

I. *Observations on the Eclipse of the Moon, June 18, 1722^r and the Longitude of Port Royal in Jamaica determined thereby. By Dr. Halley, Astronomer Royal, F.R.S.*

THE Eclipse of the Moon which happened in *June* last, 1722, was so far hid by the cloudy Sky, that neither myself, nor any of our Astronomical Friends, in or about *London*, could furnish an Observation thereof worthy to be laid before the Society. But the same having been well observed at *Jamaica*, by the late curious Capt. *Candler*, Commander of his Majesties Ship *Launceston*, (whose Example it were to be wished, others in the like Post would imitate) and at *Berlin*, by Mr. *Christfried Kirck*, Astronomer of the Royal Academy of Sciences there. I thought it not amiss to prefix to their Accounts that little I was able to note concerning it.

Sunday, June 18, mane, Having perfectly rectified my Clock so as to shew the Apparent Time, neither the transit of the Moon over the Meridian, nor the beginning of the Eclipse which soon followed, could be seen thro' the very thick Cloud. At 13 *b.* 12' *T. app.* a small Particle of the Moons Body was seen through a very little *hiatus* in the Cloud, by which glimpse I could only be assured that the Eclipse was not yet Total. At 13 *b.* 29' by such another view. I was satisfied that it was now become Total; but in a Moment, it again disappeared, till 14 *b.* 49' 10'', when the Cloud beginning to break, I got time to measure with the Micrometer, the *Partes Lucidæ* now recovered in the Moon's Diameter, which I found 14'. 00'', though this not so well as I could wish, by reason of a thinner Sort of Cloud which perpetually intercurr'd, and render'd the Edge of the Shadow somewhat dubious.

At 15 *b.* 15' the Moon was pretty well got out of the thick Cloud, but being very low, and the Daylight become strong, she shone very faintly, and the Shadow became worse and worse defined.

From

From 15 h. 26' to 15 h. 27' T. app. I doubted of the End, and am confident it did not exceed the 27th Minute. It ended overagainſt the North Part of the *Palus Mæotis* of Mr. *Hevelius*, much about the middle of the Western or Right-hand Limb of the Moon, ſhe being then very near ſetting.

Capt. *Barth. Candler*, being then at *Port Royal*, in *Jamaica*, had much better Fortune, and a ſerene Sky from the Beginning to the End; who having uſed due care to be aſſured of his Times, by Altitudes taken with an Inſtrument of three Foot *Radius*, was pleaſed to ſend us the Reſult of his Obſervation as follows.

	h.	'	''
The Eclipse began	6	59	10
Immerſion	8	7	50
Emerſion	9	11	0
The End	10	19	40
Whence the Middle	8	39	25

And ſuppoſing the Eclipse to have ended at *Greenwich*, at 15 h. 26' $\frac{1}{2}$ the Difference of Longitude between *Port Royal* and *Greenwich*, will be 5 h. 6' 50'', or 5 h. 6' $\frac{1}{2}$ from *London*, that is, 76 gr. 37' $\frac{1}{2}$.

Mr. *Kirck* being in a more Eaſterly Meridian, could ſee nothing of the Emerſion, but has carefully noted the Time of the Beginning and Immerſion, as he obſerved them at *Berlin*, viz. the Beginning of the Eclipse at 12 h. 59' 55'' and the Immerſion at 14 h. 8' 8''. Now by comparing ſeveral Obſervations made at both Places, we have formerly concluded *Berlin* to be 54 Min. of Time, or 13 $\frac{1}{2}$ grad. of Longitude more Eaſterly than *London*; wherefore at *London* it began at 12 h. 5' 55'' and immerged at 13 h. 14' 8'' that is, the beginning was later here than at *Jamaica* 5 h. 6' 45'', and the Immerſion later 5 h. 6' 18'', punctually agreeing with what reſulted from my own Obſervation of the End as aboveſaid; and ſufficiently with what I had long ſince determined from Obſervations ſent me from *Jamaica* by my old Aſtronomical Friend Mr. *Charles Boucher*.