FIELD EXPERIMENTS

ARCTAS
In Spring and Summer 2008 NASA will conduct a campaign called Arctic Research of the Composition of the Troposphere from Aircraft and Satellites (ARCTAS). The spring deployment will target arctic haze, anthropogenic pollution in general, stratosphere-troposphere exchange, and sunrise photochemistry. The summer deployment will target boreal forest fires, stratosphere-troposphere exchange, and summertime photochemistry. ARCTAS will be part of the international IPY/POLARCAT arctic field program for atmospheric composition.

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INTEX-B / MILAGRO
In March 2006 several coordinated experiments studied gaseous and aerosol pollutants originating primarily in Mexico City. The March phase of INTEX-B (the Intercontinental Chemical Transport Experiment) was closely coordinated with MILAGRO (Megacity Initiative: Local and Global Research Observations). Our airborne sunphotometer, AATS-14, flew on the J31 aircraft based in Veracruz, Mexico, measuring aerosols and water vapor in outflow from Mexico City and biomass burning regions of Mexico and Central America.

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ALIVE
Set for September 2005, ALIVE (Aerosol LIdar Validation Experiment) IOP will conduct further validation studies of the Raman and a Micro Pulse Lidars at the DOE ARM's Southern Great Plains Site in Oklahoma. The AATS-14 will fly onboard SkyResearch's J31 aircraft along with the NASA RSP instrument.

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INTEX - ITCT - ICARTT
In Summer 2004 several coordinated experiments studied air quality, intercontinental transport, and radiation balance in air masses carried across the US and over the Atlantic to Europe. NASA organized INTEX-NA. NOAA organized NEAQS - ITCT 2004. And Europeans organized ITOP. ICARTT was formed to enhance the synergy between ITCT, INTEX, and ITOP.

AATS-14 participated in INTEX and ITCT by flying on a twin turboprop Jetstream-31, based at Portsmouth, NH in July and August 2004. Its goal was to help characterize aerosol radiative properties and effects in flights that sample polluted and clean air masses in coordination with measurements by other INTEX-ITCT platforms, including aircraft and a ship.

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FYE
The primary purpose of this experiment is to validate the over-ocean MODIS aerosol optical depth (AOD) measurements at 1.6 and 2.1 μm aboard the Terra and Aqua platform. The primary tool for validating the MODIS AOD is the 14-channel NASA Ames Airborne Tracking Sunphotometer, AATS-14, which will fly aboard the CIRPAS Twin-Otter aircraft out of Monterey, CA. The timing of the experiment is chosen to coincide with the maximum transport of Asian dust to the US West coast, one of the few aerosol species with considerable AOD in the near-IR.

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ARM Aerosol IOP
To gain improved understanding and model-based representation of aerosol radiative influences an IOP was conducted at the Department of Energy's ARM Southern Great Plains Site in north central Oklahoma, in May 2003. The IOP carried out a variety of closure experiments on aerosol optical properties and their radiative influence. Additionally, measurements of the aerosol chemical composition size distribution will allow testing of the ability to reconstruct optical properties from these measurements.

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ADAM 2003
The Asian Dust Above Monterey-2003 (ADAM-2003) project is a surface and airborne observational field study to investigate the properties and effects of the natural and anthropogenic Asian aerosols transported to the west coast of the United States in the springtime. ADAM-2003 took place from April 1-30, 2003 based out of the Monterey, CA. AATS-14 operated onboard the CIRPAS Twin Otter.

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SOLVE II
The SAGE III Ozone Loss and Validation Experiment (SOLVE II) examined the processes controlling ozone levels at mid- to high latitudes. Measurements were made in the Arctic high-latitude region in winter using the NASA DC-8 aircraft, as well as balloon platforms and ground-based instruments. The mission acquired correlative data needed to validate the Stratospheric Aerosol and Gas Experiment (SAGE) III satellite measurements which are used to quantitatively assess high-latitude ozone loss.

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CLAMS
The CLAMS aircraft field campaign ran from July 10 through August 3, 2001. It was a shortwave closure experiment targeting clear (cloud-free) sky conditions. Our AATS-14 instrument was integrated on the CV-580.

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ACE-Asia
The first major airborne/shipborne campaign of ACE-Asia took place in March-April 2001. Both of our instruments, AATS-14 and AATS-6, were involved in the experiment. AATS-14 was integrated on the CIRPAS Twin Otter. AATS-6 flew on the NCAR C-130. Both planes were flown out of Iwakuni Marine Corps Air Station, Japan.

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3rd ARM Water Vapor IOP
The ARM water vapor IOP was conducted to study lower tropospheric water vapor profiles at the Southern Great Plains site in Oklahoma. The emphasis was on the intercomparison of lower atmosphere water vapor measurements. Our AATS-6 took ground-based measurements of water vapor and aerosols.

Other website to visit:
ARM site for the Fall 2000 Water Vapor IOP

SAFARI 2000
The SAFARI-2000 dry season campaign took place in August-September 2000 in South Africa, Zambia, Namibia and nearby countries. AATS-14 flew on the UW CV-580 and measured aerosols and water vapor.

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PRiDE
The PRiDE experiment was conducted in June-July 2000 in Puerto Rico. Our AATS-6 instrument on the SPAWAR Navajo was used to measure African dust, other aerosols, and water vapor.

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2nd ARM Water Vapor IOP
The ARM water vapor IOP was conducted to study lower tropospheric water vapor profiles at the Southern Great Plains site in Oklahoma. The emphasis was on the intercomparison of lower atmosphere water vapor measurements. Our AATS-6 took ground-based measurements of water vapor and aerosols.

Other website to visit:
ARM site for Fall 1997 Water Vapor IOP

ACE-2
ACE-2 studied European and African aerosols in Summer 1997 near the Canary Islands and Southwest Portugal. The AATS-14 instrument flew on the CIRPAS Pelican, and the AATS-6 instrument took surface measurements from the R/V Vodyanitskiy. Please see a list of our ACE-2 publications on the website.

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TARFOX
The TARFOX experiment included AATS-6 on the UW C-131A and the first flights of AATS-14 on the CIRPAS Pelican. TARFOX was designed to measure and analyze aerosol properties and effects in the US eastern seaboard, where one of the world's major plumes of industrial haze moves from the continent over the Atlantic Ocean. It included coordinated measurements from four satellites, four aircraft, land sites, and ships. The website has a list of our publications from the TARFOX program.

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