19980928I1-LPS

On-Board Lead Project Scientist Check List

Date 28 Sept/98 Aircraft 43 Flight ID 980928~~E~~I

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	P.Dodge/M.Black	Flight Director	J.Parrish
Cloud Physics		Pilots	D.Tennesen B.Taggert
Radar	M.Black/P.Dodge	Navigator	S.Kozak
Workstation	P.Dodge/M.Black	Systems Engineer	T. Lynch
Photographer/Observer		Data Technician	J.Smith
~~Omega~~GPSsonde	J. Franklin	Electronics Technician	Chris
~~AXBT/AXCP/Guest~~ SRA	Wayne Wright, Ed Walsh	Other (WARDS)	J. McFadden

48 H News Crew:

Take-Off: 090727 Location: McDill

Landing: 182326 Location: " (7)

9 h 16 min

Number of Eye Penetrations: ~~IIII~~ 11

B. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind
28/10Z	30.2	88.8	964 FCST	BY Frank
?	29.9	88.7		

C. Mission Briefing: Fly 7,000 Coastal Patterns in support of Scanning Radar Altimeter measurement of storm surge and wave heights.

NOTE: Attached 5 pages of notes replace Event Log sheets

E.2 Lead Project Scientist (On-Board)

E.2.1 Preflight

___ 1. Participate in general mission briefing.

___ 2. Determine specific mission and flight requirements for assigned aircraft.

___ 3. Determine from CARCAH or field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist and CARCAH unless briefed otherwise by field program director.

___ 4. Contact HRD members of crew to:

a. Assure availability for mission.
b. Arrange ground transportation schedule when deployed.
c. Determine equipment status.

___ 5. Meet with AOC flight crew at least 90 minutes before takeoff, provide copies of flight requirements, and provide a formal briefing for the flight director, navigator, and pilots.

___ 6. Report status of aircraft, systems, necessary on-board supplies and crews to appropriate HRD operations center (MGOC in Miami or FGOC at remote recovery location).

E.2.2 In-Flight

___ 1. Confirm from AOC flight director that satellite data link is operative (information).

___ 2. Confirm camera mode of operation.

___ 3. Confirm data recording rate.

___ 4. Complete Form E-2.

E.2.3 Postflight

___ 1. Debrief scientific crew.

___ 2. Report landing time, aircraft, crew, and mission status along with supplies (tapes, *etc.*) remaining aboard the aircraft to the appropriate HRD operations center (MGOC or FGOC).

___ 3. Gather completed forms for mission and turn in at the appropriate operations center. [Note: all data removed from the aircraft by HRD personnel should be cleared with the AOC flight director.]

___ 4. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.

___ 5. Determine next mission status, if any, and brief crews as necessary.

___ 6. Notify the appropriate operations center (FGOC or MGOC) as to where you can be contacted and arrange for any further coordination required.

___ 7. Prepare written mission summary.

Mission Summary
Hurricane Georges
Landfall
9809028I Aircraft: 43RF

Scientific Crew:		**Aircraft Crew:**	
Chief Scientist	Peter Dodge	Cockpit:	LCDR Brian Taggart
Doppler Scientist	Mike Black		CAPT Dave Tennesen
Cloud Physics			Steve Wade, Butch Moore
Dropsonde Scientist	James Franklin	Navigator:	LCDR Steve Kozak
Workstation/AXBT:	Mike Black/ Peter Dodge	Flight Director:	Jack Parrish
Observer/WARDS	James McFadden	Engineers:	Terry Lynch, Jeff Smith,
SRA	Ed Walsh, Wayne Wright		Chris Hornbrook
		Radio:	Damon Sans Souci

Mission Briefing:

At 3 am EDT, 28 September 1998, we briefed the AOC flight crew for a Tropical Cyclone Windfields at Landfall research flight in Hurricane Earl, which at that time was forecast to make landfall between Mobile, Alabama, and New Orleans, Louisiana. The goal of the flight was to collect flight-level, radar and GPS dropsonde data to capture the structure of the windfield in a landfalling hurricane. We were especially interested in the onshore flow because of the possibile storm surge in Lake Ponchatrain and Mobile Bay. Ed Walsh and Wayne Wright were there to collect Scanning Radar Altimeter (SRA) data to map out the wave heights and storm surge. Our plan was to pass along the Gulf Coast, followed by a figure 4 through the storm, all at 7,000' altitude. Then we would climb to 14 000', if necessary, and fly radials between Mobile and New Orleans WSR-88D radars. There was also an option to fly along the principal rainband east of the center, similar to the pattern we flew in Hurricane Earl a few weeks before.

Several University groups sent surface observing systems to catch Georges' landfall; their locations near Slidell and Gulfport are shown in Figure 1. The University Of Oklahoma sent two mobile Doppler radars (DOWs), an instrumented 10m tower, and two portable observing systems mounted on cars. Clemson University and Texas Tech University erected instrumented towers, and the University of Alabama/Huntsville deployed a profiler. Flight patterns for this flight (and the previous flight, NOAA 42) were desgined to overfly these sites if possible and to drop GPS sondes nearby.

Mission Synopsis:

We left MacDill Air Force Base at 0907 UTC, and reached our mission altitude of 7000' by 1005. Figure 1 shows most of our flight track, and Figure 2 shows the surface data from most of our GPS sondes. The core of Hurricane Georges was mainly stratiform, so we maintained our altitude at 7 000' until we finished our pattern at 1712 and climbed out to return home. The experiment is conveniently described in three parts:

a. Initial coastal survey and figure 4, 1005-1326 UTC:

After dropping two sondes near buoys 42036 and 42039, the aircraft descended to 7,000' and headed for C-Man station CSBF1 (Figure 3a), where we dropped another sonde. We then turned NW and then W, to map the winds and waves east of the center, deviating slightly to avoid the nastier cells in a strong rainband between Panama City and Fort Walton Beach (the rainband was right over the Eglin AirForce 88D at this time). At 1028 we were ~110 nmi from the center and Ed Walsh reported 10-15' wave heights. After the 5th sonde drop at 1032, the aircraft turned to move closer along the coast on our first pass through the center. Sondes were deployed near C-Man station DPIA1, in the east eyewall, in the center at 1057, and then in the west eyewall and along the coast, finishing with our 10th sonde in the center of Lake Ponchatrain. During this initaial pass the radar was in F/AST mode. We turned and headed back east to fly a figure 4 pattern in continuous mode, so that we could construct an EVTD analysis and send a horizontal windfield image back to TPC. But two errors rendered the second pass through the storm unsuitable for EVTD: the radar operator forgot to swich out of F/AST until we were in the center and the workstation operator (me!) had forgotten to start the radar capture. It had been a long week, and fatigue was starting to play tricks on us. But no problem, we just added

another east-west leg, which ended at 1326 over Lake Ponchatrain. One image of the EVTD winds at 1 km was transmitted back to TPC. During the figure 4 several GPS sondes were dropped in Georges to define the eyewall winds. Sondes 7, 11-13 and 18 were dropped near the Gulfport-Biloxi area where the surface teams were deployed. We also flew over that region three times in this part of the flight.

b. Second coastal pass and WSR-88D triangle, 1326-1632:

From Lake Ponchatrain we flew south to the GDIL1 C-Man station to drop sonde #20 (Figure 3b), followed by a drop at BURL1. This was the first time we got out of the rain and clouds and could see the Gulf of Mexico and bayous.Then we turned northeast and flew towards KEVX, releasing a sonde at buoy 42040 on the way. At 1427 we turned at the coast, dropped another sonde and headed back along the coast. We followed the coast line more closely, to measure the wave heights close to the shore. We passed through the center for the 5th time at 1504 and then followed the coast to Lake Borgne where we turned south east, heading for 42040. From 42040 we flew North up into Mobile Bay, where we dropped the 25th GPS sonde. We had intended to repeat the KMOB-KLIX-42040 triangle, but time was running short so Mike suggested we pass through the center, turn and go back to the center again. Then we would turn in tthe center to head southeast towards the inflow region of the main rainband, which was now just east of Mobile Bay. By doing this we were able to release sondes 26 and 27 quite near the shore on each side of the center to get a pair of onshore and offshore soundings in higher winds.

c. rainband module, 1632-1712:

The strong rainband was shaped similarly to the line-echo wave pattern seen occasionally in midwestern squall lines, and the only weakness in the high reflectivity was at the kink. After dropping a sonde in the inflow region, we flew up the outside edge until we reached to the weak spot, dropped sonde # 30 as we crossed the band and continued along the inside edge until we were about 25 km inland, above Fairhope, Alabama. We turned south and stayed on the inside edge of the band. At 1704 there was a great view of the the disturbed ocean as we came off the coast. A sonde was lauched there, (# 31), and probably landed on the beach. Our last sonde was dropped in the band at 1707. After we crossed back through the rainband at 1712 the pattern was finished and we climbed out to return home.

NOAA 43 landed at MacDill at 1823 UTC.

Evaluation:

The flight went very well. The sondes, Doppler radar and SRA data provide good coverage of a destructive hurricane. GPS sonde data and F/AST Doppler radar data were collected near every one of the deployed profilers, instrumented towers and DOW radars, so there will be a lot of joint effoert required to analyze all of the data collected.

Acknowledgements:

The AOC crew were great. Jack Parrish and the flight crew agreed to every change in the flight patterns that we requested, and Dave Tennesen and Brian Taggart moved us through some bumpy flying with a minimum of surprises. Terry Lynch kept the radar running, and Jeff Smith and Chris Hornbrook managed to keep with our evolving plans for GPS sonde drops.

Mike Black acted as co-LPS on this mission; he called most of the sonde drops, and also helped design the patterns. James Franklin processed and transmitted the GPS sonde data. Frank Marks and Pete Black helped plan the flight . Mark Powell and Jerry Straka (University of Oklahoma) coordinated the mobile teams' deployment on the ground.

Problems:

There was a brief problem with the ASDL system at the beginning of the flight. The radar system was down from 1002 to 1014 UTC, and the tail radar froze from 1106 to 1115.

Tables:

Table 1. Centers determined by AOC Flight Director and Navigator

Time	Lat	Lon	Comments
1057	30° 21′	88° 55′	962 mb, from GPS Sonde
1134	30° 20.5′	88° 56′	
1222	30° 20′	88° 59′	
1311	30° 21′	88° 57′	
1504	30° 24″	88° 58′	
1606	30° 28′	88° 57′	967 mb, est from flight level
1628	30° 29′	88° 57′	

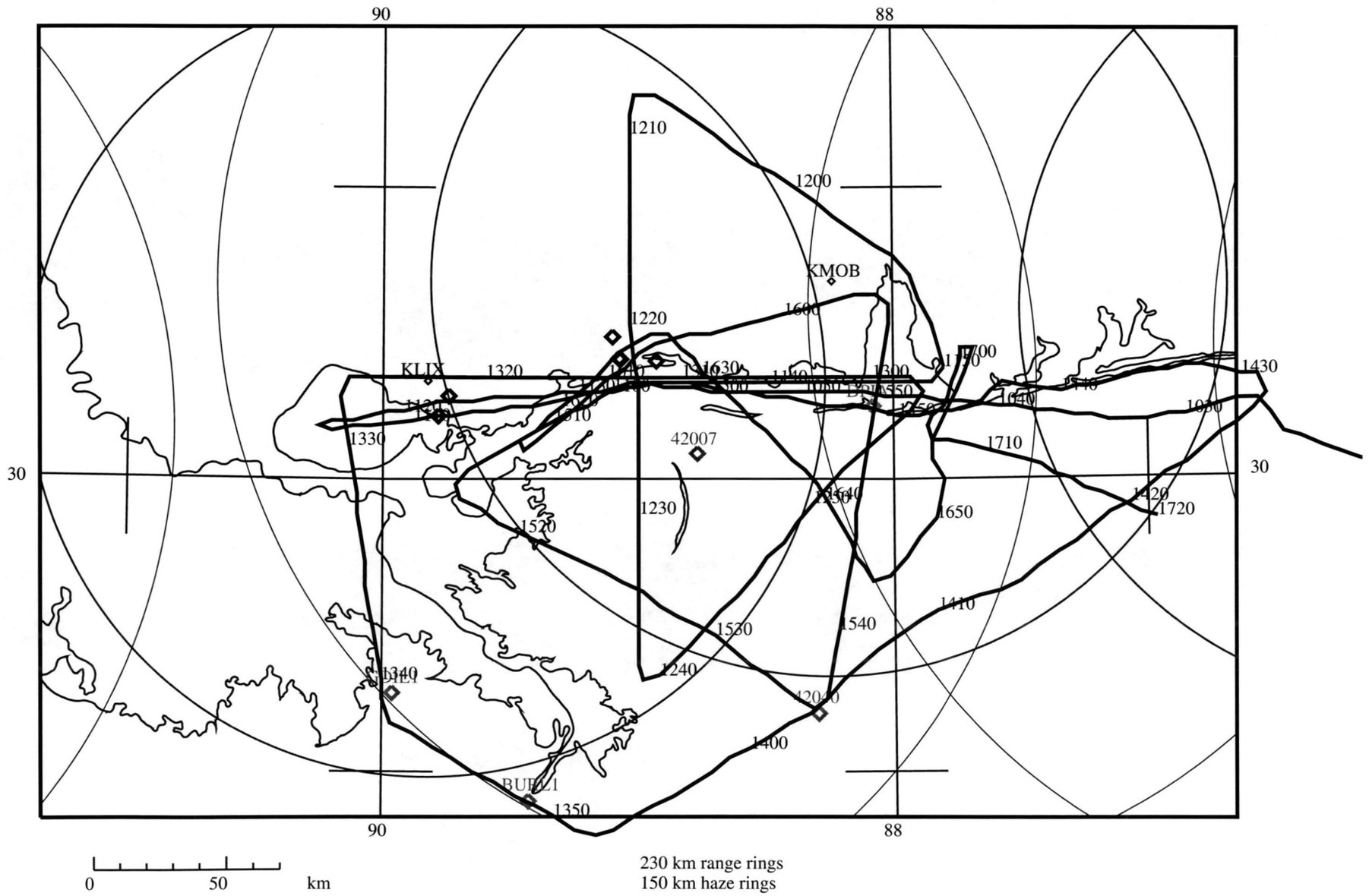
Table 2. GPS Sondes

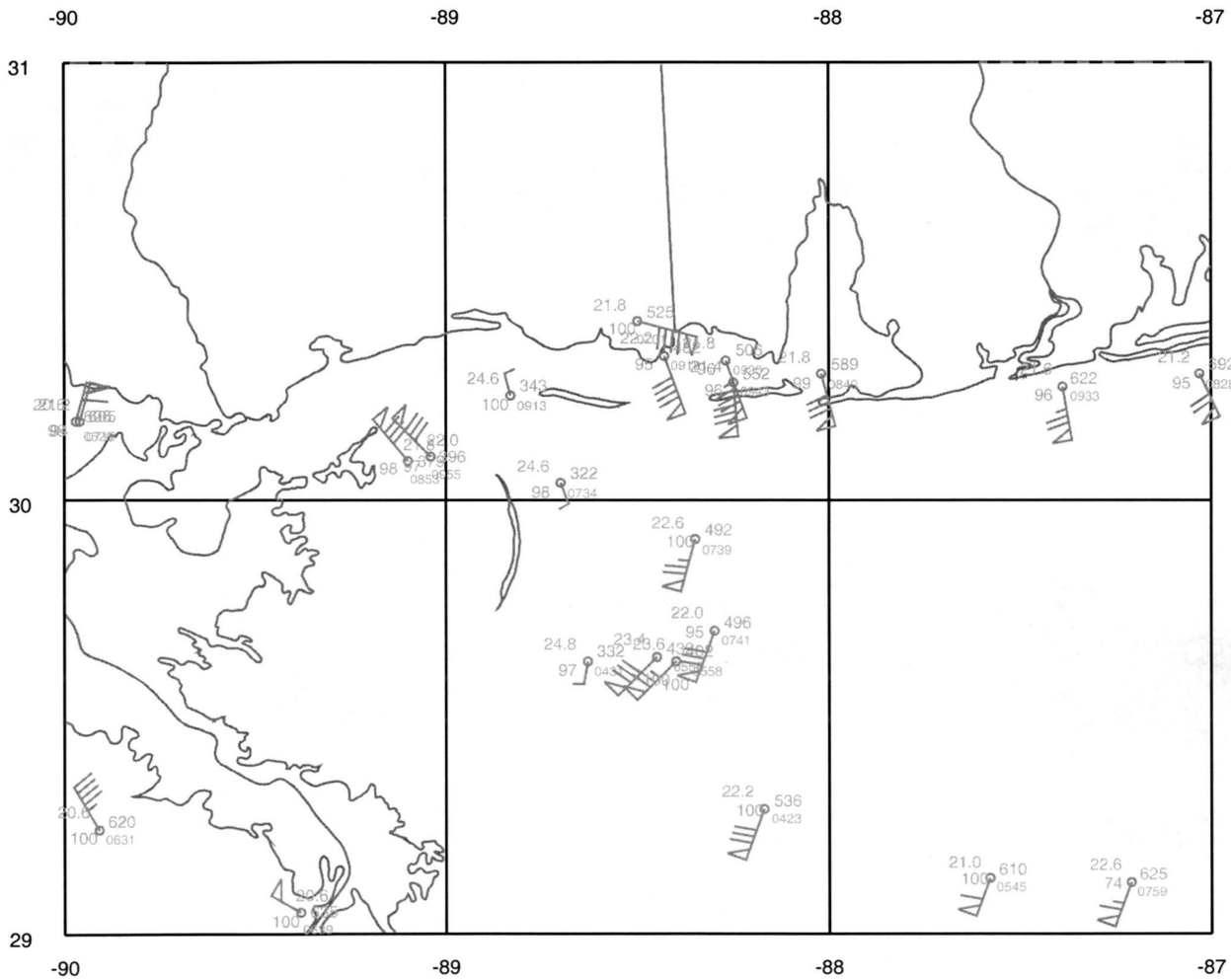
#	Serial #	Time	Lat	Lon	Comments from message
2	974510071	093800	28.540	-084.690	MBL WND 16529 OVER BUOY 42036=
3	973720050	095600	28.880	-086.000	MBL WND 17044=
4	981750069	100900	29.770	-085.410	MBL WND 15538=
5	983310208	103200	30.250	-087.010	MBL WND 16567=
6	981830038	104600	30.340	-088.110	MBL WND 16569=
7	983310202	105300	30.350	-088.600	MBL WND 16575 EYEWALL 090=
9	974010013	110100	30.240	-089.170	MBL WND 33072 EYEWALL 270=
10	982010018	111500	30.150	-090.210	MBL WND 32045=
11	974530093	113300	30.330	-088.930	EYE=
12	974510011	113700	30.380	-088.670	MBL WND 16068 EYEWALL 090 LST WND 014= (Mud!)
13	982430075	113800	30.380	-088.560	MBL WND 16567 EYEWALL 090=
15	982640254	122600	30.080	-088.960	MBL WND 26562 EYEWALL 180=
16	981810001	124100	29.410	-088.800	MBL WND 24558=
17	981750021	125800	30.400	-087.960	MBL WND 16561=
18	981830011	130800	30.390	-088.770	LST WND 091 MBL WND 16061 EYEWALL 090=
19	981820084	132600	30.320	-090.090	MBL WND 33047=
20	981810014	134100	29.200	-089.950	MBL WND 27048=
21	981750024	134800	28.900	-089.410	MBL WND 26048=
22	982720419	140300	29.230	-088.290	MBL WND 22052=
23	983410129	142900	30.390	-086.600	MBL WND 16546=
24	983410136	152300	29.690	-089.110	MBL WND 26063=
25	983310209	155300	30.600	-088.010	MBL WND 16054=
26	983340083	162200	30.350	-089.120	MBL WND 31046=
27	983310051	163200	30.310	-088.620	EYEWALL 135 MBL WND 21068=
28	983410123	164500	29.720	-088.090	MBL WND 21556 RAINBAND=
29	983410046	164800	29.790	-087.920	MBL WND 19559 RAINBAND=
30	983410135	165200	30.080	-087.820	MBL WND 19545 RAINBAND=
31	983410134	170500	30.230	-087.850	RAINBAND= (Mud!)
32	983410127	170700	30.170	-087.790	MBL WND 19061 RAINBAND=

Note: Sondes 1, 8, and 14 had no data.

Figures:

1. NOAA 43RF flight track. (on thor in /users/peter/georges_stuff.d/ inner_pattern_map.draw, *.ps}
2. Surface plot of GPS Sonde drops (/users/peter/georges_stuff.d/synmap1050.ps)
3. Flight track maps for each module (/users/peter/georges_stuff.d/3_panel_fig.draw, *.ps)
4. Lower Fuselage radar image (thor /hrd/dat/georges/g28_11.gif)


Center Lat: 30.20 Lon: -89.00
90
88
30
KLIX
KMOB
42007
1210
1200
1220
1600
1700
1430
1320
1330
1710
1230
1650
1520
1720
1410
1540
1530
1240
1400
1350
0
50
km
230 km range rings
150 km haze rings



GEORGES

925 mb

Date: 980928
Time: 00-12 UTC

EARTH RELATIVE

NOAA/ERL/HURRICANE RESEARCH DIVISION

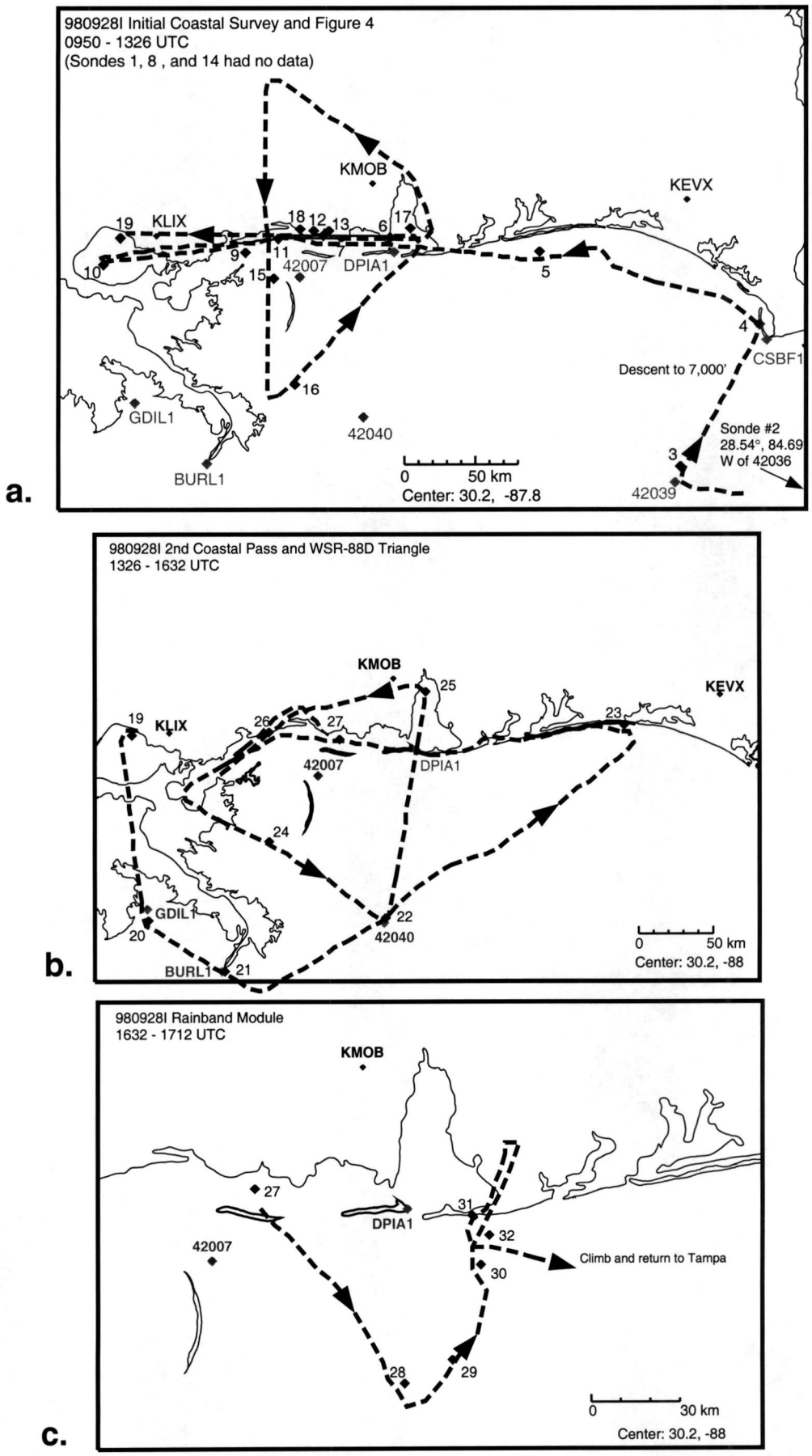
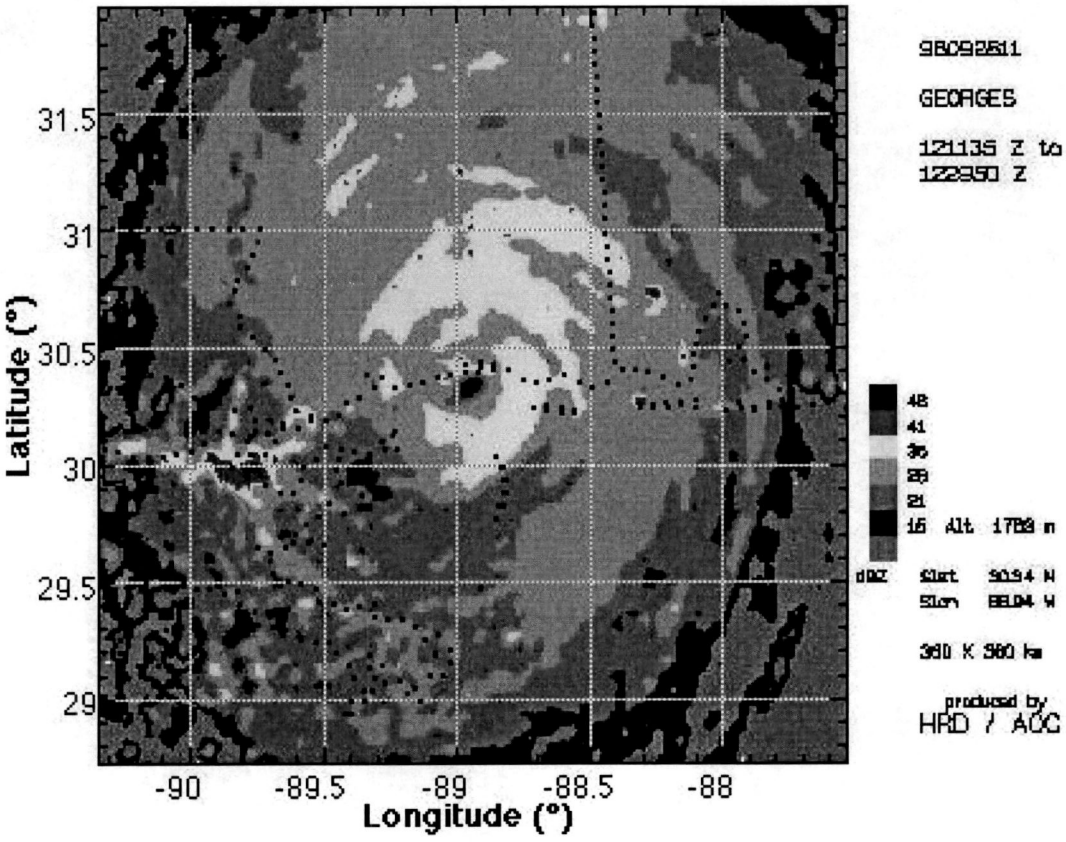


Figure 3.NOAA 43 Track (dashed) and GPS Sonde Splash Locations (black diamonds) on 28 September 1998


31.5
31
30.5
30
29.5
29
Latitude (°)
-90
-89.5
-89
-88.5
-88
Longitude (°)
98092511
GEORGES
121135 Z to
122350 Z
48
41
35
28
21
15 Alt 1788 m
dBZ
Start 3019 N
Stop 8804 W
360 K 360 ka
produced by
HRD / AOC

980928h1
GEORGE
054606 Z to
062000 Z
47
43
38
33
25
18 Alt 3000 m
m/s
Slat 29.73 N
Slon 88.77 W
150 X 150 km
produced by
HRD / AOC

Figure 3

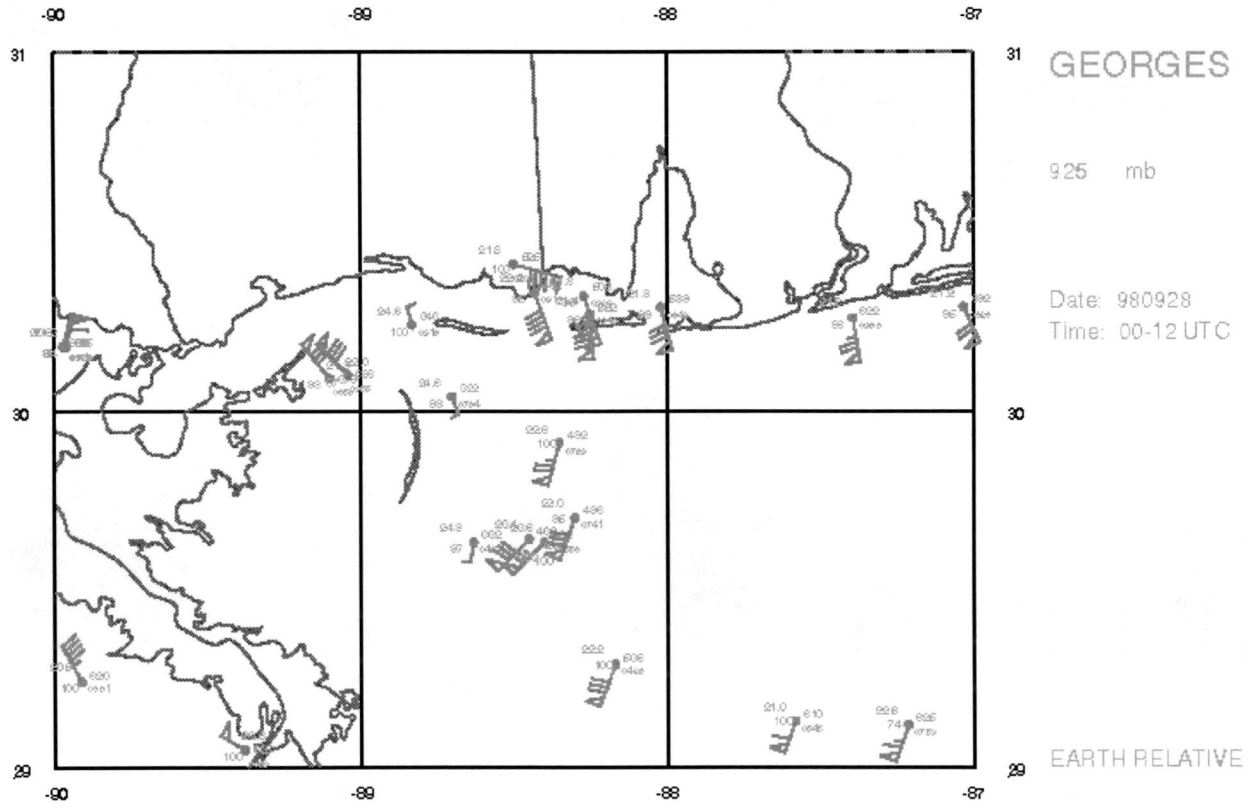
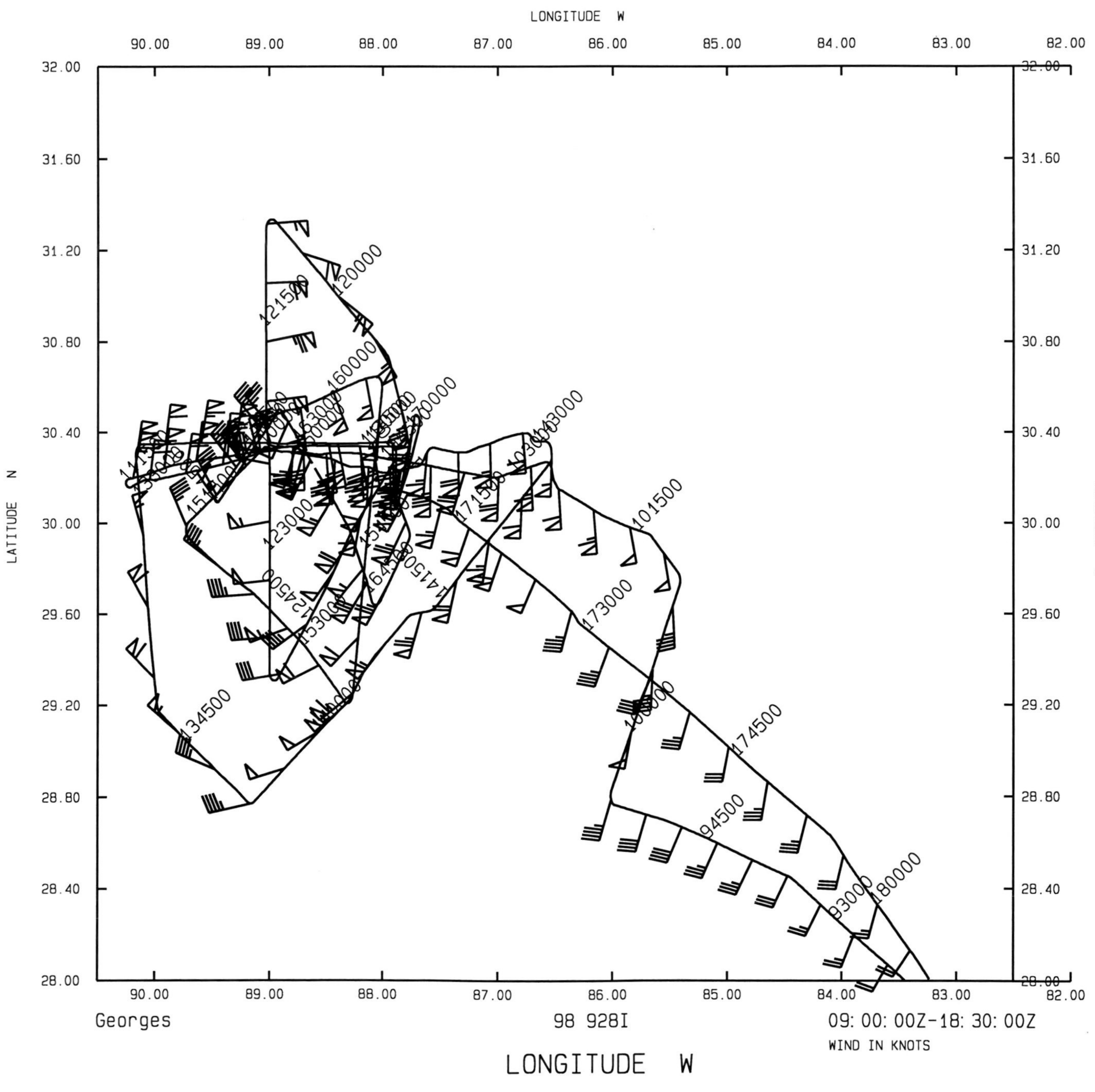
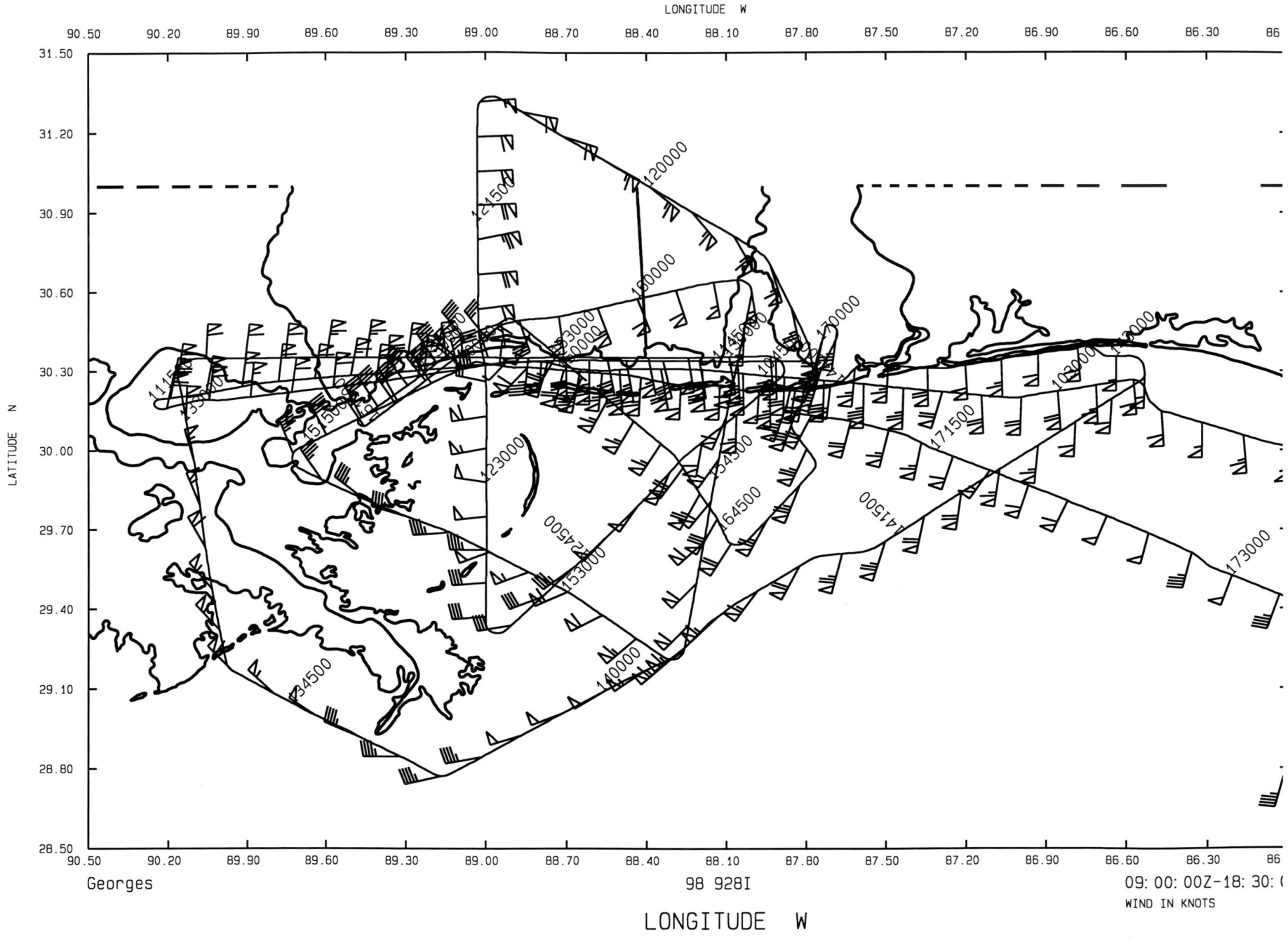
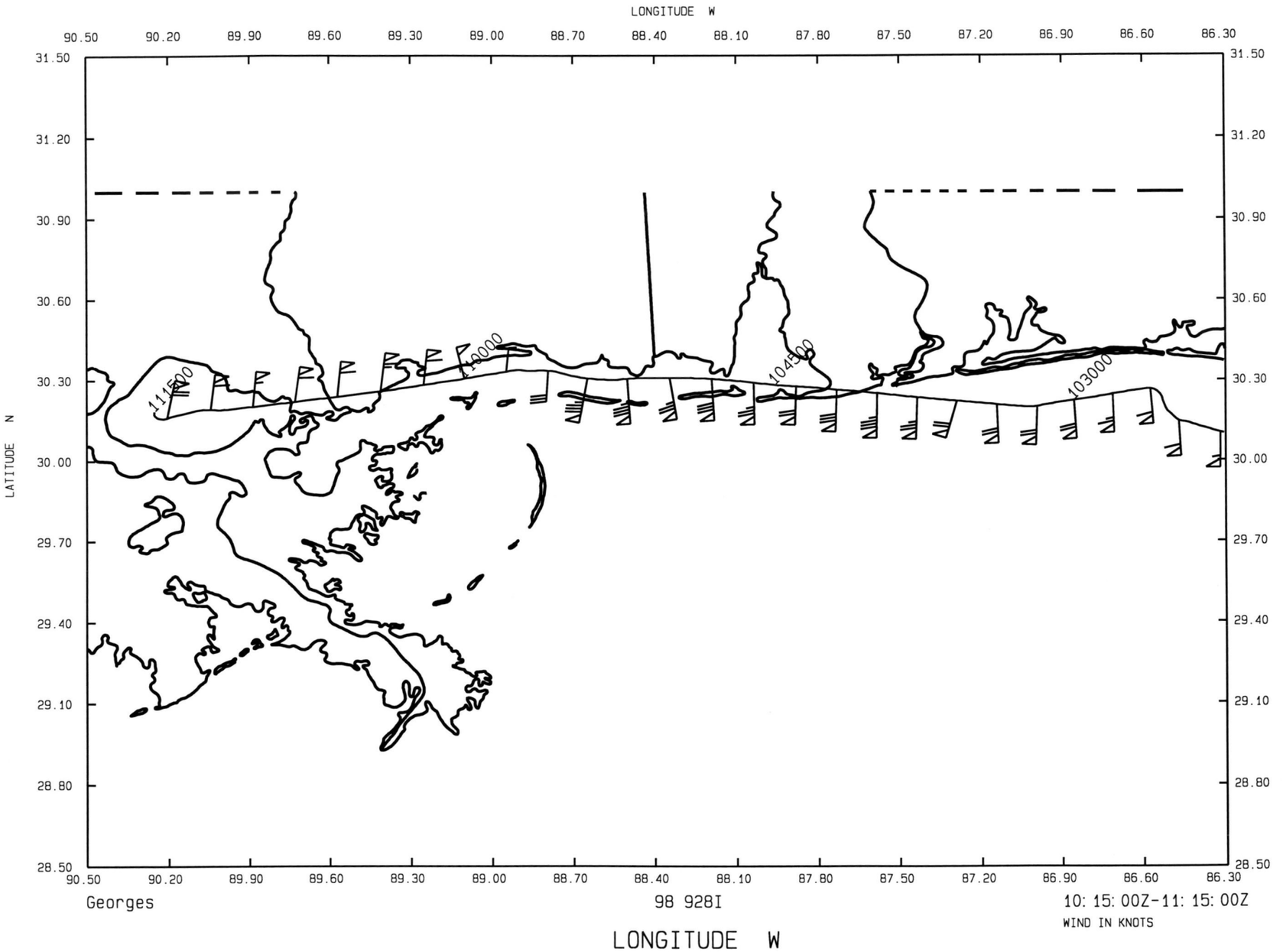
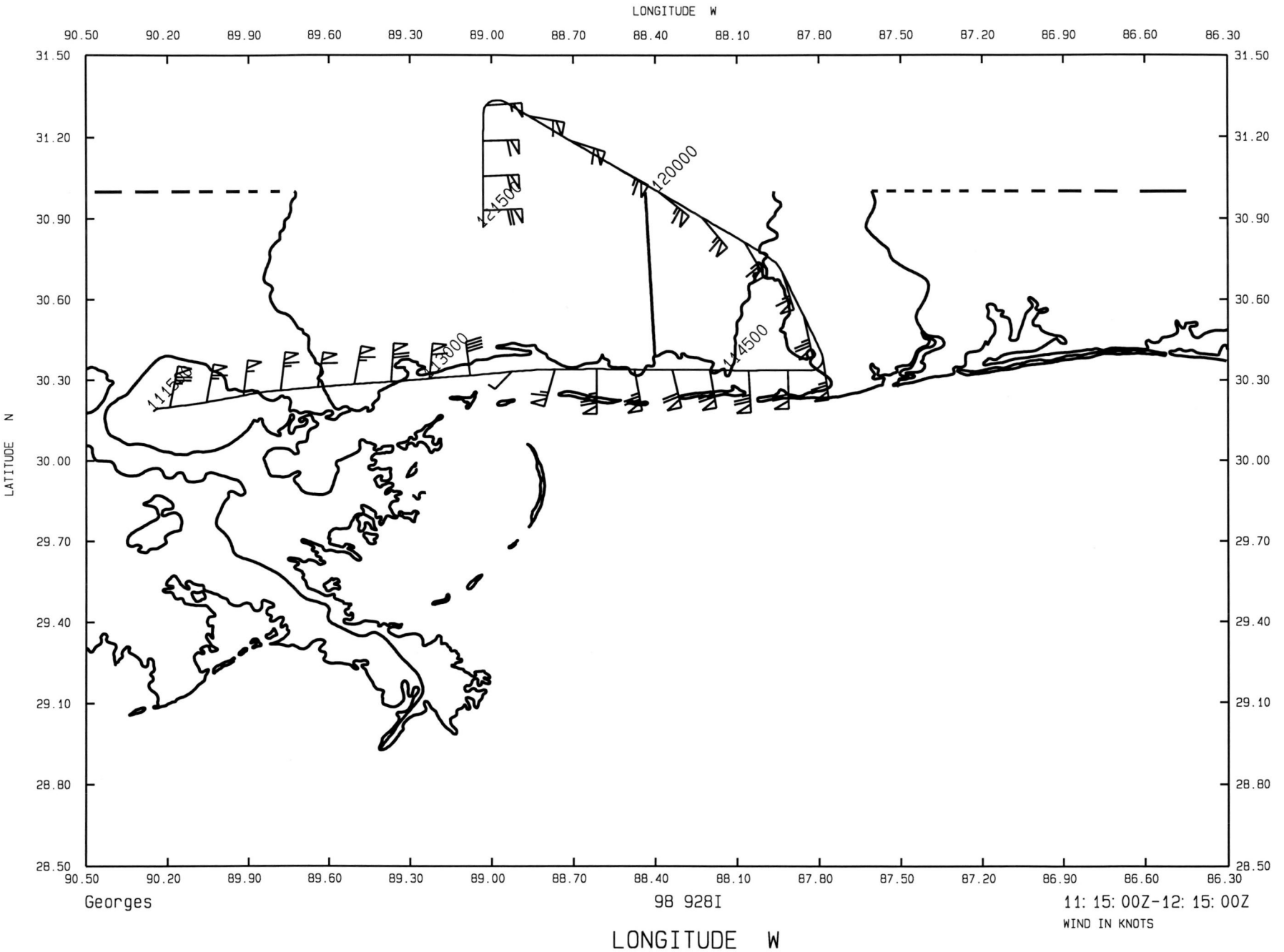

-90
-89
-88
-87
31
30
29
GEORGES
925 mb
Date: 980928
Time: 00-12 UTC
EARTH RELATIVE
NOAA/ERL/HURRICANE RESEARCH DIVISION

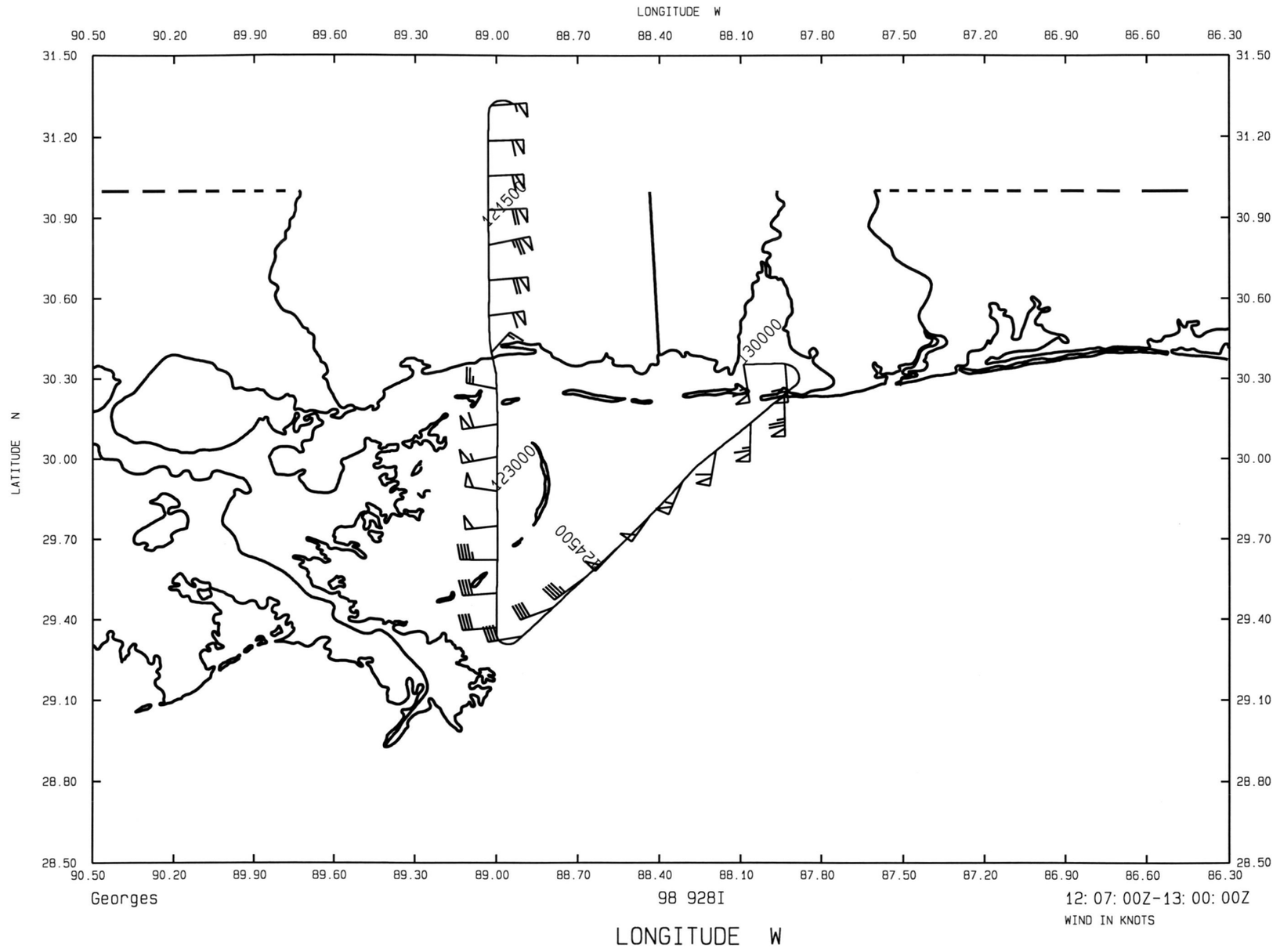
Figure 4

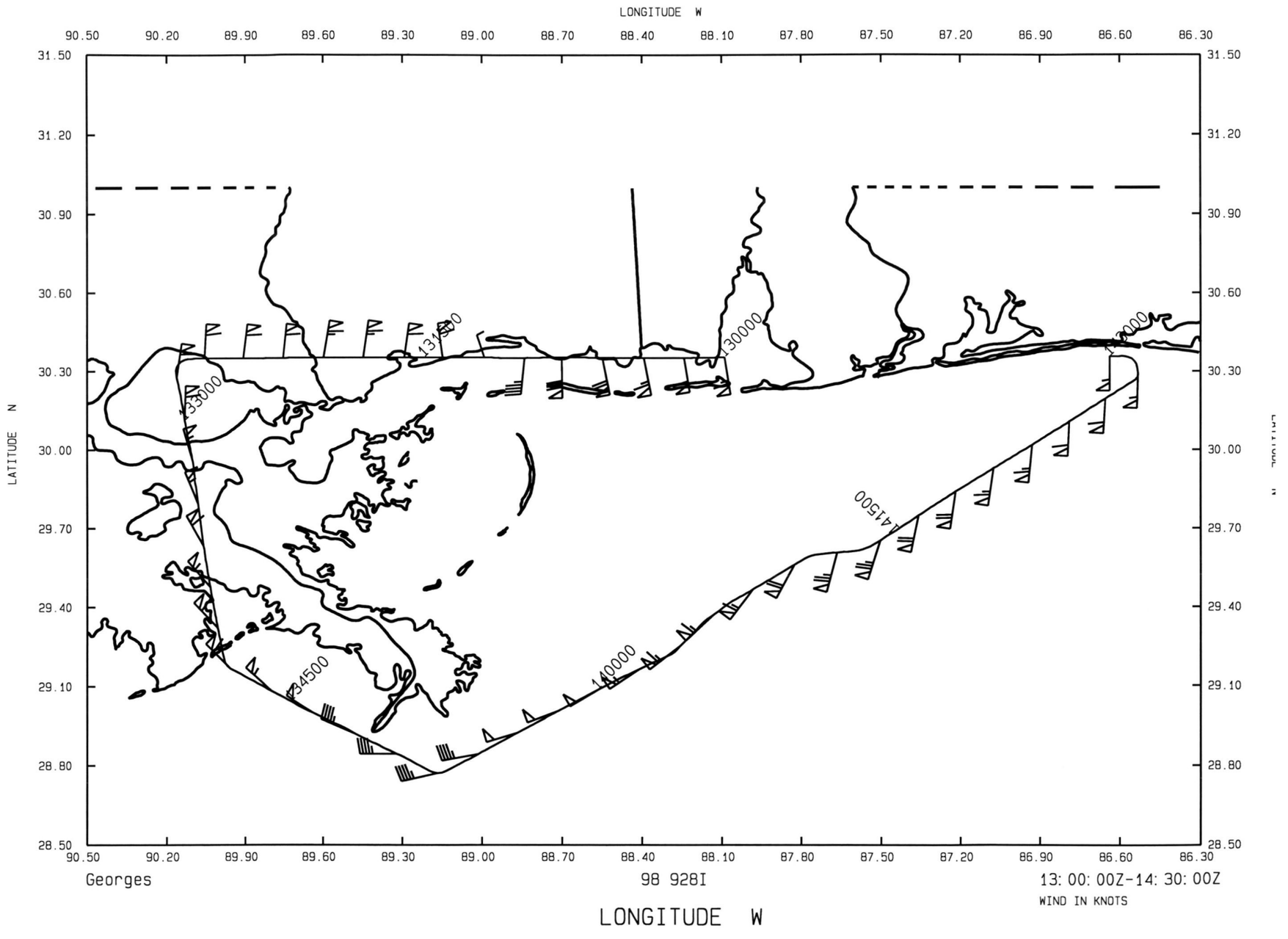

LONGITUDE W
90.00 89.00 88.00 87.00 86.00 85.00 84.00 83.00 82.00
32.00 31.60 31.20 30.80 30.40 30.00 29.60 29.20 28.80 28.40 28.00
LATITUDE N
LATITUDE N
120000
121500
160000
170000
103000
101500
173000
134500
174500
94500
180000
93000
Georges
98 928I
09: 00: 00Z-18: 30: 00Z
WIND IN KNOTS
LONGITUDE W

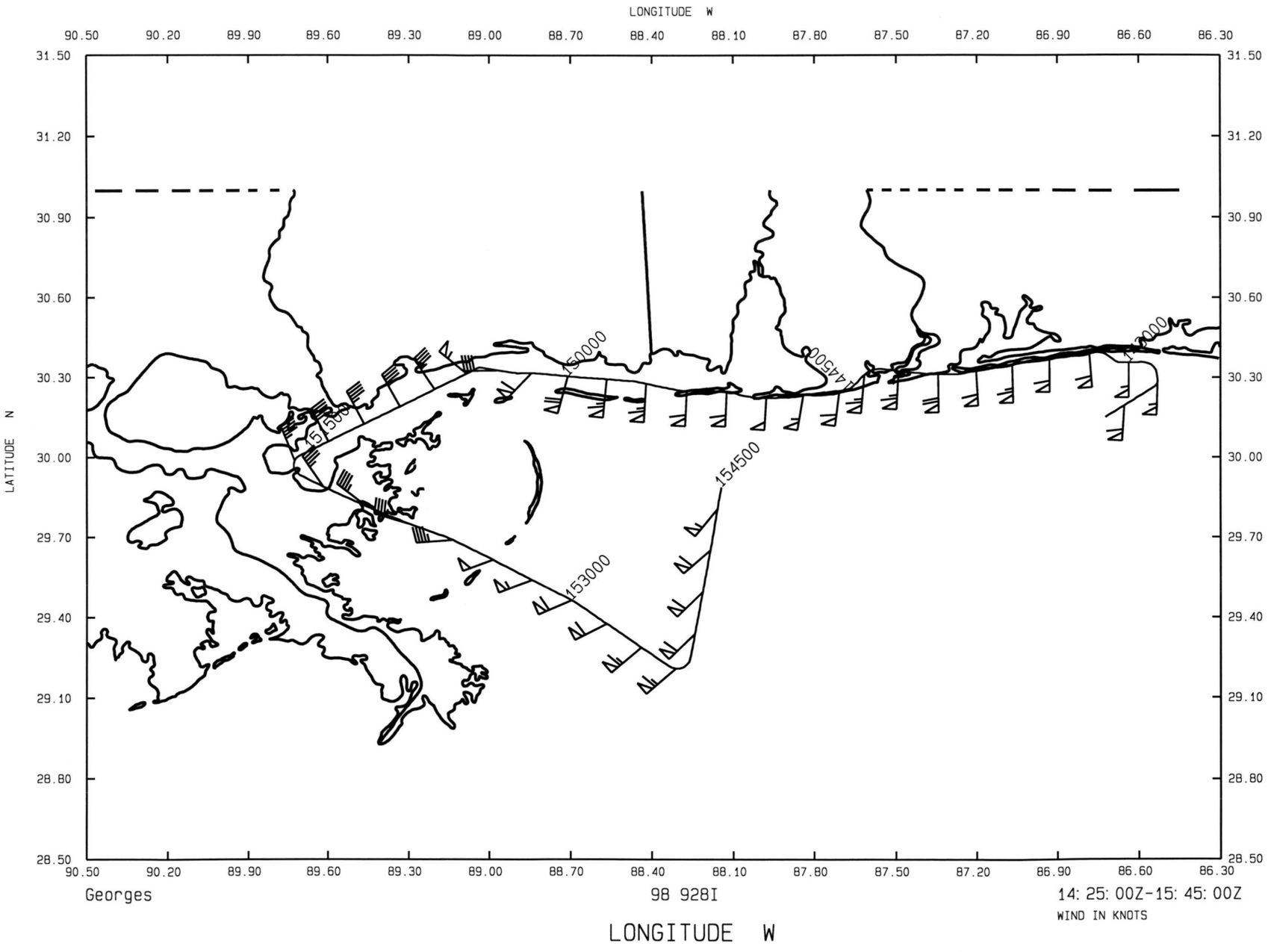

LONGITUDE W
90.50 90.20 89.90 89.60 89.30 89.00 88.70 88.40 88.10 87.80 87.50 87.20 86.90 86.60 86.30 86
31.50
31.20
30.90
30.60
30.30
30.00
29.70
29.40
29.10
28.80
28.50
LATITUDE N
120000
121500
123000
124500
134500
140000
153000
154500
164500
171500
173000
Georges
98 928I
09: 00: 00Z-18: 30: (
WIND IN KNOTS
LONGITUDE W

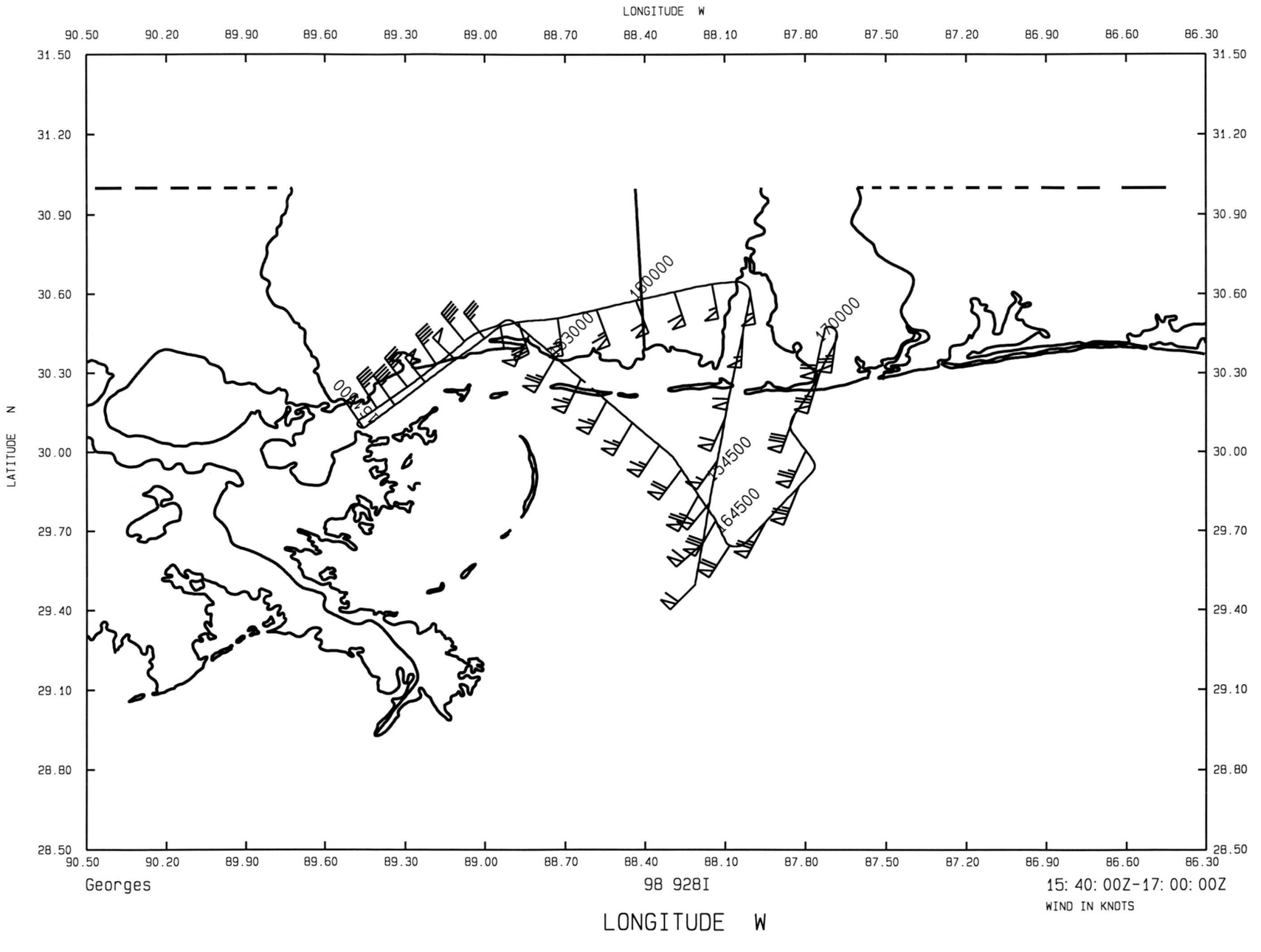

LONGITUDE W
90.50 90.20 89.90 89.60 89.30 89.00 88.70 88.40 88.10 87.80 87.50 87.20 86.90 86.60 86.30
31.50 31.20 30.90 30.60 30.30 30.00 29.70 29.40 29.10 28.80 28.50
LATITUDE N
111500
110000
104500
103000
Georges
98 928I
10: 15: 00Z-11: 15: 00Z
WIND IN KNOTS
LONGITUDE W

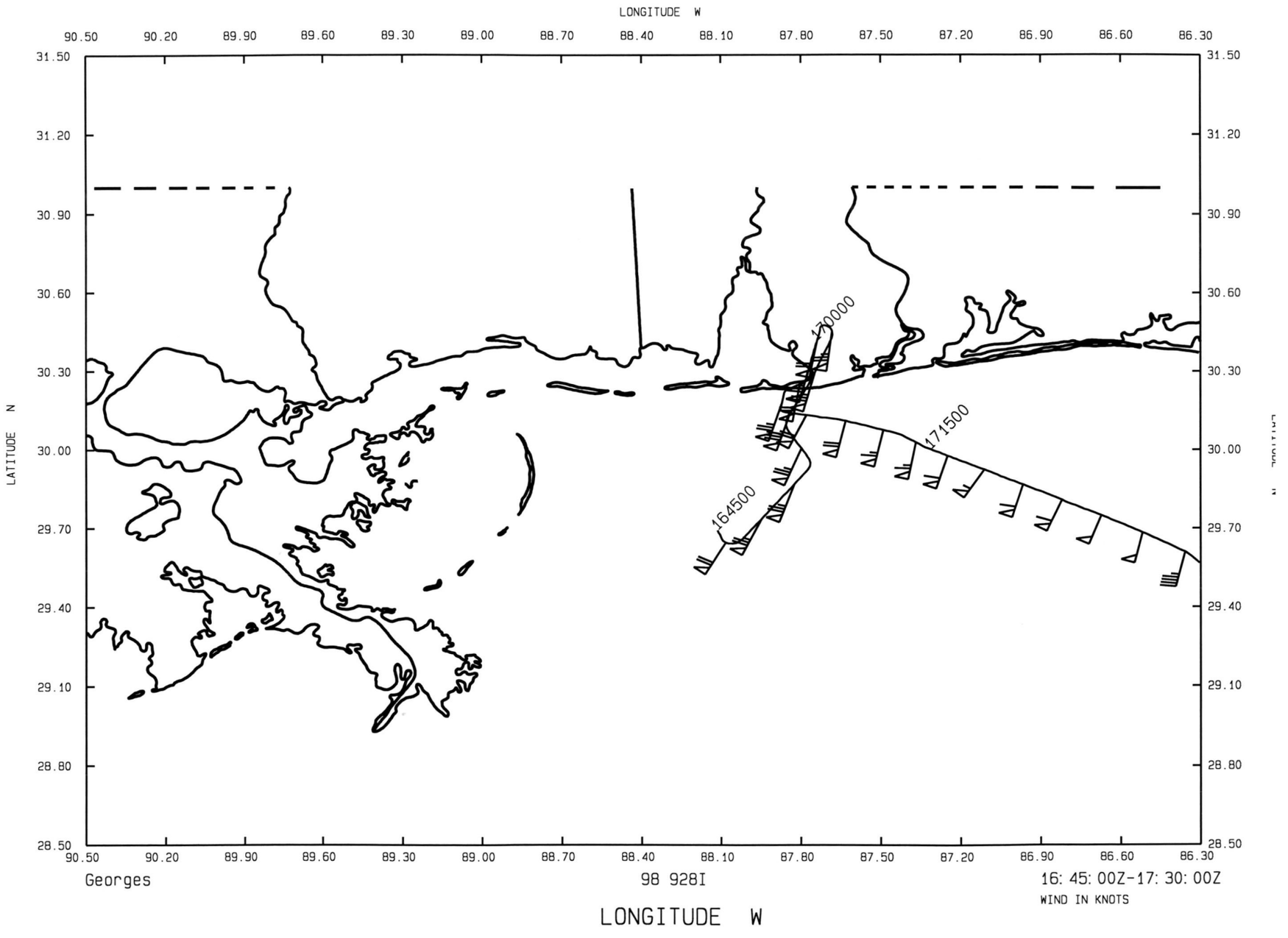

LONGITUDE W
90.50 90.20 89.90 89.60 89.30 89.00 88.70 88.40 88.10 87.80 87.50 87.20 86.90 86.60 86.30
31.50 31.20 30.90 30.60 30.30 30.00 29.70 29.40 29.10 28.80 28.50
LATITUDE N
115000
115000
120000
114500
114500
Georges
98 928I
11: 15: 00Z-12: 15: 00Z
WIND IN KNOTS
LONGITUDE W

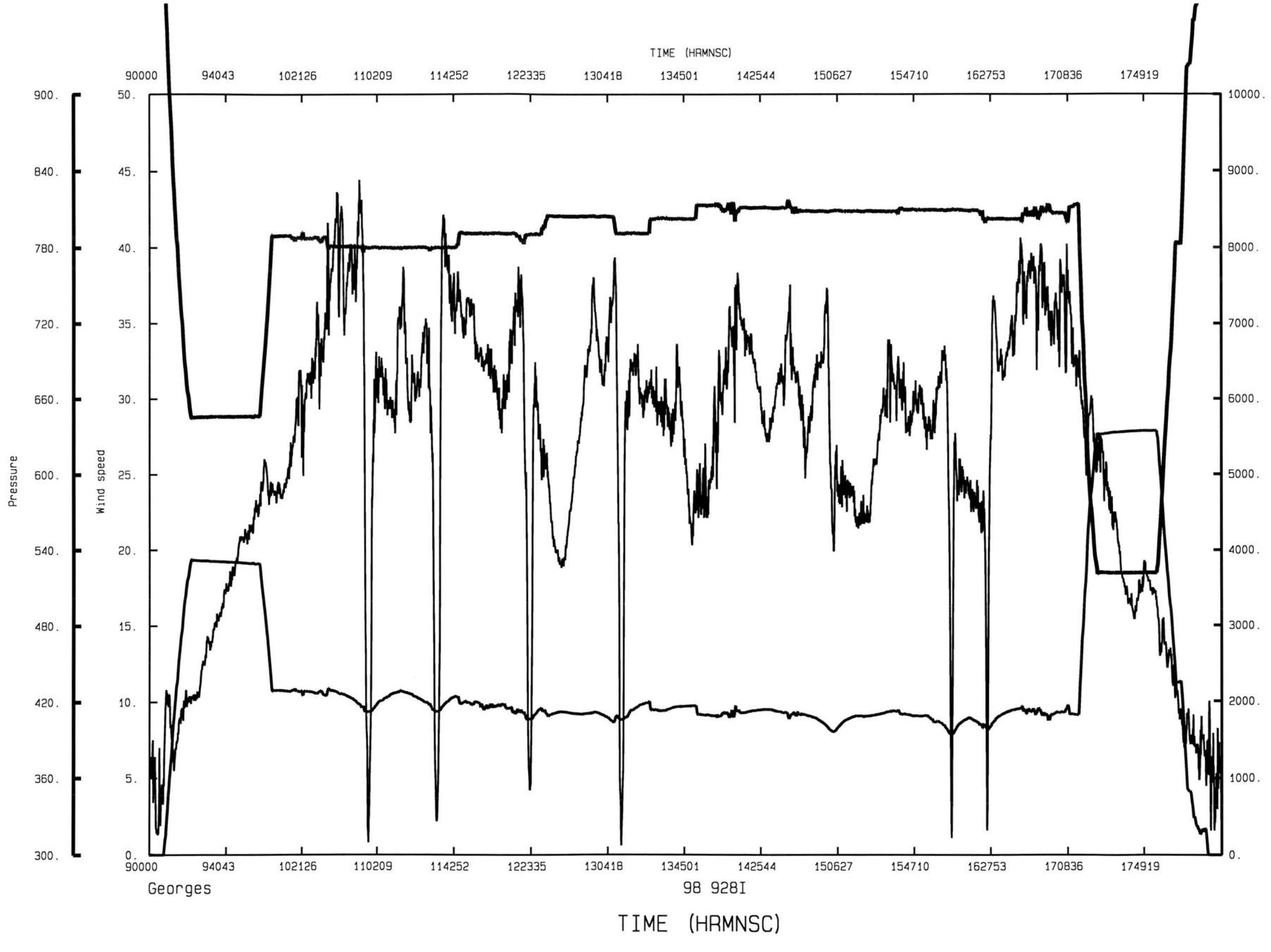

LONGITUDE W
90.50 90.20 89.90 89.60 89.30 89.00 88.70 88.40 88.10 87.80 87.50 87.20 86.90 86.60 86.30
31.50 31.20 30.90 30.60 30.30 30.00 29.70 29.40 29.10 28.80 28.50
LATITUDE N
12150
30000
23000
24500
Georges
98 928I
12: 07: 00Z-13: 00: 00Z
WIND IN KNOTS
LONGITUDE W

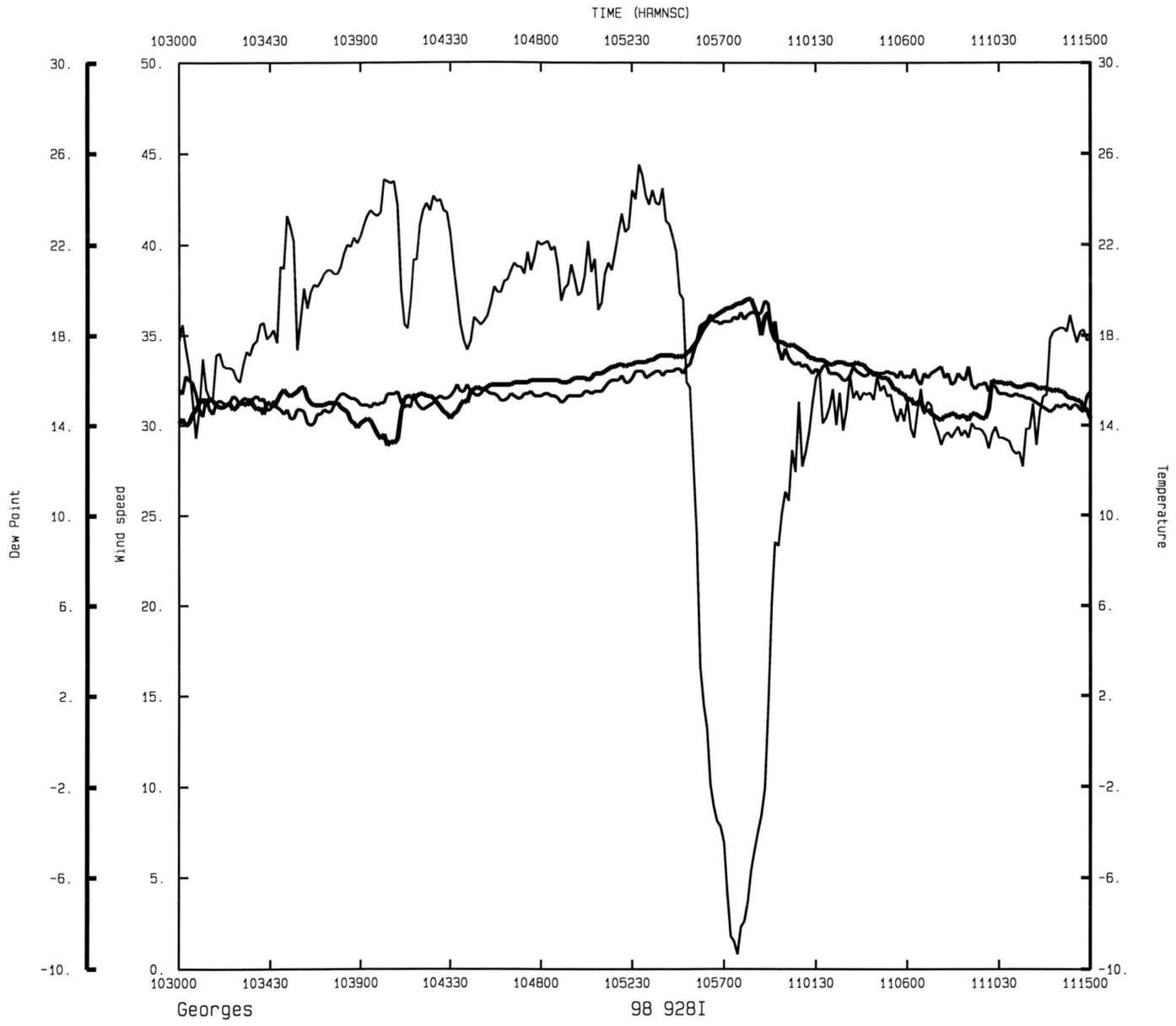

LONGITUDE W
90.50 90.20 89.90 89.60 89.30 89.00 88.70 88.40 88.10 87.80 87.50 87.20 86.90 86.60 86.30
31.50 31.20 30.90 30.60 30.30 30.00 29.70 29.40 29.10 28.80 28.50
LATITUDE N
133000
131500
130000
130000
141500
134500
140000
Georges
98 928I
13: 00: 00Z-14: 30: 00Z
WIND IN KNOTS
LONGITUDE W


LONGITUDE W
90.50 90.20 89.90 89.60 89.30 89.00 88.70 88.40 88.10 87.80 87.50 87.20 86.90 86.60 86.30
31.50 31.20 30.90 30.60 30.30 30.00 29.70 29.40 29.10 28.80 28.50
LATITUDE N
150000
145000
140000
151500
154500
153000
Georges
98 928I
14: 25: 00Z-15: 45: 00Z
WIND IN KNOTS
LONGITUDE W

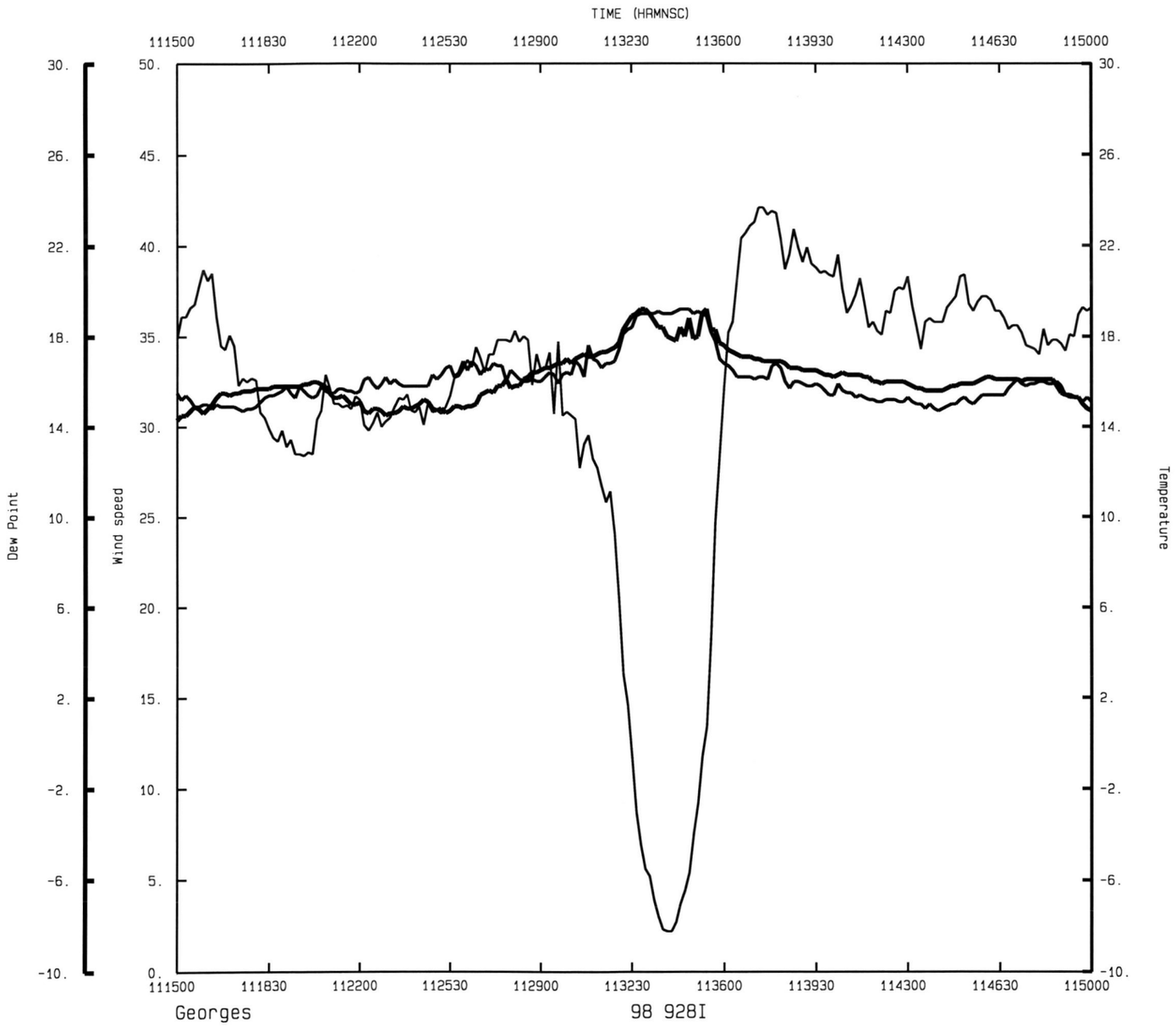

LONGITUDE W
90.50 90.20 89.90 89.60 89.30 89.00 88.70 88.40 88.10 87.80 87.50 87.20 86.90 86.60 86.30
31.50 31.20 30.90 30.60 30.30 30.00 29.70 29.40 29.10 28.80 28.50
LATITUDE N
150000
153000
154500
164500
170000
Georges
98 928I
15: 40: 00Z-17: 00: 00Z
WIND IN KNOTS
LONGITUDE W


LONGITUDE W
90.50 90.20 89.90 89.60 89.30 89.00 88.70 88.40 88.10 87.80 87.50 87.20 86.90 86.60 86.30
31.50 31.20 30.90 30.60 30.30 30.00 29.70 29.40 29.10 28.80 28.50
LATITUDE N
170000
171500
164500
Georges
98 928I
16: 45: 00Z-17: 30: 00Z
WIND IN KNOTS
LONGITUDE W

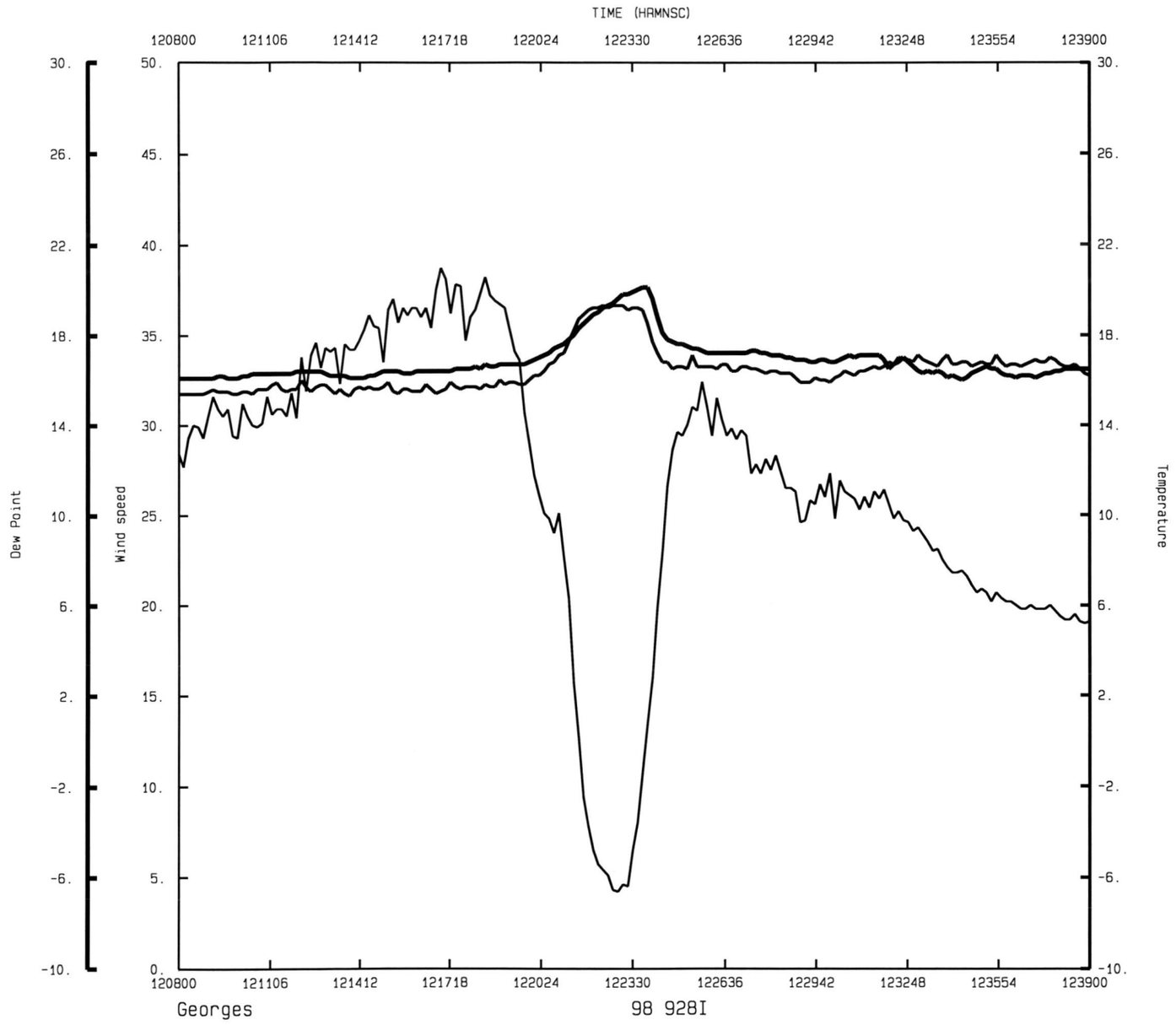

TIME (HRMNSC)
90000
94043
102126
110209
114252
122335
130418
134501
142544
150627
154710
162753
170836
174919
Pressure
900.
840.
780.
720.
660.
600.
540.
480.
420.
360.
300.
Wind speed
50.
45.
40.
35.
30.
25.
20.
15.
10.
5.
0.
10000.
9000.
8000.
7000.
6000.
5000.
4000.
3000.
2000.
1000.
0.
Georges
98 928I
TIME (HRMNSC)


TIME (HRMNSC)
103000
103430
103900
104330
104800
105230
105700
110130
110600
111030
111500
Dew Point
Wind speed
Temperature
30.
26.
22.
18.
14.
10.
6.
2.
-2.
-6.
-10.
50.
45.
40.
35.
30.
25.
20.
15.
10.
5.
0.
Georges
98 928I
TIME (HRMNSC)

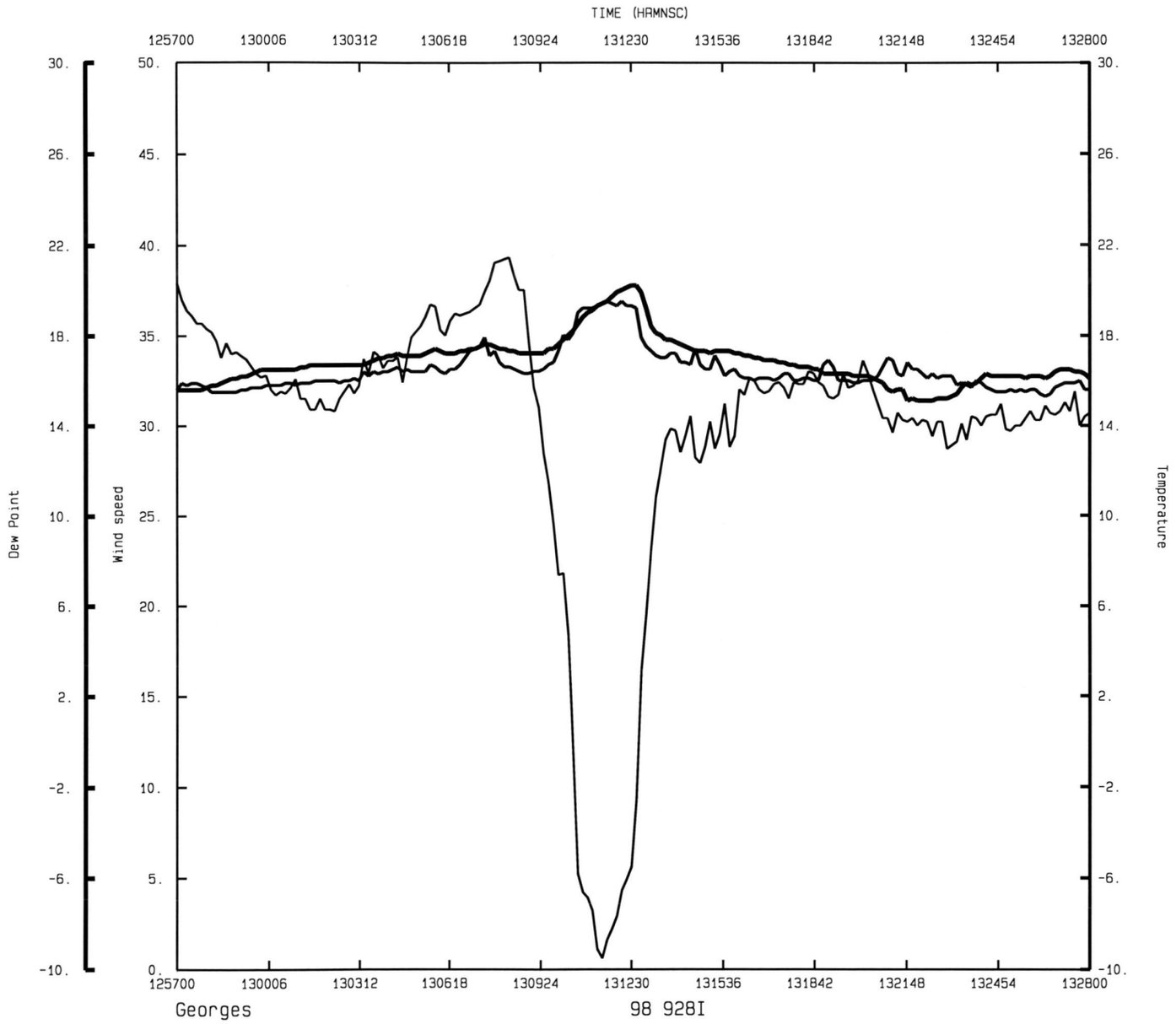
NOAA/HRD


TIME (HRMNSC)
111500
111830
112200
112530
112900
113230
113600
113930
114300
114630
115000
Dew Point
Wind speed
Temperature
30.
26.
22.
18.
14.
10.
6.
2.
-2.
-6.
-10.
50.
45.
40.
35.
30.
25.
20.
15.
10.
5.
0.
Georges
98 928I
TIME (HRMNSC)

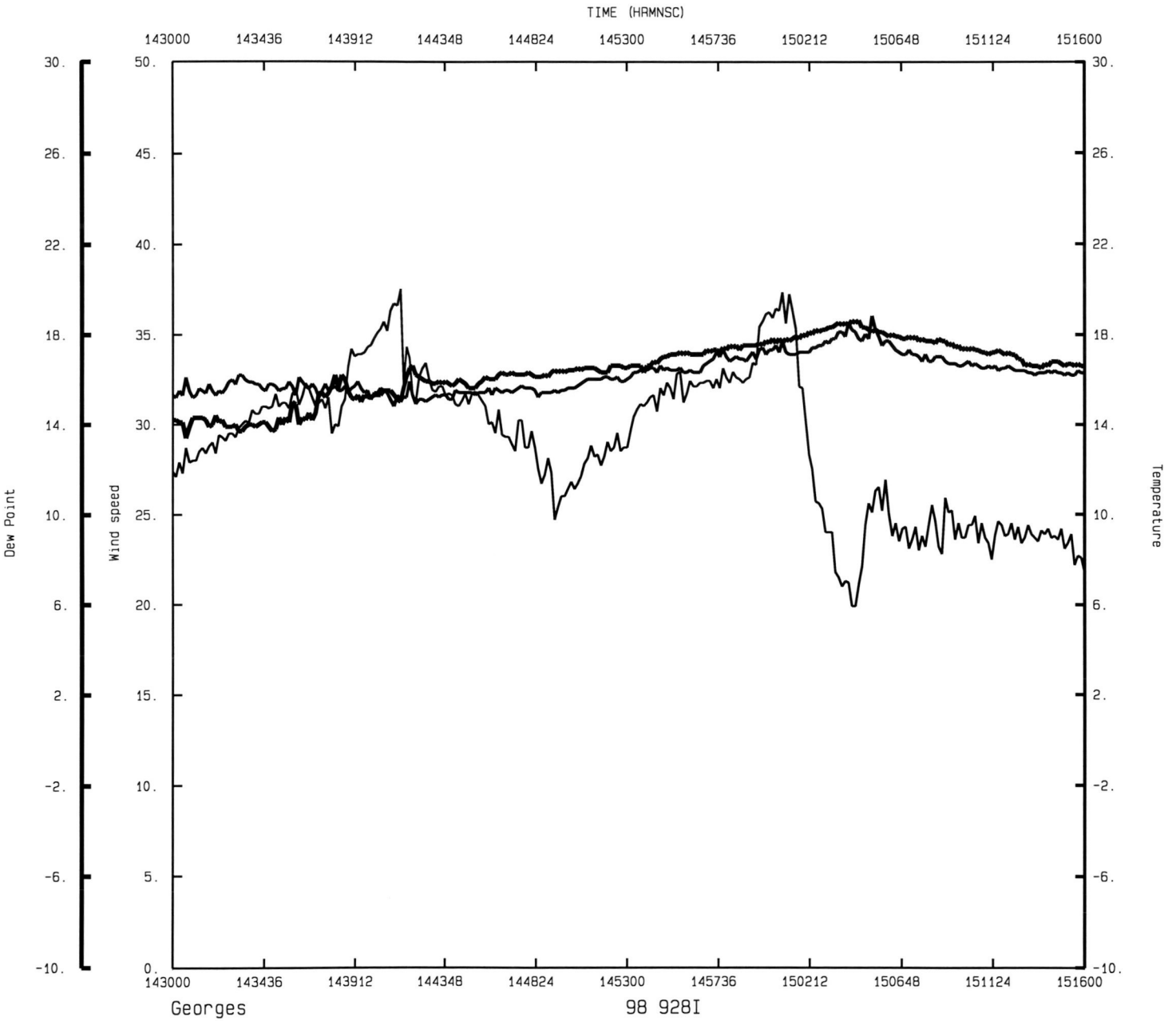
NOAA/HRD


TIME (HRMNSC)
120800
121106
121412
121718
122024
122330
122636
122942
123248
123554
123900
Dew Point
Wind speed
Temperature
30.
26.
22.
18.
14.
10.
6.
2.
-2.
-6.
-10.
50.
45.
40.
35.
30.
25.
20.
15.
10.
5.
0.
Georges
98 928I
TIME (HRMNSC)

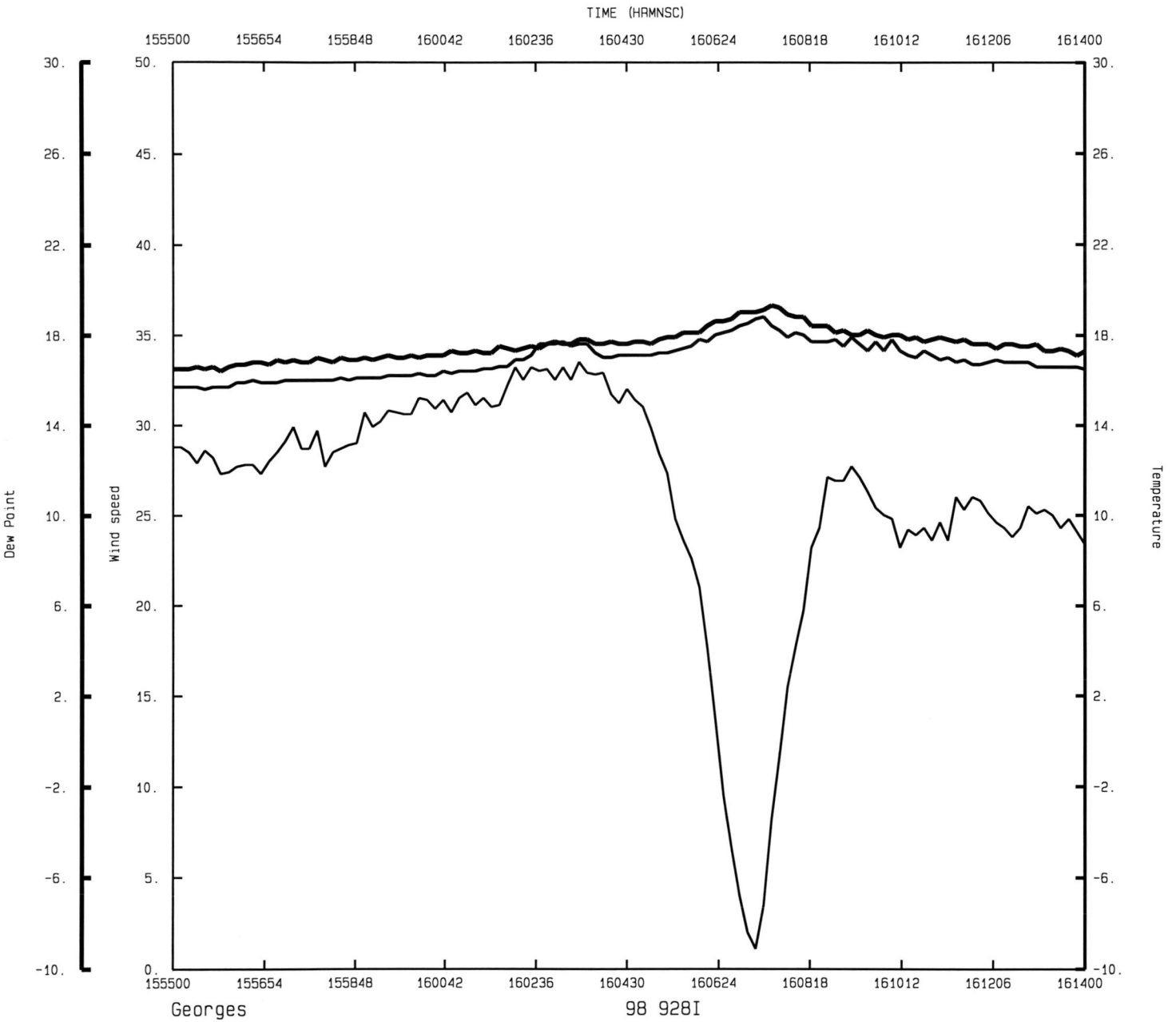
NOAA/HRD


TIME (HRMNSC)
125700
130006
130312
130618
130924
131230
131536
131842
132148
132454
132800
Dew Point
Wind speed
Temperature
30.
26.
22.
18.
14.
10.
6.
2.
-2.
-6.
-10.
50.
45.
40.
35.
30.
25.
20.
15.
10.
5.
0.
Georges
98 928I
TIME (HRMNSC)

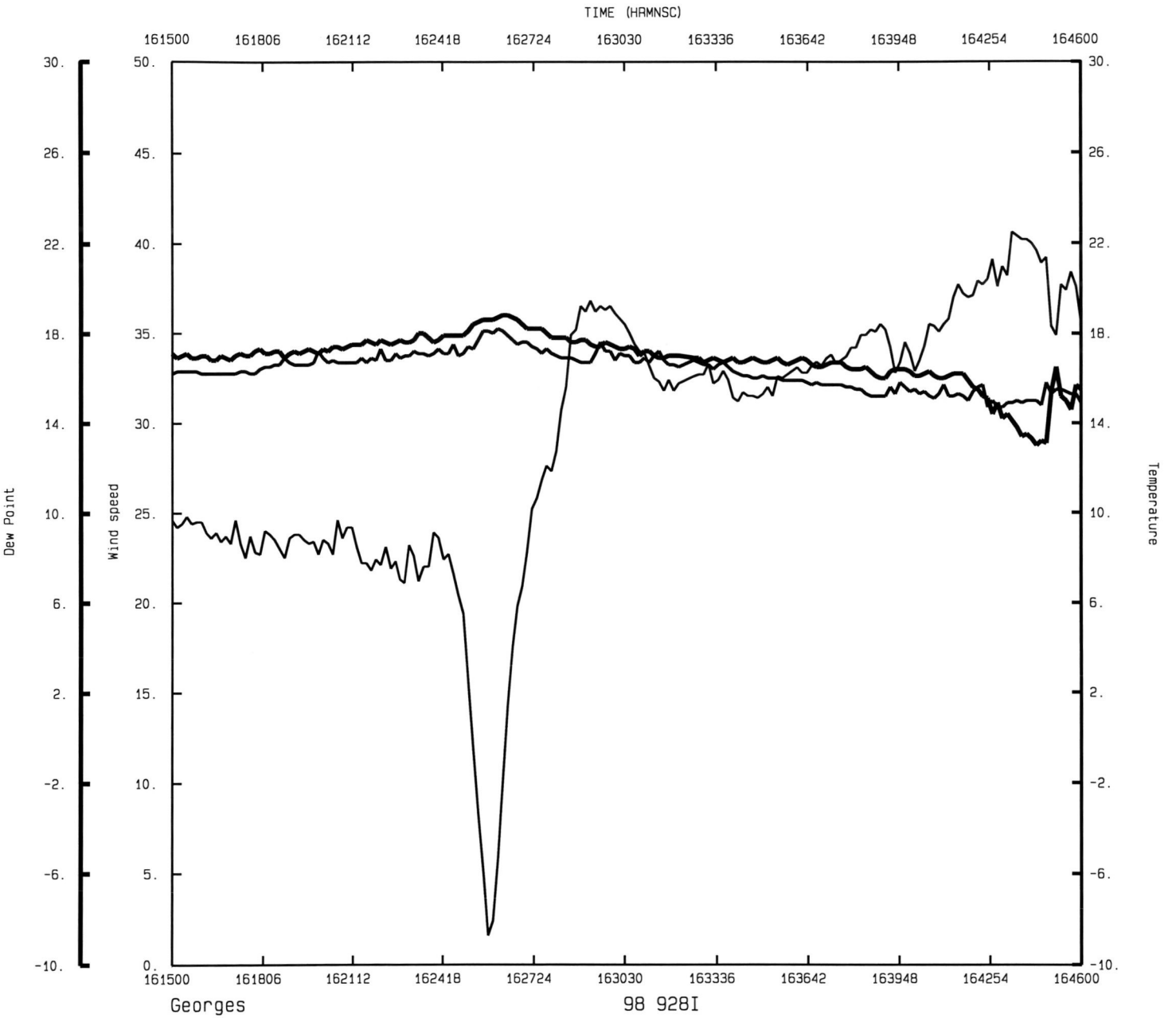
NOAA/HRD


TIME (HRMNSC)
143000
143436
143912
144348
144824
145300
145736
150212
150648
151124
151600
Dew Point
Wind speed
Temperature
30.
26.
22.
18.
14.
10.
6.
2.
-2.
-6.
-10.
50.
45.
40.
35.
30.
25.
20.
15.
10.
5.
0.
Georges
98 928I
TIME (HRMNSC)

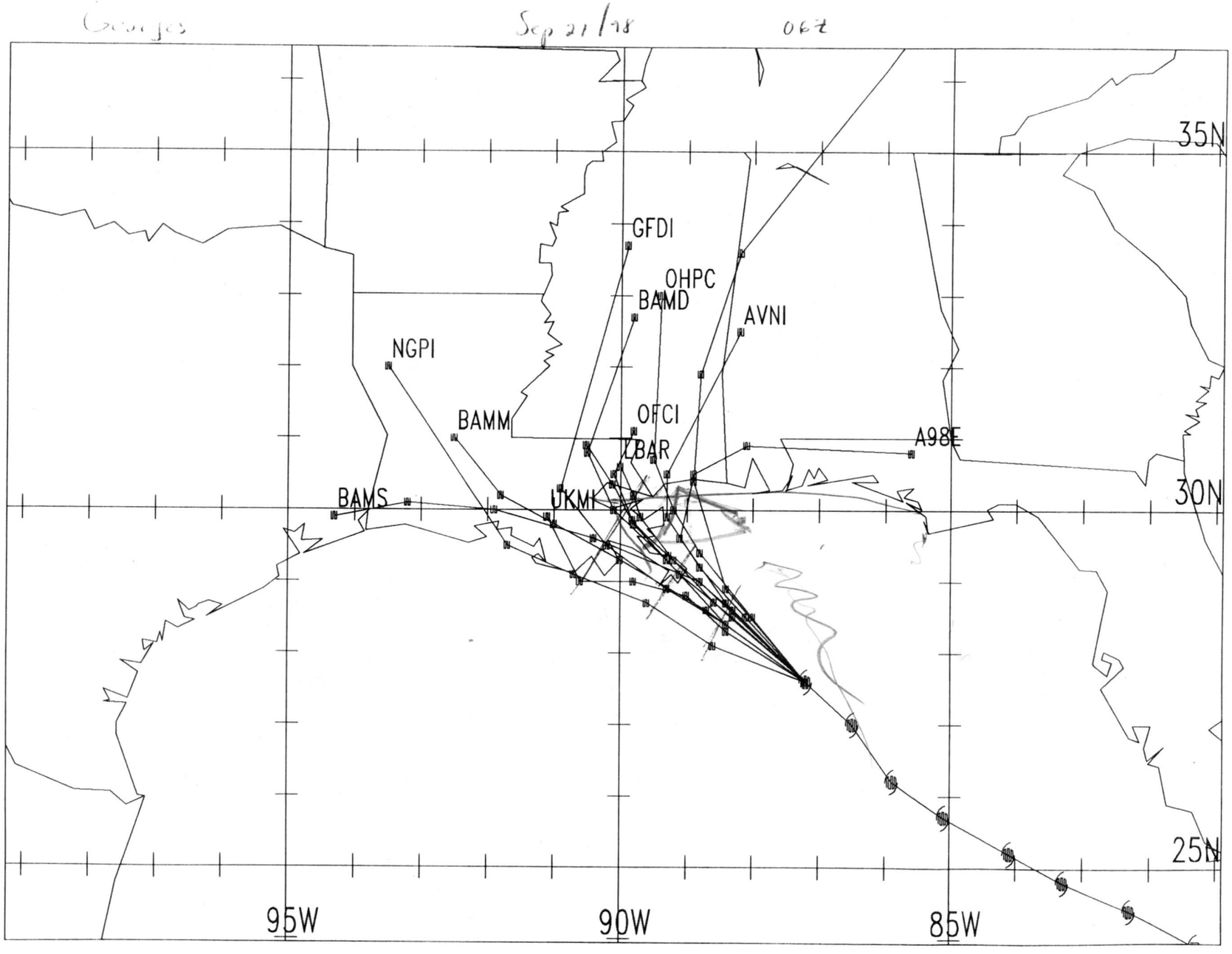
NOAA/HRD


TIME (HRMNSC)
155500
155654
155848
160042
160236
160430
160624
160818
161012
161206
161400
Dew Point
Wind speed
Temperature
30.
26.
22.
18.
14.
10.
6.
2.
-2.
-6.
-10.
50.
45.
40.
35.
30.
25.
20.
15.
10.
5.
0.
Georges
98 928I
TIME (HRMNSC)

NOAA/HRD


TIME (HRMNSC)
161500
161806
162112
162418
162724
163030
163336
163642
163948
164254
164600
Dew Point
Wind speed
Temperature
30.
26.
22.
18.
14.
10.
6.
2.
-2.
-6.
-10.
50.
45.
40.
35.
30.
25.
20.
15.
10.
5.
0.
Georges
98 928I
TIME (HRMNSC)

NOAA/HRD


Georges
Sep 21/98
06Z
35N
30N
25N
95W
90W
85W
GFDI
OHPC
BAMD
AVNI
NGPI
BAMM
OFCI
LBAR
A98E
BAMS
UKMI

ZCZC MIATCPAT2
TTAA00 KNHC 270845
BULLETIN
HURRICANE GEORGES ADVISORY NUMBER 48
NATIONAL WEATHER SERVICE MIAMI FL
4 AM CDT SUN SEP 27 1998

...DANGEROUS HURRICANE GEORGES APPROACHING THE WARNING AREA...BE PREPARED...

A HURRICANE WARNING IS IN EFFECT FROM MORGAN CITY LOUISIANA TO PANAMA CITY FLORIDA. A HURRICANE WARNING MEANS THAT HURRICANE CONDITIONS ARE EXPECTED IN THE WARNED AREA WITHIN 24 HOURS. PREPARATIONS TO PROTECT LIFE AND PROPERTY SHOULD BE RUSHED TO COMPLETION.

A TROPICAL STORM WARNING AND A HURRICANE WATCH ARE IN EFFECT FROM EAST OF PANAMA CITY FLORIDA TO ST. MARKS FLORIDA. A HURRICANE WATCH IS IN EFFECT FROM WEST OF MORGAN CITY TO INTRACOASTAL CITY LOUISIANA.

AT 4 AM CDT...0900Z...THE CENTER OF HURRICANE GEORGES WAS LOCATED NEAR LATITUDE 28.1 NORTH...LONGITUDE 87.6 WEST. THIS POSITION IS ABOUT 110 MILES SOUTHEAST OF THE MOUTH OF THE MISSISSIPI RIVER AND ABOUT 200 MILES SOUTHEAST OF NEW ORLEANS.

GEORGES IS MOVING TOWARD THE NORTHWEST NEAR 10 MPH AND THIS MOTION IS EXPECTED TO CONTINUE TODAY WITH SOME DCREASE IN FORWARD SPEED. OUTER BANDS SHOULD GRADUALLY BEGIN TO SPREAD ACROSS THE COASTAL SECTIONS WITHIN THE WARNING AREA SOON AND HURRICANE FORCE WINDS SHOULD BEGIN TO AFFECT THE AREA LATER TODAY.

MAXIMUM SUSTAINED WINDS ARE NEAR 110 MPH WITH HIGHER GUSTS. GEORGES IS A STRONG CATEGORY TWO HURRICANE ON THE SAFFIR/SIMPSON HURRICANE SCALE. SOME FLUCTUATIONS IN INTENSITY ARE EXPECTED BEFORE LANDFALL.

HURRICANE FORCE WINDS EXTEND OUTWARD UP TO 115 MILES FROM THE CENTER...AND TROPICAL STORM FORCE WINDS EXTEND OUTWARD UP TO 175 MILES MAINLY TO THE EAST.

ESTIMATED MINIMUM CENTRAL PRESSURE IS 970 MB...28.64 INCHES.

STORM SURGE FLOODING OF 10 TO 15 FEET...UP TO 17 FEET AT THE HEADS OF BAYS...ABOVE NORMAL TIDE LEVELS IS POSSIBLE IN THE WARNED AREA AND WILL BE ACCOMPANIED BY LARGE AND DANGEROUS BATTERING WAVES.

FLOODING RAINS ARE LIKELY IN ASSOCIATION WITH GEORGES AND WILL BECOME PARTICULARLY SEVERE IF GEORGES FORWARD MOTION DECREASES NEAR LANDFALL AS IS NOW FORECAST.

SMALL CRAFT FROM INTRACOASTAL CITY TO HIGH ISLAND TEXAS SHOULD REMAIN IN PORT. SMALL CRAFT ALONG THE WEST COAST OF THE FLORIDA PENINSULA SHOULD REMAIN IN PORT UNTIL WINDS AND SEAS SUBSIDE.

REPEATING THE 4 AM CDT POSITION...28.1 N... 87.6 W. MOVEMENT TOWARD...NORTHWEST NEAR 10 MPH. MAXIMUM SUSTAINED WINDS...110 MPH. MINIMUM CENTRAL PRESSURE... 970 MB.

AN INTERMEDIATE ADVISORY WILL BE ISSUED BY THE NATIONAL HURRICANE CENTER AT 7 AM CDT FOLLOWED BY THE NEXT COMPLETE ADVISORY AT 10 AM

ZCZC MIATCPAT2
TTAA00 KNHC 270845
BULLETIN
HURRICANE GEORGES ADVISORY NUMBER 48
NATIONAL WEATHER SERVICE MIAMI FL
4 AM CDT SUN SEP 27 1998

...DANGEROUS HURRICANE GEORGES APPROACHING THE WARNING AREA...BE PREPARED...

A HURRICANE WARNING IS IN EFFECT FROM MORGAN CITY LOUISIANA TO PANAMA CITY FLORIDA. A HURRICANE WARNING MEANS THAT HURRICANE CONDITIONS ARE EXPECTED IN THE WARNED AREA WITHIN 24 HOURS. PREPARATIONS TO PROTECT LIFE AND PROPERTY SHOULD BE RUSHED TO COMPLETION.

A TROPICAL STORM WARNING AND A HURRICANE WATCH ARE IN EFFECT FROM EAST OF PANAMA CITY FLORIDA TO ST. MARKS FLORIDA. A HURRICANE WATCH IS IN EFFECT FROM WEST OF MORGAN CITY TO INTRACOASTAL CITY LOUISIANA.

AT 4 AM CDT...0900Z...THE CENTER OF HURRICANE GEORGES WAS LOCATED NEAR LATITUDE 28.1 NORTH...LONGITUDE 87.6 WEST. THIS POSITION IS ABOUT 110 MILES SOUTHEAST OF THE MOUTH OF THE MISSISSIPI RIVER AND ABOUT 200 MILES SOUTHEAST OF NEW ORLEANS.

GEORGES IS MOVING TOWARD THE NORTHWEST NEAR 10 MPH AND THIS MOTION IS EXPECTED TO CONTINUE TODAY WITH SOME DCREASE IN FORWARD SPEED. OUTER BANDS SHOULD GRADUALLY BEGIN TO SPREAD ACROSS THE COASTAL SECTIONS WITHIN THE WARNING AREA SOON AND HURRICANE FORCE WINDS SHOULD BEGIN TO AFFECT THE AREA LATER TODAY.

MAXIMUM SUSTAINED WINDS ARE NEAR 110 MPH WITH HIGHER GUSTS. GEORGES IS A STRONG CATEGORY TWO HURRICANE ON THE SAFFIR/SIMPSON HURRICANE SCALE. SOME FLUCTUATIONS IN INTENSITY ARE EXPECTED BEFORE LANDFALL.

HURRICANE FORCE WINDS EXTEND OUTWARD UP TO 115 MILES FROM THE CENTER...AND TROPICAL STORM FORCE WINDS EXTEND OUTWARD UP TO 175 MILES MAINLY TO THE EAST.

ESTIMATED MINIMUM CENTRAL PRESSURE IS 970 MB...28.64 INCHES.

STORM SURGE FLOODING OF 10 TO 15 FEET...UP TO 17 FEET AT THE HEADS OF BAYS...ABOVE NORMAL TIDE LEVELS IS POSSIBLE IN THE WARNED AREA AND WILL BE ACCOMPANIED BY LARGE AND DANGEROUS BATTERING WAVES.

FLOODING RAINS ARE LIKELY IN ASSOCIATION WITH GEORGES AND WILL BECOME PARTICULARLY SEVERE IF GEORGES FORWARD MOTION DECREASES NEAR LANDFALL AS IS NOW FORECAST.

SMALL CRAFT FROM INTRACOASTAL CITY TO HIGH ISLAND TEXAS SHOULD REMAIN IN PORT. SMALL CRAFT ALONG THE WEST COAST OF THE FLORIDA PENINSULA SHOULD REMAIN IN PORT UNTIL WINDS AND SEAS SUBSIDE.

REPEATING THE 4 AM CDT POSITION...28.1 N... 87.6 W. MOVEMENT TOWARD...NORTHWEST NEAR 10 MPH. MAXIMUM SUSTAINED WINDS...110 MPH. MINIMUM CENTRAL PRESSURE... 970 MB.

AN INTERMEDIATE ADVISORY WILL BE ISSUED BY THE NATIONAL HURRICANE CENTER AT 7 AM CDT FOLLOWED BY THE NEXT COMPLETE ADVISORY AT 10 AM

ZCZC MIATCDAT2
TTAA00 KNHC 270847
HURRICANE GEORGES DISCUSSION NUMBER 48
NATIONAL WEATHER SERVICE MIAMI FL
5 AM EDT SUN SEP 27 1998

THE INTENSITY OF GEORGES HAS NOT CHANGED SIGNIFICANTLY DURING THE PAST 24 HOURS. THE HURRICANE IS MOVING OVER A WARM OCEAN AND THE SHEAR IS LOW BUT...AT THIS STAGE...THIS DOES NOT APPEAR TO BE ENOUGH FOR THE HURRICANE TO INTENSIFY RAPIDLY. IT HAS BEEN DISCUSSED IN MOST OF THE HURRICANE INTENSITY CHANGE WORKSHOPS...THAT...FOR RAPID INTENSIFICATION...THERE SHOULD BE AN EYEWALL REPLACEMENT CYCLE AND/OR A TROUGH INTERACTION. THESE TWO PROCESSES ARE VERY DIFFICULT TO EVALUATE...BUT WITH THE LIMITED AVAILABLE INFORMATION...NONE OF THE ABOVE PROCESSES ARE LIKELY TO OCCUR BECAUSE THE INGREDIENTS ARE NOT PRESENT. THERE IS NOT A PERSISTENT AND WELL DEFINED INNER CORE...NO DOUBLE EYE STRUCTURE EITHER AND THERE IS NO UPPER-TROUGH APPROACHING THE HURRICANE. ONLY A SMALL INCREASE IN INTENSITY IS THEN FORECAST BEFORE LANDFALL. THIS IS AN ARRESTED FORECAST BECAUSE THE ABOVE PROCESSES ARE STILL IN THEORY AND HAVE NOT BEEN TRANSLATED INTO OPERATIONAL TOOLS YET.

INITIAL MOTION IS 310/09. THE STEERING PATTERN IS EVOLVING AS FORECAST. THEREFORE...NO CHANGE FROM THE PREVIOUS OFFICIAL FORECAST TRACK IS NECESSARY. MODELS CONTINUE TO SUGGEST THAT THE STEERING CURRENTS WILL COLLAPSE AS THE HURRICANE MAKES LANDFALL. THIS MEANS THAT THE HURRICANE WOULD SLOW DOWN CONSIDERABLY AND COULD PRODUCE EXTREMELY LARGE RAINFALL AMOUNTS COMBINED WITH A LONG PERIOD OF ONSHORE WINDS AND STORM SURGE FLOODING. GEORGES IS A VERY SERIOUS THREAT AND IT COULD BE EVEN WORSE IF THE HURRICANE STRENGTHENS MORE THAN
FORECAST.

AVILA

FORECAST POSITIONS AND MAX WINDS

INITIAL	27/0900Z	28.1N	87.6W	95 KTS
12HR VT	27/1800Z	28.7N	88.6W	100 KTS
24HR VT	28/0600Z	29.4N	89.3W	100 KTS
36HR VT	28/1800Z	30.0N	90.0W	80 KTS...INLAND
48HR VT	29/0600Z	30.5N	90.0W	65 KTS...INLAND
72HR VT	30/0600Z	31.0N	90.0W	50 KTS...INLAND

NNNN

ZCZC MIATCPAT2
TTAA00 KNHC 270845
BULLETIN
HURRICANE GEORGES ADVISORY NUMBER 48
NATIONAL WEATHER SERVICE MIAMI FL
4 AM CDT SUN SEP 27 1998

...DANGEROUS HURRICANE GEORGES APPROACHING THE WARNING AREA...BE PREPARED...

A HURRICANE WARNING IS IN EFFECT FROM MORGAN CITY LOUISIANA TO PANAMA CITY FLORIDA. A HURRICANE WARNING MEANS THAT HURRICANE CONDITIONS ARE EXPECTED IN THE WARNED AREA WITHIN 24 HOURS. PREPARATIONS TO PROTECT LIFE AND PROPERTY SHOULD BE RUSHED TO COMPLETION.

A TROPICAL STORM WARNING AND A HURRICANE WATCH ARE IN EFFECT FROM EAST OF PANAMA CITY FLORIDA TO ST. MARKS FLORIDA. A HURRICANE WATCH IS IN EFFECT FROM WEST OF MORGAN CITY TO INTRACOASTAL CITY LOUISIANA.

AT 4 AM CDT...0900Z...THE CENTER OF HURRICANE GEORGES WAS LOCATED NEAR LATITUDE 28.1 NORTH...LONGITUDE 87.6 WEST. THIS POSITION IS ABOUT 110 MILES SOUTHEAST OF THE MOUTH OF THE MISSISSIPI RIVER AND ABOUT 200 MILES SOUTHEAST OF NEW ORLEANS.

GEORGES IS MOVING TOWARD THE NORTHWEST NEAR 10 MPH AND THIS MOTION IS EXPECTED TO CONTINUE TODAY WITH SOME DCREASE IN FORWARD SPEED. OUTER BANDS SHOULD GRADUALLY BEGIN TO SPREAD ACROSS THE COASTAL SECTIONS WITHIN THE WARNING AREA SOON AND HURRICANE FORCE WINDS SHOULD BEGIN TO AFFECT THE AREA LATER TODAY.

MAXIMUM SUSTAINED WINDS ARE NEAR 110 MPH WITH HIGHER GUSTS. GEORGES IS A STRONG CATEGORY TWO HURRICANE ON THE SAFFIR/SIMPSON HURRICANE SCALE. SOME FLUCTUATIONS IN INTENSITY ARE EXPECTED BEFORE LANDFALL.

HURRICANE FORCE WINDS EXTEND OUTWARD UP TO 115 MILES FROM THE CENTER...AND TROPICAL STORM FORCE WINDS EXTEND OUTWARD UP TO 175 MILES MAINLY TO THE EAST.

ESTIMATED MINIMUM CENTRAL PRESSURE IS 970 MB...28.64 INCHES.

STORM SURGE FLOODING OF 10 TO 15 FEET...UP TO 17 FEET AT THE HEADS OF BAYS...ABOVE NORMAL TIDE LEVELS IS POSSIBLE IN THE WARNED AREA AND WILL BE ACCOMPANIED BY LARGE AND DANGEROUS BATTERING WAVES.

FLOODING RAINS ARE LIKELY IN ASSOCIATION WITH GEORGES AND WILL BECOME PARTICULARLY SEVERE IF GEORGES FORWARD MOTION DECREASES NEAR LANDFALL AS IS NOW FORECAST.

SMALL CRAFT FROM INTRACOASTAL CITY TO HIGH ISLAND TEXAS SHOULD REMAIN IN PORT. SMALL CRAFT ALONG THE WEST COAST OF THE FLORIDA PENINSULA SHOULD REMAIN IN PORT UNTIL WINDS AND SEAS SUBSIDE.

REPEATING THE 4 AM CDT POSITION...28.1 N... 87.6 W. MOVEMENT TOWARD...NORTHWEST NEAR 10 MPH. MAXIMUM SUSTAINED WINDS...110 MPH. MINIMUM CENTRAL PRESSURE... 970 MB.

AN INTERMEDIATE ADVISORY WILL BE ISSUED BY THE NATIONAL HURRICANE CENTER AT 7 AM CDT FOLLOWED BY THE NEXT COMPLETE ADVISORY AT 10 AM

ZCZC MIATCDAT2
TTAA00 KNHC 270847
HURRICANE GEORGES DISCUSSION NUMBER 48
NATIONAL WEATHER SERVICE MIAMI FL
5 AM EDT SUN SEP 27 1998

THE INTENSITY OF GEORGES HAS NOT CHANGED SIGNIFICANTLY DURING THE PAST 24 HOURS. THE HURRICANE IS MOVING OVER A WARM OCEAN AND THE SHEAR IS LOW BUT...AT THIS STAGE...THIS DOES NOT APPEAR TO BE ENOUGH FOR THE HURRICANE TO INTENSIFY RAPIDLY. IT HAS BEEN DISCUSSED IN MOST OF THE HURRICANE INTENSITY CHANGE WORKSHOPS...THAT...FOR RAPID INTENSIFICATION...THERE SHOULD BE AN EYEWALL REPLACEMENT CYCLE AND/OR A TROUGH INTERACTION. THESE TWO PROCESSES ARE VERY DIFFICULT TO EVALUATE...BUT WITH THE LIMITED AVAILABLE INFORMATION...NONE OF THE ABOVE PROCESSES ARE LIKELY TO OCCUR BECAUSE THE INGREDIENTS ARE NOT PRESENT. THERE IS NOT A PERSISTENT AND WELL DEFINED INNER CORE...NO DOUBLE EYE STRUCTURE EITHER AND THERE IS NO UPPER-TROUGH APPROACHING THE HURRICANE. ONLY A SMALL INCREASE IN INTENSITY IS THEN FORECAST BEFORE LANDFALL. THIS IS AN ARRESTED FORECAST BECAUSE THE ABOVE PROCESSES ARE STILL IN THEORY AND HAVE NOT BEEN TRANSLATED INTO OPERATIONAL TOOLS YET.

INITIAL MOTION IS 310/09. THE STEERING PATTERN IS EVOLVING AS FORECAST. THEREFORE...NO CHANGE FROM THE PREVIOUS OFFICIAL FORECAST TRACK IS NECESSARY. MODELS CONTINUE TO SUGGEST THAT THE STEERING CURRENTS WILL COLLAPSE AS THE HURRICANE MAKES LANDFALL. THIS MEANS THAT THE HURRICANE WOULD SLOW DOWN CONSIDERABLY AND COULD PRODUCE EXTREMELY LARGE RAINFALL AMOUNTS COMBINED WITH A LONG PERIOD OF ONSHORE WINDS AND STORM SURGE FLOODING. GEORGES IS A VERY SERIOUS THREAT AND IT COULD BE EVEN WORSE IF THE HURRICANE STRENGTHENS MORE THAN
FORECAST.

AVILA

FORECAST POSITIONS AND MAX WINDS

INITIAL	27/0900Z	28.1N	87.6W	95 KTS
12HR VT	27/1800Z	28.7N	88.6W	100 KTS
24HR VT	28/0600Z	29.4N	89.3W	100 KTS
36HR VT	28/1800Z	30.0N	90.0W	80 KTS...INLAND
48HR VT	29/0600Z	30.5N	90.0W	65 KTS...INLAND
72HR VT	30/0600Z	31.0N	90.0W	50 KTS...INLAND

NNNN

Pavone

43. Cloud Physics – Bob Black

profiler (NOAA)

+ DOW

◇ – NEXRAD

Fax
NHC
305 553-1901

Tom Keeb
Jarrel
Mantplaisan

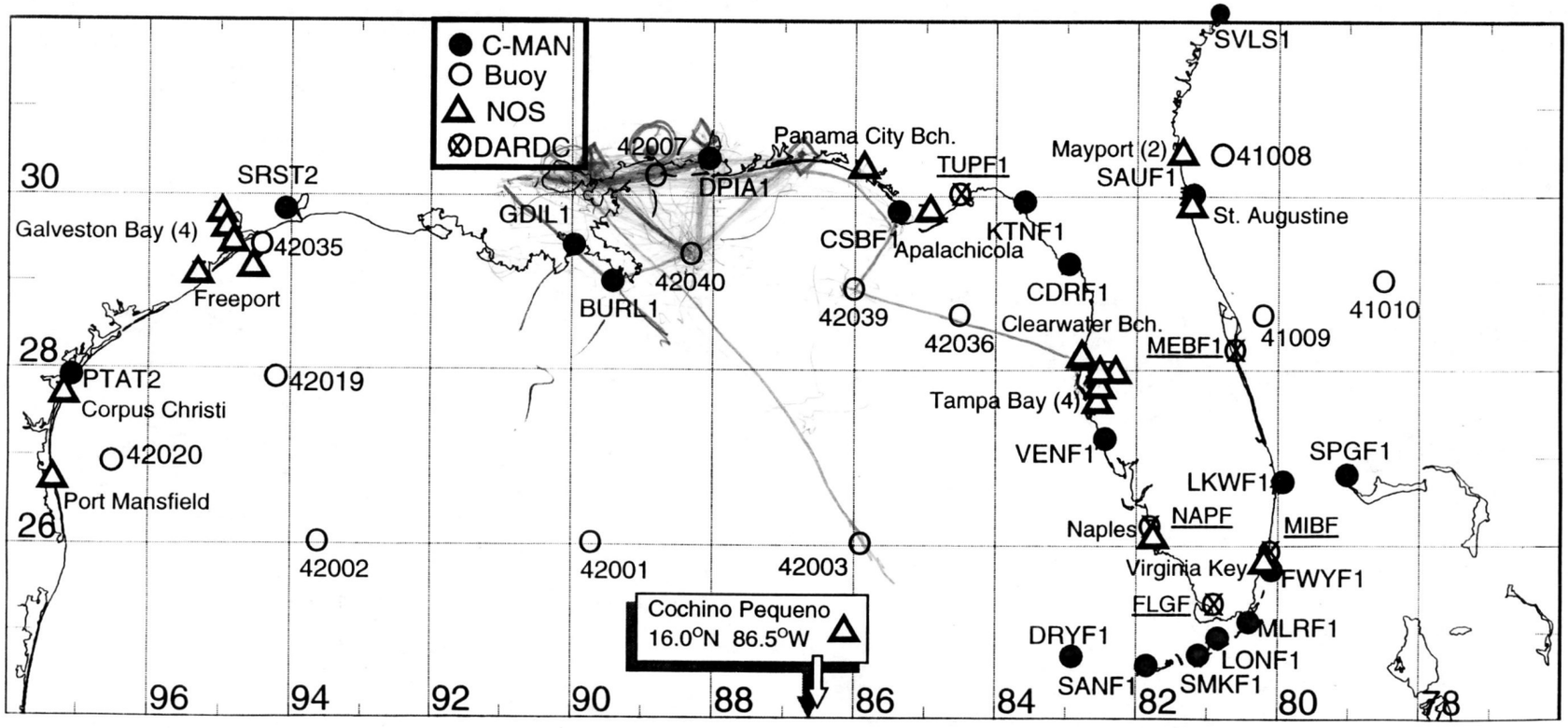


Fig. C-2. Marine buoy, C-MAN, NOS (lower case), and DARDC (underlined) locations in the Gulf of Mexico, Florida, and southern Georgia. See Tables C-3.1 -- C-3.5.

ZCZC MIATCDAT2
TTAA00 KNHC 270847
HURRICANE GEORGES DISCUSSION NUMBER 48
NATIONAL WEATHER SERVICE MIAMI FL
5 AM EDT SUN SEP 27 1998

THE INTENSITY OF GEORGES HAS NOT CHANGED SIGNIFICANTLY DURING THE PAST 24 HOURS. THE HURRICANE IS MOVING OVER A WARM OCEAN AND THE SHEAR IS LOW BUT...AT THIS STAGE...THIS DOES NOT APPEAR TO BE ENOUGH FOR THE HURRICANE TO INTENSIFY RAPIDLY. IT HAS BEEN DISCUSSED IN MOST OF THE HURRICANE INTENSITY CHANGE WORKSHOPS...THAT...FOR RAPID INTENSIFICATION...THERE SHOULD BE AN EYEWALL REPLACEMENT CYCLE AND/OR A TROUGH INTERACTION. THESE TWO PROCESSES ARE VERY DIFFICULT TO EVALUATE...BUT WITH THE LIMITED AVAILABLE INFORMATION...NONE OF THE ABOVE PROCESSES ARE LIKELY TO OCCUR BECAUSE THE INGREDIENTS ARE NOT PRESENT. THERE IS NOT A PERSISTENT AND WELL DEFINED INNER CORE...NO DOUBLE EYE STRUCTURE EITHER AND THERE IS NO UPPER-TROUGH APPROACHING THE HURRICANE. ONLY A SMALL INCREASE IN INTENSITY IS THEN FORECAST BEFORE LANDFALL. THIS IS AN ARRESTED FORECAST BECAUSE THE ABOVE PROCESSES ARE STILL IN THEORY AND HAVE NOT BEEN TRANSLATED INTO OPERATIONAL TOOLS YET.

INITIAL MOTION IS 310/09. THE STEERING PATTERN IS EVOLVING AS FORECAST. THEREFORE...NO CHANGE FROM THE PREVIOUS OFFICIAL FORECAST TRACK IS NECESSARY. MODELS CONTINUE TO SUGGEST THAT THE STEERING CURRENTS WILL COLLAPSE AS THE HURRICANE MAKES LANDFALL. THIS MEANS THAT THE HURRICANE WOULD SLOW DOWN CONSIDERABLY AND COULD PRODUCE EXTREMELY LARGE RAINFALL AMOUNTS COMBINED WITH A LONG PERIOD OF ONSHORE WINDS AND STORM SURGE FLOODING. GEORGES IS A VERY SERIOUS THREAT AND IT COULD BE EVEN WORSE IF THE HURRICANE STRENGTHENS MORE THAN
FORECAST.

AVILA

FORECAST POSITIONS AND MAX WINDS

INITIAL	27/0900Z	28.1N	87.6W	95 KTS
12HR VT	27/1800Z	28.7N	88.6W	100 KTS
24HR VT	28/0600Z	29.4N	89.3W	100 KTS
36HR VT	28/1800Z	30.0N	90.0W	80 KTS...INLAND
48HR VT	29/0600Z	30.5N	90.0W	65 KTS...INLAND
72HR VT	30/0600Z	31.0N	90.0W	50 KTS...INLAND

NNNN AF fix 27/0849 28.00 87.5 967mb

maps

Departments

Browse All Maps
Map a U.S. Address
U.S. Driving Directions

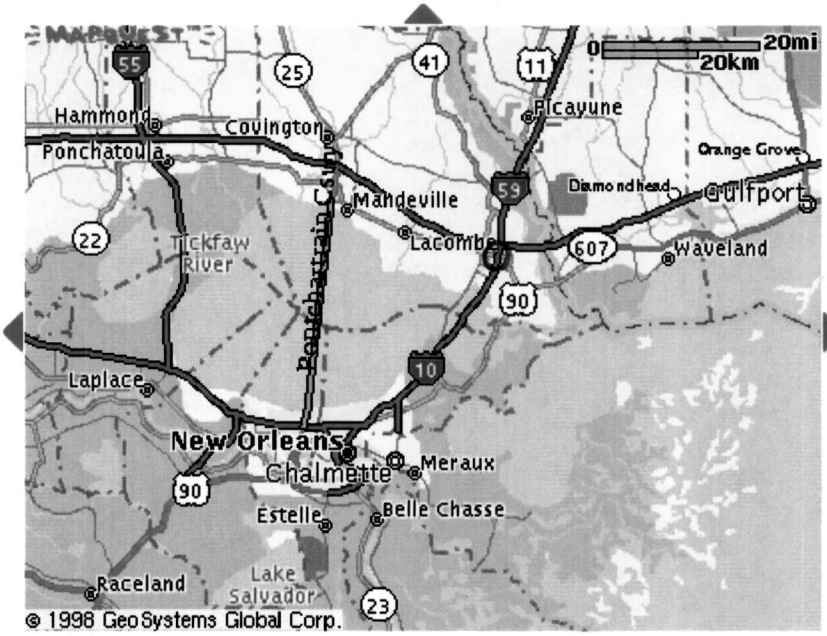
Local Resources

Books on Louisiana
Travel to Louisiana
Excite Local
Travel Reservations
Yellow Pages

Need help?
See Maps Q & A

Louisiana

zoom in | zoom out

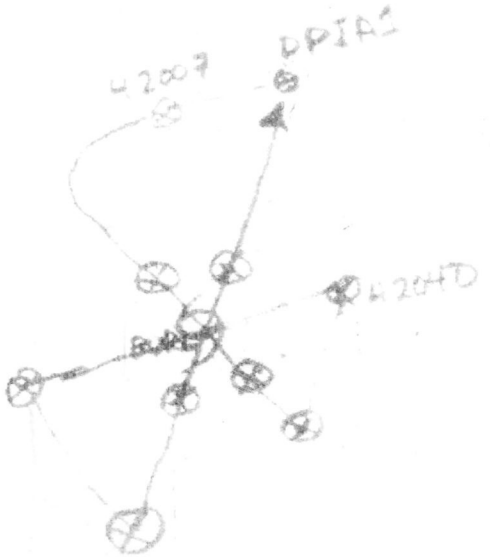


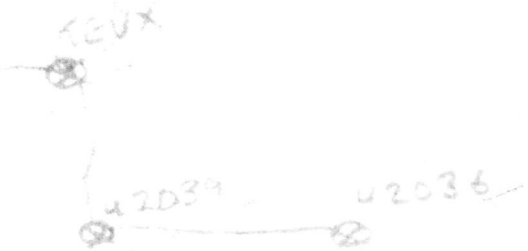
Map Another Address

Address:
City:
State:
Label: (optional)

Map It!

Possible 43





Initial Figure 4
and coastal
Wave Height Survey
5-7,000' (if possible)

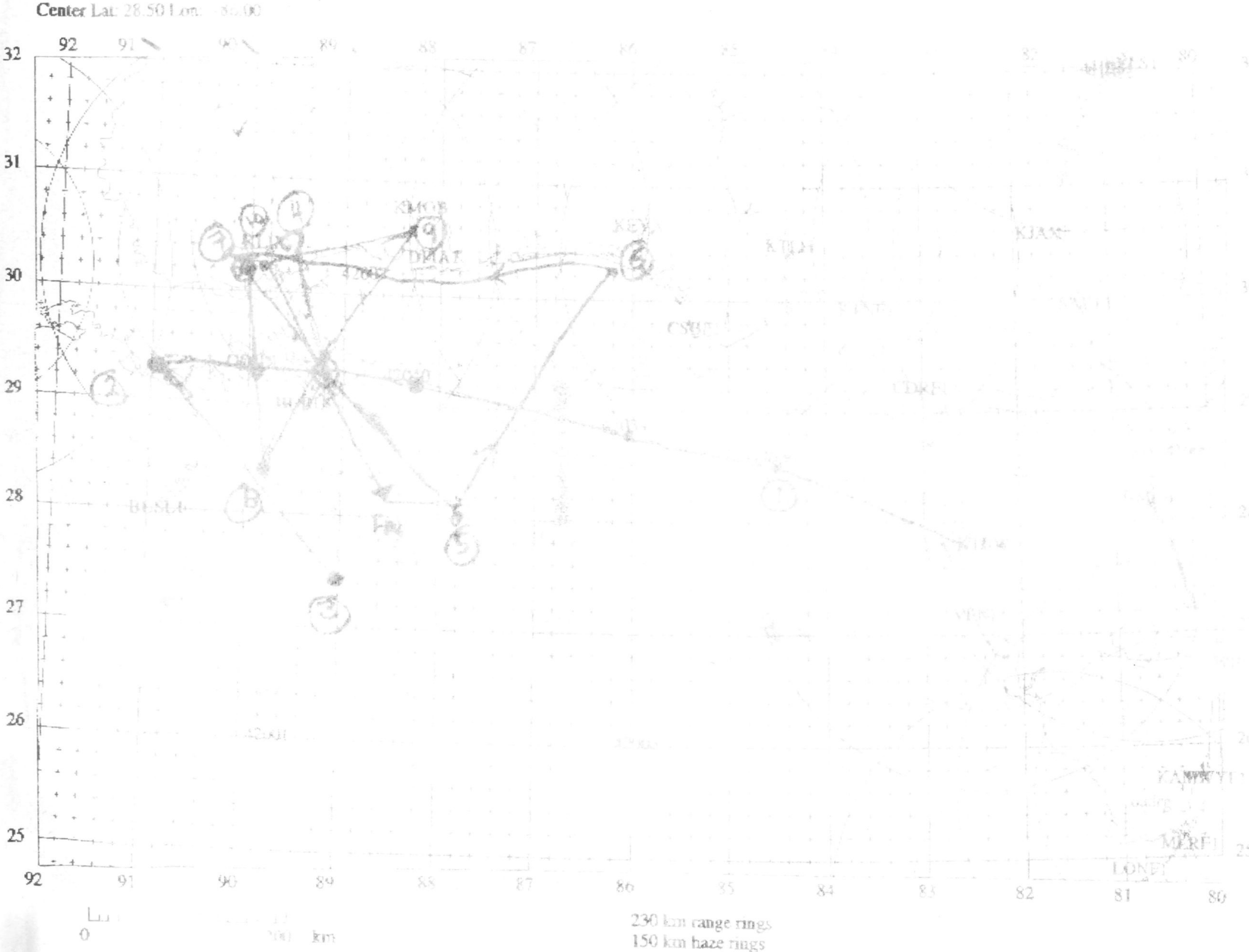
3 OVER LAND
(ALTITUDE ?)

Repeat Legs 1-3 4 times

More Wave heights
250 Figure 4
Rainbands
Sawtooth
Eye Climb

Final Figure 4
and out

Possible 42



305-361-4407

Mike,

Heres JOHN'S and mine ideas.

If you look in mus/peter there files like WEB_MAP.PS and I draw that you could print for sketches.

Peter

813-877-0721 room 216

813-877-6218 Tahitian Fax

Buoys/C-MAN's locations

ID	Lat	Lon
41001	34.70	-72.59
41002	32.35	-75.26
41004	32.51	-79.10
41006	29.34	-77.32
41009	28.50	-80.18
41010	28.90	-78.50
41021	31.92	-80.85
41022	31.88	-80.86
41023	31.92	-80.93
42001	25.93	-89.65
42002	25.89	-93.57
42003	25.94	-85.91
42007	30.09	-88.77
42019	27.90	-95.00
42020	27.01	-96.50
42035	29.25	-94.41
42036	28.50	-84.50
42039	28.78	-86.04
42040	29.20	-88.30
SPGF1	26.69	-79.00
SAUF1	29.86	-81.26
LKWF1	26.61	-80.03
FWYF1	25.59	-80.10
MLRF1	25.01	-80.38
SMKF1	24.63	-81.11
SANF1	24.45	-81.88
LONF1	24.80	-80.90
DRYF1	24.60	-82.90
VENF1	27.07	-82.45
CDRF1	29.14	-83.03
KTNF1	29.82	-83.59
CSBF1	29.67	-85.36
DPIA1	30.25	-88.08
BURL1	28.90	-89.43
GDIL1	29.27	-89.96
SRST2	29.67	-94.05
PTAT2	27.83	-97.05
44004	38.46	-70.69
44005	42.90	-68.94
44007	43.53	-70.14
44008	40.50	-69.42
44009	38.46	-74.70
44011	41.08	-66.58
44013	42.35	-70.69
44014	36.58	-74.83
44025	40.25	-73.17
44028	41.40	-71.09
MDRM1	43.97	-68.13
MISM1	43.78	-68.85
IOSN3	42.97	-70.62
ALSN6	40.46	-73.83
TPLM2	38.90	-76.44
CHLV2	36.91	-75.71
DUCN7	36.18	-75.75
DSLN7	35.15	-75.30
CLKN7	34.62	-76.52
FPSN7	33.48	-77.59
FBIS1	32.68	-79.89

28 06Z 29.4 89.3

28/12Z 29.7 89.7

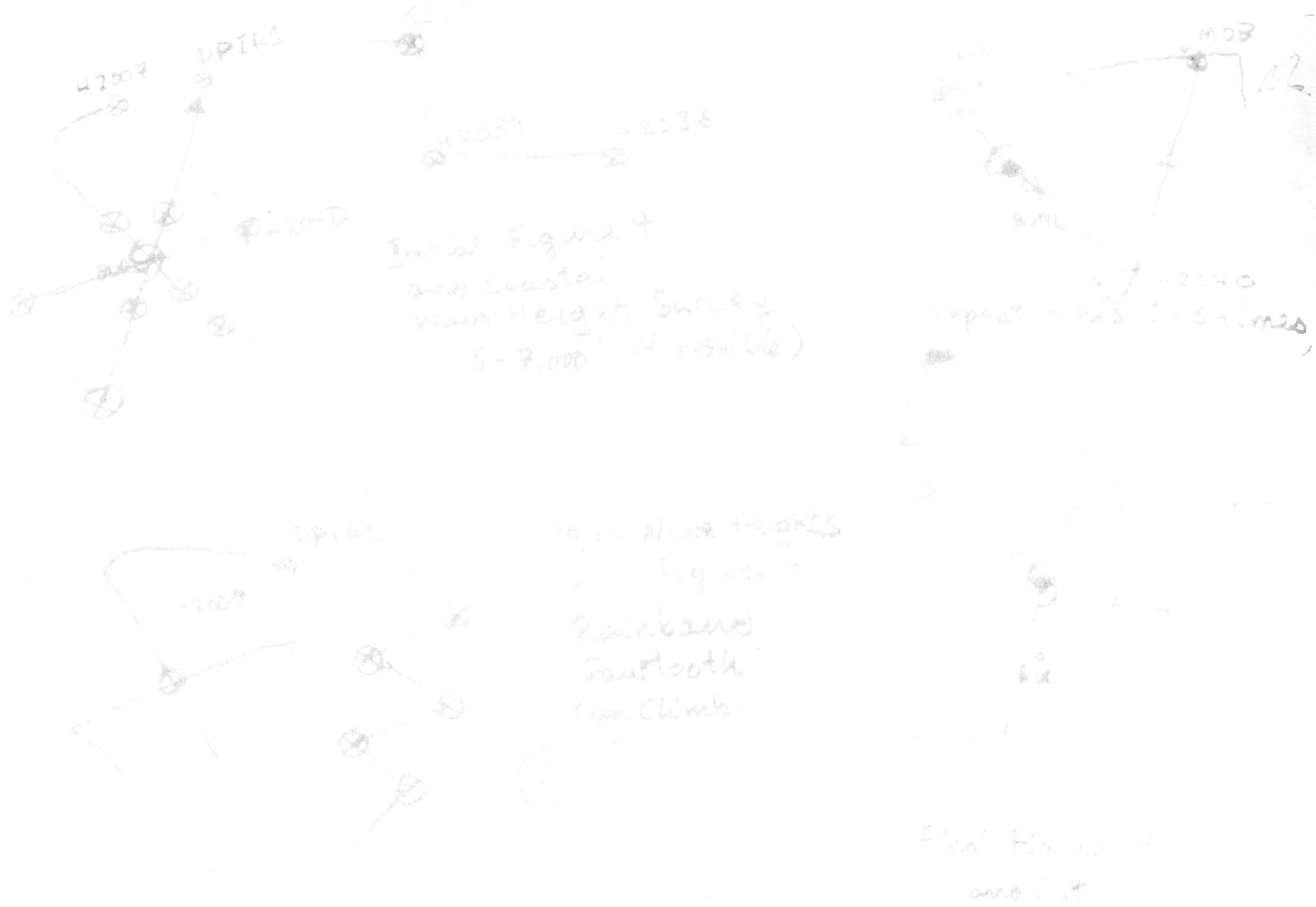
Coastal WSR-88D Sites, with WBAN numbers

WBAN	Site	RPG		Lat	Lon	Site Ht(m)	Tower HT(m)		
12899	KAMX	728	1	25.6111	-80.4128	4.3	20.0	NWS	Miami, Florida RDA location
12919	KBRO	324	1	25.9161	-97.4189	7.0	10.0	NWS	Brownsville, Texas
53845	KCLX	333	1	32.6555	-81.1756	29.6	30.0	NWS	Charleston, South Carolina
12924	KCRP	343	1	27.7842	-97.5111	13.7	20.0	NWS	Corpus Christi, Texas
03980	KHGX	378	1	29.4719	-95.0792	5.5	20.0	NWS	Houston/Galveston
13889	KJAX	383	1	30.4847	-81.7019	10.1	20.0	NWS	Jacksonville, Florida
92804	KBYX	386	1	24.5975	-81.7031	2.4	20.0	NWS	Key West, Florida
03937	KLCH	391	1	30.1253	-93.2158	3.9	20.0	NWS	Lake Charles, Louisiana
12838	KMLB	302	1	28.1133	-80.6542	10.7	20.0	NWS	Melbourne, Florida
13894	KMOB	509	1	30.6794	-88.2397	63.4	20.0	NWS	Mobile, Alabama
93768	KMHX	375	1	34.7761	-76.8761	9.4	30.0	NWS	Morehead City, North Carolina
53813	KLIX	545	1	30.3367	-89.8256	7.3	30.0	NWS	New Orleans/ Baton Rouge, Lou
93773	KAKQ	516	1	36.9839	-77.0072	34.1	20.0	NWS	Norfolk/Richmond/Wakefield
93805	KTLH	551	1	30.3975	-84.3289	19.2	30.0	NWS	Tallahassee, Florida
92801	KTBW	552	1	27.7056	-82.4022	12.5	20.0	NWS	Tampa Bay, Florida
93774	KLTX	563	1	33.9894	-78.4289	19.5	20.0	NWS	Wilmington, North Carolina
93770	KDOX	351	1	38.8256	-75.4397	15.2	20.0	DOD	Dover AFB, Delaware
53825	KEVX	307	1	30.5644	-85.9214	42.7	20.0	DOD	Eglin AFB, Florida
93767	KLWX	303	1	38.9753	-77.4778	82.9	25.0	NWS	Sterling, VA
04725	KBGM	319	1	42.1997	-75.9847	489.5	20.0	NWS	Binghamton, NY
94703	KOKX	515	1	40.8656	-72.8639	25.9	30.0	NWS	New York City, NY
54765	KBOX	323	1	41.9558	-71.1369	40.0	30.0	NWS	Boston, MA
54762	KGYX	528	1	43.8914	-70.2564	124.7	10.0	NWS	Portland, ME
94625	KCBW	-99	1	46.0392	-67.8064	227.4	30.0	DOD	Loring AFB, ME (Houlton)
93772	KRAX	531	1	35.6656	-78.4897	106.1	30.0	NWS	Raleigh/Durham, NC
-9999	TJUA	502	1	18.1156	-66.0781	851.6	30.0	DOT	San Juan, Puerto Rico
41417	PGUA	-99	1	13.4525	144.8114	80.5	30.0	DOD	Anderson AFB, Guam
-9999	KBIX	-99	0	30.2100	-88.9877	42.1		DOD	Keesler AFB, MS ! Training Radar

The number after the site ID indicates whether site is operational yet. 1 = radar is installed and working, 0 = radar not yet installed. Site ID's may not all be correct; I've used old identifiers until I hear otherwise. Lat and Lon are in degrees and decimal fraction. Altitude is in m. Adde RPG #'s on 28 JUly 1998. These #'s are used in product, HDP and RCM headers.

..... Revised 26 Feb 1998, as per list on NCDC WWW page

Possible 43


DPI41
42007
42039
42036
Initial Figure 4
and coastal
Wave Height Survey
5-7,000' (if possible)
MOB
42040
DPI41
42009
Wave Heights
Rainbow
Sawtooth
Can Climb

980928 I (2)

modified