

NSF C-130 Platform Report

Robert Wood



MISSIONS

(a) 20°S Cross-Sections [4 full missions+5 partial missions]

- to characterize structure of MBL, aerosols, clouds along the 20°S parallel from 72-85°W
- collaborative (RHB, BAe-146, Do-228, G-1)

(b) POC Drift missions [5 missions including 1 POC Lagrangian with BAe-146]

- investigate structure of boundary between closed and open cellular stratocumulus

(c) Pollution Surveys [2 missions total]

- coast-parallel surveys to 30°S to study how pollutants are transported into the MBL

INSTRUMENTS

RAF instruments:

Microphysics, Turbulence, Thermodynamics suite, Radiation

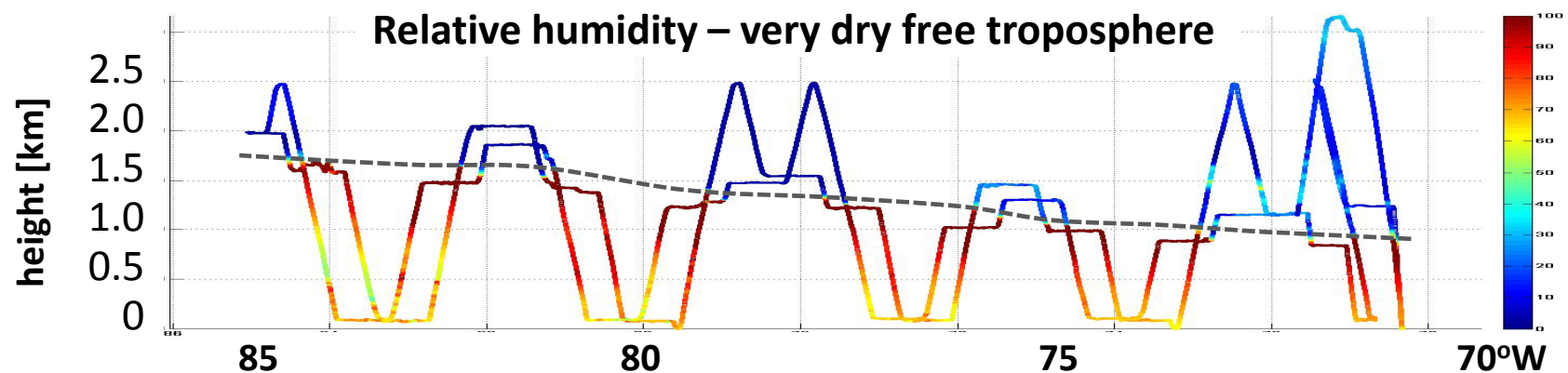
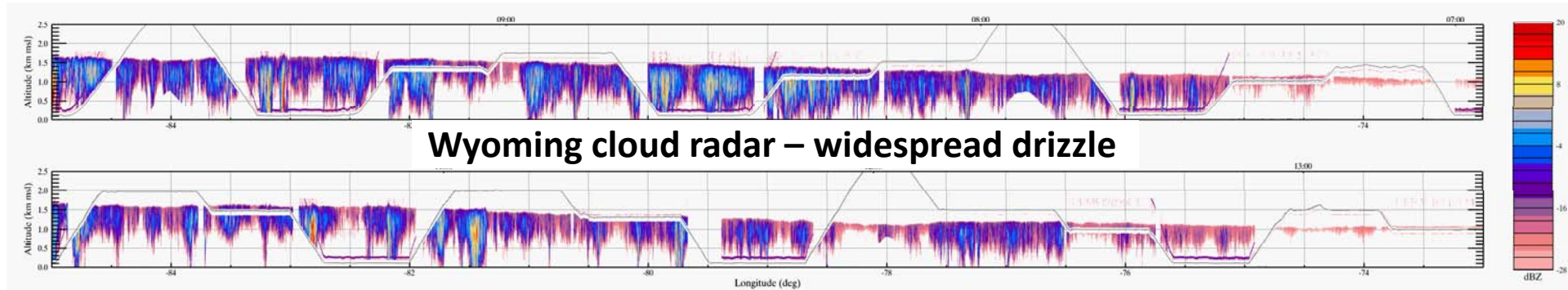
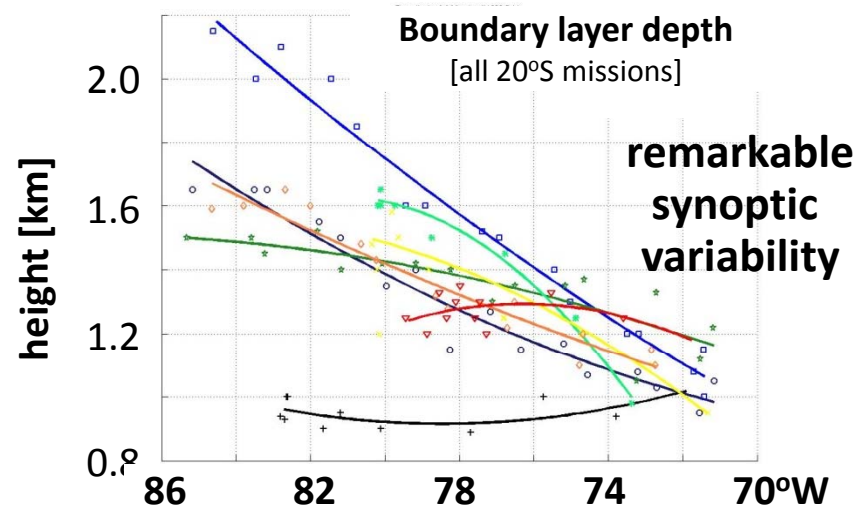
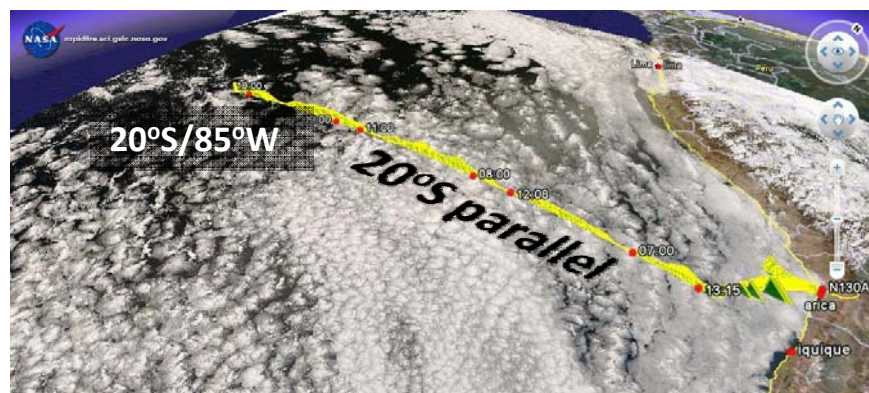
Special Remote sensing:

Wyoming Cloud Radar (zenith+nadir+slant), Cloud Lidar (zenith), Microwave radiometer (GVR, 183 GHz, zenith)

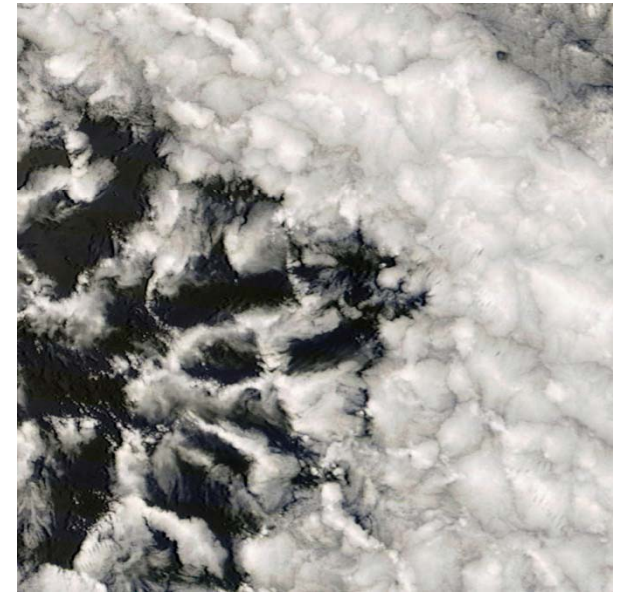
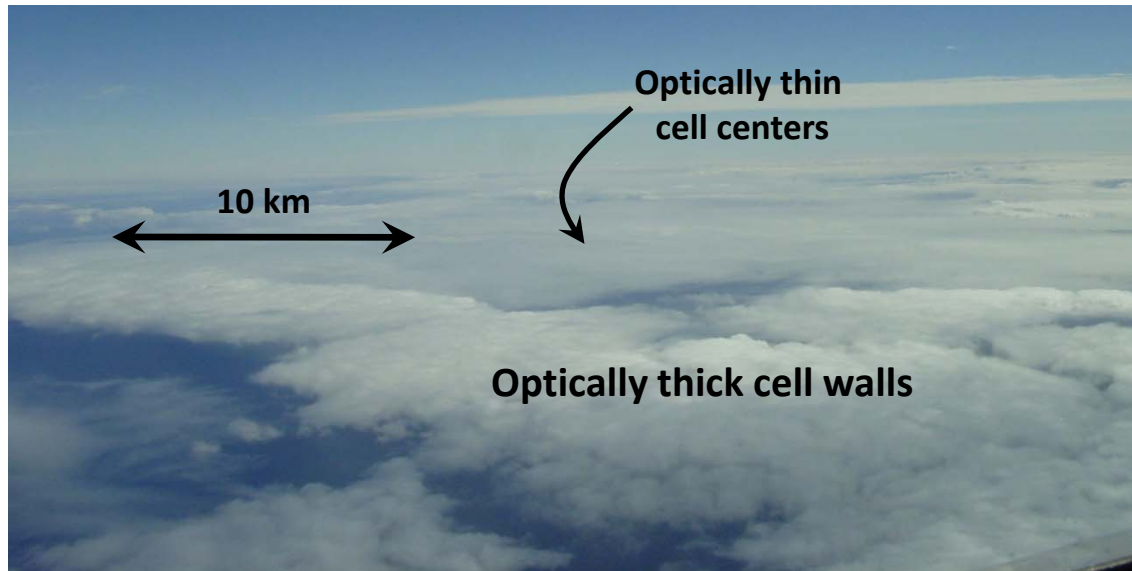
Special Chemistry/aerosols/clouds:

CCN, CVI, Streakers, Giant CCN, Special CN counters (+ultrafine), LDMA, RDMA, Aerosol Mass Spec, volatility, nephelometer, SP2/PSAP, DMS/SO₂, Cloud water collector, CO/O₃, fast FSSP

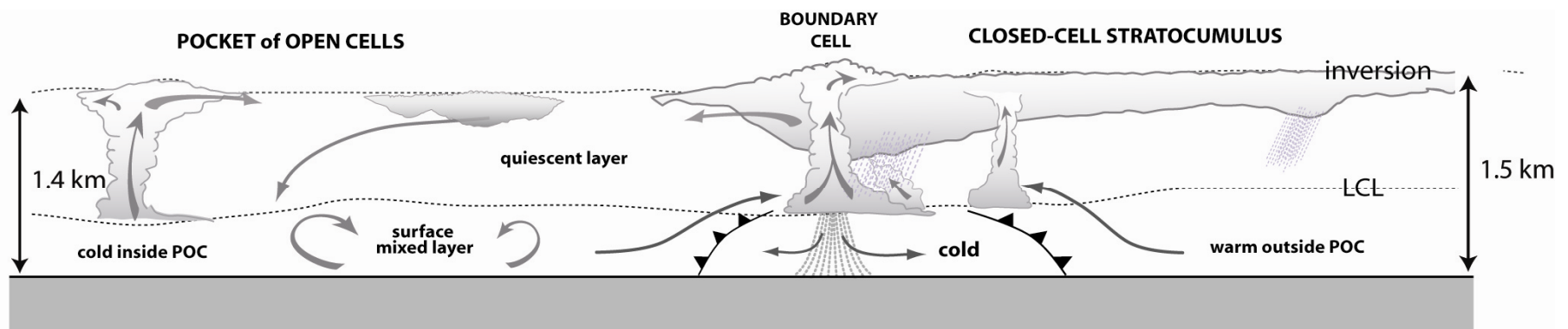
20°S Missions



POC Missions

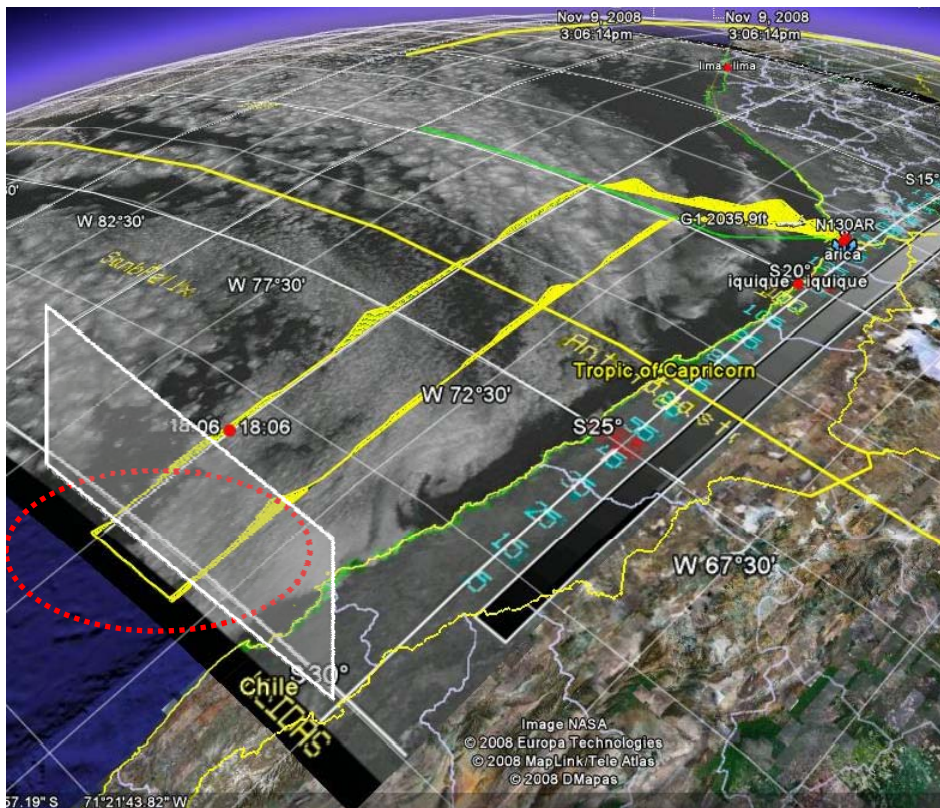


- Lowest CN concentration ever measured
- Remarkable contrasts in microphysics and cloud dynamics across POC boundary [aerosols, drizzle, cloud structure and morphology, CO and O₃]
- Ultraclean clouds in optically-thin cloud centers
- Quasi-linear boundary cells with copious drizzle scavenge aerosols

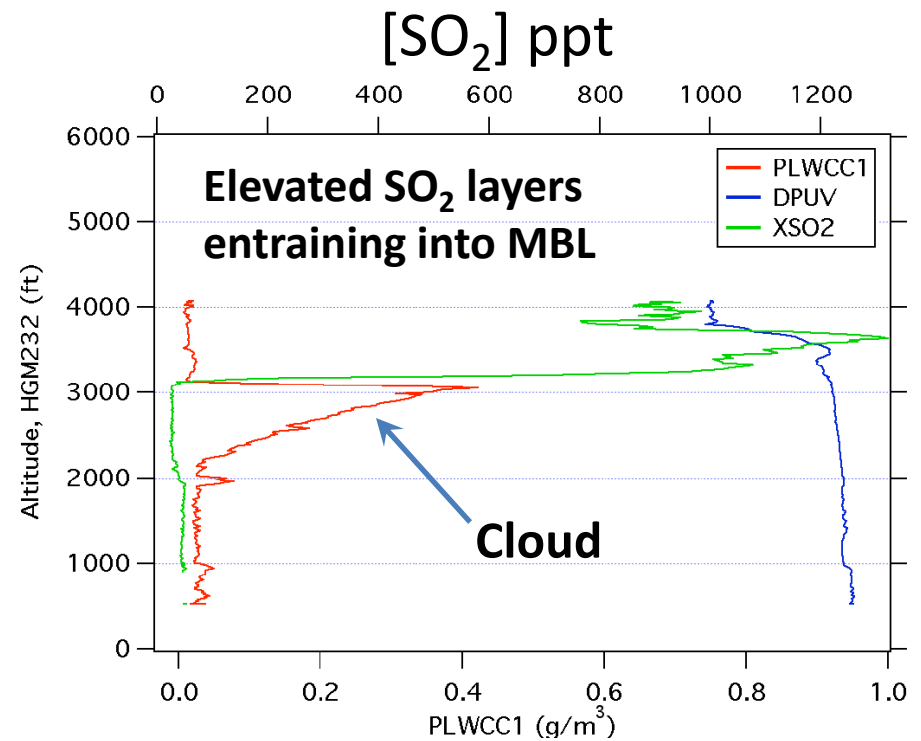


Pollution survey missions

RF12, November 11th 2008



 Santiago



Diurnal flushing of continental air, RF12 ~27S

