



PAN and other Trace Hydrohalocarbon Experiment (PANTHER)



Principal Investigator: James W. Elkins NOAA Earth System Research Laboratory, Boulder, CO (NOAA/ESRL)
Co-Investigators: Fred L. Moore, Geoffrey S. Dutton, Dale F. Hurst, J. David Nance, Cooperative Institute for Research in Environmental Sciences (NOAA/ESRL & CIRES) and Bradley D. Hall (NOAA/ESRL)

Description: PANTHER is multiple channel gas chromatograph (GC) with four electron capture detector channels (ECD) and two channel separation glass capillary column systems with one mass selective detector (MSD).

Location on the WB-57F: On aft transition pallet with CAFS.

Compounds Measured: **ECD channels:** Nitrous oxide (N_2O), sulfur hexafluoride (SF_6), chlorofluorocarbons (CFCs), -12 (CCl_2F_2) and -11 (CCl_3F), and halon-1211 ($CBrClF_2$) injected every 70 seconds with 3 second sample widths; Hydrogen (H_2), methane (CH_4), carbon monoxide (CO) and peroxy acetyl nitrate (PAN) every 140 seconds with 3 seconds sample widths.

MSD channels: Carbonyl sulfide (COS), CFC-12, hydrochlorofluorocarbons HCFC-22 ($CHClF_2$), -141b ($C_2H_3Cl_2F$), -142b ($C_2H_3ClF_2$), hydrofluorocarbons HFC-134a ($C_2H_2F_4$), methyl chloride (CH_3Cl), methyl bromide (CH_3Br), and methyl iodide (CH_3I), injected every 180 seconds with 150 seconds sample width.

Accuracy of calibration: $> \pm 1\%$, except PAN $\pm (5-20)\%$ depending on concentration.

Weight: 200 lbs.

Power: 750 W (typical), 1.5kW (startup)