



## **Measurements of ozone from the Canadian Arctic Validation of ACE Campaign Project: 2004, 2005, 2006 and 2007**

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Four springtime validation campaigns have been conducted in the Canadian high Arctic to provide correlative measurements for the Atmospheric Chemistry Experiment (ACE) satellite mission. There are two instruments on-board the satellite: a high-resolution ( $0.02\text{ cm}^{-1}$ ) infrared Fourier Transform Spectrometer (ACE-FTS) and a dual UV-visible-NIR spectrophotometer called MAESTRO (Measurements of Aerosol Extinction in the Stratosphere and Troposphere Retrieved by Occultation).

The validation campaigns took place at the Polar Environment Atmospheric Research Laboratory (PEARL) (formerly Environment Canada's Arctic Stratospheric Ozone (AStrO) Observatory) in Eureka, Nunavut (80 N, 86 W) between February and April in 2004, 2005, 2006 and 2007. This period coincided with the most chemically active time of year in the Arctic and a significant number of satellite overpasses. Seven ground-based instruments were operated during the 2004 campaign: a ground-based version of the ACE-FTS (PARIS - Portable Atmospheric Research Interferometric Spectrometer), a terrestrial version of the ACE-MAESTRO, a SunPhotoSpectrometer, a zenith-viewing UV-visible grating spectrometer, a Bomem DA8 Fourier transform spectrometer, a Differential Absorption Lidar and a Brewer spectrophotometer. For the 2005 campaign, a Systeme d'Analyse par Observations Zenithales (SAOZ) in-

strument and a second Brewer were added to the instrument complement. In 2007, a Bruker 125HR Fourier transform spectrometer and a second UV-visible grating spectrometer also participated. Also, balloon-borne ozonesonde and radiosonde sensors were flown frequently during the four campaigns.

This presentation will focus on comparisons of ozone measurements made by the ground-based, balloon-borne and satellite-borne instruments during the 2004-2006 ACE Arctic Validation campaigns. Comparisons of both retrieved columns and profiles will be presented. Also, the results from the 2004, 2005 and 2006 campaigns will be intercompared to highlight the differences between the two years. Preliminary results from the 2007 campaign will also be discussed.