



Philosophical Transactions

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XVII. *Observation of the Eclipse of the Sun, the 1st of April 1764, made in Surry street, in the Strand, London: By James Short, M. A. F. R. S.*

Read April 5, 1763. **T**HE morning of the eclipse I had provided the instruments I judged would be necessary for observing it in such a manner as to be satisfactory to the Royal Society as well as to myself. A reflecting telescope of two feet focal length, it's aperture four inches and a half, and it's magnifying power seventy times. To this telescope was fitted a micrometer with an achromic object-glass of 40 feet focal length.

The right honourable the Earl of Morton, now President of this Society, was pleased to honour me with his company, and also to observe; but in different rooms, out of sight and hearing of one another. His Lordship used a reflector of only eighteen inches focal length, four inches and a half aperture, and a power of forty times, to the eye-piece of which a helioscope was adapted, for viewing the Sun distinctly, without the least inconvenience to the eye.

The condition of the air was very unpromising, for, besides a general haziness of the sky, thin slow moving clouds were frequently passing over the Sun
from

from the South-west, so that it was by fits only that the Sun's limb could be seen distinctly. I used a smoked-glass to defend my eye, and my observations were noted down as follows.

		Apparent time.		
		h	' "	
March 31,	21	4	33	} the beginning of the eclipse by me.
		4	36	

All the rest by myself, with the before mentioned micrometer.

21	12	27	—	13	22, 0	= distance of the cusps.
	14	12	—	14	32, 1	= ditto.
	16	17	—	15	50, 8	= ditto.
	18	1	—	16	50, 6	= ditto.
	19	37	—	17	45, 4	= ditto.
	48	42	—	27	7, 1	= ditto.
22	19	15	—	29	33, 2	= ditto.
	22	28	—	29	49, 5	= { Moon's diameter nearly parallel to the horizon.
	23	58	—	29	49, 5	= ditto.
	26	10	—	2	58, 7	= { greatest distance of Sun and Moon's limbs.
	28	28	—	2	31, 3	= ditto.
	30	43	—	2	26, 2	= ditto.
	32	8	—	29	49, 5	= { Moon's diameter nearly parallel to the horizon.
23	35	23	—	21	11, 4	= distance of the cusps.
	37	33	—	20	18, 4	= ditto.
	40	59	—	18	52, 9	= ditto.

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.

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