VI. *Catalogue of Double Stars.*

By William Herſchel, *Eſq. F. R. S.*

Read December 9, 1784.

INTRODUCTORY REMARKS.

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 $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{3}$, 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 $\frac{3}{4}$ 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 ¾ 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 1¼ 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 ¼ 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 AR 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 ſurpriſed to find that I place them at a viſible diſtance from each other: for the Newtonian reflectors, on the plan of my 7-feet 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-feet reflector; the 10-feet inſtrument ſhews it alſo very well in fine evenings; the 7-feet 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. Tranſ. 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. 1782. Double. Conſiderably unequal. L. fine w.; S. w. inclining to pale roſe colour. The diſtance or black diviſion between the two ſtars with 278 is about $\frac{1}{4}$ diameter of L.; with 460, near $\frac{1}{2}$ diameter of L. Poſition with 278, 52° 10′ f. preceding.

26. ω Leonis. Fl. 2. Anteriorem pedem dextrum præcedens.
Feb. 8. 1782. A very minute double ſtar. Conſiderably unequal. 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 $\frac{3}{4}$ of the apparent diameter 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° 54′ f. following *.

27. FL. 90 Leonis. Infra eductionem caudæ.

Feb. 9. 1782. Treble. The two neareſt—very unequal. L. w.; S. rw. With 278, $1\frac{1}{4}$ diameter of L; with 460, $1\frac{1}{2}$ diameter of L. Poſition with 278, 61° 9′ f. preceding. The two fartheſt—very unequal. S. duſky r. Diſtance from L. 53″ 43‴. Poſition 35° 12′ f. preceding.

28. γ Leonis. FL 41. In collo lucida.

Feb. 11. 1782. A beautiful double ſtar. Pretty unequal. L. w.; 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 ½ diameter of S.; with 1504, ¾ 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 ¾ 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-feet reflector, 9 inches aperture, power 626, above ½ diameter of S. very diſtinct; with a 20-feet reflector, power 350, too bright an object to be quite diſtinct, though I ſee it very well. Poſition 5° 24′ n. following. A third ſtar preceding. Diſt. 1′51″23‴, pretty accurate for ſo great a diſtance. Poſition 31° 0′ n. preceding. A fourth ſtar preceding the third, and ſomewhat ſmaller.

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

Feb. 17. 1782. Double. About 4′ following the 44th Leonis, which being double in the finder, this is the leaſt of the two. Extremely unequal. L. w. S. d. With 227, 1⅓ diameter of L.; with 460, 2 diameters of L. Poſition 26° 32′ n. following.

I. 30. Secunda ad ι Cancri. FL. 57.

March 5. 1782. Double. Pretty unequal. Both pr. With 227, about ¼ diameter; with 278, ¼ diameter; with 460, about ½ diameter or leſs. Poſition 68° 12′ n. preceding. A beautiful minute object.

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

March 5. 1782. Double. Near 1¼ degree n. preceding the 41ſt Lyncis; towards *n* Urſæ majoris. A little unequal. Both w. With 460, ¼ or at moſt ⅓ diameter, Poſition 51° 21′ ſ. preceding.

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

April 3. 1782. Double. About ¾ degree ſ. preceding the 44th Lyncis; in a line parallel to θ Urſæ majoris and the 39th Lyncis. Very unequal. L. r.; S. bluiſh r. With 227, 1 diameter of L. or 1¼ when beſt; with 460, 1¼ 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° 27′ ſ. preceding.

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

May 12. 1782. Treble. Without great attention, and a conſiderable power, it may be miſtaken for a double ſtar; but the largeſt of them conſiſts of two. Very little unequal. Both w. With 460, ¼ or at moſt ⅓ diameter aſunder; with 932, full ⅓ diameter of L. or near ½ diameter of S. Poſition, with 278, 82° 2′ n. following. For meaſures of the third ſtar ſee the 20th of the ſecond claſs.

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

Tr

I. Treble. The two neareſt very unequal. L. w.; S. colour of pale red blotting paper. With 278, ½ diameter of S. Poſition with 227, 20° 30′ n. preceding. For meaſures of the third ſtar ſee the fourth in the third claſs.

June 11, 1782.

35. Fl. 38. Serpentarii. Dextrum infra pedem.

Double. Very unequal. L. w.; S. d. With 460, 1¼ diameter of L. As the ſituation is too low for 460, I tried 227, but it only ſhewed the ſtar wedge-formed. Poſition 60° 48′ n. preceding.

June 11, 1782.

36. ζ Herculis. Fl. 40. In dextro latere.

A fine double ſtar. Very unequal. L. w.; S. aſh-colour. With 460, leſs than ½ diameter of S.; with 932, 1 full diameter of S.*. Poſition with 811, 20° 42′ n. following.

July 18, 1782.

37. φ (Fl. 11ª.) Herculis borealior et ſequens.

Double. About ⅓ degree n. following φ; in a line 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 1½ diameter of L. Poſition 59° 48′ f. following.

July 22, 1782.

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, 1782. Double. About ½ degree n. preceding the 18th; in 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, ½ diameter of either. Poſition with 278, 9° 42′ n. preceding.

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

Aug. 25, 1782. Double. About ¾ degree ſ. preceding β; in a line parallel to η and α Caſſiopeiæ; the following and largeſt of two very conſiderable ſtars. Very unequal. L. pr.; S. r. With 278, ¼ diameter of S.; with 460, ½, or when beſt, ¾ diameter of S. Poſition 50° 42′ n. preceding.

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

Aug. 28, 1782. Double. About ½ degree n. preceding the 25th; towards α Caſſiopeiæ; the firſt teleſcopic ſtar in that direction. Very unequal. Both r. With 460, ¼ diameter of S.; difficult to be ſeen. Poſition 50° 30′ ſ. following.

41. FL. 31^{a} Draconis borealior.

Aug. 29, 1782. A very minute double ſtar. About ¾ degree n. of the 31ſt; in a line parallel to γ and ξ Draconis; the moſt ſouth and preceding of two. Conſiderably unequal. Both pr. or r. With 227, they appear only as a lengthened or diſtorted ſtar; with 460, ¼ diameter of S.; or in very fine nights ⅓ diameter of S.; with a new ſpeculum and 500, near ½ diameter when beſt; with 932, ½ diameter. Poſition 84° 21′ n. preceding. Requires every favourable circumſtance to be ſeen double.

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

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

43. Ad Fl. 48ᵃᵐ Draconis.

Sept. 3, 1782. A very minute double ſtar. The moſt north of three, forming an arch; or that which is towards ο 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 $\frac{1}{8}$ diameter. Poſition with 500, 88° 24′ n. preceding.

44. Fl. 4. Aquarii. Supra veſtimentum manus ſiniſtræ.

Sept. 3, 1782. A minute double ſtar. Very unequal. Both pr. With 460, almoſt in contact, or at moſt $\frac{1}{6}$ diameter of S. Poſition 81° 30′ n. preceding. A third ſtar of the ſixth claſs in view, n. preceding.

45. μ Aurigæ (Fl. 11ᵃᵐ) præcedens ad auſtrum.

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

46. ν (Fl. 13ᵃᵐ) Aquarii ſequens ad boream.

Sept. 7, 1782. Treble. About $1\frac{3}{4}$ degree n. following ν, in a line 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° 27′ n. preceding. The two fartheſt very unequal. S. pr. Diſtance with 227, 1′ 22″ 42‴. Poſition 35° 51′ n. following.

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

Sept. 27, 1782. A minute double ſtar. About ¾ degree n. preceding 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° 48′ n. preceding. 20-feet reflector, 200. Both w.

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

Sept. 27, 1782. A very minute and beautiful double ſtar. Near ¾ degree 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° 9′ ſ. preceding.

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

Sept. 27, 1782. Double. About 1¼ degree n. following λ, in a line from ζ through λ Cephei continued. Extremely unequal. Both dw. Cannot be ſeen with 278, except with long attention; with 460, 1½ diameter of L. Poſition 85° 48′ n. following; perhaps a little inaccurate.

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

Sept. 30, 1782. Double. About 2⅓ degrees preceding, and a little ſouth of λ Aquarii; a conſiderable ſtar. Very unequal. L. w.; S. dw. With 278, leſs than 1 diameter of L; with 460, 1¼ diameter of L. Poſition with 227,

I. 41° 12′ n. preceding. The meaſure inaccurate on account of the low power, and probably 3° or 4° too ſmall.

51. Quæ ſequitur ι (Fl. 32am) Cephei.

Sept. 30, 1782. Double. About 2¼ degrees n. following ι, towards γ Cephei; a conſiderable ſtar. A little unequal. Both pr. A pretty object with 227; with 460, 1½ diameter nearly. Poſition 3° 36′ ſ. preceding.

52. Parvula Fl. 25tæ Orionis adjecta.

Oct. 2, 1782. Double. A few minutes n. following the 25th Orionis, in a line parallel to *h* Eridani and ε Orionis. Very unequal. L. aſh. w.; S. dw. With 460, 1 diameter of L. Poſition 52° 48′ n. preceding.

53. Parvula Fl. 30mæ Orionis adjecta.

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

54. τ (Fl. 20am) Orionis præcedens. In malleolo ſiniſtri cruris.

Oct. 4, 1782. Double. Near ¾ degree preceding τ, in a line from 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° 42′ n. preceding; a little inaccurate.

55. Fl. 8am Tauri præcedens ad boream.

Oct. 9. 1782. Double. About 1⅓ degree n. preceding the 8th 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° 48′ ſ. following.

56. FL. 54^{am} Ceti ſequens ad auſtrum.

Oct. 12, 1782. Double. About $\frac{1}{3}$ degree ſ. following the 54th, towards δ Ceti. Nearly equal. Both r. With 227, about 1 diameter; with 460, about $1\frac{1}{2}$ diameter. Poſition 87° 39′ n. following.

57. FL. 70^{am} et 67^{am} Orionis præiens.

Oct. 12, 1782. Multiple. In a ſpot which appears nebulous in the 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° 48′ ſ. following..

58. δ Lyræ (FL. 12^{am}) ſequens. Inter eductionem cornuum.

Oct. 24, 1782. Double. About $\frac{1}{2}$ degree following the 12th, in a 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° 0′ n. preceding.

59. Ab ι (FL. 18^{a}) Lyræ β verſus.

Oct. 24, 1782. Double. The moſt ſouth of two very ſmall teleſcopic 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° 0′ ſ. 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, 1782. Double. About ¾ degree ſ. following λ, in a line parallel to α and γ Lyræ; a very ſmall teleſcopic ſtar. Extremely unequal. Both dr. With 227, 1 full diameter of L; with 460, near 2 diameters of L. Poſition 16° 48′ n. preceding.

61. Præiens Fl. 1ᵃᵐ Equulei.

Oct. 26, 1782. A minute double ſtar. About ¾ degree n. preceding the 1ſt Equulei, in a line parallel to α Equulei and γ Aquilæ; a large ſtar. Very unequal. Both pr. With 460, ½ diameter of S. Poſition 18° 24′ n. preceding. A pretty object, but requires fine weather.

62. Sequitur Fl. 2ᵃᵐ Equulei.

Oct. 29, 1782. Double. About ¾ degree ſ. following the 2d Equulei, in a line parallel to δ Delphini and δ Equulei. Conſiderably unequal. Both r. With 460, 1¼ or 1½ diameter of S. Poſition 35° 9′ ſ. preceding.

63. γ Equulei (Fl. 5ª) auſtralior.

Oct. 29, 1782. Double. Full ½ degree ſ. of γ, in a line from the 5th through the 6th Equulei continued. Equal. Both dr. With 227, about ¼ diameter ſcarce viſible; with 460, about ½ diameter. Poſition 5° 57′ ſ. preceding.

64. π Arietis. Fl. 42. In poplite.

Oct. 29, 1782. Treble. Exceſſively unequal. L. w; S. both mere points. With 227, neither of the ſmall ſtars can be ſeen, except with conſiderable and long continued attention, when they alſo appear; the neareſt with this power is ¾ or ⅘ diameter of L.; with 460, 1½ or 1¾ 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° 19′ ſ. following; as exact as the obſcurity will permit.

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

Nov. 4, 1782. Double. ⅓ degree n. following β Sagittæ, towards 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 1¾ or 2 diameters of L. Poſition 14° 0′ n. preceding. A third ſtar in view, of the 5th or 6th claſs.

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

Nov. 4, 1782. Double. About 1¼ degree ſ. preceding β, in a line from ν continued through β Draconis. Pretty unequal. Both pr. With 460, 1½ or 1¾ diameter of L. Poſition 2° 24′ ſ. preceding.

67. Nebulam Aurigæ pedem dextrum ſequentem, præcedens.

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

68. Parvula FL. 10ª Orionis quam proximè adjecta.

Nov. 5, 1782. Double. The ſmall ſtar not many minutes from the 10th Orionis. A little unequal. Both whitiſh. With 460, near 1 diameter. Poſition 84° 54′ ſ. following; a little inaccurate on account of the difficulty of ſeeing the ſtars well.

69. In Lyncis pectore.

Nov. 13, 1782. Double. About 3 degrees ſ. preceding the 19th Lyncis, in a line drawn from the 19th Lyncis to τ Aurigæ; 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, ¾ dia-

I. ¾ diameter; with 460, 1¼ or near 1½ diameter. Poſition 77° 0′ f. following.

70. ζ (Fl. 123ª) Tauri borealior et præcedens.

Nov. 13, 1782. 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, 1¾ diameter of L. Poſition 36° 24′ f. preceding.

71. Fl. 44ªᵐ Urſæ majoris præcedens ad auſtrum.

Nov. 19, 1782. Double. Nearly in the interſection of a line from β Urſæ majoris to the 39th Lyncis, croſſed by one from ψ to υ Urſæ majoris; the laſt line ſhould bend a little towards ψ Urſæ majoris. A little unequal. Both whitiſh. With 460, near 2 diameters of S. Poſition 2° 6′ n. following.

72. Fl. 65. Urſæ majoris.

Nov. 20, 1782. Double. Exceſſively unequal. L. pr.; S. a point. Not viſible with 227, nor hardly to be ſuſpected unleſs it has been firſt ſeen with a higher power; with 460, 1¾ diameter of L. or, when long viewed, full 2 diameters of L. Poſition 53° 45′ n. following. A third ſtar in view. Equal to L. Colour rw. Diſtance 1′ 0″ 4‴. Poſition 22° 21′ f. following.

73. β (Fl. 6ª) Arietis borealior et præcedens.

Nov. 22, 1782. Double. About 1¾ degree n. preceding β Arietis, towards β Andromedæ; a conſiderable ſtar. Very unequal. L. r.; S. deeper r. With 227, about ¾ diameter of L.; with 460, full 1¼ or almoſt 1½ diameter of L. when beſt. Poſition 77° 24′ f. following.

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

Dec. 22, 1782. Double. About $\frac{2}{3}$ degree n. preceding 39 Arietis, 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° 36′ n. preceding.

75. FL. 26ᵗᵐ Orionis præcedens ad auſtrum.

Jan. 9, 1783. Double. About $\frac{1}{4}$ degree ſ. preceding the 26th, in a line parallel to δ and β Orionis; the fartheſt of two; or $\frac{3}{4}$ degree ſ. preceding the 30th in the ſame direction. Nearly equal. Both w. or rw. With 460, perhaps a diameter. Poſition 89° 36′ n. preceding; but not very accurate.

76. In pectore Lyncis.

Jan. 23, 1783. Double. Not eaſy to be found. A line from the 19th Lyncis to υ Geminorum croſſed by one from θ Urſæ 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, $\frac{1}{4}$ diameter of S. Poſition 0° 0′ preceding. A third large ſtar in view. Diſtance 1′ 7″ 46‴. Poſition 3° 42′ ſ. preceding.

77. α (FL. 7ª) Crateris borealior.

Jan. 31, 1783. Double. Near $2\frac{3}{4}$ degrees north of α Crateris; a 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

I. with 460, near 1 diameter; with 625, a little more than 1 diameter. Poſition 82° 24′ n. following.

78. Fl. 11[a] Libræ borealior.

Jan. 31, 1783. Double. Near 2½ 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° 24′ n. preceding, or ſ. 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° 36′ ſ. following.

80. Fl. 81 Virginis.

Feb. 7, 1783. Double. Equal. Both pr. With 227, near ½ diameter; with 460, ⅔ diameter. Poſition 41° 12′ n. following or ſ. preceding.

81. π Serpentis (Fl. 44[am]) præcedens ad auſtrum.

Mar. 7, 1783. Double. About 1¼ degree ſ. preceding π, towards $\varkappa$; the moſt north of two. A little unequal. Both r. With 460, 1½ diameter of L. Poſition 49° 48′ ſ. 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° 48′ ſ. preceding.

82. Fl. 49 Serpentis.

Mar. 7, 1783. Double. The moſt north and following of two ſtars. A little unequal. Both pr. With 227, ¼ or ⅓ diameter, and a very minute and beautiful object; with 460, ¾ diameter. Poſition 21° 33′ n. preceding.

I. 83. λ Ophiuchi. FL. 10. In ancone ſiniſtri brachii.

Mar. 9, 1783. A very beautiful and cloſe double ſtar. L. w.; S. 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° 30′ n. following.

84. FL. 50ª Aurigæ auſtralior.

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

85. FL. 36ªᵐ Lyncis ſequens ad auſtrum.

Mar. 24, 1783. Double. Near $\frac{1}{2}$ degree ſ. following the 36th Lyncis, in a line parallel to the 31ſt Lyncis and *n* Urſæ majoris; of two the neareſt to the 31ſt Lyncis. Conſiderably 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° 57′ n. following.

86. FL. 105ª Herculis borealior.

Mar. 27, 1783. Double. One full degree n. of the 105th Herculis, 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° 24′ n. preceding.

87. *q* Ophiuchi. FL. 73.

April 27, 1783. A very minute double ſtar. Conſiderably unequal. L. r. 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° 48′ f. preceding.

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

April 28, 1783. The cloſeſt of all my double ſtars; can only be ſuſpected 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° 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, 1783. Double. About $\frac{2}{3}$ degree preceding, and a little north 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° 30′ f. following.

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

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

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

Aug. 7, 1783. Double. About $\frac{1}{3}$ degree n. preceding γ, in a line 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° 18′ n. preceding.

92. π Aquilæ. FL. 52. Duarum in ſiniſtro humero ſequens.

Aug. 27, 1783. A minute pretty double ſtar. A little unequal. Both pr. With 460, $\frac{1}{2}$ diameter of L. or near $\frac{3}{4}$ diameter of S. Poſition 34° 24′ f. following.

93. FL. 62^{am} Aquilæ præcedens ad boream.

Sept. 12, 1783. A minute double ſtar. About $\frac{3}{4}$ degree n. preceding 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° 9′ n. preceding.

94. δ Cygni. FL. 18. In ancone alæ dextræ.

Sept. 20, 1783. Double. Very unequal. L. fine w.; S. aſh colour 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 and thereby increaſed the interval. Poſition 18° 21′ n. following; perhaps a little inaccurate.

95. FL. 33^{am} Cygni ſequens ad auſtrum.

Sept. 22, 1783. Double. Full $1\frac{1}{3}$ degree f. following the 33d, towards ξ 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° 15′ n. preceding.

96. η (FL. 21^{am}) Cygni ſequens ad auſtrum.

Sept. 23, 1783. Treble. Full $1\frac{3}{4}$ degree n. following η, in a line parallel to β and λ Cygni. The two neareſt conſiderably unequal.

I. unequal. Both pr. With 460, 1 diameter of S. or ¼ diameter of L. Poſition 89° 18′ ſ. following. The two fartheſt conſiderably unequal; the colour r. Diſt. . . . . Poſition 56° 3′ n. preceding.

97. FL. 51^{am} Cygni ſequens.

Sept. 24, 1783. A minute double ſtar. About 2½ 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, ½ diameter of S. and beautiful; with 460, ¾ diameter of S. Poſition 46° 24′ n. following.

SECOND CLASS OF DOUBLE STARS.

II. 39. Procyonem juxta.

Feb. 2, 1782. Double. About 2 degrees ſ. 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° 28′ ſ. 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, 1782. Double. A little unequal. Both rw. With 227, near 2 diameters; with 460, 2½ diameters of L. Poſition 56° 42′ n. following.

41. * Prima ad υ Cancri. FL. 24.

Feb. 2, 1782. Double. Conſiderably unequal. Both pr. With 227, 1½ diameter of L.; with 460, 4 diameters of L. Poſition 32° 9′ n. following.

42. E teleſcopicis *k* Virginis precedentibus †.

Feb. 6, 1782. Double. About 1¼ degree f. preceding *k* Virginis, 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° 24′ f. following.

43. FL. 43^am^ Leonis præcedens ad auſtrum. In dextro genu.

Feb. 17, 1782. Double. Near ⅔ degree f. preceding the 43d, in a line parallel to α and the 14th Leonis. Very unequal. L. w.; S. d. With 227, near 2¼ diameters of L. when beſt. Poſition 85° 2′ n. following.

44. o Virginis. FL. 84. Verſus finem alæ dextræ.

Feb. 17, 1782. Double. Extremely unequal. L. w. inclining to r.; S. d. Requires attention to be ſeen with 227; with 460, 2½ diameters of L. Poſition, with 278, 29° 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, 1782. Double. A little unequal. Both w. With 227, 1½ or near 1¾ diameter. Position 57° 0′ n. following.

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

April 15, 1782. Double. About 1¾ degree from the 42d Comæ towards υ Bootis; the moſt ſouth of a teleſcopic equilateral triangle. Exceſſively unequal. L. pr.; S. d. With 278, 2½ diameters of L.; not ſo well to be ſeen with higher powers. Poſition 6° 42′ f. following. A third ſtar preceding, above 1′.

47. Fl. 2 Comæ Berenices.

April 18, 1782. Double. Conſiderably unequal. L. rw.; S. pr. With 278, 2 diameters of L; with 460, above 2 diameters of L. Poſition 27° 42′ f. preceding.

48. Prope Fl. 16^{am} Aurigæ.

Aug. 28, 1782. A minute double ſtar. Leſs than ¼ degree f. preceding 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, 1½ or, when beſt, 1¾ diameter of L. Poſition 15° 48′ n. following.

49. *o* (Fl. 110^{a}) Piſcium borealior. In lino boreo.

Sept. 3, 1782. Double. About ½ degree n. of, and a little preceding 110th, towards η Piſcium. A little unequal. Both wr. With 460, about 3 diameters of L. Poſition 59° 6′ n. preceding. A third ſtar in view, about 1¾ min.

50. Fl. 38. Piſcium. In auſtrino lino.

Sept. 4, 1782. Double. Pretty unequal. Both pr. With 227, full 2 diameters of L.; with 460, about 4 diameters of L. Poſition 25° 3′ f. preceding.

II. 51. ρ Capricorni. FL. 11. Trium in roſtro ſequens.

Sept. 5, 1782. Double. Very unequal. Both rw. With 460, 1½ diameter of L. Poſition 84° 0′ f. following. A third ſtar in view.

52. ο (FL. 40am) Perſei præcedens ad boream.

Sept. 7, 1782. Double. Almoſt ½ degree preceding the 40th, in a line parallel to ζ and the 38th Perſei. Equal. Both w. With 227, nearly 2 diameters. Poſition 8° 24′ n. preceding.

53. FL. 12am Camelopardali præcedens.

Sept. 7, 1782. Double. Leſs than ¼ degree preceding the 11th and 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 3½ diameter of L. Poſition 18° 33′ f. following; a little inaccurate.

54. Quæ præcedit ε (FL 74am, oculum boreum) Tauri.

Sept. 7, 1782. Double. Near ½ degree f. preceding ε, in a line parallel to α and γ Tauri; a ſmall ſtar. Extremely unequal. L. rw.; S. d. With 460, above 3 diameters of L. Poſition 68° 42′ f. preceding.

55. FL. 4â Ceti auſtralior et ſequens.

Sept. 9, 1782. Double. About 1 degree f. following the 4th and 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° 42′ n. preceding.

56. β (FL. 6am) 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° 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 2½ degrees following $\varkappa$, in a line parallel
1782. to α and η Aquarii. The neareſt a little unequal. Both r. With 460, 2½ diameters of L. Poſition 25° 51′ ſ. preceding. The two fartheſt a little unequal. Of the 5th claſs. About 50° or 55° ſ. following.

58. FL. 56^{a} Ceti auſtralior et ſequens.
Sept. 27, Double. About ¾ degree ſ. following the 56th, in a
1782. line parallel to η and τ Ceti. Conſiderably unequal. Both dw. With 278, 1½ diameter of L. Poſition 25° 12′ n. preceding; too low for accuracy.

59. ϱ (FL. 46^{am}) Aquarii ſequens ad auſtrum.
Sept. 30, Double. About 2 degrees ſ. 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, 2½ or 2¾ diameter of L. Poſition 61° 12′ n. preceding.

60. ξ (FL. 5^{am}) Canis majoris ſequens ad boream.
Sept. 30, Double. About ½ 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.; ſ. d. With 227, 1¼ diameter. Poſition 67° 36′ n. preceding.

61. ϖ (FL. 47^{am}) Orionis ſequens ad auſtrum.
Oct. 2, Treble. About 1½ degree ſ. following ϖ in a line
1782. parallel to φ and ω Orionis; the ſmalleſt and moſt ſouth of three forming an arch. The two neareſt extremely unequal.

H. unequal. L. dw.; S. a mere point. With 227, 1½ or 1¾ diameter of L. Poſition 4° 54′ n. following; too obſcure for accuracy. The two fartheſt extremely unequal. S. a mere point. Of the fourth claſs. Poſition about 50° ſ. following.

62. FL. 3ᵉ Pegaſi adjecta.

Oct. 4, 1782. Double. In a line with, and north of, the two ſtars that are about the place of the third Pegaſi. A little unequal. Both duſky r. With 227, about 3 diameters of S. Poſition 88° 24′ n. preceding; perhaps a little inaccurate.

63. FL. 2ᵃᵐ et 4ᵃᵐ Navis præcedens.

Oct. 12, 1782. Multiple. Near 2 degrees preceding the 2d and 4th Navis; the middle one of three. One of the multiple is double. Nearly equal. Both w. or aſh colour. With 227, about 2½ diameter, and not leſs than 20 ſtars more in view; with 460, about 3 diameters. Poſition 30° 12′ n. preceding.

64. *g* (FL. 81ᵃᵐ) Geminorum ad auſtrum ſequitur.

Oct. 13, 1782. Double. About ½ degree ſ. following *g*, in a line from ζ continued through *g* Geminorum nearly; the neareſt and largeſt of two. Very unequal. L. r.; S. bluiſh r. With 227, above 3 diameters of L. Poſition 4° 9′ n. preceding.

65. Pollucem ſequens ad boream.

Oct. 13, 1782. Double. Full ¾ degree n. following β, in a line from 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 2½ or near 3 diameters of L. and 5 other ſtars in view; with 460, above 3 diameters of L. Poſition 89° 12′ n. following.

II. 66. Juxta γ Delphini.

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

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

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

68. Proximè ϱ Lyræ.

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

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

Oct. 24, 1782. Double. Near $\frac{1}{2}$ degree n. following the 4th Cygni, 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° 12′ n. following.

70. *των* 8 teleſcopicarum $\varkappa$ (Fl. 15.) Sagittæ ſequentium ultima.

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

II. meter of L.; with 460, above 2 diameters of L. Poſition 72° 57′ n. following.

71. FL. 58ª Aurigæ auſtralior.

Nov. 6, 1782. Multiple. About ¾ degree ſ. of the 58th Aurigæ, in 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 2½ diameter of L. Poſition 44° 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. 13ª Lyncis auſtralior.

Nov. 13, 1782. A pretty double ſtar. About 1¼ degree ſ. of the 13th Lyncis, towards θ Geminorum; a conſiderable ſtar. Nearly equal. Both pr. With 227, full 2½ diameters; with 460, almoſt 4 diameters. Poſition 11° 0′ ſ. preceding.

73. FL. 21ª Urſæ majoris.

Nov. 17, 1782. Double. Very unequal. Both rw. With 227, 2¼ diameter of L.; with 460, above 3. Poſition 36° 45′ n. preceding.

74. ν (FL. 4ª) Crateris borealior.

Nov. 20, 1782. Treble. Near 1 degree n. preceding ν Crateris, towards α Leonis. The two neareſt equal. Both dw. With 227, 2½ or 3 diameters. Poſition 71° 33′ n. following. The fartheſt larger than either of the two other ſtars. Of the ſixth claſs. Poſition about 68 or 69° ſ. preceding the double ſtar.

II. 75. Fl. 118 Tauri.

Dec. 7, 1782. Double. A little unequal. L. w.; S. w. inclining to r. With 278, 2½ diameter of L.; with the ſame power by the micrometer 4″ 41‴; more exactly with 625, 5″ 2‴. Poſition 77° 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. 63ª) Arietis auſtralior et præcedens.

Dec. 23, 1782. Double. About 1 degree ſ. preceding τ Arietis, 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′ ſ. preceding.

77. * Fl. 17 Hydræ.

Dec. 28, 1782. Double. The largeſt of two. A little unequal. Both w. With 227, 2¼ diameter of L.; with 460, 1¼ diameter. Poſition 90° 0′ north.

78. χ (Fl. 63ᵃᵐ) Leonis ſequens ad auſtrum.

Jan. 1, 1783. Double. About ⅓ degree ſ. following χ, towards τ Leonis; the ſmalleſt of two. Very or extremely unequal. L. r.; S. d. With 227, 3 full diameters of L. Poſition 75° 21′ ſ. following.

79. Fl. 39 Bootis.

Jan. 8, 1783. A pretty double ſtar. A little unequal. Both pr. With 227, near 1½ diameter of L.; with 460, near 2 diameters of L. Poſition 38° 21′ n. following.

80. *d* (Fl. 40ᵉ) Eridani adjecta.

Jan. 31, 1783. Double. About 1½ min. ſ. following *d* Eridani. Very unequal. Both dr. With 227, hardly viſible; with 460, very obſcure. Poſition 56° 42′ n. preceding.

II. Diſtance of L. from *d* Eridani, with 227, 1′ 21″ 47‴. Poſition of L. 17° 53′ ſ. following *d* Eridani.

81. FL. 49^{am} Eridani ſequens.

Jan. 31, 1783. Double. Near 1 degree following the 49th Eridani, towards δ Orionis. Very unequal. Both dw. With 227, full 1 diameter of L.; with 278, 1½ or 1¾ diameter of L.; with 460, 2½ or 3 diameters of L. Poſition 51° 36′ n. preceding.

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

Feb. 3, 1783. Double. Near 1 degree ſ. following the 31ſt, in a line from υ continued through the 31ſt Bootis; the moſt ſouth of two. A little unequal. L. w.; S. dw. With 227, about 1¾ diameter of L.; with 460, about 3 diameters of L. Poſition 1° 0′ ſ. following. A third ſtar in view, 20° or 30° n. preceding.

83. FL. 22^{d} Andromedæ borealior.

Feb. 26, 1783. Double. Within ½ degree north of the 22d, in a line parallel to the 19th and 16th Andromedæ; the following and ſmalleſt of two. Conſiderably unequal. L.w.; S. d. With 227, 1¼ or 1½ diameter of L.; with 460, more than 2 diameters of L. Poſition 5° 48′ n. following.

84. FL. 65 Piſcium.

Feb. 27, 1783. Double. Nearly equal. Both pr. With 227, near 1½ diameter of L.; with 460, full 2 diameters. Poſition 30° 57′ n. preceding.

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

Mar. 4, 1783. Double. About 1½ degree n. following *b*, nearly in a line from the 32d continued through the 36th Serpentis. 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° 9′ n. preceding.

86.

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

Mar. 7, 1783. Double. About 1½ degree ſ. preceding the 49th, in a line with the 49th and another between this and the 49th Serpentis, each nearly at ¾ degree diſtance. Very unequal. L. dw.; S. d. With 227, 2 diameters, or 2¼ when beſt. Poſition 53° 9′ ſ. following.

87. Fl. 29^{a} et 30^{a} Monocerotis auſtralior.

Mar. 8, 1783. Multiple. It makes nearly an equilateral triangle 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° 12′ ſ. following.

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

Mar. 8, 1783. Double. About ½ degree ſ. preceding the 51ſt, towards the 13th Serpentis. Very or extremely unequal. Both r. With 227, 2¼ diameter of L. when beſt; with 460, near 3 diameters of L. Poſition 44° 45′ n. preceding.

89. Ad Genam Monocerotis.

Mar. 26, 1783. Double. About 1 degree n. preceding the 12th Monocerotis, in a line parallel to α and λ Orionis; the ſmalleſt and moſt north of two. Conſiderably unequal. L. r.; S. bluiſh r. With 227, near 4 diameters of L. when beſt. Poſition 50° 51′ n. following.

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

Mar. 27, 1783. Double. About 1¾ degree n. preceding the 100th, 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° 9′ ſ. following.

II. 91. ϰ (FL. 15ª) Sagittæ auſtralior.

Apr. 5, 1783. Treble. About twice as far ſouth of ϰ Sagittæ, as ϰ and the ſtar near it are from each other; a ſmall ſtar. The two neareſt very unequal. L. pr.; S. r. With 227, 1½ diameter of L. Poſition 74° 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 ½ 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, 1½ or 2 diameters of L. Poſition 22° 42′ f. following. Very inaccurate.

93. ε (FL. 13ª) Aquilæ auſtralior.

May 25, 1783. Double. Near ¼ 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° 0′ n. preceding.

94. ι (FL. 17ªm) Andromedæ præcedens ad boream.

Aug. 19, 1783. Double. About 1⅓ 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, 2½ diameters of L. Poſition 34° 24′ n. preceding.

95.

II. 95. η (Fl. 55^{a}) Aquilæ auſtralior.

Sept. 12, 1783. Double. About $\frac{1}{3}$ degree ſouth of η, in a line from 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° 3′ n. preceding.

96. θ (Fl. 65^{a}) Aquilæ borealior et ſequens.

Sept. 12, 1783. Double. About $1\frac{3}{4}$ degree n. following θ Aquilæ, 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° 12′ f. preceding.

97. ζ (Fl. 64^{am}) Cygni præcedens.

Sept. 15, 1783. Treble. About 1 degree preceding ζ, towards the 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° 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, 1783. Double. Very unequal. L. r.; S. bluiſh r. With 278, $1\frac{1}{2}$ diameter of L.; with 460, $2\frac{1}{2}$ diameters of L. Poſition 31° 48′ n. following.

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

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

100. Fl. 51^{a} Cygni borealior et ſequens.

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

II. pretty conſiderable ſtar. Very unequal. L. w.; S. inclining to blue. With 278, extremely unequal. and 1½ diameters of L. when beſt; requires attention to be ſeen well with this power; with 460, full 2 diameters of L. or 2¼ when beſt, otherwiſe much leſs. Poſition 15° 51′ n. following.

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

Sept. 26, 1783. Double. About 2 degrees n. preceding the 57 ::, 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, 1⅔ diameter of L.; with 460, 2½ diameters of L. Poſition 67° 15′ n. preceding.

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

Sept. 27, 1783. Double. About ½ degree ſ. preceding *e*, in a line 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, 2½ diameters of L. Poſition 52° 24′ ſ. following.

THIRD CLASS OF DOUBLE STARS.

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

Dec. 27, 1781. Double. Extremely unequal. L. rw.; S. r. Diſtance, with 460, 7″ 48‴. Poſition 89° 54′ ſ. following. Two more in view, the neareſt of them perhaps 40″; they form a rectangle nearly.

48.

III. 48. *r* (Fl. 61am) Geminorum præcedens ad boream.

Dec. 27, 1781. Double. About ½ degree n. preceding *r*, in a line parallel to *ν* and the 60th Geminorum; near two degrees from *δ*. A little unequal. Both pr. Diſtance 6″ 15‴. Poſition 43° 54′ n. following.

49. *δ* (Fl. 4am) Hydræ præcedens ad boream.

Jan. 20, 1782. Double. About 1¼ degree n. preceding *δ*, in a line 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, 1782. Treble. The two neareſt extremely unequal. L. w.; 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, 1782. Double. Extremely unequal. L. rw.; S. r. Diſtance 14″ 38‴; a little inaccurate. Poſition 47° 33′ n. preceding.

52. Fl. 10am Orionis ſequens.

Feb. 17, 1782. Double. Above ¾ deg. n. following the 10th, towards *ω* Orionis. Conſiderably unequal. Both pr. Diſtance with 278, 13″ 40‴. Poſition 37° 3′ n. following.

53. *γ* Virginis borealior et ſequens.

Feb. 17, 1782. Double. Near 2½ degrees n. following *γ*, in a line 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, 1782. Double. Extremely unequal. L. w.; S. r. Diſtance 7″ 56‴. Poſition 13° 0′ n. preceding.

55. υ (FL. 18^{am}) Coronæ borealis ſequens ad boream.

June 14, 1782. Double. Conſiderably unequal. L. dr.; S. d. Diſtance with 227, about 3 or 4 diameters of L. being too obſcure for the micrometer. Poſition 53° 48′ f. preceding. Diſtance of the largeſt of the two from υ Coronæ 1′ 18′ 8‴. Poſition of the ſame with υ, 64° 24′ n. following.

56. S (FL. 72^{a}) Serpentarii borealior.

June 16, 1782. Double. About 2½ degrees n. of the 72d Serpentarii; a conſiderable ſtar. A little unequal. Both r. Diſtance 7″ 37‴. Poſition 9° 42′ f. preceding. A third ſtar about 1′ preceding.

57. In Anſeris corpore.

Aug. 11, 1782. A pretty double ſtar. About ⅔ degree n. of a cluſter of ſtars formed by the 4th, 5th, 7th, 9th Anſeris; in a line parallel to the 6th Vulpeculæ and β Cygni; that of two which is fartheſt from the cluſter. A little unequal. Both r. Diſtance 7″ 1‴. Poſition 58° 36′ f. following.

58. θ Perſei. FL. 13. In ſiniſtro humero.

Aug. 20, 1782. Double. Extremely unequal. L. w. inclining to r.; S. d. Diſtance with 932, 13″ 31‴. Poſition 20° 0′ n. preceding. A third ſtar, very unequal, within 1′; towards the ſouth.

59. Ad FL. 19^{am} Perſei. In capite.

Aug. 20, 1782. Double. It is perhaps the 19th Perſei removed, or more likely a ſtar not marked in FLAMSTEED's Catalogue; the 19th being either vaniſhed, or miſplaced by FLAMSTEED.

III. FLAMSTEED. Pretty unequal. L. bw.; S. br. Diſtance 12″ 2‴. Poſition 0° 0′ following.

60. Secunda ad *p* Perſei. FL. 20. Illas in larva præcedit.

Aug. 20, 1782. Double. Extremely unequal. L. rw.; S. d. Diſtance 14″ 2‴. Poſition 30° 30′ ſ. following.

61. Sub finem caudæ Draconis.

Aug. 29, 1782. Double. Of two conſiderable ſtars, about half-way 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° 42′ n. preceding.

62. FL. 35 Piſcium. In lino auſtrino.

Sept. 4, 1782. Double. Conſiderably unequal. L. rw.; S. pr. Diſtance 12″ 30‴. Poſition 58° 54′ ſ. following.

63. Prope FL. 65^{am} Sagittarii. Ad extremum paludamentum.

Sept. 5, 1782. Double. Near ½ degree ſ. following the 65th Sagittarii towards *ζ* Capricorni. Very unequal. Too low for colours; perhaps dw. Diſtance 14″ 20‴. Poſition 73° 48′ n. following.

64. FL. 26 Aurigæ. In dextri cruris involucro.

Sept. 5, 1782. Double. Very unequal. L. rw.; S. r. Diſtance 13′ 25‴. Poſition 2° 36′ n. preceding.

65. *e* (FL. 58^{a}) Perſei auſtralior. In dextri pedis talo.

Sept. 7, 1782. Double. About 10′ ſouth of the 58th Perſei, in a line parallel to *ζ* and *ι* Aurigæ; a ſmall teleſcopic ſtar. Very unequal. L. r.; S. d. Diſtance with 625, 11″ 22‴. Poſition 48° 54′ n. following. Very inaccurate: windy.

66. *e* Tauri. FL. 30. In dextri humeri ſcapula.

Sept. 7, 1782. Double. Extremely unequal. L. w.; S. r. Diſtance 11″ 16‴; inaccurate on account of obſcurity. Poſition 17° 15′ n. following.

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

Sept. 7, 1782. Double. Exceſſively unequal. L. w.; S. d. With 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° 21′ n. preceding.

68. η (FL. 17[4]) Arietis auſtralior et præcedens.

Sept. 10, 1782. Double. Full 1 degree ſouth preceding η, in a line parallel to α and γ Arietis. Very unequal. L. pr.; S. d. Diſtance 8″ 5‴. Poſition 55° 42′ f. following.

69. Prope FL. 64[am] Aquarii. In dextro femore.

Sept. 27, 1782. Double. Full 1½ degree n. following the 64th ::, 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° 3′ f. following.

70. ϰ Cephei. FL. 1. In dextro crure.

Sept. 27, 1782. A beautiful double ſtar. Extremely unequal. L. fine w.; S. r. Diſtance 5″ 47‴. Poſition 32° 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 viſibile, 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, 1782. Treble. About 1½ degree preceding the *garnet ſtar* *, in a line parallel to ι and ζ Cephei. The two neareſt very unequal. L. w.; S. db. Diſtance 11″ 35‴. Poſition 35° 24′ ſ. following. The two fartheſt conſiderably unequal. S. db. Diſtance 18″ 37‴. Poſition 73° 57′ n. preceding. The place of the *garnet ſtar*, reduced to the time of FLAMSTEED's Catalogue, is about ☌ 21 h. 45′. P.D. 32°½.

72. Tiaram Cephei præcedens.

Sept. 27, 1782. Double. Within ¼ degree of the foregoing treble ſtar. Conſiderably unequal. L. rw.; S. pr. Diſtance 13″ 7‴. Poſition 32° 0′ n. following.

73. FL. 25ª Ceti auſtralior et ſequens.

Oct. 2, 1782. Double. About ¾ degree ſ. following the 25th, in a line parallel to θ and τ Ceti. Pretty unequal. Diſtance with 278, 14″ 50‴. Poſition 89° 12′ ſ. preceding; perhaps a little inaccurate.

74. FL. 18ª Pegaſi auſtralior. Ad oculum ſiniſtrum.

Oct. 4, 1782. Double. About ¾ degree ſ. preceding the 18, in a 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° 33′ n. following.

75. Ad Genam Monocerotis.

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

76. τῶν quatuor teleſcopicarum, δ Orionis ſequentium, penultima.

Oct. 4, 1782. Double. About ¾ degree n. following δ, in a line parallel to τ and ι Orionis. Extremely unequal.

* Phil. Tranſ. 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, 1782. Double. About ¾ degree ſ. 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′ ſ. following.

78. FL. 13^{am} Tauri præcedens ad auſtrum.

Oct. 9, 1782. Double. About 1¾ degree ſ. 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, 1782. Double. About ⅔ 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′ ſ. preceding.

80. σ (FL. 76^{am}) Ceti præcedens. In ſiniſtro crure.

Oct. 13, 1782. Double. Full 1½ degree preceding σ, towards τ Ceti. Extremely unequal. L. rw.; S. br. Diſtance 11″ 16‴. Poſition 22° 24′ n. preceding.

81. Parvula à ζ Lyræ ε verſus.

Oct. 19, 1782. Double. Above ½ degree from ζ towards ε Lyræ. Extremely unequal. L. r.; S. dr. Diſtance 9″ 27‴ full meaſure. Poſition 66° 18′ n. following.

82. FL. 41 Aurigæ.

Nov. 6, 1782. A pretty double ſtar. Conſiderably unequal. L. w.; S. grey inclining to r. Diſtance 8″ 32‴. Poſition 80° 0′ n. preceding.

III. 83. Fl. 19 Lyncis.

Nov. 13, 1782. Double. A little unequal. L. rw.; S. bw. Diſtance 14″ 11‴. Poſition 46° 54′ ſ. preceding.

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

Nov. 13, 1782. Double. Very or extremely unequal. L. wr.; S. r. Diſtance 7″ 11‴. Poſition 48° 12′ n. preceding.

85. Fl. 2 Canum Venaticorum.

Nov. 13, 1782. Double. Very unequal. L. r.; S. bluiſh. Diſtance 12″ 12‴. Poſition 11° 0′ ſ. preceding.

86. Fl. 57 Urſæ majoris.

Nov. 20, 1782. 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, 1782. 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, 1782. Double. About ½ degree n. following the 11th Tauri, towards ι 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, 1782. 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, 1782. Double. About three degrees directly n. of the 103 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, 1782. Double. Near 1 degree n. following the 62d Arietis, towards ε Perſei. Nearly equal. Both dw. Diſtance 11″ 17‴; not very accurate. Poſition 12° 24′ n. preceding or ſ. following.

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

Dec. 28, 1782. Double. About 1 degree n. preceding ξ Cancri, in a line parallel to ε Leonis and the 41ſt Lyncis; a conſiderable ſtar. A little unequal. Both rw. Diſtance 8″ 50‴. Poſition 65° 12′ ſ. preceding.

93. FL. 117 Tauri.

Dec. 31, 1782. Double. Almoſt equal. Both rw. Diſtance 12″ 12‴. Poſition 52° 27′ ſ. following.

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

Dec. 31, 1782. Double. About 1⅓ degree n. preceding ν Leporis, in a line parallel to κ and ε Orionis; the ſecond in that line. Equal. Both rw. Diſtance 11″ 44‴. Poſition 4° 0′ ſ. following or n. preceding.

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

Jan. 2, 1783. Double. Near ⅓ degree ſ. preceding ν, in a line from 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′ ſ. preceding.

III. 96. Fl. 17 Crateris.

Jan. 10, 1783. Double. Nearly equal. Both rw. Diſtance 9″ 46‴. Poſition 64° 27′ f. preceding.

97. Fl. 54 Hydræ.

Jan. 10, 1783. Double. Very unequal. L. w.; S. bluiſh r. Diſtance 11″ 17‴; too low for great accuracy. Poſition 38° 15′ f. following.

98. Ad Genam Monocerotis.

Jan. 13, 1783. Double. About ⅔ degree f. preceding the moſt f. of a cluſter of ſix teleſcopics in the place of the 12th, in a line parallel to the 15th and 12th Monocerotis. Exceſſively unequal. Poſition 61° 57′ f. preceding.

99. Fl. 55 Eridani.

Jan. 31, 1783. Double. A very little unequal. L. pr.; S. rw. Diſtance 9″ 9‴. Poſition 44° 9′ n. preceding.

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

Jan. 31, 1783. Double. About 2¼ degrees f. preceding the 55th Eridani, in a line parallel to Rigel and γ Eridani. Conſiderably unequal. L. pr.; S. db. Diſtance 11″ 53‴. Poſition 16° 24′ f. preceding.

101. *k* Centauri. Fl. 3.

Jan. 31, 1783. Double. Conſiderably unequal. L. dw.; S. dpr. Diſtance 11″ 35‴. Poſition 22° 0′ f. following.

102. *h* (Fl. 29^{am}) Herculis præcedens ad auſtrum.

Feb. 3, 1783. Double. About 1¼ degree f. preceding *h* Herculis towards ε Serpentis; a ſmall ſtar. Very unequal. Both r. Diſtance 14″ 2‴. Poſition 67° 12′ n. following.

103. ε (Fl. 37^{a}) Serpentis borealior et ſequens.

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

III. ſo call it, probably tinges them too deeply. Diſtance with 278, 12″ 34‴; with 625, 12″ 23‴. Poſition 50° 12′ n. preceding.

104. FL. 83^{am} Herculis præcedens.

Mar. 26, 1783. 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° 48′ n. preceding.

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

April 7, 1783. Double. About 2′ preceding the double ſtar V. 106. Pretty unequal. L. r.; S. d. Diſtance 14″ 29‴; very inaccurate, on account of obſcurity. Poſition 50° 24′ f. preceding.

106. FL. 5 Serpentis.

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

107. Congerie Stellularum Sagittarii borealior.

June 6, 1783. Double. Above $1\frac{1}{4}$ degree n. of the 20th cluſter of 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° 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, 1783. Double. Above ¾ n. preceding the 19th, in a line 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, 1783. Double. About 1⅓ degree n. preceding the 19th, in 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, 1783. Quadruple. Full ¾ degree n. preceding the 17th, in 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. following.

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. 46ª) Orionis borealior et ſequens.

Sept. 20, 1783. Treble. About 1¼ degree n. following ε, towards α Orionis. The two neareſt of the third claſs.

112. δ (FL. 18ªm) Cygni ſequens ad auſtrum.

Sept. 22, 1783. Double. About 1 degree ſ. following δ, towards the 47th Cygni; a pretty conſiderable ſtar. Equal, or perhaps the ſouthern ſtar the ſmalleſt. Both pr. Diſtance with 278, 10″ 8‴. Poſition 71° 0′. ſ. following.

113. FL. 27ªm Cygni præcedens ad auſtrum.

Sept. 23, 1783. Quadruple and Sextuple. About ½ 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° 0′ n. preceding; the two largeſt almoſt equal. Both r. Diſtance with 278, 29″ 27‴. Poſition 57° 12′ n. following. In the ſextuple or ſ. following ſet, the two largeſt pretty unequal. Both r. Diſtance with 278, 19″ 20‴. Poſition 27° 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. 16ªm Monocerotis præcedens ad boream.

Jan. 23, 1784. Double. About 1¼ degree n. preceding the 16th.

FOURTH CLASS OF DOUBLE STARS.

IV. 45. In pectoris crate Orionis.

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

46. Fl. 21 :: Geminorum *.

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

47. Fl. 3 Leonis.

Feb. 2, 1782. Double. Exceſſively unequal. L. r.; S. d.; not 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° ſ. following.

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

Feb. 6, 1782. Quintuple. In the form of a croſs. About $\frac{2}{3}$ degree 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′ ſ. 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, 1782. Double. 1 full degree n. following ξ Virginis, in a line parallel to ι and β Leonis. A little unequal. L. pr.; S. dr. Diſtance 27″ 28‴. Poſition 56° 30′ ſ. preceding.

50. FL. 17 Virginis. In pectore.

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

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

Feb. 6, 1782. Double. A ſtar ſouth of three forming an arch, and 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, 1782. Double. Conſiderably unequal. L. rw.; S. d. garnet. Diſtance 29″ 54‴. Poſition 39° 54′ n. preceding; a little inaccurate.

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

Feb. 9, 1782. Double. Exceſſively unequal. L. garnet; S. d. Diſtance with 460, 21″ 30‴. Poſition

Other very ſmall ſtars in view.

54. δ (FL. 4^{am}) Hydræ ſequens.

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

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

Mar. 5, 1782. Double. About 3$\frac{1}{2}$ minutes n. following the 41ſt 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.

56.

IV. 56. Fl. 18 Libræ.

April 3, 1782. Double. The following of two. Extremely unequal. L. r.; S. b. Diſtance 17″ 59‴. Poſition 44° 45′ n. following.

57. Fl. 42am Comæ Berenices ſequens ad auſtrum.

April 15, 1782. Double. About 3 degrees ſ. following the 42d Comæ Berenices towards υ Bootis; the vertex of an iſoſceles triangle. Extremely unequal. Diſtance with 625, 16″ 42‴. Poſition 46° 31′ ſ. preceding.

58. Fl. 36am Comæ Berenices præcedens ad boream.

April 18, 1782. A pretty double ſtar. About 2½ degrees n. preceding 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° 57′ ſ. preceding.

59. Prope α Lyræ.

May 12, 1782. Double. About 2 or 3 minutes ſ. preceding α Lyræ. Very unequal. Both d. Diſtance with 278, 22″ 20‴. Poſition 33° 57′ n. preceding. Poſition of the largeſt with regard to α Lyræ 59° 12′ ſ. preceding.

60. Fl. 4am Urſæ majoris ſequens ad boream.

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

61. ζ (Fl. 7a) Coronæ auſtralior et præcedens.

July 18, 1782. Double. Near ½ degree ſ. preceding ζ, towards η Coronæ bor. Nearly equal. Both pr. Diſtance 16″ 46‴. Poſition 4° 57′ n. following.

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

Aug. 11, 1782. Double. About 2½ degrees ſ. following τ Herculis, 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° 15′ ſ. preceding.

63. FL. 42 Herculis. Dextrum ſupra genu.

Aug. 11, 1782. Double. Very unequal. L. r.; S. rw. Diſtance 21″ 31‴. Poſition 3° 42′ ſ. following.

64. Prope q (FL. 12^{am}) Perſei.

Aug. 20, 1782. Double. Within a few minutes of q Perſei. Pretty unequal. Both pr.; but S. a little darker. Diſtance 21″ 59‴. Poſition 57° 57′ ſ. preceding.

65. Prope FL. 3^{am} Caſſiopeiæ.

Aug. 25, 1782. Double. Within 10 minutes of the 3d Caſſiopeiæ. Very unequal. L. pr.; S. r. Diſtance 20″ 46‴; very inaccurate. Poſition 41° 12′ ſ. following.

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

Aug. 28, 1782. Double. About 1¾ degree ſ. of, and a little preceding θ, in a line from δ continued through θ Caſſiopeiæ. Extremely unequal. L. r.; S. db. Diſtance 24″ 2‴; very inaccurate. Poſition 13° 12. n. following; inaccurate.

67. † FL. 40 et 41 Draconis.

Aug. 29, 1782. Double. A little unequal. L. rw.; S. pr. Diſtance 20′ 39‴ mean meaſure; very accurate. Poſition 35° 15′ ſ. preceding *. There is a third, much ſmaller ſtar. Diſtance 3′ 16″ 33‴. Poſition about 30° ſ. following.

* The proper motion of one of theſe ſtars at leaſt ſince the time of FLAMSTEED is evident, as he gives us their difference in AR 2′, and in PD 3′ 5″. Poſition ſ. preceding. Hence we have the hypotenuſe or diſtance above 3′ 40″, inſtead of 20″ 39‴; and the angle 86° 17′ inſtead of 35° 15′.

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

Sept. 3, 1782. Double. A little unequal. L. wr.; S. pr. Diſtance 29″ 36‴. Poſition 4° 48′ n. following. In both meaſures the weather too windy for accuracy.

69. Fl. 23^{am} Andromedæ præcedens.

Sept. 4, 1782. Double. Full 1½ degree preceding the 23d, in a line 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° 36′ n. preceding.

70. Fl. 51 Piſcium. In auſtrino lino.

Sept. 4, 1782. Double. Very unequal. L. rw.; S. d. Diſtance with 278, 22″ 29‴. Poſition 0° 36′ n. following.

71. * *o* Capricorni. Fl. 12. Trium in roſtro auſtrina.

Sept. 5, 1782. Double. Pretty unequal. Both rw. Diſtance 23″ 30‴. Poſition 30° 45′ f. preceding.

72. Fl. 55^{a} Perſei borealior.

Sept. 7, 1782. Double. About ¼ degree n. of the 55th Perſei; of three in a line the moſt north. Pretty unequal. L. rw.; S. pr. Diſtance with 278, 16″ 51‴. Poſition 27° 24′ n. following.

73. In Conſtellatione Camelopardali.

Sept. 7, 1782. Double. Between Fl. 2 and 8 Cam.; the ſmalleſt of two that are within ¼ degree of each other. Conſiderably unequal. Diſtance 19″ 32‴. Poſition 85° 0′ f. preceding.

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

Sept. 7, 1782. Double. Near ½ degree n. following δ, towards ι Tauri. Very unequal. L. pr.; S. r. Diſtance 16″ 31‴. Poſition 25° 45′ n. following.

IV. 75. *r* (FL. 66am) Tauri ſequens.

Sept. 7, 1782. Double. About 1¼ degree n. following *r*, in a line parallel to *μ* Tauri and the 9th Orionis. Very unequal. L. r.; S. dr. Diſtance 22″ 35‴. Poſition 61° 36′ ſ. following.

76. FL. 13am Ceti præcedens ad auſtrum.

Sept. 9, 1782. Double. About 1 degree ſ. preceding the 13th, towards the 8th Ceti. Conſiderably unequal. L. rw.; S. br. Diſtance with 278, 18″ 35‴. Poſition 40° 24′ n. following.

77. FL. 37â Ceti borealior. In dorſo.

Sept. 22, 1782. Double. About ¼ degree n. preceding the 37th, towards the 36th Ceti. Very unequal. L. r.; S. dr. Diſtance 19″ 6‴. Poſition 63° 24′ n. preceding.

78. *η* (FL. 3am) Cephei præcedens.

Sept. 27, 1782. Double. About 1¼ degree preceding *η*, in a line from *ε* continued through *η* Cephei. Very unequal. L. r.; S. d. Diſtance 19″ 32‴. Poſition 40° 36′ n. following.

79. *μ* Cephei. FL. 13. Ad coronam.

Sept. 27, 1782. Double. A little unequal. L. w.; S. rw. Diſtance 21″ 3‴. Poſition 77° 48′ ſ. preceding.

80. *β* (FL. 2â) Canis majoris borealior.

Sept. 30, 1782. Double. About 1¾ degree n. of *β* Canis majoris towards the 11th Monocerotis; the moſt n. of two. Conſiderably unequal. Diſtance 17″ 59‴; difficult to take, and perhaps a little inaccurate. Poſition 2° 24′ n. following.

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

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

IV. 82. Prope Fl. 16am Cephei. In cingulo.

Sept. 30, 1782. Double. Above ¾ degree following the 16th Cephei, in a line parallel to β and α Caſſiopeiæ. Conſiderably unequal. L. orange. S. r. Diſtance 28″ 5‴. Poſition 79° 18′ n. preceding.

83. Fl. 26 Ceti. Supra dorſum.

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

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

Oct. 2, 1782. Double. Conſiderably unequal. L. w.; S. pr. Diſtance with 278, 26″ 9‴. Poſition 59° 33′ n. following.

85. Fl. ultima Lacertæ.

Oct. 4, 1782. Treble. The two neareſt extremely unequal. L. 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, 1782. Quadruple. The two largeſt and neareſt a little unequal. 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. 29am) Orionis præcedens. In ſiniſtro calcaneo.

Oct. 4, 1782. Double. About 1 degree preceding *e*, in a line parallel to σ Orionis and *h* Eridani nearly. Conſiderably unequal. Both pr. Diſtance 29″ 18‴. Poſition 82° 18′ n. following.

IV. 88. FL. 7 Tauri. In dorſo.

Oct. 9, 1782. Double. Very unequal. L. pr.; S. dr. Diſtance 19″ 50‴. Poſition 23° 15′ n. following.

89. E teleſcopicis caudam Arietis ſequentibus.

Oct 9, 1782. Double. The vertex of an iſoſceles triangle following 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. 18am Urſæ minoris. Prope eductionem caudæ.

Oct. 12, 1782. Double. The largeſt of ſix or ſeven ſtars, and moſt ſouth 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.

Oct. 12, 1782. A pretty double ſtar. A little unequal. L. w.; S. w. inclining to r. Diſtance 17″ 23‴. Poſition 69° 12′ n. preceding.

92. β inter et ζ Delphini.

Oct. 17, 1782. Treble. Between β and ζ, but nearer to β Delphini. All three nearly equal. All wr. Diſtance of the two neareſt with 278, 21″ 33‴. Poſition 18° 27′ n. preceding.

93. ε (FL. 4am) Lyræ ſequens.

Oct. 19, 1782. Double. About 3 degrees following ε, in a line parallel 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.

Oct. 19, 1782. Double. Full 2 degrees n. preceding β Lyræ, in a 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, 1782. Quadruple. About 2½ degrees preceding, and a little 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, 1782. Double. About 1¼ n. following the 25th, in a line 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, 1782. Double. Extremely unequal. L. wr.; S. d. Diſtance 29″ 54‴. Poſition 15° 12′ f. following. Six more in view.

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

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

99. Duarum teleſcopicarum δ Sagittæ ad auſtrum ſequentium borea.

Nov. 6, 1782. Treble. Of a trapezium, conſiſting of this treble 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, 1782. Treble. The largeſt of three. The two neareſt equal. Both r. Diſtance 23″ 2‴. Poſition 10° 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. 24ª) Aurigæ borealior et præcedens.

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

102. FL. 59 Aurigæ.

Nov. 6, 1782. Double. The apex of an iſoſceles triangle. Very or extremely unequal. L. rw.; S. Diſtance 23″ 30‴. Poſition 50° 3′ f. preceding.

103. FL. 77^{am} Draconis ſequitur.

Nov. 13, 1782. Double. Near $\frac{3}{4}$ degree following the 77th Draconis, in a line parallel to $\varkappa$ Cephei and the 76th Draconis nearly; of a rectangular triangle the leg neareſt the 77th. Very unequal. L. r.; S. bluiſh r. Diſtance 22″ 35‴. Poſition 45° 48′ n. following.

104. Inter γ et 55^{am} Andromedæ.

Nov. 13, 1782. Double. A little more than 1 degree n. following the 55th Andromedæ, in a line parallel to β Trianguli and Algol. Conſiderably unequal. L. r.; S. d. Diſtance with 278, 18″ 57‴. Poſition 22° 33′ n. following.

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

Nov. 13, 1782. Double. Extremely unequal. L. w.; S. r. Diſtance 23″ 30‴. Poſition 54° 0′ f. preceding.

IV. 106. α (Fl. 50^{am}) Urſæ majoris ſequens ad boream.

Nov. 17, 1782. Double. About 1$\frac{3}{4}$ degree n. following α, in a line parallel to β Urſæ et $\varkappa$ Draconis; the laſt of three in a row. Extremely unequal. Both r. Diſtance 18″ 55‴; very inaccurate. Poſition 44° 33′ ſ. following. A third ſmall ſtar in view.

107. Fl. 79^{a} Pegaſi auſtralior et præcedens.

Nov. 20, 1782. Double. About $\frac{3}{4}$ degree ſ. preceding the 79th, towards τ Pegaſi; at the center of a trefoil. Very unequal. L. r.; S. d. Diſtance with 278, 26″ 12‴. Poſition 50° 21′ n. following.

108. Fl. 69^{a} Urſæ majoris auſtralior.

Nov. 20, 1782. Double. Near 2 degrees ſ. of the 69th, towards the 63d$\frac{1}{2}$ Urſæ majoris. A very little unequal. Both r. Diſtance 19″ 15‴; very inaccurate. Poſition 10° 12′ n. following.

109. Fl. 62 Tauri.

Nov. 25, 1782. Double. Conſiderably unequal. L. w.; S. r. Diſtance 28″ 5‴. Poſition 21° 12′ n. preceding.

110. β (Fl. 112^{a}) Tauri borealior et ſequens.

Dec. 24, 1782. Double. About 1$\frac{1}{4}$ degree n. following β Tauri, towards θ Aurigæ; the ſecond in that direction. Very unequal. L. r.; S. d. Diſtance 16″ 1‴. Poſition 74° 54′ n. preceding.

111. Fl. 54 Cancri.

Dec. 28, 1782. Double. A little unequal. Both rw. S. a little darker. Diſtance 17″ 14‴. Poſition 29° 0′ ſ. following.

112. γ (Fl. 15^{am}) Crateris ſequens ad boream.

Jan. 1, 1783. Double. About 1 degree n. following γ Crateris, in a line parallel to δ Corvi and Spica. Equal. Both pr. Diſtance

IV. Diſtance 26″ 15‴; too low for accuracy. Poſition 58° 42′ n. preceding or ſ. following.

113. FL. 61ª Cygni borealior et præcedens.

Jan. 6, 1783. Double. About 1¼ degree n. preceding the 61ſt, in a line parallel to *υ* and *α* Cygni. Very or extremely unequal. L. r.; S. db. Diſtance with 278, 17″ 30‴. Poſition 28° 24′ n. preceding. A third ſtar in view.

114. *t* (FL. 12ª) Virginis auſtralior.

Jan. 8, 1783. Double. About 1½ degree ſ. of *t* Virginis. Very unequal. L. pr.; S. d. Diſtance 23″ 21‴. Poſition 15° 54′ n. preceding.

115. *φ* (FL. 11am) Herculis præcedens ad auſtrum.

Jan. 10, 1783. Double. About 2½ degrees ſ. of, and a little preceding *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° 48′ n. following.

116*. FL. 83am Pegaſi ſequens ad boream.

Jan. 13, 1783. Double. Equal. Both w. Diſtance 28″ 59‴. Poſition 68° 21′. Mr. C. MAYER, in 1777, ſettled its place *A*R 0h. 52′ 53″ in time, and 20° 17′ 53″ in declination N.

117. FL. 42ª Eridani auſtralior.

Jan. 31, 1783. Double. About 1¼ degree ſ. of the 42d Eridani, in 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° 48′ ſ. preceding.

118. *ι* (FL. 48am) Cancri ſequens.

Feb. 5, 1783. Double. Full ½ degree following the 48th, in a line parallel to *δ* Cancri and *ε* Leonis; a very ſmall ſtar, next to two more which are nearer to *ι*. A little une-

IV. qual. Distance 24″ 6‴. Position about 25° n. following.

119. ι (Fl. 68^{am}) Virginis præcedens ad austrum.

Feb. 7, 1783. Double. About 1 degree s. preceding the 68th, in a line parallel to the 99th and α Virginis. Extremely unequal. Distance 21″ 49‴. Position 36° 54′ n. preceding.

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

Feb. 27, 1783. Double. About ¾ degree n. following the 82d Piscium, in a line parallel to α and β Trianguli; the largest of two. Considerably unequal. L. rw.; S pr. Distance 18″ 19‴. Position 21° 0′ s. preceding. A third star in view.

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

Mar. 1, 1783. Double. Very unequal. L. whitish; S. r. Distance 21″ 40‴. Position 0° 0′ (or perhaps 1°) n. preceding.

122. Fl. 32da Ophiuchi borealior et præcedens.

Mar. 7, 1783. Double. Near 1 degree n. of, and a little preceding the 32d Ophiuchi, in a line parallel to α and η Herculis. Very unequal. Distance 21″ 3‴. Position 25° 3 s. preceding.

123. Fl. 19 Ophiuchi.

Mar. 9, 1783. Double. The most south of two. Very unequal. L. pr.; S. d. Distance 20″ 27‴. Position 3° 9′ s. following.

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

Mar. 24, 1783. Double. About ¾ degree preceding and a little s. of ψ, 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° 54′ n. following.

125. FL. 29 Camelopardali.

April 2, 1783. Double. Very unequal. L. pr.; S. d. Diſtance 22″ 26‴; very inaccurate. Poſition 47° 36′. f. following; a little inaccurate.

126. λ (FL. 22ª) Cephei borealior et præcedens.

April 20, 1783. Double. Leſs than ½ degree n. preceding λ, in a line almoſt parallel to δ and ζ Cephei; a conſiderable ſtar. A little unequal. Both dw. Diſtance 18″ 50‴. Poſition 45° 39′ n. preceding.

127 †. λ (FL. 16ªᵐ) Aquilæ ſequens ad boream.

May 21, 1783. Double. About 2½ degrees n. following the fartheſt of two which are about 1½ 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° 54′. n. preceding. Mr. PIGOTT, who favoured me with it, gives its place Æ 18ʰ 52′½ ±, Declination 1° 0′ S.

128. γ (FL. 57ªᵐ) Andromedæ præcedens ad auſtrum.

July 28, 1783. Double. About 1⅓ degree f. preceding γ almoſt 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° 12′ n. following.

129. FL. 59 Andromedæ.

July 28, 1783. Double. A little unequal. L. rw.; S. pr. Diſtance 15″ 15‴. Poſition 55° 9′ n. following. A third ſtar in view about 58° or 60° f. preceding.

IV. 130. η (Fl. 99^{i}) Piſcium borealior et ſequens.

Aug. 2, 1783. Double. About 1½ 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° 15′ n. following.

131. Fl. 100 Piſcium.

Aug. 2, 1783. Double. Pretty unequal. L. pr.; S. r. Diſtance 15″ 52‴. Poſition 5° 0′ n. following.

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

Aug. 6, 1783. Double. About ½ degree n. following 46 Aquilæ, in a line parallel to α and γ Sagittæ. Very unequal. L. r.; S. db. Diſtance 22″ 44‴. Poſition 41° 24′ n. preceding.

FIFTH CLASS OF DOUBLE STARS.

V. 52. Secunda a ν Geminorum μ verſus.

Dec. 27, 1781. Double. The ſecond ſtar from ν towards μ Geminorum. Pretty unequal. L. r.; S. b. Diſtance 35″; inaccurate.

53. p Geminorum. Fl. 63. In inguine ſequentis II^{i}.

Dec. 27, 1781. 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, 1782. Double. Exceſſively unequal. L. w.; S. a point. 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. 12am Geminorum. In pede II^{i} præcedentis sinistro.
Jan. 30, 1782. Treble. A small star near the place of the 12th Geminorum. The two nearest a little unequal. Distance less than 1′.

56. Fl. 15 Geminorum. Dextrum prioris II^{i} pedem attingens.
Jan. 30, 1782. Double. Considerably or very unequal. L. r.; S. d. Distance 32″ 39‴. Position near 60° f. preceding.

57. Fl. 9^{a} Orionis borealior et sequens. In exuviarum summo.
Feb. 4, 1782. Treble. More than 1 degree n. following the 9th 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° 36′. The farthest very unequal. S. r. Distance Vth Class. Position following.

58. Fl. 7 Leonis. Supra pedem borealem anteriorem.
Feb. 4, 1782. Double. Very unequal. L. rw.; S. r. Distance 42″ 25‴. Position 8° 36′ n. following.

59. *θ* Cancri. Fl. 31. In quadrilatero circa Nubem.
Feb. 6, 1782. Double. Extremely unequal. L. r.; S. d. Distance 44″ 52‴. Position n. following.

60. *o* (Fl. 95am) Leonis præcedens; ad caudam.
Feb. 9, 1782. Double. Near ¾ degree f. preceding the 95th, in a line parallel to *β* and *ρ* Leonis. Very unequal. L. rw.; S. d. Distance 37″ 15‴. Position 70° 48′ n. following.

61. Fl. 81 Leonis. In clune.
Feb. 9, 1782. Double. Extremely unequal. L. rw.; S. r. Distance 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, 1782. Double. The largeſt of two. Extremely unequal. L. pr.; S. d. Diſtance 52″ 46‴. Poſition

64. Fl. 43ª Leonis auſtralior. Ad ſiniſtrum anteriorem cubitum.

Feb. 17, 1782. 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, 1782. Treble. The two neareſt very unequal. L. rw.; S. r. Diſtance 44″ 52‴. Poſition 64° 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. 63ª) Geminorum borealior.

Mar. 3, 1782. Double. About ¾ degree n. of, and a little preceding *p*, in a line parallel to υ and α Geminorum. Very unequal. L. pr.; S. d. Diſtance 34″ 39‴. Poſition 1° or 2° n. preceding.

67. Pollucem prope. In capite ſequentis Π¹.

Mar. 3, 1782. Double. Near 1 degree n. following β, in a line from δ continued through β Geminorum nearly; the fartheſt and ſmalleſt of three. Conſiderably unequal. L. r.; S. dr. Diſtance 47″ 37‴.

68. Fl. 75ᵃᵐ Leonis præcedens ad boream.

Mar. 5, 1782. Treble. One of two n. preceding the 75th, in a line parallel to the 84th and 59th Leonis. The two

V. neareſt very unequal. Diſtance 54″ 37‴. The fartheſt extremely unequal.

69. FL. 7 Leonis minoris. In extremo anteriore pede.

Mar. 12, 1782. Double. The largeſt of two. Extremely unequal. L. pr.; S. r. Diſtance 58″ 18‴.

70. FL. 2am Bootis præcedens ad boream.

April 5, 1782. Double. Near 3 degrees n. preceding the 2d Bootis, 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° 0′ ſ. preceding.

71. Prope γ (FL. 24am) Geminorum.

April 15, 1782. Double. Three or four minutes n. preceding γ Geminorum. Of the Vth Claſs. More in view.

72. † *m* Herculis. FL. 36 et 37. In ſiniſtro Serpentarii brachio.

May 18, 1782. Double. A little unequal. L. bluiſh w. S. reddiſh w. Diſtance 59″ 59‴. Poſition 36° 57′ ſ. preceding *.

73. τ Urſæ majoris. FL. 14. Duarum in collo præcedens.

June 11, 1782. Double. Extremely unequal. L. w.; S. d. Diſtance 54″ 46‴. Poſition about 45° n. following.

74. S (FL. 72a) Serpentarii borealior.

June 16, 1782. Double. More than 1 degree n. following the 56th double ſtar of the IIId Claſs; nearly in a line parallel to the 62d and 72d Serpentarii, Very unequal. L. rw.; S. r. Diſtance 40″ 54‴. Poſition 39° 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 ſ. preceding; hence we have the hypotenuſe or diſtance above 1′ 45″, inſtead of 59″ 59‴, and poſition 69° 46′ inſtead of 36° 57′.

V. 75. E teleſcopicis ε Coronæ borealis ſequentibus.

July 18, 1782. Double. About 1 degree ſ. following ε, in a line 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° 0′ ſ. following.

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

July 20, 1782. Double. Exceſſively unequal. L. w.; S. d. Diſtance about 33″ 16‴; very inaccurate. Poſition 55° 48′.

77. *d* (Fl. 43ª) Sagittarii borealior et ſequens.

Aug. 4, 1782. Double. A few minutes n. following the 43d, in a line parallel to *o* and π Sagittarii; the neareſt of two. Extremely unequal. L. w.; S. d. Diſtance with 278, 36″ 3‴. Poſition 78° 45′ ſ. following.

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

Aug. 4, 1782. Double. Extremely unequal. L. r.; S. d. Diſtance Vth Claſs. Poſition 28° 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, 1782. Double. Of two in a line parallel to β and γ, that towards γ Caſſiopeiæ. Very unequal. L. w.; S. pr. Diſtance 52″ 39‴. Poſition 50° 36′ n. preceding.

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

Aug. 28, 1782. Double. Very unequal. L. rw.; S. d. Diſtance 36″ 47‴. Poſition 19° 54′ ſ. following.

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

Aug. 28, 1782. Double. Conſiderably unequal. L. rw.; S. br. Diſtance 42″ 35‴. Poſition 85° 12′ n. following.

82.

V. 82. ν (FL. 25^{am}) Caſſiopeiæ præcedens. In ſiniſtra manu.
Aug. 28, 1782. Double. Near $\frac{1}{4}$ degree n. preceding ν, in a line parallel to α and β Caſſiopeiæ. Nearly equal. Both pr. Diſtance 43″ 26‴. Poſition 7° 48′ n. following.

83. ψ Caſſiopeiæ. FL. 36. Sub pede ſiniſtro.
Aug. 28, 1782. Double. Very unequal. L. pr.; S. r. Diſtance 33″ 25‴. Poſition 10° 12′ f. following.

84. FL. 47 :: Caſſiopeiæ. Ex obſcurioribus infra pedes.
Aug. 29, 1782. Double. The largeſt of three forming a rectangular 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, 1782. Double. About $\frac{1}{3}$ degree n. preceding ρ Andromedæ θ verſus. Very unequal. L. rw.; S. r. Diſtance 30″ 57‴. Poſition 79° 24′ n. following.

86. FL. 12 Urſæ minoris.
Sept. 4, 1782. Treble. Extremely unequal. All three r. The 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, 1782. Double. Very, or almoſt extremely unequal. L. r.; S. d. bluiſh. Diſtance 50″ 7‴. Poſition 85° 12′ f. following.

88. λ (FL. 15^{a}) Aurigæ borealior. In ſiniſtra manu.
Sept. 5, 1782. Double. About 3′ or 4′ n. following the 15th Aurigæ. Very unequal. Diſtance 34″ 15‴, mean meaſure. Poſition 54° 6′ f. preceding.

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

Sept. 5, 1782. Double. Exceſſively unequal. L. fine w.; S reddiſh. Diſtance with 460, 35″ 18‴, narrow meaſure. Poſition 16° 0′ n. preceding. A third ſtar in view.

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

Sept. 5, 1782. Double. Exceſſively unequal. L. orange w.; S. r. Diſtance 53″ 43‴. Poſition 61° 48′ f. preceding. S. not viſible till after ſome minutes attention.

91. β (Fl. 34ᵉ) Aurigæ adjecta. In dextro humero.

Sept. 5, 1782. Double. Near ½ degree f. following β, in a line from the 27th continued through β Aurigæ; a conſiderable ſtar. Very or extremely unequal. L. pr.; S. d. Diſtance 30″ 3‴. Poſition 45° 6′ n. preceding.

92. Fl. 3ª Arietis borealior.

Sept. 10, 1782. Double. Full ½ degree f. following the 3d Arietis, in a line parallel to α Arietis and δ Ceti; the moſt ſouth of two. Equal. Both reddiſh. Diſtance 51″ 16‴. Poſition 52° 45′ n. preceding or f. following.

93. Fl. 103ᵃᵐ Herculis ſequens ad auſtrum.

Sept. 19, 1782. Double. About 1¼ degree f. following the 103d 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° 42′ f. following.

94. Duarum Fl. 31ᵃᵐ Cephei ſequentium auſtrina.

Sept. 30, 1782. Double. About ¾ degree n. of the 31ſt Cephei, towards α Polaris. Pretty unequal. Both pr. Diſtance 41″ 40‴. Poſition 45° 15′ f. following.

95. Fl. 51 Aquarii. In dextro cubito.

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

V. other ſtars in view; the neareſt of them extremely unequal. Poſition about 80 or 90° ſ. preceding. The fartheſt very unequal. Poſition about 30° ſ. following.

96. υ (FL. 59^{am}) Aquarii ſequens ad auſtrum.

Oct. 2, 1782. Double. About ½ degree ſ. following υ, in a line parallel to δ and *c* Aquarii. Extremely unequal. Diſtance Vth Claſs near. Poſition 15 or 20° ſ. preceding.

97. FL. 10 Lacertæ.

Oct. 4, 1782. Double. Very unequal. L. w.; S. r. Diſtance with 278, 52″ 34‴. Poſition 38° 45′ n. following.

98. FL. 3 Pegaſi.

Oct. 4, 1782. Double. Pretty unequal. L. wr.; S. dr. Diſtance 34″ 43‴. Poſition 82° 48′ n. preceding. Beſides II. 62. another ſtar in view. Poſition following.

99. FL. 33 Pegaſi.

Oct. 4, 1782. Double. Conſiderably unequal. L. pr.; S. r. Diſtance with 278, 45″ 3‴. Poſition 89° 12′ n. following.

100. FL. 59 Orionis.

Oct. 4, 1782. Double. The following of two. Extremely unequal. L. w.; S. a point requiring ſome attention to be ſeen. Diſtance 37″ 15‴. Poſition about 65° ſ. preceding.

101. υ (FL. 36^{am}) Orionis præcedens.

Oct. 4, 1782. Double. About ⅔ degree preceding υ, nearly in a line parallel to κ and β Orionis; the ſecond from υ. Extremely unequal. L. w.; S. r. Diſtance 44″ 15‴. Poſition about 15° ſ. following.

V. 102. Fl. 61 Ceti.

Oct. 12, 1782. Double. Extremely unequal. L. rw.; S. dr. Diſtance with 278, 37″ 53‴. Poſition 76° 21′ f. preceding. A third ſtar at ſome diſtance. A little unequal. Poſition n. following.

103. Ab ι (Fl. 18ª) Lyræ β verſus.

Oct. 24, 1782. Double. Full ⅓ degree f. preceding ι, nearly towards β Lyræ. Extremely unequal. L. w.; S. r. Diſtance with 278, 45″ 32‴. Poſition 29° 12′ n. following.

104. ε (Fl. 4ª) Sagittæ auſtralior et præcedens.

Nov. 6, 1782. Double. Full ½ 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° 18′ f. following.

105. γ (Fl. 14ª) Sagittæ auſtralior et ſequens.

Nov. 6, 1782. Double. About ⅓ degree f. following γ Sagittæ, in a line parallel to Sagitta and Delphinus. Conſiderably unequal. L. pr.; S. r. Diſtance 38″ 36‴. Poſition 74° 15′ f. following.

106. γ (Fl. 12ª) Sagittæ borealior et præcedens.

Nov. 6, 1782. Double. About 1¾ degree n. preceding γ Sagittæ, towards the 6th Vulpeculæ; a conſiderable ſtar. Equal. Both rw. Diſtance 38″ 54‴. Poſition 60° 42′ n. preceding or f. following.

107. Fl. 56 Aurigæ.

Nov. 6, 1782. Double. Conſiderably unequal. L. w.; S. pr. Diſtance 52″ 57‴. Poſition 72° 36′ n. following.

108. ϰ (Fl. 13ª) Canis majoris borealior.

Nov. 6, 1782. Double. About ¾ degree n. of ϰ Canis majoris. A little unequal. L. dw.; S. d. Diſtance 42″ 53‴. Poſition 23° 18′ n. following.

V. 109. Inter β Cancri et δ Hydræ.

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

110. FL. 111 Tauri.

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

111. FL. 42ª Urſæ majoris auſtralior et ſequens.

Nov. 20, 1782. Double. Full 1 degree ſ. following the 42d, in a line parallel to the 29th and 48th Urſæ 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, 1782. Double. Forms almoſt an iſoſceles triangle with μ and ν Geminorum. Nearly equal. The preceding pr. the following wr. Diſtance Vth Claſs far.

113. * FL. 9ᵃᵐ inter et 11ᵃᵐ Orionis.

Dec. 7, 1782. Treble. About 1½ degree ſ. preceding the 11th 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, 1782. Double. Exceſſively unequal. L. rw.; S. d. Diſtance with 278 and 625, 30″ 2‴, mean meaſure. Poſition 72° 24′.

115. *o* Tauri. FL. 114.

Dec. 7, 1782. Double. Exceſſively unequal. L. w.; S. a point. Diſtance 5″ 34‴. Poſition 77° 54′ ſ. preceding.

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

116. Fl. 41 Arietis.

Dec. 23, 1782. Treble. The two neareſt exceſſively unequal. L. w.; S. a point. Diſtance with 278, 39″ 20‴. Poſition 80° 48′ f. preceding. For the diſtance of the fartheſt, ſee VI. 5. *.

117. ζ (Fl. 58am) Arietis præcedens ad boream.

Dec. 23, 1782. Double. About 1¾ n. preceding ζ, towards the 41ſt Arietis; the following of four forming an arch. Very unequal. Both dr. Diſtance 34″ 48‴. Poſition 47° 33′ n. preceding.

118. ε (Fl. 46a) Orionis borealior et præcedens.

Dec. 28, 1782. Double. The moſt n. of three preceding ε Orionis, 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° 6′ f. preceding. Two more following, exceſſively unequal; one about 1′, the other about 1½ minute.

119. ε (Fl. 46a) Orionis auſtralior et præcedens.

Dec. 28, 1782. Double. Full ¾ degree f. preceding ε, in a line parallel to ε Orionis, and *h* Eridani; the ſmalleſt and moſt f. of two. Very unequal. L. w.; S. r. Diſtance 30″ 12‴; a little inaccurate. Poſition 21° 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, 1782. Double. Extremely unequal. L. w.; S. r. Diſtance 43″ 2‴. Poſition about 70° n. preceding.

121. *e* Comæ Berenices. FL. 12.

Jan. 1, 1783. Double. Conſiderably unequal. L. rw.; S. pr. Diſtance 58″ 55‴. Poſition about 77° ſ. following.

122. FL. 44ª Bootis auſtralior et præcedens.

Jan. 8, 1783. Double. Near ⅔ degree ſ. preceding the 44th, towards the 38th Bootis. Very unequal. L. bw.; S. pr. Diſtance 34″ 21‴. Poſition 67° 6′ ſ. preceding.

123. * In Andromedæ pectore.

Jan. 8, 1783. Double. Equal. Both rw. or pr. Diſtance 45″ 1‴. Poſition 32° 24′ ſ. preceding. Its place, as determined in 1777 by C. MAYER, is ℞ 0^h 34′ 33″ in time, and 29° 45′ 3″ declination north.

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

Jan. 31, 1783. Double. About 1½ degree ſ. following *g* Centauri, in a line parallel to *γ* Serpentis and *θ* Centauri; the moſt ſ. of two. Conſiderably unequal. Diſtance 54″ 1‴; too low for accuracy.

125. FL. 46ªᵐ Bootis ſequens ad boream.

Feb. 3, 1783. 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′ ſ. preceding.

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

Feb. 3, 1783. Double. Near ½ degree ſ. 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′ ſ. preceding.

V. 127. (Fl. 41am) Herculis præcedens ad boream.

Feb. 5, 1783. Double. About ¾ degree n. preceding the 41ſt Herculis, in a line parallel to κ Serpentarii and β Herculis. Pretty unequal. Both r. Diſtance 48″ 40‴. Poſition 19° 45′ n. preceding.

128. ι (Fl. 68am) Virginis ſequens.

Feb. 7, 1783. Double. About 1½ degree following ι Virginis, in a line parallel to Spica and β Libræ. A little unequal. L. pr.; S. r. Diſtance 41″ 58‴.

129. *f* (Fl. 25am) Virginis ſequens ad boream.

Feb. 7, 1783. Double. About 1½ degree n. following *f*, in a line parallel to γ and ε Virginis; a large ſtar. Very unequal. L. r.; S. dark r. Diſtance 46″ 42‴. Poſition 6 or 7° ſ. following. A double ſtar of the Vth Claſs in view, preceding.

130. Fl. 35 Comæ Berenices.

Feb. 26, 1783. Double. Very unequal. L. r.; S. d. Diſtance 31″ 17‴. Poſition 36° 51′ ſ. following.

131. Fl. 24am Libræ ſequens ad boream.

Mar. 1, 1783. Double. About 1½ degree n. following the 24th Libræ, in a line parallel to π and β Scorpii. Conſiderably unequal. L. rw.; S. r. Diſtance 47″ 46‴.

132. Fl. 29am inter et 30am Libræ.

Mar. 1, 1783. Double. Of two between the 29th and 30th Libræ that neareſt to the 30th. Very unequal. L. w.; S. d. Diſtance 39″ 59‴; very inaccurate.

133. Fl. 60 Herculis.

Mar. 7, 1783. Double. Extremely unequal. L. w.; S. d. Diſtance 48″ 40‴. Poſition 37° 0′ n. preceding.

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

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

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

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

136. θ (FL. 65^{a}) Aquilæ borealior.

Sept. 12, 1783. Double. About ⅔ degree n. of θ, in a line parallel 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, 1783. Double. About 1⅓ degree n. of χ, towards δ Cygni; 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, 1781. Double. Exceſſively unequal. L. w.; S. d. Diſtance 1′ 50″ 57‴. Poſition 35° 12′ n. following.

VI. 68. η (Fl. 28^{a}) Orionis auſtralior.

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

70. *o* Geminorum. Fl. 70. Supra caput prioris II^{i}.

Dec. 27, 1781. 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, 1782. 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, 1782. Double. The moſt n. of two that are 1 degree aſunder. Very unequal. L. w.; S. dr. Diſtance with 278, 1′ 12″ 50‴. Poſition 41° 0′ f. preceding.

73. ε Geminorum. Fl. 27. In boreali genu præcedentis II^{i}.

Feb. 2, 1782. Double. L. w. Diſtance 1′ 50″ 30‴.

74. Fl. 51 Geminorum.

Feb. 2, 1782. Has two very obſcure ſtars in view. L. r.; S. r. S. r. 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 forficem.

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

VI. 76. *o* Leonis. FL. 14.

Feb. 2, 1782. Double. Extremely unequal. L. rw.; S. r. Diſtance 1′ 3″ 29‴. Poſition 49° 36′ n. following.

77. *τ* Virginis. FL. 93.

Feb. 4, 1782. Double. Very unequal. L. w.; S. dr. Diſtance 1′ 8″ 22‴.

78. *ζ* (FL. 16am) Cancri ſequitur.

Feb. 8, 1782. Double. About ½ degree following *ζ* Cancri, towards *η* Leonis. Extremely unequal. Diſtance 1′ 3″ 47‴.

79. *φ* Leonis. FL. 74,

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

80. FL. 93 Leonis.

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

81. FL. 27 Virginis. In ala dextra.

Feb. 9, 1782. Double. Extremely unequal. L. w. Diſtance 1′ 28″ 48‴.

82. FL. 31 Monocerotis. In media cauda.

Feb. 9, 1782. Double. Very unequal. L. rw.; S. db. Diſtance 1′ 10″ 13‴. Poſition 40° 0′ n. preceding.

83. Prope FL. 1am Orionis.

Feb. 9, 1782. Double. A few minutes ſ. following the 1ſt, towards the belt of Orion. Conſiderably unequal. L. pr.; S. r. Diſtance 1′ 20″ 58‴. Poſition 88° 15′ n. following.

84. FL. 14 Canis minoris.

Feb. 9, 1782. Treble. The neareſt extremely unequal. L. rw.; S. d. Diſtance 1′ 5″ 28‴. Poſition 26° 24′ n. following.

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

85. Fl. 27 Hydræ.

Feb. 9. 1782. Double. Very unequal. L. rw.; S. pr. Diſtance VIth Claſs far. Poſition about 60° ſ. preceding.

86. Prima ad σ Cancri. Fl. 51.

March 5, 1782. Double. Extremely unequal. L. w.; S. d. Poſition n. following.

87. Tertia ad σ Cancri. Fl. 64.

March 5, 1782. Double. Very unequal. L. rw.; S. dr. Diſtance 1′ 25″ 45‴. Poſition 25° 12′ n. preceding.

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

March 5, 1782. Double. Extremely or exceſſively unequal. L. fine bluiſh w.; S. d. Diſtance 2′ 49″ 6‴. Poſition 54° 12′ n. following. A third farther off. Very unequal. About 40 or 50° n. following.

89. Fl. 6^{æ} Bootis adjecta.

Mar. 12, 1782. Double. Juſt following the 6th Bootis. A little unequal. L. r.; S. deeper r. Diſtance 1′ 19″ 39‴. Poſition 58° 6′ ſ. preceding.

90. Fl. 61 Virginis.

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

91. Prope γ (Fl. 24^{am}) Geminorum.

Apr. 15, 1782. Double. Three or four minutes n. of γ Geminorum. 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. 1ª) Capricorni borealior.

June 14, 1782. Double. About ⅓ degree n. of ξ Capricorni. Very unequal. Both r. Diſtance 1′ 2″ 16‴. Poſition 2° 3′ f. preceding.

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

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

94. λ Coronæ borealis. FL. 12.

July 18, 1782. Double. Extremely unequal. L. w.; S. r. Diſtance 1′ 35″ 14‴. Poſition 33° 12′ n. following.

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

Aug. 3, 1782. Double. Extremely unequal. L. w. inclining to orange; S. r. Diſtance about 1½ minute. Poſition about 25 or 30° f. following.

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

Aug. 25, 1782. Treble. The neareſt extremely unequal. L. w.; S. r. Diſtance 1′ 11″ 26‴. Poſition 66° 36′ f. preceding. The fartheſt very unequal. S. r. about 1½ minute. 70 or 75° f. preceding.

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

Aug. 28, 1782. Double. Very unequal. L. r.; S. d. Diſtance 2′ 3″ 36‴, mean meaſure. Poſition 18° 30′ n. preceding.

98. FL. 46ᵃᵐ Tauri ſequens ad auſtrum.

Sept. 7, 1782. Double. About 1½ degree f. following the 46th, 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, 1782. Double. Pretty unequal. L. r.; S. rw. Diſtance 1′ 36″ 27‴. Poſition 71° 51′ f. preceding.

100. *ι* (Fl. 32^{am}) Cephei ſequens.

Sept. 30, 1782. Double. About 1¾ degree n. following *ι*, nearly towards *γ* Cephei. A little unequal. Both pr. Diſtance 1′ 1″ 54‴. Poſition 8° 9′ n. preceding.

101. *δ* Tauri. Fl. 68.

Oct. 31, 1782. Has two ſtars in view. The neareſt exceſſively unequal. L. w.; S. d. Diſtance with 278, 1′ 3″ 18‴. Poſition 35° 24′ f. preceding. The fartheſt extremely unequal. S. r. About 1½ minute. Poſition about 50° n. preceding.

102. Fl. 5 Lyncis.

Nov. 13, 1782. Double. The largeſt of a ſmall triangle. Very unequal. L. r.; S. garnet. Diſtance 1′ 28″ 20‴. Poſition 2° 0′ n. preceding.

103. *ε* Pegaſi. Fl. 8.

Nov. 20, 1782. Double. Very unequal. L. pr.; S. dr. Diſtance 1′ 30″ 56‴. Poſition 52° 45′ n. preceding.

104. *ζ* Bootis. Fl. 30. In dextro calcaneo.

Nov. 29, 1782. Has a very obſcure ſtar in view. Extremely unequal. L. w. inclining to r.; S. d. Diſtance about 1½ minute. Poſition almoſt directly preceding.

105. Fl. 105 Tauri.

Dec. 7, 1782. Double. Very unequal. L. pr.; S. r. Diſtance 1′ 41″ 29‴. Poſition 18° 0′ f. preceding.

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

Dec. 7, 1782. Double. Conſiderably unequal. L. w.; S. pr. Diſtance 1′ 0″ 26‴. Poſition 15° 9′ n. following.

107. FL. 31ª Monocerotis auſtralior et præcedens.

Dec. 21, 1782. Double. About 1¼ degree ſ. of, and a little preceding the 31ſt Monocerotis, in a line parallel to ζ Hydræ and the 31ſt Monocerotis; the moſt ſouth of two. Conſiderably unequal. L. r.; S. deeper r. Diſtance about 1½ minute. Poſition 50 or 60° ſ. following.

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

Dec. 28, 1782. Double. About ½ degree n. of, and a little preceding *θ*, nearly in a line parallel to *α* and *θ* Hydræ. Very unequal. L. r.; S. blackiſh r. VIth Claſs far. Poſition 1 or 2° n. preceding. A third ſtar preceding.

109. FL. 22 an 26 Cancri incertum.

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

110. Teleſcopica ad *o* Ceti.

Jan. 2, 1783. Double. Looking for *o* Ceti, which was inviſible to 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° 42′.

111. *α* Hydræ. FL. 30. Duarum contiguarum lucidior.

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

112. FL. 13 Bootis.

Jan. 8, 1783. Double. Extremely unequal. L. r.; S. dr. Diſtance 1′ 17″ 58‴. Poſition 7° 24′ n. preceding.

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

113.

VI. 113. Fl. 4 Virginis.

Jan. 8. 1783. Double. Extremely unequal. L. wr.; S. dr. Distance 2′ 25″ 44‴; too obscure for accuracy.

114. Fl. 69^{am} Orionis præcedens ad austrum.

Jan. 9, 1783. Double. About ½ degree s. preceding the 69th, nearly towards λ Orionis. Considerably unequal. L. pr.; S. d. Distance 1′ 30″ 38‴. Position 22° 6′ s. following.

115. Fl. 21^{am} Crateris sequens ad austrum.

Jan. 10, 1783. Double. About 2½ degree s. following the 21st, in a line parallel to the 12th Crateris and 4th Corvi. Very unequal. L. w.; S. r. Position 12° 12′ n. following.

116. Fl. 43 Herculis.

Jan. 10, 1783. Double. Very unequal. L. inclining to garnet; S. r. Distance 1′ 14″ 37‴. Position 38° 48′ s. preceding.

117. Fl. 12^{a} Libræ borealior et præcedens.

Jan. 10, 1783. Double. About 1¼ degree n. preceding the 12th Libræ, towards Spica. Very unequal. L. rw.; S. r. Position about 40° s. preceding.

118. Fl. 30 Monocerotis.

Feb. 12, 1783. Double. Very or extremely unequal. Distance 3′ 30″ 54‴ *.

119. ε (Fl. 18^{a}) Piscis austrini australior et præcedens.

July 28, 1783. Double. About 1¼ degree s. 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.

through

through ε Piſcis. Pretty unequal. L. dpr. S. dr. Diſtance 1′ 26″ 58‴. Poſition 67° 46′ f. following.

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

Aug. 16, 1783. Double. Near 1 degree f. following the 43d, in a line parallel to ξ and *o* Sagittarii; a conſiderable ſtar. Very unequal. Both dr. Diſtance with 278, 1′ 14″ 9‴. Poſition 37° 0′ n. preceding.

121. FL. 12 Lacertæ.

Aug. 18, 1783. Double. Very unequal. L. w.; S. r. Diſtance with 278, 1′ 0″ 10‴. Poſition 73° 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 LXXIIId 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.	ϱ Capricorni. FL. 11.
153	11	33° 42′	61° 23′
156	4	FL. 5.	FL. 4.

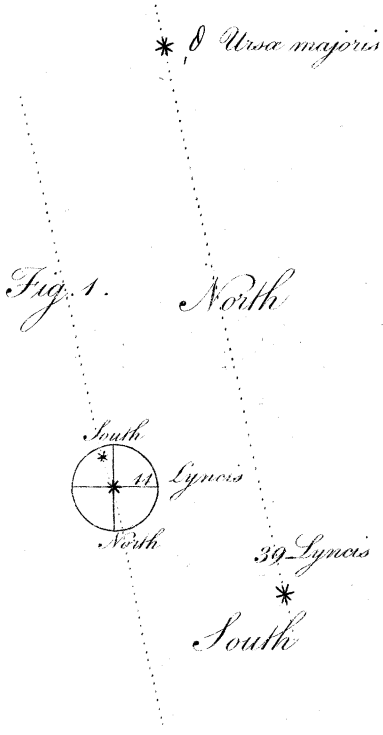
δ Ursæ majoris
North
South
11 Lyncis
39 Lyncis
South
North

Fig. 1.

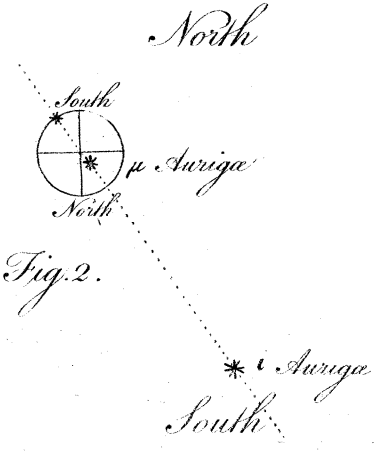
North
South
μ Aurigæ
North
ι Aurigæ
South

Fig. 2.