N49RF ERROR SUMMARY
20201007N2

Flight ID: 20201007N2

Sensor or System	Number or Name
Static Pressure Probe	PSM.2
Dynamic Pressure Probe	PQM.2
Total Temperature Probe	TTM.1
Dewpoint Temp. Probe	TDM.2
Vertical Accelerometer	AccZI.1
Altimeter	AltGPS.3
INE Selection	1
Differential Attack Pressure Probe	PDALPHA.2
Differential Sideslip Pressure Probe	PDBETA.2
Dynamic Attack Pressure Probe	PQALPHA.2
Dynamic Sideslip Pressure Probe	PQBETA.2
Flight Directory	acdata/2020/MET/20201007N2

Local Met Data	Takeoff KLAL (1730Z)	Landing KLAL (0000Z)
Dynamic Corrections		Yes
AttackAngleIntercept		3.97801
AttackAngleSlope		3.86172
SlipAngleIntercept		1.258
SlipAngleSlope		6.69941
AttackAngleIntercept2		5.05753
AttackAngleSlope2		5.52397
SlipAngleIntercept2		0.931
SlipAngleSlope2		6.57562

Notes:
There were no edits made in the measured parameters used to calculate meteorological and navigational parameters.

Takeoff/Landing data: Data during landing and takeoff are potentially suspect. It is recommended that ground data not be used for scientific analysis.

Expendable Type	# deployed	# good	# transmitted	
Dropsondes	33	32	32	
Test sondes	0	0	0	
AXBTs	0	0	0	
AXCPs	0	0	0	
AXCTDs	0	0	0	
UAS	0	0	0	

Flight Director: Hathaway / Flaherty
Phone #: 863-500-3911

ACAT-4 Version = 7.3

U.S. Department of Commerce / NOAA / OMAO / Aircraft Operations Center - N49RF Manifest

FLIGHT INFORMATION

FLT ID:	20201007N2	FLT #:	
From:	KLAL	ETD:	1730Z
To:	KLAL	ETA:	0030 Z

Block Time		Flight Time	
In:	0055Z	Land:	0048 Z
Out:	1720Z	T/O:	1730Z
Total:	7.6	Total:	7.3

Sponsoring Org:	NHC
Program:	Hurricane 2020-PHS
Purpose:	Surveillance Delta

CREW MANIFEST

AC:	Mansour	Scientists:
CP(s):	Nardi	
Nav(s):		
FE(s)		
FD(s):	Hathaway Flaherty	Visitors:
SEB:		
SSA:	Defeo	
AVAPS:	Paul	

MISSION INFORMATION

Pressure		Dropsondes		
		Good	Bad	Sent
A/C Takeoff		32	1	32
ASOS Takeoff				
		BTs		
		Good	Bad	Sent
A/C Land		0	0	0
ASOS Land				

Storm Number ID: (ie: AL072012)	AL 26 2020
TCPOD/WSPOD Mission (ie: NOAA2 2418A SANDY)	NOAA9 1026A DELTA

AS REQUIRED BY ORM

	Y	N
VOLCANIC ASH		
SCIENCE MISSION WITHIN BDRY LAYER		
LACK OF PRECIPITATION		
RELATIVE HUMIDITY ≥ 80%		
LARGE AIR-SEA TEMP GRADIENT		
HIGH SURFACE WINDS		
LONG FETCH / DURATION OF SFC WND		
SEA SALT ACCRETION FORECAST		
SEA SALT ACCRETION OBSERVED		

REMARKS

OBSERVATIONS

Fix Number	Obs Number	Fix Time	SLP

Gmax: **Gmin:** *Highlighted items must be completed before departure.

Remarks:

G-IV QC Checklist

Overall Assessment	Minor instrument issue(s) - minimal mission impact.

Flight ID:	20201007N2
Flight Director(s):	Hathaway / Flaherty
Mission:	Non-tasked Science Collection/Research
UWZ.d mean:	0.12

Pressure Comparison		
	T/O	Land
Aircraft	1011.1	1010.7
Tower	1012.0	1010.6

	Raw 1Hz Mean File Parameters				C File Parameters	
☐ Accelerometer	☑ AccAXI.1	☑ AccAYI.1	☑ AccAZI.1	☑ AccZI.1	☑ AccZref	
	☑ AccAXI.2	☑ AccAYI.2	☑ AccAZI.2	☑ AccZI.2		
	☑ AccAXI.3	☑ AccAYI.3	☑ AccAZI.3	☑ AccZI.3		
☐ Altitude	☑ AltGPS.1	☑ AltI.1	☑ AltPaADDU.1	☑ AltBCADDU.1	☑ ALTref	
	☑ AltGPS.2	☑ AltI.2	☑ AltPaADDU.2	☑ AltBCADDU.2	☑ ALTPA.d	
	☑ AltGPS.3	☑ AltI.3	X AltRA.1		☑ ALTGA.d	
☐ Ground Speed	☑ GsXI.1	☑ GsYI.1	☑ GsZI.1	☑ GsGPS.1	☑ GSXref	
	☑ GsXI.2	☑ GsYI.2	☑ GsZI.2	☑ GsGPS.2	☑ GSYref	
	☑ GsXI.3	☑ GsYI.3	☑ GsZI.3		☑ GSZref	
	☑ GsXGPS.1	☑ GsYGPS.1	☑ GsZGPS.1			
	☑ GsXGPS.2	☑ GsYGPS.2	☑ GsZGPS.2			
☐ Lat / Lon	☑ LatGPS.1	☑ LatI.1	☑ LonGPS.1	☑ LonI.1	☑ LATref	
	☑ LatGPS.2	☑ LatI.2	☑ LonGPS.2	☑ LonI.2	☑ LONref	
	☑ LatGPS.3	☑ LatI.3	☑ LonGPS.3	☑ LonI.3		
☐ Pressure	☑ PDALPHA.1	☑ PQALPHA.1	☑ PQM.1	☑ PSM.1	☑ PDALPHAref	☑ PQMref
	☑ PDALPHA.2	☑ PQALPHA.2	☑ PQM.2	☑ PSM.2	☑ PDBETAref	☑ PQ.c
	☑ PDBETA.1	X PQBETA.1			☑ PQALPHAref	☑ PSMref
	☑ PDBETA.2	X PQBETA.2			X PQBETAref	☑ PS.c
☐ Air Speed	☑ CasADDU.1	☑ CasADDU.2	☑ TasADDU.1	☑ TasADDU.2	☑ IAS.d	☑ TAS.d
☐ Pitch / Roll	☑ PitchI.1	☑ PitchRateI.1	☑ RollI.1	☑ RollRateI.1	☑ PITCHref	
	☑ PitchI.2	☑ PitchRateI.2	☑ RollI.2	☑ RollRateI.2	☑ ROLLref	
	☑ PitchI.3	☑ PitchRateI.3	☑ RollI.3	☑ RollRateI.3		
☐ Temp / Dewpt	☑ TTM.1	☑ TTM.4	X TDM.1		X TD.c	☑ TTMref
	☐ TTM.2		X TDM.2		X TDMref	☑ TA.d
	☑ TTM.3	TDM are separated by 20				
☐ Misc. (Must check)					☑ UWZ.d	☑ WS.d
					☑ DPJ_WSZ	☑ WD.d
					X HUM	

FLID_Mission_Documents.pdf:
☑ Error Summary
☑ Crew Manifest
☑ QC Checklist
☑ Dropwindsonde Log(s) - AVAPS and FD if completed
☑ Flight Track
☑ Miscellaneous FD Notes

QC Key	
Not checked	☐
Valid	☑
Errors (note)	X

NOTES:

AltRA.1 has multiple significant dropouts and should not be used as absolute altitude.
Occasional spikes in multiple sensors in CDO due to turbulence.
PQBeta.1 and PQBeta.2 are unrepresentative with unusual drop outs.
When examined at high resolution, data from the three inertials shows "stairstepping" for all parameters for brief intervals (generally less than 15 seconds).
TDM.1 & TDM.2 were unrepresentative for the cruise portion of the mission above 41K and also for intervals at low altitudes.
Consider all relative humidity values to be considered suspect.
TTM.3 has a small amplitude (magnitude 0.2 – 0.3 deg C) unnatural oscillation with a period of roughly 30 seconds.
TTM.1 was used for calculation of Ambient Temperature (TA) and other derived parameters.
There were no edits made in the measured parameters used to calculate meteorological and navigational parameters.
Takeoff/Landing data: Data during landing and takeoff are potentially suspect...
It is recommended that ground data not be used for scientific analysis.

AOC GPS Dropwindsonde Log (updated Mar 2019)

32/33

Flight ID: 20201007N2 ASPEN Operator/Flight Director(s): FLAHERTY / HATHAWAY

Mission ID: NOAA9 1026A DELTA Storm Name/Track: HURR DELTA SURV PG 1 of 1

Sonde #	Ob #	Launch Time HHMMSS (Z)	Sonde ID (min last 5)	Ch # used	Lat (°N)	Lon (°E)	Prominent Wx Cond.	SFC Prs (mb)	Comments / Issues / QC / ASPEN Edits	KWBC #	Sonde Issues?
1	1	1751	50603	1	28.5	-84.0	BKN BLW	1014.6		1821	N
2	2	1806	40422	2	28.4	-86	OVC BLW	1012.8		1852	N
3	3	1823	40424	3	26.5	-86.5	"	1011.2		1858	N
4	4	1841	20904	4	25.2	-88.3	"	1007.7		1906	N
5	5	1850	J1043	1	25.7	-89.3	"	1007.9		1912	N
6	6	1903	40277	2	27.0	-88.0	SCT BLW	1009.6	POST SPLASH DELTA - 949 SEC	1930	N
7	7	1914	30010	3	28.4	-88.1	BKN BLW	1011.6		1944	N
8	8	1928	40410	4	28.4	-89.9	"	1011.9		2030	N
9	9	1941	50562	1	27.0	-90.0	"	1010.7		2036	N
10	10	1954	20693	2	25.7	-90.9	"	1009.7	POST SPLASH - 955.5 SEC	2046	N
11	11	2004	40423	3	25.3	-92.0	"	1008.4	NO SFC WINDS	2051	N
12	12	2015	20912	4	26.7	-92.0	"	1010.1		2053	N
13	13	2028	20887	1	28.4	-92.1	SCT BLW	1012.5		2104	N
14	~~14~~	2042	20902	2			"		FAST FALL		Y
15	14	2043	21319	3	28.2	-94.0	BKN BLW	1013.3	BACK UP	2108	N
16	15	2058	22116	4	26.7	-94.0	BKN BLW	1010.9		2125	N
17	16	2113	20883	1	25.0	-94.0	"	1009.3		2132	N
18	17	2125	1086	2	24.0	-93.0	OVC BLW	1006.0		2202	N
19	18	2137	40134	3	22.7	-93.2	"	1005.3		2206	N
20	19	2147	40280	4	21.6	-93.0	"	1005.6		2220	N
21	20	2158	20901	1	20.6	-92.0	"	1005.2		2244	N
22	21	2212	20907	2	21.8	-91.1	"	1000.8		2252	N
23	22	2221	30420	3	22.7	-91.8	"	1002.8		2253	N
24	23	2233	40491	4	23.6	-91.2	"	1002.6		2255	N
25	24	2243	10863	1	24.2	-90.1	"	1004.2		2321	N
26	25	2252	51031	2	23.8	-89.2	"	1003.1		2336	N
27	26	2301	40137	3	22.8	-88.6	"	1001.3		2339	N
28	27	2312	30189	4	22.9	-87.3	"	1006.1		2344	N
29	28	2321	41444	1	24.0	-87.3	"	1006.6		2358	N
30	29	2334	30020	2	24.2	-85.7	DARK	1009.0		0002	N
31	30	2344	30021	3	24.8	-84.6	"	1011.2		0009	N
32	31	2356	30064	4	25.5	-83.2	"	1013.1		0016	N
33	32	0011	10871	1	26.6	-84.6	"	1012.4	LAST REPORT	0032	N
34											
35											
36											
37											
38											

ASPEN Operator will ensure this form is delivered to the AOC Flight Director to be archived

COMMENTS:

Obs Xmitted	Obs Missed	# of sondes launched	# of bad sondes
32	0	33	1

AVAPS Drop Log

Project: HX 2020 Mission: DELTA Flight ID: 20201007N2

Take Off: 1730Z Landing: _____ Flt Dir: HATHAWAY FLAHERTY Launcher S/N: 02

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
1	201650603	1	-1.2	1751	SLP	NWS		✓
2	2014 40422	2	Ø	1806				✓
3	2014 40424	3	Ø	1823				✓
4	20152 0904	4	Ø	1841				✓
5	2013 51043	1	Ø	1850				✓
6	2014 40277	2	Ø	1903				✓
7	2014 30010	3	Ø	1914				✓
8	2014 40410	4	Ø	1928				✓
9	2014 50362	1	Ø	1941				✓
10	2015 20693	2	Ø	1954				✓
11	2014 40423	3	Ø	2004				✓
12	2015 20912	4	Ø	2015				✓
13	2015 20887	1	Ø	2028				✓
14	2015 20902	2	Ø	2042			fast fall	X
15	2014 21319	3	Ø	2043			backup for 14	✓
16	20172 1211	4	-0.4	2058				✓
17	2015 20883	1	Ø	2113				✓
18	2014 10866	2	Ø	2125				✓
19	2014 40134	3	Ø	2137				✓
20	2014 40280	4	Ø	2147				✓
21	2015 20901	1	Ø	2158				✓
22	2015 20907	2	Ø	2212				✓
23	2023 30420	3	-0.7	2221				✓
24	2044 04091	4	Ø	2233				✓
25	2014 10869	1	Ø	2243				✓
26	2013 51031	2	Ø	2252				✓
27	2014 40137	3	-0.9	2301				✓
28	20163 0189	4	-0.9	2312				✓
29	2022 41444	1	-0.7	2321				✓
30	2017 30020	2	-0.6	2334				✓
31	2017 30021	3	-0.8	2344				✓
32	2014 30064	4	-0.8	2356				
33	2014 10871	1	-1.4	0011				

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
32								
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								

Drop Station Operator Notes

Charge $$ To Options (DO NOT USE FUNDING CODES):
AOC, NWS, HRD, NESDIS, IR/SST, AR, STAN (Stanford), SAT (JPSS/NESDIS/HRD)

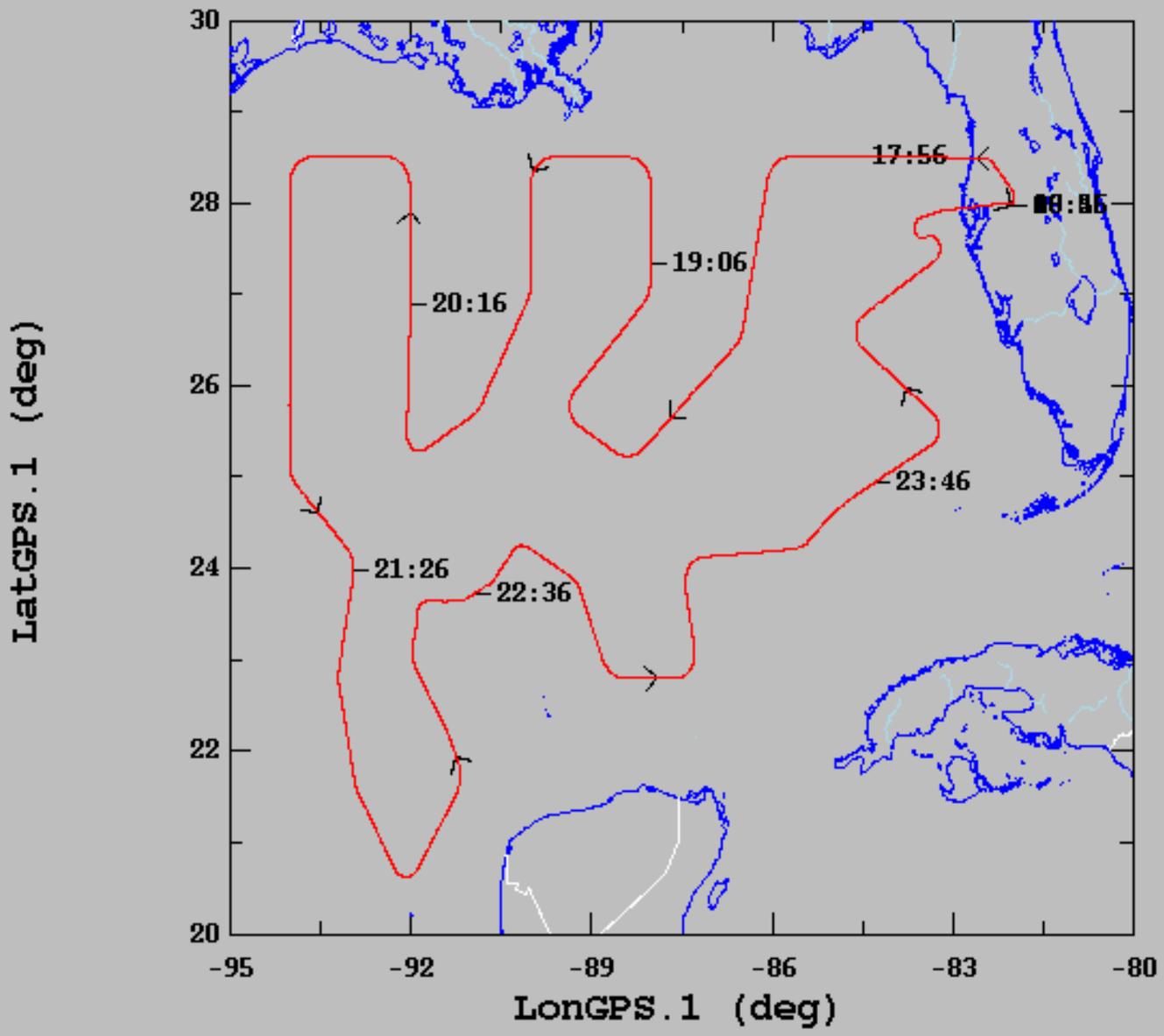
AVAPS Pre-Flight Check:

- If time-permits, verify cabin pressure sensor w/ lab standard
- Start AVAPS., then start Soundings and set the Project Name and Full Flight ID (example: 20120823N2).
- Verify the Frequency band allocation as required:
  Band A: 53rd WRS - Band B: N42RF - Band C: N43RF - Band D: N49RF - Band E: Unallocated
- Select the **GPS Reference** tab from the **Soundings Displays** page and verify good GPS data
- Perform a prelaunch check on each channel, look for reasonable data and no CRC error status lights.
- Verify data is available on Remote AVAPS, then terminate the sonde.
- Verify the AVAPS Data mission folder has been created
- Verify AVAPS PC Time is correct – if time is off by >4sec, no data will display
- Early launch detects are caused usually by remanufactured sondes with the chute riser line not properly coiled below the PCB ear. This may also cause fast falls. If this is suspected, repack the riser line as time permits
- Perform RH Regeneration on all sondes – Multiple RD41 sondes may be processed at once

AVAPS Launch:

- Select a sonde frequency in the Green band and away from other sondes
- Enter sonde pressure error offset if 0.4mB or greater using cabin pressure sensor – warning, this can not be used during a climb
- If the Cal lab pressure standard and the cabin pressure standard match, apply pressure offset +/- 0.1 mB
- Wait until GPS available (green) on the pre-launch screen before continuing.
- Select "begin data collection" and verify good data with winds prior to putting sonde in launch tube
- On N42 & N43, remove about ½ of the ribbon. Do not shorten the ribbon on N49. Loosen ribbon and extend end of ribbon to near, but not over, the sensor end of the sonde. Place excess orange tape on end of ribbon to form a pocket.
- Place the sonde in the launch tube, sensor arm up, with the power pin socket facing right
- Verify the sonde is actively tracking GPS data prior to launch and no early launch detect

2020-10-07, 16:45:57-24:56:46



	mean	sigma	min	max
LatGPS.1 (deg), 1 s/sec	25.94	2.20	20.62	28.50
LonGPS.1 (deg), 1 s/sec	-88.15	3.99	-94.00	-81.98