



## **An initial assessment of the Stratospheric Aerosol and Gas Experiment III temperature and pressure retrievals**

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The Stratospheric Aerosol and Gas Experiment (SAGE) III instrument was deployed on the International Space Station (ISS) in early March 2017. SAGE III/ISS is the latest in the NASA lineage of solar occultation satellite instruments designed to monitor the vertical distribution of aerosol, ozone and other trace gases in the upper atmosphere. Originally built in the early 2000s, the SAGE III/ISS instrument required extensive testing and refurbishment prior to deliver to ISS, including the replacement of the neutral density filter that has been associated with some instrument response issues during the METEOR/3M mission. In particular, METEOR/3M measurements of the oxygen A-band absorption feature near 762 nm that were to be utilized to retrieve profiles of temperature and pressure were adversely affected by this instrument issue. Preliminary examination of the SAGE III/ISS oxygen A-band spectra indicate that the measurements are of higher fidelity than from the METEOR/3M instrument, which may permit successful retrieval of science quality temperature and pressure products. In this paper, we will provide an overview of the temperature and pressure retrieval algorithm, present preliminary analyses of the SAGE III/ISS oxygen A-band measurements, and an initial assessment of the quality of the temperature and pressure retrievals.