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At the Optical Society of America's recent Remote Sensing of the Atmosphere Meeting in Salt Lake City, Utah (March, 1993), our group presented evidence that there had been a reduction in ozone observed over the Observatoire d'Haute Provence(OHP), France during the late Summer of 1992. This reduction in ozone occurred within the region of heavy aerosol loading from the eruption of Mt. Pinatubo. Subsequent to those measurements, our lidar system was transported to the National Institute for Water and Air facility at Lauder, New Zealand for a series of measurements during October to December, 1992. In addition to lidar measurements, there were balloon sondes and microwave measurements of ozone made during that time. During this period there was no similar reduction in ozone observed, even though the level of aerosols present was nearly the same as at OHP. The same lidar system is again on site at Lauder, New

Zealand, and will be making measurements of ozone, aerosols and temperature between March and October, 1994, in support of ER-2 flights from Christchurch to the Antarctic continent. Preliminary data from this deployment will be presented as well as the data from the Autumn, 1992.

The GSFC Stratospheric Ozone Lidar is a mobile lidar system housed in a 14 m long trailer. It uses both a Rayleigh Differential Absorption Lidar (DIAL) technique, and a Raman DIAL technique to measure ozone. The Raman DIAL capability was installed after the injection of enormous quantities of sulfate aerosols were introduced into the stratosphere when Mt. Pinatubo erupted explosively in June, 1991. These aerosols made the treatment of the differential scattering impossible to untangle in heavily loaded regions of the atmosphere, and extraction of ozone in these regions could not be done. The

addition of Raman channels to the detector, permits the collection of a lidar return with no aerosol backscatter component. This allows for a much more straightforward ozone extraction. This technique has been presented earlier (McGee, et al., *Geophys Res Lett*, 20, 955-958, 1993).