

Sunspots and Magnetic Storms.

GENTLEMEN,—

In Mr. Newton's paper on "Sunspots, Bright Eruptions and Magnetic Storms" prepared for the British Association Discussion and published in *The Observatory* for December, I notice a statement about the 27-day period in magnetic storms that seems to be contradicted by certain records of the Kodaikanal Observatory. This is the statement that though the smaller magnetic storms show a marked tendency to recur at intervals of 27 days, this characteristic is not shown by the "great" storms.

Two of the greatest storms recorded at Kodaikanal during the years when I was in charge certainly did show this characteristic recurrence. The first was the "very great" storm of 1920 March 22, associated with a very large spot group passing the central meridian of the Sun on that date. The spot group was observed during five meridian passages, from January 1 to April 18, and each meridian passage was accompanied by a magnetic storm of "great", "very great", or "moderate" intensity. The spot disturbance and its surrounding flocculi completely subsided during May, yet the magnetic disturbance continued to recur at 27-day intervals for eight further periods: the last to be identified in this sequence was recorded on November 21 as a "moderate" storm. The interval January 1 to November 21 is equal to 12 synodic periods of 27.08 days, or a true solar period of 25.22 days.

The second sequence appears to have started a year later on March 21, 1921, nearly two months before a spot had appeared. This first storm was classed as "great", and was followed on April 18 by another "great" storm. In May a very large spot group appeared and crossed the central meridian on May 14-15, when violent magnetic storms were recorded. These lasted from May 12 to 21, with a lull on May 18. From May 15 storms continued at 27 or 28 day intervals without a break until September 28-29, giving in all, from March 21, seven periods of 27.3 days. These storms were recorded also by Cortie at the Stonyhurst Observatory, and he also records two other sequences of great or moderate storms in that year. ('Nature', October 1921, p. 272.)

These few instances may of course be very exceptional, or it may be that such sequences are more easily recognised in magnetograph records obtained in low latitude stations than in regions much nearer to the magnetic poles.

1939 December 15.

I am, Gentlemen,

Yours faithfully,
J. EVERSHED.