chemiſt; and, by the experiments which he made, he ſaid he could diſcover neither acid nor alkali prevailing in it.

We, whoſe names are ſubſcribed, do atteſt the truth of this relation.

June 25, 1753. B. DACK, Phyſician.
EDWARD COOPER, } Surgeons.
B. GOOCH, }

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## XLV. *Aſtronomical Obſervations made in* Surry-ſtreet, London, *by* J. Bevis, *M. D. and* James Short. *A. M. F. R. S.*

Read Nov. 8, 1753.

Eclipſe of *Venus* by the *Moon*.

Apparent Time.

| | d | h | ′ | ″ | |
|---|---|---|---|---|---|
| 1753 July | 26 | 16 | 2 | 17 | Venus totally hid by the Moon. |
| | | 17 | 5 | 6 | Her northern cuſp emerg'd: and, a few ſeconds after, her ſouthern one. |
| | | | 5 | 31 | Venus was totally emerged. All theſe with a reflector of two feet focus. Then her diameter was found to be $32\frac{3}{4}''$, with a new kind of micrometer (of which more hereafter); and alſo with one of Mr. Graham's ſort,

ſort, in a two-feet Gregorian reflector.

| d | h | ′ | ″ | |
|---|---|---|---|---|
| July 26 | 21 | 4 | 18 | The Moon's conſequent limb paſſed the meridian. |

Eclipſe of *Mars* by the *Moon*

| | | | | |
|---|---|---|---|---|
| Aug. 20 | 17 | 6 | 49½ | The Moon's conſequent limb paſſed the meridian. |
| | | 8 | 4 | Mars's centre paſſed the merid. His diameter then, with both micrometers, 13¼″. The Moon's diameter 31′ 21″. |
| | 18 | 6 | 59½ | Mars totally hid by the Moon with a reflector of four feet focus. The emerſion could not be ſeen for clouds. |

Occultation of β *Capricorni* by the *Moon*.

| | | | | |
|---|---|---|---|---|
| Oct. 5 | 7 | 16 | 50 | The Moon's preceding limb paſſed the meridian. |
| | | 20 | 4 | A ſmall ſtar, which preceded β, paſſed the meridian. |
| | | 20 | 19 | β paſſed the meridian. Preſently after, the Moon's diameter was found to be 29′ 48″, with the new micrometer, applied to a reflector of two feet focus. |
| | 8 | 21 | 3 | The ſmall ſtar eclips'd by the Moon. |
| | | 28 | 48 | β eclipſed by the Moon. |

Oct.

| | d | h | ′ | ″ | |
|---|---|---|---|---|---|
| Octob. | 5 | 9 | 48 | 24 | β emerged from the Moon. [The three laſt with a two-feet reflector.] |
| | | | 48 | 44½ | β paſſed the horary wire of the micrometer in the equatorial inſtrument of two feet focus. |
| | | | 48 | 55 | The Moon's preceding limb paſſed the ſame; the ſtar then apparently north of the Moon's ſouth limb 15′ 4″ in declination. |

Eclipſe of the *Sun*.

| | | | | | |
|---|---|---|---|---|---|
| Octob. | 25 | 20 | 30 | 10 | The eclipſe had been ſome time begun; but, for clouds, could not be ſeen till now; when the diſtance between the cuſps, meaſur'd with the new micrometer, applied to a two-feet reflector, was 12′ 26½″. |
| | | 21 | 15 | 23 | The diſtance between the cuſps 29′ 49″. |
| | | | 18 | 6 | The diſtance between the viſible limbs of the Sun and Moon 11′ 32″. |
| | | 22 | 18 | 56 | The diſtance between the cuſps 24′ 12″½. |

The day before, about 10 in the morning, the Sun's horizontal diameter was 32′ 17″.

Theſe meaſures were all taken, when the ſun continued viſible but for a few ſeconds, through the interſtices

interſtices of flying clouds; and yet, from the nature of this micrometer, they may be very ſafely relied upon: though it would have been impoſſible to have catch'd any one of them with the common micrometer.

The principle on which this moſt excellent inſtrument is conſtructed, was laid before this Society laſt May: and it is to be hoped, that Mr. Dollond will evince the certainty of its meaſurements, from the leaſt to the greateſt angle it is capable of comprehending; and that, under every conſideration of reflexion as well as refraction by ſpherical ſurfaces; ſo as to leave no room for ſuch objections or cavils, as otherwiſe may probably be brought againſt it. For our own parts, we are fully ſatisfied of the juſtneſs thereof, from a great variety of trials and compariſons. That which we have hitherto uſed, is the firſt that has been made of the kind; and might, perhaps, have been better conſtructed in ſome reſpects, tho' in nothing material.

Applied to a reflector of only two feet, the ſcale is as large as the common micrometer can have in a forty-foot refractor; and all is done without the help of ſcrews or wires; ſo that there is no need of illuminating.

In virtue of ſuch a ſcale it is, that even fractions of ſeconds may be depended upon; as we have found, by often repeated trials on the diameters of the planets. Theſe, as well as ſmall diſtances of ſtars, may be meaſured in all directions, with equal and almoſt incredible facility, without a polar axis; as well out of doors, in a rough wind, as within.

More

More of its advantages might be mentioned, but theſe, we apprehend, may be enough to recommend it at preſent.

J. Bevis.
Ja. Short.

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## XLVI. *A Letter from Mr.* John Ellis *to Mr.* Peter Collinſon, *F. R. S concerning a* Cluſter-Polype, *found in the Sea near the Coaſt of* Greenland.

SIR,

Read Nov. 8, 1753. THE marine production, that you were ſo obliging to ſend me, appears to be an animal, not a vegetable, as your friend call'd it, who ſent it to you. Upon examining it, I find it to be a ſpecies of cluſter-polype, conſiſting of many bodies united at one common baſe. This ſpecimen appears to have three-and-twenty diſtinct ones. I have ſince ſeen another, that was taken at the ſame time, that had between thirty and forty.

Each body is furniſhed at the top with eight arms or *tentaculi*, which expand themſelves in the form of a ſtar. Each arm is again furniſhed on each ſide with a row of ſmall fibres, which ſeem to do the office of fingers. In the centre of the eight arms appears the mouth, ſurrounded by ſix little ſemicircular lips ſtanding upright.

Upon diſſecting one of the bodies lengthwiſe, it appeared to conſiſt of a ſtrong muſcle, contracted