XXVII. *An Account of an Appearance of Light, like a Star, seen lately in the dark Part of the Moon, by* Thomas Stretton, *in St.* John's Square, Clerkenwell, London; *with Remarks upon this Observation, and Mr.* Wilkins's. *Drawn up, and communicated by the Rev.* Nevil Maskelyne, *D. D. F. R. S. and Astronomer Royal.*

Read July 10, 1794.

Mr. Vince, Fellow of this Society, having acquainted me by letter, early in April last, that a gentleman at Norwich had a month before seen a bright spot upon the dark part of the moon, and had made a little drawing of it in his pocket-book, which he promised to send to him, I immediately wrote a letter in answer to Mr. Vince, to desire him to request the gentleman to send the drawing he had promised, and a full account of the phænomenon. Mr. Vince accordingly wrote to the gentleman immediately, Mr. William Wilkins, architect at Norwich, which produced the first of the foregoing letters, and addressed by Mr. Wilkins to him, giving a particular account of his observation, with a drawing of the appearance.

Soon after, my relation Sir George Booth, Bart. with his lady, being on a visit at the Royal Observatory, upon my mentioning Mr. Wilkins's observation, Lady Booth said their servant, who is curious for a person in his situation, and fond of looking at the stars, had some time before seen something

extraordinary in the moon. Upon this I took occasion, on the 28th of April, to question the man about it, taking care at the same time to direct my inquiries so as to give him no hint of what had been seen by Mr. WILKINS. I immediately minuted down the information he gave me, which was as follows. "Some time ago, about six in the evening, the moon "not being a quarter old, he saw a light like a star, and as "large as a middle sized star, but not so bright, in the dark "part of the moon. He continued looking at it for a minute "or more, during which time it kept the same light, and he "then lost sight of it by going into the house. He said he "thought it was not the present moon, viz. that which is now "almost gone, and that it was not above seven weeks ago. "He was not, however, certain whether it was three weeks or "seven weeks ago." I made a drawing of the moon before him, and desired him to direct me about forming the size of the crescent, and laying down the place of the star-like appearance in the dark part of the moon, which sketch I have subjoined to this account. (See Tab. XXI. fig. 3.)

Lady BOOTH thought the time of the night, when he saw this appearance, was later, and rather seven o'clock, for he mentioned it to her immediately after. Not doubting but this phænomenon, seen by THOMAS STRETTON, in St. John's Square, was the same as was seen by Mr. WILKINS at Norwich, and on the same night, I wished to ascertain the time more nearly by some local circumstances, depending on the place from which the phænomenon was seen, and the tops of the houses or chimnies over which it appeared. Accordingly, on the 21st of May, I desired THOMAS STRETTON to stand in the same place he did when he saw the appearance, and point

out to me the place of the sky where he had seen the moon, with respect to the opposite house and chimnies over which she appeared. With the help of a pocket compass and small wooden quadrant, I found the bearing of the place of the sky, which he pointed out to me, to be 80° west of the magnetic south, or 56° west of the true south meridian, and the altitude 34°. Taking the moon's right ascension from the nautical almanac for the 7th of March, the day stated by Mr. WILKINS, with the bearing abovementioned, and latitude of St. John's Square taken 51° 31′, I find the observation must have been made exactly at eight o'clock mean time, provided the bearing could be exactly depended upon; but as an uncertainty of a few degrees may be allowed therein, we may conclude that the observation was not far from eight o'clock. This agrees nearly with the time of Mr. WILKINS's observation, for he seems to have lost sight of the star on the dark part of the moon a little before eight o'clock, mean time, at Norwich, the correspondent time to which in St. John's Square, on account of the difference of meridians, would be five minutes sooner. An error only of ten minutes in the time noted by Mr. WILKINS, and that deduced from the bearing observed in St. John's Square, both taken together, will bring the observation in St. John's Square to precede the time of the disappearance of the star-like appearance at Norwich: and therefore the two observations agree as nearly together as can be expected from the circumstances in which the observers were placed, and the two observations mutually confirm each other. The altitude of the moon at eight o'clock, by computation, is 41°, or 7° higher than that taken with the quadrant; which difference may be allowed for the error such

an estimation is liable to, and affords no ground for argument against the observations belonging to the same phænomenon, and consequently is an additional confirmation of it.

In order to ascertain the time, and other circumstances relating to the phænomenon, I made some inquiries of Mr. WILKINS, by several letters, which he answered with much candour and exactness, as appears by the extracts of his answers prefixed to this account.

Mr. VINCE, in his letter to me, giving me the first notice of this phænomenon, observed that Mr. WILKINS is an eminent builder, a sensible man, and by no means likely to be deceived; and adds, that the length of time during which he saw it, seems to preclude the possibility of any deception. Mr. WILKINS himself relates that he is long sighted, and that he distinguishes very well the dark part of the moon, illuminated by a faint light, while she is young, which completes her circle. The other person, THOMAS STRETTON, is a young man of sobriety and steadiness, and long sighted also. I particularly mention these circumstances, to obviate an objection that has been made to these accounts, from the circumstance of the bright star in the south eye of the bull, called Aldebaran, having passed by the moon the same evening, and been eclipsed by the northern part of her disk. I own it is a singular coincidence of circumstances, that Aldebaran should the same evening pass behind the moon, in nearly the same track in which this star-like appearance was observed upon the dark part of the moon's disc: but the two facts, considered as independent of each other, are not incompatible. The appulse of Aldebaran to, and subsequent occultation by the moon's disc, was predicted in the nautical almanac, and observed by many.

I observed its eclipse at the moon's dark limb at $6^h\ 47'\ 30''$, and its emersion from the moon's bright limb, at $7^h\ 30^\circ\ 3''$ mean time, at Greenwich.*

The appearance of the spot of light upon the moon's dark part, and its subsequent sudden disappearance at Norwich, happened near eight o'clock; and the observation of the star upon the moon at St. John's Square happened about the same time. I would then ask the persons who make the objection, how could two persons, at two distant places, see a star appear upon the dark part of the moon, at a considerable distance within its circumference, while it was really off it, especially as they were both long sighted? and particularly, how could the immersion be observed near eight o'clock, which really happened at 54 minutes past six, or above an hour before? If it be supposed that the persons saw Aldebaran after its emersion from the moon's bright limb, that is, after half past seven, it becomes still more difficult to conceive, that a star, really on the bright side of the moon, should, by some illusion or optic fallacy, cross that bright part to appear upon the dark part; besides, this supposition does not account for the sudden disappearance of the star.

Mr. VINCE has lately informed me, that he had seen and conversed with Mr. WILKINS on the subject; who expressed himself to be certain both of the time, and place on the dark part of the moon's disc, where he saw the star-like appearance within the circumference.

* The immersion at Norwich, on account of the difference of parallax, would happen about a minute and an half later, and the emersion as much sooner; and considering also the difference of meridians, by which Norwich is five minutes of time to the east of Greenwich, the immersion at Norwich must have happened at $6^h\ 54'$, and the emersion at $7^h\ 33'$ mean time.

I shall make no conjectures on the cause to which this extraordinary phænomenon may be attributed; but only remark, that it is probably of the same nature with that of the light seen of late years in the dark part of the moon by our ingenious and indefatigable astronomer, Dr. HERSCHEL, with his powerful telescopes, and formerly by the celebrated DOMINIC CASSINI; although this has been so illustrious as to have been visible to the naked eye, and probably equal in appearance to a star of the third magnitude.

Fig. 1.

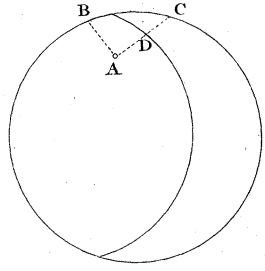

Fig. 2.

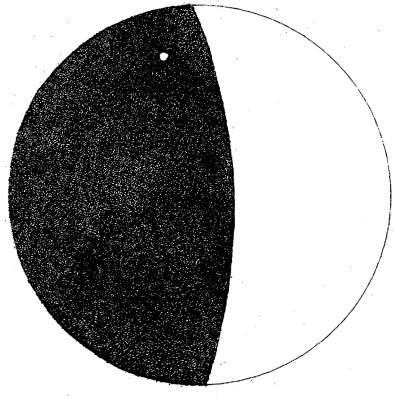

Fig. 3.