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OBSERVATIONS ON PHOTOSPHERIC BRIGHTNESS SURROUNDING SUNSPOTS

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A film of the Sun taken with a 4-inch refractor at the Manila Observatory in integrated light through an orange filter at 23.43 U.T. on 1959 March 25 shows the phenomenon of the bright ring which sometimes encircles large sunspots. To investigate the phenomenon, an enlargement was examined section by section for the number of granules per unit area of 169 square mm. Of the total solar area 0·77 per cent was covered, when account was taken of foreshortening at cos θ of 0·9533, and when the area covered by the sunspots was deducted. The 8281 granules which were counted works out to 1 076 000 granules on the whole sunspot-free solar surface, a number satisfactorily in agreement with the commonly accepted round number of one million.

Fig. 1 shows the granule count in the squares into which the enlargement was divided. The double dashed line about the spots shows the boundary

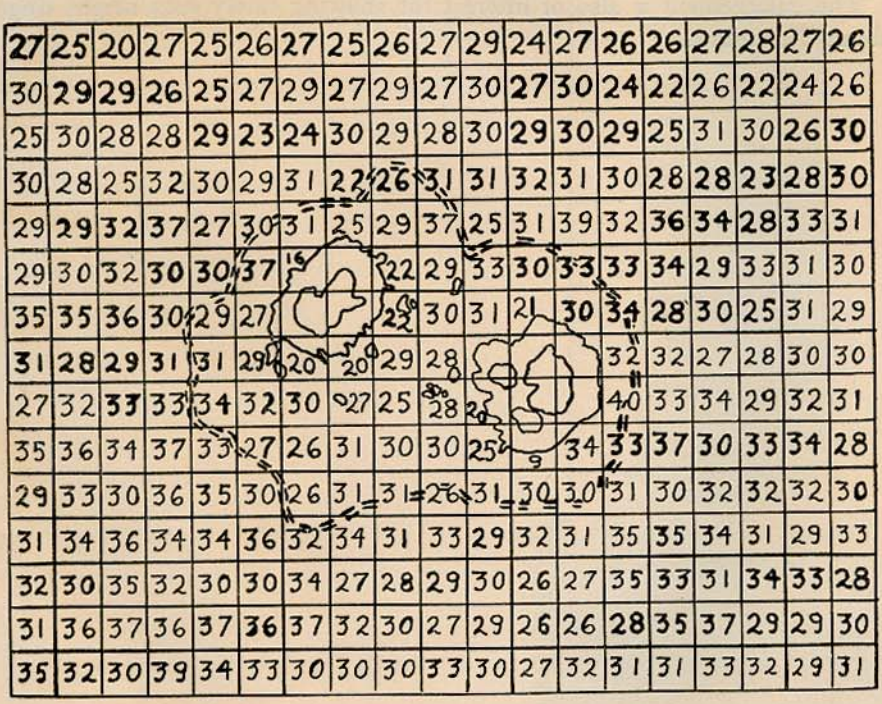

FIG. 1. Numbers are granule count at corresponding places on the enlargement. Double-dashed lines indicate facular limits. Sunspots are sketched near the middle of the figure.