N49RF ERROR SUMMARY
Hurricane Michael Mission 0514A

Flight ID: 20181008N1

Sensor or System	Number or Name
Static Pressure Probe	PSM.1
Dynamic Pressure Probe	PQM.1
Total Temperature Probe	TTM.1
Dewpoint Temp. Probe	TDM.1
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/2018/MET/20181008N1

Local Met Data	Takeoff KLAL (1739Z)	Landing KLAL (0144Z)
Dynamic Corrections		Yes
AttackAngleIntercept		3.97801
AttackAngleSlope		3.86172
SlipAngleIntercept		1.258
SlipAngleSlope		6.69941
AttackAngleIntercept2		5.04641
AttackAngleSlope2		5.41847
SlipAngleIntercept2		0.905
SlipAngleSlope2		6.78464

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.

Flight Level winds and dew point suspect. PSM.2 inop (PSM.1 used in post processing as reference).

Expendable Type	# deployed	# good	# transmitted
Dropsondes	47	38	38
Test sondes	0	0	0
AXBTs	0	0	0
AXCPs	0	0	0
AXCTDs	0	0	0
UAS	0	0	0

Flight Director: Henning
Phone #: (863) 500-3982 ACAT-4 Version = 7.2.2

U.S. Dep't. of Commerce / OMAO / NOAA / Aircraft Operations Center

FLT ID: 20181008N1	From: KLAL	To: KLAL
FLT #:	Blk In: 0150 Z	Lnd Time: 0144 Z
ETD: 1730 Z	Blk Out: 1731 Z	T/O Time: 1739 Z
ETE: 8+15	Total Blk:	Total Flt: 8.1
Sponsoring Org: NHC	Program: PHC	Purpose: 5 MICHAEL SS

1730
8

AOC Flight Crew

Aircraft Commander: COWAN	SSA: DEFEO
Co-Pilot: FRITZLER	AVAPS: Delgado / Warnecke
Navigator: /	Scientists:
Flight Eng: /	Scientists
Flt Director: HENNING PARRISH	Scientists
SEB: PATEL /	Scientists:
Crew Chief:	Visitors: / /

	A/C - Takeoff	Wx Station - Takeoff	A/C - Land	Wx Station - Land
PSM 1 Pressure	1009.0	1010.3 29.98 +29C	1008.5	1009.9 29.97 +26 C

AS REQUIRED BY ORM	YES / NO	REMARKS
VOLCANIC ASH		
SCIENCE MISSION WITHIN BOUNDARY LAYER		
LACK OF PRECIPITATION		
RELATIVE HUMIDITY AT OR ABOVE 80%		
LARGE AIR-SEA TEMPERATURE GRADIENT		
HIGH SURFACE WINDS		
LONG FETCH AND/OR DURATION OF SFC WIND		
SEA SALT ACCRETION FORECAST		
SEA SALT ACCRETION OBSERVED		

Dropsondes	47	Good: 38	Bad: 9	Sent: 38
AXBT		Good:	Bad:	Sent:

List other data sources in Remarks section

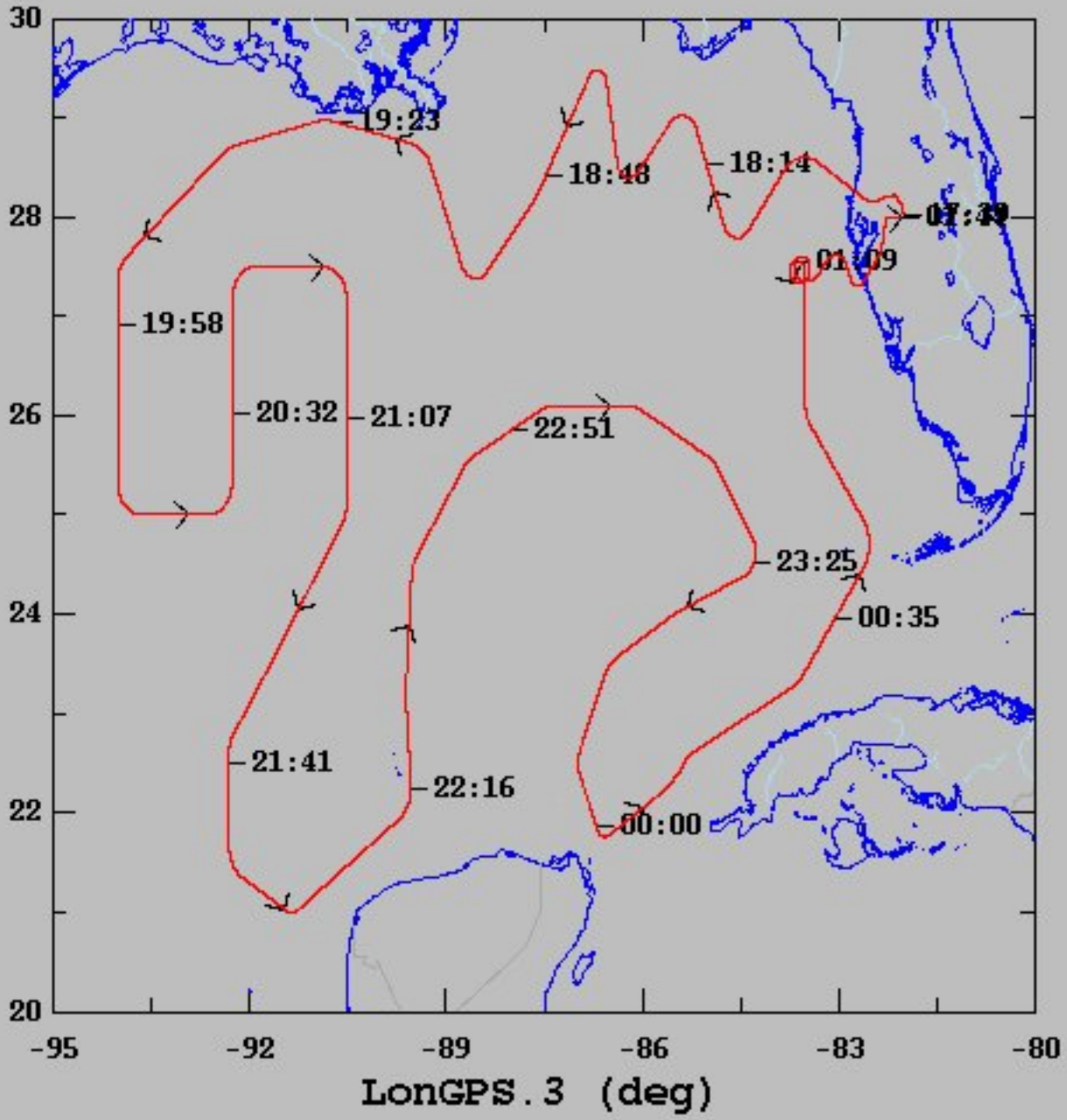
Remarks (Storm VDM Identifier, Mission ID, Fix Times)	Fix #	VDM Ob Num	Fix Time / SLP
Storm Number Identifier (VDM): (ie: AL072012)			
TCPOD/WSPOD Mission ID: 0514A MICHAEL (ie: NOAA2 2418A SANDY)			

Remarks:

#291505

PSM #2 INOP

10/08/2018, 17:39:40-25:44:18



APPENDIX 2 – GIV QC Checklist

PSM #1 (#2 INOP)

Flight ID:	20181008N1
Flight Director(s):	HENNING / PARRISH

UWZ.d mean: ~~+0.04~~ −3.10 from RAW A.nc file; +0.04 after post processing

Pressure Comparison	T/O	Land
Aircraft	1009.0	1008.5
Tower	1010.3	1009.9

	Raw 1Hz Mean File Parameters				C File Parameters	
X Accelerometer	AccAXI.1	AccAYI.1	AccAZI.1		AccZref	
	AccAXI.2	AccAYI.2	AccAZI.2			
	AccAXI.3	AccAYI.3	AccAZI.3			
X Altitude	AltGPS.1	AltI.1	AltPaADDU.1	AltBCADDU.1	ALTref	
	AltGPS.2	AltI.2	AltPaADDU.2	AltBCADDU.2	ALTPA.d	
	AltGPS.3	AltI.3	AltRA.1		ALTGA.d	
X Ground Speed	GsXI-GPS.1	GsXI.1	GsGPS.1	GsXGPS.1	GSXref	
	GsXI-GPS.2	GsXI.2	GsGPS.2	GsXGPS.2	GSYref	
	GsYI-GPS.1	GsXI.3		GsYGPS.1	GSZref	
	GsYI-GPS.2	GsYI.1	GsZI.1	GsYGPS.2		
	GsZI-GPS.1	GsYI.2	GsZI.2	GsZGPS.1		
	GsZI-GPS.2	GsYI.3	GsZI.3	GsZGPS.2		
X Lat/Lon	LatGPS.1	LatI.1	LonGPS.1	LonI.1	LATref	
	LatGPS.2	LatI.2	LonGPS.2	LonI.2	LONref	
	LatGPS.3		LonGPS.3			
X 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	PQM.11	PSM.11	PQALPHAref	PSMref
	PDBETA.2	PQBETA.2			PQBETAref	PS.c
X Air Speed	CasADDU.1	TasADDU.1	IasADDU.1		IAS.d	TAS.d
X 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		
X Temp/Dewpt	TTM.1	TTM.11	TDM.1		TD.c	TTMref
	TTM.2	TTM.13	TDM.2		TDMref	TA.d
	TTM.3	TTM.4	TDM.11			
X Miscellaneous (must check)					UWZ.d	WS.d
					DPJ_WSZ	WD.d
					HUM	

PSM.2 INOP

Mission Documents:

X	Error Summary
X	Crew Manifest
X	QC checklist
X	Dropwindsonde Log(s) – AVAPS and FD if completed
	Miscellaneous FD notes

NOTES: Selecting PDAlph.2 in post processing removes the very large negative bias in vertical winds seen in ~~RAW~~ A.nc file coming off plane.

N49RF AOC GPS Dropwindsonde Log (updated 9/2017)

Flight ID: 20181008N1 Flight Director(s): Henning / Parrish

Mission ID: 05WA NOAA9 Storm Name/Track: Michael PG 1 of 2

Sonde #	Obs #	Sonde ID (Last 5)	Drop Time (UTC)	Ch #	Lat (°N)	Lon (°E)	Wx Cond.	SFC Prs (mb)	Comments / Issues / ASPEN Edits (wd/ws(m/s))	KWBC #	Bad Sonde?
1	1	10554	175637	1	28.5	83.6	low cirrus	1013.9	~~8815~~ 85/24	081813	
2	2	21001	180732	2	27.8	84.6	Above Ci	1011.6	070/17	081825	
3	3	30901	181928	3	29.0	85.4	"	1012.9	095/27	081339	
4	4	21003	182852	4	28.4	86.3	"	1012.6	72/13.7	081848	
5	5	20158	183816	1	29.5	86.7	"	1013	98/15	081857	
6	6	20796	185106	2	28.2	87.6	Sct	1010.7	102/11.8	081910	
7	7	21004	190137	3	27.4	88.6	Sct	1009.9	86/10.2	081920	
8 (not sent)	~~8~~	20998	191?3	4	-		Bad Bad		Bad - Bad - Bad		Bad
9	8	20157	191414	1	28.7	89.4	Sct blw	1010.9	78.5/9.0	081934	
10	9	30906	192601	2	29	91	"	1010.6	92/10.8 RI noisy mid-lvl	081946	
11	10	20162	193609	3	28.7	92.3	"	1010.2	82/8.9	081954	
12	11	30262	195316	4	27.5	94.0	"	1008.3	91/7.5	082012	
13	12	20158	200422	1	26.2	94.0	"	1007.8	105/4.8	082023	
14	13	21000	~~201418~~	2	25.1	93.9	"	1006.8	102/9.5	082032	
15	14	10549	202534	3	25.1	92.3	"	1007.2	77/8.7	082044	
16	15	10068	203421	4	26.2	92.2	"	1007.6	88/7.8	082053	
17	16	20158	204647	1	27.5	91.8	"	1008.8	89/9.1	082106	
18	17	21002	205538	2	27.4	90.6	"	1008.0	77/9.5	082114	
19	~~18~~	10794	210538	3	BAD		Disp Pt	18	missed Same prob - RH hung up high		Bad
20	~~19~~	20803	210609	4	BAD						Bad
21	18	10550	211550	1	24.9	90.5	"	1006.4	76/8.7 No sfc RH	082135	
22	/	21002	212925	2	BAD		Disp Pt	20	missed. BAD		Bad
23	/	10503	212925	3	BAD				BAD		Bad
24	19	40089	214024	4	22.7	92.3	"	1001.5	36/6.4	082159	
25	20	10550	215110	1	21.5	92.2	"	1005.3	35/2.3	082210	
26	21	10067	220136	2	21.2	91.0	"	1004.9	325/2.8	082221	
27	/	21011	221530	3	BAD	BAD	→		BAD		Bad
28	22	21007	221557	4	22.2	89.5	"	1003.8	12.8/3.6	082235	
29	23	40088	222449	1	23.2	89.6	"	1004.5	81.2/8.5	082244	
30	24	20999	223536	2	24.5	89.5	"	1005.5	66/10.3	082254	
31	25	40091	224606	3	25.6	88.6	BKN Blw	1006.2	90/10.7	082305	
32	/	10730	225553	4	BAD	BAD		BAD			BAD
33	26	20716	225622	1	26.1	87.3	"	1006.5	87/11.6	082316	
34	/	40428	230536	2	BAD	BAD		BAD			BAD
35	27	30259	230558	3	26.1	86.0	In the CDO	1007.2	96/16.4	082325	
36	/	20793	231542	4	BAD	BAD	↓		BAD		BAD
37	28	40282	232656	1	24.4	84.4		1003.7	99/18.4	082346	
38	29	40087	233645	2	24	85.5	"	1000.2	~~1005~~ 69/22.9	082357	

COMMENTS:

23197 22.57 85.24

N49RF AOC GPS Dropwindsonde Log (updated 9/2017)

Flight ID: 20181008N1 Flight Director(s): Henning/Parrish

Mission ID: 0514A 20AA9 Storm Name/Track: Michael PG 2 of 2

Sonde #	Obs #	Sonde ID (Last 5)	Drop Time (UTC)	Ch #	Lat (°N)	Lon (°E)	Wx Cond.	SFC Prs (mb)	Comments / Issues / ASPEN Edits	KWBC #	Bad Sonde?
1	30	30028	234832	3	23.5	86.5	Night	999.6	45/20.7	090004	
2	31	20793	235447	4	22.5	86.9	"	1000.4	348/12	090016	
3	32	40260	000244	1	21.8	86.5		1000.5	285/8.7	090022	
~~4~~	33	30634	001317	2	22.5	85.4	"	999.5	229/35.8	090033	
5	34	21010	001948	3	22.9	84.6		—	Not reach sfc 830 mb	090040	
6	35	30261	002840	4	23.3	83.6	"	1003.6	~~36.7/8.9~~ No sfc wind	090056	
7	36	40260	004300	1	24.8	82.5	"	1008.5	100.4/16.6	090104	
8	37	21013	005613	2	26.0	83.5	"	1009	97/5	090116	
Last 9	38	40119	010812	3	27.5	83.5	"	1011.9	75/11.4	090127	Last
10											
11											
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COMMENTS:

NOAA • AOC • SED

N49RF AVAPS DROP LOG Lead Tech: Gabe Defeo

Project: Hurricane 2018 Mission: Hurricane Michael Flight ID: 20181008N1

Take Off: 1737Z Landing: _____ Flt Dir: Henning/Parrish Launcher S/N: 002

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
1	182310554	1	Ø	1756	JW	NWS		✓
2	181840257	2	-.3	1807				✓
3	181930901	3	Ø	1819				✓
4	181921003	4	-.7	1828				✓
5	181920158	1	Ø	1838				✓
6	181920796	2	Ø	1851				✓
7	181921004	3	Ø	1901				✓
8	181920998	4	Ø	1913		SONDE	WIRE FAILURE LOST PTH	X
9	181920157	1	Ø	1914				✓
10	181930906	2	Ø	1926				✓
11	181920162	3	Ø	1936				✓
12	182430262	4	Ø	1953		TRH	ONLY	✓
13	181920802	1	Ø	2004				✓
14	181921000	2	Ø	2014				✓
15	182310549	3	Ø	2025				✓
16	182010068	4	Ø	2034				✓
17	182240427	1	Ø	2046				✓
18	182010732	2	Ø	2055				✓
19	181920794	3	Ø	2105		WIRE FAIL	LOST PTH	X
20	181920803	4	Ø	2106	WIRE FAIL		LOST PTH	X
21	182310550	1	Ø	2115				✓
22	182310560	2	Ø	2129	WIRE FAIL		LOST PTH	X
23	182310503	3	Ø	2129	WIRE FAIL		LOST PTH	X
24	182440089	4	Ø	2140				✓
25	182440090	1	Ø	2151				✓
26	182010067	2	Ø	2201				✓
27	181921011	3	Ø	2215	WIRE fail		LOST PTH	X
28	181921007	4	Ø	2215				✓
29	182440088	1	Ø	2224				✓
30	181920999	2	Ø	2235				✓
31	182440091	3	Ø	2246				✓
32	182010730	4	Ø	2255	WIRE FAIL		LOST PTH	X
33	181920716	1	Ø	2256				✓
34	182240428	2	Ø	2305	WIRE FAIL		LOST PTH	X

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
35	182430259	3	Ø	2305	JW	NWS		✓
36	181920793	4	Ø	2315	WIRE	FAIL	LOST PTH	X
37	182240282	1	Ø	2326				✓
38	182440087	2	Ø	2336				✓
39	181930028	3	Ø	2345				✓
40	182310551	4	Ø	2354				✓
41	181840260	1	Ø	0062				✓
42	182330634	2	Ø	0013				✓
43	181921010	3	Ø	0019				✓
44	182430261	4	Ø	0028				✓
45	181921001	1	Ø	0043				✓
46	181921013	2	Ø	0056				✓
47	182340119	3	Ø	0108				
48								
49								
50	Note: ALL sondes wrapped w/ Tape on clamshell							
51	Red PWR pin oriented FWD in launch tube							
52								
53								

Drop Station Operator Notes

Charge $$ To Options: AOC, NWS, HFIP, HRD, IR/SST, SAT (Special NESDIS/HRD sondes) or HRD ONLY– Do not use funding codes!

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 - W53rd, Band B - Research, Band C - N43RF, Band D - N49RF, Band E – Global Hawk
- 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 at R1 and L1, then terminate the sonde by selecting **NoDrop** to cancel the sonde initialization. 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
- Select "begin data collection" and verify good data with winds prior to putting sonde in launch tube
- 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 the sonde in the launch tube, sensor arm up, with the power pin socket facing starboard
- Verify the sonde is actively tracking GPS data prior to launch and no early launch detect