

THE ELLIPTICITY OF THE CORONA AT 80 MC./S. DURING SUNSPOT MINIMUM 1954

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The solar eclipse of 30 June 1954 was observed in the neighbourhood of Helsinki on the frequency 81.5 Mc./s. [1]. At the maximum of the optical eclipse 90% of the solar diameter was occulted by the moon. We may accordingly assume that on the wave-length of observation the eclipse was nearly central. Further, the angle between the orbit of the moon and the solar equator was only 12° .

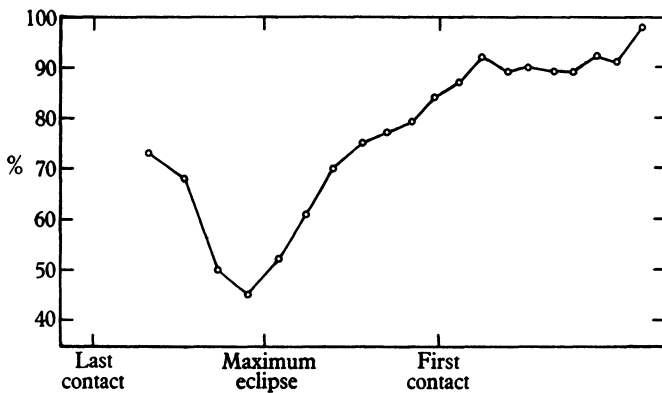


Fig. 1. Percentage of solar radiation observed during the eclipse.

Fig. 1 shows the results obtained. We have used the phase switching system; each circle corresponds to a maximum deflexion of the recorder. At the maximum of the optical eclipse $52 \pm 7\%$ of the radio-frequency radiation is occulted by the moon. At the first contact the corresponding number is $16 \pm 4\%$. At the last contact the percentage seems to be the same as at the first, although observations could not be continued to the end of the eclipse due to an interfering radio sonde. Assuming symmetry of the curve, the diagram of Fig. 2 represents the observations.

The diagram shows the rate of solar radiation emanating from various areas occulted by the moon. The sum of all these percentage values is about one hundred, the exact figure being 102 %. Accordingly, the observations

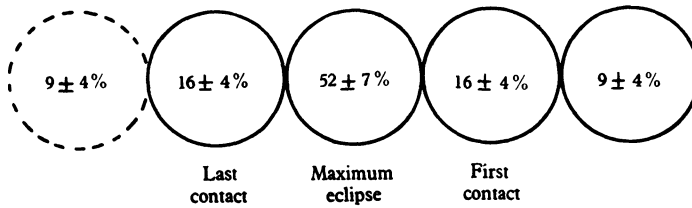


Fig. 2. The percentage in each circle indicates how much of the total solar radiation is taken away by the moon in that position.

indicate that all radiation on 80 Mc./s. emanates from the strip along which the moon passes the sun. It is not possible to deduce from our observations alone the breadth of the active strip in the polar direction or to determine the ellipticity of the corona.

REFERENCE

- [1] Tuominen, J., Riihimaa, J. and Tuori, K. *Ann. d'Astrophys.* **18**, 3-6, 1955.