

XXIV. *An Observation of an Eclipse of the Sun at the Island of New-found-land, August 5, 1766, by Mr. James Cook, with the Longitude of the Place of Observation deduced from it: Communicated by J. Bevis, M. D. F. R. S.*

Read April 30, 1767. **M**R. Cook, a good mathematician, and very expert in his business, having been appointed by the Lords Commissioners of the Admiralty, to survey the sea coasts of New-found-land, Labradore, &c. took with him a very good apparatus of instruments, and among them a brass telescopic quadrant made by Mr. John Bird.

Being, August 5, 1766, at one of the Burgeo Islands near Cape Ray, latitude $47^{\circ} 36' 19''$, the south-west extremity of New-found-land, and having carefully rectified his quadrant, he waited for the eclipse of the sun; just a minute after the beginning of which, he observed the zenith distance of the sun's upper limb $31^{\circ} 57' 00''$; and, allowing for refraction and his semidiameter, the true zenith distance of the sun's centre $32^{\circ} 13' 30''$, from whence he concluded the eclipse to have begun at $0^{\text{h}} 4' 48''$ apparent time, and by a like process to have ended at $3^{\text{h}} 45' 26''$ apparent time.

N. B. There

N.B. There were three several observers, with good telescopes, who all agreed as to the moments of beginning and ending.

Mr. Cook having communicated his observation to me, I shewed it to Mr. George Witchell, who told me he had a very exact observation of the same eclipse, taken at Oxford by the Rev. Mr. Hornsby ; and he would compute, from the comparison, the difference of longitude of the places of observation, making due allowance for the effect of parallax, and the earth's prolate spheroidal figure ; and he has since given me the following result:

$\begin{array}{r} 5^{\text{h}} \ 23' \ 59'' \\ 0 \ 46 \ 48 \end{array}$	$\begin{array}{r} 7^{\text{h}} \ 7' \ 5'' \\ 3 \ 39 \ 14 \end{array}$
beginn. at Oxford.	end at Oxford.
beginn. at Borgeo Isles.	end at Borgeo Isles.
$\begin{array}{r} 4 \ 37 \ 11 \\ - \ 51 \ 59 \end{array}$	$\begin{array}{r} 3 \ 27 \ 51 \\ + \ 17 \ 35 \end{array}$
effect of parallax, &c.	effect of parallax, &c.
$3 \ 45 \ 22$	$3 \ 45 \ 26$
diff. of meridians.	diff. of meridians.

J. Bevis.