

The end could not be seen for clouds, but the whole of the eclipse may be determined from the above measurements.

The Sun's diameter parallel to the horizon, about an hour before noon on the day of the eclipse, was  $31' 59''$ , 4, air hazy. The next day at the same hour it was  $31' 58''$ , 6.

A D D I T I O N.

April 12.	11	0	0	P. M.	Moon's diameter measured	=	32	49,	9	
13.	6	30	0	P. M.	=====		=	33	8,	8
	10	25	0	P. M.	=====		=	33	20,	7 air undulating.
14.	6	30	0	P. M.	=====		=	33	21,	6
	11	0	0	P. M.	=====		=	33	39,	5 air undulating.

XVIII. *Observation of the Eclipse of the Sun, April 1, 1764: In a Letter from Dr. John Bevis, to Joseph Salvador, Esq; F. R. S.*

S I R,

Read April 5, 1764. **T**HE honour you were pleased to do me by sending me an invitation to observe the late eclipse of the Sun at your house, and the accommodations I there met with, require that I should give you the best account I can of my observation, however imperfect through the unfavourableness of the weather.

VOL. LIII,

P

You

You may remember, Sir, that, not long before the beginning of the eclipse, the air, from very serene, turned hazy, and thin clouds came from the South-west. I had set a stop watch of Graham's, by a clock likewise of his, with which the Sun's transit on the meridian was observed carefully two days before the day of the eclipse, and the next day after it. By comparing my watch with this clock on my return, I found it was 19 seconds too fast in mean time, at your house, when I observed the beginning; and whereas it then shew'd  $9^h 9' 12''$ , it should have shewed no more than  $9^h 8' 53''$ , from whence subtracting  $3' 45''$ , the equation of time, there remains  $9^h 5' 8''$ , the apparent time of the beginning of the eclipse, as I observed it.

But I must remark, that, the state of the sky continuing such as I have described it, the beginning must have really happened sooner, by 10 or 15 seconds, as I judge from the first perceivable distance of the cusps; so that, if I state it at  $9^h 4' 53''$ , I presume I shall err but a very few seconds.

About the middle of the eclipse, the air was very clear, and the cusps well defined, which wanted about 60 degrees of joining. I could not then discern any thing on the Sun about the Moon's limb, which in the least indicated a lunar atmosphere. A full digit of the Sun, or more, remained uneclipsed. The day-light was but inconsiderably diminished, so that neither Jupiter nor Venus could be seen, though both in a favourable position, to the east of the Sun.

Fahrenheit's thermometer, placed without door to the north, stood at 50 when the eclipse began, and fell but one division whilst it lasted.

The

The end of the eclipse could not be observed for thick clouds, to the great disappointment of all who had the curiosity to give their attention to this phænomenon in or about London.

I am, with great regard,

S I R,

Your very obedient humble servant,

Clerkenwell-Clofe,  
April 4, 1764.

J. Bevis.

*The Moon's Eclipse of March 17th, 1764, observed in Surrey-street, in the Strand, London.*

Apparent time.

- |    |    |    |  |
|----|----|----|--|
| 10 | 32 | 0  | the penumbra just sensible to the naked eye.   |
|    | 39 | 0  | the beginning, viewed with an opera glass.   |
|    | 48 | 30 | the shadow touches <i>Mare Humorum</i> : This, and those that follow, with a 9 inch reflector. |
|    | 53 | 35 | <i>Tycho</i> touched by the shadow.  |
|    | 54 | 41 | <i>Grimaldi</i> touched.   |
|    | 57 | 30 | <i>Grimaldi</i> covered.   |
| 11 | 46 | 30 | the shadow touches the southern border of <i>Mare Tranquillitatis</i> .                        |
|    | 0  | 49 | 36 ————— touches the southern border of <i>Mare Crisium</i> .                                  |
| 12 | 13 | 44 | <i>Grimaldi</i> begins to emerge.  |
|    | 17 | 36 | ————— is quite emerged.  |
|    | 56 | 23 | <i>Mare Crisium</i> nearly bisected by the shadow.   |
| 13 | 0  | 30 | <i>Tycho</i> out of the shadow.  |
|    | 2  | 40 | <i>Mare Crisium</i> out of the shadow.   |
|    | 16 | 30 | the end of the eclipse, with an opera glass.   |
|    | 24 | 0  | the Moon clear of the penumbra.  |

The shadow was ill defined, tho' the air was clear.

P. S. I find an observation of mine of the lunar eclipse of May 7th, 1762, printed in the Philosophical Transactions Vol. LII. pag. 543. How it got there I know not, never having thought it worthy the notice of the Royal Society. Besides, in the three observations there said to be made at Mr. Short's before the eclipse, the equation (I suppose by my own mistake) is *subtracted*, which should have been *added* to give the apparent time; and the three apparent times there set down, are to be increased each by 4' 16" to make them the true ones. J. B.

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XIX. *Observations on the Eclipse of the Sun, April 1, 1764: In a Letter to the Rev. Thomas Birch, D. D. Secret. R. S. from Mr. James Ferguson, F. R. S.*

Reverend Sir,

Liverpool, April 2, 1764.

Read April 5, 1764. **H**AVING been at this place ever since the beginning of March, and hoping that the sky would prove favourable (as to my great joy it did) for observing both the lunar eclipse of March 17th, and the solar eclipse of yesterday, I proposed to captain Hutchinson, at whose house I stay, to have a meridian line drawn on the leads on the top of his house, in order to adjust his clock for observing the times of these eclipses by: and we got Mr. Holden, who is master of a mathematical school here, to do it for us, by several observations of the altitude