

the epoch comes round every year, as it is likely to be a periodical display which will reappear with considerable strength at a future time.

Yours sincerely,

Bishopston, Bristol, 1900, July 16.

W. F. DENNING.

A previous Total Eclipse at Navalmoral.

GENTLEMEN,—

The question as to what was the previous occasion on which the shadow passed over Navalmoral may occur to some of us who witnessed the late eclipse there. As that of 1706 seems to have gone northward of this point, we shall probably have to go back exactly 300 years for the desired conditions, to July 10, 1600. Under what different circumstances would this be witnessed by the simple peasantry from that of 1900, when it is reported that 20,000 railway tickets were sold in Madrid for eclipse-excursionists!

The eclipse of 1600 was observed by Kepler as an obscuration of half the solar disk. Tycho ("in arce Benatek") also saw it a few miles east of Prague, and considered the magnitude 5 digits, middle $1^h 46\frac{1}{2}^m$. It occurred the year before his death.

The eclipse of 1842 must have been total over Madrid and possibly at Navalmoral; but as this was little more than 20 minutes after sunrise, it can hardly be reckoned among the list of total eclipses available for observation.

Melplash Vicarage, Bridport,
1900, July 9.

Faithfully yours,

S. J. JOHNSON.

Edmund Weaver.

GENTLEMEN,—

Dr. Stukeley, in the *Philosophical Transactions* for 1754 (vol. xlviii. p. [221]) speaks of Edmund Weaver (whose acquaintance he had made in Lincolnshire) as "a very uncommon genius, who had made himself master in astronomy and was scarcely to be accounted the second in the kingdom," and adds that when his tables were shown in MS. to Halley, the latter suspected that he must have seen his own. Yet it does not appear that Weaver's were ever published, or anything of his except a short series of Almanacs (of which I have been able to find only that for 1745) under the title "The British Telescope." Is anything more known of this "uncommon genius"? Stukeley constructed a map, from the calculations of Weaver, of the shadow-path of the eclipse of May 28, B.C. 603, and contends strongly for its being the eclipse (commonly called that of Thales) which, according to Herodotus, put a stop to a battle impending between the Medes and Lydians. I need not again go over the subsequent investigations which are decisive for the eclipse in question being that of May 28, B.C. 585. But it may be worth while to call attention to the positive way

in which Stukeley accuses Pliny of error in regard to the date of this eclipse, though that assigned by the latter seems to be perfectly correct when the right eclipse is taken. For Pliny (Hist. Nat. ii. 12) says that the year when the eclipse put a stop to the battle was the fourth year of the forty-eighth Olympiad; and this is interesting as a confirmation of the view that the first year of the first Olympiad corresponded to B.C. 776, as Clinton places it. For if B.C. 585 were the last year of the 48th Olympiad, and B.C. 584 the first year of the 49th, 48 complete Olympiads would have elapsed since that which is reckoned as the first, and $584 + 4 \times 48 = 776$. The eclipse furnishes therefore an important confirmation of the accuracy of the received system of ancient chronological dates. Weaver, however, seems to deserve great credit for his tables if really original; for the path of the eclipse of B.C. 603 mapped from them by Stukeley does not differ much (though somewhat more to the west, crossing the eastern Mediterranean instead of the northern Red Sea) from that derived from modern tables by Oppolzer.

Yours faithfully,

W. T. LYNN.

Blackheath, 1900, July 6.

Occultations of δ Scorpii.

GENTLEMEN,—

The occultation of the above-named star last night was little affected by parallax here as compared with Greenwich, though the duration was short. The disappearance must have taken place between $11^h 21^m 50^s$ and $11^h 27^m$, when a cloud covered the Moon. The emersion was well observed, exactly at the lowest point of the Moon's disk, at $11^h 53^m 5^s$. Power used 50 on $3\frac{3}{4}$ inches.

A slight interest is attached to occultations of this star from the fact that it is the first one of which an occultation is recorded in the years Anno Domini among the Chinese observations found by Gaubil, and published in the 'Connaissance des Temps' for 1810. The mode in which the Chinese have recorded this bears an air of truthfulness:—

“An. 32=8^e année Kien-von, 4^e lune, jour sin-oney (12 mai) la lune pres de l'etoile δ du Scorpion. La lumière de la lune cachait la vue de l'etoile.”

The Moon at the time was nearly full.

The Moon is also mentioned, in the same records, to have occulted this star on August 9, 821, and on July 6, 1001.

Melplash Vicarage, Bridport.
1900, July 9.

Faithfully yours,

S. J. JOHNSON.