

National Aeronautics and
Space Administration
Langley Research Center
Hampton, VA 23681-0001



Reply to Attn of: 472

October 24, 1997

Mr. Milfred E. Thomas
Science and Technology Corporation
Mail Stop 468
Hampton, VA 23681

Dear Mr. Thomas:

It is with great pride that we send to you, the NASA Group Achievement Award Certificate for your participation on the Lidar Atmospheric Sensing Experiment (LASE) Experiment Team. Your efforts have made a major contribution to the successful development and demonstration of the LASE system. LASE is a world-class instrument, and it is being used to make significant contributions to important atmospheric science investigations. Some of the recent accomplishments of LASE are mentioned below.

LASE is the first fully-engineered, autonomous Differential Absorption Lidar (DIAL) system for the remote measurement of water vapor, aerosols and clouds across the troposphere. It was designed to fly aboard a NASA Ames ER-2 aircraft (a modified U-2 spy plane) and operate at altitudes from 58,000 to 70,000 feet. Since its first flight (May 11, 1994), it has flown 28 times on board the ER-2 during the development of the instrument, the validation of the science data, and a radiation science mission (Tropospheric Aerosol Radiative Forcing Observational Experiment (TARFOX)) last summer. The LASE instrument has been validated with results showing an accuracy better than the initial requirement for vertical profiles of water vapor in the troposphere. No other instrument in the world can provide the spatial coverage and accuracy of LASE.

Water vapor is the most radiative active gas in the troposphere and the lack of understanding about its distribution provides one of the largest uncertainties in modeling climate change. LASE has demonstrated the necessary potential in providing high resolution water vapor measurements that can advance the studies of tropospheric water vapor distributions in support of NASA's Office of The Mission To Planet Earth (MTPE).