JOINT NASA/EPA AVIRIS ANALYSIS IN THE CHESAPEAKE BAY REGION: PLANS AND INITIAL RESULTS

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NASA's Ames Research Center is performing an AVIRIS demonstration project in conjunction with the U.S. Environmental Protection Agency (Region 3). NASA and EPA scientists have jointly defined a Study Area in eastern Virginia to include portions of the Chesapeake Bay, southern Delmarva Peninsula, and the mouths of the York and James Rivers. Several environmental issues have been identified for study. These include, by priority: 1) water constituent analysis in the Chesapeake Bay, 2) mapping of submerged aquatic vegetation in the Bay, 3) detection of vegetation stress related to Superfund sites at the Yorktown Naval Weapons Station, and 4) wetland species analysis in the York River vicinity.

In support of this project, three lines of AVIRIS data were collected during the Wallops Island deployment on 17 August 1997. The remote sensing payload included AVIRIS, MODIS Airborne Simulator and an RC-10 color infrared fim camera. The AVIRIS data were delivered to Ames from the JPL AVIRIS Data Facility on 29 September 1997. Quicklook images indicate nominal data acquisition, and at the current time an atmospheric correction is being applied.

Water constituent analysis of the Bay is our highest priority based on EPA interest and available collateral data, both from the surface and from other remote sensing instruments. Constituents of interest include suspended sediments, chlorophyll-a and accessory pigments. Analysis steps will include: verification of data quality, location of study sites in imagery, incorporation of relevant field data from EPA and other Chesapeake Bay cooperators, processing of imagery to show phenomenon of interest, verification of results with cooperators. By 1st quarter CY98 we plan to circulate initial results to NASA and EPA management for review. In the longer term we will finalize documentation, prepare results for publication, and complete any needed technology transfer to EPA remote sensing personnel.