

# **Multi-wavelength Limb Scattering Aerosol Algorithm and Application to the OSIRIS dataset**

Landon RIEGER<sup>1</sup>, Adam BOURASSA<sup>1</sup>, Doug DEGENSTEIN<sup>1</sup>

<sup>1</sup> *University of Saskatchewan, Saskatoon, Canada*

The Optical Spectrograph and InfraRed Imaging System (OSIRIS) on-board the Odin satellite has now taken over 15 years of limb scatter measurements, producing global coverage of radiance profiles in the UV/visible range. These measurements are used to produce vertical profiles of 750nm extinction from the upper troposphere to 35km altitudes. This work has been used to monitor volcanic eruptions and subsequent transport of the aerosols throughout the stratosphere, and has recently played an important role in constructing the post-2000 period of the Global Spaced-based Stratospheric Aerosol Climatology. However, limitations inherent in single wavelength inversions of limb scattered radiances produce extinction biases related to particle size, as well as poor sensitivity in the upper troposphere and lower stratosphere. This work develops a multi-wavelength aerosol extinction algorithm to reduce these limitations and applies it to the full 15 years of OSIRIS data. Results are validated against SAGE II, CALIPSO, and OMPS-LP instruments.

Key words: aerosol, stratosphere, OSIRIS, retrieval