



The SAGE III's mission aboard the International Space Station

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The Stratospheric Aerosol and Gas Experiment (SAGE III) is being prepared for deployment on the International Space Station (ISS) in 2015. Constructed in the early 2000s, the instrument is undergoing extensive testing and refurbishment prior to delivery to ISS. In addition, ESA is refurbishing their Hexapod which is a high-accuracy pointing system developed to support ISS external payloads, particularly SAGE III. The SAGE III instrument refurbishment also includes the replacement of the neutral density filter that has been associated with some instrument performance degradation during the SAGE III mission aboard METEOR/3M mission (2002-2005). We are also exploring options for expanding the science targets to include additional gas species including IO, BrO, and other solar, lunar, and limb-scatter species. In this presentation, we will discuss SAGE III-ISS refurbishment including results from Sun-look testing. We also will discuss potential revisions to the science measurements and the expected measurement accuracies determined in part through examination of the SAGE III-METEOR/3M measurement data quality. In addition, we will discuss potential mission science goals enabled by the mid-inclination ISS orbit. No dedicated field campaign for SAGE III validation is anticipated. Instead, validation will primarily rely on a collaborative effort with international groups making in situ and ground-based measurements of aerosol, ozone, and other SAGE III data products. A limited balloon-based effort with a yet-to-be-determined validation partner is also in the planning stages.