



NOAA P-3 N43RF
SFMR Calibration Flight
July 2007



Flight ID: I070725

<u>Sensor or system</u>	<u>Number or Name</u>
INE	2
Accelerometer	N/A
Temperature Probe	1
Dew Point Probe	2 (Edgetech)
Altitude (for vertical wind)	Radar Altitude (RA-232)
Static Pressure	Rosemount Fuselage
Dynamic Pressure	Rosemount Fuselage
Time Source	Micro 99

Local Met Data:	<u>Takeoff (1317Z)</u>	<u>Landing (1718Z)</u>
Aircraft Static Pressure	1017.2 mb	1017.8 mb
Tower Pressure	1017.1 mb	1018.5 mb

Notes

There were 5 time periods of missing data for this flight:

154650Z-154704Z, 162239Z-162241Z, 162750Z-162759Z, 163710Z-163712Z, 164858Z-164903Z.

There were 7 time periods where the inertial data didn't update for a noticeable length of time:

130451Z-131322Z, 131531Z-131608Z, 134911Z-140154Z, 143740Z-144614Z, 152204Z-152338Z, 155929Z-162001Z, 165553Z-171204Z

The ra232 had 5 data spikes at the 1,500 ft level that each lasted for 7sec. The spikes were removed and smoothed with the altitude data from inertial 2. The spikes were at: 150045Z-150052Z, 150102Z-150109Z, 150124Z-150131Z, 150512Z-150519Z, 150926Z-151009Z

Another spike in the ra232 data occurred not long before landing (170140Z – 170146Z) which might be due to a building, but can not be verified.

Accelerometer data from the inertials are not available.

At 165549Z-171206Z the inertial measured a near constant altitude whereas the ra232, ashtech, and pressure altitude readings all indicated a decrease in altitude.

At about 1424Z the Buck dewpointer (tdm1) deviated from the Edgetech dewpointer (tdm2) and then at about 1541Z the buck deviated and both didn't start to come back to normal until about 1707Z.

The downward looking radiometer (PRT5_Barnes) measured a temperature of about 88degF when we were at about 500ft over the buoy and the buoy was reading 30.2degC.

Flight Director:
Phone #:

LTJG Jackie Almeida
(813) 828-3310 ext. 3075

U.S. Dep't. of Commerce / NMAO / NOAA / Aircraft Operations Center

FLT ID: I 070725	From: KMCF	To: KMCF
Flt No: 07-021	In: 1726^Z	On: 1718^Z
ETD: 1200^Z	Out: 1308^Z	Off: 1317^Z
ETE: 4hrs + 30min	Blk Time: 4hrs + 18min (4.3) hrs	Flt Time: 4hrs + 1min (4.0) hrs
Sponsoring Org: AOC	Program: Cal flight	Purpose: SFMR Calibration

AOC Flight Crew

Aircraft Commander: NEWMAN	Data System: LYNCH
Co-Pilot: GIRIMONTE¹	AVAPS: RASCO
Navigator: SIEGEL¹	System Engineer:
Flight Eng: FLOYD¹	AA:
Flight Director: ALMEIDA¹ DAMIANO	AA:
Avionics: SANS SOUZI	Crew Chief:

Participating Scientists / Visitors

Name (Last, First)	Activity on Aircraft	Affiliation
Gamache, John		
Rogers, Robert		
Black, Robert		
Aberson, Sim		
Valde, Krystal		
Fridgen, Tad		

Remarks (Storm Name, Mission ID, Recco Times, Fix Times)	Recco Times	Fix #	Fix Time
Storm Name: _____			
Mission ID: _____			

142 SNE stopped

U.S. DEP'T OF COMMERCE / NMAO / NOAA / AIRCRAFT OPERATIONS CENTER

FLT ID: *I 070725*

TIME OFF: *1317 Z*

TIME ON: *1718 Z*

A/C - Takeoff

WX Station - Takeoff

A/C - Land

WX Station - Land

Pressure

1017.2

30.04

1017.8

30.08

ATIS - Takeoff

13003 KT 10.5M 30.04

ATIS - Land

00000 KT 10.5M 30.09

Data Source

Number

Data Disposition / Date / Quality

Flight Level Tapes

2

Radar Tapes

1

Cloud Physics Tapes /
Cds

Video Tapes/DVDs

Dropsondes

1

Good: *1* Bad: *0*

AXBT

1

no data received from AXBT

AXCP

AXCTD

SONOBUOY

REMARKS:

~14z - inertial stopped coming in to data system

153315z - Data System crash

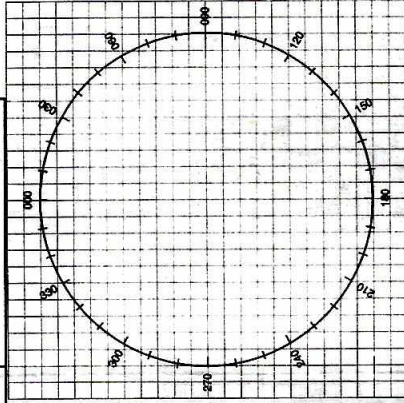
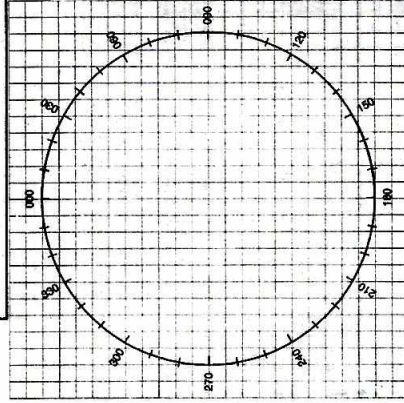
~1540z - Begin Leg 2 East 5k ft using radar time

1543z - Passed over buoy

1545z - End Leg 2 East 5k ft using radar time

154733z - Data System Reset

POSITION BEPOTENTIAL

[illegible]

POSITION BEPOTENTIAL

1. POSITION
2. TIME
3. ALTITUDE
4. NEXT POS
5. ETA
6. NEXT POS

EMERGENCY MESSAGE

TRANSMIT THE FOLLOWING MESSAGE TO ANY AGENCY ON THE AIR-GROUND
FREQUENCY IN USE. IF UNABLE TO ESTABLISH COMMS, ATTEMPT CONTACT ON
ANY OF THE FOLLOWING EMERGENCY FREQUENCIES:

UHF/VOICE	VHF/VOICE	MF/VOICE	HF/CW	MF/CW
243.0	121.5	2182 KHZ	8364 KHZ	500 KHZ

**MAYDAY, MAYDAY, MAYDAY
THIS IS NOAA - NOAA**

- POSITION _____ N/S _____ E/W AT _____

-HEADING _____ TRUE/MAG _____
-AT _____ KTS TRUE/INDICATED _____

- FLIGHT LEVEL OR ALTITUDE
- WE ARE A P-3 AIRCRAFT WITH

- NATURE OF EMERGENCY
- ASSISTANCE DESIRED

- PILOT INTENTIONS _____
- WE HAVE _____ ENDURANCE REMAINING _____

[illegible]

PAGE _____ **OF** _____

FIX TYPES

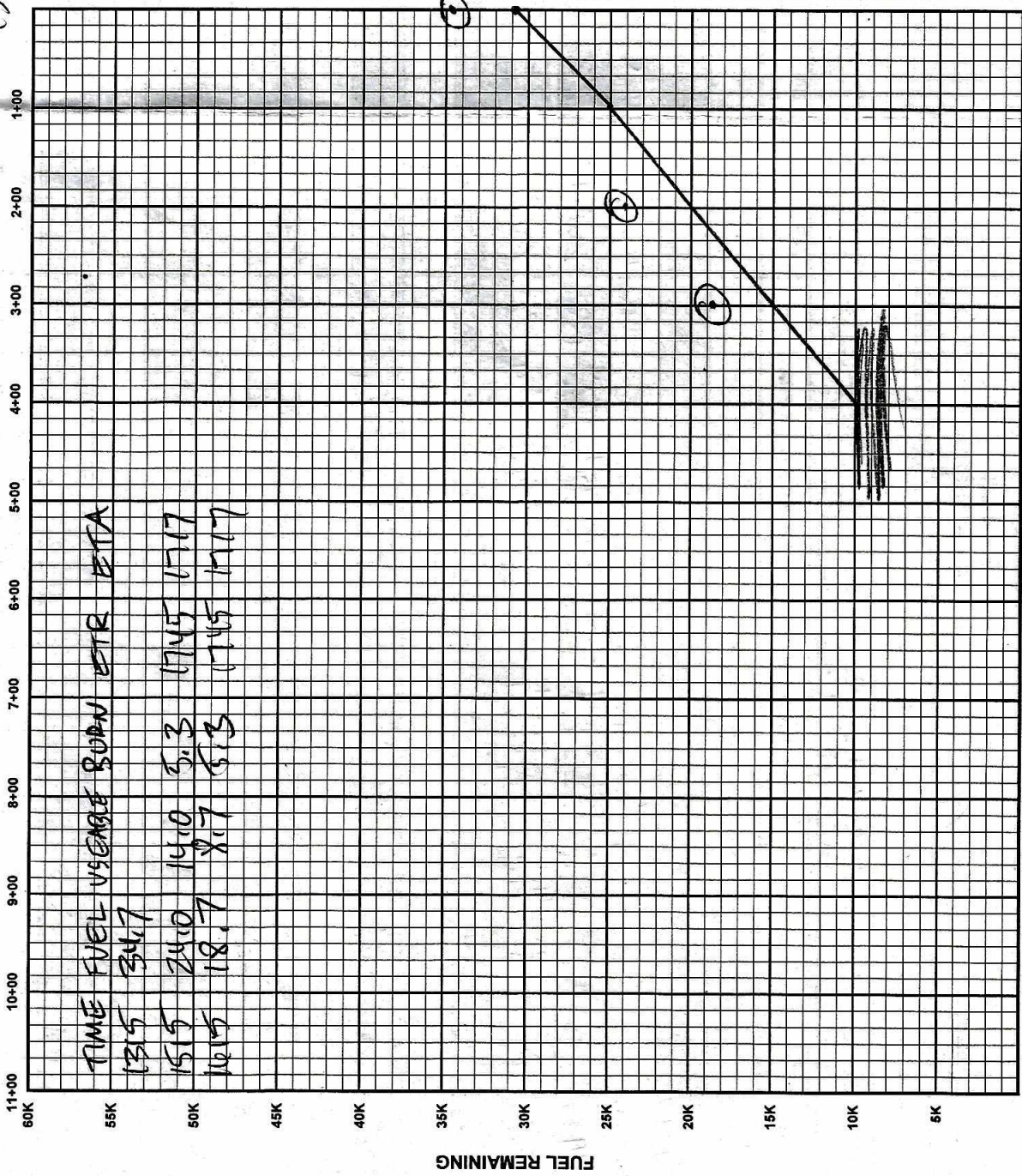
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4
15
21

1515
1305

RANGE CONTROL GRAPH

TIME REMAINING



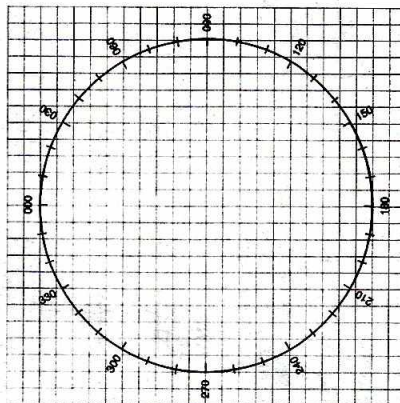
ENROUTE FUEL	
ENROUTE TIME	4400
ENROUTE FUEL (6K 5K 45K RULE)	21.0
RESERVE AT DESTINATION	10.0
REQUIRED RAMP	31.0
ACTUAL RAMP FUEL	34.7

TACTICAL (OFFSTA TO DESTINATION)	
DISTANCE (OFFSTA TO DEST)	
ENROUTE TIME (OFFSTA TO DEST)	
BURN RATE (LBS/HR)	4500
ENROUTE FUEL REQUIRED	5500
RESERVE AT DESTINATION	
FUEL AT OFFSTA	

POINT OF SAFE RETURN	
ETP DISTANCE (TO DEPARTURE)	
ENROUTE TIME (TO DEPARTURE)	
BURN RATE (LBS/HR)	4500
FUEL REQUIRED	5500
RESERVE AT DEPARTURE	
PSR FUEL	

CEX - TRUE BEARING METHOD				CEX SIGHT	
COMPASS TYPE	INS1	INS2	WET	GMT	
MCH (READING)				GHA	
MTH (SEXTANT)				CORR	
CE				GHA	
-VAR				LONG WAVE	
DEV				EXACT LHA	
				LAT	
				BODY	
				DEC	
				HO/D	
				CORR	
				HC	
				Z	
				ZN	

CEX - ERB METHOD			
COMPASS TYPE	INS1	INS2	WET
MERB (DIAL 000)			
+ZN			
= MTH			
MCH (READING)			
CE			
-VAR			
= DEV			



WIND FACTOR		
WINDSPEED	HEADWIND	TAILWIND
10	1.03	.97
20	1.06	.94
30	1.10	.92
40	1.14	.89
50	1.18	.87
60	1.22	.85

DISTANCE REMAINING

ETP = .5(TOTAL DISTANCE x OUTBOUND WIND FACTOR)

PRESS ALT		200	250	300	350
10,000	1.0	.99	.98	.97	.96
20,000	.99	.98	.97	.96	.95
30,000	.97	.96	.95	.94	.93
40,000	.96	.94	.92	.90	

TRUE AIRSPEED CROSS-CHECK						
TIME	IAS	PRESS ALT	"F" FACTOR	EAS	OAT	ITAS
1337	280	100	X	X	24	353
						321/314

070725I	LAT	ION	TA	TD	TK	SHD	RA	PS	SP	WD	WS	WZ	SFWs	COMMENTS
152350	27.51.00	-82.29.52	-9	-64.2	.0	.0	1.0	250.7	250.7	.3	42.3	-4.0	0.0	test
125412	27.50.94	-82.29.58	41.5	29.7	134.5	134.5	1.0	1017.3	1017.4	179.1	2.4	-1	0.0	
131818	27.48.06	-82.32.58	25.7	19.3	182.7	183.3	385.0	974.6	1017.9	199.4	1.7	1.9	0.0	
140229	26.2.52	-85.44.88	11.0	-2.2	270.4	269.4	3065.0	712.8	1016.3	210.3	4.8	2.2	7.4	Start leg 1 to west 10k ft
140741	26.2.46	-86.8.70	9.9	.8	89.6	269.1	3066.0	712.9	1017.6	177.7	2.9	2.3	11.9	end leg 1 start turn
141039	25.56.34	-86.3.84	10.6	-2.0	294.5	117.1	3065.0	713.0	1017.1	200.2	3.4	2.4	6.9	vicinity shower
141355	25.56.04	-85.51.42	10.7	-2.3	.4	.4	3062.0	713.3	1017.1	213.1	4.7	2.1	8.5	start leg 2 to north 10k ft
141609	26.5.58	-85.51.42	10.5	-1.3	.2	359.8	3067.0	713.0	1017.4	214.8	5.3	2.2	8.1	pilots note in and out of lt precip
141859	26.17.70	-85.51.48	10.6	-2.5	359.6	359.8	3069.0	713.0	1017.5	204.1	3.8	2.2	4.4	end Leg 2 10k ft
142651	26.26.76	-85.52.14	26.7	22.9	358.4	178.7	246.0	990.6	1018.3	354.5	.8	1.7	6.5	
143155	26.8.10	-85.52.02	27.7	23.8	184.8	184.9	158.0	1000.5	1018.4	80.6	1.9	1.4	10.2	begin 5 min leg 1 500ft
143358	26.0.42	-85.52.74	28.0	23.1	173.4	184.9	160.0	1000.3	1018.4	74.5	2.1	1.4	10.5	xbt launched pass buoy
143709	25.48.72	-85.53.88	27.9	23.7	5.3	185.0	156.0	1000.6	1018.2	85.5	2.8	1.5	9.1	end leg 1 500ft
143803	25.46.56	-85.54.06	27.9	23.6	6.3	185.5	157.0	1000.4	1018.2	79.1	4.4	2.4	9.4	chuck reports no temps from axbt
144438	25.46.56	-85.54.06	27.9	23.4	6.3	185.5	157.0	1000.8	1018.6	92.4	4.6	.8	9.4	begin leg 2 east 500ft
144529	25.46.56	-85.54.06	27.9	23.4	6.3	185.5	159.0	1000.6	1018.6	110.1	4.4	.8	9.4	nav data locked up
144620	26.4.80	-85.55.38	27.8	23.7	89.3	90.4	160.0	1000.5	1018.6	88.8	1.3	1.5	16.0	vicinity shower
144749	26.4.86	-85.49.32	27.8	23.6	89.2	90.5	159.0	1000.7	1018.6	141.9	.5	2.0	12.6	passed buoy
145009	26.4.98	-85.39.90	27.7	24.3	89.3	90.2	159.0	1000.6	1018.6	88.8	1.0	2.0	12.5	end leg 2 east 500
145635	26.14.40	-85.52.98	24.9	22.8	357.9	178.1	466.0	966.8	1018.9	78.3	1.6	1.5	9.0	begin leg 1 south 1.5k ft
150026	26.0.06	-85.52.32	25.1	22.6	177.9	177.9	465.0	966.8	1018.7	86.4	2.0	1.8	10.2	on top of buoy
150337	25.49.32	-85.50.22	25.2	22.7	85.1	85.9	463.0	966.9	1018.6	121.9	2.7	1.4	8.1	ended leg 1 150235
151255	26.13.08	-85.50.24	24.9	23.4	267.7	267.8	467.0	966.8	1019.0	119.7	2.3	1.7	9.4	begin leg 2 west 1.5kft
151808	26.11.94	-85.51.96	25.3	21.5	264.1	267.1	466.0	966.8	1018.9	113.9	2.8	1.4	12.3	end leg 2 west 1.5k ft
152326	26.24.06	-85.56.94	19.5	11.5	290.5	289.9	1537.0	854.9	1018.5	132.0	2.3	.8	8.9	begin leg 1 south 5k ft
153315	25.42.60	-85.57.60	18.9	13.7	178.0	177.7	1539.0	854.8	1018.9	86.8	2.3	1.6	10.7	end leg 1 south 5k ft
153315	25.42.60	-85.57.60	18.9	13.7	178.0	177.7	1539.0	854.8	1018.9	86.8	2.3	1.6	10.7	begin leg 2 east 5k ft
153315	25.42.60	-85.57.60	18.9	13.7	178.0	177.7	1539.0	854.8	1018.9	86.8	2.3	1.6	10.7	Terry reports data system has
154733	26.4.02	-85.39.54	12.5	3.1	314.0	313.9	2677.0	747.3	1018.1	80.7	.7	1.5	10.0	problems - wrking on it
155453	25.58.92	-85.40.50	-6.4	-13.3	295.2	292.4	5661.0	515.9	1015.1	226.5	8.0	2.1	9.1	data system back up
160823	25.51.12	-85.48.24	-11.0	25.1	293.2	115.5	6491.0	464.5	997.2	267.8	8.7	3.0	7.7	sonde dropped
161110	25.51.12	-85.48.24	-11.0	31.5	293.2	115.5	6488.0	464.5	988.4	254.7	6.3	2.7	6.0	begin leg 1 west 20k ft
161159	25.51.12	-85.48.24	-10.8	33.3	293.2	115.5	6489.0	464.4	984.9	252.7	5.8	2.6	6.2	passing through clouds
161337	25.51.12	-85.48.24	-10.6	35.6	293.2	115.5	6490.0	464.5	980.5	249.3	5.4	2.6	6.9	in and out of clouds now
161630	25.51.12	-85.48.24	-10.5	36.4	293.2	115.5	6487.0	464.5	978.5	245.2	5.0	2.5	5.5	end leg 1 west 20k ft
162105	26.11.10	-86.4.50	-10.4	37.6	.0	358.9	6485.0	464.5	975.5	268.4	5.1	2.3	6.0	begin leg 2 north 20k ft
164833	27.30.84	-84.0.48	-8.1	23.0	62.0	62.2	6149.0	484.4	997.1	255.7	7.2	2.1	4.0	end leg 2 north 20k ft in clouds
171247	27.58.44	-82.19.80	26.0	19.8	306.3	304.7	517.0	960.0	1017.5	194.4	1.6	1.1	0.0	last recco report sent
														-1710 terry reported nav data went
														out again

data
system
crashed

#1

	070725I	LAT	LON	TA	TD	TK	SHD	RA	PS	SP	WD	WS	WZ	SFWS	
COMMENTS															
152350	27.51.00	-82.29.52	-9	-64.2	.0		.0	1.0	250.7	250.7	.3	42.3	-4.0	0.0	test
125412	27.50.94	-82.29.58	41.5	29.7	134.5		134.5	1.0	1017.3	1017.4	179.1	2.4	-.1	0.0	
131818	27.48.06	-82.32.58	25.7	19.3	182.7		183.3	385.0	974.6	1017.9	199.4	1.7	1.9	0.0	
140229	26. 2.52	-85.44.88	11.0	-2.2	270.4		269.4	3065.0	712.8	1016.3	210.3	4.8	2.2	7.4	Start
Leg 1 to west 10k ft															
140741	26. 2.46	-86. 8.70	9.9	.8	89.6		269.1	3066.0	712.9	1017.6	177.7	2.9	2.3	11.9	end
leg 1 start turn															
141039	25.56.34	-86. 3.84	10.6	-2.0	294.5		117.1	3065.0	713.0	1017.1	200.2	3.4	2.4	6.9	
vicinity shower															
141355	25.56.04	-85.51.42	10.7	-2.3	.4		.4	3062.0	713.3	1017.1	213.1	4.7	2.1	8.5	start
leg 2 to north 10k ft															
141609	26. 5.58	-85.51.42	10.5	-1.3	.2		359.8	3067.0	713.0	1017.4	214.8	5.3	2.2	8.1	pilots
Note in and out of light precip															
141859	26.17.70	-85.51.48	10.6	-2.5	359.6		359.8	3069.0	713.0	1017.5	204.1	3.8	2.2	4.4	end
Leg 2 10k ft															
142651	26.26.76	-85.52.14	26.7	22.9	358.4		178.7	246.0	990.6	1018.3	354.5	.8	1.7	6.5	
143155	26. 8.10	-85.52.02	27.7	23.8	184.8		184.9	158.0	1000.5	1018.4	80.6	1.9	1.4	10.2	begin
5 min leg 1 500ft															
143358	26. 0.42	-85.52.74	28.0	23.1	173.4		184.9	160.0	1000.3	1018.4	74.5	2.1	1.4	10.5	xbt
launched pass buoy															
143709	25.48.72	-85.53.88	27.9	23.7	5.3		185.0	156.0	1000.6	1018.2	85.5	2.8	1.5	9.1	end
leg 1 500ft															
143803	25.46.56	-85.54.06	27.9	23.6	6.3		185.5	157.0	1000.4	1018.2	79.1	4.4	2.4	9.4	chuck
reports no temps from axbt															
144438	25.46.56	-85.54.06	27.9	23.4	6.3		185.5	157.0	1000.8	1018.6	92.4	4.6	.8	9.4	begin
leg 2 east 500ft															
144529	25.46.56	-85.54.06	27.9	23.4	6.3		185.5	159.0	1000.6	1018.6	110.1	4.4	.8	9.4	nav
data locked up															
144620	26. 4.80	-85.55.38	27.8	23.7	89.3		90.4	160.0	1000.5	1018.6	88.8	1.3	1.5	16.0	
vicinity shower															
144749	26. 4.86	-85.49.32	27.8	23.6	89.2		90.5	159.0	1000.7	1018.6	141.9	.5	2.0	12.6	passed
bouy															
145009	26. 4.98	-85.39.90	27.7	24.3	89.3		90.2	159.0	1000.6	1018.6	88.8	1.0	2.0	12.5	end</

Date: 2007-07-31

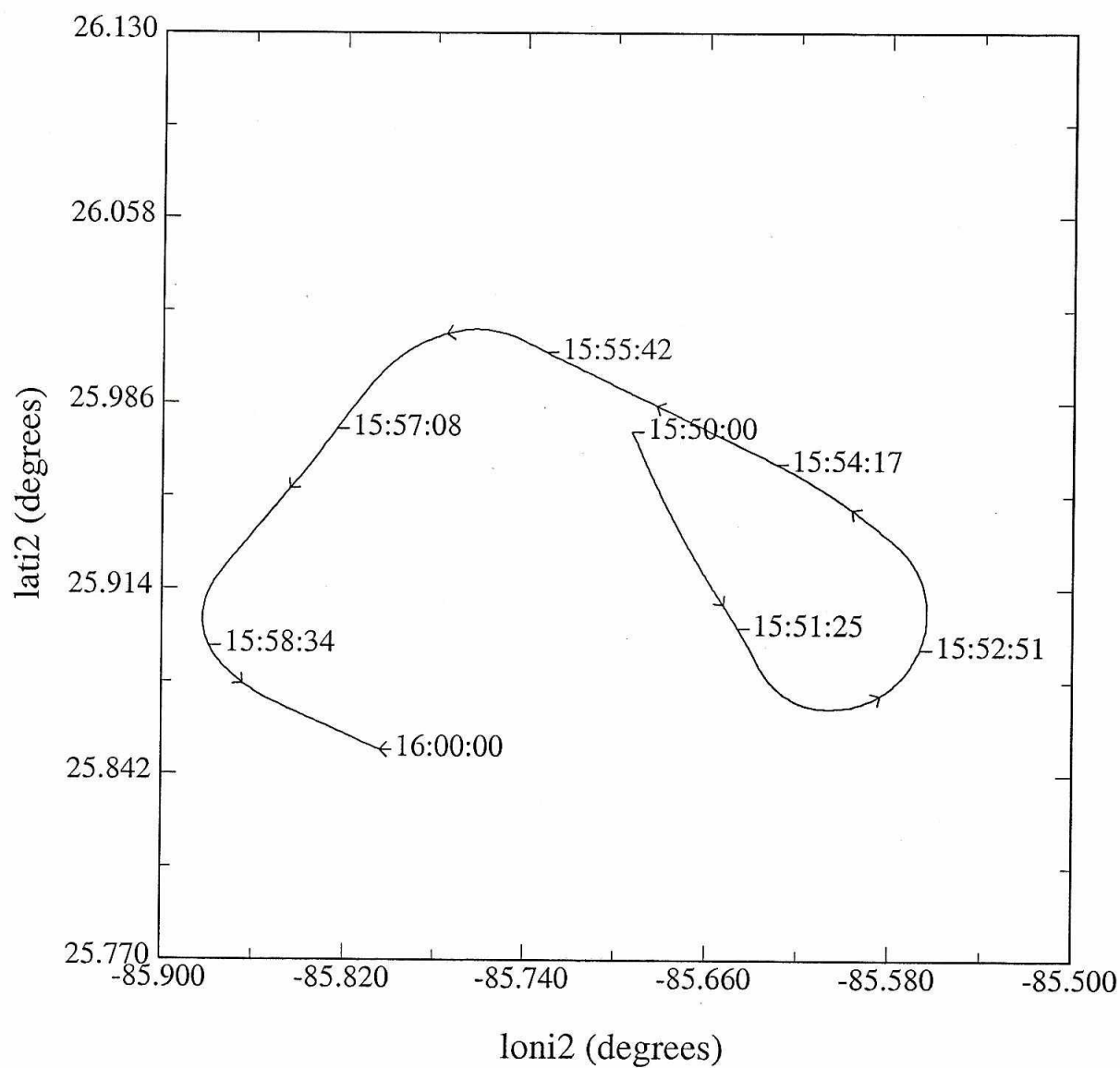
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#2

[illegible]

Sonde drop at 155453Z

07/25/2007 UTC, 15:50:00-16:00:00



—	lati2 (degrees), 1 s/sec	mean	sigma	min	max
	loni2 (degrees), 1 s/sec	25.93	0.05	25.85	26.01
		-85.72	0.10	-85.88	-85.56