Measurements, sources, and chemistry of PANs, organic nitrates, carbonyls, alcohols, and nitriles based on observations during TRACE-P

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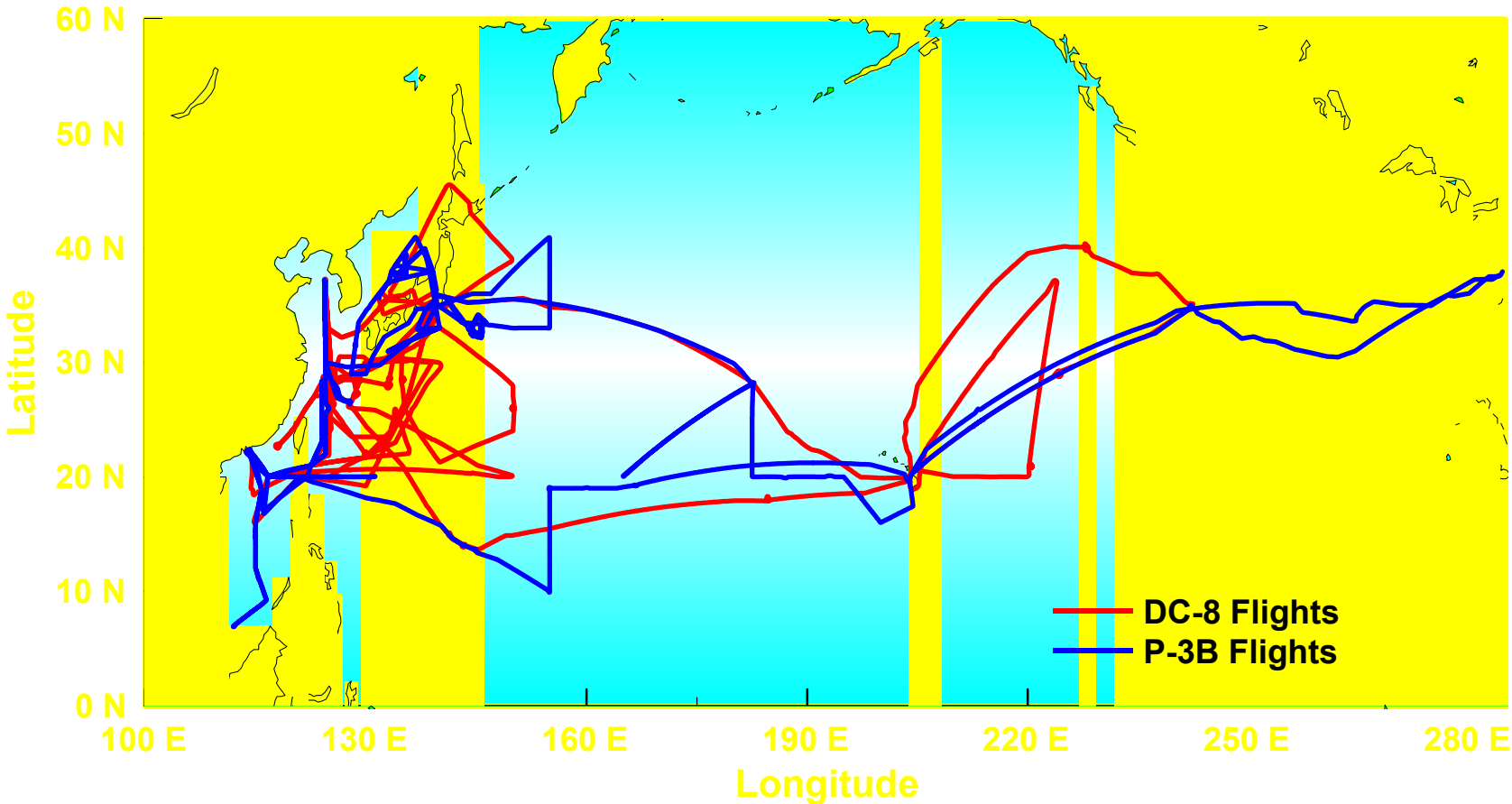
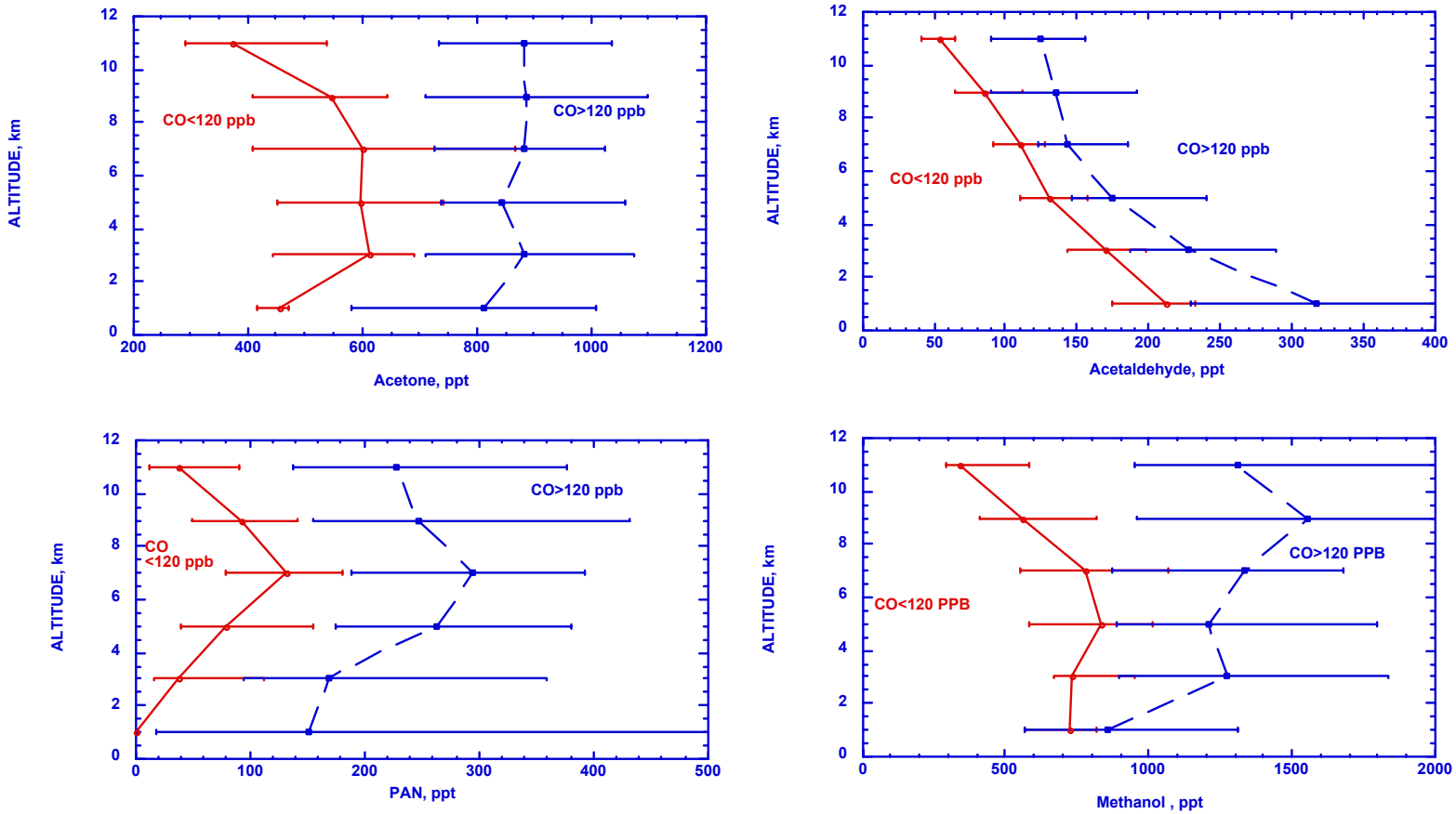
PANAK (Pans-aldehyde-alcohols-ketons): Three channel GC-ECD-PID/RGD instrument, heated probe, cryo sampling

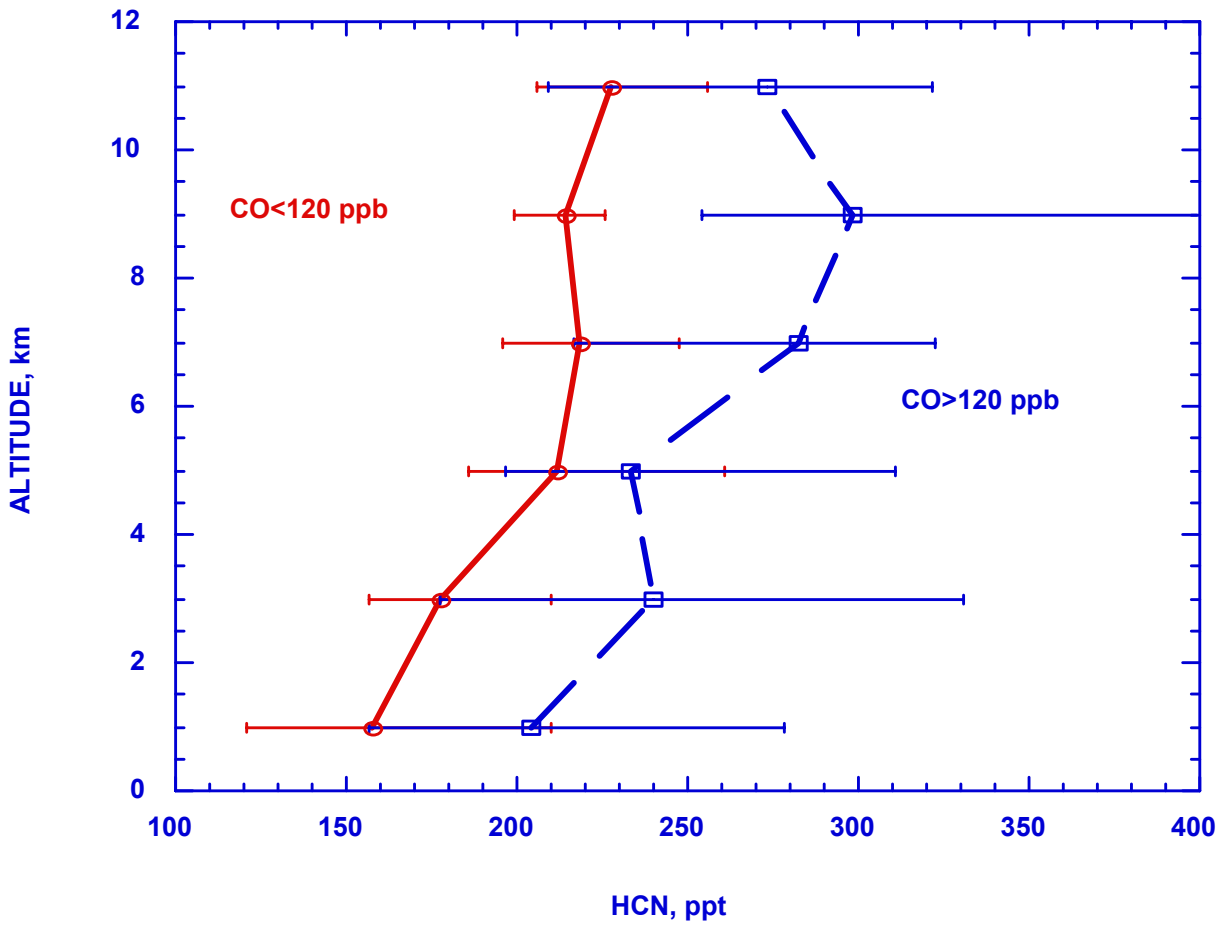
Ch 1/ECD: PAN, PPN, Methyl nitrate, Ethyl nitrate/i-propyl nitrate, Tetrachloroethylene (MM tracer) [sensitivity - 1ppt/160 ml]

Ch 3/PID-RGD: Acetone (PID, RGD), Methyl ethyl ketone (PID, RGD), Acetaldehyde (PID, RGD), Propanaldehyde (PID, RGD), Methanol (RGD), Ethanol (RGD), Acetonitrile (RGD)(BB tracer), Hydrogen cyanide (RGD)(BB tracer) [sensitivity - 5-30 ppt/200 ml]

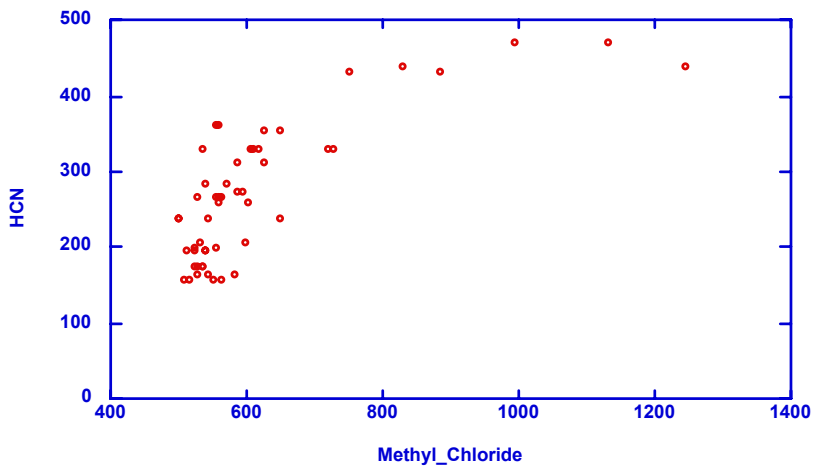

60 N
50 N
40 N
30 N
20 N
10 N
0 N
Latitude
100 E
130 E
160 E
190 E
220 E
250 E
280 E
Longitude
DC-8 Flights
P-3B Flights

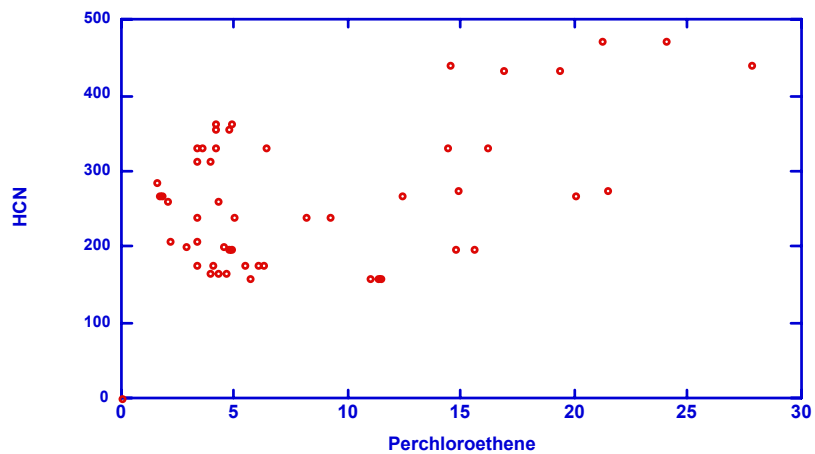
All data/Trace-p



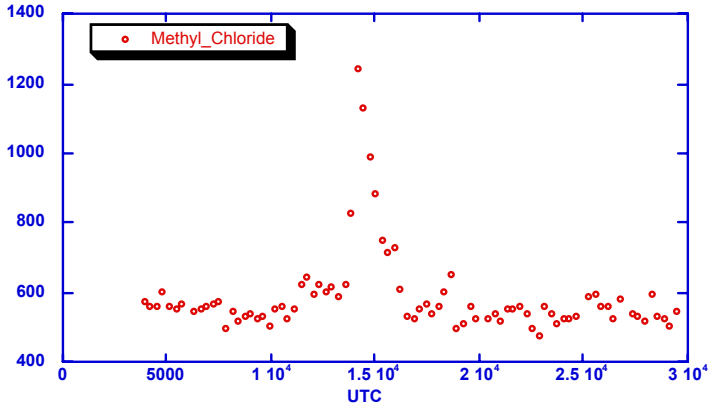

CO<120 ppb
CO>120 ppb
ALTITUDE, km
HCN, ppt
0
2
4
6
8
10
12
100
150
200
250
300
350
400

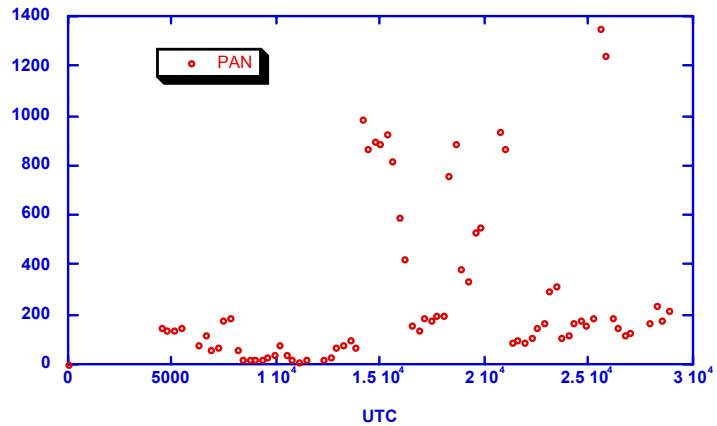
Mission 12/Trace-p

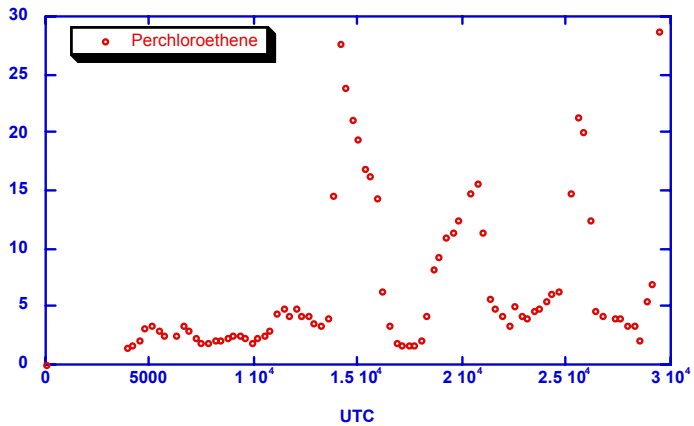


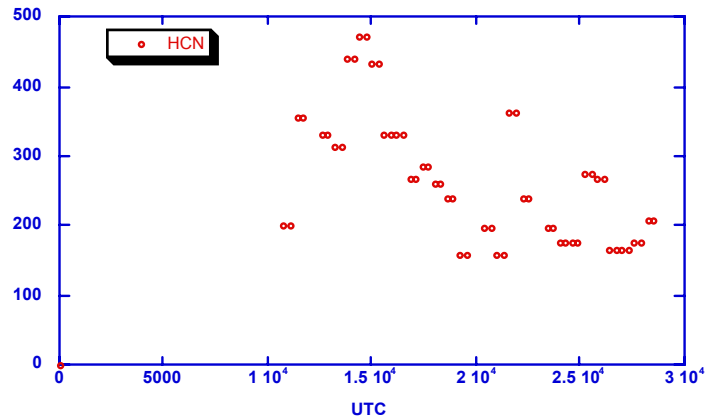


Mission 12/Trace-p

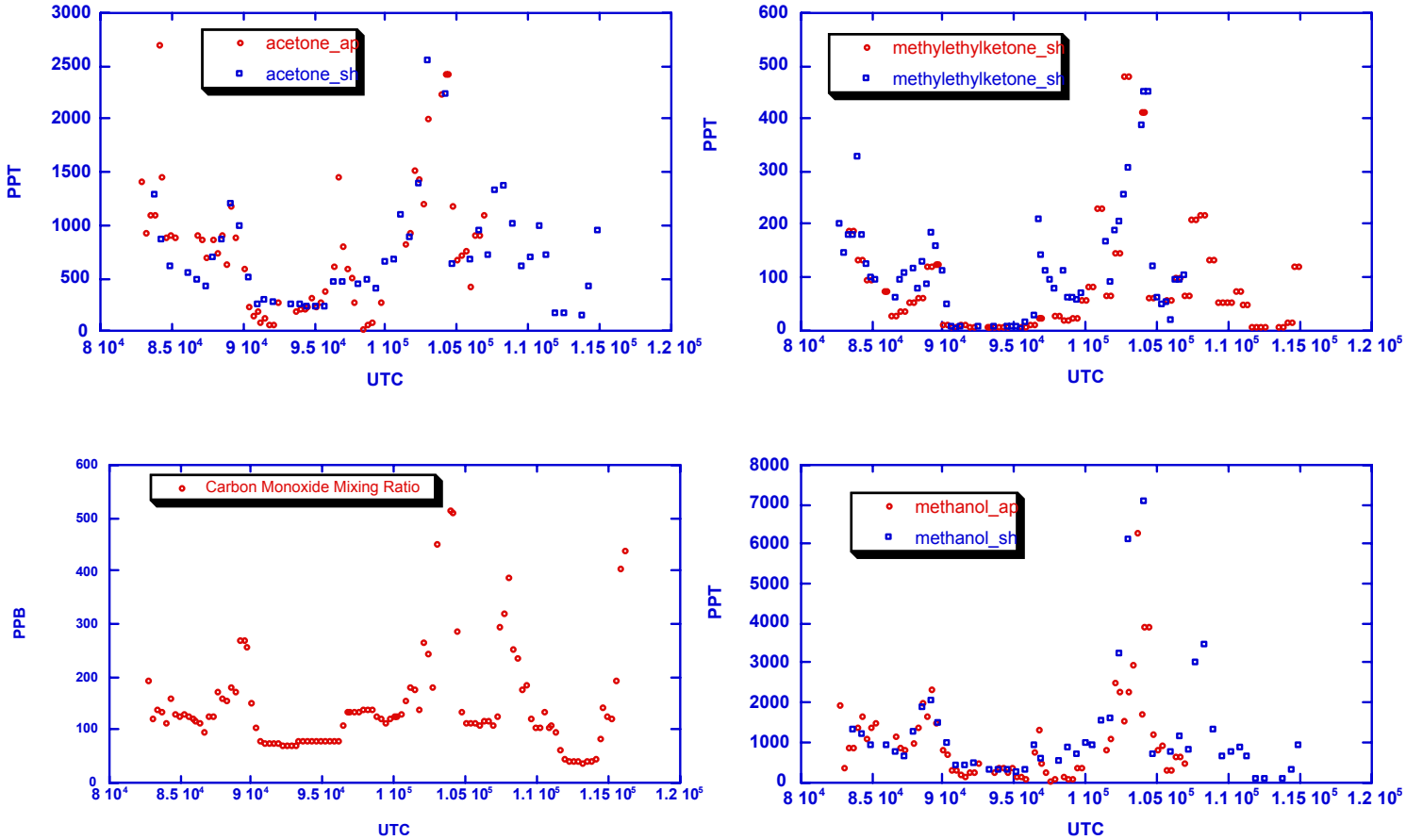




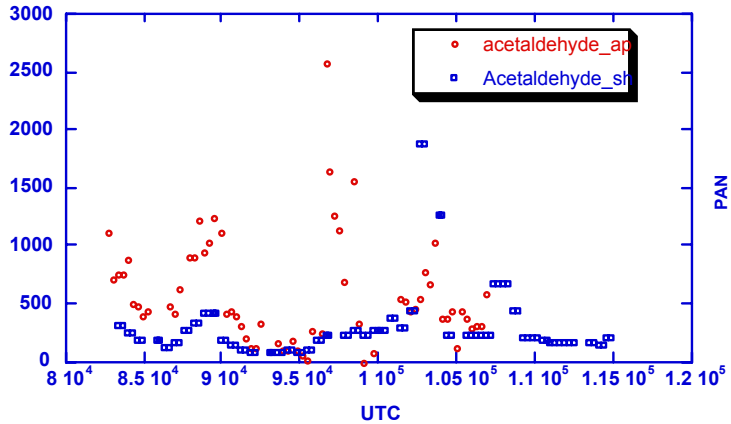


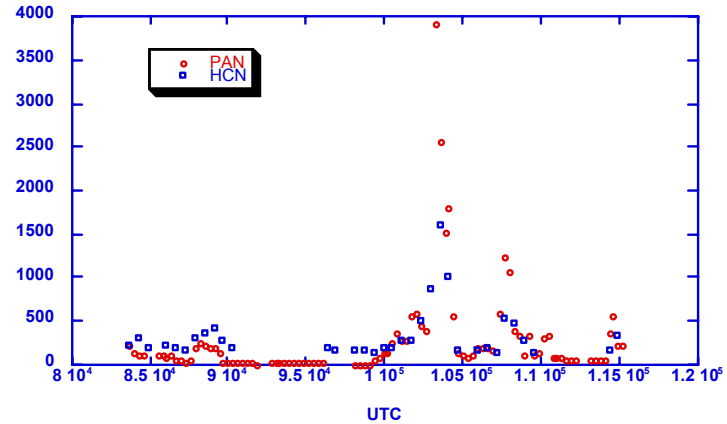


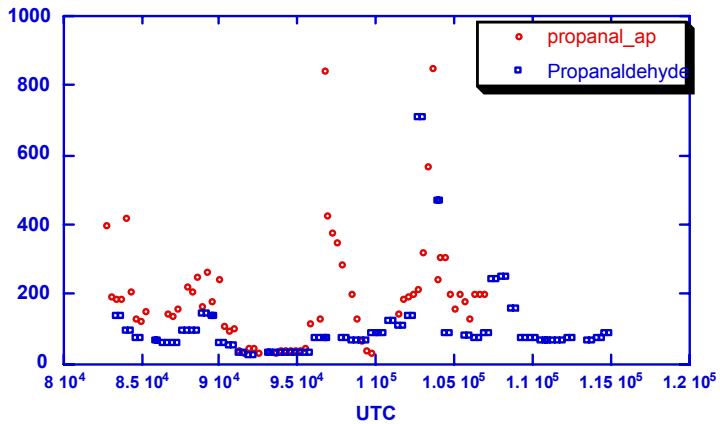
Mission 13/Trace-p

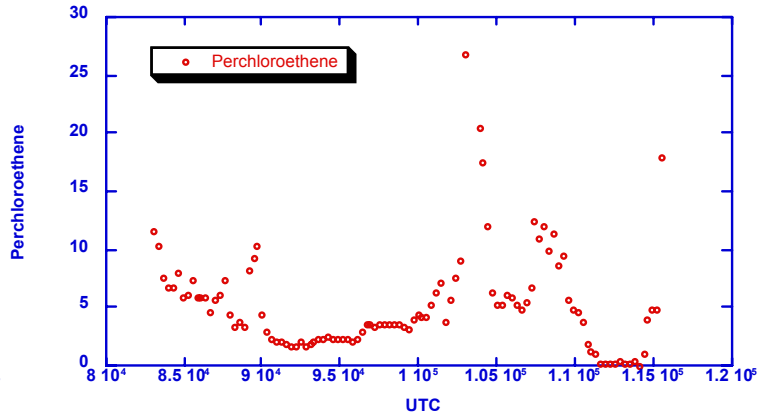


Mission 13/Trace-p









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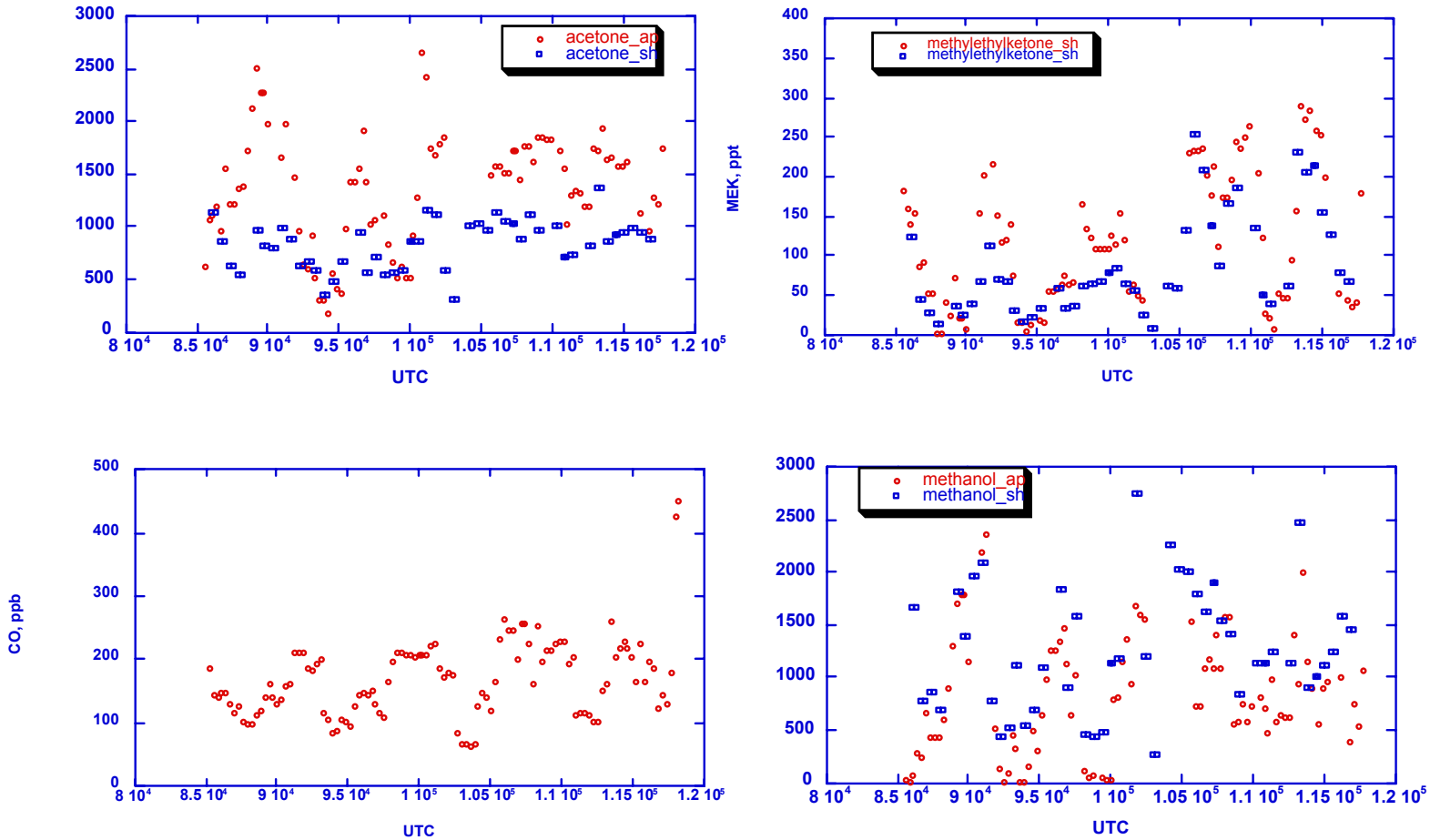

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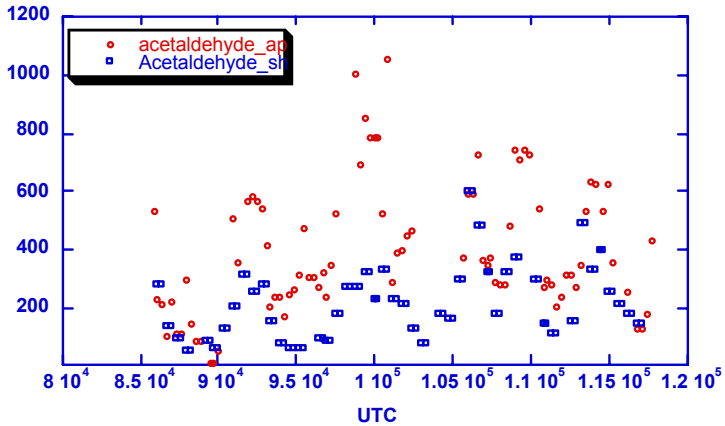

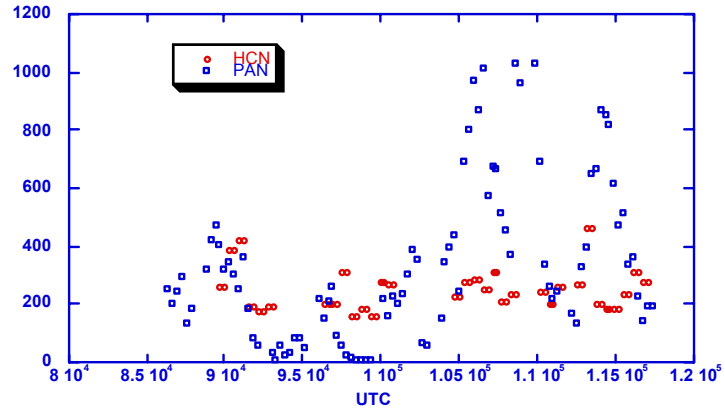

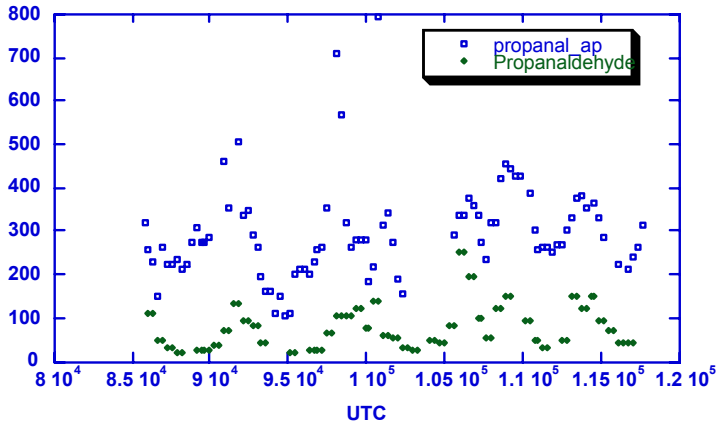

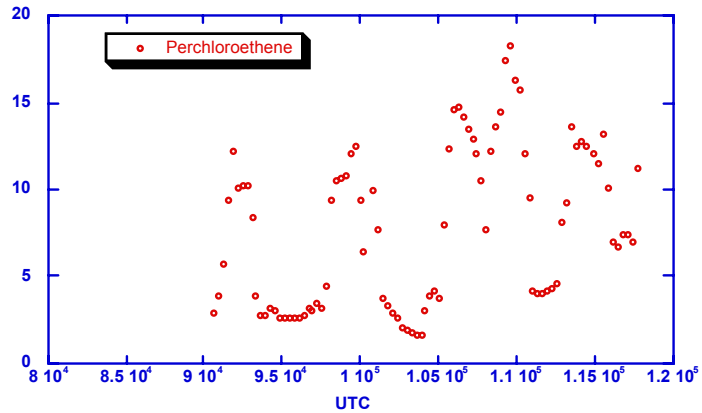

Potential TRACE-P publications: (H. Singh & co-authors)

- **Atmospheric distribution, sources, and sinks of PANs, carbonyls, and alcohols: role in NOx, HOx, and heterogeneous chemistry**

- **Is there a case for significant oceanic source of oxygenated organic chemicals and can this be quatified from TRACE-P observations?**

- **Large scale tropospheric distribution of HCN and CH3CN: sources, sinks, and budgets**

(How do we handle measurement disagreements???)