



GTE Field Missions



[GTE Missions Map](#)

This world map shows the locations of the GTE Missions with the ability to see the individual flights and results.

[GTE Data Available](#)

This table shows each mission location along with the objective, aircraft used, completion date, and includes links to the individual missions data.

[GTE Chemical Data Plots](#)

These data plots contain a selected subset of the GTE data acquired by investigator instruments recorded onboard various aircraft platforms.

[Chemical Instrument Test and Evaluation](#)

Our understanding of tropospheric chemistry is limited primarily by our ability to accurately measure minute quantities of key tropospheric species. An initial, and continuing, focus of the GTE has been the development, testing, and evaluation of techniques capable of airborne measurements of trace species. The CITE-1 mission, consisting of a ground-based intercomparison, and two separate airborne campaigns to evaluate instrumentation for measuring carbon monoxide, nitric oxide, and the hydroxyl radical. The CITE-2 mission focused on intercomparison of techniques for measuring nitrogen dioxide, nitric acid, and peroxyacetylnitrate, as well as a reevaluation of nitric oxide techniques. The CITE-3 mission focused on intercomparison of techniques to measure sulfur dioxide, dimethylsulfide, hydrogen sulfide, carbonyl sulfide, and carbon disulfide.

CITE-1

- [Publications](#)
- [Data Available](#)
- [GTE FTP Site: Wallops \(A\)](#)

CITE-2

- [Publications](#)
- [Data Available](#)
- [GTE FTP Site: CITE-1](#)

CITE-3

- [Publications](#)
- [Data Available](#)
- [GTE FTP Site: CITE-3](#)

- [GTE FTP Site: Hawaii \(B\)](#)
- [GTE FTP Site: Ames \(C\)](#)

Atmospheric Boundary Layer Experiments

Nowhere is atmosphere-biosphere interactions more pronounced than within the atmospheric boundary layer-the lowest few hundred meters of the atmosphere. The ABLE missions have been designed to study emissions of gases from the biosphere, and the chemical changes that occur as these gases are transported through the boundary layer and into the free troposphere. Expeditions have now been completed in three ecosystems that are known to exert a major influence over global tropospheric chemistry and that are being profoundly affected by natural and human activities. These are ABLE-1 in the tropical Atlantic ocean; ABLE-2 in the Amazon Rain Forest; and ABLE-3 in the wetland/tundra of the North American Continent.

ABLE-1

- [Publications](#)
- [Data Available](#)

ABLE-2A/2B

- [Publications: ABLE 2A](#)
- [Publications: ABLE 2B](#)
- [Data Available \(ABLE-2A\)](#)
- [Data Available \(ABLE-2B\)](#)
- [Data Archive CD-ROM](#)
- [GTE FTP Site: ABLE 2A](#)
- [GTE FTP Site: ABLE 2B](#)

ABLE-3A/3B

- [Publications: ABLE 3A](#)
- [Publications: ABLE 3B](#)
- [Data Available \(ABLE 3A\)](#)
- [Data Available \(ABLE 3B\)](#)
- [Data Archive CD-ROM](#)
- [GTE FTP Site: ABLE 3A](#)
- [GTE FTP Site: ABLE 3B](#)

Pacific Exploratory Missions

Along the north western rim of the Pacific are the most populated countries of the world. The potential for these countries to emerge as major industrial centers, with the concurrent pollution is just beginning to be recognized. The PEM's were initiated to provide an early assessment of the chemistry over the Pacific ocean,

and to study the impact of emissions from Asia on the Pacific region. The PEM-West expedition, focussed on the north western pacific region, conducted phase-A during a period of minimum outflow from Asia, while phase-B was conducted during enhanced outflow. The PEM-Tropics has focussed on the south tropical Pacific Basin, most of which is remote from continental regions.

PEM-WEST A

- [Summary](#)
- [Mission Map](#)
- [DC-8 Layout & Instrumentation](#)
- [Participants & Measurements](#)
- [Instrument Characteristics](#)
- [Publications](#)
- [Data Available](#)
- [Data Archive CD-ROM](#)
- [GTE FTP Site: PWEM-WEST A](#)
- [Synopsis of Results](#)

PEM-West B

- [Summary](#)
- [Mission Map](#)
- [DC-8 Layout & Instrumentation](#)
- [Participants & Measurements](#)
- [Publications](#)
- [Data Available](#)
- [Data Archive CD-ROM](#)
- [GTE FTP Site: PEM-WEST B](#)
- [Synopsis of Results](#)

PEM-Tropics A

- [Summary](#)
- [Mission Map](#)
- [DC-8/P-3B Layout & Instrumentation](#)
- [Participants & Measurements](#)
- [Publications](#)
- [Data Available](#)
- [Data Archive CD-ROM](#)
- [GTE FTP Site: PEM-Tropics A](#)
- [Video Tapes](#)
- [Ozonesondes](#)
- [Overview of Results](#)
- [Graphics for the PEM-Tropics A Special Section Reprint Volume](#)

PEM-Tropics B

- [Mission Objectives](#)
- [Science Objectives](#)
- [Mission Map](#)
- [Science Team](#)
- [GTE Project Contacts](#)
- [PEM-Tropics B Participant Contacts](#)
- [Participants & Measurements](#)
- [DC-8/P-3B Layout & Instrumentation](#)
- [DC-8 Integration Schedule](#)
- [P3-B Integration Schedule](#)
- [DC-8 Status/Photos](#)
- [P3-B Status/Photos](#)
- [Deployment Schedule](#)
- [Major Milestones](#)

- [Mission Logistics](#)
- [Expedition Plan](#)
- [PEM-Tropics B Logo](#)
- [Data Available](#)
- [Data Archive CD-ROM](#)
- [GTE FTP Site: PEM-Tropics B](#)
- [Video Tapes](#)
- [Ozonesondes](#)
- [Publications](#)
- [PTB Manuscripts](#)
- [Press Conference](#)
- [AGU Results](#)
- [DC-8 Chemical Data Plots](#)
- [P-3B Chemical Data Plots](#)

[Transport and Atmospheric Chemistry in the Atlantic](#) [Transport and Chemical Evolution over the Pacific](#)

TRACE-A was deployed in August 1992 to determine the cause and source of high concentrations of ozone that accumulate over the Atlantic ocean between southern Africa and South America during the months of August through October. The enhanced levels of ozone were observed to be the highest during the southern hemisphere's springtime, a period of intense burning of vegetation in both southern Africa and South America. The TRACE-A results showed the link between the biomass burning and the ozone pollution. TRACE-P, conducted in March/April 2001, had as its major objectives to 1) determine the chemical composition of the Asian outflow over the western Pacific in spring in order to understand and quantify the export of chemically and radiatively important gases and aerosols, and their precursors, from the Asian continent and to 2) determine the chemical evolution of the Asian outflow over the western Pacific in spring and to understand the ensemble of processes that control the evolution.

TRACE-A

- [Summary](#)
- [Mission Map](#)
- [DC-8 Layout & Instrumentation](#)
- [Participants & Measurements](#)
- [Publications](#)
- [Data Archive CD-ROM](#)
- [Data Available](#)
- [GTE FTP Site: TRACE-A](#)
- [Synopsis of Results](#)

TRACE-P

- [White Paper](#)
- [NRA](#)
- [IGAC Recent Accomplishments and Future Plans \(TRACE-P\)](#)
- [Mission Maps](#)
- [Concurrent Missions](#)
- [Program and Project Personnel](#)
- [Science Team](#)
- [DC-8/P-3B Layout &](#)

Instrumentation

- **[DC-8 Status](#)**
- **[P-3B Status](#)**
- **[Deployment Schedule](#)**
- **[Investigator Measurements](#)**
- **[PI Web Sites](#)**
- **[Expedition Plan](#) ([What's new as of 6/11/01](#))**
- **[Tee Shirt Order Form](#)**
- **[Press Release](#)**
- **[Education Day](#)**
- **[Mission Photos](#)**
- **[P-3B Meteorology Images, Summaries, Notes](#)**
- **[DC-8 Meteorology Images, Summaries, Notes](#)**
- **[Special Issue Manuscripts, Manuscript Ideas](#) (UserID & Password Required)(Updated 01/13/04)**
- **[Data Workshop Presentations](#), (UserID & Password Required)(Updated 2/05/02)**
- **[Publications](#)**
- **[Instrument Workshop Report](#)**
- **[Ozonesondes](#)**
- **[Video Tapes](#)**
- **[GTE FTP Site: TRACE-P](#)**
- **[Data Available](#)** (Updated 3/6/03)
- **[DC-8 Chemical Data Plots](#)** (Updated 3/14/03)
- **[P-3B Chemical Data Plots](#)** (Updated 3/14/03)
- **[Listing of TRACE-P Manuscripts](#)** (Updated 6/05/03)

5/15/2009

Global Tropospheric Experiment (GTE)...

[Return to the GTE Home Page](#)

Responsible NASA Official: [Dr. Vic Delnore](#)
Curator: [Kay Costulis and Clyde Brown](#)

[Feedback on Langley Products and Services](#)
Last updated: October 30, 2006