Irradiance Observations in Near-UV, Visible and Near Infrared Spectral Bands from Measurements Carried out during ATLAS-1 and EURECA-1 Missions

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1. Introduction

For the ATLAS and EURECA missions, we have used two identical instruments to measure the absolute solar spectral irradiance from 180 to 3200 nm. These instruments are calibrated by use of a blackbody and a set of lamp standards. The measurements are carried out with 1 nm bandpass up to 800 nm and 20 nm above. The instruments and calibration procedures are described by Thuillier *et al.* (1981). The platform capability of instruments retrieval after measurements allows a post-flight calibration which is essential for accurate measurements. The main results obtained up to now are:

- In the UV, the ATLAS-1 and EURECA-1 solar spectral irradiance are consistent with the SpaceLab 1 data obtained in 1983 (Labs *et al.* 1987). Figure 1 shows the ATLAS1 and SL 1 spectra. The origin of the existing differences is presently under investigation.

- In the visible domain, our measurements agree with the solar spectrum from Neckel & Labs (1984) within a few percent difference at certain wavelength.

- In the IR domain, the preliminary processing shows a spectrum close to the one obtained by Thekaekara (1974).

This instrument calibrated against the same standard and operated in space has measured the solar irradiance spectrum from 200 to 3000 nm. This instrument has participated in the ATLAS 2 mission and will continue to monitor the solar spectral irradiance as a function of time.

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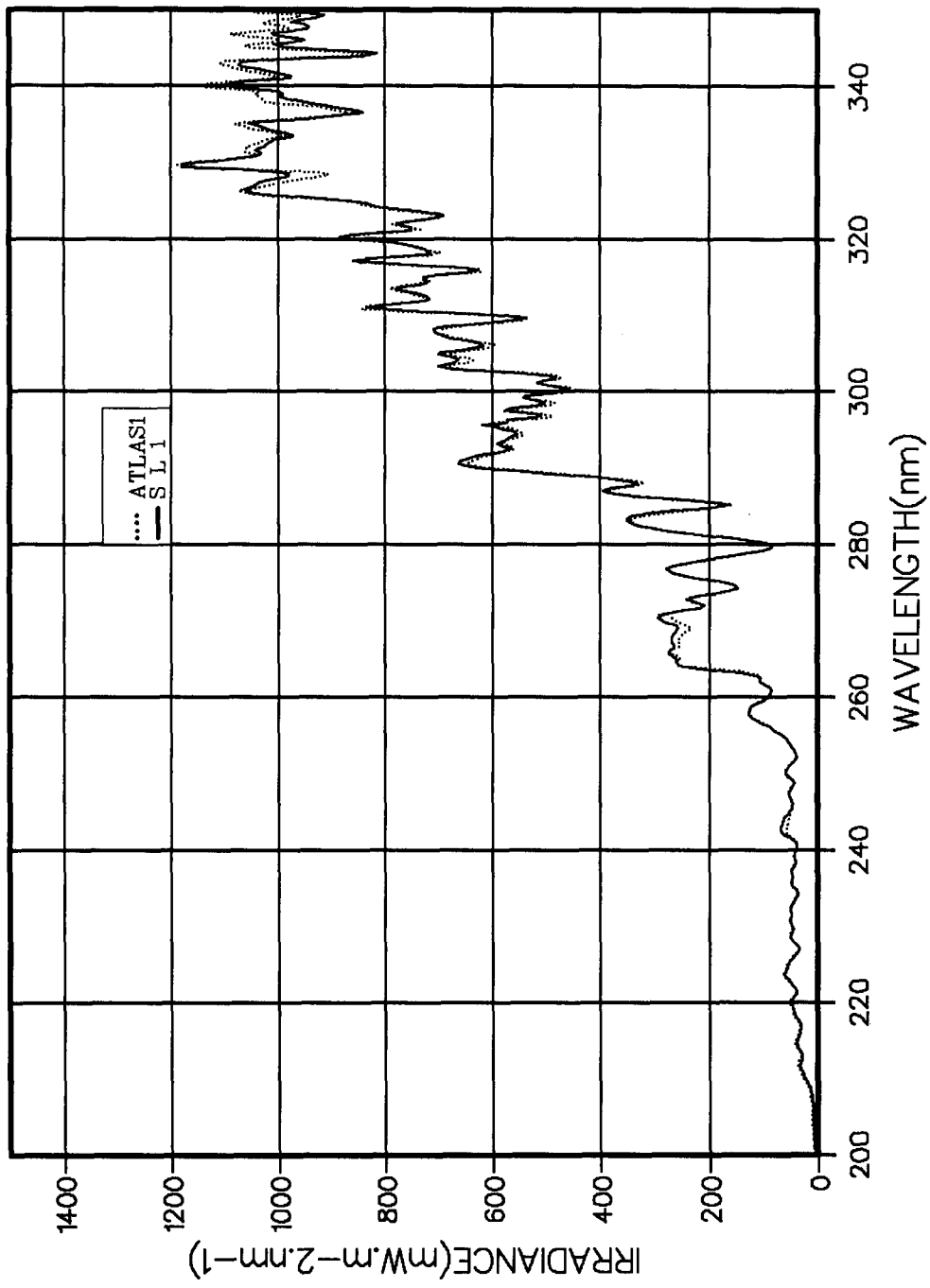

FIGURE 1. UV Solar irradiance from ATLAS1 mission.

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