N49RF ERROR SUMMARY
20200801N2

Flight ID: 20200801N2

Sensor or System	Number or Name
Static Pressure Probe	PSM.2
Dynamic Pressure Probe	PQM.2
Total Temperature Probe	TTM.4
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/20200801N2

Local Met Data	Takeoff KLAL (1729Z)	Landing KLAL (0103Z)
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	38	35	35	
Test sondes	0	0	0	
AXBTs	0	0	0	
AXCPs	0	0	0	
AXCTDs	0	0	0	
UAS	0	0	0	

Flight Director: Hathaway / Henning
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:	20200801N2	FLT #:	
From:	KLAL	ETD:	1330L / 1730Z
To:	KLAL	ETA:	2130/1302

Block Time		Flight Time	
In:	0109Z	Land:	0103 Z
Out:	1721Z	T/O:	1729Z
Total:	7.8	Total:	7.6

Sponsoring Org:	NHC
Program:	PHS
Purpose:	Hurricane Isaias

CREW MANIFEST

AC:	Jason Mansour	Scientists:
CP(s):	Matt Nardi	
Nav(s):		
FE(s)		
FD(s):	Nikki Hathaway Rich Henning	Visitors:
SEB:		
SSA:	Gabe Defeo	
AVAPS:	Charles Lynch	

MISSION INFORMATION

Pressure		Dropsondes		
		Good	Bad	Sent
A/C Takeoff		35	3	35
ASOS Takeoff				
		BTs		
		Good	Bad	Sent
A/C Land		0	0	0
ASOS Land				

Storm Number ID: (ie: AL072012)	AL 092020
TCPOD/WSPOD Mission (ie: NOAA2 2418A SANDY)	NOAA9 1409A Isaias

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: Alternates - KLAL, KTPA, KMCF, KMIA, MYNN, KSAV

G-IV QC Checklist

Flight ID:	20200801N2
Flight Director(s):	Hathaway/Henning
UWZ.d mean:	0.13

Pressure Comparison		
	T/O	Land
Aircraft	1011.4	1009.9
Tower	1011.0	1010.0

	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	☐ GsGPS.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	☑ PQBETA.1			☑ PQALPHAref	☑ PSMref
	☑ PDBETA.2	☑ PQBETA.2			☑ 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	X WS.d
					☑ DPJ_WSZ	X 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

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. TDM.2 performed well 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.4 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)

Flight ID: 20200801N2 ASPEN Operator/Flight Director(s): HENNING/HATHAWAY

Mission ID: 1409A Storm Name/Track: ISAIAS

PG __ of __

FLW = toss FL winds

Sonde #	Ob #	Launch Time HHMMSS (Z)	Sonde ID (min last 5)	Ch # used	Lat (°N)	Lon (°E)	Prominent Wx Cond.	SFC Prs (mb)	HEIGHTS 250 mb	500	SFC WIND	Comments / Issues / QC / ASPEN Edits	KWBC #	Sonde Issues?	
1	1	1755	0690	1	27.8	79.2	SCT	1014.0	11027	5909	045/19		1814		✓✓
2	2	1803	0845	2	27.5	78.2	UCST	1013.3	11041	5906	070/21		1823		✓✓
3	3	1813	0367	3	28.6	77.5	UCST	1016.0	11039	5917	075/18		1831		✓✓
4	4	1822	0854	4	29.3	78.4	SCT	1016.0	11016	5919	065/12		1844		✓✓
5	5	1838	0575	1	31.3	77.7	SCT	1016.6	11001	5922	215/3		1904		✓✓
6	6	1848	0572	2	32.2	76.6	SCT	1015.8	11006	5918	210/13		1909	FLW	✓✓
7	7	1857	0169	3	33.0	75.5	UCST	1016.4	11019	5927	230/16		1917	FLW	✓✓
8	8	1907	0576	4	33.8	74.2	BKN	1015.7	11018	5925	215/12		1941	FLW	✓✓
9	9	1917	1066	1	33.8	72.7	UCST	1016.2	11025	5931	230/22		1944		✓✓
10	~~000~~	1926	——	2	——	——	NO LAUNCH DETECT ——						NO PTH		
11	10	1927	1080	3	33.6	71.2	SCT	1016.2	11029	5930	245/24		1949		✓✓
12	11	1938	1076	4	32.4	71.3	CLR	1018.0	11051	5941	220/14		2001		✓✓
13	12	1948	1074	1	32.3	72.7	UCST	1016.7	11033	5924	240/11		2014		✓✓
14	13	2003	1071	2	32.3	74.7	UCST	1016.1	11024	5916	220/12		2027		✓✓
15	14	2015	0034	3	31.3	75.7	UCST	1017.4	11034	5920	185/7		2049		✓✓
16	15	2027	1080	4	30.3	76.6	UCST	1016.3	11025	5913	095/15		2056		✓✓
17	16	2037	0842	1	29.3	75.8	UCST	1015.1	11031	5904	090/18		2111		✓✓
18	17	2052	0777	2	27.6	76.5	CDO	1014.1	11042	5906	105/19		2125		✓✓
19	18	2103	0872	3	26.3	76.2	CDO	1012.7	11052	5896	120/28		2138		✓✓
20	~~19~~	2110	~~1065~~	4	~~25.7~~	~~76.7~~	CDO	~~1010.7~~	~~0000~~	GPS	~~LATE~~		2144		~~✓✓~~ 120/25
21		2111		1	——	——	CDO	NO PTH ——							
22	20	2115	0856	2	25.1	77.1	CDO	1009.5	11051	5878	115/20		2202	FLW	✓✓
23	21	2126	0695	5	24.0	78.0	CDO	1007.7	11045	5890	205/22		2213	FLW	✓✓
24		2132	——	6	——	——	PTH	DIED NO BACKUP ——							✓
25	22	2142	0268	3	23.4	79.9	CDO	1009.3	11050	5903	250/11		2235		✓✓
26	23	2201	1077	4	24.3	82.2	SCT	1009.6	11034	5900	005/10		2240		✓✓
27	24	2218	0685	1	25.8	83.7	SCT	1011.4	11025	5906	355/12		2252		✓✓
28	25	2230	0841	2	25.8	85.2	SCT	1013.3	11029	5916	030/9		2258		✓✓
29	26	2242	0853	3	25.8	86.7	SCT	1013.7	11023	5917	045/12		2324		✓✓
30	27	2254	0778	4	25.9	88.1	SCT	1013.9	11019	5914	050/12		2327		✓✓
31	28	2305	0689	1	27.3	88.2	SCT	1014.4	11004	5913	020/7		2330		✓✓
32	29	2316	0368	2	28.7	88.1	SCT	1013.6	10988	5911	220/1		2338	FLW	✓✓
33	30	2325	1085	3	28.7	86.8	CLR	1014.6	10993	5914	LSTW	16 m	2345		✓✓
34	31	2337	0846	4	27.4	86.6	SCT	1014.2	11005	5917	020/9		2358		✓✓
35	32	2346	0012	1	27.4	85.3	SCT	1012.9	11004	5911	025/12		0010		✓✓
36	33	2357	0855	2	28.7	85.1	SCT	1014.6	10995	5919	330/5		0018	FLW	✓✓
37	34	0006	0776	3	28.7	83.8	SCT	1014.3	10999	5920	335/10		0028		✓✓
38	35	0017	1084	4	27.4	83.6	SCT	1013.0	11019	5917	——		0037		✓✓

LAST

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

24.40 78.02 24.48 78.18 24.80 78.30

AVAPS Drop Log

Project: HURR 20 Mission: ~~ISAS~~ IAS Flight ID: 20200801N2

Take Off: _____ Landing: _____ Flt Dir: NIKKI Launcher S/N: _____

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
1	192 350 690	1	-0.3	1755	CFL	NWS		✓
2	192 410 845	2	-0.4	1803	"	"		✓
3	192 320 367	3	-0.1	1813				✓
4	192 410 854	4	Ø	1822				✓
5	192 350 575	1	-0.3	1838				✓
6	192 350 572	2	-0.2	1848				✓
7	194 930 169	3	-0.4	1857				✓
8	192 350 576	4	-0.2	1907				✓
9	192 411 066	1	-.3	1917	GD			✓
10	192 631 081	2	0	1926	"		NO TEMP or HUM	
11	192 631 080	3	-.2	1927				✓
12	192 411 076	4	-.2	1938				✓
13	192 631 074	1	-.1	1948				✓
14	192 631 071	2	-.2	2003				✓
15	192 410 034	3	0	2015				✓
16	192 411 080	4	.2	2027				✓
17	192 410 842	1	-.2	2037				✓
18	192 410 777	2	-.2	2052				✓
19	192 410 872	3	0	2103				✓
20	192 411 065	4	0	2110			LATE GPS	
21	192 350 686	1	-.2	2111			NO TEMP or HUM	
22	192 410 836	2	-.2	2115				✓
23	192 320 695	5	-.2	2126				✓
24	192 410 083	6	0	2132			DLVD 2200 m lost RH & TEMP	
25	193 420 268	3	-.3	2142				✓
26	192 631 077	4	0	2201	CFL			✓
27	192 350 685	1	0	2217	"			✓
28	192 410 841	2	0	2230				✓
29	192 410 853	3	-.2	2242				✓
30	192 410 778	4	-.5	2254				✓
31	192 350 689	1	-.1	2305				

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
32	192 320 368	2	-.3	2316				✓
33	192 631 085	3	-.2	2325				✓
34	192 410 846	4	-.2	2337				✓
35	192 410 012	1	-.3	2346				✓
36	192 410 855	2	-.3	2357				✓
37	192 410 776	3	-.2	0006				✓
38	192 631 084	4	-.2	0017				
~~39~~	~~192 410 843~~	~~1~~	~~-.2~~					
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)

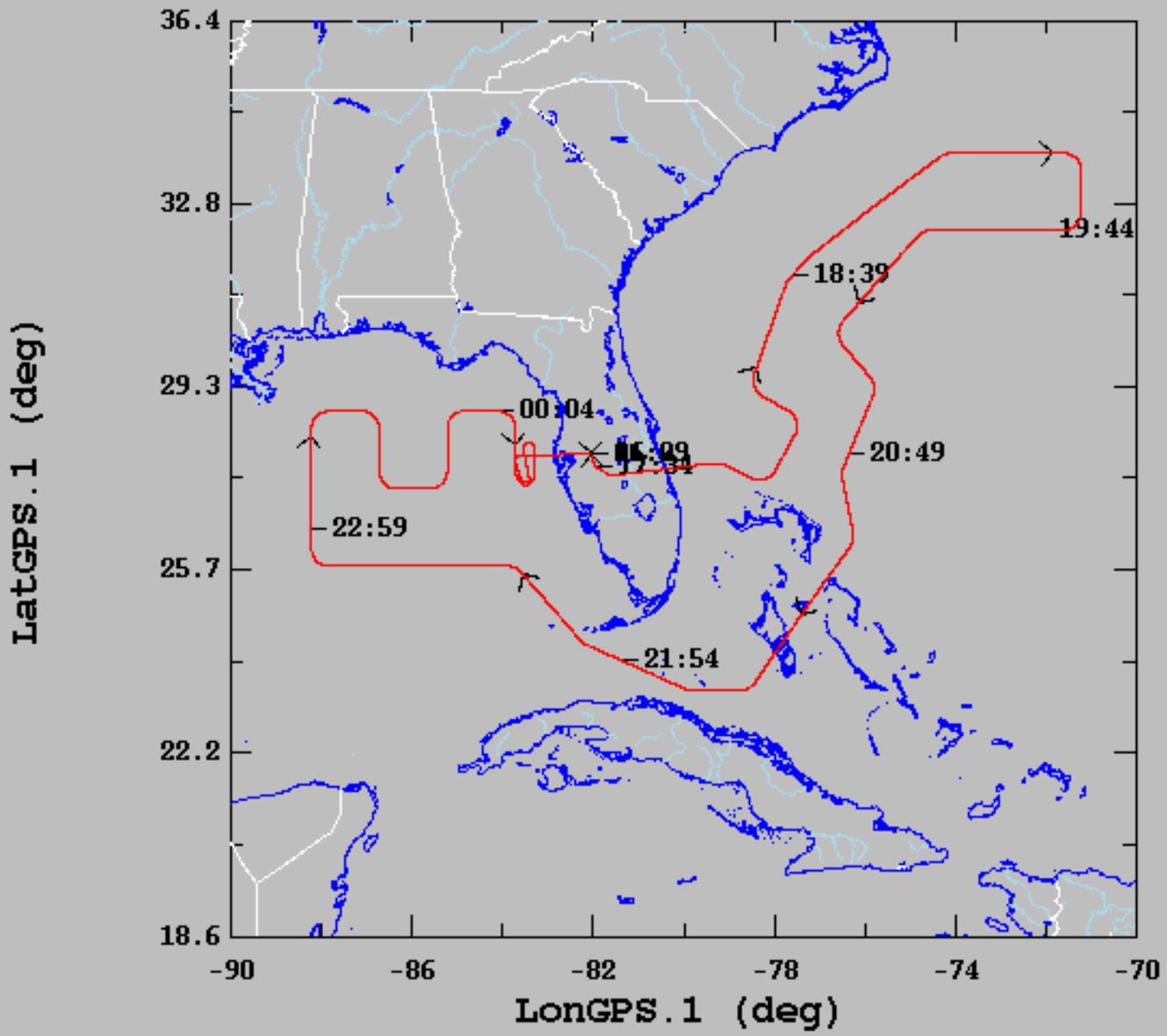
AVAPS Pre-Flight Check:

- 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

2020-08-01, 16:29:53-25:09:18



	mean	sigma	min	max
LatGPS.1 (deg), 1 s/sec	28.35	2.64	23.38	33.80
LonGPS.1 (deg), 1 s/sec	-80.31	4.56	-88.20	-71.20