

## **AATS-14 on the J31 in INTEX-B/MILAGRO: Comparisons to data collected by aerosol sensors on Terra, Aqua, and suborbital platforms**

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In March 2006 during INTEX-B/MILAGRO (Phase B of the Intercontinental Chemical Transport Experiment/Megacity Initiative-Local And Global Research Observations) the 14-channel Ames Airborne Tracking Sunphotometer (AATS-14) flew on the Jetstream 31 (J31) aircraft. AATS measured AOD at 13 wavelengths (354-2139 nm) and water vapor columns in 13 flights based in Veracruz, Mexico, sampling clean and polluted air masses over the Gulf of Mexico and Mexico City. Vertical differentiation of AOD and water vapor column data from J31 vertical profiles yields vertical profiles of multiwavelength aerosol extinction and water vapor density. J31 flights were coordinated with overflights of several satellites, including Aqua, Aura, Terra, and Parasol, plus other aircraft, including the NASA DC-8 and King Air and the NCAR C-130.

This paper will provide a summary of the AATS-14 observations in INTEX-B/MILAGRO. We will focus on the comparisons of AATS retrievals of AOD to observations by MODIS-Terra, MODIS-Aqua and MISR. Our preliminary analyses of 37 coincident observations by AATS and MODIS-Terra and 18 coincident observations between AATS and MODIS-Aqua indicate excellent agreement between the aircraft and satellite retrievals of AOD. We find sufficient AOD at near-IR wavelengths to permit meaningful validation of the MODIS retrievals at those wavelengths. In the case of MODIS-Terra, 98% of near-IR AOD retrievals fall within the estimated uncertainty range of  $\pm 0.03 \pm 0.05$  AOD, while 100% of MODIS-Aqua near-IR AOD retrievals fall within this uncertainty range. We note that in the small number of cases studied here, MODIS-Aqua has a tendency to overestimate the AATS-derived Angstrom exponents, while Angstrom exponents derived from MODIS-Terra agree well with the suborbital observations. Finally, we will provide preliminary analysis of the collocated measurements by AATS, MODIS-Terra and MISR over the Gulf of Mexico on March, 10, 2006.