

S-HIS Flight Summary: 29-30 August 2013

Revision: 30 August 2013, J. Taylor, University of Wisconsin-Madison, SSEC

Summary:

First takeoff attempt aborted; second attempt successful.

Ku lost in southernmost portion of first lawnmower flight leg however complete S-HIS data will be available in post-processed products.

The first and second legs of the lawnmower pattern provided an excellent opportunity for clear sky validation of the S-HIS dual regression (DR) and physical (UWPHYSRET) retrievals.

An anomalous S-HIS detector temperature rise was experienced on this flight (77 K gradually increased to 84 K). While the detectors were operational for the full flight, slightly reduced SNR for the tail end of the flight is expected given the change in detector temperature and preliminary analysis of the responsivity time series. The impact on the quality of the science data for the flight should be negligible, but we need review the processed data in further detail as soon as it's available to confirm this conclusion. We will be carefully monitoring detector cooler performance for further degradation.

Timeline (All times are UTC and are only approximate):

- 20130829T1216 GH engine start
- 20130829T1236 Ku ON and transmitting
- 20130829T1256 SHIS Power on
- 20130829T1259 Takeoff
- 20130829T200000 S-HIS detector temperature increasing
- 20130830T054200 S-HIS power cycle
- 20130830T0947 S-HIS descent heaters on
- 20130830T1003 Instrument power OFF before descent (IL42, IL41, DC42, DC41)
- 20130830T1018 Instrument power ON (DC41, DC42, IL41, IL42)
- 20130830T1110 Instrument power OFF (DC41, DC42, IL41, IL42)
- 20130830T1134 Landing

Potential Clear Sky Comparison Cases; S-HIS, CPL, and Dropsonde

- 20130829T1918: Sonde launched at 1917, CPL indicates clear with infrequent low cumulous
- 20130829T1929: Sonde launched at 1929, CPL indicates clear with infrequent low cumulous
- 20130829T1937: Sonde launched at 1937, CPL indicates clear with infrequent low cumulous
- 20130829T1949: Sonde launched at 1949, CPL indicates clear with infrequent low cumulous
- 20130829T2044: Sonde launched at 2044, CPL indicates clear with infrequent low cumulous
- 20130829T2053: Sonde launched at 2053, CPL indicates clear with infrequent low cumulous

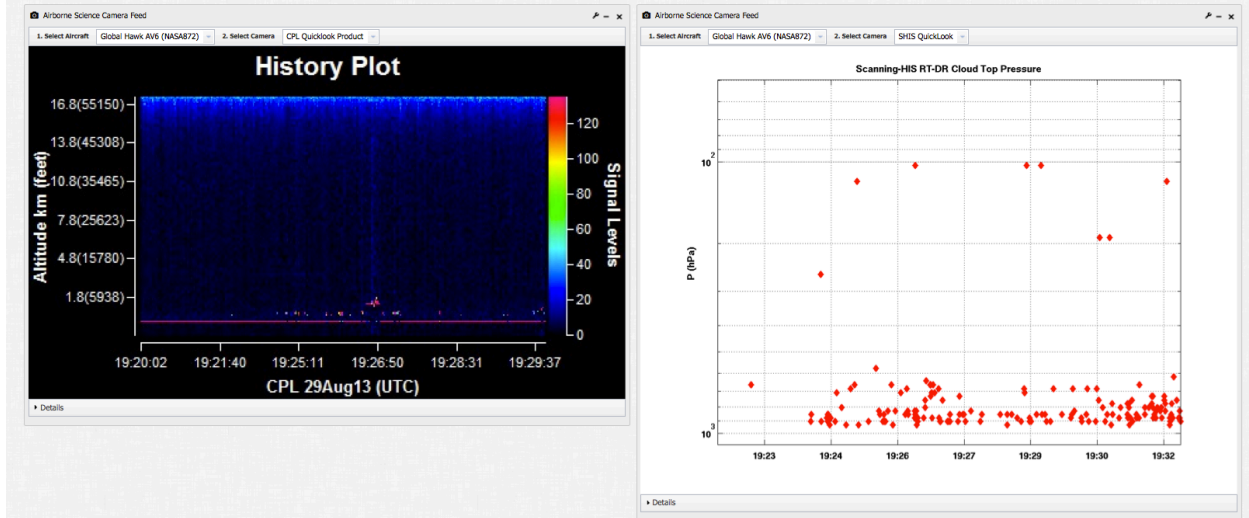


Figure 1: 20130829T1929: Sonde launched at 1929, CPL indicates clear with infrequent low cumulus

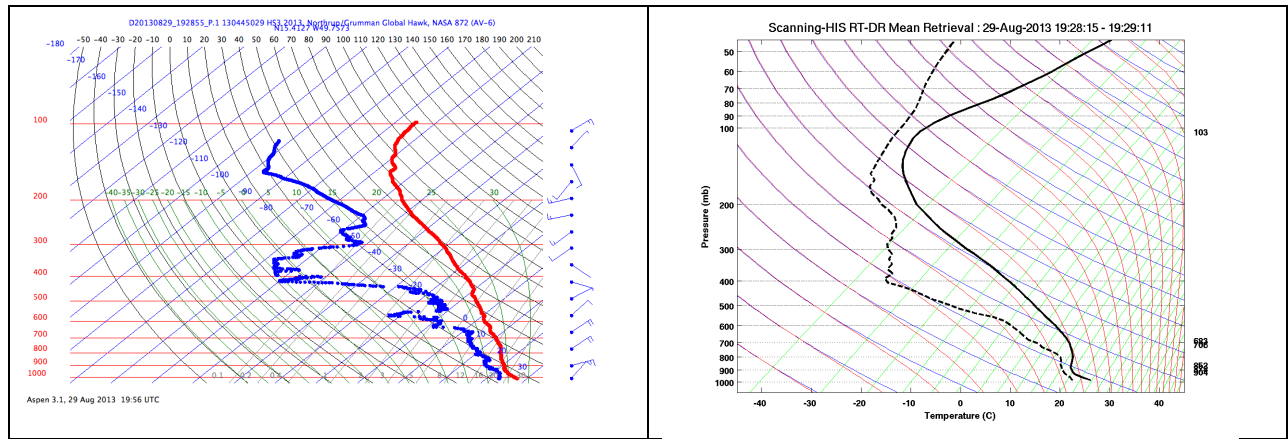


Figure 2: 20130829T1929: Sonde launched at 1929, CPL indicates clear with infrequent low cumulus

S-HIS Retrieval: RH time-height cross-section Quicklook Example from MTS (Near line 30 minute summary, 1 hour latency)

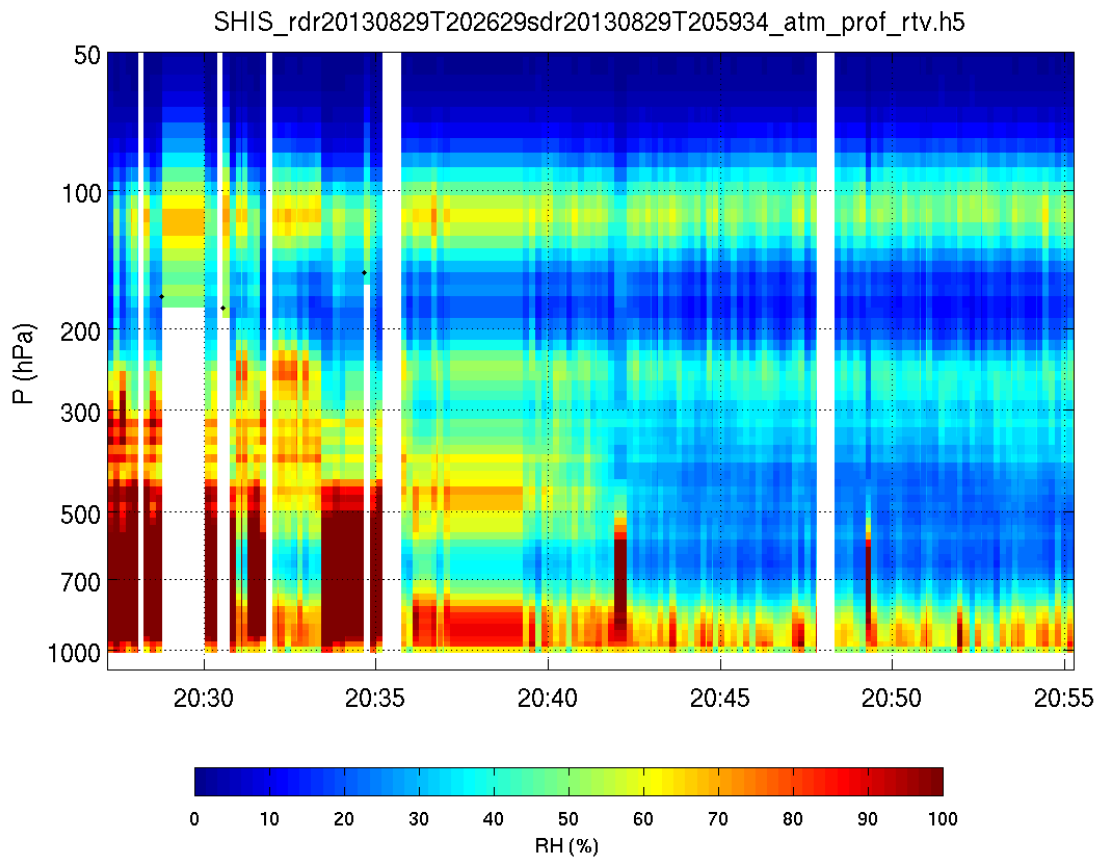
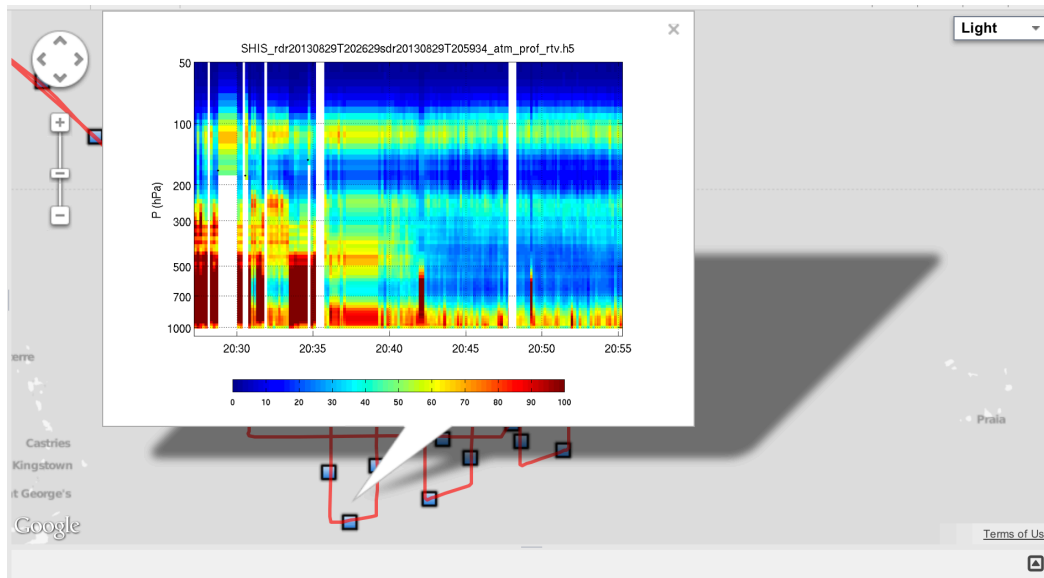


Figure 3: S-HIS Retrieval: RH time-height cross-section Quicklook Example from MTS (Near line 30 minute summary, 1 hour latency)