

DISCOVER-AQ HSRL Data Summary

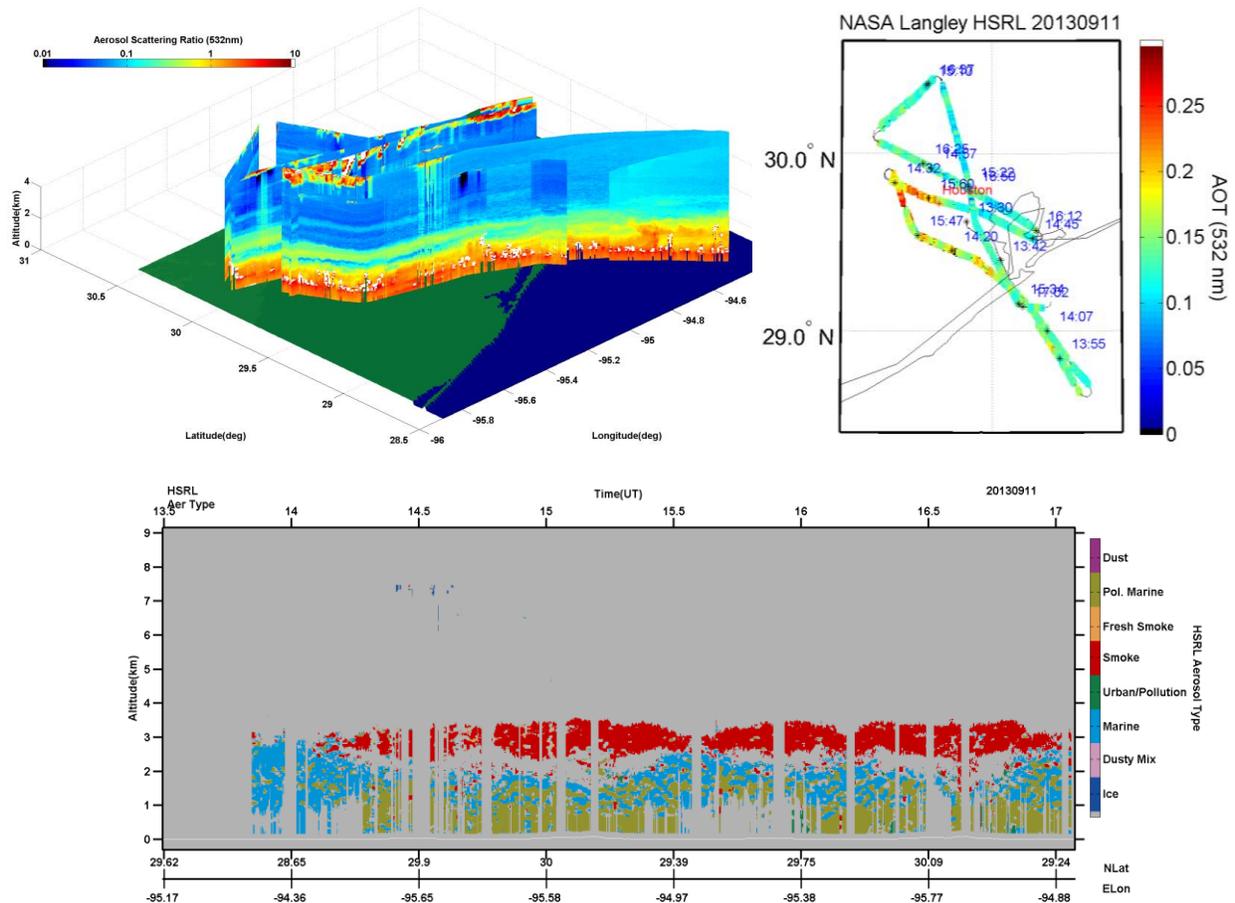
FLIGHT: Morning science flight (1 of 2)

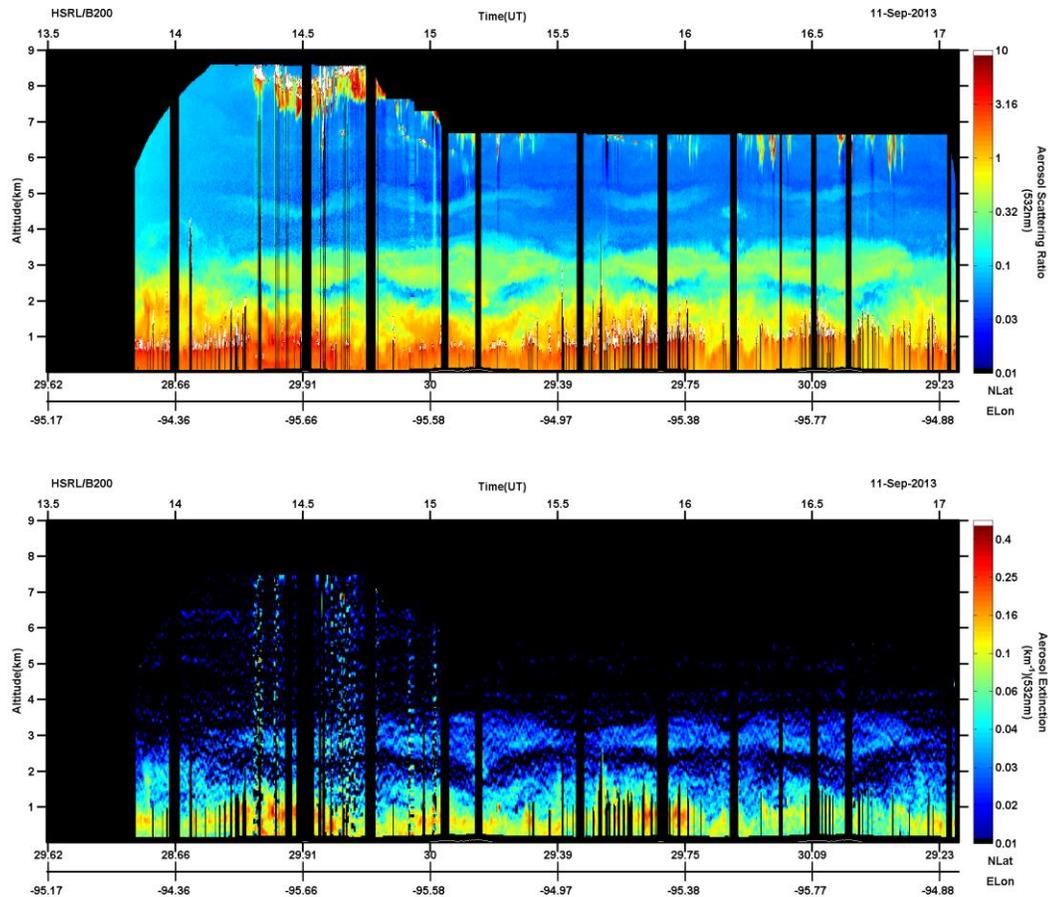
DATE: September 11, 2013

DURATION: 3.7 hours, 13:34 to 17:18 UTC

SUMMARY:

Partly cloudy conditions persisted on both flights today. In addition to broken boundary layer clouds, scattered cirrus were present at our standard flight altitude of 28 kft. Partway through the flight, the pilots requested lower flight altitudes to get under the cirrus and reduce lost signal for both HSRL-2 and ACAM. The aerosol typing analysis identified a layer of marine aerosol between polluted marine below and a smoke layer aloft; however, keep in mind that these data are preliminary and the type analysis may change on final processing. Summary plots are shown below for Flight 1.





Operator Flight Notes, Flight # 1:

- tuning INTF during ascent
- persistent cloud deck over flight route - we keep descending to try to get below. Final altitude is 22kft. Can't go any lower due to air traffic control. 15:03 UTC.
- optimizing INTF tilt at 15:12UTC
- dc offset problem on 355 parallel, readjusted at 16:33 UTC.
- Too cloudy to do cals at desired leg 16:39 UTC

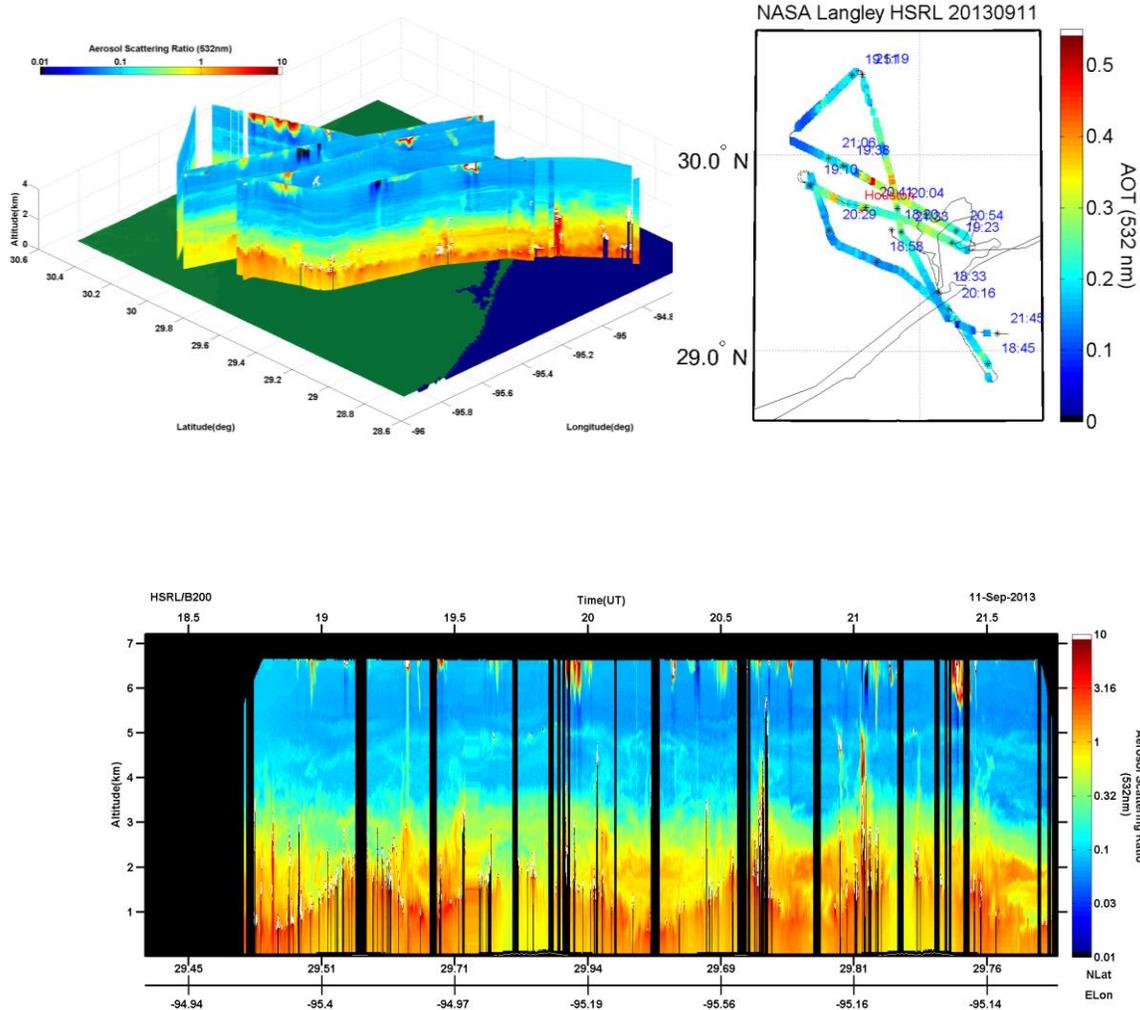
FLIGHT: Afternoon science flight (2 of 2)

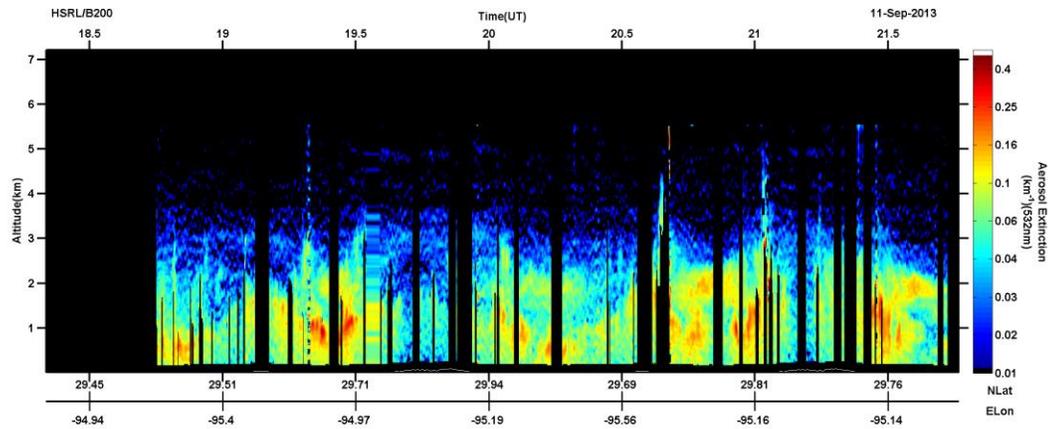
DATE: September 11, 2013

DURATION: 3.7 hours, 18:22 to 22:04 UTC

SUMMARY:

This flight was conducted at 22 kft to stay beneath the scattered cirrus. Cloudiness reduced through the afternoon for the southern end of the research area. Aerosol backscatter was very low at NW Houston, NW Harris Co, and Conroe and depolarization was observed in this NW region of the study area. Aerosol loading was generally higher aloft than at ground level. The aerosol type indicator was less conclusive for the afternoon, presumably due to mixing, but the identification of the topmost layer as smoke was as on the first flight.





Operator Flight Notes, Flight # 2:

- INF found out of range, resetting 1907 UTC
- 355 par channel has detect offset issue, corrected at 1914 UTC
- INF found out of range, readjusting 1924 UTC
- INF adjustment 19:33 UTC
- PGR and I2 calcs performed, skipped OAC due to clouds 1956 UTC
- INF near end of range, readjusted at 2019 UTC
- INF near end of range again, readjusted at 2033 UTC
- Low level clouds building up in altitude, anticipating significant interference 2058 UTC
- PGR, I2, and INF IGR calcs 21:25 UTC
- INF IGR did not come back to optimum tilt, applying auto tilt to correct 2127 UTC