N42RF ERROR SUMMARY
20240702H1

Flight ID: 20240702H1

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/20240702H1

Local Met Data	Takeoff TISX (2206Z)	Landing TISX (0411Z)
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.

PDALPHA.2, PDBETA.2, and PQM.4 (all radome) sensors erroneous throughout the flight and should not be used
PTM.1 erroneous and should not be used
TDM.1 and TDM.2 spike in the first (23:42:26-23:46:52 UTC) and third eyewall (01:56:35-01:59:41 UTC) inbound passes, but otherwise appear reasonable
These spikes/dropouts in TDM.2 (which was TDMref) also led to dropouts in TD.c, TDMref, TA.d, HUM, TAS.d, UWZ.d, WS.d, WD.d, and PSURF
SFMR TB, WS SFMR, and RAIN RATE SFMR needs further assessment and data should be used with caution (note Unit 001 was swapped in for 002 for this flight and subsequent missions in Beryl on N42)

Expendable Type	# deployed	# good	# transmitted
Dropsondes	22	22	21
Test sondes	0	0	0
AXBTs	0	0	0
AXCPs	0	0	0
AXCTDs	0	0	0
UAS	0	0	0

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

ACAT-4 Version = 7.4

U.S. Department of Commerce / NOAA / OMAO / Aircraft Operations Center - N42RF Manifest

FLIGHT INFORMATION			
FLT ID:	20240702H1	FLT #:	FY24-
From:	TISX	ETD:	1700L / 2100Z
To:	TISX	ETA:	0100L / 0500Z
Block Time		Flight Time	
Out:	21:59	T/O:	22:06
In:	04:16	Land:	04:11
Total:	6.3	Total:	6.1
Sponsoring Org:	NHC		
Program:	PRX		
Purpose:	TDR Mission + Saildrone Overpass		

CREW MANIFEST		
AC:	Copare	Scientists:
CP(s):	Palmer	Sim Aberson (HRD)
	Ellis	Paul Chang (NESDIS)
NAV:	Utama	
FE(s):	Stokes	
	Dittoe	
FD(s):	Zawislak	
	Englert	
SSA:	McAlister	Visitors:
AVAPS:	Lynch	
SEB:		
MX:		

MISSION INFORMATION				
Pressure		Dropsondes		
A/C Takeoff	1013.3	Good	Bad	Sent
ASOS Takeoff	1012.3	22	0	21
A/C Land	-	BTs		
ASOS Land	1014.0	Good	Bad	Sent
		0	0	0
Storm Number ID: (ie: AL072012)		AL022024		
TCPOD/WSPOD Mission (ie: NOAA2 2418A SANDY)		NOAA2 1202A BERYL		

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		X

REMARKS
Saildrone 1041 overflight at 8000 ft accomplished
22 NWS sondes

OBSERVATIONS			
Fix Number	Obs Number	Fix Time	SLP
1	OB# 16.01N/71.76W	23:47:11	950 mb 215/31 kt
2	OB# 16.07N/72.08W	00:45:41	949 mb 115/19 kt
3			
4			
Pennies:	3 x CAT 4		

*Highlighted items must be completed before departure.

Remarks:

P-3 QC Checklist

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

Flight ID:	20240702H1
Flight Director(s):	Zawislak / Englert
Mission:	Tasked/Operational
UWZ.d mean:	0.20

Pressure Comparison		
	Pre-flight	Post-flight
Aircraft	1013.3	Not reported
Airfield	1012.3	1014.0

This form uses:
_B.nc

SFMR Serial Unit	1

Parameters	Raw				Derived, Corrected & Reference	
✓ Acceleration	✓ AccAXI.1	✓ AccAYI.1	✓ AccAZI.1	✓ AccZfilter-GPS.1	✓ AccZref	
	✓ AccAXI.2	✓ AccAYI.2	✓ AccAZI.2	✓ AccZfilter-GPS.2		
	✓ AccAXI-GPS.1	✓ AccAYI-GPS.1	✓ AccAZI-GPS.1			
	✓ AccAXI-GPS.2	✓ AccAYI-GPS.2	✓ AccAZI-GPS.2			
✓ Altitude	✓ AltGPS.1	✓ 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	✓ GsXI-GPS.1	✓ GsYI-GPS.1	✓ GsZI-GPS.1		✓ GSXref	
	✓ GsXI-GPS.2	✓ GsYI-GPS.2	✓ GsZI-GPS.2		✓ GSYref	
					✓ GSZref	
✓ Location	✓ LatGPS.1	✓ LatI-GPS.1	✓ LonGPS.1	✓ LonI-GPS.1	✓ LATref	
	✓ LatGPS.2	✓ LatI-GPS.2	✓ LonGPS.2	✓ LonI-GPS.2	✓ LONref	
	✓ LatGPS.3		✓ LonGPS.3			
	✓ LatGPS.4		✓ LonGPS.4			
✓ Pressure Sensors	✓ PDALPHA.1	✓ PQALPHA.1	✓ PQM.1	✓ PSM.1	✓ PQMref	
	X PDALPHA.2	✓ PQBETA.1	✓ PQM.2	✓ PSM.2	✓ PQ.c	
	✓ PDBETA.1		✓ PQM.3	X PTM.1	✓ PSMref	
	X PDBETA.2		X PQM.4		✓ PS.c	
✓ Air Speed	✓ CasADDU.1	✓ TasADDU.1	✓ IasADDU.1		✓ IAS.d	X 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		X TD.c	✓ TTMref
	✓ TTM.2	X TDM.2	✓ TRadS.1		X TDMref	X TA.d
	inop TTM.3	inop TDM.3	inop TRadU.1		X HUM	
✓ Wind and Pressure		X CH 1 TB	X CH 4 TB		X UWZ.d	X WS.d
✓ SFMR	SFMR	X CH 2 TB	X CH 5 TB		X PSURF	X 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:
PDALPHA.2, PDBETA.2, and PQM.4 (all radome) sensors erroneous throughout the flight and should not be used
PTM.1 erroneous and should not be used
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SFMR TB, WS SFMR, and RAIN RATE SFMR needs further assessment and data should be used with caution (note Unit 001 was swapped in for 002 for this flight and subsequent missions in Beryl on N42)

AVAPS Drop Log

Project: HURR 24 Mission: BERYL #3 Flight ID: 20240702H1

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

	Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
IP	1	221 430 385	1	-1.3	2316	CPL	NWS		
MP	2	221 830 360	2	-1.0	2330	↓	↓	WINDS GAP 750-80	?
RMW	3	221 470 731	3	-1.4	2343				
CTR	4	221 220 371	4	-0.5	2347				
RMW	5	221 210 170	5	-0.6	2350				
MID	6	221 470 109	6	-0.8	0000				
END	7	221 830 925	7	-1.4	0008				
IP	8	221 810 080	8	-1.4	0027			NASTY WINDS	
MID	9	221 410 040	1	-0.5	0037				
RMW	10	221 410 031	2	-0.8	0044				
CTR	11	221 830 927	3	-1.4	0045				
RMW	12	221 250 036	4	-0.7	0049				
MID	13	221 470 783	5	-1.1	0057				
END	14	221 410 022	6	-1.2	0105				
IP	15	221 350 841	7	-0.9	0131				
MID	16	221 350 535	8	-1.0	0143				
RMW	17	221 830 359	1	-1.4	0155				
RMW2	18	221 220 231	2	-0.5	0156				
CTR	19	221 470 776	3	-1.0	0158				
RMW	20	221 470 729	4	-0.5	0201				
MID	21	221 470 786	5	-1.1	0214				
END	22	221 410 023	6	-1.0	0233				
	~~23~~	~~221 410 032~~	~~7~~	~~-0.5~~					
	24								
	25								
	26								
	27								
	28								
	29								
	30								
	31								

21 ~~20~~ ~~19~~ RD41
1 2 ~~3~~ BAD
51 NRD41
73 TOTAL

Dropwindsonde Scientist Log

Storm:	BERYL	**Flight ID:**	20240702H1	**Mission ID:**	1202A	**Takeoff:**	2206Z	**Landing:**	0411Z

Dropsonde Scientist(s):	Alaka/Sippel (TAG)	**AVAPS Operator:**	Lynch

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.

Storm: BERYL **Flight ID: 20240702H1** **Mission ID: 1202A**

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		2316							End Point (NE)	X
Comments: IP; Did not transmit to SEB?										
2	221830360	2330	16.42N	70.76W	1007	120/48	10		Mid Point (NE)	01
Comments: (GJA) Clean sonde. Sent.										
3	221470731	2343	16.04N	71.55W	967	115/98	10		Eyewall (NE)	02
Comments: (GJA) Clean sonde. Marked “EYEWALL”. Sent.										
4	221220371	2347	16.01N	71.75W	949	215/30	10		Center	03
Comments: (GJA) Center; Set end time to 175.75s. Marked “CENTER”. Sent.										
5	221210170	2350	15.88N	71.92W	981	250/76	10		Eyewall (SW)	04
Comments: (GJA) Ignored a few lines w/ zero sats. Set end time to 190.75s. Marked “EYEWALL”. Sent.										
6	221470109	0000	15.48N	72.43W	1004	315/21	10		Mid Point (SW)	05
Comments: (GJA) Post-splash data; set new end time to 209.0s; ignored several lines near the top w/ zero sats. Sent.										
7	221830925	0008	15.28N	72.95W	1007	350/22	10		End Point (SW)	06
Comments: (GJA) Clean sonde. Sent.										
8	221810080	0027	14.82N	72.12W	1007	280/08	10		End Point (S)	07
Comments: Ignored a few lines w/ < 6 sats. Noisy winds toward the bottom. Sent.										
9	221410040	0037	15.50N	72.14W	1003	255/36	10		Mid Point (S)	08
Comments: (GJA) Set end time to 211.75s.										
10	221410031	0044	15.98N	72.07W	959	205/56	10		Eyewall (S)	09
Comments: (GJA) Pressure slightly increases at the very bottom. Set end time to 179.50s.										

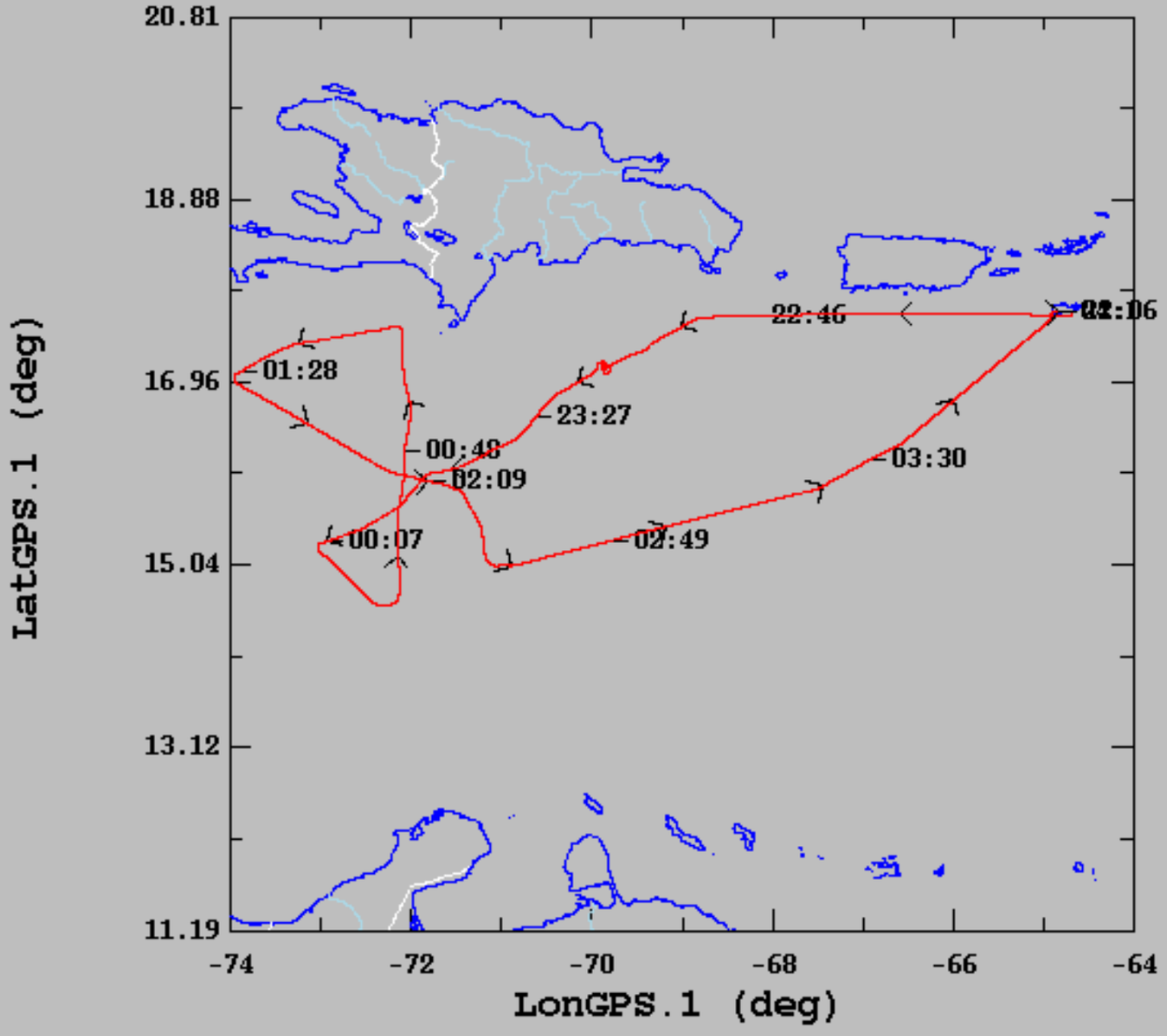
Storm: BERYL **Flight ID: 20240702H1** **Mission ID: 1202A**

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	221830927	0045	16.08N	72.08W	947	115/19	10		Center	10
Comments: (GJA) Post-splash data. Adjusted end time to 180.50s.										
12	221250036	0048	16.28	-72.05	963	30/124	10		N Eyewall	11
Comments: (JAS)										
13	221470783	0057	16.87	-72.03	1006	070/60	10		N Mid Point	12
Comments: (JAS)										
14	221410022	0105	17.43	-72.08	1009	085/41	10		N End Point	13
Comments: (JAS) Set end of drop to 215.5										
15	221350841	0131	16.94	-73.90	1009	030/23	10		NW End Point	14
Comments: (JAS)										
16	221350535	0143	16.56	-73.20	1006	035/39	10		NW Mid Point	15
Comments: (JAS)										
17	221830359	0155	16.21	-72.58	972	340/101	10		NW Eyewall	16
Comments: (JAS)										
18	221220231	0156	16.19	-72.54	958	345/85	10		NW Eyewall	17
Comments: (JAS)										
19	221470776	0158	16.10	-72.40	949	150/30	10		Center	18
Comments: (JAS) Set end of drop to 182										
20	221470729	0201	16.04	-72.27	970	136/12	10		SE Eyewall	19

Storm: BERYL **Flight ID: 20240702H1** **Mission ID: 1202A**

Comments: (JAS)										
21	221470786	0214	15.83	-71.48	1008	160/38	10		SE Mid Point	20
Comments: (JAS) set end of drop at 224										
22	221410023	0233	15.02	-70.90	1010	140/25	10		SE End Point	
Comments: (JAS)										

07/02/2024, 22:06:00-28:10:56



	mean	sigma	min	max
LatGPS.1 (deg), 1 s/sec	16.39	0.91	14.62	17.71
LonGPS.1 (deg), 1 s/sec	-70.04	2.66	-73.95	-64.67