

Global Hawk #872 09/06/12 - 09/07/12

Aircraft: [Global Hawk - AFRC #872](#) ([See full schedule](#))

Flight Number: 872-0096

Payload Configuration: HS3 - TN872 2012 config

Nav Data Collected: No

Total Flight Time: 19.3 hours

Submitted by: Chris Naftel on 09/09/12

Flight Segments:

From:	DFRC	To:	WFF
Start:	09/06/12 20:19 Z	Finish:	09/07/12 15:37 Z
Flight Time:	19.3 hours		
Log Number:	12H002	PI:	Marilyn Vasques
Funding Source:	Hal Maring - NASA - SMD - ESD Radiation Science Program		
Purpose of Flight:	Science		
Comments:	The ferry flight from DFRC to WFF also included science data gathering around Hurricane Leslie. CPL, SHIS, and AVAPS were all operational and 30 sondes were deployed, with all 30 sending data back to the airplane. The Co-Pilot workstation in the GHMOF had a hardware failure and has been replaced. Other issues are being worked before the next science flight.		

Images:

Ferry flight to Wallops Sept 7 2012



[Read more](#)

Flight Hour Summary:

	12H002	13H008
Flight Hours Approved in SOFRS	327	
Flight Hours Previously Approved		178.1
Total Used	148.9	46
Total Remaining		132.1

13H008 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
10/06/12	872-0102	Science	7.3	7.3	170.8	
10/12/12	872-0103	Ferry	9.7	17	161.1	
11/01/12	871-0082	Check	4.8	21.8	156.3	
11/05/12 - 11/06/12	871-0083	Science	24.2	46	132.1	

Source URL: https://espo.nasa.gov/hs3/flight_reports/Global_Hawk_872_09_06_12_-_09_07_12#comment-0

Page Last Updated: April 22, 2017

Page Editor: Brad Bulger

NASA Official: Marilyn Vasques

HS3 - Global Hawk #872 09/06/12 - 09/07/12 Science Report

Mission: HS3

Mission Summary:

Hurricane and Severe Storm Sentinel (HS3) Mission

2012-09-06 Flight Report

This flight was the inaugural flight for HS3. The flight served two goals: 1) Transit from Dryden to Wallops and collection of some science data around Hurricane Leslie. Due to delays in getting the aircraft to Wallops, and because of forecasts of poor weather at Wallops in later days, it was decided to try to obtain some science data around Leslie during the transit. The flight pattern consisted of a very simple path around Leslie, from south-to-east-to-north flying along the axis of strongest winds in the upper-troposphere. These strong winds are expected to be related to outflow from the storm, either the outflow directly or a region of stronger winds forming along the outer edge of the outflow. The flight was also going to be a useful test of all components of the mission, including the plane, the PayMOF and GHMOF, the instruments, and interactions with the FAA. Because Ku coverage was needed for the transit over the southern U.S., we were not going to have Ku coverage over the Atlantic (the satellite covering the U.S. didn't extend that far off shore). As a result, we were dependent on Iridium for instruments and communications.

During the flight, the GH encountered strong convection over Arizona. Pilots requested, and received, permission to deviate around the storm. The rest of the trip did not produce any concerns about convection. Iridium dropouts and AVAPS-related issues prevented the release of several sondes. In addition, while on the eastern side of Leslie, one of the two command and control computers in the GHMOF crashed. As a result, the aircraft was immediately turned toward Wallops. The pilots did get FAA approval to do several drops off of our original flight pattern, showing some flexibility on the part of the FAA when flying near storms. Overall, the flight was an excellent shakeout flight, identified a number of things that needed to be addressed before the first full science flight.

2012-09-06 Flight Report

Flight Scientists:

Shift 1 (1600-0100 UT): Jeff Halverson, Jason Sippel

Shift 2 (0000-0900 UT): Paul A. Newman, Jon Zawislak

Shift 3 (0800-1600 UT): Scott Braun, Carlos

NOTE: Wall clocks in the PMOF were in disagreement by 3-4 minutes. All times below are based upon the time on the computer instead of the PMOF wall clocks.

2019 Takeoff

0050 Paul & John relieve Jeff and Jason

0100 Feet wet in the Gulf

0136 Ku problems in the Gulf. Pilots are extremely reluctant to drop sondes without Ku. Somewhat at variance with T-0 discussion.

0142 Suggestion made to turn off cameras so that Ku comms can be used for dropsondes.

0150 Configuring mission tools is very difficult, partially because of my relative unfamiliarity, but also because of the slowness of the computer.

0212 Ku comm working, so 1st sonde loaded.

0217 1st sonde launched. 28.836 (28.0° 50.0' 9.2"), -88.406 (-89.0° 35.0' 39.1"). Some confusion on launch instructions between mission director, payload, and AVAPS.

0233 Clear skies in sonde launch area. 2nd sonde loaded.

0238 2nd sonde launched. Both sondes appear to be good.

0315 Crossing Florida, CPL off

0316 Pilots have some worries about squall line east of Fla @ 28.8N, 78.9W. Cloud tops from CIMSS are well below 45 kft. Base reflectivity shows max returns of 55dbz, but they are dying off.

0332 Left Florida, now over the Atlantic. CPL on.

0348 AVAPS no status from iridium to load sonde for drop 3 (79.54W/29.22N)

0353 **Missed drop (D03)**. Will have to proceed to drop point 4 (76.83W/27.55N)

0411 KU dropped, Iridium not working, MPCS failed.

0416 Everything back on-line.

0417 AVAPS not getting any status packets.

0419 AVAPS status back on. They can now load.

0425 D04 launched.

0440 D05 launched

0455 D06 launched

0509 Sonde loaded, nearly at 60kft, 9 hours into the flight.

0513 D07 launched.

0517 Ku getting very flaky.

0531 Awaiting Miami Center clearance for D08.

0544 D08 dropped.

0558 D09 dropped (flight plan had this launch at 0608). Since we took off at 2019 (not 2000 as in the flight planner), we are about 10 minutes off schedule.

0621 Pilots are not comfortable with sonde launches without Ku.

0625 D10 launched. Delayed abt 2min to wait for GH to come straight and level.

0626 Payload control passed from GHOC (Mike Craig) to GMOF (Bernie Luna)

0646 D11 launched. This sonde is in a nice outflow

0710 D12 launched. Some problems confirming the interlock status for launching.

0716 Apparently all power off to the payload. Unknown cause.

0721 Bringing power up on all of the EIPs

0735 Instruments confirm they are now on, Ku SMA being brought up.

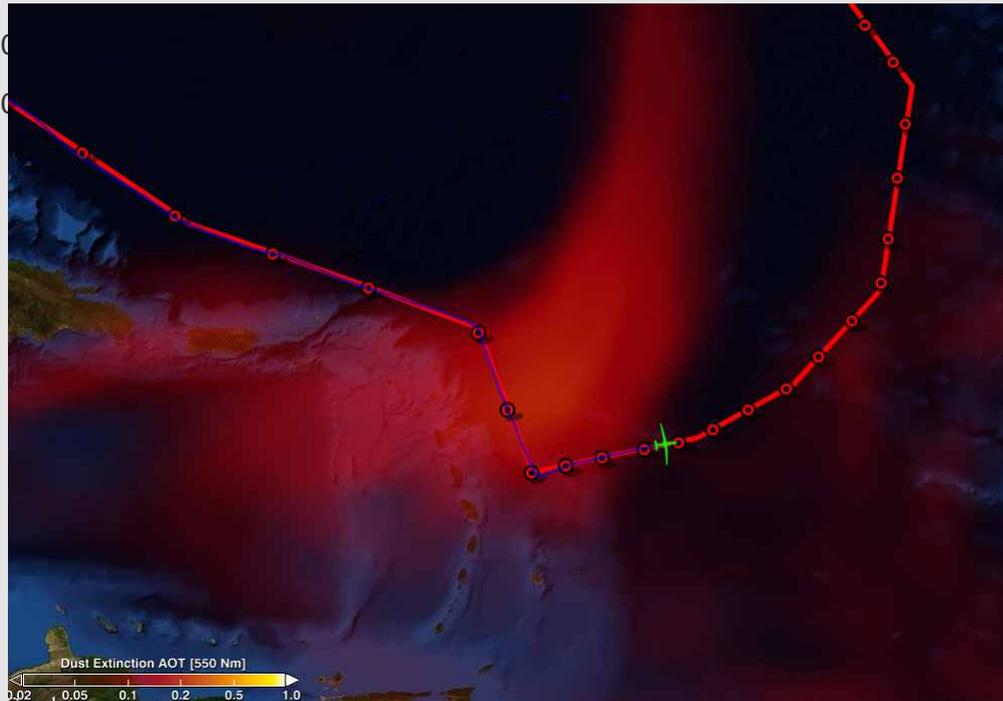
0739 D13 will be dropped late because of the power drop-out. We probably didn't get info back on D12 because of the power loss.

0743 D13 launch command sent, but iridium dropped out. Did not get the drop out.

0756 D14 launched.

0810 D15 launched (about 20 minutes behind schedule).

0819 D16 launched.



Caption. Around 0844 UTC, AV-6 passed over a seemingly strong layer of dust according to the GEOS-5 model. Skies were fairly clear. However, power to instruments lost over the period when we were first moving onto this dust layer.

0845 D19 scrubbed because AVAPS could not confirm status.

0855 D20 scrubbed because AVAPS recycling power

0907 D21 scrubbed because AVAPS still troubleshooting problem. No iridium.

0918 D22 scrubbed because AVAPS still troubleshooting problem. No iridium.

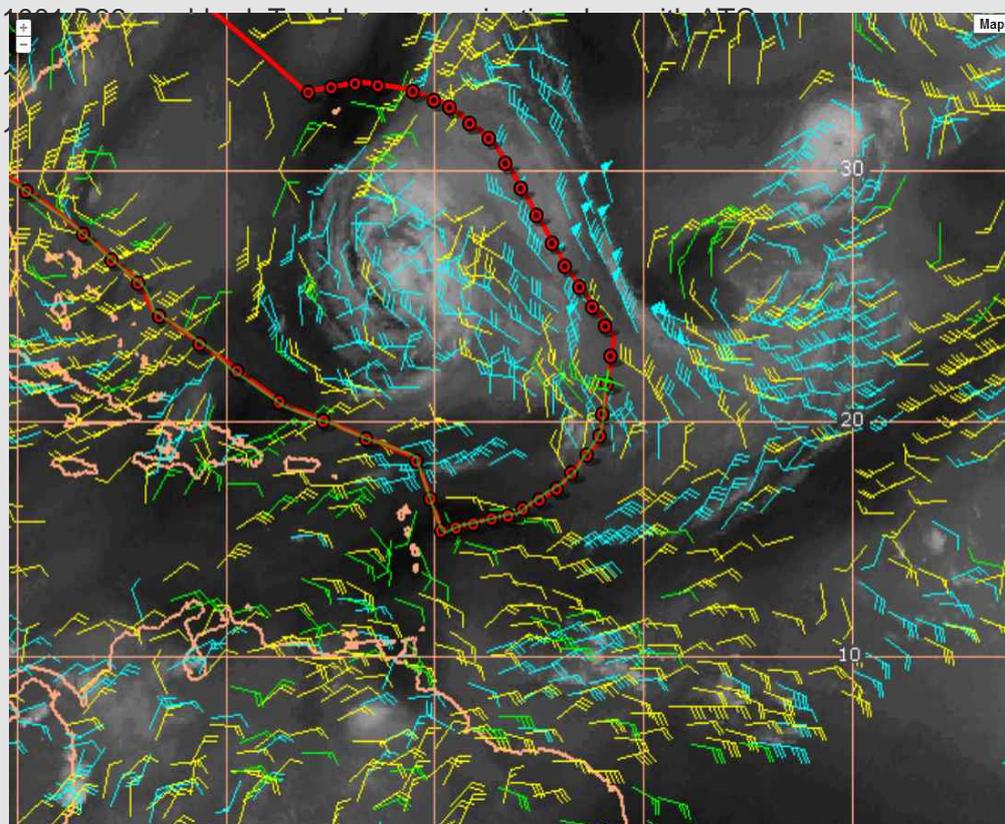
0920 Beginning procedures for handing off the aircraft from GHOC to GHMOF. Pilots busy, so can't continue procedures for resetting dropsondes.

0928 D23 scrubbed because AVAPS still awaiting iridium and approval to retest. Entered NY Oceanic.

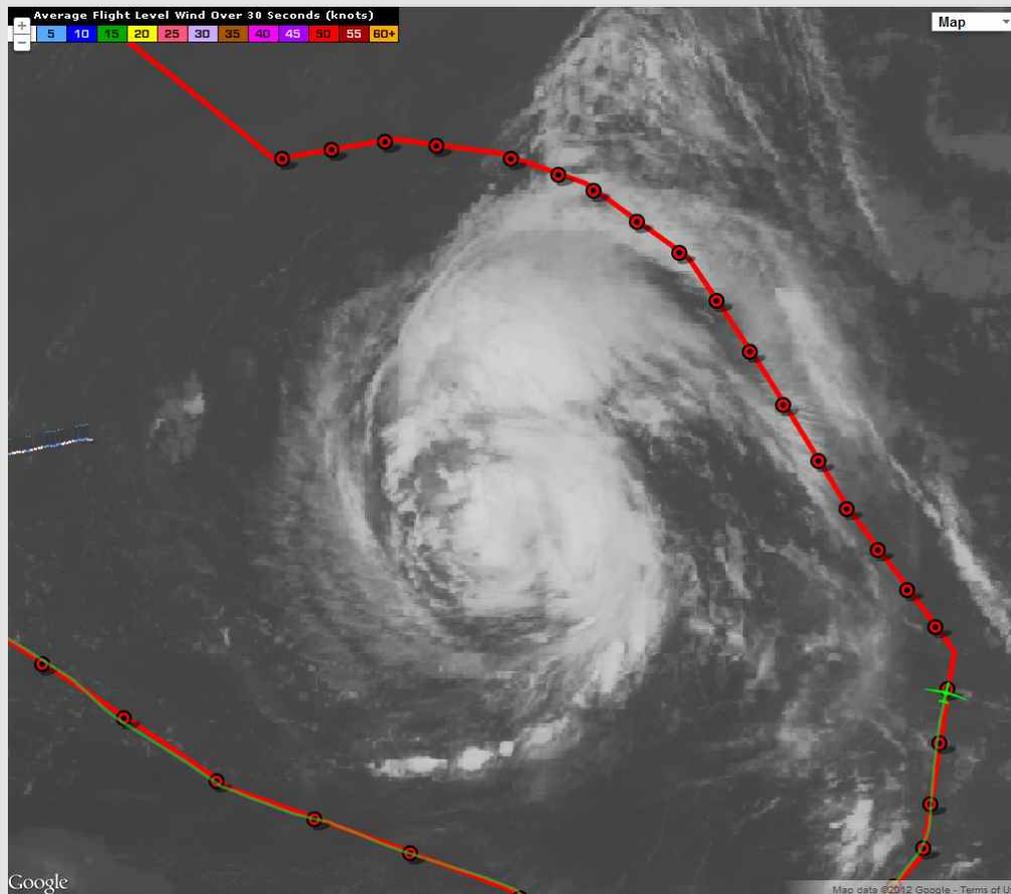
0939 D24 scrubbed because AVAPS still awaiting approval to retest.

0946 Handover to WFF pilots still ongoing. If this happens during a period in which we are doing drops, how will they handle doing both. Haven't been able to get approval to test AVAPS since handover began. Pilots talking about preparing for sonde 26, so will miss 25.

0951 D25 scrubbed. Insufficient time to prepare for drop.



Captions. AV6 appears to go directly up the wind maximum aloft. Likely right along the eastern edge of the primary outflow from Leslie starting on the southeastern side then going along or somewhat across the clouds associated with outflow on the eastern to northeastern side.



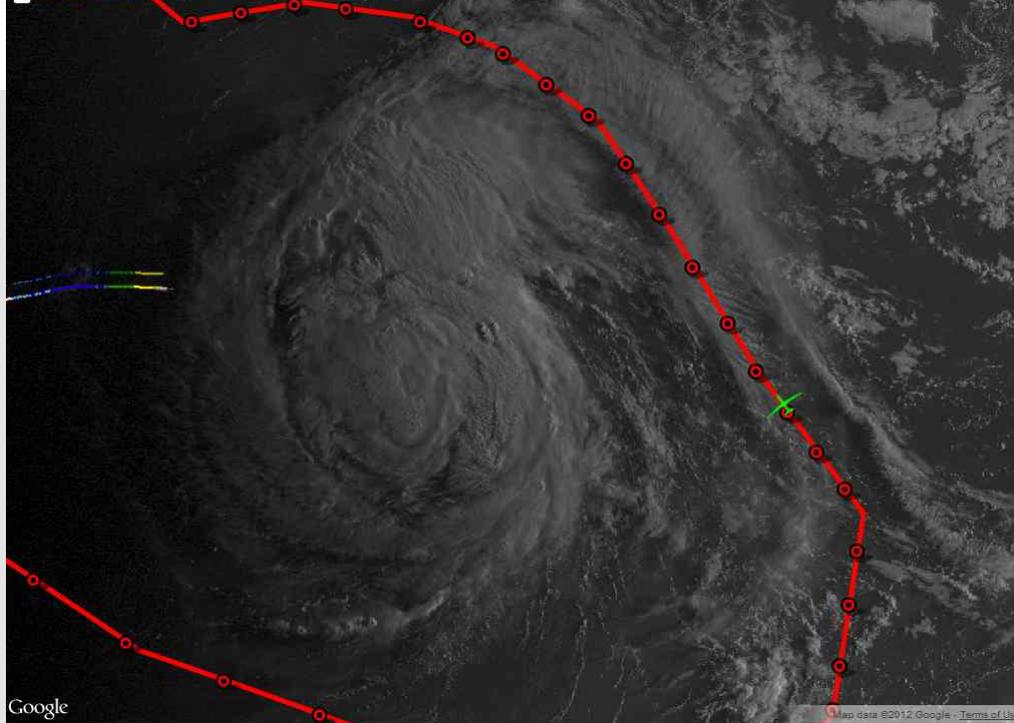
The wind max targeted by the flight plan may be due to upper-high over Leslie and upper trough to the east, creating strong pressure gradient in between.

1025 D28 not launched --command did not go through due to iridium loss--successfully launched at 1030

1041 D29 launched

1051 D30 launched

1101 D31 launched



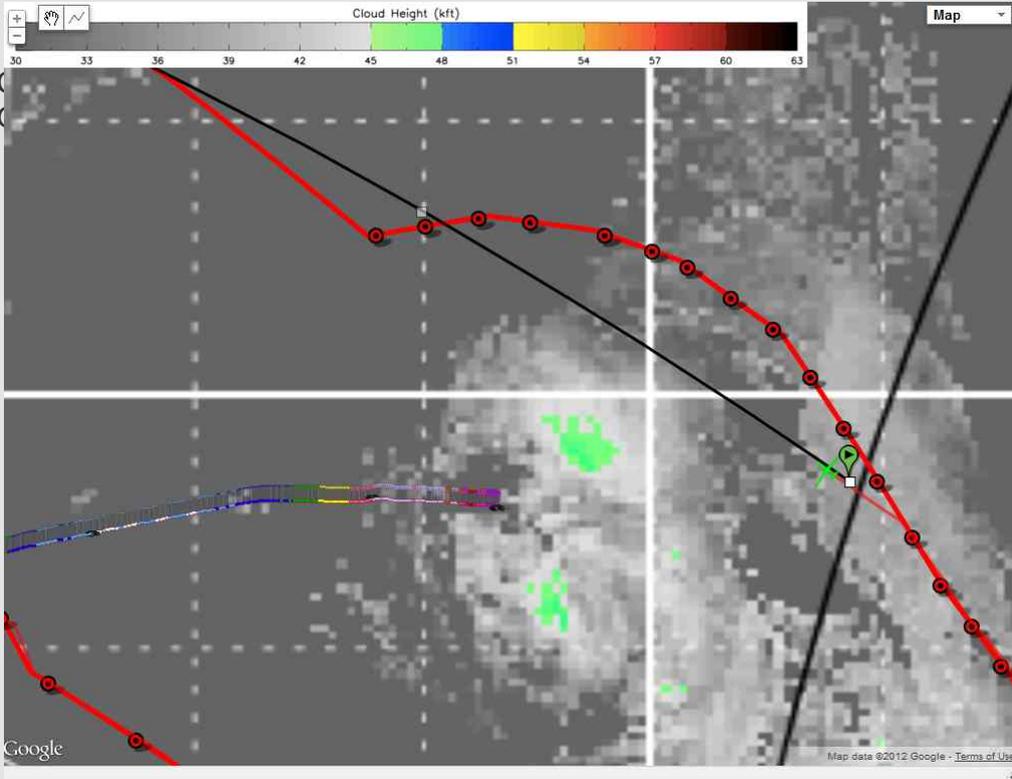
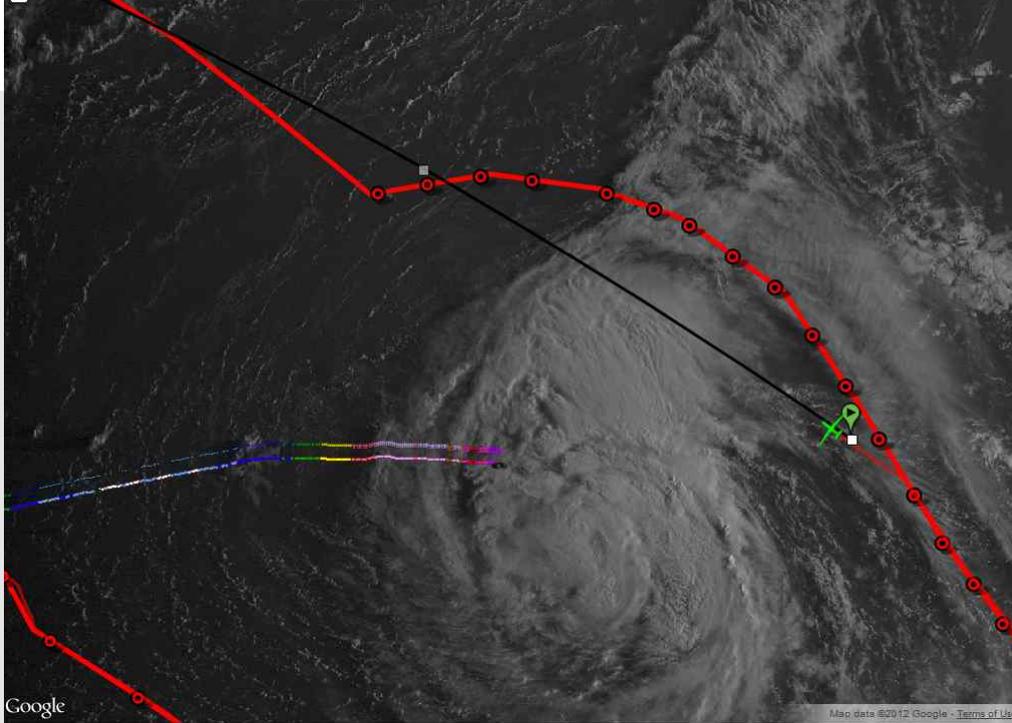
Caption: Visible image at 1104 UTC. GH approaching tail end of upper cirrus

1111 D32 launched

1123 D33 launched --

1123 D33 not launched --command did not go through

1127 GH lost command and control. Aircraft to head directly to WFF. Waiting to hear if we can still drop sondes.



ive to the

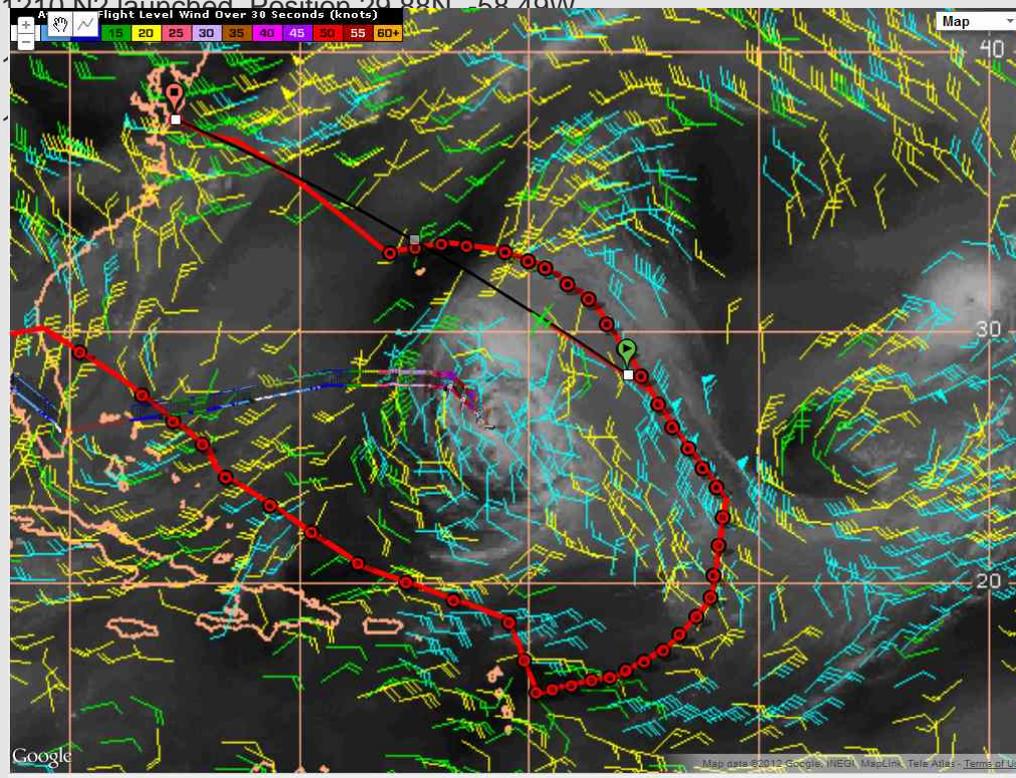
Caption: Image at 1145 UTC shows the approximate route home (black line) relative to cloud-top height data.

1158: Still no iridium for drops. We have permission to do drops all the way to Bermuda, up to 1 per 5 minutes.

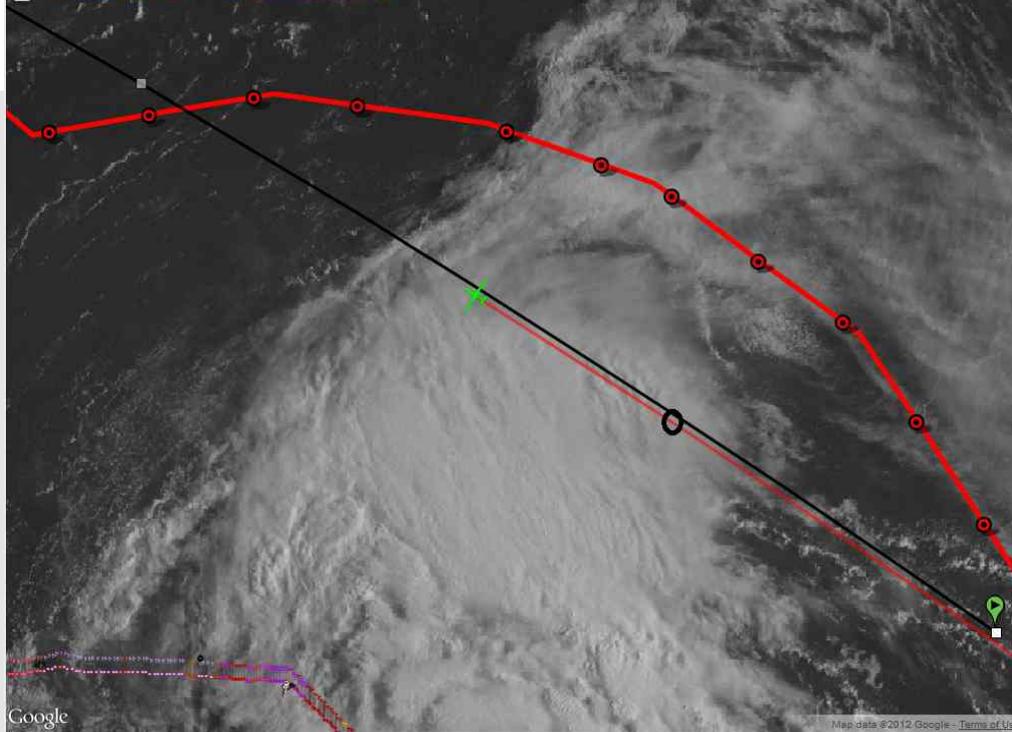
1202 Iridium back, dropsonde ready to launch.

1203 N1 launched (N1 meaning new launch location since we are not off track). Position 29.55N, -57.97W

1210 N2 launched, Position 29.88N, -58.40W



Caption: 1200 UTC GOES winds and GH flight pattern. Iridium appears to be on, but AVAPS is not getting a signal. This happened during previous iridium loss as well.



Caption: This image shows where we did NOT get drops, between the black circle and the GH symbol. So we missed drops in a key portion of the outflow due to iridium connection problems.

1241 N4 launched. Position 31.48N, -61.38W

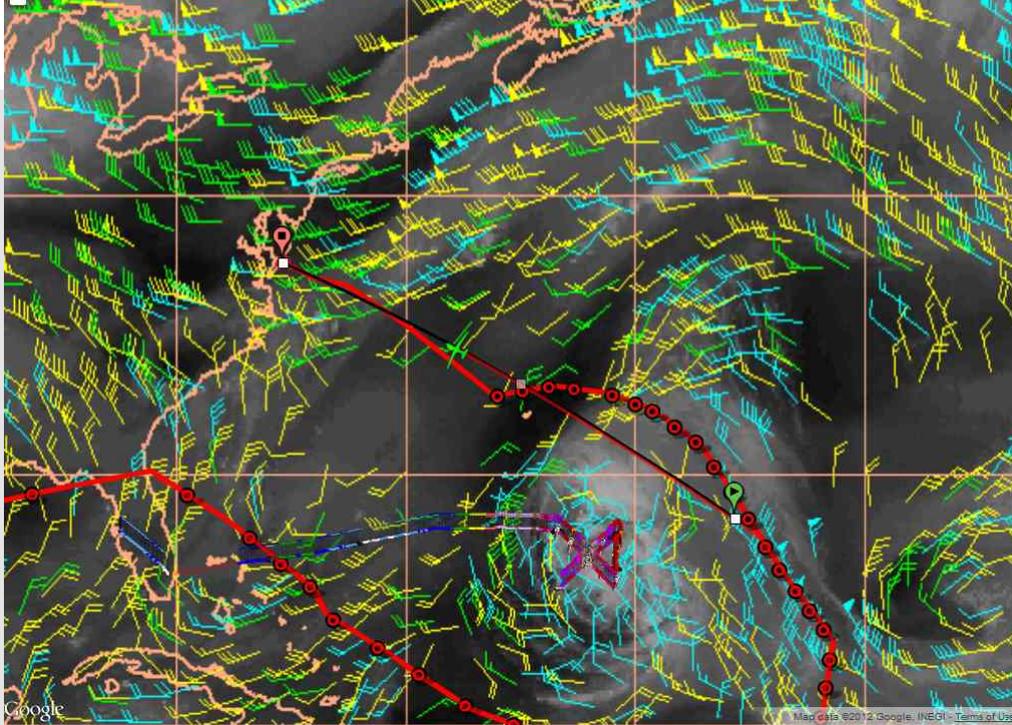
1247 N5 launched. Position 31.78N, -61.95W

That was last drop before getting in range of Bermuda. Will hold drops until sufficiently past Bermuda.

1333 N5 launched west of Bermuda. Position 34.10N, -66.65W

1339 N6 launched. Position 34.23N, -66.93W

1345 N7 launched. This will be our last sonde. Position 34.65N, -67.86W



Caption. The last three sondes were completed to the west of Bermuda in clear air. Useful for S-HIS validation. GOES suggests weaker winds between Leslie and the trough to the northwest.

Landing at 1537 UTC.

30 dropsondes used in total. 20 spares.

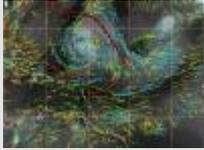
Images:

0844 UTC



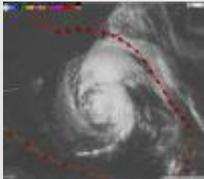
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1017 UTC



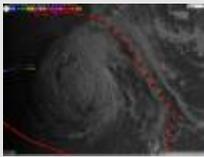
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1025 UTC



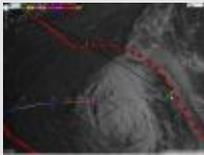
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1104 UTC



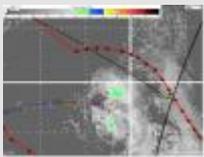
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1145 UTC



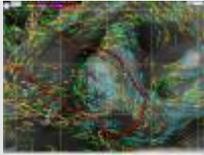
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1146 UTC



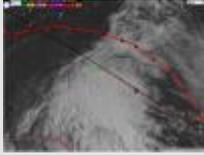
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1225 UTC



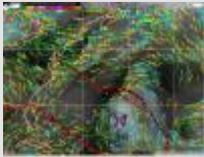
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1242 UTC



[Read more](#)

1343 UTC



[Read more](#)

Submitted by: Susan Kimi McFadden on 09/12/12

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

12H002 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
08/28/12	872-0094	Check	5.5	5.5	321.5	
08/30/12	872-0095	Maintenance	0.7	6.2	320.8	
09/06/12 - 09/07/12	872-0096	Science	19.3	25.5	301.5	
09/11/12 - 09/12/12	872-0097	Science	25.7	51.2	275.8	
09/14/12 - 09/15/12	872-0098	Science	22.4	73.6	253.4	
09/19/12 - 09/20/12	872-0099	Science	24.8	98.4	228.6	
09/22/12 - 09/23/12	872-0100	Science	25.1	123.5	203.5	
09/26/12 - 09/27/12	872-0101	Science	25.4	148.9	178.1	