

DISCOVER-AQ
HSRL Data Summary

FLIGHT: PODEX flight (1 of 1 for day)

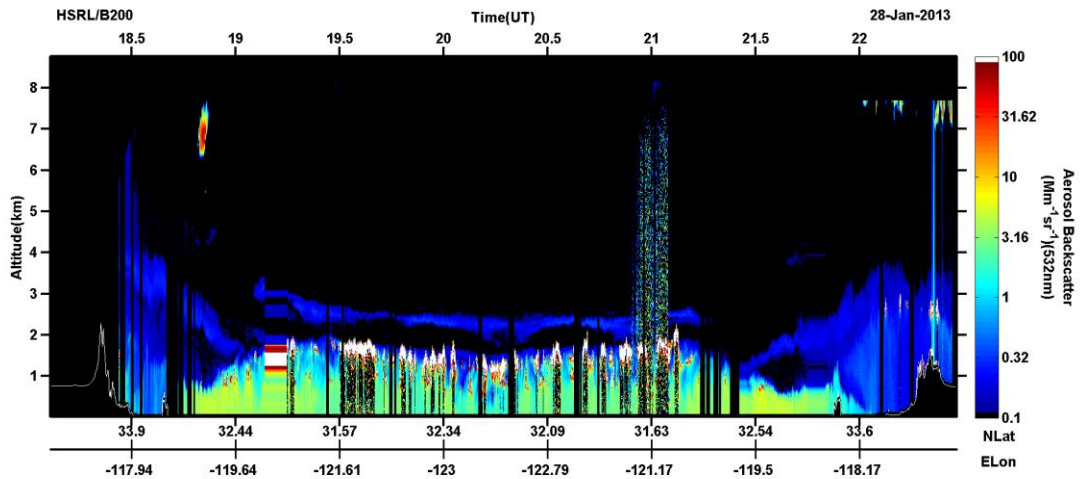
DATE: Jan 28 2013

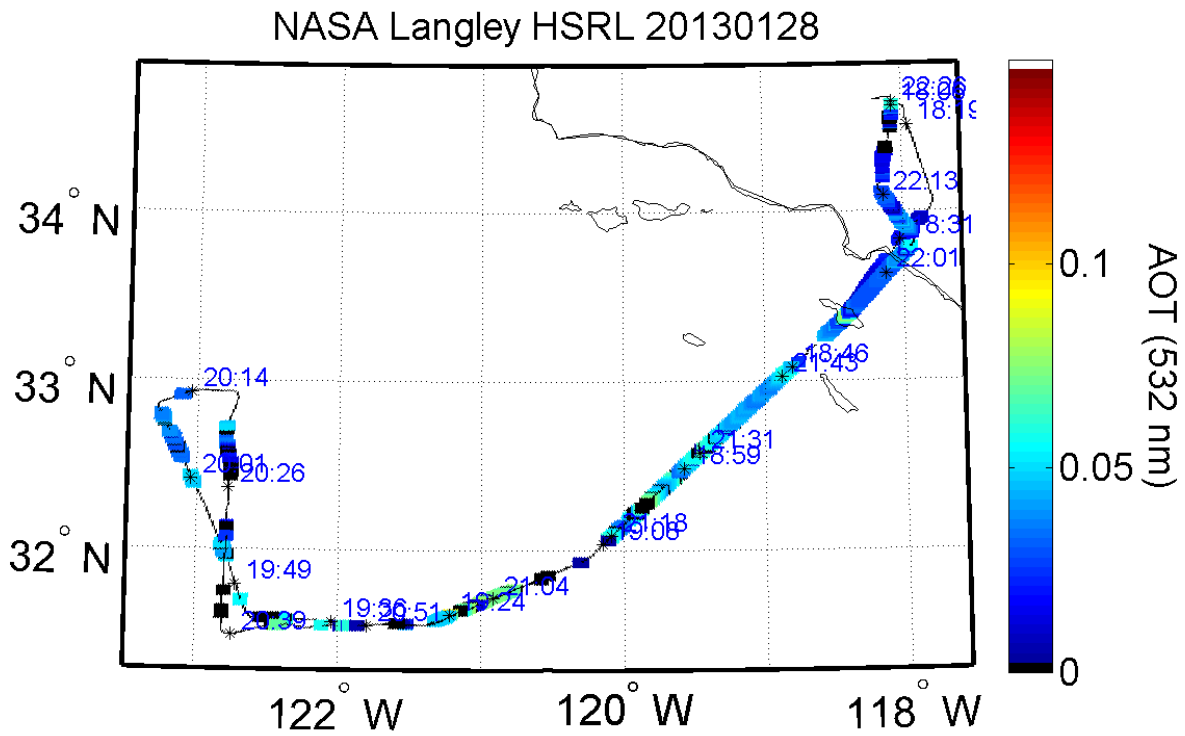
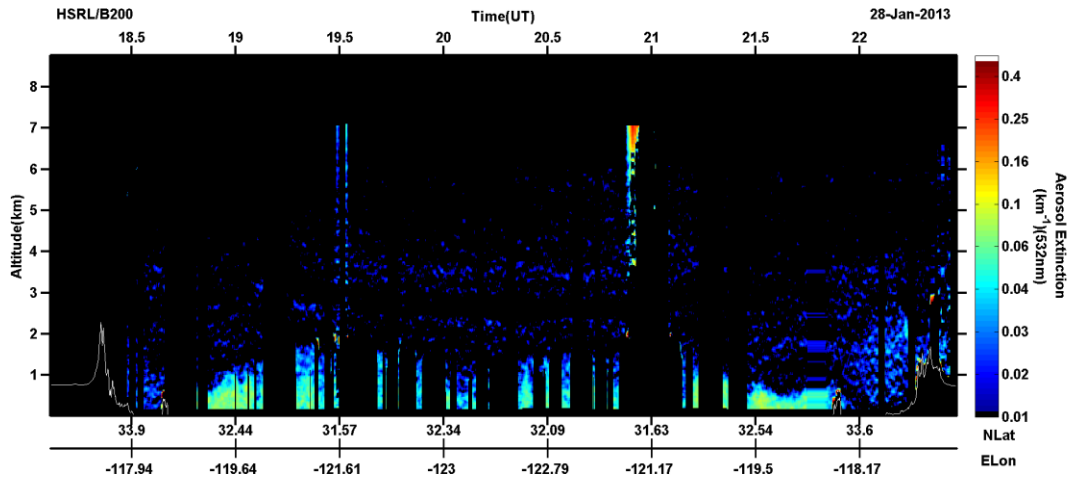
DURATION: 4.5 hours

SUMMARY:

This was an over-water flight conducted for PODEX. The objectives were to acquire data over stratiform clouds over water. The B200 executed the center part of the crossing pattern for the ER-2 principal plane and off principal plan runs. There was a problem with the Aplanix IMU on the transit out to the pattern that caused the operator to recycle power. This put calibrations, beam steering, and interferometer tuning behind schedule. The interferometer was tuned probably about halfway through the first leg of the crossing pattern. Boresighting was a problem through much of the flight. Regardless of the problems, the Level-2 products look reasonable. Microphysical retrievals from the data (not shown) were consistent with marine aerosol according to Detlef Mueller.

SUMMARY PLOTS:





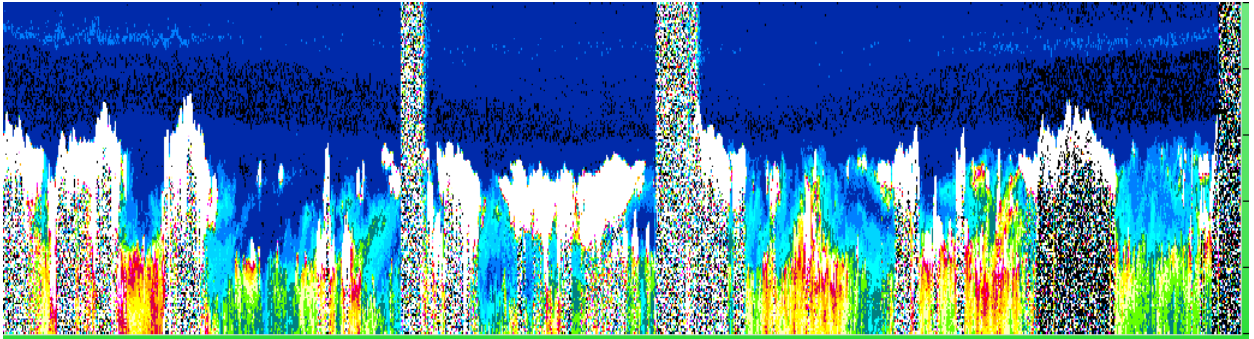
HSRL2 Flight Notes

Date: 1/28/2013

Flight # 1: PODEX Flight

- tuning INTF with auto-tilt thru 18:46UTC
- Drop out of detector data at 18:48UTC (momentary drop out)
- having trouble getting the contrast ratio high - it is low

- lost IMU data around 19:05UTC - it forced the shutters to close - cycled power at 19:07 and that cleared the problem
- beam steering is wandering on this flight
- green beam is misaligned - having trouble getting reoptimized?????????????? 19:30UTC
- due to beam steering problems, I wasn't able to work the INTF until 19:56UTC. It was not optimized
- Beam steering has stabilized in the past half hour. 20:16UTC
- INTF piezo too close to 150V limit. I adjusted offset thru 1 FSR to put it back in range
- 532nm steering misalignment at 20:33UTC
- 532 Scattering Ratio Plot



- Gross 532nm misalignment at 20:54 thru 21:06 - complete loss of data during this time
- 2nd set of cals completed near 20:19UTC
- INTF Piezo 1 getting too close to -20V limit at 21:21UTC
- Erroneous readings from IMU?????????? - 21:23UTC - Verified that the RAW data from the IMU was wrong - i.e. not problems with my software - cycled power and this fixed the problem
- INTF tilt tuning at 21:47UTC
- We are in clouds near Palmdale - can't do cals
- INTF in severe tilt at 22:28UTC - started and IGR cal but turned during cal so do not use this file.
- INTF in severe tilt for rest of descent