the upper edge; which shews that the prismatic powers of the edges of the eye lens were assisted in one situation by the power of the atmosphere, but counteracted by it in the other. I turned the eye lens in all situations, to convince myself that it was not in fault. This experiment explains also, why a star is not always best in the center of the field of view; a fact I have often noticed before I knew the cause.

- III. lowing. The farthest very unequal. S. d. Position almost in a line with the two largest.
111. ϵ (FL. 46^a) Orionis borealior et frequens.
 Sept. 20, Treble. About $1\frac{1}{4}$ degree n. following ϵ , towards
 1783. α Orionis. The two nearest of the third class.
112. δ (FL. 18^{am}) Cygni frequens ad austrum.
 Sept. 22, Double. About 1 degree s. following δ , towards the
 1783. 47th Cygni; a pretty considerable star. Equal, or perhaps the southern star the smallest. Both pr. Distance with 278, $10'' 8'''$. Position $71^\circ 0'$ s. following.
113. FL. 27^{am} Cygni præcedens ad austrum.
 Sept. 23, Quadruple and Sextuple. About $\frac{1}{2}$ degree s. preceding the treble star I. 96.; the middle of three, the most north whereof is the 27th Cygni. In the quadruple or n. preceding set, the two nearest very unequal. Distance with 278, $11'' 16'''$. Position $26^\circ 0'$ n. preceding; the two largest almost equal. Both r. Distance with 278, $29'' 27'''$. Position $57^\circ 12'$ n. following. In the sextuple or s. following set, the two largest pretty unequal. Both r. Distance with 278, $19'' 20'''$. Position $27^\circ 36'$ s. preceding. All the other stars are as small as the smallest of the quadruple set, and some of them much smaller.
114. FL. 16^{am} Monocerotis præcedens ad boream.
 Jan. 23, Double. About $1\frac{1}{4}$ degree n. preceding the 16th.
 1784.

FOURTH CLASS OF DOUBLE STARS.

IV. 45. In pectoris crate Orionis.

Dec. 27, Double. About $\frac{2}{3}$ degree following ψ , towards n 1781. Orionis. Extremely unequal. L. pr.; S. dr. Distance with 278, 20'' 3''. Position 62° 24' f. following.

46. FL. 21 :: Geminorum *.

Dec. 27, Double. A little unequal. Both pr. Distance 1781. about 25''. Position

47. FL. 3 Leonis.

Feb. 2, Double. Excessively unequal. L. r.; S. d.; not 1782. visible with 227. Distance estimated with 460, about 24''. Position a little n. following. A third star in view. Distance perhaps 2'. Position about 15° f. following.

48. H (FL. 1^{am}) Geminorum præcedens ad boream.

Feb. 6, Quintuple. In the form of a cross. About $\frac{2}{3}$ degree 1782. n. preceding H Geminorum, in a line parallel to the 65th Orionis and ζ Tauri; the middle of three. The two nearest or preceding of the five extremely unequal. Distance 20'' 57'''. Position 7° 27' f. preceding. The last of the three, in the short bar of the cross, has an excessively obscure star near it of the third class. Five more in view, differently dispersed about the quintuple.

* The 21st and 20th Geminorum are not in the heavens as they are marked in FLAMSTEED'S Atlas, so that it becomes doubtful whether the N° 21, is right.

IV. 49. ξ (FL. 4^{am}) Virginis sequens ad boream.

Feb. 6, Double. 1 full degree n. following ξ Virginis, in a
1782. line parallel to ι and β Leonis. A little unequal. L.
pr.; S. dr. Distance 27'' 28'''. Position 56° 30' f.
preceding.

50. FL. 17 Virginis. In pectore.

Feb. 6, Double. Considerably unequal. L. w.; S. bluish.
1782. Distance 20'' 9'''. Position 58° 21' n. preceding.

51. k Virginis :: FL. 44 :: †. In ala austrina.

Feb. 6, Double. A star south of three forming an arch, and
1782. of the same magnitude with the middle one of the arch.
Extremely unequal. L. w.; S. db. Distance 22''
17'''; inaccurate. Position 32° 30' n. following.

52. * ι Cancri. FL. 48. In boreali forfice.

Feb. 8, Double. Considerably unequal. L. rw.; S. d. gar-
1782. net. Distance 29'' 54'''. Position 39° 54' n. preceding;
a little inaccurate.

53. π Geminorum. FL. 80. Supra capita.

Feb. 9, Double. Excessively unequal. L. garnet; S. d.
1782. Distance with 460, 21'' 30'''. Position
Other very small stars in view.

54. δ (FL. 4^{am}) Hydræ sequens.

Feb. 11, Double. About $\frac{1}{2}$ degree following δ , towards ζ
1782. Hydræ. Pretty unequal. Both pr. S. deeper. Dis-
tance 25'' 43'''. Position 59° 24' n. following.

55. FL. 41^{am} Lyncis sequens. In caudæ fine.

Mar. 5, Double. About $3\frac{1}{2}$ minutes n. following the 41st
1782. Lyncis. Extremely unequal. L. r.; S. dr. Distance
15'' 52'''; a little inaccurate. Position 50° 48' n.
preceding; inaccurate.

† Perhaps the 45th; requires fixed instruments to determine.

IV. 56. FL. 18 Libræ.

April 3, Double. The following of two. Extremely unequal. 1782. qual. L. r.; S. b. Distance $17'' 59'''$. Position $44^{\circ} 45'$ n. following.

57. FL. 42^{am} Comæ Berenices sequens ad austrum.

April 15, Double. About 3 degrees f. following the 42d Comæ 1782. Berenices towards ν Bootis; the vertex of an isosceles triangle. Extremely unequal. Distance with 625, $16'' 42'''$. Position $46^{\circ} 31'$ f. preceding.

58. FL. 36^{am} Comæ Berenices præcedens ad boream.

April 18, A pretty double star. About $2\frac{1}{2}$ degrees n. preceding 1782. the 36th, in a line parallel to the 42d and 15th Comæ Berenices; the following of two unequal stars. A little unequal. Both rw. Distance $15'' 52'''$. Position $67^{\circ} 57'$ f. preceding.

59. Prope α Lyræ.

May 12, Double. About 2 or 3 minutes f. preceding α Lyræ. 1782. Very unequal. Both d. Distance with 278, $22'' 20'''$. Position $33^{\circ} 57'$ n. preceding. Position of the largest with regard to α Lyræ $59^{\circ} 12'$ f. preceding.

60. FL. 4^{am} Ursæ majoris sequens ad boream.

June 6, Double. Near 1 degree n. following the 4th, in a 1782. line parallel to o and b Ursæ majoris; a pretty large star. Extremely unequal. L. r.; S. d. Distance near $30''$; but too obscure for measures.

61. ζ (FL. 7^a) Coronæ australior et præcedens.

July 18, Double. Near $\frac{1}{2}$ degree f. preceding ζ , towards η 1782. Coronæ bor. Nearly equal. Both pr. Distance $16'' 46'''$. Position $4^{\circ} 57'$ n. following.

IV. 62. τ (FL. 22^a) Herculis australior et sequens.

Aug. 11, Double. About $2\frac{1}{2}$ degrees f. following τ Herculis, 1782. in a line parallel to ι and γ Draconis; a considerable star. Very or extremely unequal. L. w.; S. br. Distance $16'' 51'''$. Position $72^\circ 15'$ f. preceding.

63. FL. 42 Herculis. Dextrum supra genu.

Aug. 11, Double. Very unequal. L. r.; S. rw. Distance 1782. $21'' 31'''$. Position $3^\circ 42'$ f. following.

64. Prope q (FL. 12^{am}) Persei.

Aug. 20, Double. Within a few minutes of q Persei. Pretty 1782. unequal. Both pr.; but S. a little darker. Distance $21'' 59'''$. Position $57^\circ 57'$ f. preceding.

65. Prope FL. 3^{am} Cassiopeiæ.

Aug. 25, Double. Within 10 minutes of the 3^d Cassiopeiæ. 1782. Very unequal. L. pr.; S. r. Distance $20'' 46'''$; very inaccurate. Position $41^\circ 12'$ f. following.

66. θ (FL. 33^{am}) Cassiopeiæ præcedens.

Aug. 28, Double. About $1\frac{3}{4}$ degree f. of, and a little pre- 1782. ceding θ , in a line from δ continued through θ Cassiopeiæ. Extremely unequal. L. r.; S. db. Distance $24'' 2'''$; very inaccurate. Position $13^\circ 12'$ n. following; inaccurate.

67. \dagger FL. 40 et 41 Draconis.

Aug. 29, Double. A little unequal. L. rw.; S. pr. Dif- 1782. tance $20' 39'''$ mean measure; very accurate. Position $35^\circ 15'$ f. preceding*. There is a third, much smaller star. Distance $3' 16'' 33'''$. Position about 30° f. following.

* The proper motion of one of these stars at least since the time of FLAM-STEED is evident, as he gives us their difference in \mathcal{R} $2'$, and in PD $3' 5''$. Position f. preceding. Hence we have the hypotenuse or distance above $3' 40''$, instead of $20'' 39'''$; and the angle $86^\circ 17'$ instead of $35^\circ 15'$.

IV. 68. FL. 77 Piscium. In lini flexu.

Sept. 3, Double. A little unequal. L. wr.; S. pr. Distance
1782. tance $29'' 36'''$. Position $4^{\circ} 48'$ n. following. In both
measures the weather too windy for accuracy.

69. FL. 23^{am} Andromedæ præcedens.

Sept. 4, Double. Full $1\frac{1}{2}$ degree preceding the 23d, in a line
1782. parallel to ν and ι Andromedæ. Of two double stars
in the finder the largest of the preceding set. Very
unequal. L. r.; S. d. Distance with 278, $21'' 58'''$.
Position $70^{\circ} 36'$ n. preceding.

70. FL. 51 Piscium. In austrino lino.

Sept. 4, Double. Very unequal. L. rw.; S. d. Distance
1782. with 278, $22'' 29'''$. Position $0^{\circ} 36'$ n. following.

71. * 0 Capricorni. FL. 12. Trium in rostro austrina.

Sept. 5, Double. Pretty unequal. Both rw. Distance $23''$
1782. $30'''$. Position $30^{\circ} 45'$ f. preceding.

72. FL. 55^a Persei borealior.

Sept. 7, Double. About $\frac{1}{4}$ degree n. of the 55th Persei; of
1782. three in a line the most north. Pretty unequal. L.
rw.; S. pr. Distance with 278, $16'' 51'''$. Position
 $27^{\circ} 24'$ n. following.

73. In Constellatione Camelopardali.

Sept. 7, Double. Between FL. 2 and 8 Cam.; the smallest
1782. of two that are within $\frac{1}{4}$ degree of each other. Consi-
derably unequal. Distance $19'' 32'''$. Position $85^{\circ} 0'$
f. preceding.

74. δ (FL. 68^{am}) Tauri sequens ad boream.

Sept. 7, Double. Near $\frac{1}{2}$ degree n. following δ , towards
1782. Tauri. Very unequal. L. pr.; S. r. Distance $16''$
 $31'''$. Position $25^{\circ} 45'$ n. following.

IV. 75. τ (FL. 66^{am}) Tauri sequens.

Sept. 7, Double. About $1\frac{1}{4}$ degree n. following τ , in a line
1782. parallel to μ Tauri and the 9th Orionis. Very unequal. L. r.; S. dr. Distance $22'' 35'''$. Position $61^{\circ} 36'$ f. following.

76. FL. 13^{am} Ceti præcedens ad austrum.

Sept. 9, Double. About 1 degree f. preceding the 13th,
1782. towards the 8th Ceti. Considerably unequal. L. rw.; S. br. Distance with 278, $18'' 35'''$. Position $40^{\circ} 24'$ n. following.

77. FL. 37^a Ceti borealior. In dorso.

Sept. 22, Double. About $\frac{1}{4}$ degree n. preceding the 37th,
1782. towards the 36th Ceti. Very unequal. L. r.; S. dr. Distance $19'' 6'''$. Position $63^{\circ} 24'$ n. preceding.

78. η (FL. 3^{am}) Cephei præcedens.

Sept. 27, Double. About $1\frac{1}{4}$ degree preceding η , in a line
1782. from ϵ continued through η Cephei. Very unequal. L. r.; S. d. Distance $19'' 32'''$. Position $40^{\circ} 36'$ n. following.

79. μ Cephei. FL. 13. Ad coronam.

Sept. 27, Double. A little unequal. L. w.; S. rw. Dis-
1782. tance $21'' 3'''$. Position $77^{\circ} 48'$ f. preceding.

80. β (FL. 2^a) Canis majoris borealior.

Sept. 30, Double. About $1\frac{1}{4}$ degree n. of β Canis majoris
1782. towards the 11th Monocerotis; the most n. of two. Considerably unequal. Distance $17'' 59'''$; difficult to take, and perhaps a little inaccurate. Position $2^{\circ} 24'$ n. following.

81. ν Canis majoris. FL. 6. In dextro genu.

Sept. 30, Double. Considerably unequal. L. rw.; S. pr. Dist.
1782. $18'' 19'''$. Position very near directly preceding.

IV. 82. Prope FL. 16^{am} Cephei. In cingulo.

Sept. 30, Double. Above $\frac{1}{2}$ degree following the 16th Cephei,
1782. in a line parallel to β and α Cassiopeiæ. Considerably
unequal. L. orange. S. r. Distance 28'' 5'''. Posi-
tion 79° 18' n. preceding.

83. FL. 26 Ceti. Supra dorsum.

Oct. 2, Double. Very unequal. L. rw. S. db. Distance
1782. 17'' 2''' mean measure. Position 14° 36' f. preceding.

84. *m* Orionis. FL. 23 In crate pectoris

Oct. 2, Double. Considerably unequal. L. w.; S. pr.
1782. Distance with 278, 26'' 9'''. Position 59° 33' n. fol-
lowing.

85. FL. ultima Lacertæ.

Oct. 4, Treble. The two nearest extremely unequal. L.
1782. rw.; S. d. Distance 20'' 27'''. Position 79° 33' n.
preceding. The next very unequal; S. r. Distance
54'' 57'''; inaccurate. Position 44° 24' n. following.
A fourth and fifth star in view.

86. FL. 8 Lacertæ. In media cauda.

Oct. 4, Quadruple. The two largest and nearest a little un-
1782. equal. Both rw. Distance 17'' 14'''. Position 84°
30' f. preceding. The two next very unequal, of the
fourth class. The two remaining considerably unequal,
of the fifth class. They form an arch.

87. *e* (FL. 29^{am}) Orionis præcedens. In sinistro calcaneo.

Oct. 4, Double. About 1 degree preceding *e*, in a line pa-
1782. rallel to σ Orionis and *b* Eridani nearly. Considerably
unequal. Both pr. Distance 29'' 18'''. Position 82°
18' n. following.

- IV. 88. FL. 7 Tauri. In dorso.
 0 α . 9, Double. Very unequal. L. pr.; S. dr. Distance
 1782. 19'' 50'''. Position 23° 15' n. following.
89. E telescopicis caudam Arietis sequentibus.
 0 α 9, Double. The vertex of an isosceles triangle follow-
 1782. ing τ Arietis; a very small star. Very unequal. L.
 r.; S. d. Distance with 278, 20'' 3'''. Position
 62° 0' f. following.
90. Ad FL. 18^{am} Ursæ minoris. Prope educationem caudæ.
 0 α . 12, Double. The largest of six or seven stars, and most
 1782. fourth of a triangle formed by three of them. A little
 unequal. L. pr.; S. deeper pr. Distance 26'' 24'''.
 Position 3° 12' n. following.
91. FL. 2 Navis.
 0 α . 12, A pretty double star. A little unequal. L. w.; S.
 1782. w. inclining to r. Distance 17'' 23'''. Position 69°
 12' n. preceding.
92. β inter et ζ Delphini.
 0 α . 17, Treble. Between β and ζ , but nearer to β Delphini.
 1782. All three nearly equal. All wr. Distance of the two
 nearest with 278, 21'' 33'''. Position 18° 27' n. pre-
 ceding.
93. ϵ (FL. 4^{am}) Lyræ sequens.
 0 α . 19, Double. About 3 degrees following ϵ , in a line pa-
 1782. rallel to α and θ Lyræ; the largest of two. Extremely
 unequal. L. w.; S. r. Distance 19'' 50'''. Position
 24° 0' f. preceding.
94. E borealibus telescopicis β Lyræ præcedentibus.
 0 α . 19, Double. Full 2 degrees n. preceding β Lyræ, in a
 1782. line parallel to the 18th and ϵ ; the sixth telescopic star.
 Considerably

IV. Considerably unequal. L. rw.; S. pr. Distance 22'' 53'''. Position 5° 24' n. following.

95. FL. 25^{am} Monocerotis præcedens.

Oct. 19, Quadruple. About 2½ degrees preceding, and a little
1782. n. of the 25th Monocerotis. Two large stars always to be seen, and two more only visible in dark nights. The nearest which is that to the smallest of the two large ones, extremely unequal. Distance 20'' 27'''. Position following.

96. FL. 25^{am} Monocerotis sequens. In latere.

Oct. 19, Double. About 1¼ n. following the 25th, in a line
1782. parallel to the 21st Monocerotis and Procyon. A little unequal. Both dr. Distance 18'' 19'''. Position 24° 0' f. preceding.

97. FL. 29 Monocerotis. In femore.

Oct. 19, Double. Extremely unequal. L. wr.; S. d. Dif-
1782. tance 29'' 54'''. Position 15° 12' f. following. Six more in view.

98. α (FL. 58^{am}) Orionis ad austrum præiens.

Oct. 29, Double. About ½ degree preceding α, towards ζ
1782. Orionis. Equal. Both r. Distance 17'' 59'''; a little inaccurate.

99. Duarum telescopicarum δ Sagittæ ad austrum sequentium borea.

Nov. 6, Treble. Of a trapezium, consisting of this treble
1782. star, δ, ζ, and the 9th Sagittæ, it is the corner opposite to ζ; the nearest to ζ of two. The two nearest very unequal. L. pr.; S. db. Distance 21'' 22'''; inaccurate. Position 0° 0' following. The two largest a little unequal; of the fifth class. Position 10° 36' f. preceding.

IV. 100. χ Sagittæ. FL. 13. Infra mediam arundinem.

Nov. 6, Treble. The largest of three. The two nearest
1782. equal. Both r. Distance $23'' 2'''$. Position $10^{\circ} 12'$ f.
preceding. The third is a large star. Distance above
1 minute. Position about 10° or 15° n. preceding the
other two.

101. ϕ (FL. 24^A) Aurigæ borealior et præcedens.

Nov. 6, Double. Near $\frac{3}{4}$ degree n. preceding ϕ , in a line
1782. parallel to the 21st and 8th Aurigæ. Pretty unequal.
L. rw. S. bluish. Distance $25'' 29'''$. Position
 $76^{\circ} 0'$ n. preceding.

102. FL. 59 Aurigæ.

Nov. 6, Double. The apex of an isosceles triangle. Very
1782. or extremely unequal. L. rw.; S. Distance
 $23'' 30'''$. Position $50^{\circ} 3'$ f. preceding.

103. FL. 77^{am} Draconis sequitur.

Nov. 13, Double. Near $\frac{3}{4}$ degree following the 77th Dra-
1782. conis, in a line parallel to κ Cephei and the 76th Dra-
conis nearly; of a rectangular triangle the leg nearest
the 77th. Very unequal. L. r.; S. bluish r. Dis-
tance $22'' 35'''$. Position $45^{\circ} 48'$ n. following.

104. Inter γ et 55^{am} Andromedæ.

Nov. 13, Double. A little more than 1 degree n. following
1782. the 55th Andromedæ, in a line parallel to β Trianguli
and Algol. Considerably unequal. L. r.; S. d. Dis-
tance with 278, $18'' 57'''$. Position $22^{\circ} 33'$ n. fol-
lowing.

105. δ Corvi. FL. 7. Duarum in ala sequente præcedens.

Nov. 13, Double. Extremely unequal. L. w.; S. r. Dis-
1782. tance $23'' 30'''$. Position $54^{\circ} 0'$ f. preceding.

- IV. 106. α (FL. 50^{am}) Ursæ majoris sequens ad boream.
 Nov. 17, Double. About $1\frac{3}{4}$ degree n. following α , in a line
 1782. parallel to β Ursæ et κ Draconis; the last of three in a
 row. Extremely unequal. Both r. Distance $18''$
 $55'''$; very inaccurate. Position $44^{\circ} 33'$ f. following.
 A third small star in view.
107. FL. 79^a Pegasi australior et præcedens.
 Nov. 20, Double. About $\frac{3}{4}$ degree f. preceding the 79th,
 1782. towards τ Pegasi; at the center of a trefoil. Very
 unequal. L. r.; S. d. Distance with 278, $26'' 12'''$
 Position $50^{\circ} 21'$ n. following.
108. FL. 69^a Ursæ majoris australior.
 Nov. 20, Double. Near 2 degrees f. of the 69th, towards
 1782. the 63d; Ursæ majoris. A very little unequal. Both r.
 Distance $19'' 15'''$; very inaccurate. Position $10^{\circ} 12'$
 n. following.
109. FL. 62 Tauri.
 Nov. 25, Double. Considerably unequal. L. w.; S. r. Dis-
 1782. tance $28'' 5'''$. Position $21^{\circ} 12'$ n. preceding.
110. β (FL. 112^a) Tauri borealior et sequens.
 Dec. 24, Double. About $1\frac{1}{4}$ degree n. following β Tauri,
 1782. towards θ Aurigæ; the second in that direction. Very
 unequal. L. r.; S. d. Distance $16'' 1'''$. Position
 $74^{\circ} 54'$ n. preceding.
111. FL. 54 Cancri.
 Dec. 28, Double. A little unequal. Both rw. S. a little
 1782. darker. Distance $17'' 14'''$. Position $29^{\circ} 0'$ f. fol-
 lowing.
112. γ (FL. 15^{am}) Crateris sequens ad boream.
 Jan. 1, Double. About 1 degree n. following γ Crateris, in
 1783. a line parallel to δ Corvi and Spica. Equal. Both pr.
 Distance

- IV. Distance $26'' 15'''$; too low for accuracy. Position $58^{\circ} 42'$ n. preceding or f. following.
113. FL. 61^{a} Cygni borealior et præcedens.
 Jan. 6, Double. About $1\frac{1}{4}$ degree n. preceding the 61^{st} , in
 1783. a line parallel to ν and α Cygni. Very or extremely unequal. L. r.; S. db. Distance with 278, $17'' 30'''$. Position $28^{\circ} 24'$ n. preceding. A third star in view.
114. ι (FL. 12^{a}) Virginis australior.
 Jan. 8, Double. About $1\frac{1}{2}$ degree f. of ι Virginis. Very
 1783. unequal. L. pr.; S. d. Distance $23'' 21'''$. Position $15^{\circ} 54'$ n. preceding.
115. ϕ (FL. 11^{am}) Herculis præcedens ad austrum.
 Jan. 10, Double. About $2\frac{1}{2}$ degrees f. of, and a little pre-
 1783. ceding ϕ , in a line parallel to η and ζ Herculis; the largest of three or four. Extremely unequal. L. r.; S. b. Distance $20'' 54'''$. Position $43^{\circ} 48'$ n. following.
- 116*. FL. 83^{am} Pegasi sequens ad boream.
 Jan. 13, Double. Equal. Both w. Distance $28'' 59'''$.
 1783. Position $68^{\circ} 21'$. Mr. C. MAYER, in 1777, settled its place \mathcal{R}^{oh} . $52' 53''$ in time, and $20^{\circ} 17' 53''$ in declination N.
117. FL. 42^{a} Eridani australior.
 Jan. 31, Double. About $1\frac{1}{4}$ degree f. of the 42^{d} Eridani, in
 1783. a line parallel to Rigel and μ Leporis; the most south and following of three. Very unequal. L. r.; S. r. Distance $19'' 32'''$. Position $31^{\circ} 48'$ f. preceding.
118. ι (FL. 48^{am}) Cancri sequens.
 Feb. 5, Double. Full $\frac{1}{2}$ degree following the 48^{th} , in a line
 1783. parallel to δ Cancri and ϵ Leonis; a very small star, next to two more which are nearer to ι . A little unequal.

IV. qual. Distance $24'' 6'''$. Position about 25° n. following.

119. δ (FL. 68^{am}) Virginis præcedens ad austrum.

Feb. 7, Double. About 1 degree f. preceding the 68th, in a
1783. line parallel to the 99th and α Virginis. Extremely unequal. Distance $21'' 49'''$. Position $36^\circ 54'$ n. preceding.

120. FL. 82^{am} Piscium sequens ad boream.

Feb. 27, Double. About $\frac{3}{4}$ degree n. following the 82d Pis-
1783. cium, in a line parallel to α and β Trianguli; the largest of two. Considerably unequal. L. rw.; S pr. Distance $18'' 19'''$. Position $21^\circ 0'$ f. preceding. A third star in view.

121. σ Scorpii FL. 20. præcedens trium lucidarum in corpore.

Mar. 1, Double. Very unequal. L. whitish; S. r. Dif-
1783. tance $21'' 40'''$. Position $0^\circ 0'$ (or perhaps 1°) n. preceding.

122. FL. 32^a Ophiuchi borealior et præcedens.

Mar. 7, Double. Near 1 degree n. of, and a little preceding
1783. the 32d Ophiuchi, in a line parallel to α and η Herculis. Very unequal. Distance $21'' 3'''$. Position $25^\circ 3'$ f. preceding.

123. FL. 19 Ophiuchi.

Mar. 9, Double. The most south of two. Very unequal.
1783. L. pr.; S. d. Distance $20'' 27'''$. Position $3^\circ 9'$ f. following.

124. ψ (FL. 4^{am}) Ophiuchi præcedens ad austrum.

Mar. 24, Double. About $\frac{3}{4}$ degree preceding and a little f. of ψ ,
1783. in a line parallel to ψ Ophiuchi and ω Scorpii; in the base of a triangle, the nearest to ψ . A little unequal.

Both

- IV. Both inclining to r. Distance $15'' 24'''$. Position $62^{\circ} 54'$ n. following.
125. FL. 29 Camelopardali.
 April 2, Double. Very unequal. L. pr.; S. d. Distance
 1783. $22'' 26'''$; very inaccurate. Position $47^{\circ} 36'$ f. following; a little inaccurate.
126. λ (FL. 22^a) Cephei borealior et præcedens.
 April 20, Double. Less than $\frac{1}{2}$ degree n. preceding λ , in a
 1783. line almost parallel to δ and ζ Cephei; a considerable star. A little unequal. Both dw. Distance $18'' 50'''$. Position $45^{\circ} 39'$ n. preceding.
- 127 †. λ (FL. 16^{am}) Aquilæ sequens ad boream.
 May 21, Double. About $2\frac{1}{2}$ degrees n. following the farthest
 1783. of two which are about $1\frac{1}{2}$ degree from λ , in a line parallel to λ and δ Aquilæ. Very unequal. L. rw.; S. dr. Distance $17'' 14'''$; more exact with 932, $15'' 52'''$. Position $69^{\circ} 54'$ n. preceding. Mr. PIGOTT, who favoured me with it, gives its place $\mathcal{R} 18^h 52\frac{1}{2}' \pm$, Declination $1^{\circ} 0' S$.
128. γ (FL. 57^{am}) Andromedæ præcedens ad austrum.
 July 28, Double. About $1\frac{1}{2}$ degree f. preceding γ almost
 1783. towards β Andromedæ; more exact towards σ Piscium; one not in a row of stars which are near that place. Considerably unequal. L. pr.; S. dr. Distance $15'' 42'''$. Position $24^{\circ} 12'$ n. following.
129. FL. 59 Andromedæ.
 July 28, Double. A little unequal. L. rw.; S. pr. Distance
 1783. $15'' 15'''$. Position $55^{\circ} 9'$ n. following. A third star in view about 58° or 60° f. preceding.

IV. 130. η (FL. 99^a) Piscium borealior et sequens.

Aug. 2, Double. About $1\frac{1}{2}$ degree n. of, and a little following η Piscium, in a line parallel to β Arietis and β Trianguli; the last of four in a crooked row. Very unequal. L. r.; S. darker r. Distance with 278, $15'' 49'''$. Position $62^\circ 15'$ n. following.

131. FL. 100 Piscium.

Aug. 2, Double. Pretty unequal. L. pr.; S. r. Distance 1783. $15'' 52'''$. Position $5^\circ 0'$ n. following.

132. FL. 46^{am} Aquilæ sequens ad boream.

Aug. 6, Double. About $\frac{1}{2}$ degree n. following 46 Aquilæ, in 1783. a line parallel to α and γ Sagittæ. Very unequal. L. r.; S. db. Distance $22'' 44'''$. Position $41^\circ 24'$ n. preceding.

FIFTH CLASS OF DOUBLE STARS.

V. 52. Secunda a ν Geminorum μ versus.

Dec. 27, Double. The second star from ν towards μ Geminorum. Pretty unequal. L. r.; S. b. Distance $35''$; inaccurate.

53. ρ Geminorum. FL. 63. In inguine sequentis Π^i .

Dec. 27, Double. The brightest of two. Extremely unequal. L. pr.; S. d. Distance $44'' 15'''$.

54. θ Hydræ. FL. 22. Duarum in eductione cervicis sequens.

Jan. 20, Double. Excessively unequal. L. w.; S. a point. 1782. Distance near 1 minute, too obscure for measures, and

- V. not visible till after having looked a good while at θ .
Position about 75° f. following.
55. Ad FL. 12^{am} Geminorum. In pede Π^i præcedentis finistro.
Jan. 30, Treble. A small star near the place of the 12th
1782. Geminorum. The two nearest a little unequal. Dis-
tance less than $1'$.
56. FL. 15 Geminorum. Dextrum prioris Π^i pedem attingens.
Jan. 30, Double. Considerably or very unequal. L. r.; S. d.
1782. Distance $32'' 39'''$. Position near 60° f. preceding.
57. FL. 9^a Orionis borealior et sequens. In exuviarum
summo.
Feb. 4, Treble. More than 1 degree n. following the 9th
1782. Orionis, towards the 113th Tauri; the largest of two.
The two nearest considerably unequal. L. rw.; S. rw.
Distance with 278, $36'' 26'''$. Position $33^\circ 36'$. The
farthest very unequal. S. r. Distance Vth Class. Po-
sition following.
58. FL. 7 Leonis. Supra pedem borealem anteriorem.
Feb. 4, Double. Very unequal. L. rw.; S. r. Distance
1782. $42'' 25'''$. Position $8^\circ 36'$ n. following.
59. θ Cancri. FL. 31. In quadrilatero circa Nubem.
Feb. 6, Double. Extremely unequal. L. r.; S. d. Dis-
1782. tance $44'' 52'''$. Position n. following.
60. σ (FL. 95^{am}) Leonis præcedens; ad caudam.
Feb. 9, Double. Near $\frac{3}{4}$ degree f. preceding the 95th, in a
1782. line parallel to β and ρ Leonis. Very unequal. L. rw.;
S. d. Distance $37'' 15'''$. Position $70^\circ 48'$ n. fol-
lowing.
61. FL. 81 Leonis. In clune.
Feb. 9, Double. Extremely unequal. L. rw.; S. r. Dis-
1782. tance $57'' 23'''$. Position

- V. 62. FL. 57 Leonis. E posteriores pedes præcedentibus.
 Feb. 11, 1782. Double. Very unequal. Distance $33'' 16'''$.
63. FL. 25 Leonis. In infimo pectore.
 Feb. 17, Double. The largest of two. Extremely unequal.
 1782. L. pr.; S. d. Distance $52'' 46'''$. Position
64. FL. 43^a Leonis australior. Ad finistrum anteriorem cubitum.
 Feb. 17, Double. Near 1 degree s. of the 43d, in a line parallel to η and α Leonis. Extremely unequal. L. w. inclining to r.; S. db. Distance $59'' 40'''$. Position
65. Secunda ad π Canis majoris. FL. 17. In pectore.
 Mar. 3, Treble. The two nearest very unequal. L. rw.;
 1782. S. r. Distance $44'' 52'''$. Position $64^\circ 12'$ s. following. The two farthest very or extremely unequal. S. r. Distance Vth Class. Position about 85° s. preceding. The three stars form a rectangle, the hypotenuse of which contains the largest and smallest.
66. p (FL. 63^a) Geminorum borealior.
 Mar. 3, Double. About $\frac{1}{4}$ degree n. of, and a little preceding p , in a line parallel to v and α Geminorum. Very unequal. L. pr.; S. d. Distance $34'' 39'''$. Position 1° or 2° n. preceding.
67. Pollucem prope. In capite sequentis Π^i .
 Mar. 3, Double. Near 1 degree n. following β , in a line
 1782. from δ continued through β Geminorum nearly; the farthest and smallest of three. Considerably unequal. L. r.; S. dr. Distance $47'' 37'''$.
68. FL. 75^{am} Leonis præcedens ad boream.
 Mar. 5, Treble. One of two n. preceding the 75th, in a
 1782. line parallel to the 84th and 59th Leonis. The two
 P 2 nearest

- V. nearest very unequal. Distance $54'' 37'''$. The farthest extremely unequal.
69. FL. 7 Leonis minoris. In extremo anteriore pede.
 Mar. 12, Double. The largest of two. Extremely unequal.
 1782. L. pr. ; S. r. Distance $58'' 18'''$.
70. FL. 2^{am} Bootis præcedens ad boream.
 April 5, Double. Near 3 degrees n. preceding the 2d Bootis,
 1782. towards the 43d Comæ Ber. ; the preceding of three in
 a line parallel to α and η Bootis. A little unequal.
 L. r. ; S. darker r. Distance $56' 56'''$. Position $7^\circ 0'$
 f. preceding.
71. Prope γ (FL. 24^{am}) Geminorum.
 April 15, Double. Three or four minutes n. preceding γ Ge-
 1782. minorum. Of the Vth Class. More in view.
72. $\dagger m$ Herculis. FL. 36 et 37. In sinistro Serpentarii brachio.
 May 18, Double. A little unequal. L. bluish w. S. reddish
 1782. w. Distance $59'' 59'''$. Position $36^\circ 57'$ f. pre-
 ceding*.
73. τ Ursæ majoris. FL. 14. Duarum in collo præcedens.
 June 11, Double. Extremely unequal. L. w. ; S. d. Dis-
 1782. tance $54'' 46'''$. Position about 45° n. following.
74. S (FL. 72^a) Serpentarii borealior.
 June 16, Double. More than 1 degree n. following the 56th
 1782. double star of the III^d Class ; nearly in a line parallel to
 the 62d and 72d Serpentarii, Very unequal. L. rw. ;
 S. r. Distance $40'' 54'''$. Position $39^\circ 15'$; inaccurate.

* One of these stars, at least, seems to have changed its place since the time of FLAMSTEED, who makes their difference in R.A. $45''$, and in P.D. $1' 35''$, Position f. preceding ; hence we have the hypotenuse or distance above $1' 45''$, instead of $59'' 59'''$, and position $69^\circ 46'$ instead of $36^\circ 57'$.

V. 75. ϵ telescopicis ϵ Coronæ borealis frequentibus.

July 18, Double. About 1 degree f. following ϵ , in a line
1782. parallel to θ and ϵ Coronæ; the preceding of three
forming an arch. Extremely unequal. L. r.; S.
darker r. Distance $41'' 12'''$. Position $16^\circ 0' f.$ fol-
lowing.

76. β Aquarii. FL. 22. In sinistro humero.

July 20, Double. Excessively unequal. L. w.; S. d. Dif-
1782. tance about $33'' 16'''$; very inaccurate. Position
 $55^\circ 48'$.

77. d (FL. 43^a) Sagittarii borealior et sequens.

Aug. 4, Double. A few minutes n. following the 43d, in a
1782. line parallel to o and π Sagittarii; the nearest of two.
Extremely unequal. L. w.; S. d. Distance with 278,
 $36'' 3'''$. Position $78^\circ 45' f.$ following.

78. ζ Sagittarii. FL. 38. Trium super costis sub axilla.

Aug. 4, Double. Extremely unequal. L. r.; S. d. Dif-
1782. tance Vth Class. Position $28^\circ 6' n.$ preceding. A
third star. Distance about four times as far as the
former. Position also n. preceding.

79. FL. 9 :: Cassiopeiæ.

Aug. 25, Double. Of two in a line parallel to β and γ , that
1782. towards γ Cassiopeiæ. Very unequal. L. w.; S. pr.
Distance $52'' 39'''$. Position $50^\circ 36' n.$ preceding.

80. τ Aquarii. FL. 69. Duarum in dextra tibia borealior.

Aug. 28, Double. Very unequal. L. rw.; S. d. Distance
1782. $36'' 47'''$. Position $19^\circ 54' f.$ following.

81. FL. 35 :: Cassiopeiæ. In sinistro crure.

Aug. 28, Double. Considerably unequal. L. rw.; S. br.
1782. Distance $42'' 35'''$. Position $85^\circ 12' n.$ following.

- V. 82. ν (FL. 25^{am}) Cassiopeiæ præcedens. In sinistra manu.
 Aug. 28, Double. Near $\frac{1}{4}$ degree n. preceding ν , in a line parallel to α and β Cassiopeiæ. Nearly equal. Both pr.
 1782. Distance 43'' 26'''. Position 7° 48' n. following.
83. ψ Cassiopeiæ. FL. 36. Sub pede sinistro.
 Aug. 28, Double. Very unequal. L. pr.; S. r. Distance
 1782. 33'' 25'''. Position 10° 12' f. following.
84. FL. 47 :: Cassiopeiæ. Ex obscurioribus infra pedes.
 Aug. 29, Double. The largest of three forming a rectangular
 1782. triangle on, or near, the place of the 47th Cassiopeiæ. A little unequal. L. rw.; S. pr. Distance 50'' 58'''.
 Position 3° 33' n. preceding.
85. ρ (FL. 27^a) borealior et præcedens. In dextro brachio.
 Aug. 29, Double. About $\frac{1}{2}$ degree n. preceding ρ Andromedæ
 1782. θ versus. Very unequal. L. rw.; S. r. Distance 30''
 57'''. Position 79° 24' n. following.
86. FL. 12 Urfæ minoris.
 Sept. 4, Treble. Extremely unequal. All three r. The
 1782. nearest is the smallest. Position some degrees f. following. The farthest also south, but more following.
87. σ Capricorni. FL. 7. Sub oculo dextro.
 Sept. 5, Double. Very, or almost extremely unequal. L. r.;
 1782. S. d. bluish. Distance 50'' 7'''. Position 85° 12' f. following.
88. λ (FL. 15^a) Aurigæ borealior. In sinistra manu.
 Sept. 5, Double. About 3' or 4' n. following the 15th Aurigæ.
 1782. Very unequal. Distance 34'' 15''', mean measure. Position 54° 6' f. preceding.

V. 89. θ Aurigæ. FL. 37. In dextro carpo.

Sept. 5, Double. Excessively unequal. L. fine w.; S reddish. Distance with 460, $35'' 18'''$, narrow measure. Position $16^{\circ} 0'$ n. preceding. A third star in view.

90. ν Aurigæ. FL. 32. In dextri brachii ancone.

Sept. 5, Double. Excessively unequal. L. orange w.; S. r. 1782. Distance $53'' 43'''$. Position $61^{\circ} 48'$ f. preceding. S. not visible till after some minutes attention.

91. β (FL. 34^a) Aurigæ adjecta. In dextro humero.

Sept. 5, Double. Near $\frac{1}{2}$ degree f. following β , in a line 1782. from the 27th continued through β Aurigæ; a considerable star. Very or extremely unequal. L. pr.; S. d. Distance $30'' 3'''$. Position $45^{\circ} 6'$ n. preceding.

92. FL. 3^a Arietis borealior.

Sept. 10, Double. Full $\frac{1}{2}$ degree f. following the 3d Arietis, 1782. in a line parallel to α Arietis and δ Ceti; the most south of two. Equal. Both reddish. Distance $51'' 16'''$. Position $52^{\circ} 45'$ n. preceding or f. following.

93. FL. 103^{am} Herculis sequens ad austrum.

Sept. 19, Double. About $1\frac{1}{4}$ degree f. following the $103d$ 1782. Herculis, in a line parallel to the 1st and 10th Lyræ; the nearest of two. Equal, perhaps the following the smallest. Both r. Distance $47'' 46'''$. Position $45^{\circ} 42'$ f. following.

94. Duarum FL. 31^{am} Cephei sequentium austrina.

Sept. 30, Double. About $\frac{1}{4}$ degree n. of the 31st Cephei, 1782. towards α Polaris. Pretty unequal. Both pr. Distance $41'' 40'''$. Position $45^{\circ} 15'$ f. following.

95. FL. 51 Aquarii. In dextro cubito.

Oct. 2, Double. Excessively unequal. L. rw.; S. d. Dis- 1782. tance Vth Class. Position n. preceding. Two other

- V. other stars in view; the nearest of them extremely unequal. Position about 80 or 90° f. preceding. The farthest very unequal. Position about 30° f. following.
96. ν (FL. 59^{am}) Aquarii sequens ad austrum.
 Oct. 2, Double. About $\frac{1}{2}$ degree f. following ν , in a line
 1782. parallel to δ and c Aquarii. Extremely unequal. Distance Vth Class near. Position 15 or 20° f. preceding.
97. FL. 10 Lacertæ.
 Oct. 4, Double. Very unequal. L. w.; S. r. Distance
 1782. with 278, $52'' 34'''$. Position $38^\circ 45'$ n. following.
98. FL. 3 Pegasi.
 Oct. 4, Double. Pretty unequal. L. wr.; S. dr. Distance
 1782. $34'' 43'''$. Position $82^\circ 48'$ n. preceding. Besides II.
 62. another star in view. Position following.
99. FL. 33 Pegasi.
 Oct. 4, Double. Considerably unequal. L. pr.; S. r. Distance
 1782. with 278, $45'' 3'''$. Position $89^\circ 12'$ n. following.
100. FL. 59 Orionis.
 Oct. 4, Double. The following of two. Extremely unequal.
 1782. L. w.; S. a point requiring some attention to be seen. Distance $37'' 15'''$. Position about 65° f. preceding.
101. ν (FL. 36^{am}) Orionis præcedens.
 Oct. 4, Double. About $\frac{2}{3}$ degree preceding ν , nearly in a
 1782. line parallel to κ and β Orionis; the second from ν . Extremely unequal. L. w.; S. r. Distance $44'' 15'''$. Position about 15° f. following.

V. 102. FL. 61 Ceti.

Oct. 12, Double. Extremely unequal. L. rw.; S. dr. Distance with 278, $37'' 53'''$. Position $76^{\circ} 21'$ f. preceding. A third star at some distance. A little unequal. Position n. following.

103. Ab ι (FL. 18^a) Lyræ β versus.

Oct. 24, Double. Full $\frac{1}{2}$ degree f. preceding ι , nearly towards β Lyræ. Extremely unequal. L. w.; S. r. Distance with 278, $45'' 32'''$. Position $29^{\circ} 12'$ n. following.

104. ϵ (FL. 4^a) Sagittæ australior et præcedens.

Nov. 6, Double. Full $\frac{1}{2}$ degree f. preceding ϵ , in a line parallel to γ Sagittæ and γ Aquilæ; the nearest of two. Extremely unequal. L. pr.; S. d. Distance Vth Class. Position $16^{\circ} 18'$ f. following.

105. γ (FL. 14^a) Sagittæ australior et sequens.

Nov. 6, Double. About $\frac{1}{3}$ degree f. following γ Sagittæ, in a line parallel to Sagitta and Delphinus. Considerably unequal. L. pr.; S. r. Distance $38'' 36'''$. Position $74^{\circ} 15'$ f. following.

106. γ (FL. 12^a) Sagittæ borealior et præcedens.

Nov. 6, Double. About $1\frac{1}{4}$ degree n. preceding γ Sagittæ, towards the 6th Vulpeculæ; a considerable star. Equal. Both rw. Distance $38'' 54'''$. Position $60^{\circ} 42'$ n. preceding or f. following.

107. FL. 56 Aurigæ.

Nov. 6, Double. Considerably unequal. L. w.; S. pr. Distance $52'' 57'''$. Position $72^{\circ} 36'$ n. following.

108. κ (FL. 13^a) Canis majoris borealior.

Nov. 6, Double. About $\frac{3}{4}$ degree n. of κ Canis majoris. A little unequal. L. dw.; S. d. Distance $42'' 53'''$. Position $23^{\circ} 18'$ n. following.

V. 109. Inter β Cancræ et δ Hydræ.

Nov. 6, Double. A large star not in FLAMSTEED, between
1782. β Cancræ and δ Hydræ. Excessively unequal. Distance
35'' 24'''. Position 55° 0' n. preceding.

110. FL. 111 Tauri.

Nov. 13, Double. Very unequal. L. rw.; S. r. Distance
1782. 46'' 42'''. Position 3° 48' n. preceding.

111. FL. 42^a Urfæ majoris australior et sequens.

Nov. 20, Double. Full 1 degree f. following the 42d, in a
1782. line parallel to the 29th and 48th Urfæ majoris; the
middle of three forming an arch. Considerably unequal. L. wr.; S. r. Distance 30'' 40'''. Position
51° 27' n. following.

112. * Ex obscurioribus μ and ν Geminorum sequentibus.

Dec. 1, Double. Forms almost an isosceles triangle with μ
1782. and ν Geminorum. Nearly equal. The preceding pr.
the following wr. Distance Vth Class far.

113. * FL. 9^{am} inter et 11^{am} Orionis.

Dec. 7, Treble. About 1½ degree f. preceding the 11th
1782. Orionis, towards ι Tauri. The two largest considerably unequal. L. w.; S. pr. Distance 37'' 51'''. Position 33° 54' n. preceding. The third farther off and smaller. S. r. Position n. following.

114. FL. 103 Tauri.

Dec. 7, Double. Excessively unequal. L. rw.; S. d. Distance
1782. with 278 and 625, 30'' 2''', mean measure. Position 72° 24'.

115. θ Tauri. FL. 114.

Dec. 7, Double. Excessively unequal. L. w.; S. a point.
1782. Distance 5'' 34'''. Position 77° 54' f. preceding.

V. Two other small stars following, and a third to the north.

116. FL. 41 Arietis.

Dec. 23, Treble. The two nearest excessively unequal. L. w.;

1782. S. a point. Distance with 278, $39'' 20'''$. Position $80^{\circ} 48'$ f. preceding. For the distance of the farthest, see VI. 5. *

117. ζ (FL. 58^{am}) Arietis præcedens ad boream.

Dec. 23, Double. About $1\frac{1}{2}$ n. preceding ζ , towards the 41st

1782. Arietis; the following of four forming an arch. Very unequal. Both dr. Distance $34'' 48'''$. Position $47^{\circ} 33'$ n. preceding.

118. ϵ (FL. 46^a) Orionis borealior et præcedens.

Dec. 28, Double. The most n. of three preceding ϵ Orionis,

1782. towards μ Tauri. More north is another set of three; care must be taken not to mistake one of them for this. Extremely unequal. L. rw.; S. d. Distance Vth Class. Position $13^{\circ} 6'$ f. preceding. Two more following, excessively unequal; one about $1'$, the other about $1\frac{1}{2}$ minute.

119. ϵ (FL. 46^a) Orionis australior et præcedens.

Dec. 28, Double. Full $\frac{3}{4}$ degree f. preceding ϵ , in a line pa-

1782. rallel to ϵ Orionis, and b Eridani; the smallest and most f. of two. Very unequal. L. w.; S. r. Distance $30'' 12'''$; a little inaccurate. Position $21^{\circ} 33'$ f. preceding. A third star 2 or 3° f. following.

* The star VI. 5. in the place referred to is called FLAMSTEED's 35th Arietis. With so many stars and measures it was hardly possible to avoid several errors, I have therefore now added to the errata already given at the end of vol. LXXII. and LXXIII. of the Phil. Trans. some others, that have since been detected by a careful review of the double stars, and believe that no more will be found.

V. 120. FL. 15 Hydræ.

Dec. 28, Double. Extremely unequal. L. w.; S. r. Distance 43'' 2'''. Position about 70° n. preceding.

121. *e* Comæ Berenices. FL. 12.

Jan. 1, Double. Considerably unequal. L. rw.; S. pr. Distance 58'' 55'''. Position about 77° f. following.

122. FL. 44^a Bootis australior et præcedens.

Jan. 8, Double. Near $\frac{2}{3}$ degree f. preceding the 44th, towards the 38th Bootis. Very unequal. L. bw.; S. pr. Distance 34'' 21'''. Position 67° 6' f. preceding.

123. * In Andromedæ pectore.

Jan. 8, Double. Equal. Both rw. or pr. Distance 45'' 1'''. Position 32° 24' f. preceding. Its place, as determined in 1777 by C. MAYER, is \mathcal{R} 0^h 34' 33'' in time, and 29° 45' 3'' declination north.

124. *g* (FL. 2^{am}) Centauri sequens ad austrum.

Jan. 31, Double. About 1 $\frac{1}{2}$ degree f. following *g* Centauri, in a line parallel to γ Serpentis and θ Centauri; the most f. of two. Considerably unequal. Distance 54'' 1'''; too low for accuracy.

125. FL. 46^{am} Bootis sequens ad boream.

Feb. 3, Double. Near 2 degrees n. following the 46th, in a line parallel to ζ Bootis and β Coronæ; the third star about that direction. Considerably unequal. L. r.; S. darker r. Distance 33° 53'. Position 37° 33' f. preceding.

126. *r* (FL. 5^{am}) Herculis præcedens ad austrum.

Feb. 3, Double. Near $\frac{1}{2}$ degree f. preceding *r* Herculis, in a line parallel to γ and δ Serpentis; a small star. A little unequal. Both pr. Distance 37'' 51''', rather full measure. Position 52° 6' f. preceding.

- V. 127. (FL. 41^{am}) Herculis præcedens ad boream.
 Feb. 5, Double. About $\frac{3}{4}$ degree n. preceding the 41st Her-
 1783. culis, in a line parallel to α Serpentarii and β Herculis.
 Pretty unequal. Both r. Distance 48'' 40'''. Position
 19° 45' n. preceding.
128. ϵ (FL. 68^{am}) Virginis sequens.
 Feb. 7, Double. About 1 $\frac{1}{2}$ degree following ϵ Virginis,
 1783. in a line parallel to Spica and β Libræ. A little une-
 qual. L. pr.; S. r. Distance 41'' 58'''.
 129. f (FL. 25^{am}) Virginis sequens ad boream.
 Feb. 7, Double. About 1 $\frac{1}{2}$ degree n. following f , in a line
 1783. parallel to γ and ϵ Virginis; a large star. Very une-
 qual. L. r.; S. dark r. Distance 46'' 42'''. Position
 6 or 7° f. following. A double star of the Vth Class
 in view, preceding.
130. FL. 35 Comæ Berenices.
 Feb. 26, Double. Very unequal. L. r.; S. d. Distance
 1783. 31'' 17'''. Position 36° 51' f. following.
131. FL. 24^{am} Libræ sequens ad boream.
 Mar. 1, Double. About 1 $\frac{1}{2}$ degree n. following the 24th
 1783. Libræ, in a line parallel to π and β Scorpii. Considera-
 bly unequal. L. rw.; S. r. Distance 47'' 46'''.
 132. FL. 29^{am} inter et 30^{am} Libræ.
 Mar. 1, Double. Of two between the 29th and 30th Libræ
 1783. that nearest to the 30th. Very unequal. L. w.; S. d.
 Distance 39'' 59'''; very inaccurate.
133. FL. 60 Herculis.
 Mar. 7, Double. Extremely unequal. L. w.; S. d. Dif-
 1783. tance 48'' 40'''. Position 37° 0' n. preceding.

V. 134. ψ (FL. 4^{am}) Ophiuchi præcedens ad austrum.

Mar. 24, Double. About 1 degree preceding and a little s. of
1783. ψ , in a line parallel to ψ Ophiuchi and ω Scorpii; the
farthest of two in the base of a triangle. Equal. Dis-
tance 45'' 47'''.

135. Ad FL. 49^{am} Camelopardali.

April 4, Double. The smallest and most s. of two that are
1783. about 20' asunder. A little unequal. Both r. Dis-
tance with 278, 38'' 18''' . Position 85° 0' s. preceding.

136. θ (FL. 65^a) Aquilæ borealior.

Sept. 12, Double. About $\frac{2}{3}$ degree n. of θ , in a line parallel
1783. to η and β Aquilæ; a considerable star. Considerably
unequal. L. pr.; S. r.; Distance with 278, 47'' 5''' .
Position 65° 48' s. preceding.

137. χ (FL. 17^a) Cygni borealior.

Sept. 22, Double. About 1 $\frac{1}{2}$ degree n. of χ , towards δ Cygni;
1783. a considerable star. Considerably unequal. L. garnet;
S. r. Distance with 278, 35'' 1''' . Position 57° 3' n.
following.

SIXTH CLASS OF DOUBLE STARS.

VI. 67. η Orionis. FL. 28. In extremo ensis manubrio.

Dec. 27, Double. Excessively unequal. L. w.; S. d. Dis-
1781. tance 1' 50'' 57''' . Position 35° 12' n. following.

VI. 68. η (FL. 28^a) Orionis australior.

Dec. 27, Double. About $\frac{1}{2}$ degree s. of, and a little following η , in a line nearly parallel to δ and θ Orionis. Very unequal. L. r.; S. d. Distance 2' 0" 11'''. Position 7° 54' n. preceding.

69. FL. 14 Arietis. Supra caput.

Dec. 27, Double. Very unequal. L. pr.; S. dr. Distance 1781. 1' 29" 28'''. Position 11° 12' n. preceding.

70. σ Geminorum. FL. 70. Supra caput prioris Π^i .

Dec. 27, Treble. Or two small stars in view; the nearest a little more than 1 minute; the other not much farther.

71. τ Hydræ. FL. 31. Trium in flexu colli australissima.

Jan. 20, Double. Pretty unequal. L. w. inclining to rose colour. S. pr. Distance 1' 1" 40'''. Position 88° 36' n. preceding.

72. Ad FL. 68^{am} Orionis. In fuste.

Jan. 30, Double. The most n. of two that are 1 degree afunder. Very unequal. L. w.; S. dr. Distance with 278, 1' 12" 50'''. Position 41° 0' s. preceding.

73. ϵ Geminorum. FL. 27. In boreali genu præcedentis Π^i .

Feb. 2, 1782. Double. L. w. Distance 1' 50" 30'''. Position 41° 0' s. preceding.

74. FL. 51 Geminorum.

Feb. 2, Has two very obscure stars in view. L. r.; S. r. S. r. 1782. The nearest about $1\frac{1}{2}$, the next 2 minutes. Position of both about 40 or 50° n. following.

75. ω Cancri. FL. 4. Ad primum borealem forcicem.

Feb. 2, Has a very obscure star in view. L. pr. Distance 1782. about $1\frac{1}{4}$ minute. Position about 30° n. preceding. A third about 2'. Position more north.

VI. 76. σ Leonis. FL. 14.

Feb. 2, Double. Extremely unequal. L. rw.; S. r. Distance 1782. $1' 3'' 29'''$. Position $49^{\circ} 36'$ n. following.

77. τ Virginis. FL. 93.

Feb. 4, Double. Very unequal. L. w.; S. dr. Distance 1782. $1' 8'' 22'''$.

78. ζ (FL. 16^{am}) Cancri sequitur.

Feb. 8, Double. About $\frac{1}{2}$ degree following ζ Cancri, towards 1782. η Leonis. Extremely unequal. Distance $1' 3'' 47'''$.

79. ϕ Leonis. FL. 74,

Feb. 9, Double. Very unequal. L. w.; S. pr. Distance 1782. $1' 38'' 35'''$. Position about 10 or 12° n. preceding.

80. FL. 93 Leonis.

Feb. 9, Double. Very unequal. L. w.; S. db. Distance 1782. $1' 10'' 13'''$.

81. FL. 27 Virginis. In ala dextra.

Feb. 9, Double. Extremely unequal. L. w. Distance 1782. $1' 28'' 48'''$.

82. FL. 31 Monocerotis. In media cauda.

Feb. 9, Double. Very unequal. L. rw.; S. db. Distance 1782. $1' 10'' 13'''$. Position $40^{\circ} 0'$ n. preceding.

83. Prope FL. 1^{am} Orionis.

Feb. 9, Double. A few minutes s. following the 1st, towards 1782. the belt of Orion. Considerably unequal. L. pr.; S. r. Distance $1' 20'' 58'''$. Position $88^{\circ} 15'$ n. following.

84. FL. 14 Canis minoris.

Feb. 9, Treble. The nearest extremely unequal. L. rw.; 1782. S. d. Distance $1' 5'' 28'''$. Position $26^{\circ} 24'$ n. following.

VI. lowing. The third forms an angle, a little larger than a rectangle, with the other two. Position f. following.

85. FL. 27 Hydræ.

Feb. 9. Double. Very unequal. L. rw.; S. pr. Distance
1782. With Clafs far. Position about 60° f. preceding.

86. Prima ad σ Cancri. FL. 51.

March 5, Double. Extremely unequal. L. w.; S. d. Posi-
1782. tion n. following.

87. Tertia ad σ Cancri. FL. 64.

March 5, Double. Very unequal. L. rw.; S. dr. Distance
1782. $1' 25'' 45'''$. Position $25^{\circ} 12'$ n. preceding.

88. β Aurigæ. FL. 34. In dextro humero.

March 5, Double. Extremely or excessively unequal. L. fine
1782. bluish w.; S. d. Distance $2' 49'' 6'''$. Position $54^{\circ} 12'$ n. following. A third farther off. Very unequal. About 40 or 50° n. following.

89. FL. 6^* Bootis adjecta.

Mar. 12, Double. Just following the 6th Bootis. A little
1782. unequal. L. r.; S. deeper r. Distance $1' 19'' 39'''$. Position $58^{\circ} 6'$ f. preceding.

90. FL. 61 Virginis.

Apr. 3, Double. Very unequal. L. w.; S. d. Distance
1782. $1' 13'' 15'''$. Position about 75° n. preceding.

91. Prope γ (FL. 24^{am}) Geminorum.

Apr. 15, Double. Three or four minutes n. of γ Geminorum.
1782. Considerably unequal. Both small; too obscure for measures with 7-feet; my 20-feet shews a third star between them with 12 inches aperture.

VI. 92. ξ (FL. 1^a) Capricorni borealior.

June 14, Double. About $\frac{1}{3}$ degree n. of ξ Capricorni. Very
 1782. unequal. Both r. Distance 1' 2'' 16'''. Position
 2° 3' f. preceding.

93. ρ Coronæ borealis. FL. 15. Ad summum.

July 18, Double. Very unequal. L. w.; S. d. Distance
 1782. 1' 27'' 44'''; a little inaccurate. Position 54° 27' f.
 following.

94. λ Coronæ borealis. FL. 12.

July 18, Double. Extremely unequal. L. w.; S. r. Dis-
 1782. tance 1' 35'' 14'''. Position 33° 12' n. following.

95. η Bootis. FL. 8. Trium in sinistro crure borea.

Aug. 3, Double. Extremely unequal. L. w. inclining to
 1782. orange; S. r. Distance about 1 $\frac{1}{2}$ minute. Position
 about 25 or 30° f. following.

96. ζ Persei. FL. 44. In pede sinistro.

Aug. 25, Treble. The nearest extremely unequal. L. w.;
 1782. S. r. Distance 1' 11'' 26'''. Position 66° 36' f. pre-
 ceding. The farthest very unequal. S. r. about 1 $\frac{1}{2}$
 minute. 70 or 75° f. preceding.

97. Secunda ad τ Aquarii. FL. 71. In dextro crure.

Aug. 28, Double. Very unequal. L. r.; S. d. Distance
 1782. 2' 3'' 36''', mean measure. Position 18° 30' n. pre-
 ceding.

98. FL. 46^{am} Tauri sequens ad austrum.

Sept. 7, Double. About 1 $\frac{1}{2}$ degree f. following the 46th,
 1782. nearly in a line parallel to the 38th Tauri and the 42d
 Eridani. A little unequal. L. pr.; S. r. Distance
 1' 2'' 34'''. Position 43° 48' n. preceding. A double
 star of the Vth Class in view, following within 3'.

Equal.

- VI. Equal. Both small and r. Almost similarly situated with the above, but position more n. preceding.
99. *m* Persei. FL. 57. In dextri pedis talo.
 Sept. 7, Double. Pretty unequal. L. r.; S. rw. Distance
 1782. 1' 36'' 27'''. Position $71^{\circ} 51'$ f. preceding.
100. *i* (FL. 32^{am}) Cephei sequens.
 Sept. 30, Double. About $1\frac{1}{4}$ degree n. following *i*, nearly
 1782. towards γ Cephei. A little unequal. Both pr. Distance
 1' 1'' 54'''. Position $8^{\circ} 9'$ n. preceding.
101. δ Tauri. FL. 68.
 Oct. 31, Has two stars in view. The nearest excessively une-
 1782. qual. L. w.; S. d. Distance with 278, 1' 3'' 18'''.
 Position $35^{\circ} 24'$ f. preceding. The farthest extremely
 unequal. S. r. About $1\frac{1}{2}$ minute. Position about 50°
 n. preceding.
102. FL. 5 Lyncis.
 Nov. 13, Double. The largest of a small triangle. Very
 1782. unequal. L. r.; S. garnet. Distance 1' 28'' 20'''.
 Position $2^{\circ} 0'$ n. preceding.
103. ϵ Pegasi. FL. 8.
 Nov. 20, Double. Very unequal. L. pr.; S. dr. Distance
 1782. 1' 30'' 56'''. Position $52^{\circ} 45'$ n. preceding.
104. ζ Bootis. FL. 30. In dextro calcaneo.
 Nov. 29, Has a very obscure star in view. Extremely unequal.
 1782. L. w. inclining to r.; S. d. Distance about $1\frac{1}{2}$ minute.
 Position almost directly preceding.
105. FL. 105 Tauri.
 Dec. 7, Double. Very unequal. L. pr.; S. r. Distance
 1782. 1' 41'' 29'''. Position $18^{\circ} 0'$ f. preceding.

VI. 106. *b* Eridani. FL. 62.

Dec. 7, Double. Considerably unequal. L. w.; S. pr.
 1782. Distance $1' 0'' 26'''$. Position $15^{\circ} 9'$ n. following.

107. FL. 31^a Monocerotis australior et præcedens.

Dec. 21, Double. About $1\frac{1}{4}$ degree f. of, and a little pre-
 1782. ceding the 31st Monocerotis, in a line parallel to ζ Hy-
 dræ and the 31st Monocerotis; the most south of two.
 Considerably unequal. L. r.; S. deeper r. Distance
 about $1\frac{1}{2}$ minute. Position 50 or 60° f. following.

108. θ (FL. 22^a) Hydræ borealior et præcedens.

Dec. 28, Double. About $\frac{1}{2}$ degree n. of, and a little pre-
 1782. ceding θ , nearly in a line parallel to α and θ Hydræ.
 Very unequal. L. r.; S. blackish r. With Clafs far.
 Position 1 or 2° n. preceding. A third star preceding.

109. FL. 22 an 26 Cancri incertum.

Dec. 29, Double. One of the two being lost *, it does not
 1782. appear which is the remaining star. Very unequal.
 L. r.; S. dr.

110. Telescopica ad σ Ceti.

Jan. 2, Double. Looking for σ Ceti, which was invisible to
 1783. the naked eye, I mistook this for it. Pretty unequal.
 L. rw. of about the eighth magnitude; S. r. Distance
 $1' 20'' 52'''$. Position $33^{\circ} 42'$.

111. α Hydræ. FL. 30. Duarum configuarum lucidior.

Jan. 8, Has two stars within about 2 minutes; the nearest
 1783. excessively unequal; the farthest extremely unequal.
 Both f. following.

112. FL. 13 Bootis.

Jan. 8, Double. Extremely unequal. L. r.; S. dr. Dif-
 1783. tance $1' 17'' 58'''$. Position $7^{\circ} 24'$ n. preceding.

* See Phil. Transf. vol. LXXIII. p. 252.

- VI. 113. FL. 4 Virginis.
 Jan. 8. Double. Extremely unequal. L. wr.; S. dr. Distance 1783. $2' 25'' 44'''$; too obscure for accuracy.
114. FL. 69^{am} Orionis præcedens ad austrum.
 Jan. 9. Double. About $\frac{1}{2}$ degree f. preceding the 69th, 1783. nearly towards λ Orionis. Considerably unequal. L. pr.; S. d. Distance $1' 30'' 38'''$. Position $22^\circ 6'$ f. following.
115. FL. 21^{am} Crateris sequens ad austrum.
 Jan. 10. Double. About $2\frac{1}{2}$ degree f. following the 21st, in 1783. a line parallel to the 12th Crateris and 4th Corvi. Very unequal. L. w.; S. r. Position $12^\circ 12'$ n. following.
116. FL. 43 Herculis.
 Jan. 10. Double. Very unequal. L. inclining to garnet; 1783. S. r. Distance $1' 14'' 37'''$. Position $38^\circ 48'$ f. preceding.
117. FL. 12^a Libræ borealior et præcedens.
 Jan. 10. Double. About $1\frac{1}{4}$ degree n. preceding the 12th 1783. Libræ, towards Spica. Very unequal. L. rw.; S. r. Position about 40° f. preceding.
118. FL. 30 Monocerotis.
 Feb. 12. Double. Very or extremely unequal. Distance 1783. $3' 30'' 54'''$ *.
119. ϵ (FL. 18^a) Piscis austrini australior et præcedens.
 July 28. Double. About $1\frac{1}{4}$ degree f. of, and a little preceding ϵ Piscis austrini, in a line from δ Aquarii continued

* On account of the change in the magnitudes of the 1st and 2d Hydræ, this small star may be of use to ascertain whether the 30th Monocerotis, which is situated between them, has any considerable proper motion. See Phil. Trans. vol. LXXIII. p. 255.

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through ϵ Piscis. Pretty unequal. L. dpr. S. dr.

Distance $1' 26'' 58'''$. Position $67^\circ 46'$ f. following.

120. FL. 43^{am} Sagittarii sequens ad austrum.

Aug. 16, Double. Near γ degree f. following the 43d, in a

1783. line parallel to ξ and σ Sagittarii; a considerable star.

Very unequal. Both dr. Distance with 278, $1' 14'' 9'''$. Position $37^\circ 0'$ n. preceding.

121. FL. 12 Lacertæ.

Aug. 18, Double. Very unequal. L. w.; S. r. Distance

1783. with 278, $1' 0'' 10'''$. Position $73^\circ 0'$ n. following.

Add the following errata of the Catalogue of Double Stars in vol. LXXII. to those already noticed at the end of the LXXIId and LXXIIIId volumes.

Page.	Line.	For	Read
133	22	25.	25*.
140	3	$19'' 14'''$	$19'' 26'''$
145	26	$35'' 48'''$	$36'' 9'''$
153	7	π Capricorni. FL. 10.	ϵ Capricorni. FL. 11.
153	11	$33^\circ 42'$	$61^\circ 23'$
156	4	FL. 5.	FL. 4.

