N42RF ERROR SUMMARY
20241009H1

Flight ID: 20241009H1

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	AccZfilterI-GPS.1
Altimeter	AltGPS.3
INE Selection	1
Differential Attack Pressure Probe	PDALPHA.1
Differential Sideslip Pressure Probe	PDBETA.1
Dynamic Attack Pressure Probe	PQALPHA.1
Dynamic Sideslip Pressure Probe	PQBETA.1

Flight Directory acdata/2024/MET/20241009H1

Local Met Data Takeoff KMOB (2034Z) Landing KMOB (0136Z)

Dynamic Corrections	Yes
AttackAngleIntercept	2.32804
AttackAngleSlope	6.09319
SlipAngleIntercept	0.25
SlipAngleSlope	6.641
AttackAngleIntercept2	2.06219
AttackAngleSlope2	5.99068
SlipAngleIntercept2	0.125
SlipAngleSlope2	6.9873

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.

Appears to be an issue with GPS.1 since those altitudes, latitudes, and longitudes were obviously different from GPS.2, .3, and .4 (all of which measured identically). As such, all values using GPS.1 should not be used; instead use .2, .3, or .4. Affected measurements include some reference values, including the LATref, LONref, GSXref, GSYref, GSZref, and AccZref

Two TDM.1 spikes in storm (2152-2159 UTC and 2201-2208 UTC), but they don't affect any other variables; additional spread in TDM.1 (against TDM.2) during the transits at higher altitudes

SFMR TB, WS SFMR, and RAIN RATE SFMR data should be used with caution as additional assessment occurs

Expendable Type	# deployed	# good	# transmitted
Dropsondes	16	16	15
Test sondes	0	0	0
AXBTs	2	2	0
AXCPs	0	0	0
AXCTDs	0	0	0
UAS	1	1	0

Flight Director: Zawislak
Phone #: 305-707-4359

ACAT-4 Version = 7.4

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

FLIGHT INFORMATION

FLT ID:	20241009H1	FLT #:	FY25-
From:	KMOB	ETD:	1500L / 2000Z
To:	KMOB	ETA:	2200L / 0200Z
Block Time		Flight Time	
Out:	20:27	T/O:	20:34
In:	01:44	Land:	01:36
Total:	5.3	Total:	5.0
Sponsoring Org:	NHC		
Program:	PRX		
Purpose:	TDR Mission + sUAS + CHAOS + TC Landfall		

CREW MANIFEST

AC:	Wood	Other Crew:
CP(s):	Keith	Kethryn Sellwood (HRD)
	Ellis	Zorana Jelenak (NESDIS)
NAV(s):	Meier	Joe Sapp (NESDIS)
FE(s):	Tyson	Mikal Montgomery (NWS)
	Wysinger	Jack Elston (Black Swift)
FD(s):	Zawislak	James Seibert (AOC)
	de Solo	
SSA:	McAlister	
IFT(s):	Dykeman	
	Keller	
MX:		

MISSION INFORMATION

sUAS		Dropsondes		
Type	Released	Good	Bad	Sent
Black Swift	1	16	0	15

Other Expendables		Dropsonde Charge Codes
Type	Released	11 NWS, 3 HRD, 2 GOMO
ASWD	2	

AXBTs		
Good	Bad	Sent
2	0	2

Pennies	2 x CAT 3
Storm ID: (i.e., AL072012)	AL142024
Mission ID: (i.e., NOAA2 2418A SANDY)	NOAA2 2114A MILTON

AS REQUIRED BY ORM

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

REMARKS

all UM AXBTs

de Solo and Seibert first pennies

OBSERVATIONS

Fix Number	Obs Number	Fix Time	SLP
1	OB04	22:06:00 27.03N, 83.15W	953 mb 165 / 15 kt
2			
3			
4			

*Highlighted items must be completed before departure.

P-3 QC Checklist

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

Flight ID:	20241009H1
Flight Director(s):	Zawislak
Mission:	Tasked/Operational
UWZ.d mean:	0.01

Pressure Comparison		
	Pre-flight	Post-flight
Aircraft	1002.2	Not reported
Airfield	1002.9	1004.3

This form uses:
_A.nc

SFMR Serial Unit	3

Parameters	Raw				Derived, Corrected & Reference	
✓ Acceleration	✓ AccAXI.1	✓ AccAYI.1	✓ AccAZI.1	X AccZfilter-GPS.1	X AccZref	
	✓ AccAXI.2	✓ AccAYI.2	✓ AccAZI.2	✓ AccZfilter-GPS.2		
	X AccAXI-GPS.1	X AccAYI-GPS.1	X AccAZI-GPS.1			
	✓ AccAXI-GPS.2	✓ AccAYI-GPS.2	✓ AccAZI-GPS.2			
✓ Altitude	X AltGPS.1	X AltI-GPS.1	✓ AltPaADDU.1	✓ AltRA.1	✓ ALTref	✓ AltRA1.c
	✓ AltGPS.2	✓ AltI-GPS.2	✓ AltBCADDU.1	✓ AltRA.2	✓ ALTPA.d	✓ AltRA2.c
	✓ AltGPS.3				✓ ALTGA.d	
	✓ AltGPS.4					
✓ Ground Speed	X GsXI-GPS.1	X GsYI-GPS.1	X GsZI-GPS.1		X GSXref	
	✓ GsXI-GPS.2	✓ GsYI-GPS.2	✓ GsZI-GPS.2		X GSYref	
					X GSZref	
✓ Location	X LatGPS.1	X LatI-GPS.1	X LonGPS.1	X LonI-GPS.1	X LATref	
	✓ LatGPS.2	✓ LatI-GPS.2	✓ LonGPS.2	✓ LonI-GPS.2	X LONref	
	✓ LatGPS.3		✓ LonGPS.3			
	✓ LatGPS.4		✓ LonGPS.4			
✓ Pressure Sensors	✓ PDALPHA.1	✓ PQALPHA.1	✓ PQM.1	✓ PSM.1	✓ PQMref	
	✓ PDALPHA.2	✓ PQBETA.1	✓ PQM.2	✓ PSM.2	✓ PQ.c	
	✓ PDBETA.1		✓ PQM.3	✓ PTM.1	✓ PSMref	
	✓ PDBETA.2		✓ PQM.4		✓ PS.c	
✓ Air Speed	✓ CasADDU.1	✓ TasADDU.1	✓ IasADDU.1		✓ IAS.d	✓ TAS.d
✓ Pitch / Roll	✓ PitchI.1	✓ PitchRateI.1	✓ RollI.1	✓ RollRateI.1	✓ PITCHref	
	✓ PitchI.2	✓ PitchRateI.2	✓ RollI.2	✓ RollRateI.2	✓ ROLLref	
	inop PitchI.3	inop PitchRateI.3	inop RollI.3	inop RollRateI.3		
✓ Temperature, Dewpoint, Radiometers	✓ TTM.1	X TDM.1	✓ TRadD.1		✓ TD.c	✓ TTMref
	✓ TTM.2	✓ TDM.2	✓ TRadS.1		✓ TDMref	✓ TA.d
	inop TTM.3	inop TDM.3	inop TRadU.1		✓ HUM	
✓ Wind and Pressure		X CH 1 TB	X CH 4 TB		✓ UWZ.d	✓ WS.d
X SFMR	SFMR	X CH 2 TB	X CH 5 TB		✓ PSURF	✓ WD.d
		X CH 3 TB	X CH 6 TB		X WS SFMR	X RAIN RATE SFMR

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

QC Key:	
Valid	✓
Errors (see NOTES)	X
Sensor Inoperative	inop

NOTES:

Appears to be an issue with GPS.1 since those altitudes, latitudes, and longitudes were obviously different from GPS.2, .3, and .4 (all of which measured identically)

As such, all values using GPS.1 should not be used; instead use .2, .3, or .4. Affected measurements include some reference values, including the LATref, LONref, GSXref, GSYref, GSZref, and AccZref

Two TDM.1 spikes in storm (2152-2159 UTC and 2201-2208 UTC), but they don't affect any other variables; additional spread in TDM.1 (against TDM.2) during the transits at higher altitudes

SFMR TB, WS SFMR, and RAIN RATE SFMR data should be used with caution as additional assessment occurs

AVAPS Drop Log

Project: Hurricane 2024 Mission: HX Milton Flight ID: 20241009H1

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

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
1	23354132 7	1	-0.4	2140	BRD	NWS	IP1	✓
2	234220963	2	-0.6	2152	BRD	NWS	MP1 1	✓
3	233640112	3	-0.3	2206	BRD	NWS	CP1 BT (combo)	✓
4	233640826	4	-0.4	2220	BRD	NWS	MP0 1	✓
5	234220164	5	-0.6	2235	BRD	NWS	EP1	✓
6	234220155	6	-0.5	2250	RK	NWS	IP2	✓
7	234220160	7	-0.6	2257	RK	HRD	INT 1	✓
8	233950703	8	-0.5	2304	RK	HRD	MP2-1/drifter	✓
9	234220229	1	-0.5	2312	RK	NWS	int	✓
10	234150036	2	-0.6	2320	RK	NWS	combo	✓
11	234220231	3	-0.5	2328	RK	NWS	Int	✓
12	234920771	4	-0.7	2337	RK	HRD	Int	✓
13	233631969	5	-0.4	2344	RK	NWS	EP3	✓
14	234220168	6	-1.0	2356	RK	Combo	Drifter Drop 1	✓
15	233824551	7	-0.2	2356	RK	Combo	Drifter Drop 2	✓
16	233814011	8	-0.4	0011	RK	NWS	Convection End	✓
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								

2nd drifter - 64139600

Dropwindsonde Scientist Log

Storm:	MILTON	**Flight ID:**	20241009H1	**Mission ID:**	2114A	**Takeoff:**	2034Z	**Landing:**	0136Z

Dropsonde Scientist(s):	Dahl	**AVAPS Operator:**	Dykeman/Keller

Pre-flight

✓ Discuss the pattern with the Lead Project Scientist (LPS) and ensure that enough dropsondes are onboard.
✓ Complete the appropriate pre-flight set-up of your workstation and ASPEN (see Dropsonde Processing Guide).

In-flight

✓ Ensure the Flight Director is aware of upcoming drops and whether a backup is requested in case of failure.
✓ Ensure the AVAPS operator has determined that the dropsonde is (or is not) transmitting a good signal.
✓ Prioritize processing of center drops and report MSLP and surface wind speed and direction to the Flight Director.
✓ Fill in the Dropwindsonde Scientist log as drops are released and processed.
✓ Copy completed ASPEN files (e.g., FRD, netCDF, Skew-t, WMO txt, BUFR) into the "FRD" folder on the workstation desktop for automated transmission to the ground for archival.

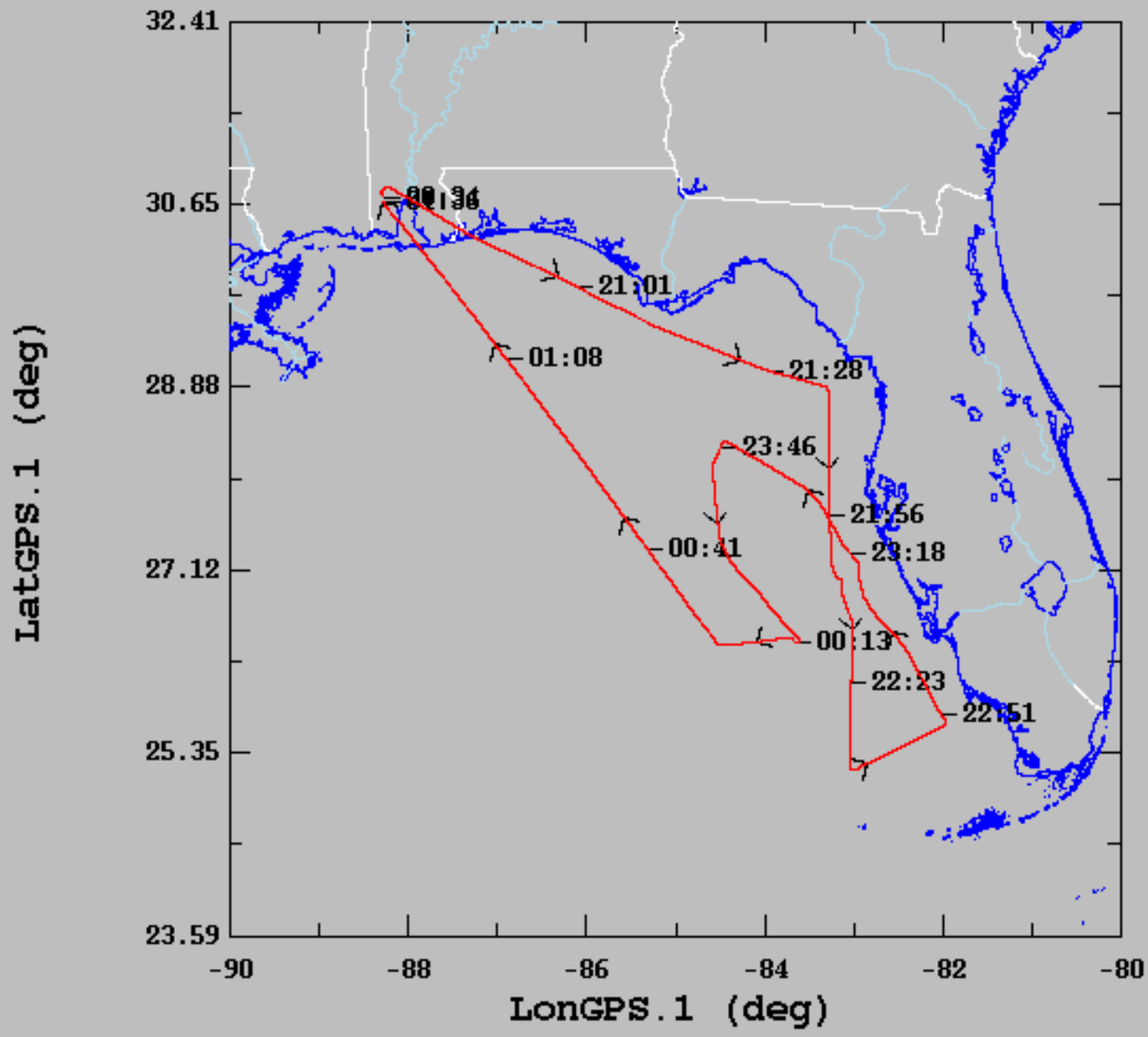
Once "science is complete"...

✓ Make synoptic map plots in ASPEN and copy them to the "FRD" folder on the workstation desktop for automated transmission to the ground for archival.
✓ Ensure ASPEN files have been sent to the ground by locating and verifying all files in the "FLIGHTID" folder within the "FRD" folder on the workstation desktop.
✓ Archive ASPEN_DATA and RAW_DATA into a folder named with the FLIGHTID within the "Season Dropsonde Archive" folder on the workstation desktop and upload the same directories into StormName/FLIGHTID/Dropsonde/ folder on Drive.
✓ Download this Dropwindsonde Scientist Log as "PDF" and upload completed PDF and Google Doc to the StormName/FLIGHTID/Dropsonde/ folder within the "Mission Reports" directory in the HFP Google Drive.

Drop #	Sonde ID	Time UTC	Lat (°N/S)	Lon (°E/W)	Sfc Pressure (mb)	Lowest Wind Direction/Speed (deg/kt)	Lowest Wind Height (m)	AXBT SST (°C)	Eye, Eyewall, Rainband, etc.	Ob #
1	233541327	214015	28.7733	-83.2677	1002	040/47	10	-		01
Comments: N IP. Post-splash warning artifact due to sat dropouts. Dropouts start cropping up about halfway down. QC performed well. Blackswift S0 sUAS turned on before sonde launch.										
2	234220963	215217	27.9171	-83.2701	988	025/72	10	-		02
Comments: N MP inbound. Fewer sat dropouts. S0 still on.										
3	233640112	220605	27.0233	-83.1413	953	165/15	10	28.5	CENTER	03
Comments: Center. BT combo. BT only gave one data point of 28.5 C. S0 deployed 2206Z. Post-splash warning artifact from sat dropouts. QC good.										
4	233640826	222007	26.2411	-83.0143	983	270/50	10	-		05
Comments: S MP outbound. Post-splash warning. Set end t = 215.25 s. Sat dropouts made QCing bottom of sonde a little sketchy, but surface data agrees with other MP. (Note: VDM OB 04)										
5	234220164	223552	25.2922	-83.0317	998	265/44	10	-		06
Comments: S EP. Set end t = 247.50 s. Updraft near surface. Less sat noise.										
6	234220155	225046	25.6947	-81.9879	995	215/49	10	-		07
Comments: Begin coastal run about 12 nmi out. SE IP. Sat noise comparable to D5. S0 splashed after this sonde, off at 2300Z.										
7	234220160	225720	26.0803	-82.2338	993	225/39	10	-		08
Comments: SE inbound intermediate 1. Sat dropouts subsided partway down sonde, seems to coincide with shutoff time of s0. Set end t = 194.75 s.										
8	233950703	230436	26.4908	-82.5382	982	230/59	10	-		09
Comments: SE MP inbound. Set end t = 184.50 s. Clean sats throughout sonde after equilibration, except for very last data point.										
9	234220229	231226	26.8787	-82.8846	959	255/42	10	-		10
Comments: SE intermediate 1 inbound. Set end t = 167.25 s.										
10	234150036	232034	27.3704	-83.1162	970	360/97	10	-		11
Comments: Intermediate drop 2 inbound. Good sonde.										

Drop #	Sonde ID	Time UTC	Lat (°N/S)	Lon (°E/W)	Sfc Pressure (mb)	Lowest Wind Direction/Speed (deg/kt)	Lowest Wind Height (m)	AXBT SST (°C)	Eye, Eyewall, Rainband, etc.	Ob #
11	234220231	232822	27.8036	-83.4164	990	360/61	10	-		12
Comments: Third Intermediate drop. Good sonde.										
12	234920771	233713	28.1075	-83.9277	998	030/49	10	-		13
Comments: NW outbound Intermediate. Set end t = 185.25 s.										
13	233631969	234411	28.3323	-84.3701	998	050/54	10	-		14
Comments: NW outbound endpoint. Good sonde.										
14	234220168	235642	27.4772	-84.4998	998	030/44	10	-		15
Comments: SW side, drifter drop 1. Good sonde.										
15	233824557	235648	27.4592	-84.4987	998	035/55	10	-		-
Comments: SW side, drifter drop 2. One sat dropout near bottom, otherwise good. Unable to transmit due to TAG timestamp bug.										
16	233814611	011158	26.4908	-83.6537	994	350/39	10	-		16
Comments: SW side. Post-splash warning, set end t = 202.25 s. End of science.										

10/09/2024, 20:34:00-25:36:12



	mean	sigma	min	max
LatGPS.1 (deg), 1 s/sec	27.93	1.53	25.18	30.81
LonGPS.1 (deg), 1 s/sec	-84.57	1.75	-88.29	-81.96