PANTHER: 200 lbs, 6-channel GC (gas chromatograph).
* 3 ECD (electron capture detectors), packed columns (OV-101, Porpak-Q, molecular sieve).
* 1 ECD with a TE (thermal electric) cooled RTX-200 capillary column.
* 2-channel MSD (mass selective detector). The MSD analyses two independent samples concentrated onto TE cooled Haysep traps, then passed through two temperature programmed RTX-624 capillary columns.

Calibration: With the exception of PAN, all channels of chromatography are normalized to a stable in-flight calibration gas referenced to NOAA scales. The PAN data is normalized to an in-flight PAN source of ≈ 100 ppt with ±5 % reproducibility. This source is generated by efficient photolytic conversion of NO in the presence of acetone. Detector non-linearity is determined by lab calibrations for all molecules.

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Compounds Measured on Past Missions:

ECD channels: N₂O, SF₆, CCl₂F₂ (CFC-12), CCl₃F (CFC-11), and CBrClF₂ (halon-1211) injected every 70 seconds, and H₂, CH₄, CO, CCl₄, CH₃CCl₃ (methyl chloroform) and PAN (peroxyl acetyl nitrate) injected every 140 seconds. The width of a sample load on an ECD channel is only 3 seconds, allowing this data set to correlate well with other fast measurements.

MSD channels: The methyl halides CH₃I, CH₃Br, CH₃Cl, the sulfur compounds COS, CS₂, the hydrochlorofluorocarbons CHClF₂ (HCFC-22), C₂H₃Cl₂F (HCFC-141b), C₂H₃ClF₂ (HCFC-142b), and the hydrofluorocarbon C₂H₂F₄ (HFC-134a) are injected every 180 seconds with 150 seconds sample load width. This data set correlates with a time average of other fast measurements.

TDL Channel: Water Vapor  (Currently relocated back in UCATS.)