

N49RF ERROR SUMMARY
20200824N2

Flight ID: 20200824N2

Sensor or System -----	Number or Name -----
Static Pressure Probe	PSM.2
Dynamic Pressure Probe	PQM.2
Total Temperature Probe	TTM.4
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/2020/MET/20200824N2

Local Met Data	Takeoff KLAL (1730Z)	Landing KLAL (0000Z)
Dynamic Corrections		Yes
AttackAngleIntercept		3.97801
AttackAngleSlope		3.86172
SlipAngleIntercept		1.258
SlipAngleSlope		6.69941
AttackAngleIntercept2		5.05753
AttackAngleSlope2		5.52397
SlipAngleIntercept2		0.931
SlipAngleSlope2		6.57562

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.

Expendable Type -----	# deployed -----	# good -----	# transmitted -----
Dropsondes	32	29	29
Test sondes	0	0	0
AXBTS	0	0	0
AXCPs	0	0	0
AXCTDs	0	0	0
UAS	0	0	0

Flight Director: Hathaway / Flaherty
Phone #: 863-500-3911

ACAT-4 Version = 7.2.2

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

FLIGHT INFORMATION				CREW MANIFEST			MISSION INFORMATION				
FLT ID:	20200824N2	FLT #:		AC:	Mansour	Scientists:	Pressure		Dropsondes		
From:	KLAL	ETD:	1730	CP(s):	Nardi		A/C Takeoff		Good	Bad	Sent
To:	KLAL	ETA:	0100						29	3	29
Block Time		Flight Time		Nav(s):			ASOS Takeoff		BTs		
In:	0110	Land:	0104	FE(s):			A/C Land		Good	Bad	Sent
Out:	1719	T/O:	1730	FD(s):	Hathaway Flaherty	Visitors:	ASOS Land		0	0	0
Total:	7.9	Total:	7.6	SEB:			Storm Number ID: (ie: AL072012)		AL 132020		
Sponsoring Org:	NHC			SSA:	Defeo		TCPOD/WSPOD Mission (ie: NOAA2 2418A SANDY)		NOAA9 1213A LAURA		
Program:	PHS			AVAPS:	Patel		OBSERVATIONS				
Purpose:	Surveillance Laura						Fix Number	Obs Number	Fix Time	SLP	
AS REQUIRED BY ORM				Y	N	REMARKS					
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:											

G-IV QC Checklist

Flight ID:	20200824N2
Flight Director(s):	Hathaway/Flaherty

Pressure Comparison		
	T/O	Land
Aircraft	1011.0	1011.8
Tower	1010.7	1011.2

UWZ.d mean:	0.1
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	Raw 1Hz Mean File Parameters				C File Parameters	
<input type="checkbox"/> Accelerometer	<input checked="" type="checkbox"/> AccAXI.1	<input checked="" type="checkbox"/> AccAYI.1	<input checked="" type="checkbox"/> AccAZI.1	<input checked="" type="checkbox"/> AccZI.1	<input checked="" type="checkbox"/> AccZref	
	<input checked="" type="checkbox"/> AccAXI.2	<input checked="" type="checkbox"/> AccAYI.2	<input checked="" type="checkbox"/> AccAZI.2	<input checked="" type="checkbox"/> AccZI.2		
	<input checked="" type="checkbox"/> AccAXI.3	<input checked="" type="checkbox"/> AccAYI.3	<input checked="" type="checkbox"/> AccAZI.3	<input checked="" type="checkbox"/> AccZI.3		
<input type="checkbox"/> Altitude	<input checked="" type="checkbox"/> AltGPS.1	<input checked="" type="checkbox"/> AltI.1	<input checked="" type="checkbox"/> AltPaADDU.1	<input checked="" type="checkbox"/> AltBCADDU.1	<input checked="" type="checkbox"/> ALTref	
	<input checked="" type="checkbox"/> AltGPS.2	<input checked="" type="checkbox"/> AltI.2	<input checked="" type="checkbox"/> AltPaADDU.2	<input checked="" type="checkbox"/> AltBCADDU.2	<input checked="" type="checkbox"/> ALTPA.d	
	<input checked="" type="checkbox"/> AltGPS.3	<input checked="" type="checkbox"/> AltI.3	<input checked="" type="checkbox"/> AltRA.1		<input checked="" type="checkbox"/> ALTGA.d	
<input type="checkbox"/> Ground Speed	<input checked="" type="checkbox"/> GsXI.1	<input checked="" type="checkbox"/> GsYI.1	<input checked="" type="checkbox"/> GsZI.1	<input checked="" type="checkbox"/> GsGPS.1	<input checked="" type="checkbox"/> GSXref	
	<input checked="" type="checkbox"/> GsXI.2	<input checked="" type="checkbox"/> GsYI.2	<input checked="" type="checkbox"/> GsZI.2	<input checked="" type="checkbox"/> GsGPS.2	<input checked="" type="checkbox"/> GSYref	
	<input checked="" type="checkbox"/> GsXI.3	<input checked="" type="checkbox"/> GsYI.3	<input checked="" type="checkbox"/> GsZI.3		<input checked="" type="checkbox"/> GSZref	
	<input checked="" type="checkbox"/> GsXGPS.1	<input checked="" type="checkbox"/> GsYGPS.1	<input checked="" type="checkbox"/> GsZGPS.1			
	<input checked="" type="checkbox"/> GsXGPS.2	<input checked="" type="checkbox"/> GsYGPS.2	<input checked="" type="checkbox"/> GsZGPS.2			
<input type="checkbox"/> Lat / Lon	<input checked="" type="checkbox"/> LatGPS.1	<input checked="" type="checkbox"/> LatI.1	<input checked="" type="checkbox"/> LonGPS.1	<input checked="" type="checkbox"/> LonI.1	<input checked="" type="checkbox"/> LATref	
	<input checked="" type="checkbox"/> LatGPS.2	<input checked="" type="checkbox"/> LatI.2	<input checked="" type="checkbox"/> LonGPS.2	<input checked="" type="checkbox"/> LonI.2	<input checked="" type="checkbox"/> LONref	
	<input checked="" type="checkbox"/> LatGPS.3	<input checked="" type="checkbox"/> LatI.3	<input checked="" type="checkbox"/> LonGPS.3	<input checked="" type="checkbox"/> LonI.3		
<input type="checkbox"/> Pressure	<input checked="" type="checkbox"/> PDALPHA.1	<input checked="" type="checkbox"/> PQALPHA.1	<input checked="" type="checkbox"/> PQM.1	<input checked="" type="checkbox"/> PSM.1	<input checked="" type="checkbox"/> PDALPHaref	<input checked="" type="checkbox"/> PQMref
	<input checked="" type="checkbox"/> PDALPHA.2	<input checked="" type="checkbox"/> PQALPHA.2	<input checked="" type="checkbox"/> PQM.2	<input checked="" type="checkbox"/> PSM.2	<input checked="" type="checkbox"/> PDBETAref	<input checked="" type="checkbox"/> PQ.c
	<input checked="" type="checkbox"/> PDBETA.1	<input checked="" type="checkbox"/> PQBETA.1			<input checked="" type="checkbox"/> PQALPHaref	<input checked="" type="checkbox"/> PSMref
	<input checked="" type="checkbox"/> PDBETA.2	<input checked="" type="checkbox"/> PQBETA.2			<input checked="" type="checkbox"/> PQBETAref	<input checked="" type="checkbox"/> PS.c
<input type="checkbox"/> Air Speed	<input checked="" type="checkbox"/> CasADDU.1	<input checked="" type="checkbox"/> CasADDU.2	<input checked="" type="checkbox"/> TasADDU.1	<input checked="" type="checkbox"/> TasADDU.2	<input checked="" type="checkbox"/> IAS.d	<input checked="" type="checkbox"/> TAS.d
<input type="checkbox"/> Pitch / Roll	<input checked="" type="checkbox"/> PitchI.1	<input checked="" type="checkbox"/> PitchRateI.1	<input checked="" type="checkbox"/> RollI.1	<input checked="" type="checkbox"/> RollRateI.1	<input checked="" type="checkbox"/> PITCHref	
	<input checked="" type="checkbox"/> PitchI.2	<input checked="" type="checkbox"/> PitchRateI.2	<input checked="" type="checkbox"/> RollI.2	<input checked="" type="checkbox"/> RollRateI.2	<input checked="" type="checkbox"/> ROLLref	
	<input checked="" type="checkbox"/> PitchI.3	<input checked="" type="checkbox"/> PitchRateI.3	<input checked="" type="checkbox"/> RollI.3	<input checked="" type="checkbox"/> RollRateI.3		
<input type="checkbox"/> Temp / Dewpt	<input checked="" type="checkbox"/> TTM.1	<input checked="" type="checkbox"/> TTM.4	<input checked="" type="checkbox"/> TDM.1		<input checked="" type="checkbox"/> TD.c	<input checked="" type="checkbox"/> TTMref
	<input type="checkbox"/> TTM.2		<input checked="" type="checkbox"/> TDM.2		<input checked="" type="checkbox"/> TDMref	<input checked="" type="checkbox"/> TA.d
	<input checked="" type="checkbox"/> TTM.3					
<input type="checkbox"/> Misc. (Must check)					<input checked="" type="checkbox"/> UWZ.d	<input checked="" type="checkbox"/> WS.d
					<input checked="" type="checkbox"/> DPJ_WSZ	<input checked="" type="checkbox"/> WD.d
					<input checked="" type="checkbox"/> HUM	

FLID_Mission_Documents.pdf:	
<input checked="" type="checkbox"/>	Error Summary
<input checked="" type="checkbox"/>	Crew Manifest
<input checked="" type="checkbox"/>	QC Checklist
<input checked="" type="checkbox"/>	Dropwindsonde Log(s) - AVAPS and FD if completed
<input checked="" type="checkbox"/>	Flight Track
<input checked="" type="checkbox"/>	Miscellaneous FD Notes

QC Key	
Not checked	<input type="checkbox"/>
Valid	<input checked="" type="checkbox"/>
Errors (note)	<input checked="" type="checkbox"/>

NOTES:

PQBeta.1 and PQBeta.2 may have gotten iced over towards the end of the flight with unusual drop outs.
 AltRA.1 has multiple significant dropouts and should not be used as absolute altitude.
 When examined at high resolution, data from the three inertials shows "stairstepping" for all parameters for brief intervals (generally less than 15 seconds).
 TDM.1 & TDM.2 were unrepresentative for the cruise portion of the mission above 41K.
 Consider all relative humidity values to be considered suspect.
 TTM.3 has a small amplitude (magnitude 0.2 - 0.3 deg C) unnatural oscillation with a period of roughly 30 seconds.
 TTM.4 was used for calculation of Ambient Temperature (TA) and other derived parameters.

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.

AOC GPS Dropwindsonde Log (updated Mar 2019)

29/32

Flight ID: 20200824 N2

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

Mission ID: N04A9 123A

Storm Name/Track: HURR LAURA SURV. PG ___ of ___

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	175838	10751	1			SET BLW	1016.0		1905	
2	2	181321	20814	2			"	1014.2		1913	
3	3	183324	10800	3			"	1015.5		1917	
4	4	184758	30676	4			"	1014.7		1922	
5	5	190330	70136	1			"	1012.9		1924	
6	6	191748	21203	2			BRW BLW	1011.7		2020	
7	7	193003	21202	3			"	1008.7		2025	
8	8	193941	20500	4			"	1008.4		2027	
9	9	195124	70111	1			SET BLW	1008.3		2030	
10	10	200013	20502	2			"	1008.2		2036	
11	11	200957	70058	3			"	1005.4		2114	
12	12	200956	20816	4			FEW BLW	1006.4		2125	
13	13	203149	20509	1			"	1004.9		2133	
14	14	203937	20834	2			"	1005.2	ORIGINAL 17	2136	
15	15	204038	20229	3			"	1005.9	17 BACK UP (GOOD)	2138	
16	16	205629	20817	4			"	1007.4		2193	
17	17	211228	20525	1			"	1008.4		2195	
18	18	212738	20703	2			"	1008.8		2233	
19	19	214720	---	3					FAST FALL		
20	20	215737	30677	4			"	1009.4	BACK UP	2249	
21	21	221240	---	1					FAST FALL		
22	22	221342	20514	2			SET BLW	1008.4	BACK UP	2252	
23	23	222843	20834	3			"	1009.2		2254	
24	24	224354	20505	4			"	1009.4		2312	
25	25	225912	20591	1			FEW BLW	1010.4		2319	
26	26	231234	---	2					FAST FALL		
27	27	231423	20718	3			SET BLW	1004.4	BACK UP	2347	
28	28	232636	20496	4			"	1009.5		0009	
29	29	234056	20823	1			"	1009.9		1011	
30	30	240340	20495	2			"	1007.7		0035	
31	31	240832	31162	3			"	1006.3		0042	
32	32	250335	20089	4			BACK	1002.2	LAST RPT	0056	
33											
34											
35											
36											
37											
38											

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

Obs Xmitted: 29
 Obs Missed: 3
 # of sondes launched: 32
 # of bad sondes: 3

AVAPS Drop Log

Project: _____

Mission: TS Laura

Flight ID: 20200824N2

Take Off: _____

Landing: _____

Fit Dir: Nikki/Paul

Launcher S/N: _____

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge \$\$ To	Comments	Good ?
1	200410751	1	-0.6	1758	AJP	NWS		✓
2	194820814	2	0	1813				✓
3	200410800	3	0	1833				✓
4	194830676	4	0	1847				✓
5	200370136	1	0	1903				✓
6	192221203	2	0	1917				✓
7	192221202	3	0	1930				✓
8	194920500	4	0	1939				✓
9	200370111	1	0	1951				✓
10	194920502	2	0	2000				✓
11	200370058	3	0	2009				✓
12	194820816	4	0	2019				✓
13	194920509	1	0	2031				✓
14	195120834	2	0	2039	GD		LATE GPS	✓
15	192220329	3	-2	2046			BACKUP	✓
16	194820817	4	0	2056				✓
17	194920525	1	-2	2112				✓
18	194920503	2	0	2127				✓
19	194920501	3	0	2142			FAST FALL	✓
20	194830677	4	0	2157				✓
21	192221204	1	0	2212			FAST FALL	✓
22	194920514	2	0	2213			BACKUP	✓
23	194820834	3	.2	2228				✓
24	194920505	4	.1	2243				✓
25	194830678	1	0	2259				✓
26*	194820818	2	.2	2312	AJP		Late GPS & Tumbling	x
27	194830718	3	0	2314			Back up	✓
28	194920496	4	0	2327				✓
29	194820823	1	0	2340				✓
30	194920495	2	0	0003				✓
31	192231162	3	0	0018				✓

*26. Tumble Para while & stable later



Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Operator	Charge \$\$ To	Comments	Good ?
32	200370089	4	-0.5	0033	AJP	NWS		✓
33								
34								
35								
36								
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)

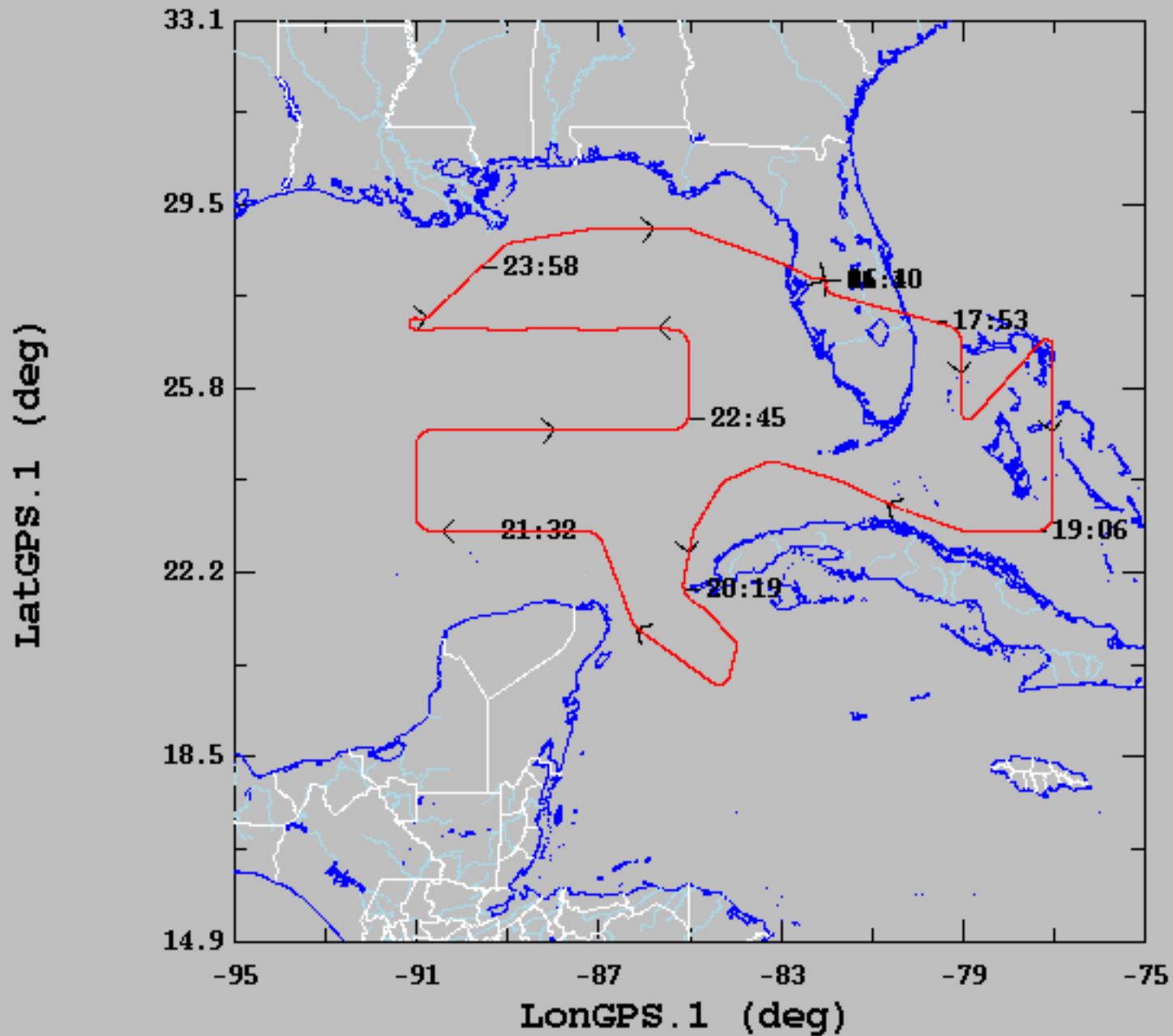
AVAPS Pre-Flight Check:

- 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**

2020-08-24, 16:40:40-25:10:56



	mean	sigma	min	max
— LatGPS.1 (deg), 1 s/sec	25.49	2.42	19.95	29.00
— LongGPS.1 (deg), 1 s/sec	-84.27	4.09	-91.14	-77.00