XLVI. *An Eclipse of the Sun June* 24, 1778, *observed at* Leicester. *By the Rev. Mr.* Ludlam, *Vicar of* Norton, *near* Leicester; *communicated by the* Astronomer Royal.

Read July 9, 1778. THE beginning was observed at $III^h 35' 27''$. The end at $V^h 19' 30''$ or $34''$, according to the time shown by the clock, the Sun being a little hazy at the end of the eclipse.

Zenith distances of the Sun's upper limb, taken with an eighteen inch quadrant made by BIRD, for determining the error of the clock.

Time by the Clock.	Z. Dist. ⊙ UL.
H M S	D M
IV 16 22	55 30
IV 29 35	57 30
IV 49 $24\frac{1}{2}$	60 30

6 L 2

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The barometer ftood at 29,9; the thermometer at 71°. The error of the line of collimation was, in the fummer of 1774, 13,8 feconds to be fubtracted (fee Phil. Tranf. vol. LXV. part 2.). As the quadrant has not been altered, and indeed feldom ufed fince, I fuppofe the error of the line of collimation to remain the fame. From the firft obfervation I make the clock to be 1′ 21″ fafter than folar time. From the fecond, 1′ 22″. From the third, 1′ 23″. Taking the mean of thefe, *viz.* 1′ 22″, the beginning of the eclipfe at Leicefter was at IIIh 34′ 5″; the end at vʰ 18′ 8″ or 12″ by folar time.

The difference between the meridians of Greenwich and Leicefter, from obfervations in the Philofophical Tranfactions, computed by Mr. WALES, mafter of the royal mathematical fchool in Chrift's Hofpital.

		M S
From folar eclipfe June 3, 1769,	{ Beginning { End	4 24,5 4 38,5
ζ Tauri, April 28, 1770,	Immerfion	4 27,8
Aldebaran, Nov. 18, 1774,	Emerfion	4 50,5
Solar eclipfe, June 24, 1778,	{ Beginning { End	4 23,2 4 41,3

M. DU SEJOURS, in the Memoirs of the Academy of Sciences for 1771, makes the difference of the meridians of Paris and Leicefter, from the end of the folar eclipfe of 1769, to be 13′ 59″; and the difference of the meri-

dians of Paris and Greenwich, both from the beginning and end of that eclipse, 9′ 20″. Whence the difference of the meridians of Greenwich and Leicester 4′ 39″.

If we take the mean of all these computations, we shall have the difference between the meridian of the Observatory at Greenwich and St. Martin's Church in Leicester 4′ 35″ of time very nearly.