

SOLAR NOISE BURST OF 11 APRIL 1952  
AND ASSOCIATED IONOSPHERIC AND  
MAGNETIC DISTURBANCES

The addition of a Magnetic and Ionospheric Section to the astrophysical observatory at Kodaikanal has placed this observatory in an especially favourable position for the study of solar-terrestrial relationships. Our Watson magnetographs have been in continuous operation for the last three years and they have been supplemented by a set of La Cour magnetographs during the last year. Mr. B. N. Bhargava, officer in charge of the Magnetic and Ionospheric Section, has put into commission our recently acquired automatic multi-frequency Ionosphere Recorder capable of making an entire frequency sweep from 1 to 25 Mc/s in  $7\frac{1}{2}$  seconds and has recently been able, with the co-operation of the members of that section, to initiate a programme of systematic ionospheric soundings from early morning to evening. Mr. R. Parthasarathy, a Government of India research scholar, has, under the supervision of Mr. Bhargava, completed the construction of an equipment for continuously recording extraterrestrial radio radiation on 100 Mc/s and has begun a systematic study of solar radio noise. A Kolhorster ionisation chamber for recording cosmic ray intensity has also been in continuous operation for about a year now and has been keeping a special watch on possible cosmic ray bursts of solar origin. The results of these allied activities are just beginning to come in. A recent solar flare effect recorded

synchronously by our magnetographs, ionosphere recorder and radio telescope is given in Fig. 1.

The records show a magnetic crochet, bursts of noise and enhanced radio noise from the sun and a partial fade-out on h'f records which occurred simultaneously on 11 April 1952 between 0530 and 0615 U.T. Although there can scarcely be any question but that there had been a solar flare synchronous with these perturbations, the flare was not actually observed spectroscopically as it occurred at a time outside the routine hours of spectroheliographic and spectrohelioscopic watch. But during the next watch with the spectrohelioscope an appreciable brightening around a spotgroup was noticeable hinting that a flare had probably occurred and subsided between watches. The occurrence of the flare could, however, be inferred with confidence from the records of the magnetographs, ionosphere recorder and the radio telescope; this shows the importance of these observations from the astrophysical standpoint.

It should be mentioned, however, that the phenomena reported above have been known for some time; but as they have been recorded for the first time in India at one and the same observatory this report may be of interest as an item of science news.

A. K. DAS

*Solar Physics Observatory,  
Kodaikanal  
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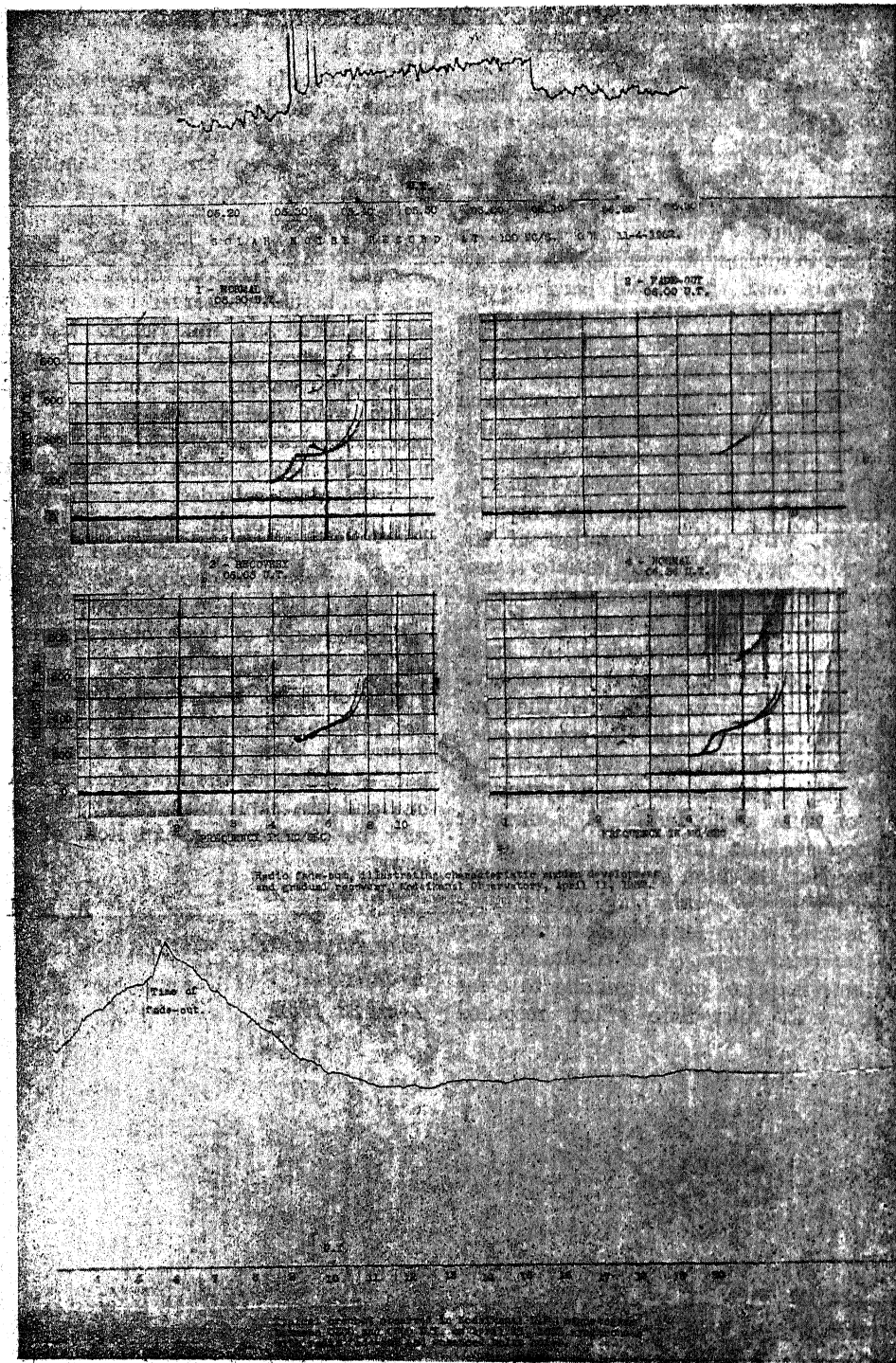


Fig. 1