

CHC-PUQ

On-time takeoff 17:57 UT

Landing 03:50 UT

Stratosphere on climb out of CHC – 180 ppb ozone; 1 ppb NO_y

Early inflight PALMs failed – turbo pump died. Repair in PUQ.

19:07 – exit stratosphere just before heading down for first profile.

Some pollution (CO) just below tropopause on several legs.

Delayed profile 3 as imagery suggested clearing a bit further east. Arrived at 1000 ft, but too cloudy to descend. After 5 min. it cleared and we had 5 min at 500 ft over sea ice / frizzle in beautiful sunshine.

Large differences in NO_y/O₃ noted in the different stratosphere portions (much lower at 65S).

Open sky at 65S; beautiful views of sea ice, icebergs at 500 ft.



5th dive was interesting. Descended just above the low as wx suggested clearing on the backside. Happened and we passed thru to 500 ft. Very windy and bumpy over broken sea ice. Toward end of 5 min leg, visibility dropped due to fog/cloud.

6th profile also went to 500 ft at twilight. Little sea ice, but some icebergs.

Requested 7th profile – got to FL150.

385 ppb ozone; 1.5 ppb NO_y at FL390 just before PUQ.

Debrief

PALMs suffered turbo pump failure shortly after takeoff; Panther had a heater failure in the N₂O channel.

NO_y good

DLH good

Picarro good

QCLS good.

SAGA good

Panther good. UCATs heater failure on N₂O channel

AO₂ good.

GT-CIMS good

NOAA CIMS good.

WAS good

MMS good

TOGA good.

AMP Good.

CAPS Good.

PALMS Turbo Failure

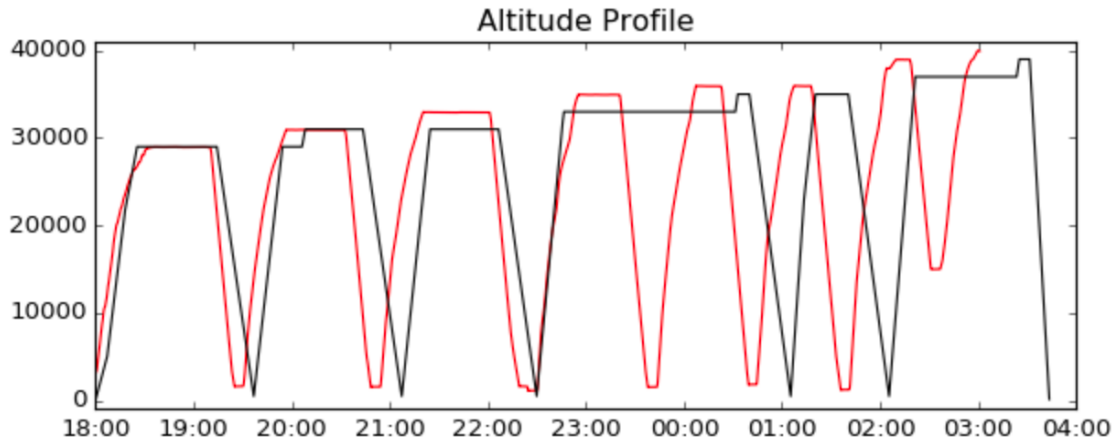
ATHOS Good / switch out super charger tomorrow.

ISAF A few glitches otherwise good

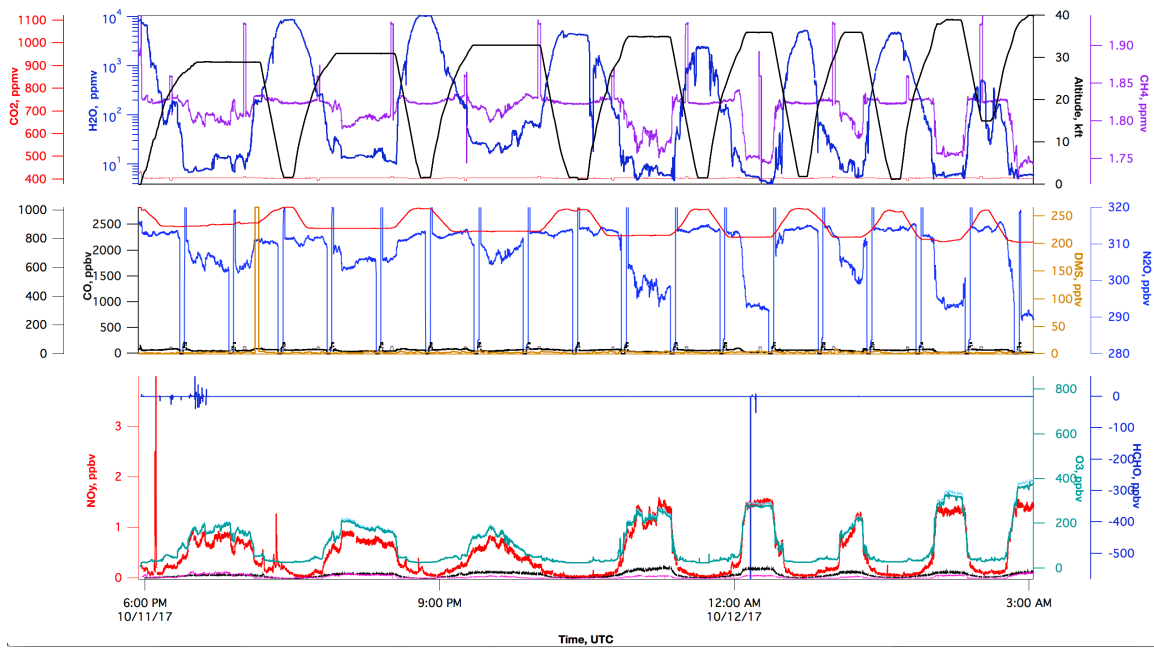
SP2 Good.

HRAMS Good

CITCIMS Good



Black is per plan; Red is actual.



Excellent flight save failure of PALMS. We obtained 8 profiles including takeoff and landing. All included stratospheric portion. We sampled boundary layer air on all profiles except 2 and 3 where we could not go below 10kft and b.l. height was low.