The NASA Global Tropospheric Experiment (GTE) was initiated in the early 1980’s and consists of an ongoing series of global airborne measurement campaigns to study the influence of humans and the natural environment on the global troposphere. Figure 1 is a map showing the geographical regions for the GTE campaigns.

The Chemical Instrumentation Test and Evaluation [CITE-1, -2 and –3] campaigns were initiated to evaluate our ability to measure critical tropospheric species. The field studies known as Atmospheric Boundary Layer Experiments (ABLE -1, -2A and -2B, and -3A and -3B) were conducted to study ecosystems that are known to exert major influences on global chemistry and, in some cases, are undergoing profound changes. The impact of long range transport of continental emissions, natural and anthropogenic, has been studied through the field campaigns TRANsport and Chemistry near the Equator in the Atlantic (TRACE A), the Pacific Exploratory campaigns TRANsport and Chemistry near the Equator in the Pacific (TRACE P), the Amazon Rain Forest during the dry season of 1985, the southern tropical Pacific region (Hoell et al., 1996), while PEM-West A, was conducted during September and October (1991), a period of minimum out-flow from the Asian continent (Hoell, et al. 1996). PEM-West B was conducted during February and March (1994), a period of maximum outflow from the Asian continent (Hoell, et al. 1997).

The central objective of the PEM-Tropics campaigns was to improve our knowledge of the factors controlling ozone, 
OH, aerosols, and related species over the tropical Pacific. PEM-Tropics A (September-October 1996) was conducted during the dry season of the southern tropical Pacific region (Hoell et al., 1996), while PEM-Tropics B (March-April 1999) was conducted during the wet season (Raper et al., in press).

The more recent TRACE P campaign (March-April 2001) was a more focused study of the Asian outflow than the earlier PEM-West A and B campaigns (Jacob, et al.). TRACE P involved coordinated flights between the instrumented NASA DC-8 and P-3B aircraft, and collaboration with the ACE-Asia campaign (http://saga.pmel.noaa.gov/aceasia/index.html).

The data from the GTE campaigns typically contain measurements of ozone, carbon monoxide, nitrogen oxides, non-methane hydrocarbons, aerosol size and chemical composition, and ancillary meteorological parameters. The archives from the more recent PEM Tropics A and B and TRACE P campaigns also contain measurements of the hydroxyl radical, along with a more extensive suite of hydrocarbon and halocarbon measurements.

The archived data from all the GTE campaigns are available through the Atmospheric Sciences Data Center, (http://eosweb.larc.nasa.gov) at NASA’s Langley Research Center. Examples of the data in each archive will be presented and CD-ROMs of selected data sets will be available. An Immersa Desk will also be available for 3D visualization of data from the TRACE P and PEM West A and B archives.
References


