

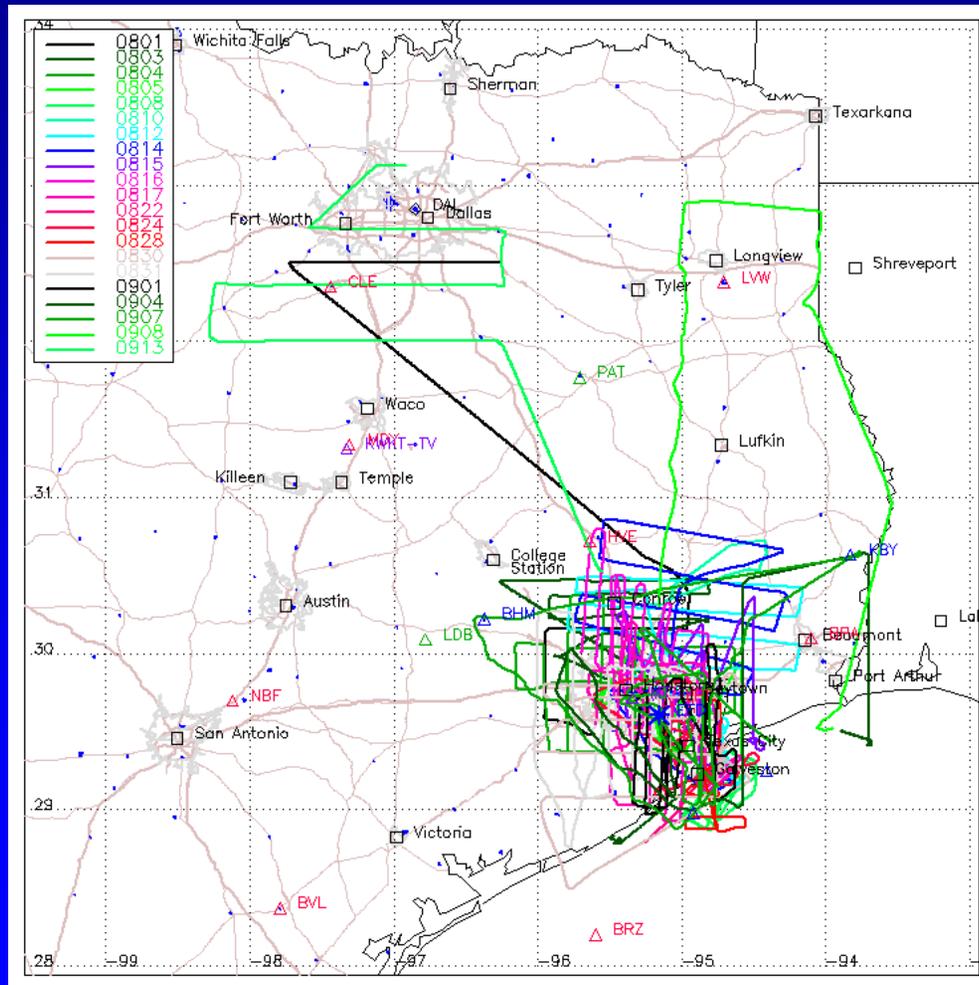
Characterization of Regional Levels of Ozone in the Marine and Continental Boundary Layers from Lidar Aircraft Measurements

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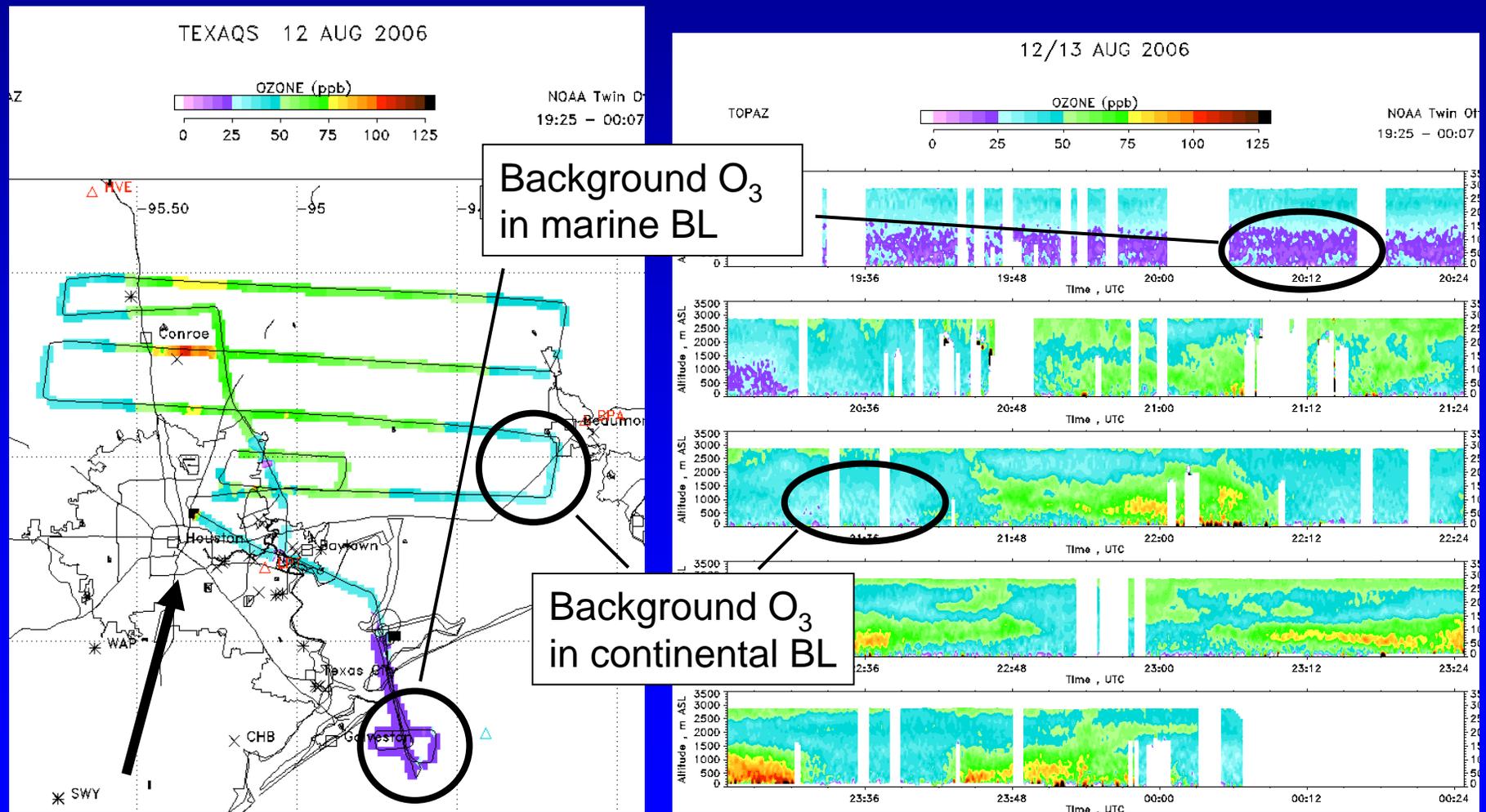
Reminder: Data and findings are preliminary

Objective: Determine regional background ozone concentrations in eastern Texas in continental and marine boundary layers using NOAA Twin Otter airborne lidar data

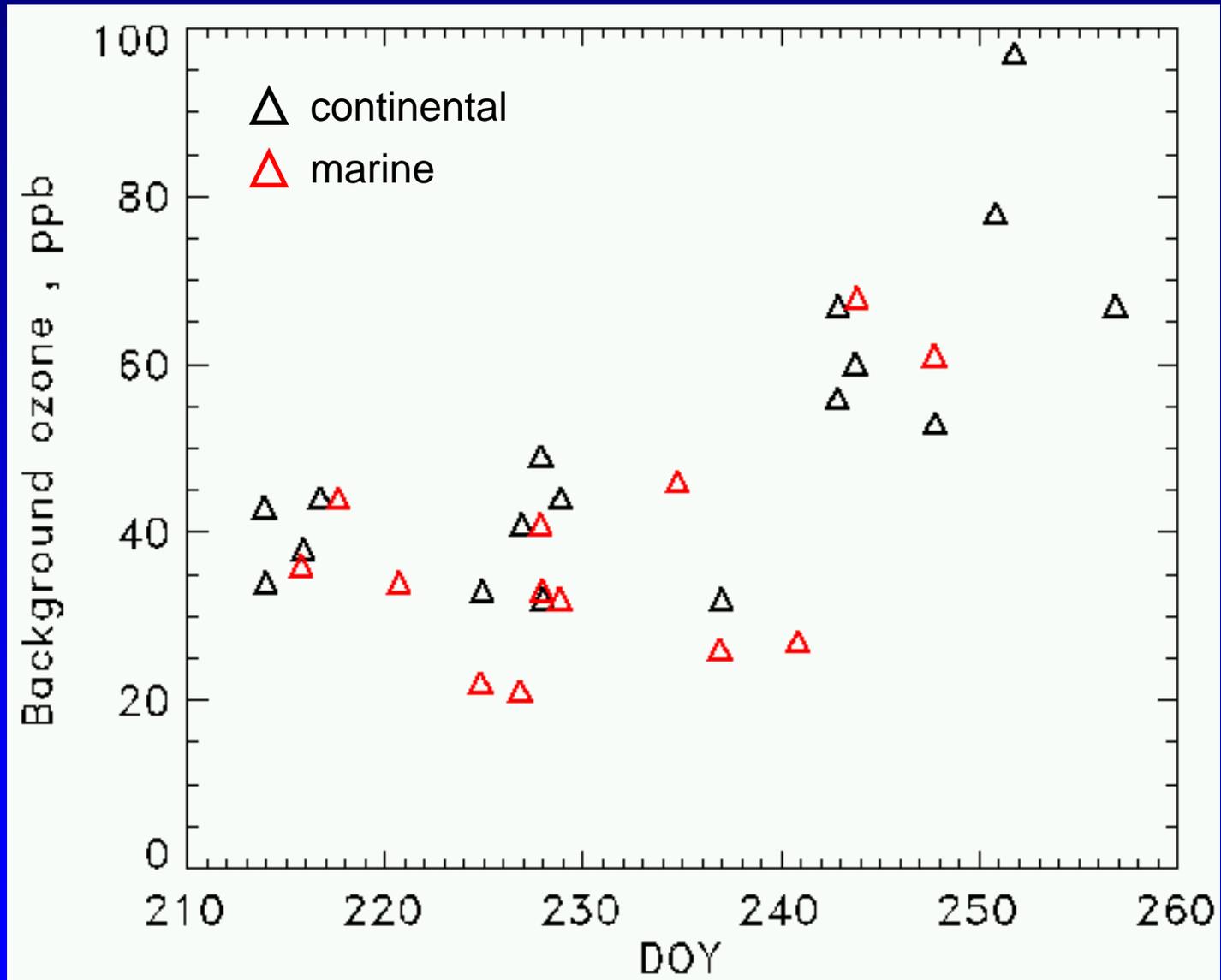


Composite flight track of all NOAA Twin Otter flights from Aug 1 to Sep 13

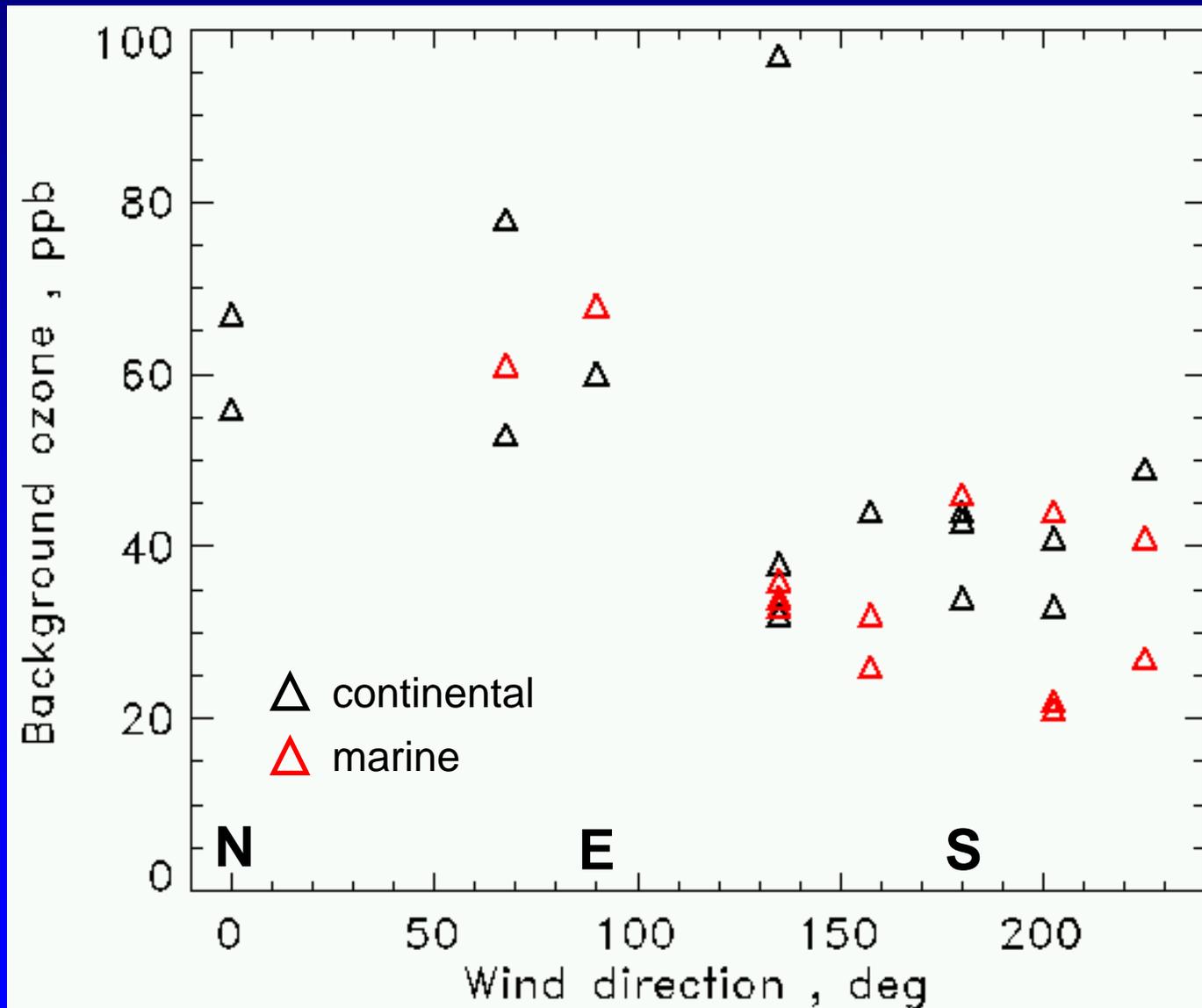
Approach: Using airborne lidar measurements, regions of background ozone are identified, that are either upwind or outside of the downwind plume of pollution sources. Background ozone values are then averaged between the surface and the top of the boundary layer over a data segment of at least several minutes.



Background ozone concentrations from Aug 1 to Sep 13



Background ozone concentrations as a function of synoptic-scale wind direction



Preliminary Conclusions

- Background ozone concentrations were determined from airborne lidar data for all but 3 flights (areas of background O₃ could not be identified in those cases).
- Both, marine and continental ozone background values were highest under northerly to southeasterly flow conditions.
- Highest observed ozone background value was ~97 ppb in east central TX after several days in a row of easterly flow conditions.