XC. On the late solar eclipse

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on or near the meridian. But, if he will take the trouble to calculate the path of the moon's shadow, he will find that the sun was centrally eclipsed on the *meridian* in north latitude $43^{\circ} 8' 48''$, east longitude $29^{\circ} 41' 30''$; and that the central path of the moon's shadow did not, at any time during its whole course, enter any part of the Russian territories.

I am, sir,

Your obedient servant,

London, Dec. 16, 1816.

ASTRONOMICUS.

XC. *On the late Solar Eclipse.* By E. WALKER, Esq.

To Mr. Tilloch.

DEAR SIR,—THE following observation on the solar eclipse, of November 19, 1816, was taken in latitude $52^{\circ} 45' 24''$ N. and longitude $1^{\circ} 34''$, 4 in time, east of Greenwich.

The beginning of the eclipse was not observed, but the end was taken, with a forty-six inch achromatic magnifying forty-two times, at $10^h 25' 14''$, 5 A.M. per clock.

Clock too fast at $10^h 25'$ 0 3 9,66

End of the eclipse $10 22 4,84$ m. time.

The air was very clear during the time of observation, and the aperture of the object glass of the telescope being contracted to two inches, the distinctness gained by this means was more than a compensation for the low power I used. And, as I had an observation of the sun's transit over the meridian on the same day, the error of observation of the end of the eclipse does not, probably, amount to more than a second.

I am, dear sir,

Yours respectfully,

Lynn, Dec. 10, 1816.

EZ. WALKER.

XCI. *Inquiries into the Laws of Dilatation of Solids, Liquids, and elastic Fluids, and on the exact Measurement of Temperatures.* By Messrs. DULONG and PETIT. Read to the Institute 29th of May 1816.

[Concluded from p. 380.]

Of the Dilatation of Solids at high Temperatures.

THE knowledge of the dilatation of the metals, particularly of the ductile metals employed in the construction of instruments and