

I. PHYSICS

Astrophysics (Atmospheric Scattering)

OBSERVATIONS OF ATMOSPHERIC SCATTERING IN THE ULTRAVIOLET DURING THE SOLAR ECLIPSE

B. H. SUBBARAYA, SHYAM LAL, R. N. MISRA *and* Y. B. ACHARYA
Physical Research Laboratory, Ahmedabad

(Received 13 October 1980)

THE experiment consisted in studying the atmospherically scattered radiation in the UV wavelength bands for the period when the detectors were not looking at the sun.

Keywords : Atmospheric Scattering in the Ultraviolet; UV Wavelength Bands; Solar Emission and Scattered Fluxes.

EXPERIMENT

Equipment

High sensitivity filter photometers and UV ion chambers were used to measure the atmospheric scattering in four wavelength bands : 104–134nm, 240–260nm, 282–298nm and 300–320nm respectively. The instrument mounted on a spinning rocket viewed the Sun for a certain fraction of the spin cycle, looked away for the remainder of the Sun for the rest of the period. The instrument had a wide dynamic range and high frequency response, so that the solar emission and the scattered fluxes could be separately studied on a quantitative basis.

RESULTS

Measurements were made at Thumba, when the sun was obscured by 40 per cent and 70 per cent respectively. The results obtained at 70 per cent obscuration show (1) an enhancement in the scattered fluxes as well as (2) a different angular distribution from the normal. The results are under detailed quantitative analysis.