

DISCOVER-AQ  
HSRL Data Summary

FLIGHT: Morning science flight (1 of 2)

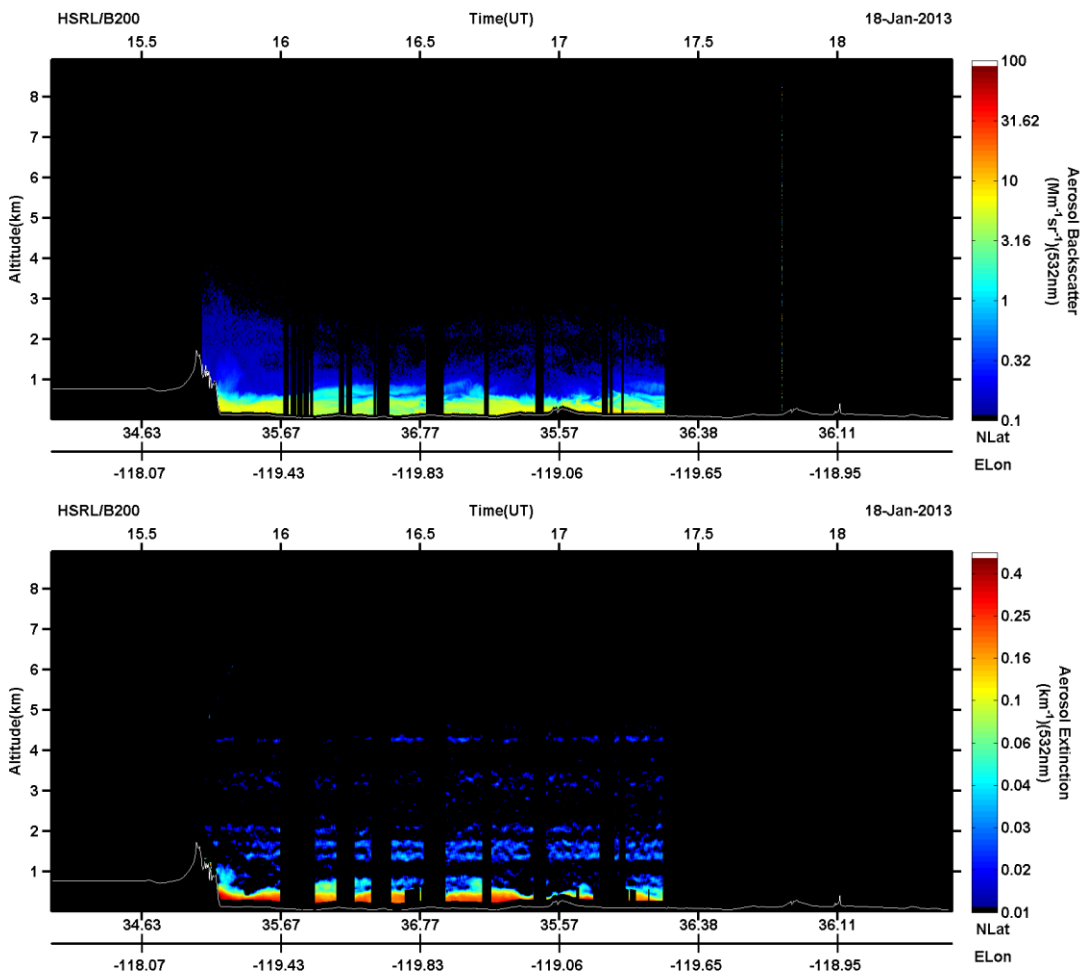
DATE: Jan 18 2013

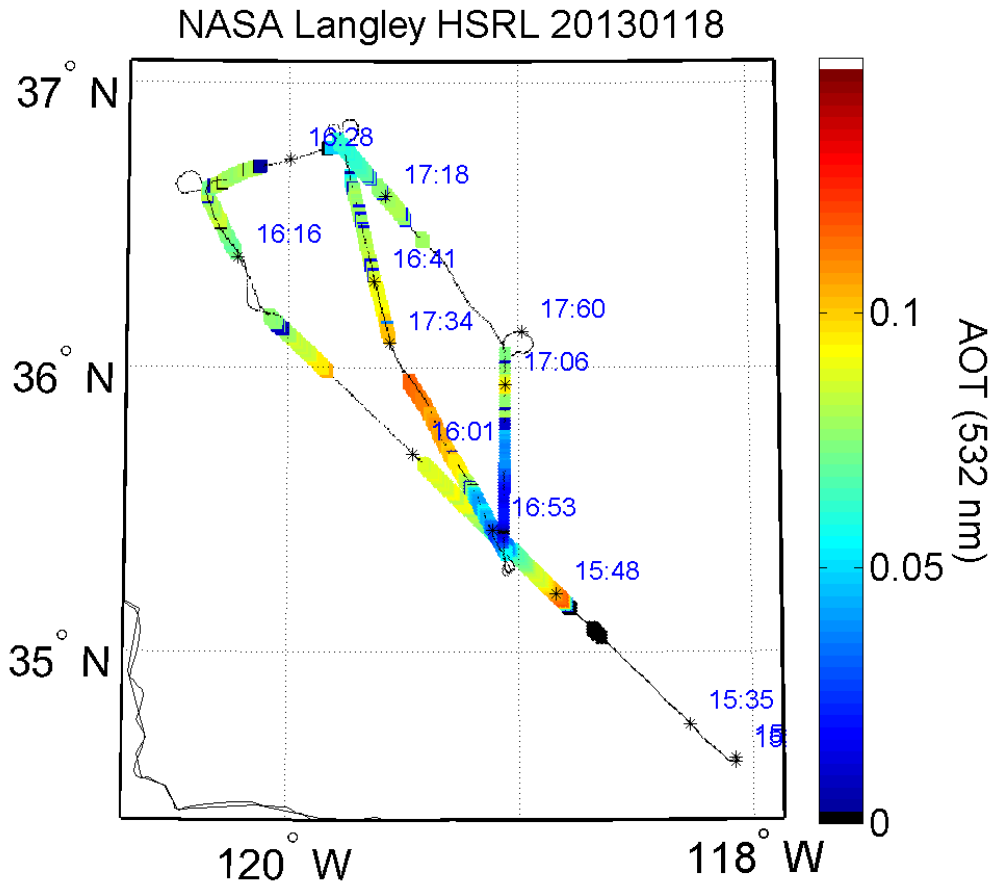
DURATION: 3.6 hours

SUMMARY:

HSRL suffered a research power glitch about half way through the flight. The operators restarted the system and it ran until about 3/4 of the way through the flight. Then there was a research system power load shed, bringing down all instruments. The operators opted not to restart and the aircraft RTBed to Palmdale. The researcher troubleshooting effort pointed to one of the research power inverters going bad. During the ground turn around, they shifted instrument power to another inverter. The system ground checked OK and the team prepared for the second flight.

SUMMARY PLOTS:





Operator Flight Notes:

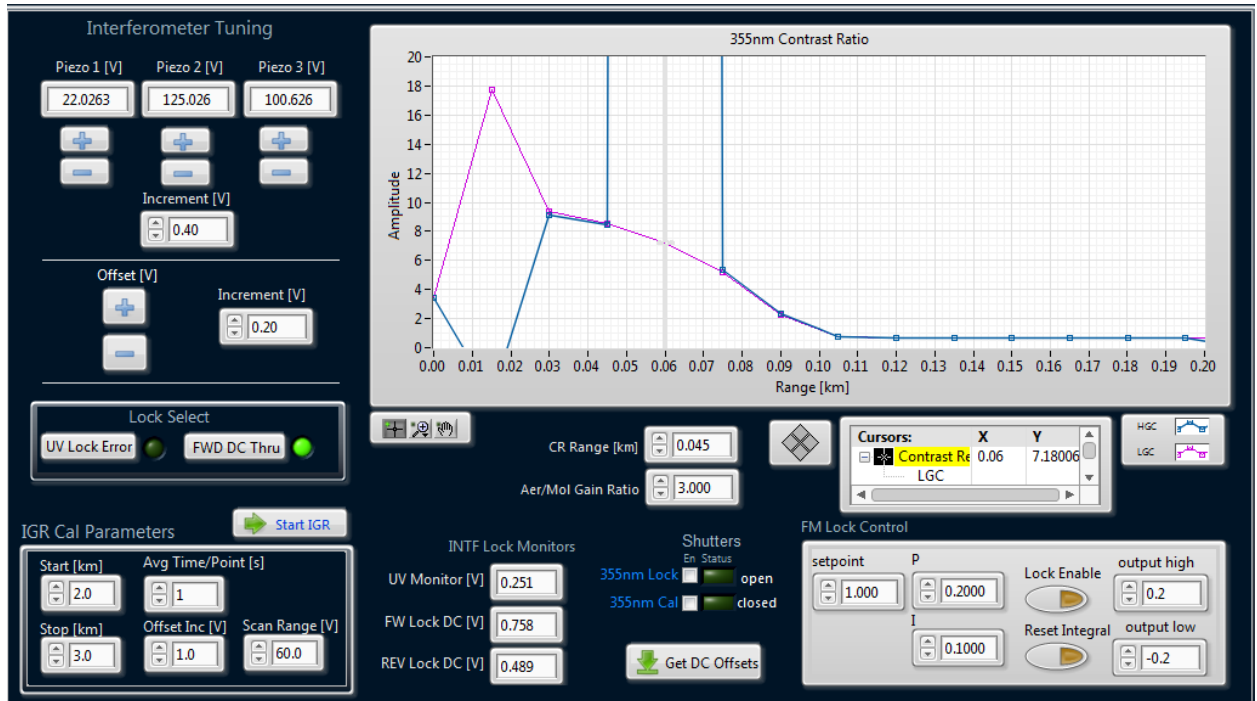
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HSRL2 Flight Notes

Date: 1/18/2013

Flight 1

- PXI time stamp has not been changed for this flight (Sorry Ray)
- aligning beams during ascent
- calibrations at 16:00UTC
- having problems getting the INTF DC Thru Voltage minimized (i.e. optimum tilt)
- still adjusting INTF at 16:26UTC
- optimizing beam steering after turn for 532nm and 355nm after turn at 16:32 to 16:36UTC
- Rich went to lock INTF but entered value in wrong control - this set the INTF into the wrong position - ~16:38UTC - reoptimizing
- INTF optimized ~16:48UTC - locking engaged



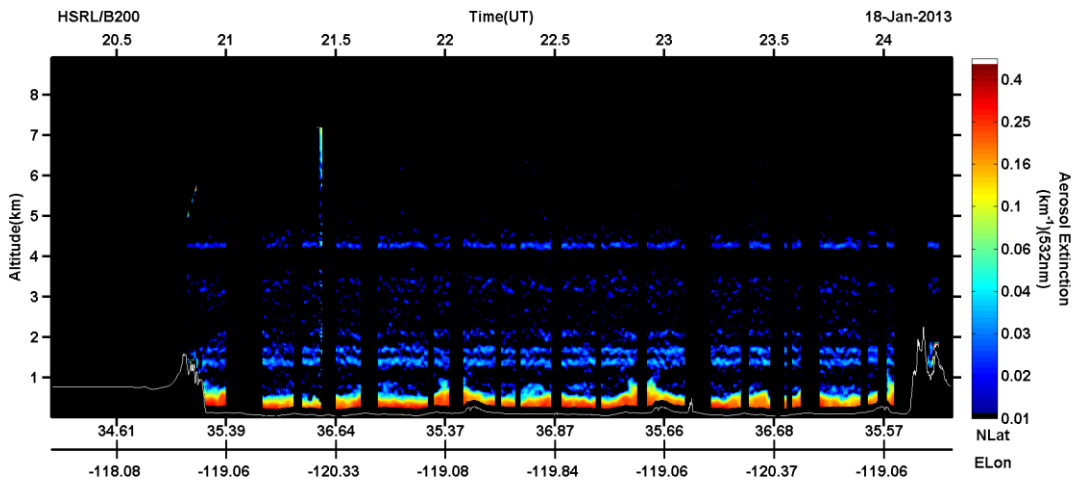
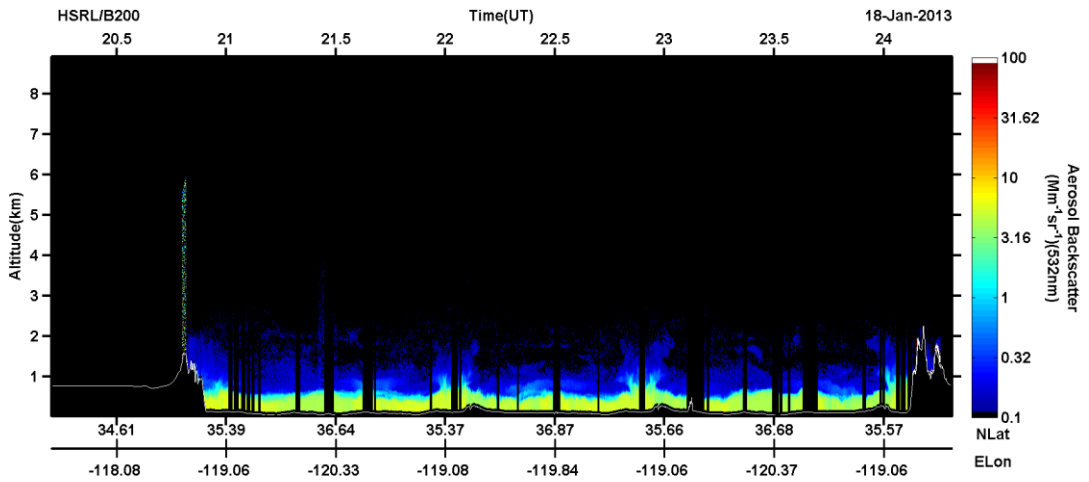
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- slight beam align optimization after turn at 16:53UTC - slight beam align optimization for 355nm at 16:57UTC
- Rich is investigating camera. It is still filling up fast even though he turned down the frame rate - 17:09UTC - Rich changed camera mode to "HE". This mode is 1440 x 1080 and should provide 720min on an empty 32GB SD card
- reoptimized INTF tilt at 17:19 - ( before next turn at 17:22)
- Lost power from our AC Strip - No breaker tripped 17:23UTC - DO NOT USE FILES NEAR THIS TIME
- Next good file is "20130118\_122841.ntc". However Laser is warming up and I forgot to reengage the autopilot to bring the laser up to low power mode. Auto pilot engaged ~17:36UTC.
- Detectors keep cycling ????????
- I think there was some type of communication problem after the AC strip power loss. Could not get the detectors to keep communicating. Finally had to power off everything and cycle research power. Did a soft shutdown on ACAM before cycling research power.
- Everything seems to be fine after cycling power. Time is 18:19UTC. Waiting for laser to warm-up.
- load shed at 18:27UTC - not going to power up again. We need to investigate the problem.

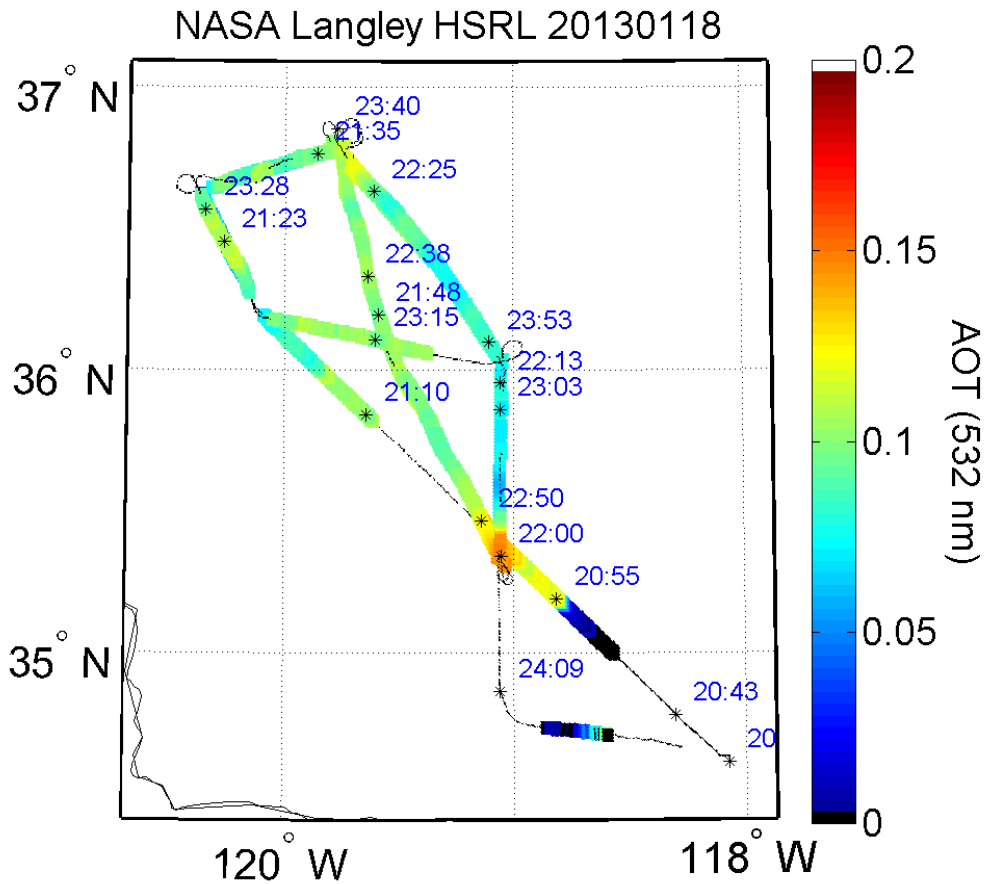
FLIGHT: Afternoon science flight (2 of 2)

DATE: Jan 18 2013

DURATION: 3.8 hours

SUMMARY: Power distribution problems were fixed between flights and the instrument operated nominally.





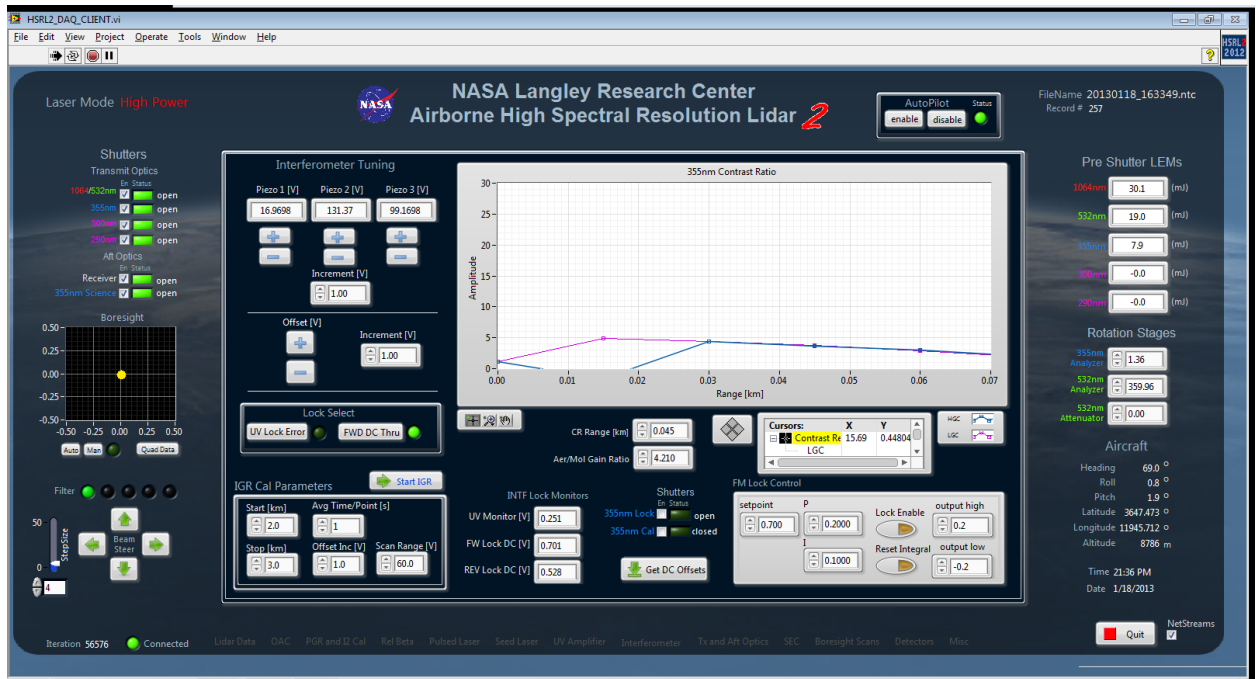

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HSRL2 Flight Notes

Date: 1/18/2013

Flight 2

- Before Flight: Switched Laser Chiller to Inverter #1, Switched Laser Power to DC Bus 3
- Takeoff at 20:36 UTC
- ACAM Powered at 20:41 UTC, FOD doors Opened
- Manuel Boresight complete at 20:55 UTC
- 532 and 355 OAC Cals completed at 21:03 UTC
- PGR's and I2 Completed at 21:09 UTC
- Slow to get interferometer tuned at 21:23 UTC
- 21:25 UTC Boresight Major Off
- 21:25 Approx Interferometer was locked to Error signal instead of DC Through
- Interferometer Locked at 21:33 UTC
- Boresight Complete at 21:35 UTC



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- 21:53 re-optimize interferometer
- Contrast Ratio Before Tuning, Non-gain corrected ratio was 3. After tweaking non-gain ratio changed to 4.
- 22:04 interferometer re-optimization ~non-gain contrast of 4
- 22:23 interferometer re-optimization ~non-gain contrast of 4.25
- slightly tweaked Boresight at 22:32 UTC.
- 23:03 interferometer re-optimization ~non-gain contrast of 4.25
- 23:34 interferometer re-optimization ~non-gain contrast of 4.50
- 23:42 UTC adjustment of Boresight, brought 532 back into alignment after drift from turns.
- Started Interferometer Gain Ratio Cal at 23:55 UTC, Discovered Errors, Ignore IGR files.
- 00:00 UTC PGR Cals Complete
- 00:08 Cals Complete, Interferometer Placed in severe tilt condition
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