



Comparisons between ACE-FTS and SAGE III/ISS profiles of ozone and nitrogen dioxide profiles

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The ACE-FTS (Atmospheric Chemistry Experiment – Fourier Transform Spectrometer) instrument has been making continuous measurements of atmospheric profiles since 2004 using solar occultation viewing geometry. SAGE III/ISS (Stratospheric Aerosol and Gas Experiment) is a solar occultation instrument now in operation on the International Space Station and has been providing data since June 2017. This study compares coincident ACE-FTS and SAGE III-ISS profiles of O₃ and NO₂ volume mixing ratios. The preliminary results show that the two solar occultation instruments are in very good agreement in the stratosphere, typically better than comparisons between ACE-FTS and SAGE III-3M data from 2004-2005. For August-October measurements in the stratosphere, with coincidence criteria of within 6 h and 500 km, O₃ concentrations are typically within $\pm 7\%$ and NO₂ concentrations are typically within -5 to +10%. Additional comparisons between the two instruments will be included as further measurements are made.