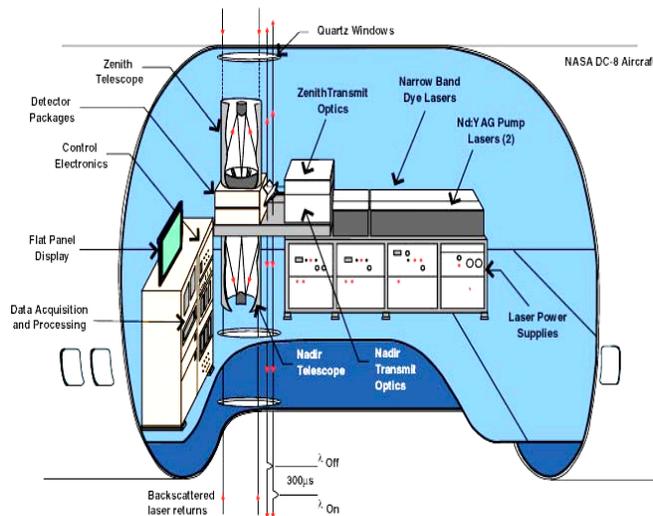




Airborne DIAL Ozone & Aerosol Measurements During INTEX-B



Ed Browell, John Hair, Carolyn Butler, Marta Fenn, Tony Notari, Syed Ismail, Susan Kooi, Rich Ferrare, Melody Avery, & Brad Pierce



Ozone & Aerosol Measurements

- Nadir & Zenith Ozone Profiles
- Nadir & Zenith Aerosol Backscatter at 588 and 1064 nm
- Nadir & Zenith Aerosol Depolarization at 588 nm

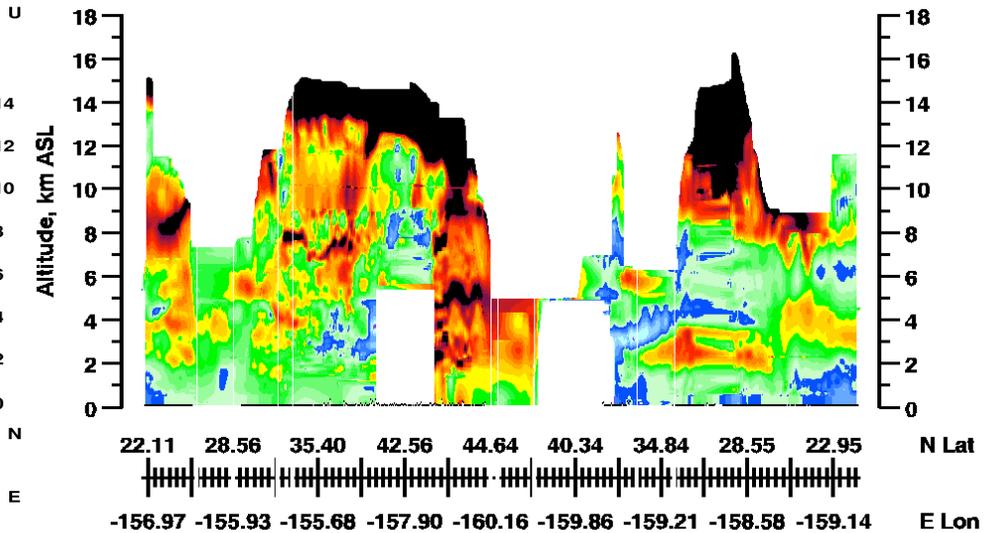
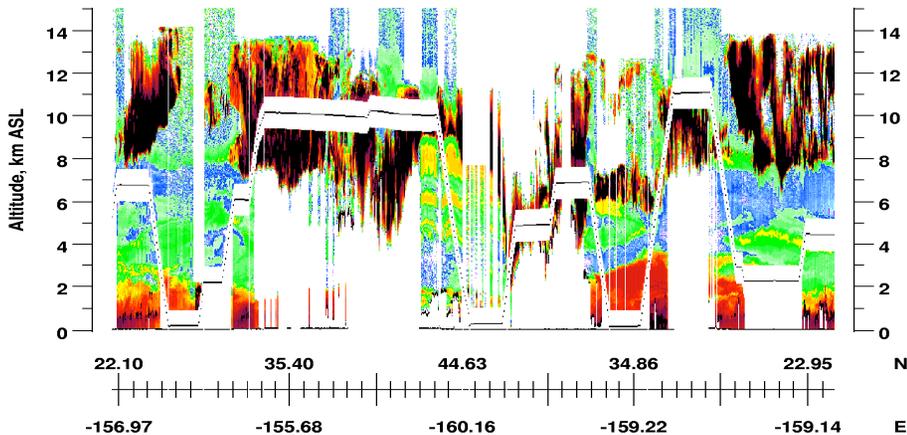
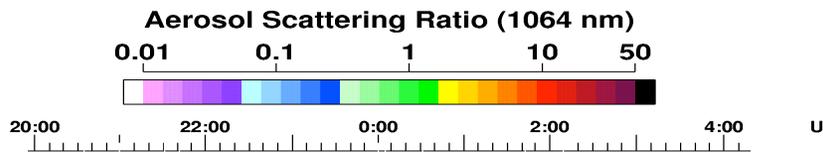
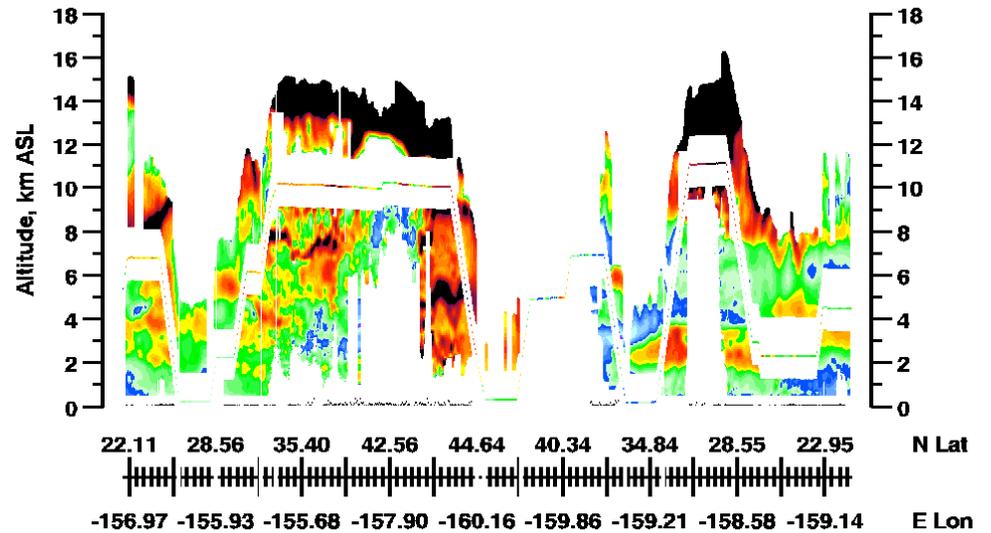
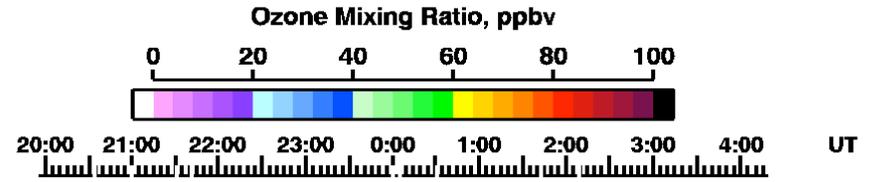
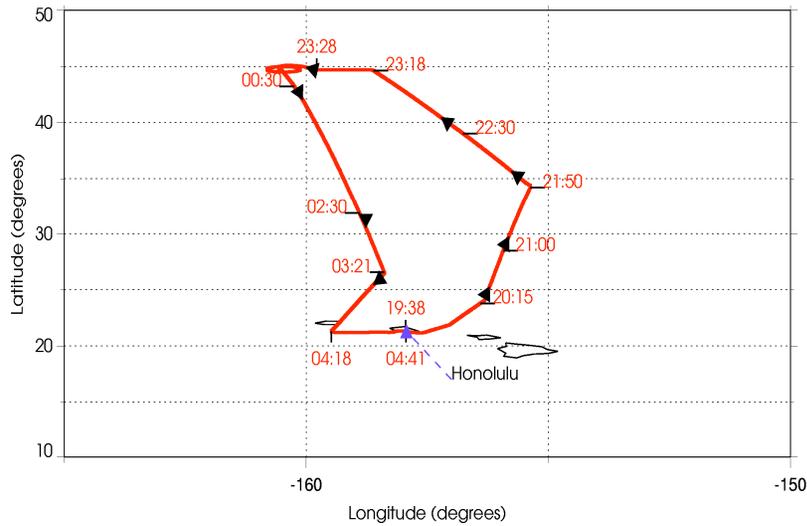
Derived Parameters

- Aerosol Backscatter Profiles Corrected For Aerosol Extinction
- Chemical Tropopause Altitudes & Column Ozone Values
- Average Latitudinal & Longitudinal Ozone and Aerosol Distributions
- Estimate of Stratospheric Contribution to Tropospheric Ozone Budget

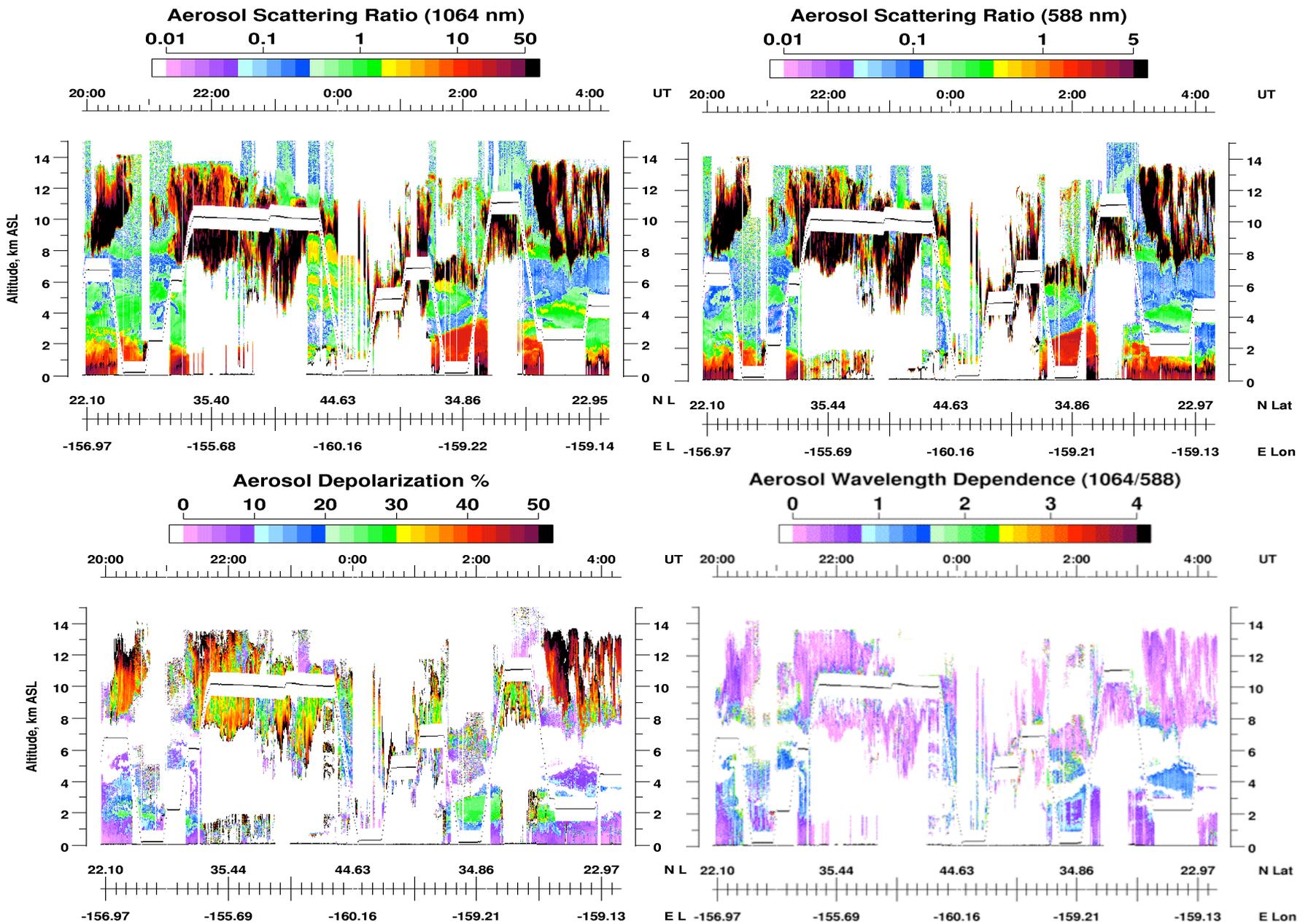
See Posters by Carolyn Butler et al. & Marta Fenn et al.

INTEX-B Data Workshop, 6-8 March 2007

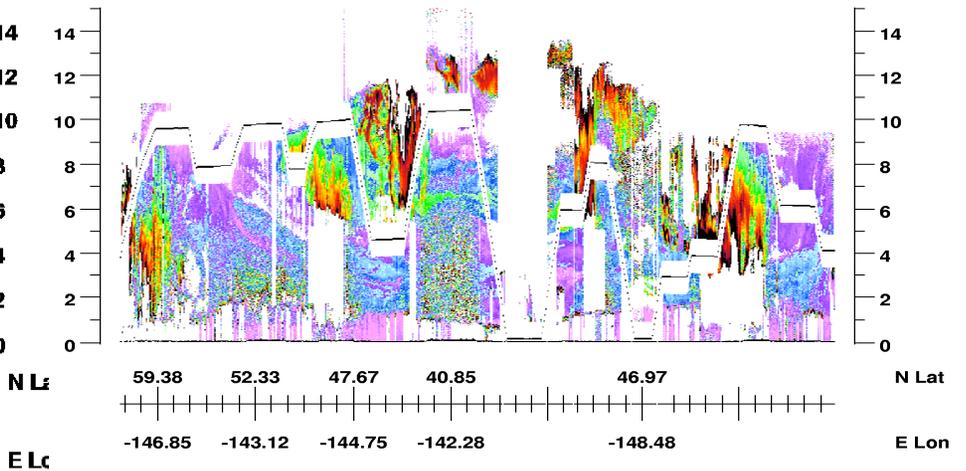
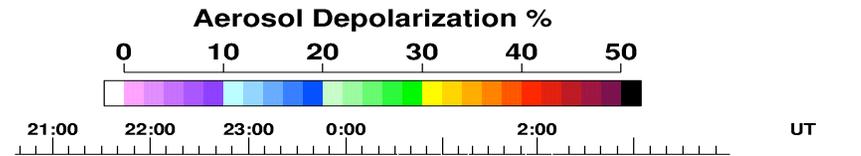
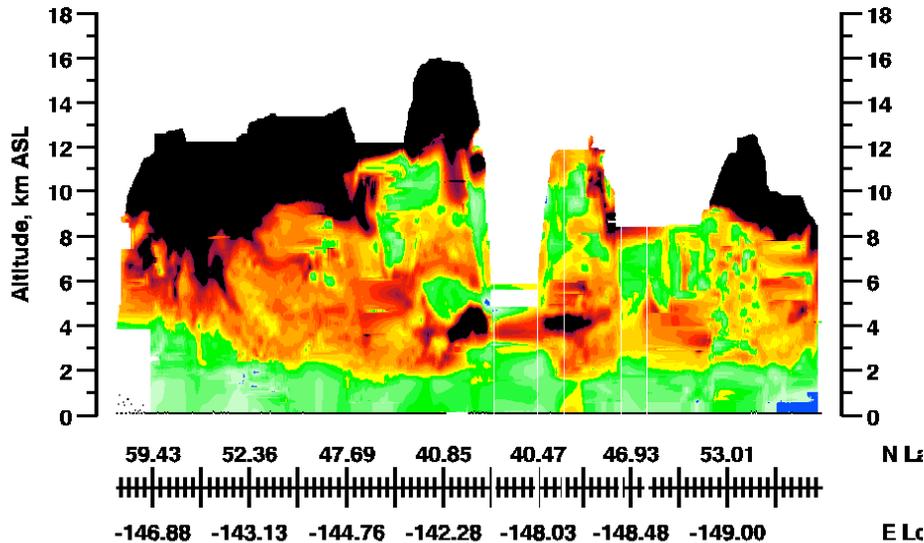
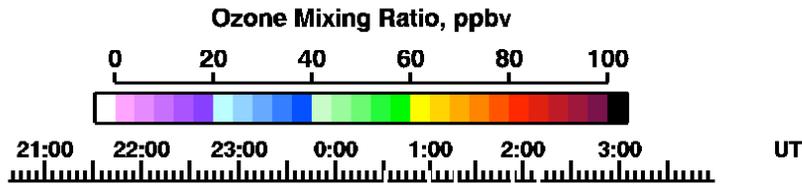
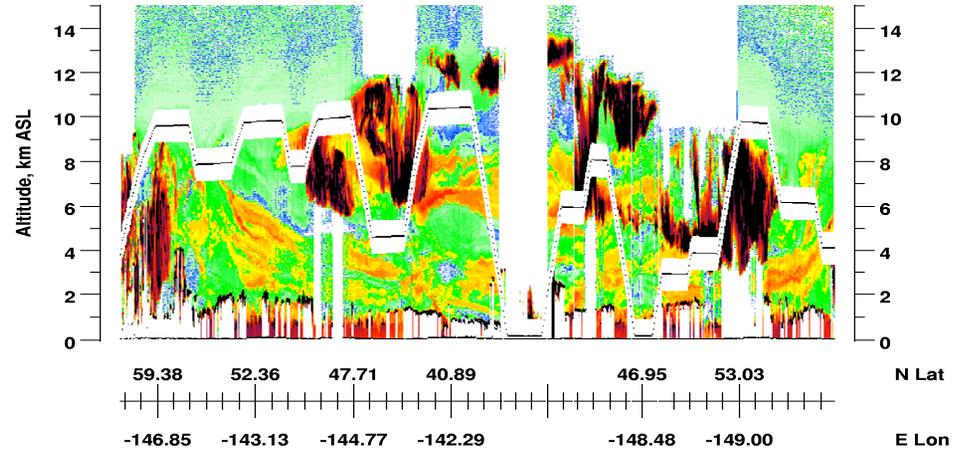
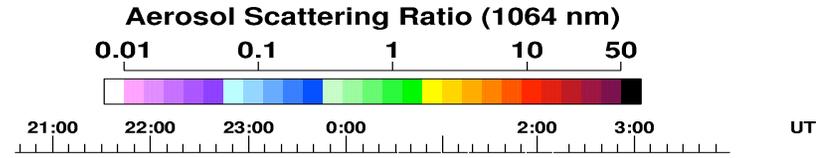
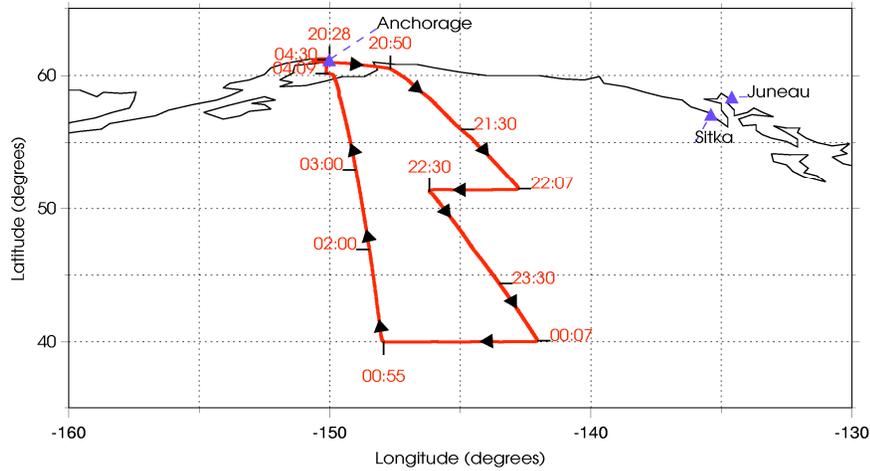
Flight 12, 25 April 2006 - Hawaii Local #2



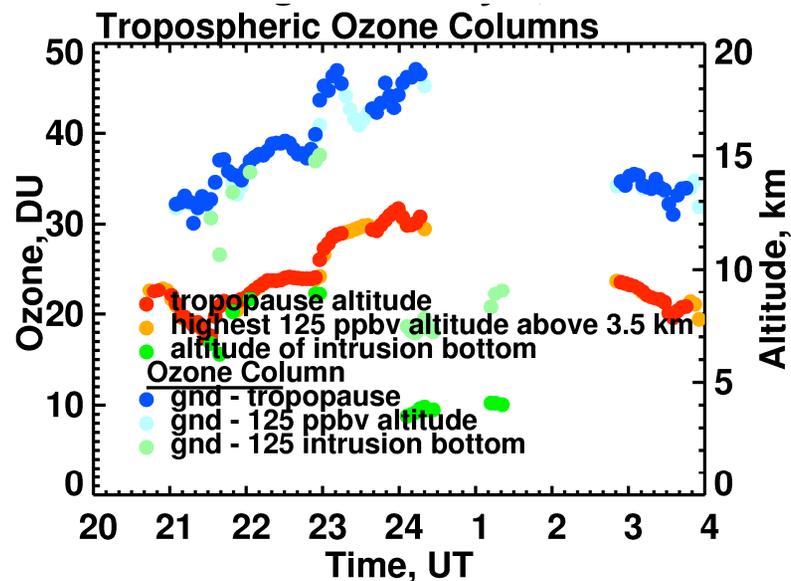
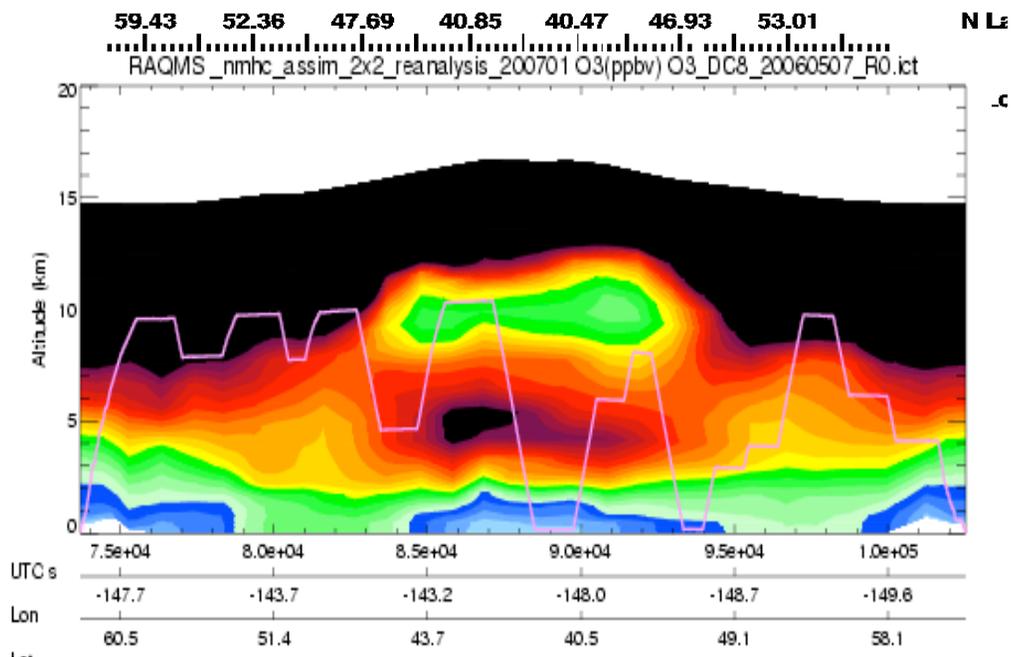
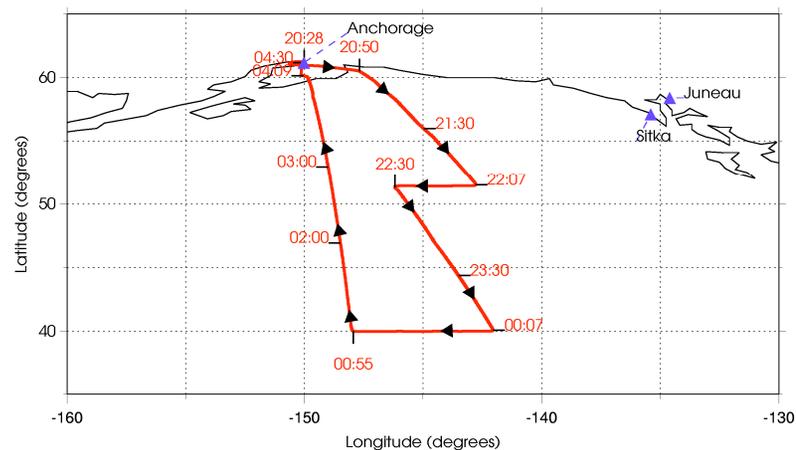
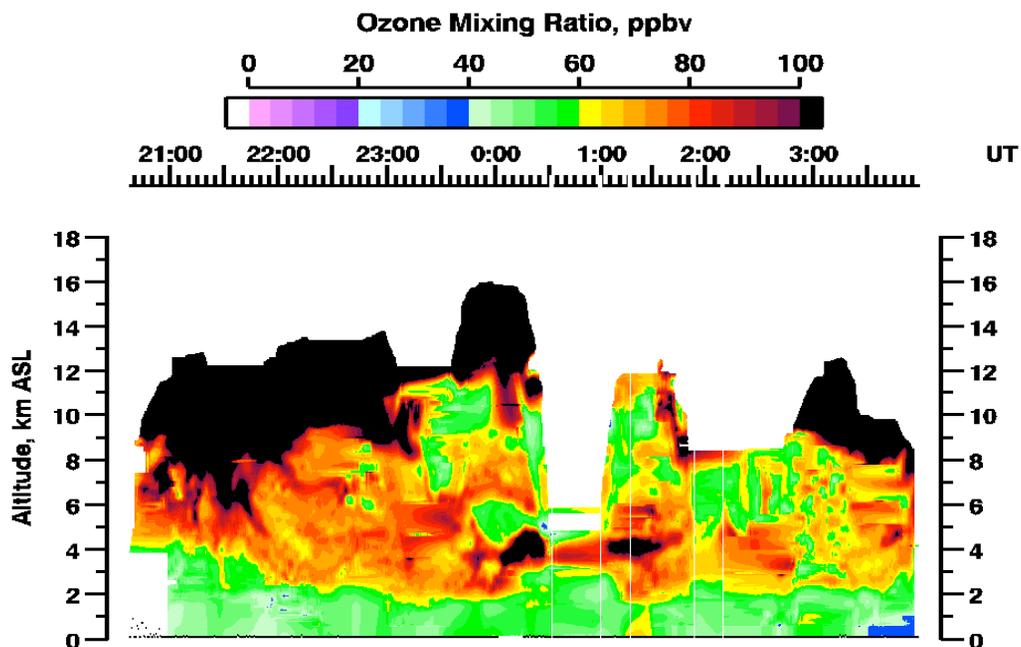
Flight 12, 25 April 2006 - Hawaii Local #2



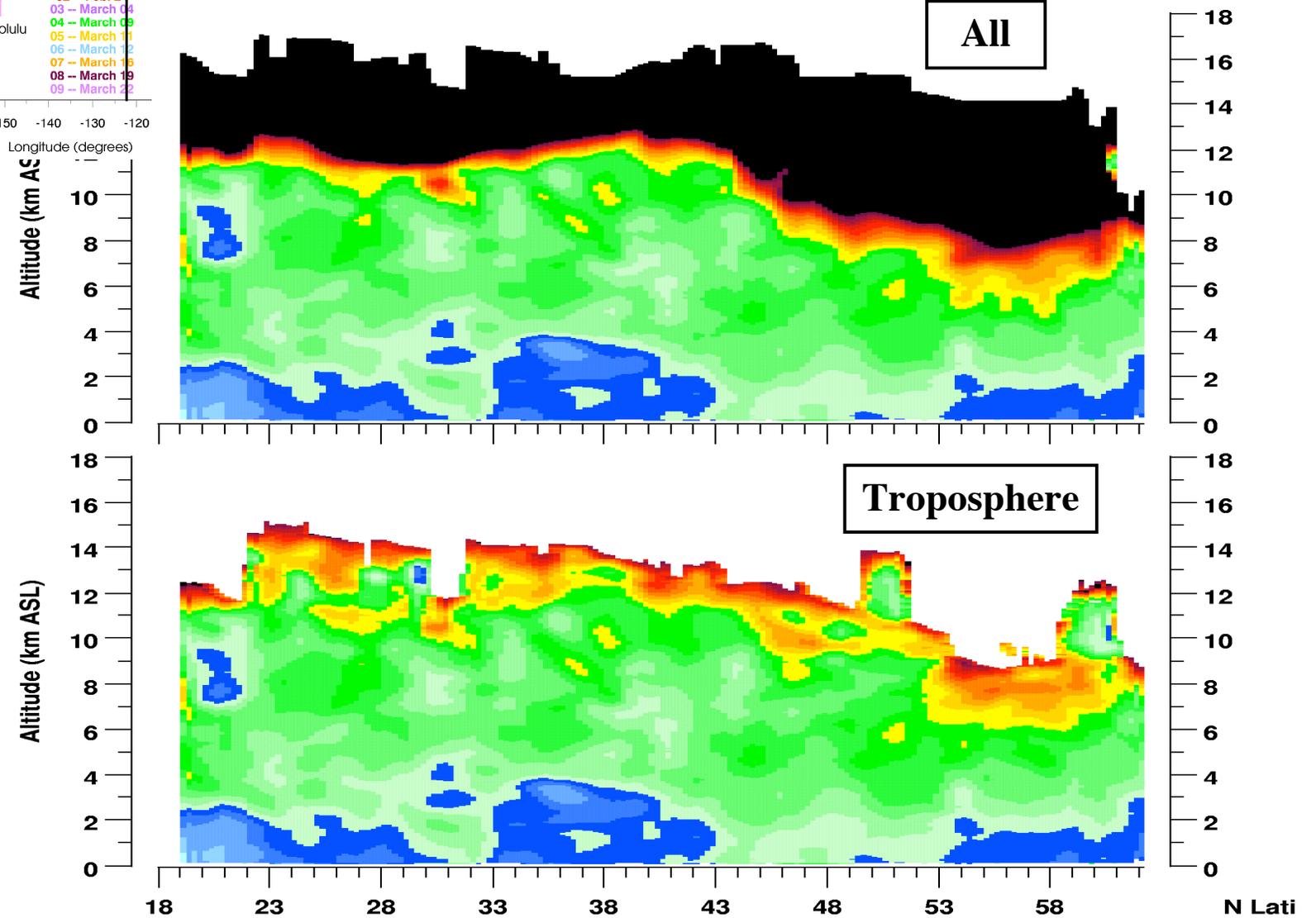
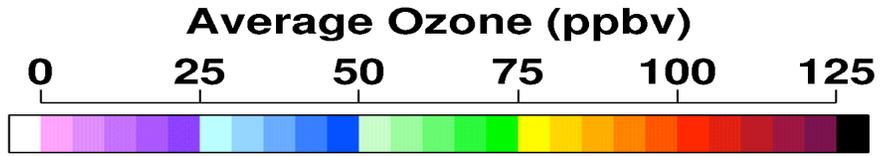
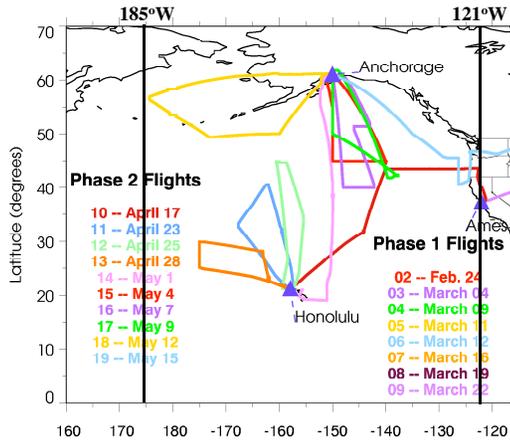
Flight 16, 7 May 2006 - Alaska Local #2



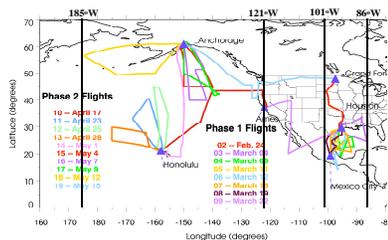
Flight 16, 7 May 2006 - Alaska Local #2



Average Latitudinal Ozone Distribution



Average Tropospheric Ozone & Aerosols



121-185 W

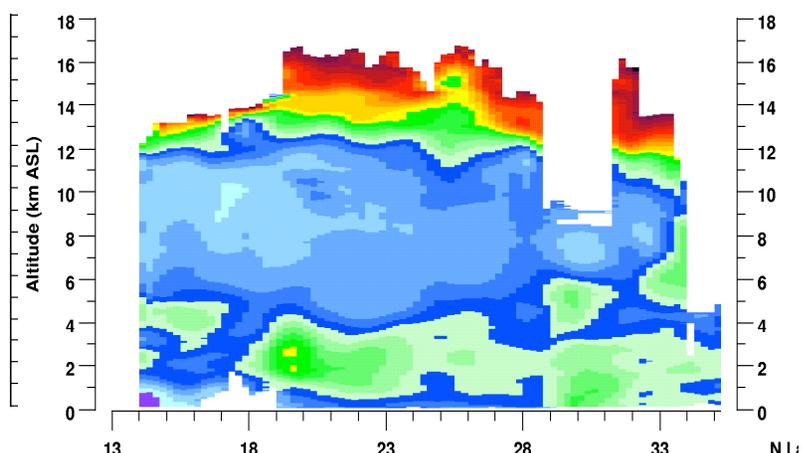
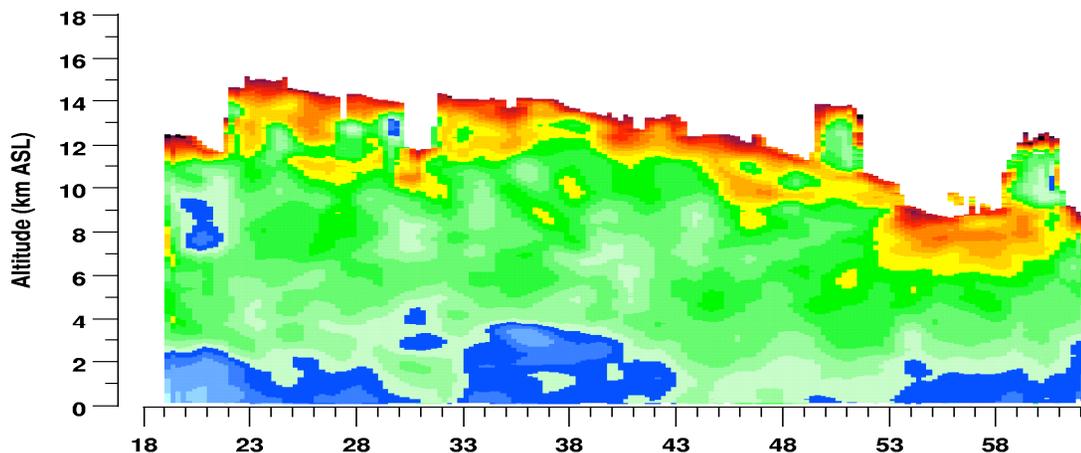
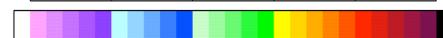
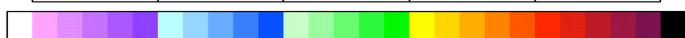
101-86 W

Average Ozone (ppbv)

Average Ozone (ppbv)

0 25 50 75 100 125

0 25 50 75 100 125

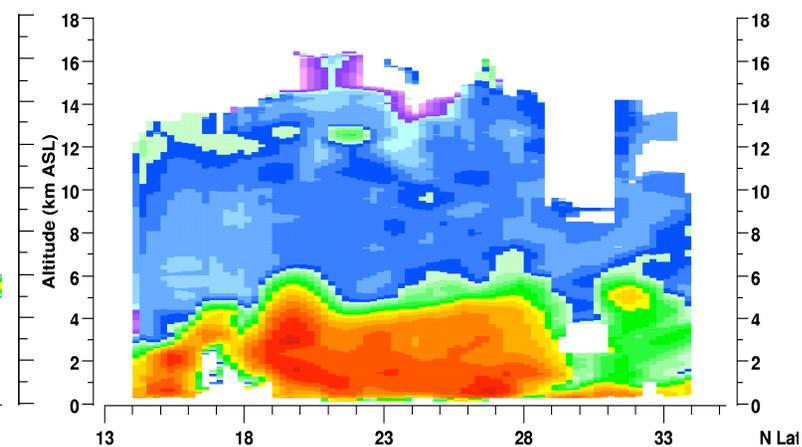
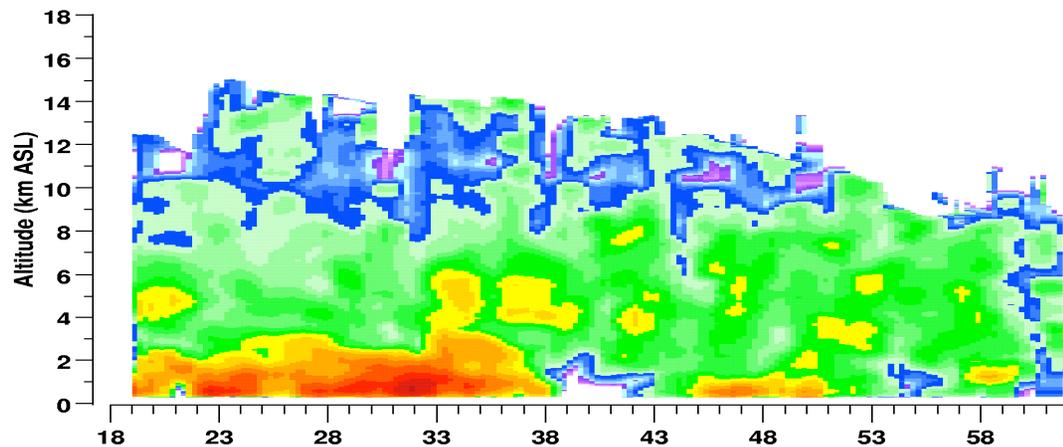
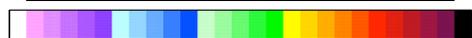


Aerosol Scattering Ratio (1064 nm)

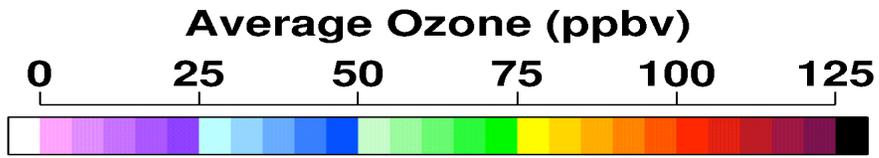
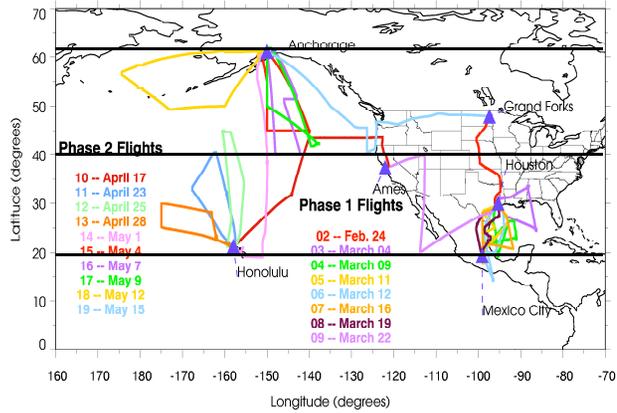
Aerosol Scattering Ratio (1064 nm)

0.01 0.1 1 10 50

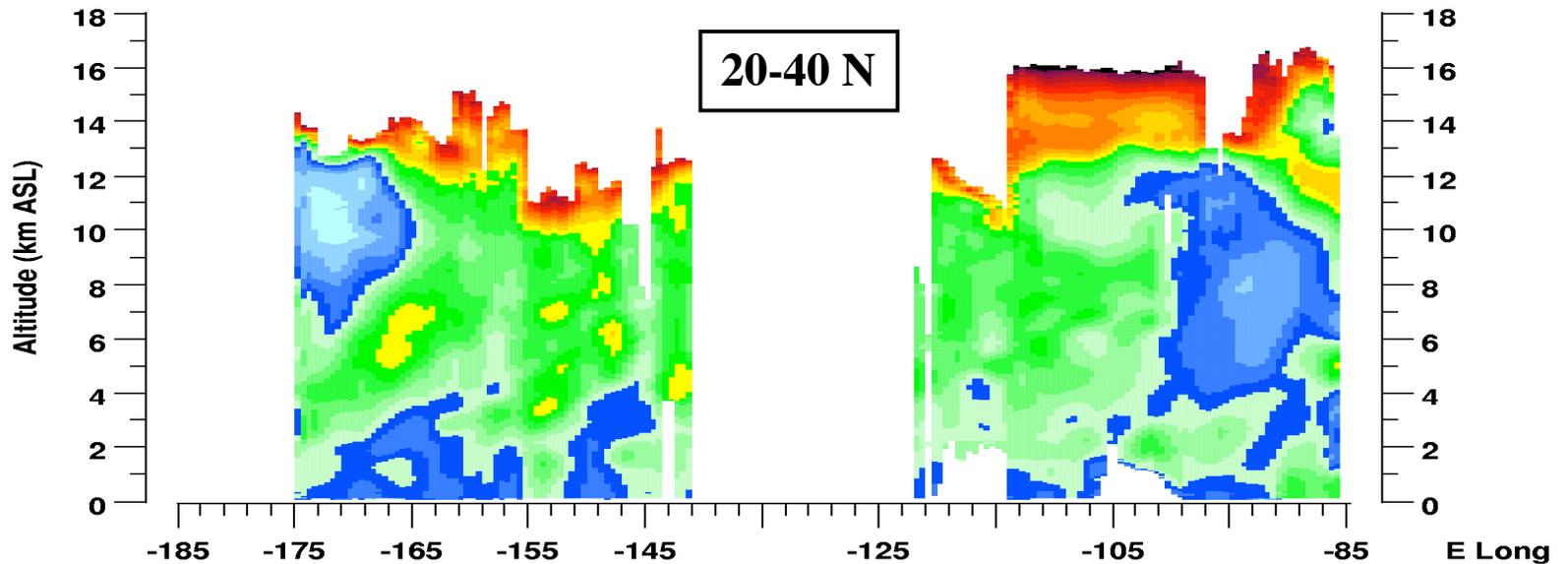
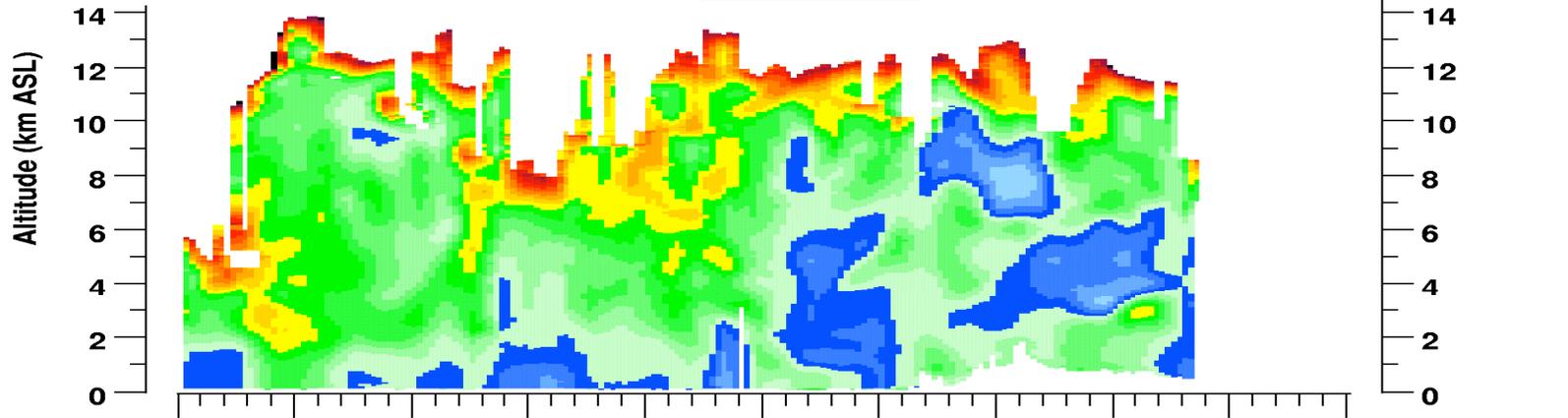
0.01 0.1 1 10 50



Average Longitudinal Tropospheric Ozone

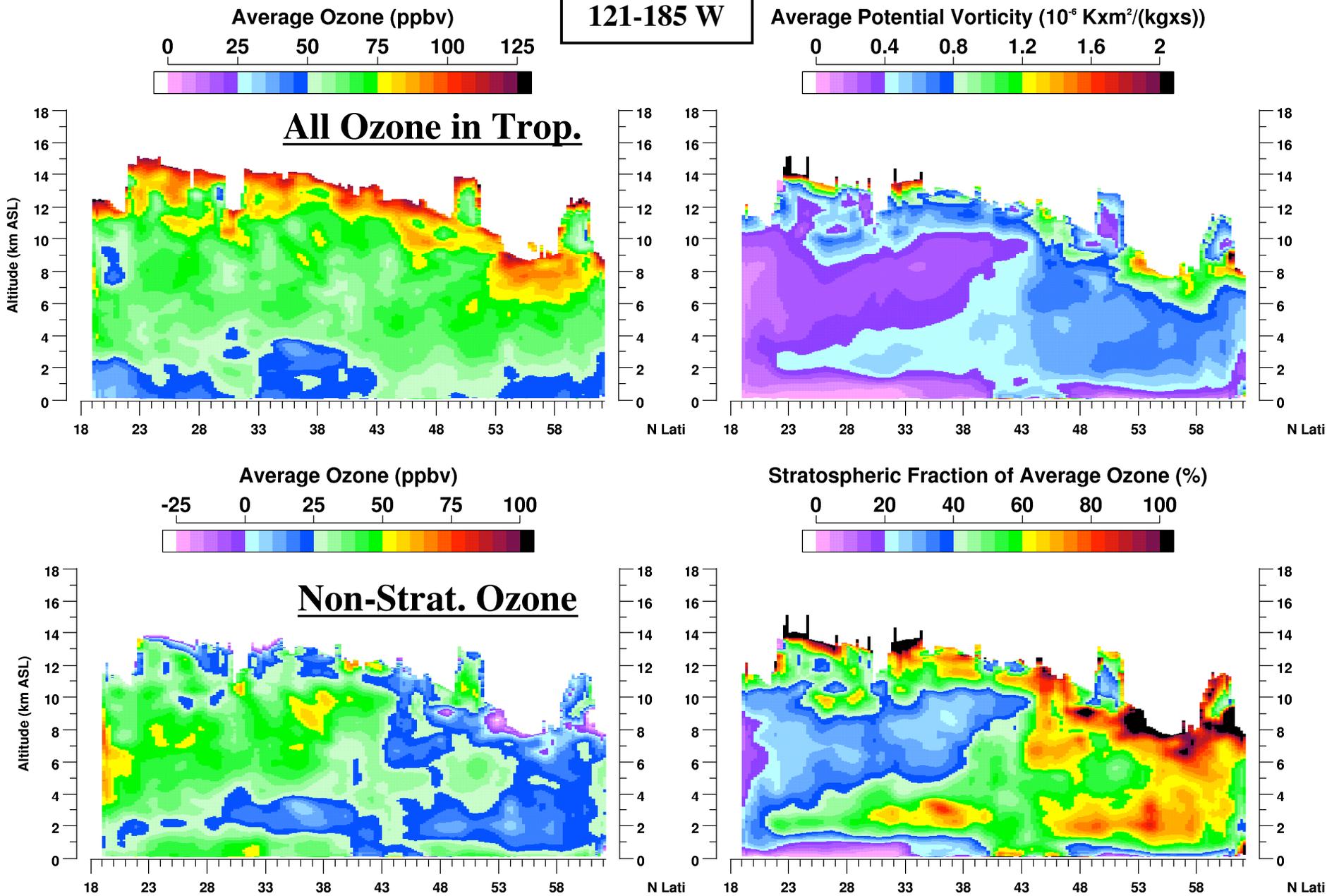


40-62 N



Average Tropospheric Ozone Contributions

121-185 W





Prelim. INTEX-B Phase-2 Results



- **Obtained large-scale O₃ and multi-wavelength aerosol scattering and depolarization characteristics on all flights.**
- **Long-range transport of aged and "fresh" Asian pollution in eastern Pacific observed in O₃ and aerosol data.**
- **Initiate comparison of observed tropospheric distributions of O₃ and aerosols with chemical transport models.**
- **Validation of TES, OMI, & MLS O₃ measurements are ongoing with very successful results.**
- **Average latitudinal and longitudinal variations of O₃ and aerosols have been derived and stratospheric contribution to tropospheric O₃ budget has been assessed.**
- **Air mass categorization based on O₃, aerosol, and meteorological analyses has just been initiated.**

All DIAL data in archive & images via <http://asd-www.larc.nasa.gov/lidar/>

See Posters by Carolyn Butler et al. & Marta Fenn et al.