

## THE ATMOSPHERIC CHEMISTRY EXPERIMENT (ACE)

CHRIS BOONE, RANDALL SKELTON, SEAN MCLEOD AND PETER BENATH, *Chemistry Department, University of Waterloo, Waterloo, Ontario, Canada, N2L 3G1.*

ACE is a satellite mission selected in the Canadian Space Agency's SCISAT-1 program, and is slated for launch in mid-2002. The principal goal of the ACE mission is to investigate the chemical and dynamical processes that govern the distribution of ozone in the stratosphere and upper troposphere. To this end, vertical profiles for trace gases, aerosols, temperature and pressure will be inferred from the analysis of solar occultation spectra taken from a low Earth orbit (650 km). The spectra will be measured with a high-resolution ( $0.02\text{ cm}^{-1}$ ) infrared Fourier Transform Spectrometer (FTS) operating between 2 and 13 microns. Measurements will extend from the cloud tops to an altitude of approximately 100 km, with a vertical resolution of better than 4 km. An overview of the novel FTS design shall be presented, and the procedure for analysing the measured spectra will be described, with an emphasis on the forward model used in the synthesis of solar occultation spectra.