N49RF ERROR SUMMARY
AR-2023 06WSC IOP07

Flight ID: 20230106N1

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	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/2023/MET/20230106N1

Local Met Data	Takeoff PHNL (1947Z)	Landing PHNL (0313Z)
Dynamic Corrections		Yes
AttackAngleIntercept		6.4652
AttackAngleSlope		7.59375
SlipAngleIntercept		0.925
SlipAngleSlope		6.56381
AttackAngleIntercept2		5.01255
AttackAngleSlope2		5.40932
SlipAngleIntercept2		0.72
SlipAngleSlope2		7.0494

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.
Neither dew point sensor (TDM.1 or TDM.2) performed reliably during the mission, therefore all flight level humidity data should be considered suspect.

Expendable Type	# deployed	# good	# transmitted
Dropsondes	32	30	30
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 = 7.4

U.S. Department of Commerce / NOAA / OMAO / Aircraft Operations Center - N49RF Manifest

FLIGHT INFORMATION

FLT ID:	20230106N1	FLT #:	
From:	PHNL	ETD:	1945z
To:	PHNL	ETA:	0330z

Block Time		Flight Time	
In:	0317	Land:	0313
Out:	1931	T/O:	1947
Total:	7.8	Total:	7.4

Sponsoring Org:	CW3E
Program:	PAR
Purpose:	Atmospheric Rivers

CREW MANIFEST

AC:	NARDI	Scientists:
CP(s):	deTRIQUET	
NAV:		
FE(s):		
FD(s):	HENNING	
	deSOLO	
SSA:	DEFEO	Visitors:
AVAPS:	HARTBERGER	
SEB:	SANTONI	
MX:		

MISSION INFORMATION

Pressure		Dropsondes		
		Good	Bad	Sent
A/C Takeoff		30	2	30
ASOS Takeoff		BTs		
		Good	Bad	Sent
A/C Land				
ASOS Land				

Storm Number ID: (ie: AL072012)	
TCPOD/WSPOD Mission (ie: NOAA2 2418A SANDY)	06WSC 10P07

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
1			
2			
3			
4			
Pennies:			

*Highlighted items must be completed before departure.

Remarks:

G-IV QC Checklist

Flight ID:	20230106N1
Flight Director(s)	Henning / de Solo

UWZ.d mean:	0.19

Pressure Comparison		
	T/O	Land
Aircraft	1021.0	1018.9
Tower	1020.9	1018.8

	Raw 1Hz Mean File Parameters				C File Parameters	
✓ Accelerometer	✓ AccAXI.1	✓ AccAYI.1	✓ AccAZI.1		✓ AccZref	
	✓ AccAXI.2	✓ AccAYI.2	✓ AccAZI.2			
	✓ AccAXI.3	✓ AccAYI.3	✓ AccAZI.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			
	✓ GsXGPS.3	✓ GsYGPS.3	✓ GsZGPS.3			
✓ Lat / Lon	✓ LatGPS.1	✓ LatI.1	✓ LonGPS.1	✓ LonI.1	✓ LATref	
	✓ LatGPS.2	✓ LatI.2	✓ LonGPS.2	✓ LonI.2	✓ LONref	
	✓ LatGPS.3		✓ LonGPS.3			
✓ Pressure	✓ PDALPHA.1	✓ PQALPHA.1	✓ PQM.1	✓ PSM.1	✓ PDLAPHAref	✓ 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	✓ TasADDU.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	
	✓ PitchI.3	✓ PitchRateI.3	✓ RollI.3	✓ RollRateI.3		
x Temp / Dewpt	✓ TTM.1	✓ TTM.4	x TDM.1		x TD.c	✓ TTMref
	✓ TTM.2		x TDM.2		x TDMref	✓ TA.d
	✓ TTM.3					
x 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:
Numerous Radar Altitude dropouts on climb to operational alt but stabilized during science mission
Both dew point sensors unreliable. Consider all FL humidity data suspect

AOC GPS Dropwindsonde Log (updated Mar 2019)

Flight ID: 20230106N1 ASPEN Operator/Flight Director(s): Henning / de Solo

Mission ID: 06WSC IOP07 Storm Name/Track: AR IOP07 PG 1 of 1

Sonde #	Ob #	Launch Time HHMMSS (Z)	Sonde ID (min last 5)	Ch # used	Lat (°N)	Lon (°E)	Prominent Wx Cond.	SFC Prs (mb)	~~Comments / Issues / QC / ASPEN Edits~~ SURFACE WIND & SPEED	KWBC #	Sonde Issues?
1	1	205028	30645	1	28.0	-157.5	FEW	1019.3	045° @ 08 kts	2112	✓✓
2		2059		2							
3	2	210114	20208	3	29.4	-157.3	FEW	1018.2	275°@ 25kts	2120	✓✓
4	3	210902	30646	4	30.3	-157.1	FEW	1018.2	275°@ 13 kts	2139	✓✓
5	4	211817	30572	1	31.5	-156.9	FEW	1016.8	260° @ 22 kts	2142	✓✓
6	5	212747	70220	2	32.7	-156.8	FEW	1014.7	285° @ 26kts	2146	✓✓
7	6	213721	40800	3	33.9	-156.6	SCT	1012.0	255°@ 27kts	2200	✓✓
8	7	214645	10407	4	35.2	-156.3	SCT	1010.3	265° @ 27 kts	2206	✓✓
9	8	215654	50643	1	36.2	-156.1	SCT	1006.1	255°@ 32 kts	2216	✓✓
10	9	220628	30214	2	37.4	-155.9	SCT	1002.5	270°@ 27 kts	2226	✓✓
11	10	221603	30647	3	38.6	-155.7	FEW	998.8	275°@ 29 kts	2237	✓✓
12	11	222458	40793	4	39.7	-155.5	FEW	994.3	275°@ 47 kts	2252	✓✓
13	12	223422	10406	1	40.8	-155.2	SCT	991.5	265° @ 40 kts	2256	✓✓
14	13	224238	60089	2	41.8	-154.8	SCT	988.1	260°@ 35kts	2307	✓✓
15	14	225003	40767	3	41.1	-153.8	SCT	989.1	275°@ 34kts	2311	✓✓
16	15	225838	50038	4	40.2	-152.6	SCT	991.2	230°@ 47 kts	2325	✓✓
17	16	230648	60037	1	39.4	-151.5	SCT	993.7	270° @ 42 kts	2328	✓✓
18	17	231608	40804	2	38.3	-150.3	SCT	997.4	250° @ 36 kts	2336	✓✓
19	18	2323	40763	3	37.6	-149.3	SCT	1000.3	255°@ 24 kts	2344	✓✓
20	19	233150	40759	4	36.7	-148.2	SCT	1002.4	NO SFC WINDS	2352	✓✓
21	20	234013	30252	1	35.7	-147.2	SCT	1003.9	265° @ 31 kts	0002	✓✓
22	21	234836	30249	2	34.8	-146.3	SCT	1004.7	275° @ 18 kts	0007	✓✓
23		2356		3					NO PTH		
24	22	235808	30647	4	33.7	-145.2	SCT	1007.8	275° @ 32 kts	0017	✓✓
25	23	000522	30196	1	32.9	-144.3	SCT	1007.8	275°@ 29kts	0029	✓✓
26	24	001351	50450	2	31.2	-143.4	SCT	1009.1	250°@ 35 kts	0037	✓✓
27	25	002216	30573	3	31.0	-142.7	SCT	1011.0	270° @ 26 kts	0045	✓✓
28	26	003328	50747	4	30.3	-143.7	SCT	1013.6	265°@ 22 kts	0103	✓✓
29	27	004553	50040	1	29.6	-145.0	SCT	1014.7	275° @ 21 kts	0109	✓✓
30	28	005829	50568	2	28.9	-146.2	SCT	1015.4	290° @ 20 kts	0119	✓✓
31	29	011025	10184	3	28.2	-147.4	SCT	1015.7	270° @ 24 kts	0131	✓✓
32	30	012208	30246	4	27.5	-148.5	SCT	1017.2	280° @ 19 kts	0142	✓✓
33											
34											
35											
36											
37											
38											

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

COMMENTS:

Obs Xmitted 30/30 Obs Missed 0 # of sondes launched 32 # of bad sondes 2

AVAPS Drop Log

Project: ARR 2023 Mission: _____ Flight ID: 20230706N1

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

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
1	220 720 645	1	Ø	2050	JEQ	AR		
2	220840 802	2	Ø	2059			Bad winds/chut	
3	221 220 208	3	-.6	2101			Backup 1	
4	R20 730 646	4	Ø	2109				
5	226 730 572	1	Ø	2118				
6	220 670 220	2	Ø	2127				
7	220 840 800	3	Ø	2137	ASR			
8	220710408	4	Ø	2146	ASR			
9	220750643	1	Ø	2156	ASR			
10	221030214	2	Ø	2206	ASR			
11	220730647	3	Ø	2216	ASR			
12	220840793	4	Ø	2224	ASR			
13	220710406	1	Ø	2234	ASR			
14	220850039	2	Ø	2242	ASR			
15	220840767	3	Ø	2250	ASR			
16	220850038	4	Ø	2258	ASR			
17	220850037	1	Ø		ASR			
18	220840804	2	Ø	2316	ASR			
19	220840763	3	Ø	2323	ASR			
20	220840759	4	Ø	2331	ASR			
21	221030252	1	Ø	2340	ASR			
22	221030249	2	Ø		ASR			
23	220730571	3	Ø		ASR		NO PTA	
24	220730648	4	Ø	2358	ASR		BACKUP	
25	221030196	1	Ø	0522	ASR			
26	220750456	2	Ø	0013	ASR			
27	220730573	3	Ø	0022	ASR			
28	220750747	4	Ø	0033	ASR			
29	220850040	1	Ø	0045	ASR			
30	220750553	2	Ø	0058	A			
31	221210184	3	Ø	0110				

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge $$ To	Comments	Good ?
32	22103246	4	Ø	0122	ASR			
33		1						
34		2						
35		3						
36		4						
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								

Drop Station Operator Notes

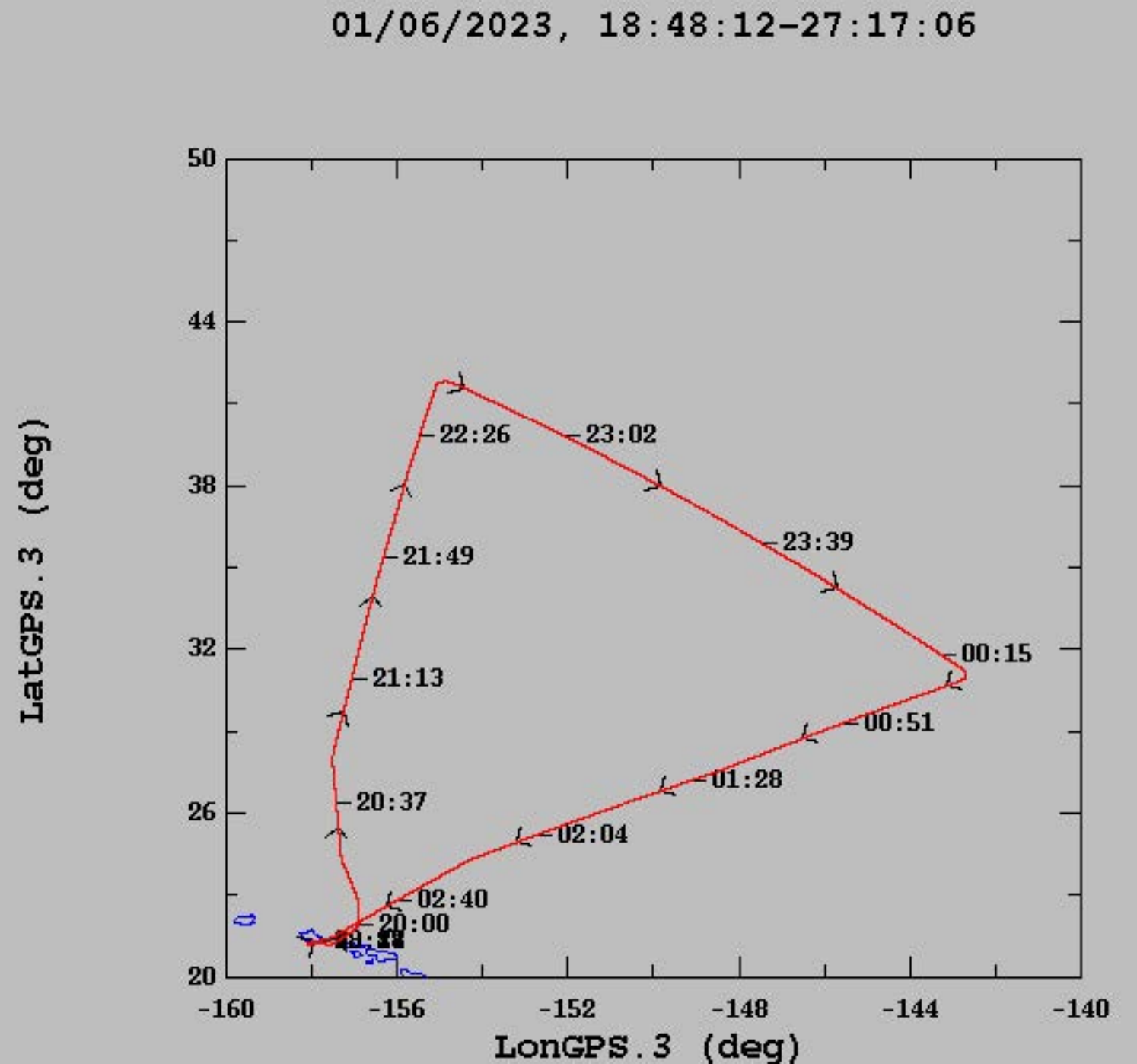
Charge $$ To Options (DO NOT USE FUNDING CODES):
AOC, NWS, HRD, NESDIS, IR/SST, AR, STAN (Stanford), SAT (JPSS/NESDIS/HRD)

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


01/06/2023, 18:48:12-27:17:06
LatGPS.3 (deg)
LonGPS.3 (deg)
50
44
38
32
26
20
-160
-156
-152
-148
-144
-140
22:26
23:02
23:39
00:15
00:51
01:28
02:04
02:40
21:49
21:13
20:37
20:00