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I. PHYSICS

Astrophysics (Ionosphere)

TRIGGERING OF IONOSPHERIC IRREGULARITIES BY THE SOLAR ECLIPSE

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THE aim of the experiment was to make measurements with the Langmüir probe system mounted on an RH-560 rocket over a wide range of scale sizes in the F-region of the ionosphere from the SHAR range during the maximum phase of the eclipse (90% obscuration) and explore the possibility of generation of F-region ionospheric irregularities. The study was motivated by recent developments in the theory of formation of the Ionospheric Spread-F irregularities. Spread-F is believed to be produced in the ionosphere by the disturbances created in the neutral atmosphere at E-region heights during sunset propagating upwards and interacting with the ionisation. A solar eclipse should create a similar effect and generate irregularities in the ionosphere. The experiment was aimed at detecting these irregularities by *in-situ* techniques.

Keywords : Ionospheric Irregularities; Langmuir Probe System; Electron Density.

EXPERIMENT

Equipment

The instrument consisted of a rocket-borne high frequency response Langmüir probe system which has been successfully flown from the Thumba Rocket range for measurement of electron density profiles and electron density irregularities (Satya Prakash & Subbaraya, 1967).

RESULTS

Two experiments were conducted from SHAR on February 16, 1980. The first at 1400hr just prior to the first contact and the second at 1549hr close to the maximum phase (90% obscuration). The second experiment during the eclipse maximum phase suffered from a rocket failure and no significant results could be obtained.

REFERENCES

Satya Prakash and Subbaraya, B. H. (1967) *Rev. scient. Instrum.*, **38**, 1132.