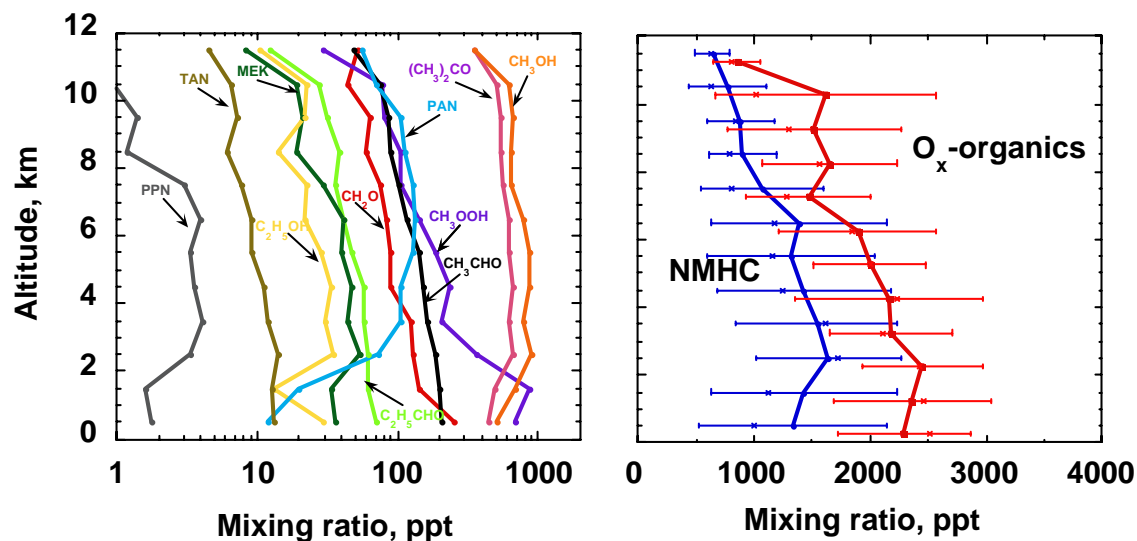


Measurements of PANs, OVOC, and Nitriles During INTEX-A

H. Singh, D. Herlth, L. Salas, R. Kolyer, E. Czech

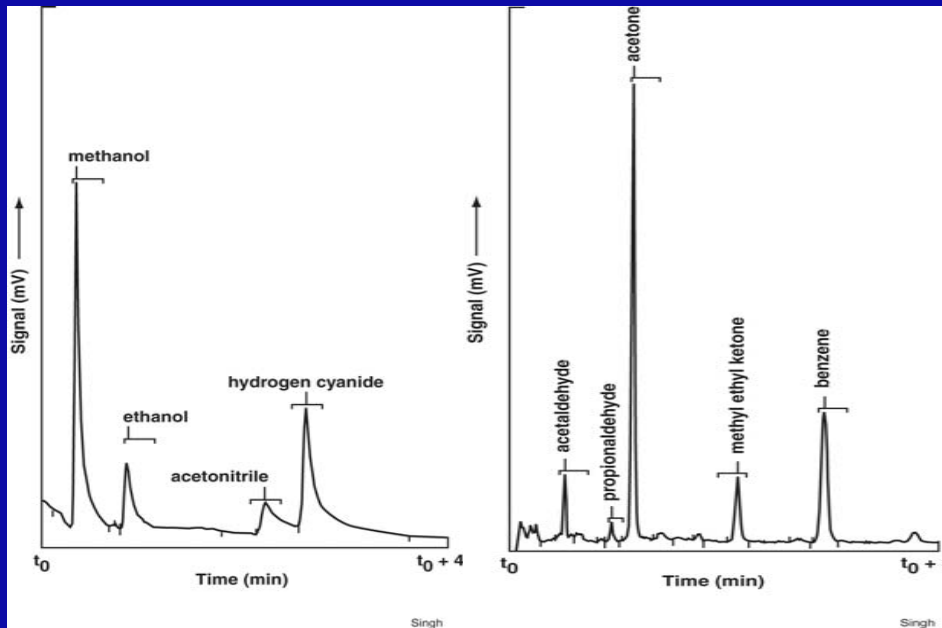


- Globally abundant
- Photochemically active
- Large poorly known sources
- Measurement uncertainties

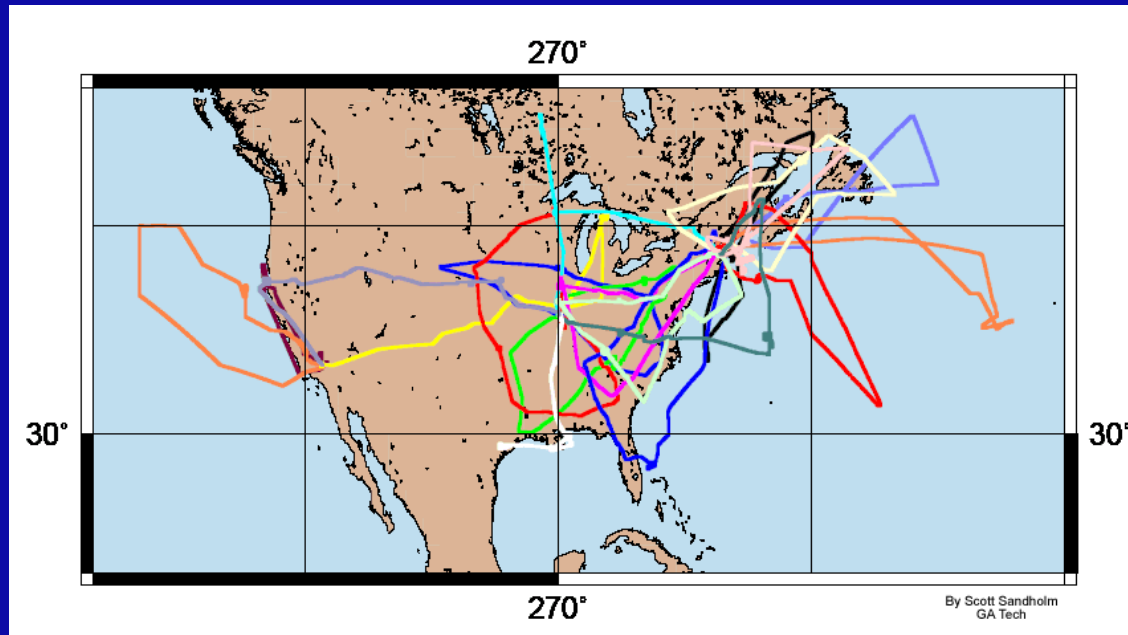
PANAK & Chemicals

- 3 Channel capillary GC/ECD-PID-RGD
 - Chs 1 & 2/ECD: PANs
 - Ch 3/PID-RGD: OVOC/Nitriles/HCs
- 200 ml cryo sampling/2-min; heated probe
- Sensitivity (ppt): PANs-1; OVOC- 5 to 20; HCN- 30
- PAN every 2.5 min; OVOC every 5 min

- $(\text{CH}_3)_2\text{CO}$
- $\text{CH}_3\text{COC}_2\text{H}_5$
- CH_3OH
- $\text{C}_2\text{H}_5\text{OH}$
- CH_3CHO
- PAN
- PPN
- RONO_2
- C_2Cl_4
- HCN
- CH_3CN
- C_6H_6

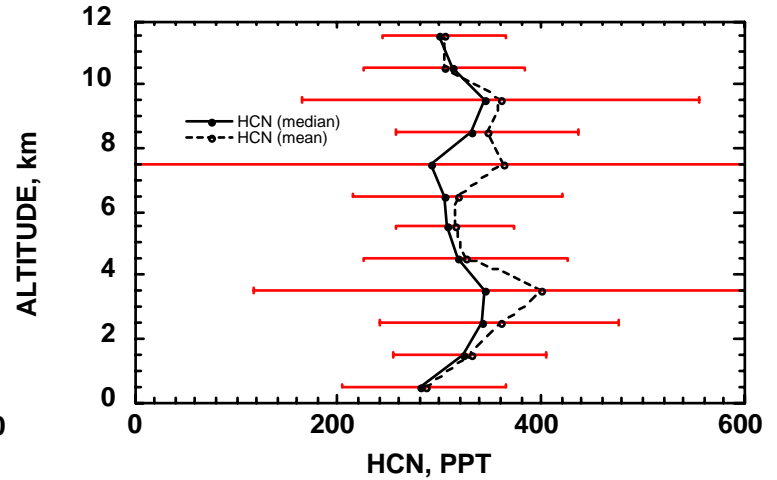
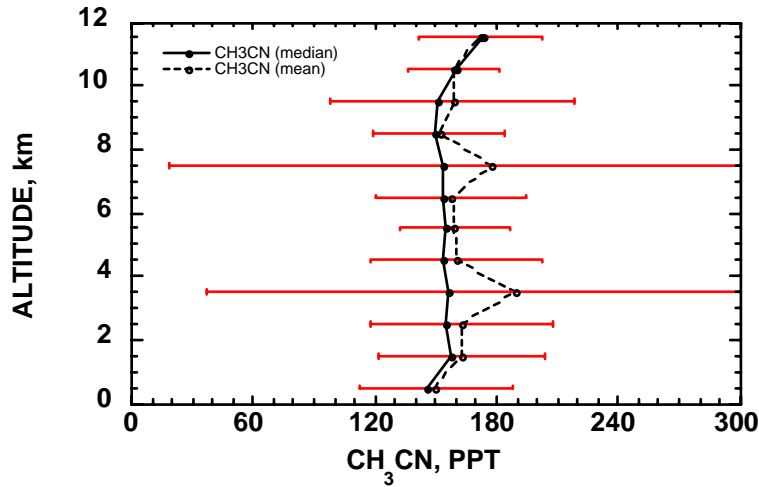


DC-8 PANAK Data Status

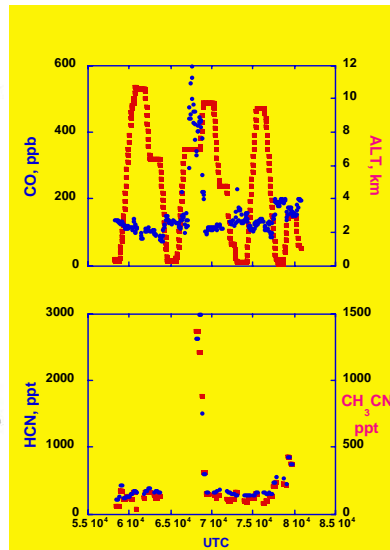
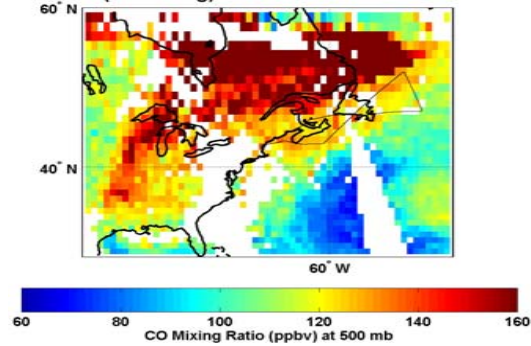


- **Data collected on all missions**
 - **No RGD channel data on Mission 11**
 - **Acetaldehyde data are only for Trop ($O_3 < 100$ ppb)**
 - **Date above 35 K ft are less precise**

CH₃CN & HCN

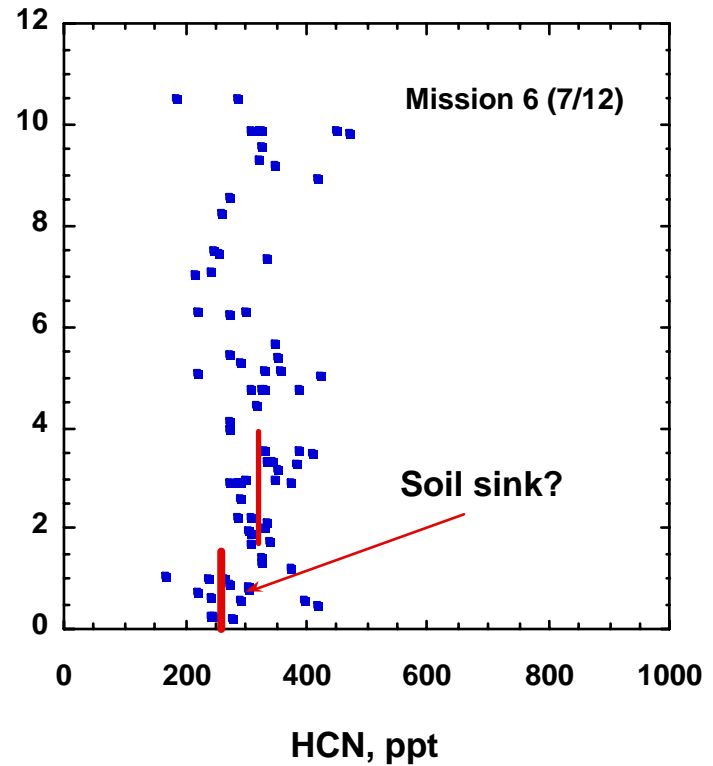
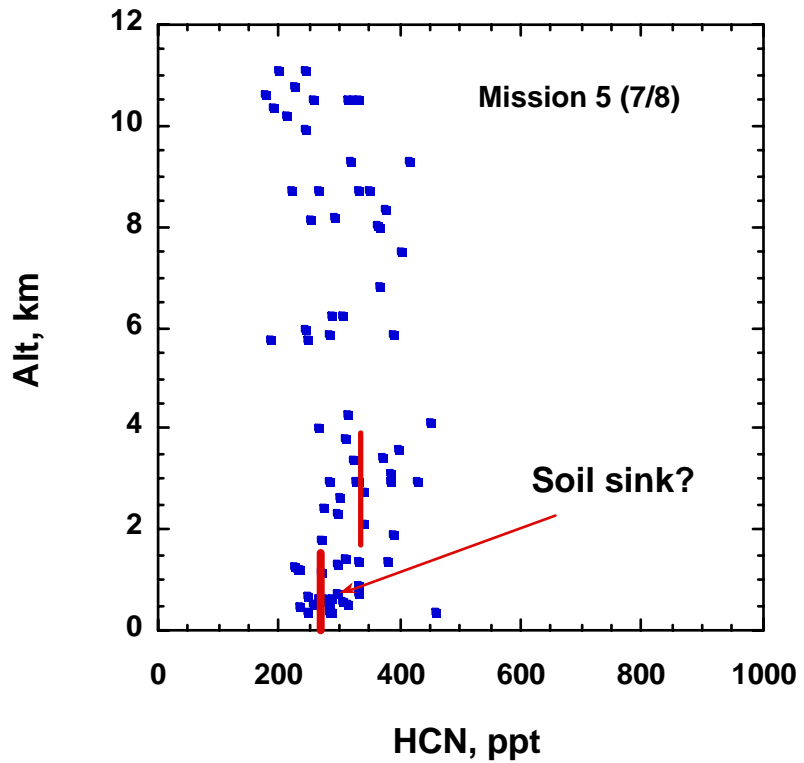


Local PM (ascending) AIRS CO at 500 mb on 20040718

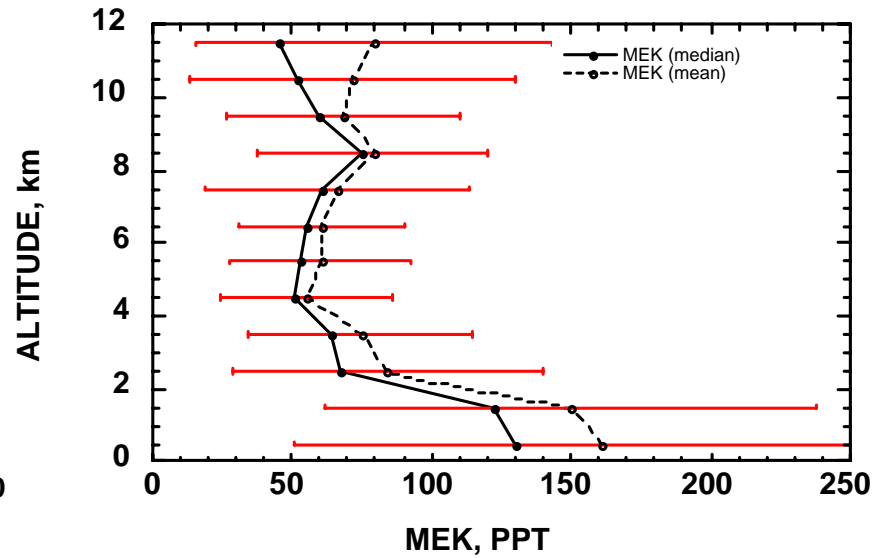
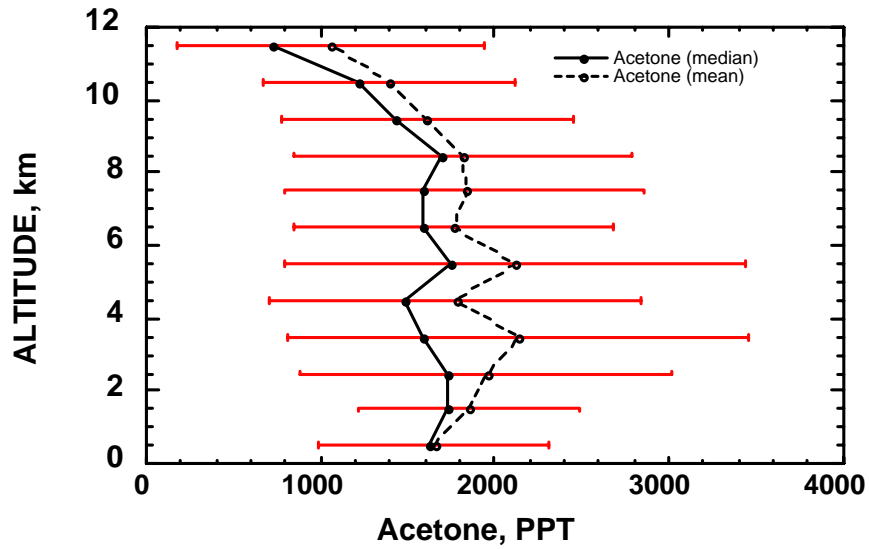


HCN column
= 5×10^{15} molec cm⁻²

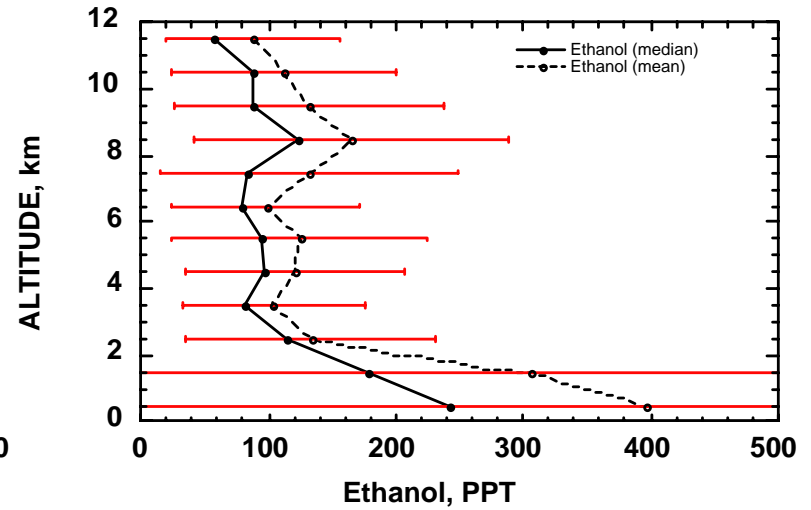
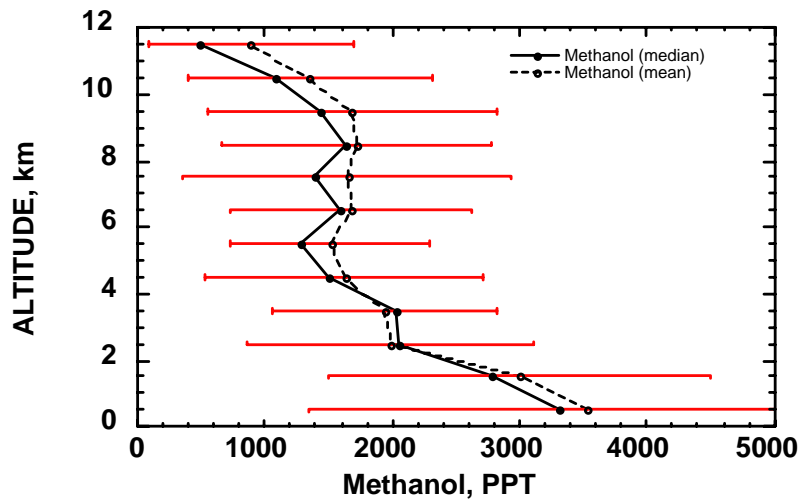
HCN Soil Sink?



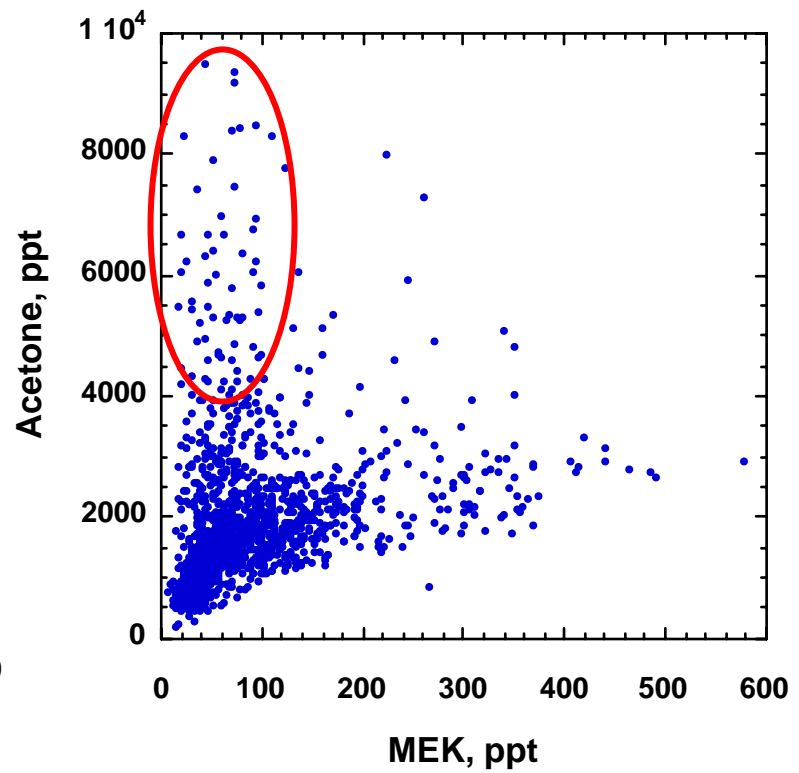
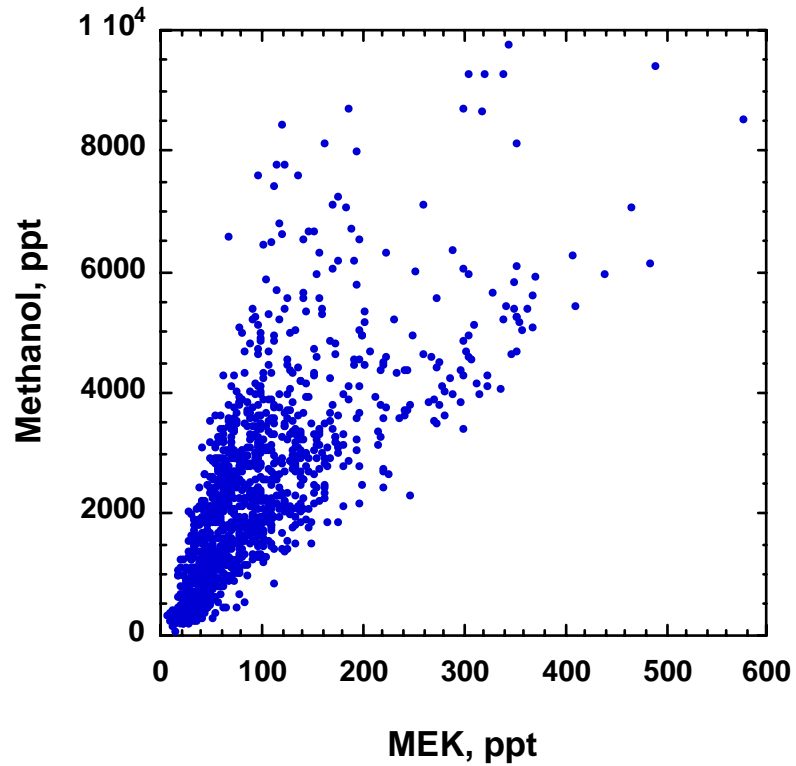
Acetone & MEK



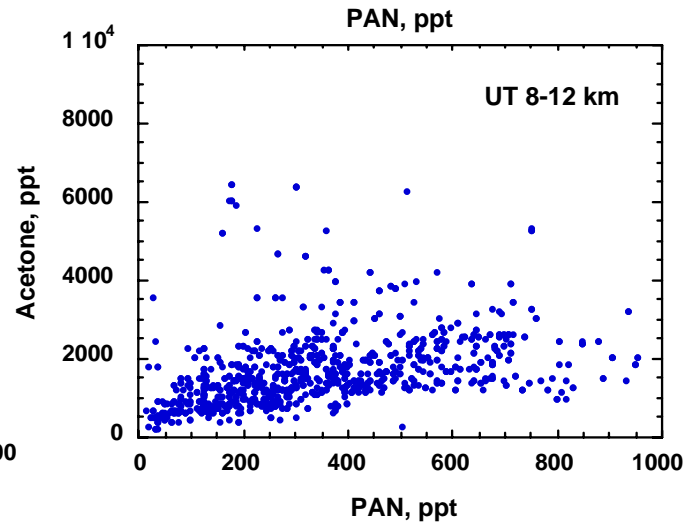
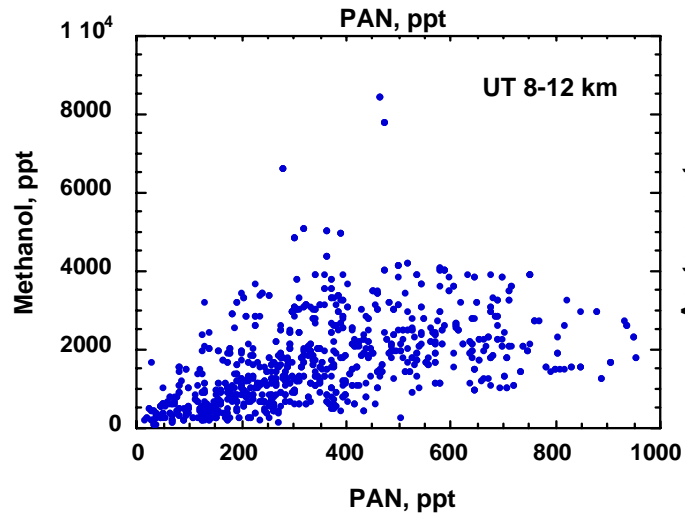
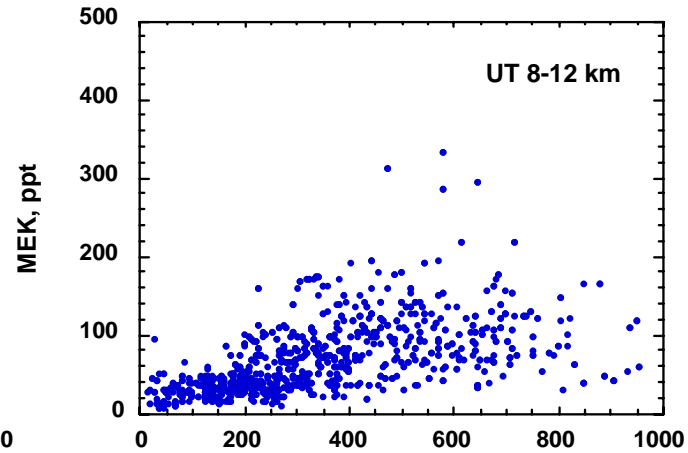
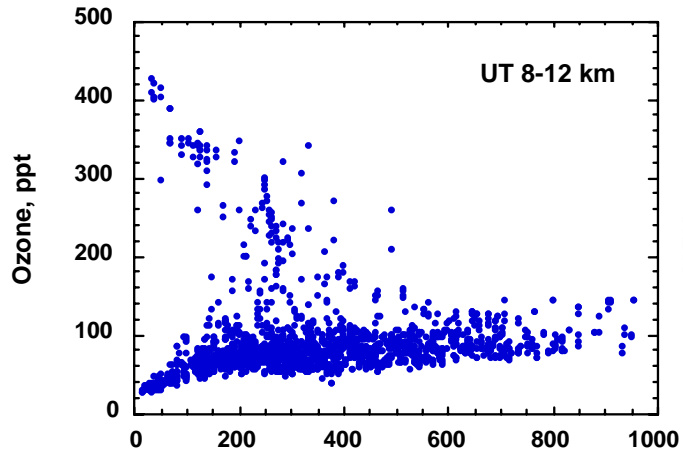
Methanol & Ethanol



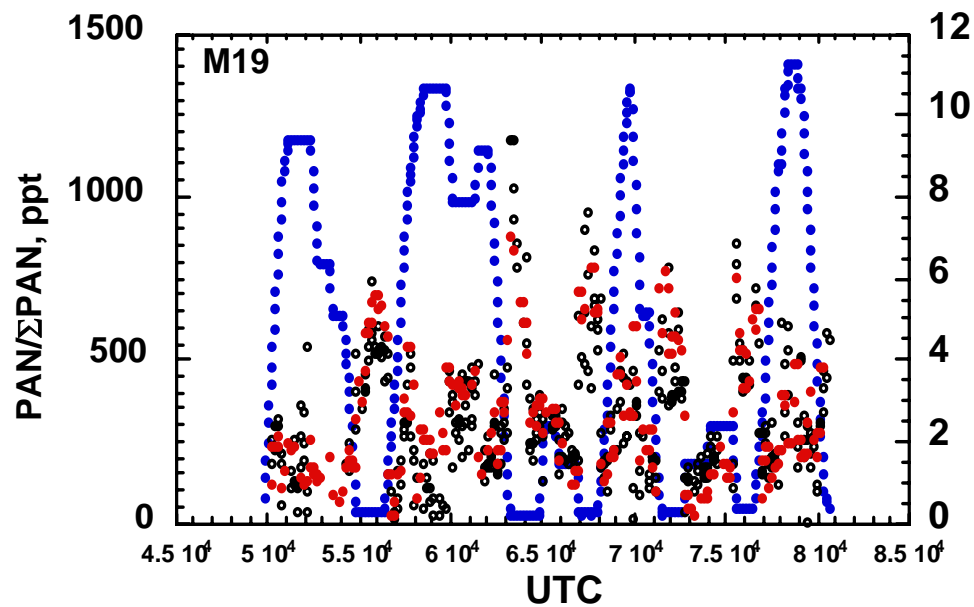
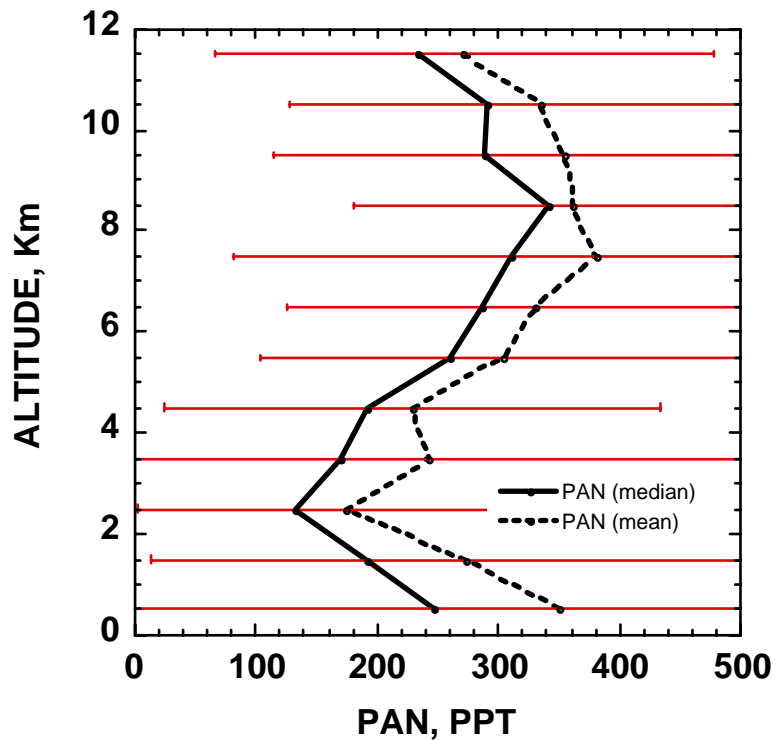
Biogenic Sources?



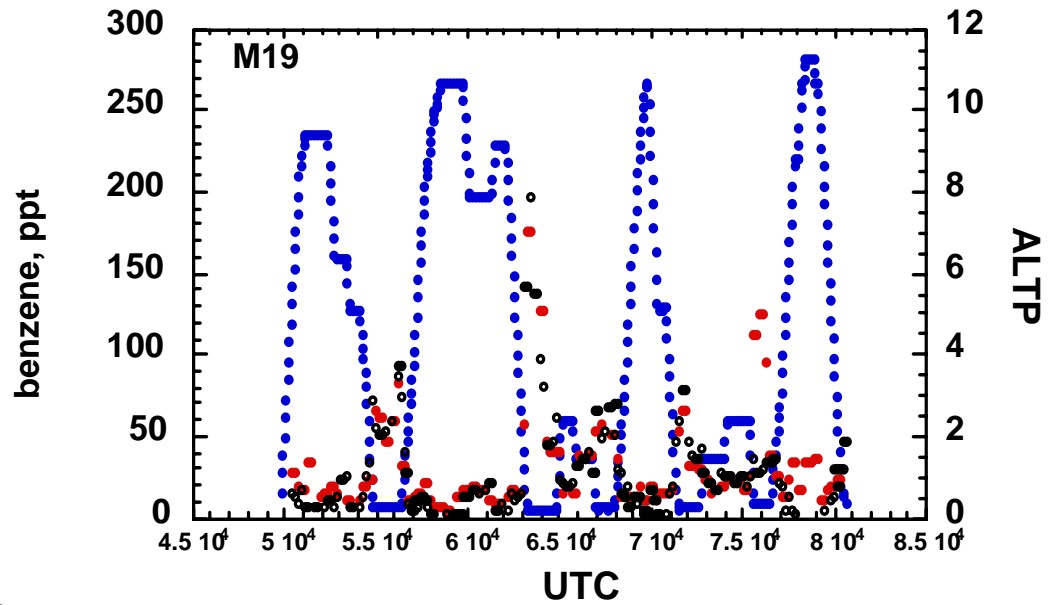
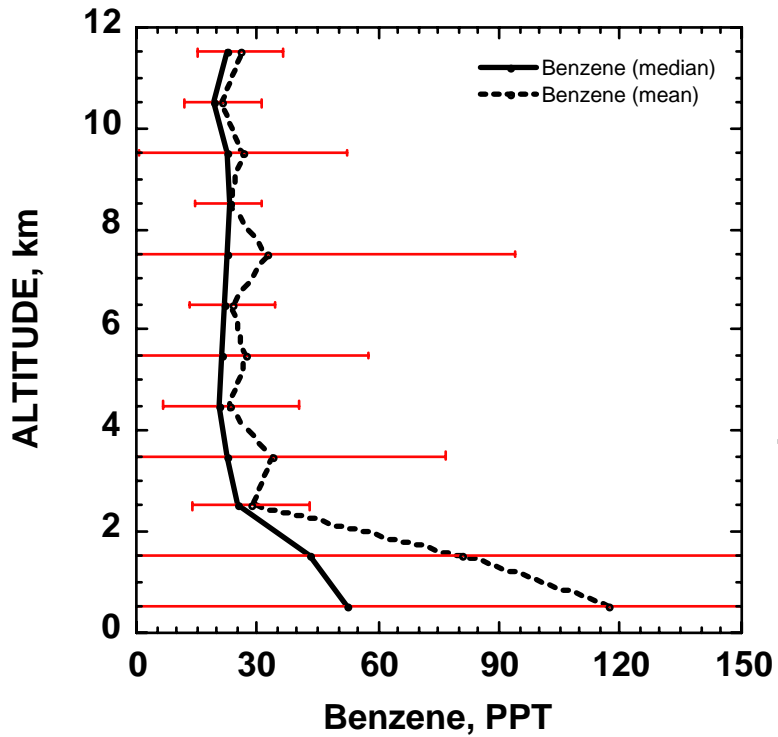
Upper Tropospheric Influences



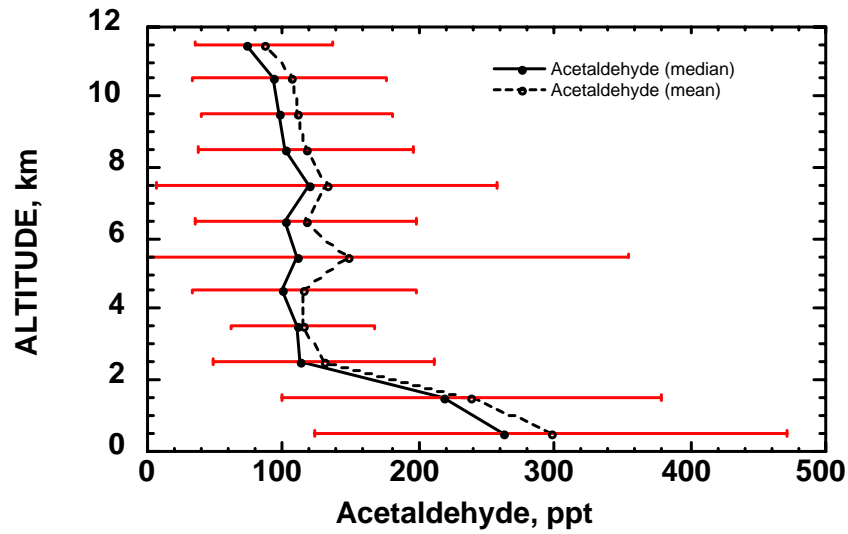
PAN & ΣPAN



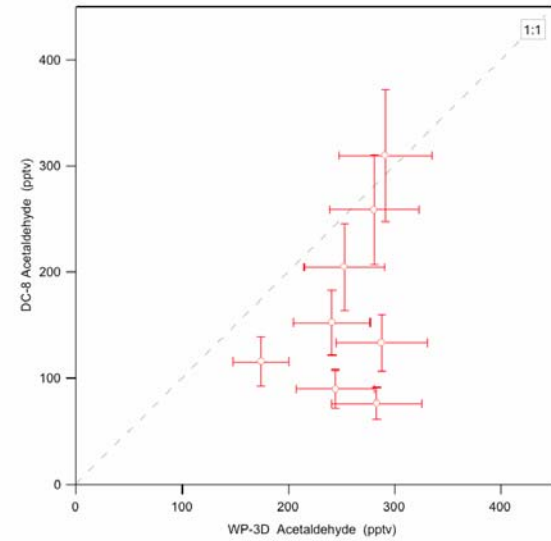
Benzene/PID



Acetaldehyde



DC-8



P-3

Ongoing Focus

- **Biogenic/anthropogenic emission sources of OVOC**
- **Sources/sinks of HCN/CH₃CN**
- **Input from models**
- **Further data and trajectory analysis**
- **Reconciliation of measurements?**
- **Manuscripts**
 - **Overview paper**
 - **Sources/sinks of OVOC/PAN/HCN**
 - **Role of OVOC in HO_x/NO_x chemistry**