

LONG TERM LASER RADAR MONITORING OF STRATOSPHERIC
AEROSOLS AT MAUNA LOA OBSERVATORY

R. Fegley
Mauna Loa Observatory
461 W. Lanikaula St.
Hilo, Hawaii 96720, U. S. A.

ABSTRACT

Long term monitoring of tropospheric and stratospheric scattering layers has commenced during 1973 at the NOAA ERL Mauna Loa Observatory. The data consist of periodic measurements of the height and scattering strength of atmospheric aerosol layers from March 1973 to the present. The system consists of a 3 joule ruby laser and a 40 cm Schmidt Cassegrain telescope located at 3.4 km msl in the clear Hawaiian air. The aerosol variations throughout the time period will be discussed. These consist of variations in layer strength and position from below to above the tropopause. Comparison will be made with solar radiation spectral, aureole spectral, and surface aerosol data.