

S^h Workshop on Atmospheric Science from Space
using Fourier Transform Spectrometry

AIRBORNE EMISSION SPECTROMETER (AES)

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AES is now complete and has flown twice. Several more flight campaigns are being planned.

Instrument

AES is a low-cost analog of the '1'1 S downlooking modes. Because AES operates at ambient temperature, limb-viewing is not possible. In addition, the AES focal planes are smaller (1 x 4 vs. 1 x 32 for TFS). However, the bandpasses and filters are identical, as is the scan speed (2 sec) and resolution (0.1 cm⁻¹). Other major differences are: the use of pumped LN₂ (65 K) to cool the focal planes, filters and cold optics; and the use of interactive video to provide targetting and image motion compensation.

The first flight of AES took place in April 1994 on the NASA P3B aircraft out of Wallops Island, VA. While planned as an engineering test flight, spectra were successfully acquired both over the Atlantic Ocean and the area of the Great Dismal Swamp on the Virginia - North Carolina border. At this writing (July 1994), a second series of flights on the NASA DC8 aircraft out of Ames RC, CA is in progress. By the time of the workshop, a third series using the NASA C130 should have been accomplished.

Data Analysis

All levels of data analysis are performed using SUN workstations. Level 1 software is largely operational; Level 2 is still somewhat developmental.