



NOAA P-3 N43RF Hurricane Katrina

Flight ID: 050829I

Sensor or system

Number or Name

INE.....	1
Accelerometer.....	1
Temperature Probe.....	1
Dew Point Probe.....	2
Altimeter (for vertical wind).....	RA-159
Static Pressure.....	Rosemount (fuselage)
Dynamic Pressure.....	Rosemount (fuselage)
Time Source.....	Micro 99

Local Met. Data: Not copied at takeoff

Take off: 0655Z

Land: 1530Z

The RA-232 was substituted for the RA-159 during take off and landing due to spiking (T.O. 065301-065650; 152955-153300 Land).

The RA-159 had spikes that were removed and patched (0994406-094422; 095418-095443; 133506-133539).

There were spikes in pitch from the selected INE. These spikes were removed and patched (065418-065421; 070828-070831; 071600-071604; 071745-071748; 072153-072156; 073311-073314; 074615-074618).

Roll angle had spikes that were removed and patched (072153-072156; 073311-073314; 074615-074618).

There were data gaps noted: 070501-070511

There were times during heavy precipitation events (e.g. eye wall penetrations) when the dew point exceeded ambient temperature yielding a RH of greater than 100%. This is probably due to a wet bulb effect on the total temperature probe and/or the dew pointer over heating while trying to remove excess moisture. In these instances, no corrections were attempted.

SPECIAL NOTE: These data have not had Dr. Dave Jorgensen's vertical wind algorithm applied to them. Only the Aircraft Operations Center standard vertical wind algorithm has been applied. A new post-flight data processing algorithm was employed which currently lacks the Jorgensen method. The data can and will be rerun if required by the investigator.

	Take off	Land
Aircraft Static Pressure	1008.4 mb	1010.9 mb
Corrected Tower Pressure	1009.8 mb	1011.5 mb

Flight Director:

Tom Shepherd
813-828-3310 x3053

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

FLT ID: 050829I	From: KMCF	To: KMCF
Flt No: 05-48	In: 1541Z	On: 1530Z
ETD: 0700Z	Out: 0640Z	Off: 0655
ETE: 8+30	Blk Time: 9+01 9.0 Hrs	Flt Time: 8+35 8.6 Hrs
Sponsoring Org: NOAA/HRD	Program: Hurr 05	Purpose: H. KATRINA

AOC Flight Crew

Aircraft Commander: KENNEDY, P	Data System: McMillan, S
Co-Pilot: TE BEEST, R ' NELSON, M	AVAPS:
Navigator: BRAKOB, D	System Engineer: Hill, J
Flight Eng: BAST, G	AA: KOZAK, S
Flight Director: SHEPHERD, T	AA:
Avionics: ROGERS, M	Crew Chief:

Participating Scientists / Visitors

Name (Last, First)	Activity on Aircraft	Affiliation
DODGE, P	PI	NOAA/HRD
BLACK, M	C6 PI	
LANDSEA, C	↓	↓
GOLDENBERG, S		

Remarks (Storm Name, Mission ID, Recco Times, Fix Times)

Storm Name: KATRINA

Mission ID: WX12A KATRINA

TEAL 04 9Z LAST FIX

TEAL 45 12Z FIRST FIX T.O. 10Z

TEAL 99 T.O. 8Z

Recco Times

0705-
0747
0814
0929
1139
1223

Fix # Fix Time

61 0852
62 1022
63 1130
64 1233
65 1345

(See reverse for additional remarks)

U.S. DEPT OF COMMERCE / NMAO / NOAA / AIRCRAFT OPERATIONS CENTER

FLT ID: 050829I TIME OFF: 0655 Z TIME ON: 1530Z

	A/C - Takeoff	WX Station - Takeoff	A/C - Land	WX Station - Land
Pressure	<u>1008.4</u>	<u>29.82</u>	<u>1010.9</u>	<u>29.87</u>

ATIS - Takeoff Q

ATIS - Land I 1455 170/13 V157 SCT140 SCT25 31/26 A2987

Data Source	Number	Data Disposition / Date / Quality
Flight Level Tapes		
Radar Tapes		
Cloud Physics Tapes / Cds		
Video Tapes		
Dropsondes	<u>36</u>	Good: <u>36</u> Bad: Total: <u>Chg to HRED</u>
AXBT	<u>4</u>	<u>REV F</u>
AXCP		
AXCTD		
SONOBUOY		

REMARKS:

0449Z
910 mb
2753
8931

0534Z
2802
8934
910 mb

RADAR 836
0752 8934
0800 2841
RADAR 8941

AF 2838
0829 8937

921 mb
2921
8935

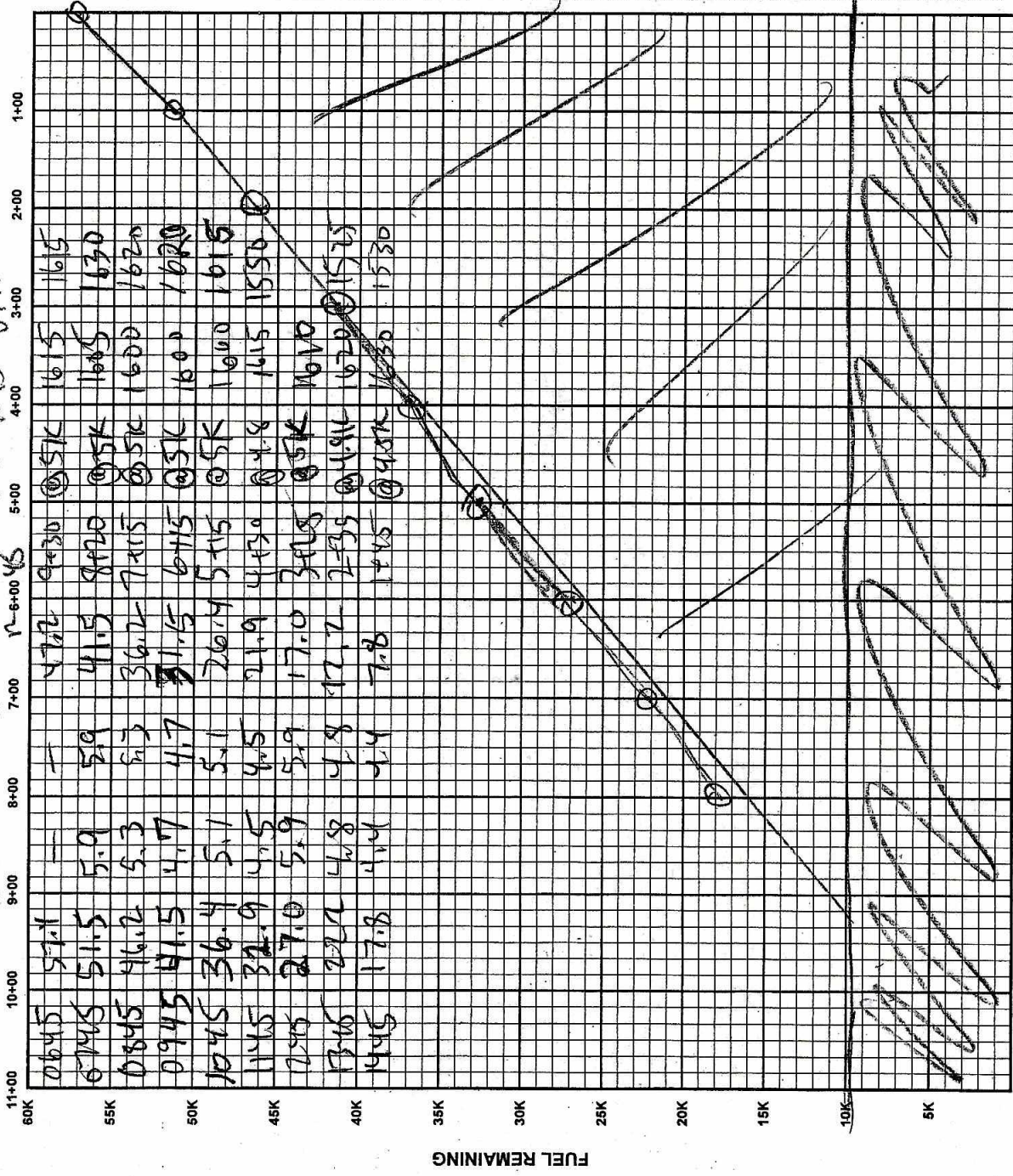
1210
0922
2933
8934

1490
1530
1490
0655

835

MISSION PREFLIGHT LOG										NAVIGATOR		AIRCRAFT COMMANDER		FLIGHT DIRECTOR		SCHEDULED / ACTUAL TAKEOFF Z		DATE OF TAKEOFF																	
DESTINATION		MISSION		RTE		MH		VAR		TH		DR		TRK		GS		WD		WS		ALT		TAS		LEG / TOT DIST		LEG / TOT TIME		PROP ETA		ATA		REMARKS	
WP	LAT / LON	KMLF	KABNA	LF																															
5	27-51 82-31														292								160	250	10	10	+10						0700	29 AUG 05	→ DIE
6	27-55 82-31														263								160	270	10	10	+10								→ DIE
7	27-30 82-00														262								✓	270	305	10	10	+45							→ 1
1	27-00 82-00														360								120	270	10	10	+45								→ 3
2	30-24 82-48														217								✓	✓	105	105	+25								→ 5
3	29-00 82-00														090								✓	✓	105	105	+30								→ 5
4	29-00 82-00														047								✓	✓	105	105	+30								→ 5
5	29-00 82-00														287								✓	✓	105	105	+30								→ 5
6	30-36 82-00														212								✓	✓	105	105	+30								→ 7
7	28-00 82-00														090								✓	✓	105	105	+30								→ 9
8	28-00 82-00														360								✓	✓	105	105	+30								→ 9
9	28-00 82-00														309								✓	✓	105	105	+30								→ 9
10	30-18 82-00														221								✓	✓	105	105	+30								→ 11
11	30-18 82-00														132								✓	✓	105	105	+30								→ 11
12	28-24 82-36														345								✓	✓	105	105	+30								→ 15
13	28-24 82-36														316								✓	✓	105	105	+30								→ 15
14	28-24 82-36														175								✓	✓	105	105	+30								→ 17
15	28-24 82-36														103								✓	✓	105	105	+30								→ 17
16	28-24 82-36														118								✓	✓	105	105	+30								→ 17
17	28-24 82-36														107								✓	✓	105	105	+30								→ 17
18	28-24 82-36														107								✓	✓	105	105	+30								→ 17
19	28-24 82-36														107								✓	✓	105	105	+30								→ 17
20	28-24 82-36														107								✓	✓	105	105	+30								→ 17
21	28-24 82-36														107								✓	✓	105	105	+30								→ 17
22	28-24 82-36														107								✓	✓	105	105	+30								→ 17
23	28-24 82-36														107								✓	✓	105	105	+30								→ 17
24	28-24 82-36														107								✓	✓	105	105	+30								→ 17
25	28-24 82-36														107								✓	✓	105	105	+30								→ 17
26	28-24 82-36														107								✓	✓	105	105	+30								→ 17
27	28-24 82-36														107								✓	✓	105	105	+30								→ 17
28	28-24 82-36														107								✓	✓	105	105	+30								→ 17
29	28-24 82-36														107								✓	✓	105	105	+30								→ 17
30	28-24 82-36														107								✓	✓	105	105	+30								→ 17
31	28-24 82-36														107								✓	✓	105	105	+30								→ 17
32	28-24 82-36														107								✓	✓	105	105	+30								→ 17
33	28-24 82-36														107								✓	✓	105	105	+30								→ 17
34	28-24 82-36														107								✓	✓	105	105	+30								→ 17
35	28-24 82-36														107								✓	✓	105	105	+30								→ 17
36	28-24 82-36														107								✓	✓	105	105	+30								→ 17
37	28-24 82-36														107								✓	✓	105	105	+30								→ 17
38	28-24 82-36														107								✓	✓	105	105	+30								→ 17
39	28-24 82-36														107								✓	✓	105	105	+30								→ 17
40	28-24 82-36														107								✓	✓	105	105	+30								→ 17
41	28-24 82-36														107								✓	✓	105	105	+30								→ 17
42	28-24 82-36														107								✓	✓	105	105	+30								→ 17
43	28-24 82-36														107								✓	✓	105	105	+30								→ 17
44	28-24 82-36														107								✓	✓	105	105	+30								→ 17
45	28-24 82-36														107								✓	✓	105	105	+30								→ 17
46	28-24 82-36														107								✓	✓	105	105	+30								→ 17
47	28-24 82-36														107								✓	✓	105	105	+30								→ 17
48	28-24 82-36														107								✓	✓	105	105	+30								→ 17
49	28-24 82-36														107								✓	✓	105	105	+30								→ 17
50	28-24 82-36														107								✓	✓	105	105	+30								→ 17
51	28-24 82-36														107								✓	✓	105	105	+30								→ 17
52	28-24 82-36														107								✓	✓	105	105	+30								→ 17
53	28-24 82-36														107								✓	✓	105	105	+30								→ 17
54	28-24 82-36														107								✓	✓	105	105	+30								→ 17
55	28-24 82-36														107								✓	✓	105	105	+30								→ 17
56	28-24 82-36														107								✓	✓	105	105	+30								→ 17
57	28-24 82-36														107								✓	✓	105	105	+30								→ 17
58	28-24 82-36														107								✓	✓	105	105	+30								→ 17
59	28-24 82-36														107								✓	✓	105	105	+30								→ 17
60	28-24 82-36														107								✓	✓	105	105	+30								→ 17
61	28-24 82-36																																		

	RANGE CONTROL GRAPH		
1645	1545	1245	1045
		845	645
		445	245
		45	



POINT OF SAFE RETURN		4 ENG	3 ENG
ETP DISTANCE (TO DEPARTURE)			
ENROUTE TIME (TO DEPARTURE)			
BURN RATE (LBS/HR)	4500	5500	
FUEL REQUIRED			
RESERVE AT DEPARTURE			
PSR FUEL			

CEX-ERB METHOD				
COMPASS TYPE	INS1	INS2	WET	
MERB(DIAL 030)				
+ZN				
= MTH				
MCH(READING)				
GE				
-VAR				
=DEV				

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

TRUE AIRSPEED CROSS-CHECK							
TIME	IAS	PRESS ALT	"F" FACTOR	EAS	OAT	TAS	ITAS
0711	210	12K	X	X	+16	255	157

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

PAGE OF

FIX TYPES
(G) - GPS (I) - INS (R) - RADIO (V) - VISUAL (C) - CELESTIAL (D) - DR

[illegible]

NOAA • AOC • SED
N43RF AVAPS DROP LOG

Project : Hurricane '05 / RAINEX

Mission : Katrina Landfall

Flight ID : 050829I

Take Off : 0654

Landing : 1530

Flt Dir : Shepherd

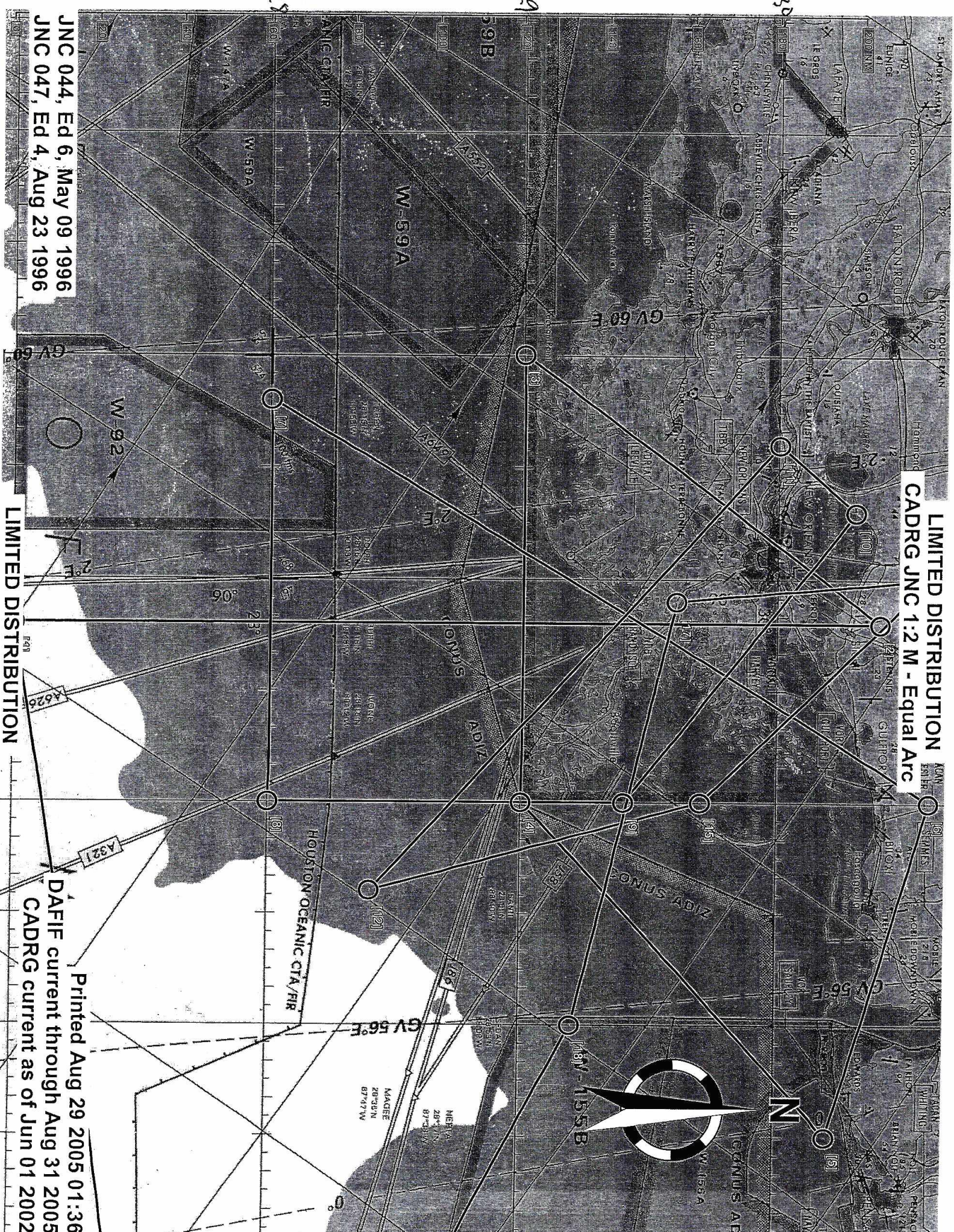
Launcher S/N: 2

Drop #	Sonde Serial #	Rcvr #	Press Offset	Launch Time	Winds Time	Operator	Comments	Good ?
1	051946009	1	0	0849	—	JWH	Very late Telem	—
2	051946012	2	0	0849	—		"	—
3	051946006	3	0	0849	—		"	—
4	051946011	4	0	0849	—		"	—
5	053116227	1	0	0912	3		Good	✓
6	051946010	2	0	0925	—		No Launch detect	—
1(BT)	1E	16	—	0849	—		No Go	—
2(BT)	1D	16	—	0849	—		No Go	—
7	051926012	3	0	0926	—		No Winds Very late Telem	—
8	051926143	4	0	0926	—		"	—
9	051946013	1	0	0926	—		"	—
3(BT)	1C	16	—	0921	—		Good	✓
10	051926145	1	0	0944	3			✓
11	044535105	1	0	0955	3			✓
12	051946005	1	0	1014			No Launch detect	—
13	051926021	2	0	1021	3			✓
14	051946014	3	0	1030	—			—
15	051926062	1	0	1030	3			✓
16	044535102	1	0	1043	—		No Launch detect	—
17	051926103	2	0	1057	3			✓
4(BT)	1A	16	—	1043	—			✓
18	051946026	3	0	1107	4			✓
19	051926110	1	0	1113	2			✓
20	051946036	4	0	1117	3			✓
21	051926201	2	0	1126	3			—
22	051926114	3	0	1126	3	JWH		—
23	051926111	1	0	1208		MER		—
24	058946058	2	+4	1210				—
25	051946004	3	0	1210				—
26	053116086	4	0	1222				—
27	053116226	1	0	1230				—
28	051946001	2	14	1242				—
29	053116062	3						—

050829I	TIME	LAT	LON	PS	SP	TA	TD	TK	RA	WD	WS	WZ	Comment
063943	27.50.94	-82.29.58	1009.0	1022.2	26.8	24.5	137.3	115.0	115.0	115.0	6.0	105.3	Block out
065435	27.50.82	-82.31.38	1010.3	2795.2	26.2	24.5	220.5	9976.0	90.2	5.5	.7		Take off
074509	27.28.86	-86.6.36	544.8	995.7	1.9	-20.0	261.0	5157.0	194.5	24.7	.1		
075231	27.24.30	-86.39.60	544.8	996.0	.8	-13.6	261.8	5143.0	206.9	31.9	.4		Radar fix 2836N, 8934W
080810	27.15.00	-87.45.12	643.3	990.9	8.9	4.3	253.2	3740.0	212.9	35.0	.2		08Z radar fix 2842N, 8941W
081050	27.13.92	-87.55.26	643.1	989.3	9.6	3.8	269.8	3737.0	209.1	37.9	.3		Now trk 270
081838	27.14.88	-88.26.34	643.5	985.0	10.1	4.2	297.7	3699.0	220.7	39.0	.4		Nw trk 300
083905	27.48.54	-89.35.82	642.8	969.3	9.2	10.4	300.6	3562.0	254.9	47.6	1.1		Hdg inbound for first pass
084807	28.26.70	-89.36.42	642.9	930.0	14.4	10.3	359.8	3247.0	263.8	49.0	2.6		BT1, D1-4
084948	28.33.90	-89.36.48	643.4	915.2	18.3	10.7	359.8	3138.0	269.4	34.3	1.6		BT2
085214	28.44.04	-89.39.18	643.1	909.5	19.3	7.2	329.4	3090.0	100.7	1.3	.1		Center fix
091229	28.48.06	-89.37.98	643.0	909.9	19.0	9.4	327.1	3095.0	49.2	1.4	1.0		Center drop; D5
092121	28.51.24	-89.35.34	643.5	909.2	20.1	7.0	359.5	3090.0	159.3	9.2	.2		BT3
092507	29.8.16	-89.35.28	643.2	930.4	12.8	14.5	1.1	3237.0	102.3	47.2	3.1		D6-9
094139	30.22.02	-89.34.62	641.1	979.8	8.5	9.4	338.2	3671.0	108.7	35.6	.5		At pt2 turn to trk 220
094444	30.21.42	-89.50.10	642.9	979.1	8.4	10.1	217.1	3640.0	103.6	47.9	2.5		D10
095508	29.39.78	-90.30.00	643.4	971.1	9.6	10.8	220.4	3575.0	55.7	46.0	1.7		D11
101422	28.54.72	-90.20.64	644.3	958.2	10.8	12.4	91.9	3460.0	357.5	49.1	3.1		D12; inbound from pt 3
102103	28.57.00	-89.45.18	643.0	921.6	16.6	11.3	80.9	3188.0	317.6	35.4	1.7		D13; W eye wall
103006	29.1.14	-89.15.84	642.4	929.9	13.2	13.6	90.8	3245.0	191.3	55.0	.4		D14 - 15 E eyewall
103529	29.5.22	-88.49.32	642.9	960.3	9.4	10.8	44.3	3480.0	185.6	64.4	1.3		Now trk 045 to pt 5
104252	29.32.04	-87.17.64	642.3	977.3	8.5	9.7	45.5	3633.0	158.8	52.4	-1.2		BT4; D16
105741	30.7.26	-88.34.32	643.3	990.7	7.7	8.1	268.3	3728.0	156.7	43.6	.5		D17; @ pt 5
110740	30.12.06	-88.32.76	640.2	980.6	8.0	9.6	270.3	3685.0	140.5	52.6	2.6		D18
111336	30.12.06	-89.10.56	640.4	971.7	9.2	10.7	269.4	3618.0	125.1	51.5	2.1		D19
111729	30.8.52	-89.32.40	644.4	967.7	9.7	10.0	191.6	3530.0	106.4	48.6	-.3		D20
112020	29.58.38	-89.32.82	644.4	960.2	9.2	10.4	181.2	3455.0	108.2	55.4	.9		Hdg back for pen #3 thne to pt7
112647	29.34.80	-89.32.64	644.0	930.7	13.0	14.0	179.3	3230.0	91.8	41.9	2.2		D21 - 22
113013	29.20.58	-89.34.32	644.0	915.9	15.7	12.9	190.5	3110.0	192.6	1.8	-.7		Fix 3
113117	29.16.14	-89.34.98	643.7	916.8	16.7	11.4	193.4	3133.0	274.5	13.6	.3		Turn to trk 220
113440	29.4.38	-89.40.38	643.7	936.0	13.1	12.2	152.0	3284.0	287.7	44.1	-.3		Aborting pt 7; hdg to pt 8
114547	28.23.70	-89.9.84	644.2	976.1	8.7	7.9	90.5	3595.0	238.3	49.8	-.8		Trk 090 to line up for S --> N run
114836	28.23.88	-88.52.26	644.0	979.1	8.5	8.8	76.1	3623.0	232.2	43.1	-.3		Turn to trk 360
120846	30.5.88	-89.24.72	644.0	957.2	9.6	11.6	294.7	3438.0	109.4	59.5	2.2		D23
120935	30.8.04	-89.30.06	643.6	957.8	10.1	11.5	295.0	3455.0	102.5	56.9	3.4		D24
121022	30.10.08	-89.35.16	644.8	960.0	9.7	11.5	294.9	3455.0	97.3	52.7	1.3		D25
121333	30.17.34	-89.54.48	644.2	966.9	8.9	10.1	274.7	3515.0	79.5	46.6	-.5		Hdg to pt10
122206	30.4.92	-90.14.94	644.0	966.6	9.0	10.0	135.4	3213.0	39.2	30.5	.6		D26 ovr L. Ponchatrane (sp?)
123023	29.43.80	-89.46.02	643.6	926.5	14.6	14.9	124.4	3213.0	39.2	30.5	1.8		D27
123245	29.38.22	-89.36.36	644.2	916.8	17.2	12.3	140.1	3132.0	214.9	1.3	.2		Fix 4
124215	29.29.88	-88.53.10	644.5	957.0	11.0	10.9	90.9	3445.0	197.4	63.1	-.0		D28
130642	30.11.16	-88.28.92	646.3	974.6	9.3	9.9	270.1	3562.0	159.8	53.9	.7		D29; along the beach
131321	30.8.28	-88.59.58	645.8	955.9	11.5	11.9	160.2	3425.0	158.1	63.6	-.6		D30

132229	29.52.38	-88.47.70	643.4	959.4	10.9	11.0	54.7	3482.0	179.5	64.7	-1.3	Setting up for SE-NW run outside
eye in NE quod												
132510	30. 6.12	-88.48.72	642.6	962.2	9.9	11.0	315.8	3508.0	162.7	63.0	1.6	D31
132559	30. 9.84	-88.52.86	644.1	961.4	9.8	11.0	315.5	3477.0	154.9	64.3	1.5	D32
132648	30.13.56	-88.57.00	643.6	960.3	9.9	11.0	315.2	3476.0	150.3	62.4	.4	D33
132737	30.17.16	-89. 1.08	643.3	960.1	9.7	11.2	315.2	3475.0	148.8	62.4	.0	D34
133337	30.32.04	-89.37.14	642.5	958.0	9.4	11.5	270.1	3464.0	104.7	51.7	2.2	Turn to trk 170; will be pen #5
134057	30.10.56	-89.37.80	642.9	932.7	12.4	14.7	150.1	3259.0	92.3	37.1	5.1	D35
135022	29.53.22	-89. 7.08	643.0	945.6	11.9	11.6	89.9	3370.0	184.4	57.4	-.5	D36
140459	29.53.46	-87.59.76	644.1	983.3	8.5	6.6	91.1	3657.0	178.8	47.0	.2	End science; RTB
144941	28.39.06	-84.41.16	483.9	998.9	-4.7	-8.8	112.9	6134.0	184.8	17.2	.6	FL190;Ci abv, sct blo
153002	27.51.36	-82.30.84	1011.7	2747.2	32.2	25.1	220.8	9976.0	141.9	6.3	1.7	Land
154045	27.50.94	-82.29.64	1010.9	1019.6	32.0	24.9	230.9	77.0	59.6	7.1	.1	Block in

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JNC 044, Ed 6, May 09 1996
 JNC 047, Ed 4, Aug 23 1996

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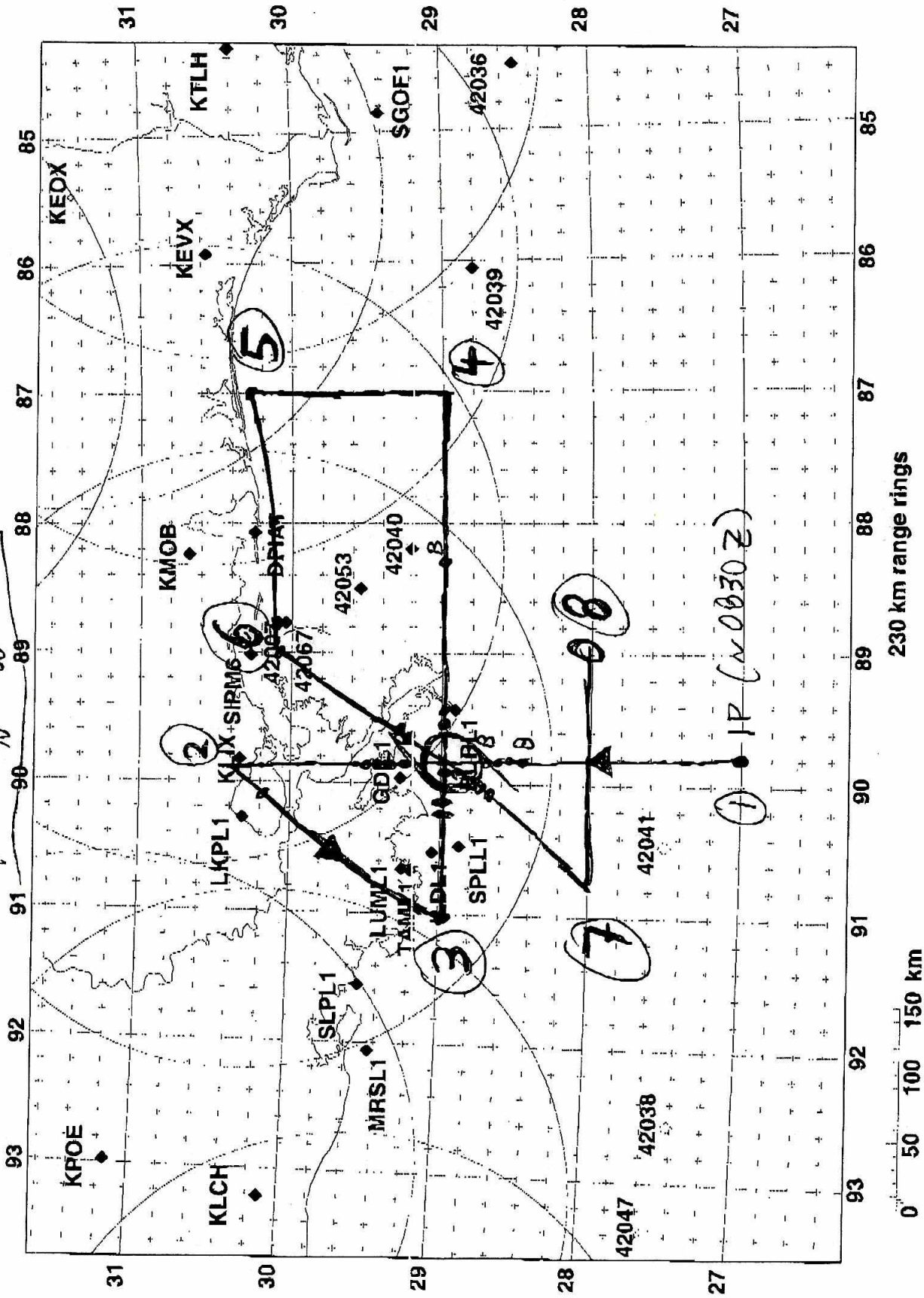
KATRINA LANDFALL

PART I

POSITION ~ 10Z

29.089.8
N
W

Center Lat: 29.00 Lon: -89.00



KATRINA PART II

LANDFALL

Center Lat: 29.00 Lon: -89.00

POSITION
N132 29.5N
89.9

