5th Workshop on Atmospheric Science from Space
using Fourier Transform Spectrometry

TROPOSPHERIC EMISSION SPECTROMETER (TES)

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The development of the TES concept continues on a schedule to permit flight on the EOS CHEM platform in 2002, where it is planned to be accompanied by HIRDLS and MIS.

Hardware

A descope of the EOS program now requires that all EOS platforms after AM1 be launched on DELTA-class vehicles, which results in much smaller platforms (and payloads) than previously envisaged. A major part of the TES hardware design effort has therefore been redirected towards meeting this challenge.

In addition, substantial "risk reduction" has been taking place:

As a consequence of the AIRS development activity, we have been able to reduce the number of Stirling-cycle coolers to 2 because of improved efficiency;

A novel interferometer scan mechanism has been prototyped and is currently (July 1994) halfway through a 2,000,000 scan life test;

Considerable technology transfer from AES (especially in the area of signal-chain design) has occurred;

Oxford University has agreed to provide the in-flight calibration and will, if logistics permit, perform the pre-flight calibration,

Software

As a direct result of AES requirements, operational Level 1 software (raw data -> calibrated spectra) are now in place. The Level 2 software (species profile retrieval) is partially functional and will become fully functional in the next year or so. Three 1.,2 algorithms are in development: SEASCRAPE at JPL; LBLRTM at AER inc.; and a variant of GENLN2 at Oxford University.