

N49 Error Summary

Overall Assessment: Minor instrument issue(s)- no mission impact

Flight ID: 20210307N1 **Mission ID:** 13WSC IOP22 **Mission Type:** Tasked/Operational

T/O Time: 1850Z PHNL **Landed:** 0225Z PHNL

Flight Director(s): Hathaway **QC performed by:** Hathaway **Phone #:** 863-500-3911

Expendable Counts

	Deployed	Good	Bad	Transmitted
Dropsonde	39	33	6	33
AXBTs	0	0	0	0
UAS	0			

Information on Meteorological Sensors

Sensor or System	Number or Name
Static Pressure Probe	PSM.2
Dynamic Pressure Prob	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
Dynamic Corrections	Yes
Attack Angle Intercept	3.97
Attack Angle Slope	3.86
Slip Angle Intercept	1.258
Slip Angle Slope	6.69941
Attack Angle Intercept 2	5.05753
Attack Angle Slope 2	5.52397
Slip Angle Intercept 2	0.931
Slip Angle Slope 2	6.57562

QC Checklist

	PSM.1	PSM.2	Average PSM	Station Pressure
Takeoff	1019.32	1020.19	1019.76	1019.9
Landing	1017.07	1018.01	1017.54	1017.5
UWZ Mean:	0.17			

QC Key	Not checked(n/a)	Reference (R)	Valid(/)	Errors(X)								
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			/	GSZref		
	/	GsXIGPS.1	/	GsYIGPS.1	/	GsZIGPS.1						
	/	GsXIGPS.2	/	GsYIGPS.2	/	GsZIGPS.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	X	TTM.4	X	TDM.1			X	TD.c	/	TTMref
	n/a	TTM.2			X	TDM.2			X	TDMref	/	TA.d
	X	TTM.3										
Misc.									/	UWZ.d	/	WS.d
									/	DPJ_WSZ	/	WD.d
									X	HUM		

QC/Data Comments:

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.

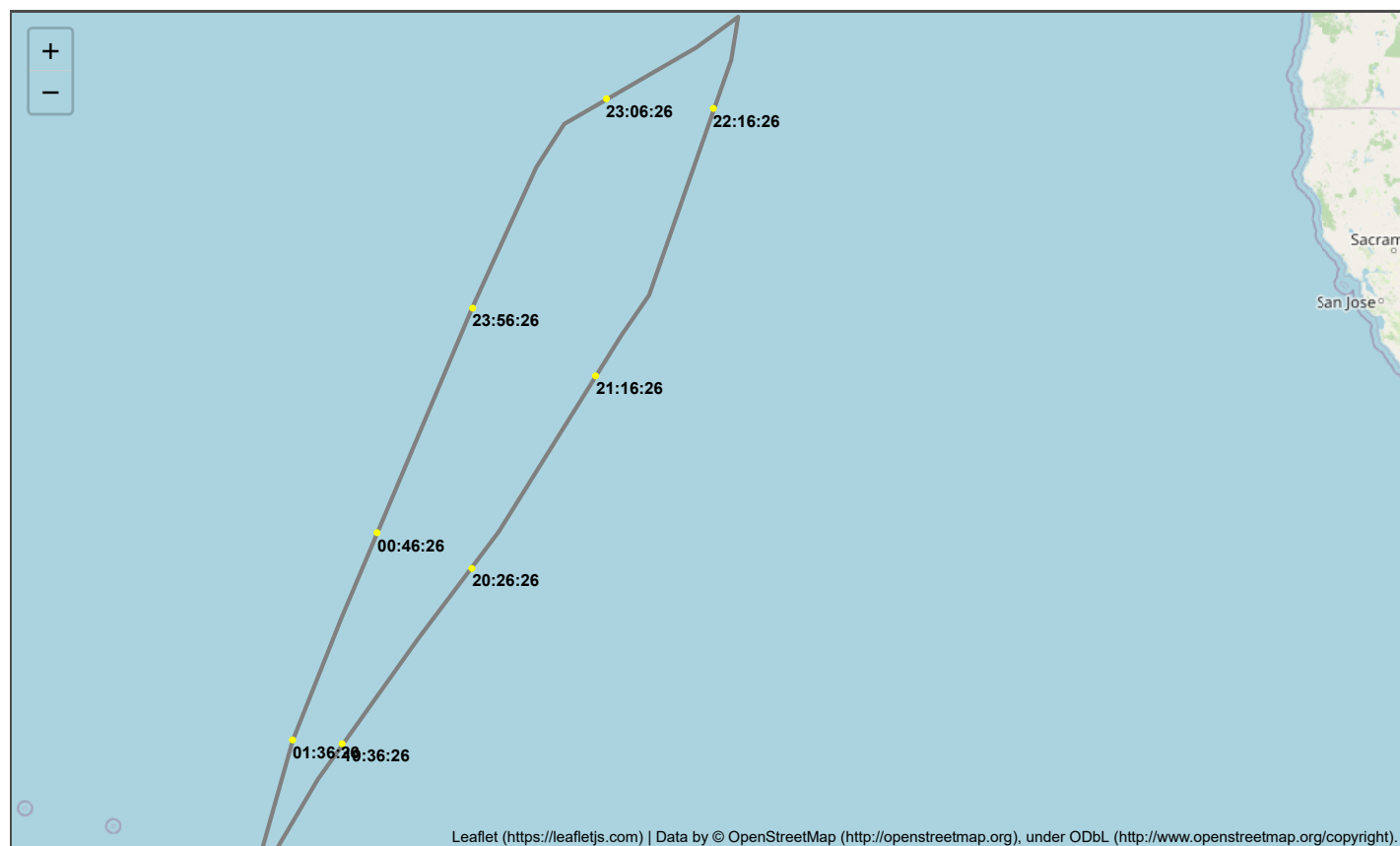
AltRA.1 has multiple significant dropouts and should not be used as absolute altitude.

When examined at high resolution, data from the three inertials (IRUs) shows "stairstepping" for some parameters.

All three AccAXI parameters contain an unusual oscillation.

TTM.3 and TTM.4 have unnatural oscillations. Used TTM.1 as a reference.

TDM.1 and TDM.2 were unrepresentative for the cruise portion of the mission above 41 K (especially through hour 4 of flight) and also for intervals at lower altitudes. Consider all relative humidity values to be suspect.



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

FLIGHT INFORMATION				CREW MANIFEST			MISSION INFORMATION				
FLT ID:	20210307N1	FLT #:		AC:	Waddington	Scientists:	Pressure		Dropsondes 39 total		
From:	PHNL	ETD:	1850Z	CP(s):	Norman		A/C Takeoff		Good	Bad	Sent
To:	PHNL	ETA:	0230Z						33	6	33
Block Time		Flight Time		Nav(s):			ASOS Takeoff		BTs		
In:	0230Z	Land:	0225Z						Good	Bad	Sent
Out:	1837Z	T/O:	1850Z	FE(s)			A/C Land		0	0	0
Total:	7.9	Total:	7.4Z	FD(s):	Hathaway Kalen	Visitors:	ASOS Land				
Sponsoring Org:		EMC		SEB:			Storm Number ID:		NONE		
Program:		PAR					(ie: AL072012)				
Purpose:		AR2021 10P22		SSA:	DeFeo		TCPOD/WSPOD Mission		NOAA 13WSC IDP22		
				AVAPS:	Warnecke		(ie: NOAA2 2418A SANDY)				
AS REQUIRED BY ORM				Y	N	REMARKS	Fix Number	Obs Number	Fix Time	SLP	
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					✓						
Gmax:				Gmin:		*Highlighted items must be completed before departure.					
Remarks:				RAST, RPAE, PHNL							

AOC GPS Dropwindsonde Log (updated Mar 2019)

33/39

Flight ID: 20210307N1

ASPEN Operator/Flight Director(s): Kelen / HATHAWAY

Mission ID: 13050 10P22

Storm Name/Track: Atmos RIVER

PG 1 of 2

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	KWBC #	Sonde Issues?
1	1	203400	51404	1	31.06	-147.76	OVCST	1030.8	06022 / LLD	72057	Y
2	2	204232	11647	2	31.94	-149.32	BRKN	1032.3	06519	72101	N
3	3	205145	20650	3	32.88	-148.64	SCT	1033.8	05026	72110	N
4	4	210051	30069	4	33.82	-147.94	SCT	1033.0	03014	72119	N
5	5	210948	30387	1	34.74	-147.23	SCT	1034.2	34516	72127	N
6	6	211852	21625	2	35.67	-146.51	BRKN	1033.0	34519	72137	N
7	7	212752	30389	3	36.58	-145.76	BRKN	1032.8	32519	72146	N
8	8	213653	20228	4	37.51	-144.99	SCT	1030.2	30526 / EXTREME FLOATER	72159	Y
9	—	214230	40496	1	—	—	BRKN	—	N O PTH	—	Y
10	9	214302	30119	2	38.21	-144.69	BRKN	1029.9	31027	72211	N
11	10	214823	11638	3	38.82	-144.43	BRKN	1027.8	30529	72214	N
12	—	215410	50309	5	39.46	-144.15	BRKN	—	DIED @ 522.5 SEC	—	Y
13	11	215959	30815	4	40.12	-143.86	OVCST	1025.1	29032	72226	N
14	12	220541	21388	7	40.77	-143.56	OVCST	1023.4	30536	72229	N
15	13	221124	70014	8	41.42	-143.26	BRKN	1022.4	32037	72235	N
16	14	221703	20263	4	42.07	-142.95	SCT	1019.2	30534	72238	N
17	15	222247	30087	1	42.72	-142.64	SCT	1017.8	29523	72242	N
18	16	222821	40127	2	43.35	-142.32	SCT	1017.9	30526	72245	N
19	17	223359	50385	3	44.00	-141.99	SCT	1014.8	32030	72255	N
20	18	224204	21413	5	43.66	-142.88	SCT	1016.9	32034	72303	N
21	19	224810	30068	6	43.31	-143.77	SCT	1020.0	32036	72310	N
22	20	225411	21414	7	42.96	-144.63	SCT	1023.0	33038	72312	N
23	21	230013	60862	8	42.61	-145.50	SCT	1024.2	32524	72325	N
24	22	230614	30680	1	42.25	-146.34	SCT	1025.1	33032	72337	N
25	—	—	31230	2	—	—	SCT	—	N L D	—	Y
26	—	—	21620	3	—	—	SCT	—	N L D	—	Y
27	—	231859	60949	4	—	—	SCT	—	N O PTH	—	Y
28	23	231901	50351	5	41.44	-148.03	SCT	1029.8	31529 lost satellite decas.	72346	N
29	24	232029	20782	1	40.60	-148.56	OVC	1031.5	32533	72353	N
30	25	233410	20774	2	39.71	-149.10	↓	1033.4	32523	80002	N
31	26	234156	20797	3	38.81	-149.64	↓	1033.8	34021	80009	N
32	27	234942	50386	4	37.93	-150.15	OVC	1034.3	33012	80018	N
33	28	235729	21389	1	37.03	-150.65	OVC	1034.9	32518	80025	N
34	—	—	—	2	—	—	OVC	—	N O PTH	—	Y
35	29	000603	21416	3	36.02	-151.18	FEW	1035.1	35508	80030	N
36	30	001300	40853	4	35.21	-151.62	FEW	1034.6	04008	80036	N
37	31	002040	21622	1	34.31	-152.09	SCT CU	1034.0	03513	80043	N
38	32	002822	30599	2	33.41	-152.55	BRKN CU	1032.1	08020	80050	N

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

WERE THE BEST AROUND

NOTHING EVER GONNA BRING US DOWN

Obs
XmittedObs
Missed

✓

of sondes
launched# of bad
sondes

AOC GPS Dropwindsonde Log (updated Mar 2019)

Flight ID: 20210307N1ASPEN Operator/Flight Director(s): Kalen / HathawayMission ID: 13WSC 10P22Storm Name/Track: AR 2021PG 2 of 2

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	KWBC #	Sonde Issues?
1	33	003608	S1433	3	32.50	-13.00	SCT CU	1031.1	09019	60055	N
2											
3											
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ASPEN Operator will ensure this form is delivered to the AOC Flight Director to be archived

COMMENTS:

Obs
XmittedObs
Missed# of sondes
launched# of bad
sondes