N49RF ERROR SUMMARY
20200731N1

Flight ID: 20200731N1

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/20200731N1

Local Met Data	Takeoff KLAL (1729Z)	Landing KLAL (0134Z)
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		6.56381

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	36	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:	20200731N1	FLT #:	
From:	KLAL	ETD:	1330L/1730Z
To:	KLAL	ETA:	2130 L/1302

Block Time		Flight Time	
In:	0142Z	Land:	0133Z
Out:	1723Z	T/O:	1729Z
Total:	8.3	Total:	8.1

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	1	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 0809A Isaias

OBSERVATIONS

Fix Number	Obs Number	Fix Time	SLP

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

Gmax: Gmin:

*Highlighted items must be completed before departure.

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

G-IV QC Checklist

Flight ID:	20200731N1
Flight Director(s):	Hathaway/Henning
UWZ.d mean:	0.13

Pressure Comparison		
	T/O	Land
Aircraft	1012.9	1011.3
Tower	1012.0	1011.4

	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	☑ 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.

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 and TDM.2 were unrepresentative for the entire mission.

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: 20200731N1 ASPEN Operator/Flight Director(s): HENNING/HATHAWAY

Mission ID: 0809A Storm Name/Track: ISAIAS

PG ___ of ___

Bad FLW = Flight level 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	HEIGHTS 500	SFC WIND	KWBC #	Sonde Issues?
									Comments / Issues / QC / ASPEN Edits				
1	1	1808	0792	1	30.4	80.9	SCT	1015.1	11021	5930	195/08	1834	
2	2	1822	0230	2	30.9	79.4	SCT	1014.7	11022	5926	235/14	1842	FLW
3	3	1833	0028	3	31.0	78.0	SCT	1014.6	11018	5921	235/14	1854	
4	4	1844	0242	4	31.0	76.5	SCT	1016.3	11030	5931	235/15	1921	
5	5	1856	0243	1	31.0	75.0	SCT	1015.9	11021	5918	250/9	1925	
6	6	1907	0241	2	31.0	73.5	SCT	1017.6	11037	5933	245/11	1936	F
7	7	1917	0508	3	30.9	72.1	SCT	1016.8	11027	5927	220/15	1959	
8	8	1931	0935	4	29.3	72.1	SCT	1018.3	11044	5934	150/8	2007	
G 9	9	1942	0217	1	29.2	73.5	SCT	1017.8	11038	5931	245/4	2011	
10	10	1953	0233	2	29.2	75.0	SCT	1016.8	11024	5919	160/10	2023	
G 11	11	2004	0607	3	29.2	76.5	SCT	1016.1	11021	5918	195/3	2032	
12	12	2015	0287	4	29.2	78.0	SCT	1015.2	11006	5916	320/3	2036	
G 13	13	2025	1051	1	29.1	79.3	SCT	1015.4	11009	5922	325/2	2103	
14	14	2039	0210	2	27.5	78.8	SCT	1015.4	11000	5915	090/9	2107	
16 15	15	2052	1075	3	26.1	78.3	SCT	1014.1	11019		065/23	2147	
17 16	16	2102	0181	4	27.2	77.2	UCST	1015.7	11024		065/18	2152	
17	17	2112	0246	1	27.6	75.8	↓	1015.6	11035		085/13	2156	
19 18	18	2126	0180	2	27.0	74.0	↓	1015.4	11049		075/17	2159	
~~20~~	~~19~~	2139	—	3	LD	LD	—	—	—		37K		
Backup 20	20	2140	0637	4	26.8	72.0	CDO	1016.6	11040		075/15	2203	
21	21	2151	0295	1	26.0	73.0	CDO	1015.0			115/17		
22 22	22	2202	0170	2	25.8	73.0	CDO	1014.6			090/17	2236	
G 23	23	2216	0285	3	24.5	73.8	CDO	1012.9			100/25	2246	FLW
24	24	2225	0292	4	25.3	74.7	CDO	1013.9			090/20	2259	
25 25	25	2236	0614	1	25.5	76.0	CDO	1013.4			075/20	2307	
26 26	26	2247	1110	2	24.5	76.8	CDO	1011.7			065/29	2318	
27 27	27	2300	~~0288~~	3	~~24.0~~	~~75.4~~	~~CDO~~	~~1011.1~~	LATE LD		100/43	2343	
28 28	28	2307	0012	4	23.6	74.6	CDO	—	DIED at 980 mb		—	2356	
29 29	29	2317	0291	1	23.0	73.5	CDO	1012.1			090/26	0003	
30 30	30	2334	0007	2	21.5	73.7	CDO	—	DIED at 920 mb		—		
G 31	31	2348	0152	3	21.9	75.5	CDO	1007.1			210/20	0021	
32	32	0000	0411	4	22.3	77.0	B&N	1007.9			020/19	0025	
33	33	0009	1123	1	23.0	78.0	SCT	1010.6			065/31	0030	
34 34	34	0021	0009	2	23.5	79.5	SCT	1011.0			080/23	0041	
35 35	35	0034	0059	3	24.4	81.0	SCT	1013.4			085/17	0055	
LAST 36	36	0047	0020	4	25.1	82.4	SCT	1014.2	LAST				
	37												
	38												

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

Obs Xmitted | Obs Missed | # of sondes launched | # of bad sondes

COMMENTS:

N

AVAPS Drop Log

Project: HURR 20 Mission: ISAIAS Flight ID: 20200731N1

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

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
1	195 120 792	1	0	1808	CFL	NWS		✓
2	195 030 230	2	0	1822	"	"		✓
3	195 020 028	3	0	1833	"	"		✓
4	195 030 242	4	0	1844				✓
5	195 030 243	1	0	1855				✓
6	195 030 241	2	0	1907	GD			✓
7	195 050 058	3	-.5	1917	"			✓
8	193 430 935	4	0	1931				✓
9	195 030 217	1	-.4	1942				✓
10	195 030 233	2	-.2	1953				✓
11	195 110 607	3	-.5	2004				✓
12	195 040 287	4	-.4	2015				✓
13	195 021 051	1	0	2004				✓
14	194 930 210	2	0	2040	CFL			✓
15	192 411 075	3	0	2052	"			✓
16	194 930 181	4	0	2102				✓
17	195 030 246	1	0	2112				✓
18	194 930 180	2	0	2126				✓
19	194 830 153	3	0	2139			~~NO~~ GD VERY LATE 225 MB	
19B 20	192 350 637	4	0	2140				✓
20 ~~21~~	192 046 295	1	0.2	2151				✓
21 ~~22~~	194 930 170	2	-0.3	2202				✓
22 ~~23~~	192 040 285	3	0.3	2216				✓
24	192 040 292	4		2225				✓
25	192 350 614	1		2236	GD			✓
26	192 521 110	2	0	2247	"			✓
27	192 040 288	3	0	2300	"			✓
28	190 220 012	4	.2	2307	"		LATE LAUNCH	
29	192 040 291	1	.3	2317				✓
30	190 220 007	2	.2	2334				✓
30 ~~31~~	194 830 152	3	.2	2348				✓

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
31 ~~32~~	192 040 411	4	.2	0000	I	NWS		✓
32 ~~33~~	192 521 123	1		0009	CAL			✓
~~34~~	190 220 009	2	Ø	0021				✓
~~35~~	192 410 059	3	Ø	0035				✓
35 ~~36~~	194 830 020	4	.2					✓
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)

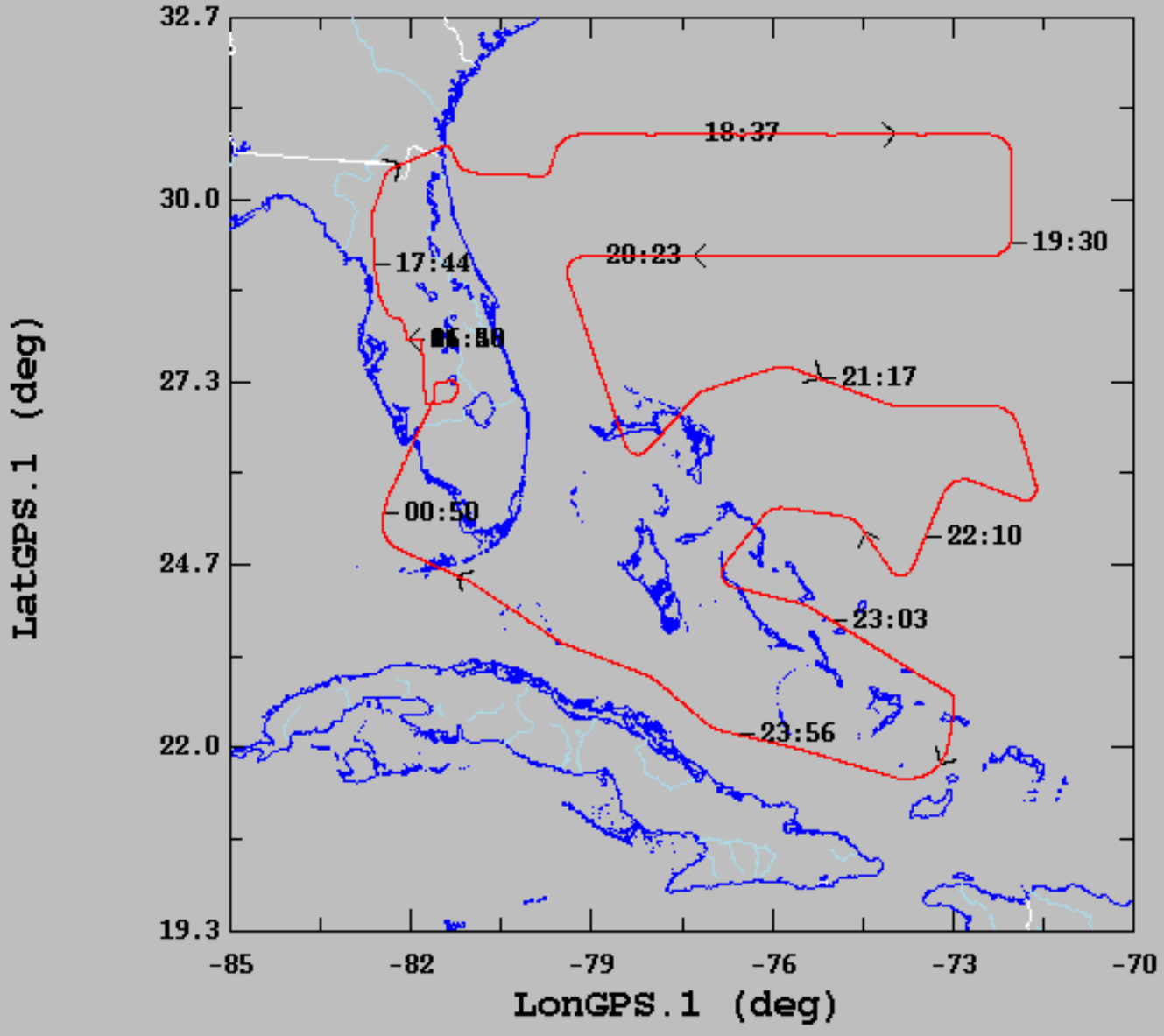
AVAPS Pre-Flight Check:

- 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

2020-07-31, 16:50:49-25:43:27



	mean	sigma	min	max
LatGPS.1 (deg), 1 s/sec	27.05	2.73	21.49	31.00
LonGPS.1 (deg), 1 s/sec	-77.40	3.51	-82.64	-71.60