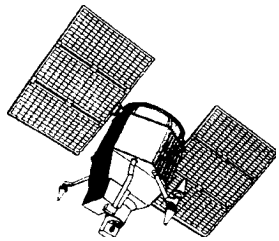
SAGE

Stratospheric Aerosol And Gas Experiment

Spacecraft Sketch	Mission Objective
	The mission objectives of the Stratospheric Aerosol and Gas Experiment (SAGE) are to determine the spatial distribution of statospheric aerosols and ozone on a global scale. Specific objectives are to: 1) develop a satellite-based remote sensing technique for measuring stratospheric aerosols and ozone; 2) map vertical extinction profiles of stratospheric aerosols and ozone globally from 79 South to 79 North degrees latitude; and 3) investigate aerosol optical properties using flight experiment and ground truth data.

TYPE OF MISSION	PROGRAM OFFICE	PROJECT LEAD CENTER	MANAGEMENT APPROACH	S/C CONTRACTOR	I&T CONTRACTOR
WEATHER, CLIMATE & ENVIR. QUALITY	SPACE & TERRESTRIAL APPLICATIONS	GSFC	OUT-OF-HOUSE	BOEING	BOEING

Payload Description

The Stratospheric Aerosol and Gas Experiment (SAGE) payload consists of a separate structure (instrument module) upon which the SAGE instrument is mounted and a spacecraft base module. The base module is the second Applications Explorer Mission (AEM) spacecraft. The base module is a small, six-sided prism containing power, command, communications, data handling and attitude control hardware to support the instrument module. The base module includes a pulse-code modulation (PCM) telemetry data system and a communications subsystem that makes use of a conical log spiral S-Band antenna and two VHF antennas. The base module is spin-stabilized, with three-axis stabilization provided by an active reaction wheel and magnetic torquing system. A hydrazine orbit adjust system provides the capability to minimize orbit variations to assure adequate mapping by the on-board instrument.

INSTRUMENT NAME	ACRONYM	PI AFFILIATION	PRINCIPAL INVESTIGATOR	I&T CONTRACTOR
STRATOSPHERIC AEROSOL & GAS EXPERIMENT	SAGE 1	LARC	M. P. McCORMICK	BASD

Instrument Descriptions

The SAGE Stratospheric Aerosol and Gas Experiment I (SAGE 1), Data Point 501, is designed and built by BASD, to measure stratospheric aerosols, ozone, and N02 as a function of altitude, latitude, and longitude. The SAGE I measures the sun's intensity through the earth's limb at four spectral intervals in the visible and near IR during spacecraft sunrise and sunset. The sensor locks onto and scans the sun during the events.

Launch
2/18/79