ATLAS OF ACE SPECTRA OF CLOUDS AND AEROSOLS

JASON J SORENSEN, PETER F. BERNATH, *Department of Chemistry and Biochemistry, Old Dominion University, Norfolk, VA, USA*; MIKE LECOURS, CHRIS BOONE, *Department of Chemistry, University of Waterloo, Waterloo, ON, Canada*; RYAN JOHNSON, *Physics Department, Old Dominion University, Norfolk, VA, USA*; KEITH LABELLE, *Department of Physics, Old Dominon University, Norfolk, VA, USA.*

Clouds and aerosols play a vital role in the Earth's climate. Detecting polar mesospheric clouds, polar stratospheric clouds and aerosols is useful for monitoring climate change and atmospheric chemistry. ACE satellite data[1] is used to provide an infrared spectral atlas of polar mesospheric clouds, three types of polar stratospheric clouds (nitric acid trihydrate, sulfuric/nitric acid ternary solutions, and ice), cirrus clouds, smoke from fires, and sulfate aerosols. Nearly all example spectra have been modeled with either Mie scattering or T-matrix codes using the appropriate optical constants.

[1]P. F. Bernath. The Atmospheric Chemistry Experiment (ACE). JQSRT 2017;186:3-16. https://doi.org/10.1016/j.jqsrt.2016.04.006.