N49RF ERROR SUMMARY
20201006N1

Flight ID: 20201006N1

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/20201006N1

Local Met Data	Takeoff KLAL (1735Z)	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:	20201006N1	FLT #:	
From:	KLAL	ETD:	1730Z
To:	KLAL	ETA:	0130 Z

Block Time		Flight Time	
In:	0144Z	Land:	0138 Z
Out:	1727 Z	T/O:	1736 Z
Total:	8.3	Total:	8.0

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 0526A 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:	20201006N1
Flight Director(s):	Hathaway / Flaherty
Mission:	Non-tasked Science Collection/Research
UWZ.d mean:	0.11

Pressure Comparison		
	T/O	Land
Aircraft	1010.6	1010.7
Tower	1009.7	1011.0

	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					
☐ 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.

AVAPS Drop Log

Project: HX 2020 Mission: DELTA Flight ID: 2020100

Take Off: 1735Z Landing: _____ Flt Dir: FLAHERTY HATHAWAY Launcher S/N: 02

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
1	201620164	1	-0.9	1755	SCP	NWS		✓
2	201440507	2	-1.1	1810	SCP			✓
3	20162O176	3	-1.2	1824	SCP			✓
4	201620308	4	-1.1	1839	SCP			✓
5	201651047	1	-1.1	1852	SCP			✓
6	201650497	2	-0.7	1908	SCP		first full	X
7	20162O248	3	-0.9	1910	SCP		backup for 6	✓
8	201650604	4	-0.8	1921	SCP			✓
9	20162O326	1	-1.2	1936	SCP			✓
10	201630242	2	-1.0	1950	SCP			✓
11	201440376	3	-1.0	2007	SCP			✓
12	201630246	4	-1.0	2023	SCP			✓
13	201730240	1	-0.7	2038	SCP			✓
14	20162O183	2	-0.8	2053	SCP			✓
15	201430008	3	Ø	2110	SCP			✓
16	201650595	4	Ø	2145	SCP			✓
17	201440525	1	Ø	2154	SCP			✓
18	201440490	2	Ø	2206	SCP			✓
19	201420572	3	Ø	2217	SCP			✓
20	201620128	4	Ø	2228	SCP			✓
21	201630249	1	-0.7	2239	SCP			✓
22	201620134	2	Ø	2254	SCP			✓
23	201450420	3	-1.5	2308	SCP			✓
24	201440509	4	Ø	2317	SCP			✓
25	201620330	1	-0.7	2325	SCP			✓
26	201730022	2	-0.6	2334	SCP			✓
27	201430127	3	Ø	2343	SCP			✓
28	201430012	4	Ø	2353	SCP			✓
29	201420559	1	Ø	0005	SCP			✓
30	201620338	2	-0.9	0015	SCP			✓
31	201740070	3	Ø	0024	SCP			✓
32	201620207	4	Ø	0040	SCP			✓
33	201430066	1	-0.7	0056	SCP			✓

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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

AOC GPS Dropwindsonde Log (updated Mar 2019)

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Flight ID: 20201006N1 ASPEN Operator/Flight Director(s): FLAHERTY / HATHAWAY

Mission ID: NOAA9 0526A DELTA Storm Name/Track: HURR DELTA SURV. PG 1 of 1

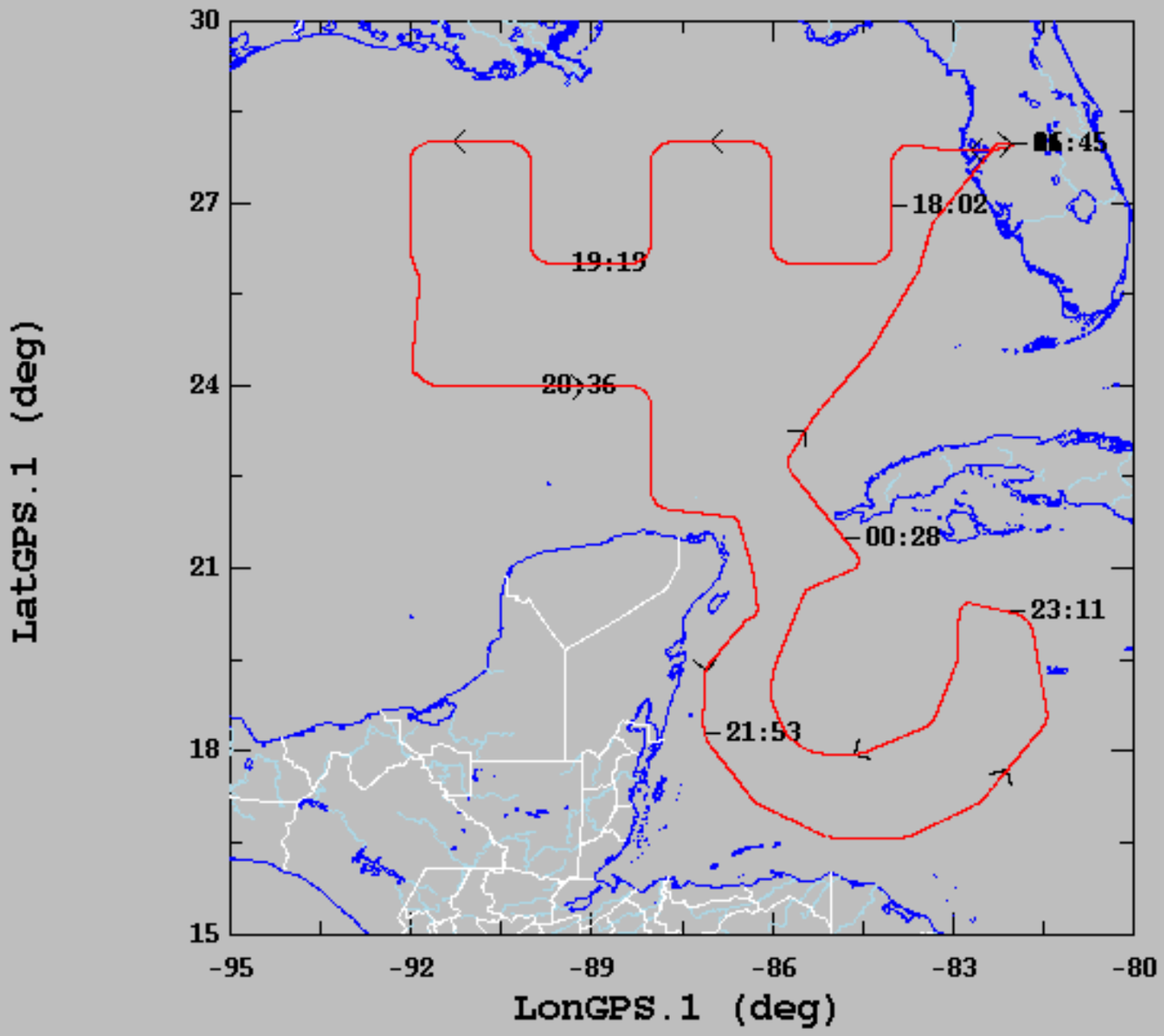
Sonde #	Ob #	Launch Time HHMMSS (Z)	Sonde ID (m-n last 5)	Ch # used	Lat (°N)	Lon (°E)	Prominent Wx Cond.	SFC Prs (mb)	Comments / Issues / QC / ASPEN Edits	KWBC #	Sonde Issues?
1	1			1			FWBLW				N
2	2	40507	1810	2	26	-84.1	SCTBLW	1012.3		1842	N
3	3	1824	20176	3	26.1	-85.9	"	1010.6		1855	N
4	4	1839	20308	4	27.9	-86.1	"	1012.6		1859	N
5	5	1857	51047	1	27.9	-87.9	"	1012.9		1923	N
6	~~6~~	1908	—	2			"		FAST FALL BACK-UP		Y
7	6	1910	20248	3	26.0	-88.4	"	1009.6		1936	N
8	7	1921	50604	4	26.1	-90.0	BKNBLW	1010.5		1955	N
9	8	1936	20326	1	28.0	-90.1	OVCBLW	1011.7		2009	N
10	9	1950	30242	2	27.9	-91.8	"	1012.6		2009	N
11	10	2007	40376	3	26.0	-92	"	1010.2		2052	N
12	11	2023	30246	4	24.1	-91.8	"	1009.3		2054	N
13	12	2038	30240	1	24.0	-90.0	BKNBLW	1008.2		2125	N
14	13	2053	20183	2	23.9	-88.1	"	1008.2		2137	N
15	14	2110	30006	3	22.0	-88.0	OVCBLW	1006.3		2141	N
16	15	2145	50595	4	19.3	-87.0	"	1004.6		2211	N
17	16	2154	40525	1	18.2	-87.0	"	1004.9		2230	N
18	17	2206	40490	2	17.1	-86.2	"	1004.2		2241	N
19	18	2217	20572	3	16.5	-85.0	"	1005.6	1005.6	2243	N
20	19	2228	20128	4	16.6	-83.7	"	1004.0		2327	N
21	20	2239	30249	1	17.1	-82.5	"	1005.0		2329	N
22	21	2254	20134	2	18.5	-81.4	"	1005.9		2331	N
23	22	2308	30420	3	20.1	-81.7	"	1005.2		2333	N
24	23	2317	40509	4	20.3	-82.8	"	1003.7		2340	N
25	24	2325	20330	1	19.4	-82.9	DARK	1002.9		2346	N
26	25	2334	30022	2	18.4	-83.3	"	1001.0		2359	N
27	26	2343	30127	3	18.0	-84.4	"	1000.6		0027	N
28	27	2353	30012	4	18.2	-85.6	"	1003.4		0039	N
29	28	0005	20559	1	19.5	-85.9	"	1002.3	SPORADIC DATA 955 mb - SPLASH	0044	N
30	29	0015	20338	2	20.5	-85.4	"	1002.3		0050	N
31	30	0024	40070	3	21.0	-84.5	"	1003.7		0052	N
32	31	0040	20207	4	22.8	-85.7	"	1007.5		0103	N
33	32	0056	30066	1	24.3	-84.5	"	1010.3	LAST REPORT	0119	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 32 Obs Missed 2 # of sondes launched 33 # of bad sondes 1

2020-10-06, 16:45:36-25:45:12



	mean	sigma	min	max
LatGPS.1 (deg), 1 s/sec	23.59	3.91	16.58	28.00
LonGPS.1 (deg), 1 s/sec	-85.69	3.07	-92.00	-81.42