

NOAA Technical Memorandum NWS NHC 17

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ANNUAL DATA AND VERIFICATION TABULATION
ATLANTIC TROPICAL CYCLONES 1981

Staff, NHC

National Hurricane Center
Miami, Florida
November 1982

UNITED STATES
DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary

National Oceanic and
Atmospheric Administration
John V. Byrne, Administrator

National Weather
Service
Richard E. Hallgren, Director



INTRODUCTION

This is the eighth report of an annual series prepared by the National Hurricane Center (NHC) to provide a source of summarized data on Atlantic tropical cyclones. It will not duplicate the narrative overview of the hurricane season and the description of individual storms, which will continue to be published in the Monthly Weather Review.

In addition to data supplied by the National Weather Service, materials have been furnished by the NOAA National Earth Satellite Services (NESS) Miami Office, and the CARCAH (Chief Aerial Reconnaissance Coordination, all Hurricanes).

OBJECTIVE FORECAST TECHNIQUES

The following tropical cyclone prediction models were used at the National Hurricane Center for forecasting motion on an operational basis:

1. NHC-67 (Miller, Hill, Chase, 1968). A stepwise screening regression model using predictors derived from the current and 24-hour old 1000, 700, and 500 mb data, and includes persistence during the early forecast periods.
2. SANBAR (Sanders and Burpee, 1968). A filtered barotropic model using input data derived from the 1000 to 100 mb pressure weighted winds. The model requires use of "bogus" data in data-void areas. The system was modified by Pike (1972) so that the initial wind field near the storm would conform to the current storm motion.
3. HURRAN (Hope and Neumann, 1970). An analog system using as as data base the tracks of all Atlantic tropical storms and hurricanes dating back to 1886.

- 4 CLIPER (Neumann, 1972). Stepwise multiple screening regression using the predictors derived from climatology and persistence.
5. NHC-72 (Neumann, Hope, Miller, 1972). A modified stepwise multiple screening regression system which combines the NHC-67 concept and the CLIPER system into a single model
6. NHC-73 (Neumann and Lawrence, 1973). Similar in concept to the NHC-72 except it also uses the "perfect prog" and MOS (model output statistics) methods to introduce NMC (National Meteorological Center) numerical prognostic data into the prediction equations.
- 7 NMC MFM MODEL (Hovermale, 1975). A ten-level baroclinic model which uses a moving fine mesh (MFM) grid nested within the coarser NMC fixed grid primitive equation (PE) model.

In addition, operational forecasts of tropical cyclone intensity changes in knots at 12-hourly intervals out to 72 hours are generated by a program named SHIFOR (Statistical Hurricane Intensity FORcasts). Generation of the forecast equations was done by multiple screening regression techniques using historical tropical cyclone data as input. Results over the past several years have shown that SHIFOR and official intensity forecasts have comparable skill scores.

The National Hurricane Center uses the above models as guidance in the formulation of its forecasts. The hurricane forecaster also makes extensive use of analyses and prognoses produced by NMC and RCTM (Regional Center for Tropical Meteorology) in Miami.

VERIFICATION

Verification statistics for the 1981 season are shown in Table 1.

The initial position error in Table 1 is the difference between the operational initial position and that determined during post analysis (best track position). The forecast displacement error is the vector difference between the forecast displacement and the actual displacement computed from best-track positions. Landfall prediction errors for the official forecasts are given in Tables 2a and 2b. These are defined as the distance from the predicted landfall point, made 24 hours prior to actual landfall, to the actual landfall point. In cases where a storm either crossed an island or made landfall when predicted to remain offshore, the error was designated as the distance from the landfall point to the nearest point on the forecast track.

Tropical cyclone warning lead times for United States landfalling storms are given in Table 3a. A summary of warning lead times for the period 1970-1981 for hurricanes only and for both tropical storms and hurricanes is given in Table 3b. The length of time between the issuance of the warnings and the time that the center crossed the coast, as determined from the track, was taken as the warning lead time. A more complete discussion of the verification of tropical cyclone warning lead times, as well as verifications for individual storms from 1970-1977, can be found in the 1977 Annual Data and Verification Tabulation (Lawrence, Hebert, and Staff, 1979).

DATA SUMMARIES

A summary of 1981 North Atlantic tropical and subtropical cyclone statistics is given in Table 4. Tracks of 1981 named storms as well as the November subtropical cyclone are shown in Figure 1.

The best track, initial, and forecast positions for 1981 named storms are in Table 5, along with initial position and forecast errors, storm average errors

Table 6 lists all center fix positions and intensity evaluations used operationally at the National Hurricane Center during 1981. Fixes are in chronological order, and include those obtained by aerial reconnaissance penetrations, satellite (Miami SFSS), and land-based radar. The legend precedes the initial table

Supplementary Vortex Data Messages which replaced Vortex Profiles in the 1977 Annual Data Tabulation are given in Table 7. A diagram of the paths flown in obtaining these Data Messages is given in Figure 2. The symbolic code for interpreting the Data Messages is given as Appendix A.

Table 8 is an aerial reconnaissance summary for the 1981 season.

Graphs of the lowest central pressure versus time for 1981 tropical cyclones and the subtropical cyclone are presented in Figure 3.

Daily SMS-2 and GOES-5 satellite photographs of 1981 named tropical cyclones and the subtropical cyclone are shown in Figure 4

ACKNOWLEDGMENTS

Main contributors were: Frank Revitte and Andrew Stern, who listed the center fixes in chronological order and performed other miscellaneous tasks; Dr. Joseph Pelissier, who computed the verification statistics; Ms. Mary Watson, who drafted the pressure/time graphs; Mr. Frank Marques who did all reduction work on the graphs and tables; and Ms. Liliias Wilson and Ms. Mary Ellen Dell, who typed the tables and manuscript

REFERENCES

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- Sanders, F., and R. W. Burpee, 1968: "Experiments in Barotropic Hurricane Track Forecasting," Journal of Applied Meteorology, Vol. 7, No. 3, pp. 313-323.

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- Table 2b. Twelve-year summary of errors in the prediction of the point of landfall of Atlantic tropical storms and hurricanes during the period 1970-1981.
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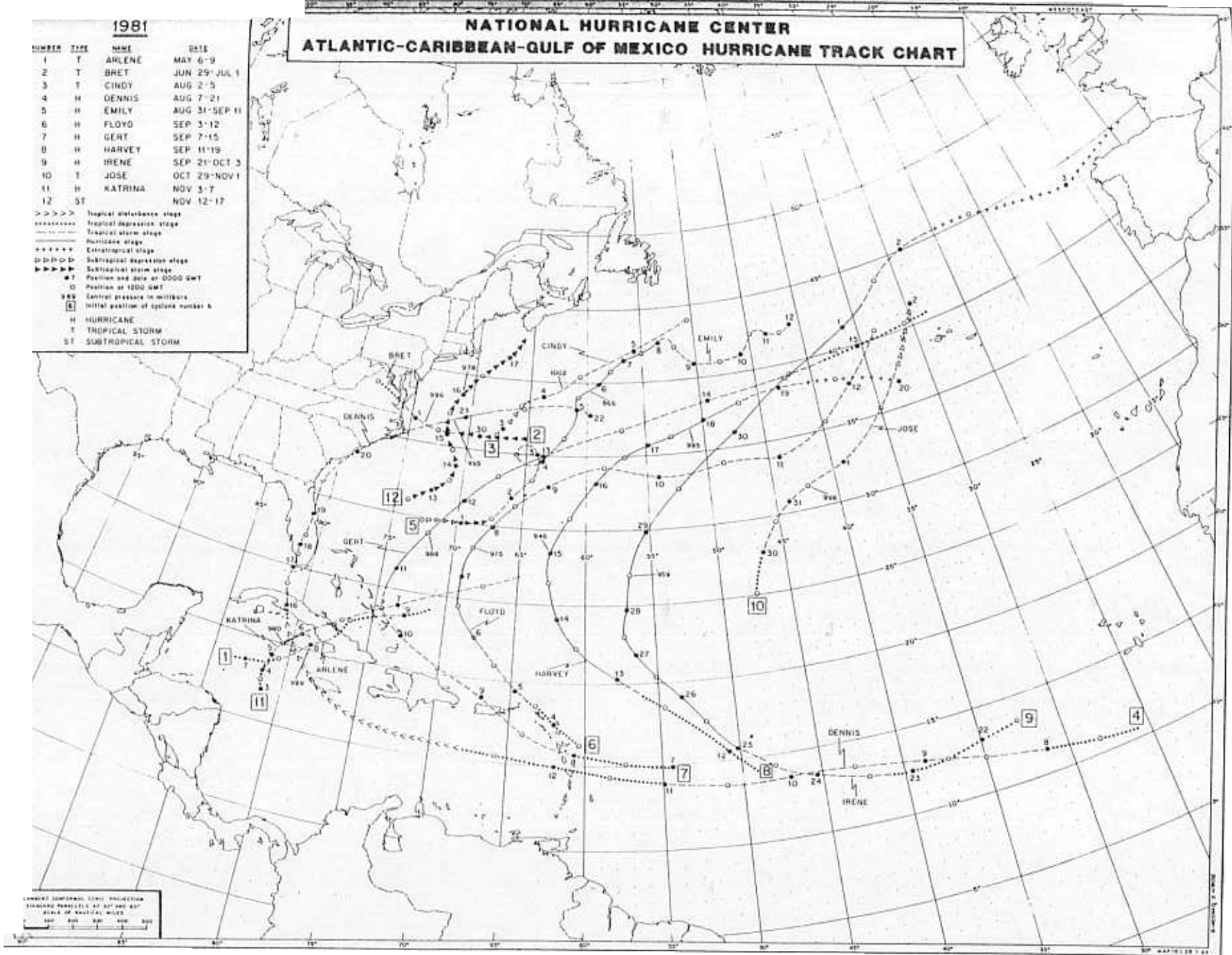
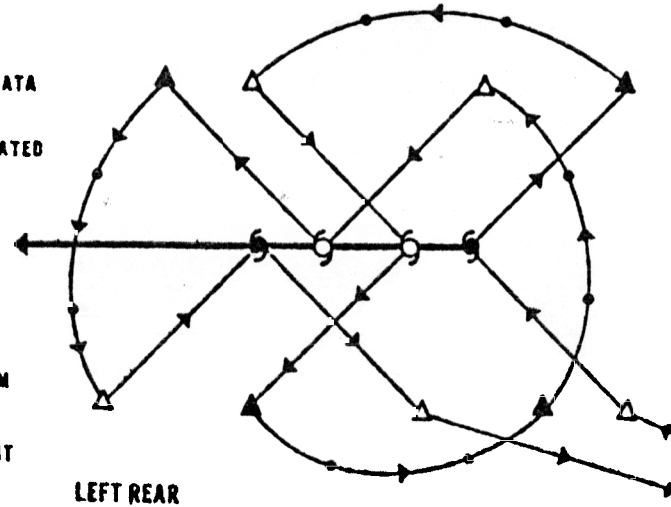
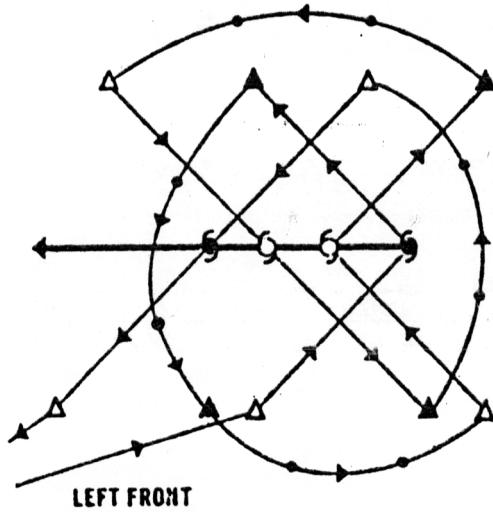
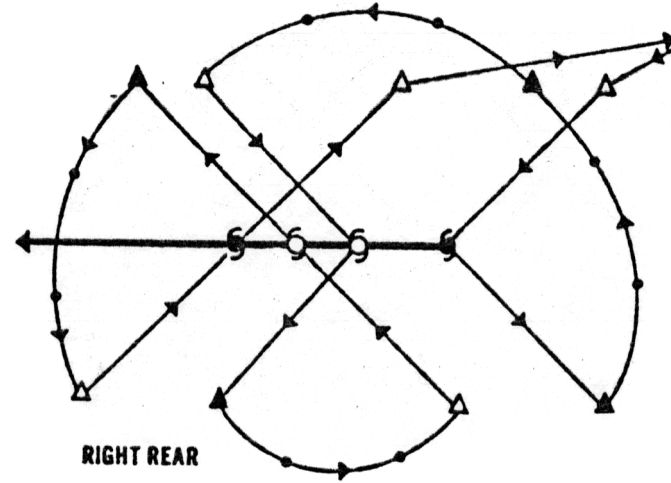
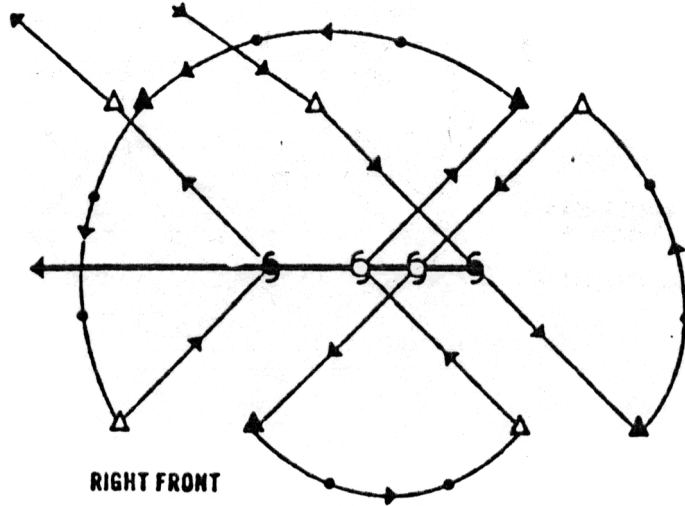


Figure 1. Tracks of 1981 tropical and subtropical cyclones.

RECOMMENDED PATTERN "A" EXECUTION



Legend

- ⊙ DETAILED VORTEX DATA PLUS CENTER DROP
- DETAILED/ABBREVIATED VORTEX DATA
- ▲ RECCO [SECTION 1] PLUS DROP
- △ RECCO [SECTION 1]
- RECCO [SECTION 3]
- ← DIRECTION OF STORM MOVEMENT
- ↔ DIRECTION OF FLIGHT

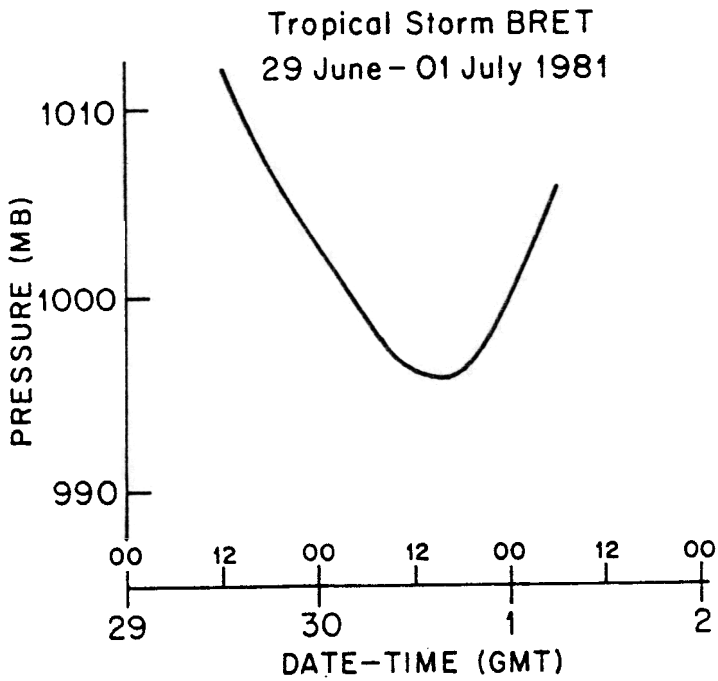
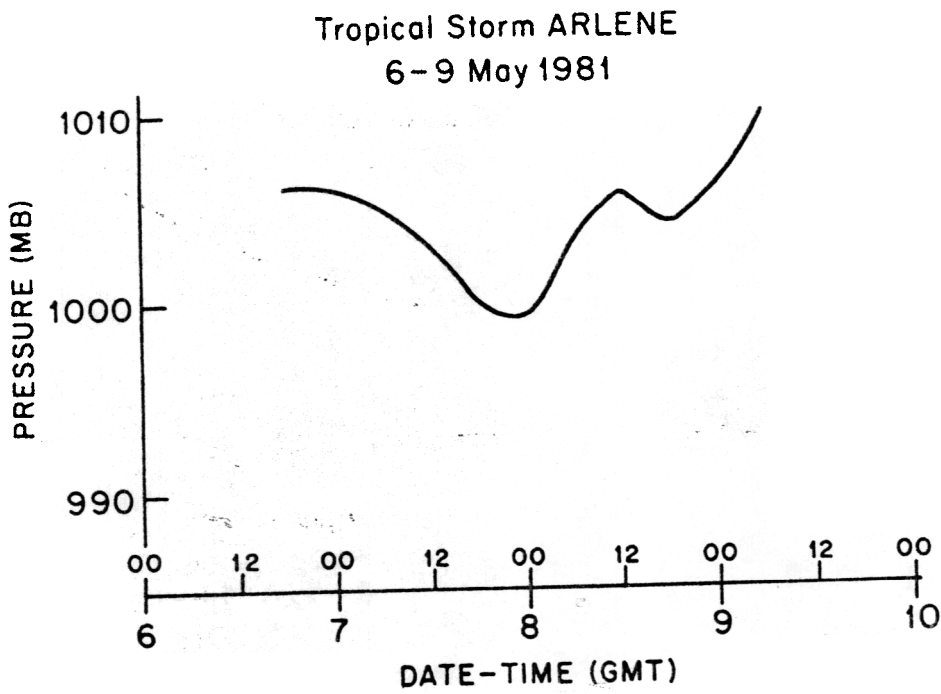


Figure 3. Lowest pressure vs time, 1981 tropical and subtropical cyclones.

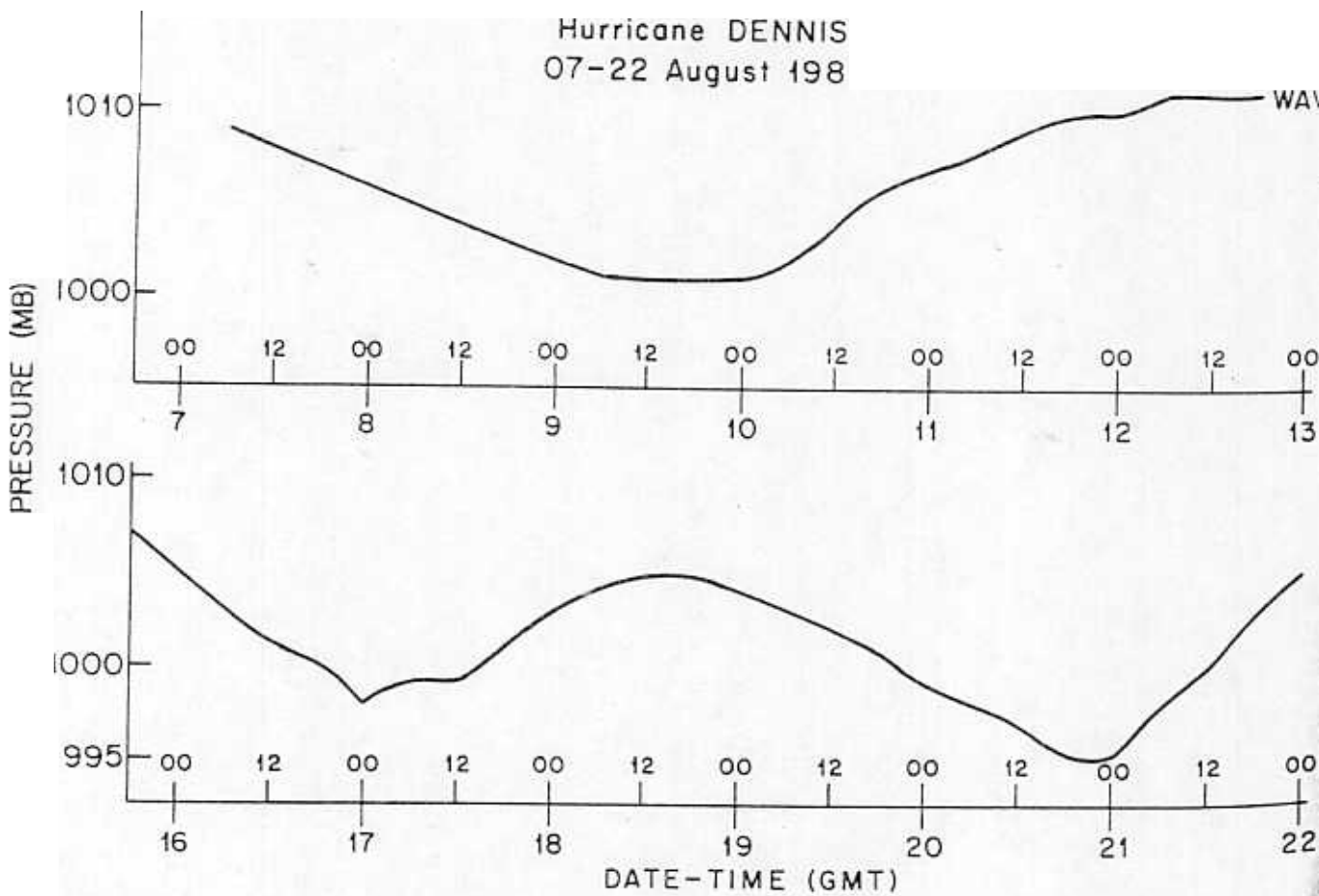
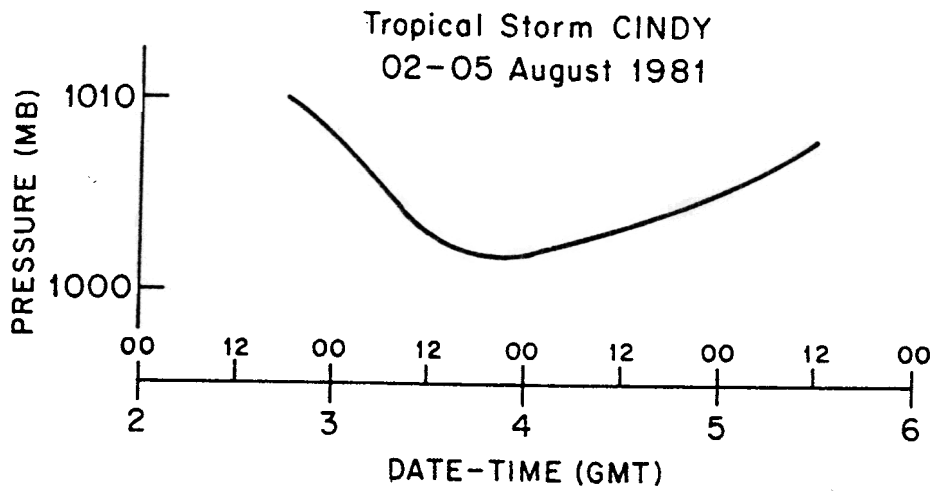


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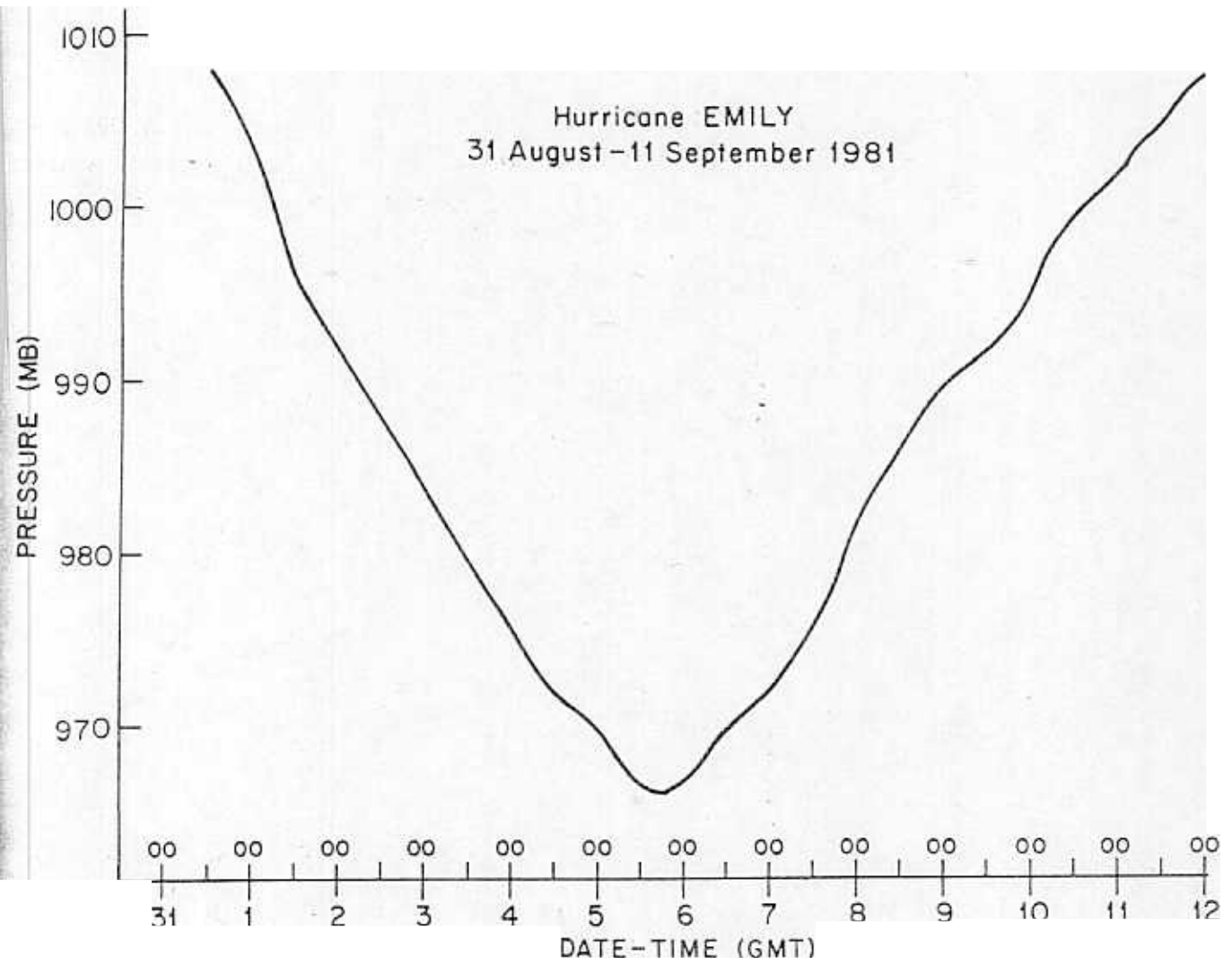


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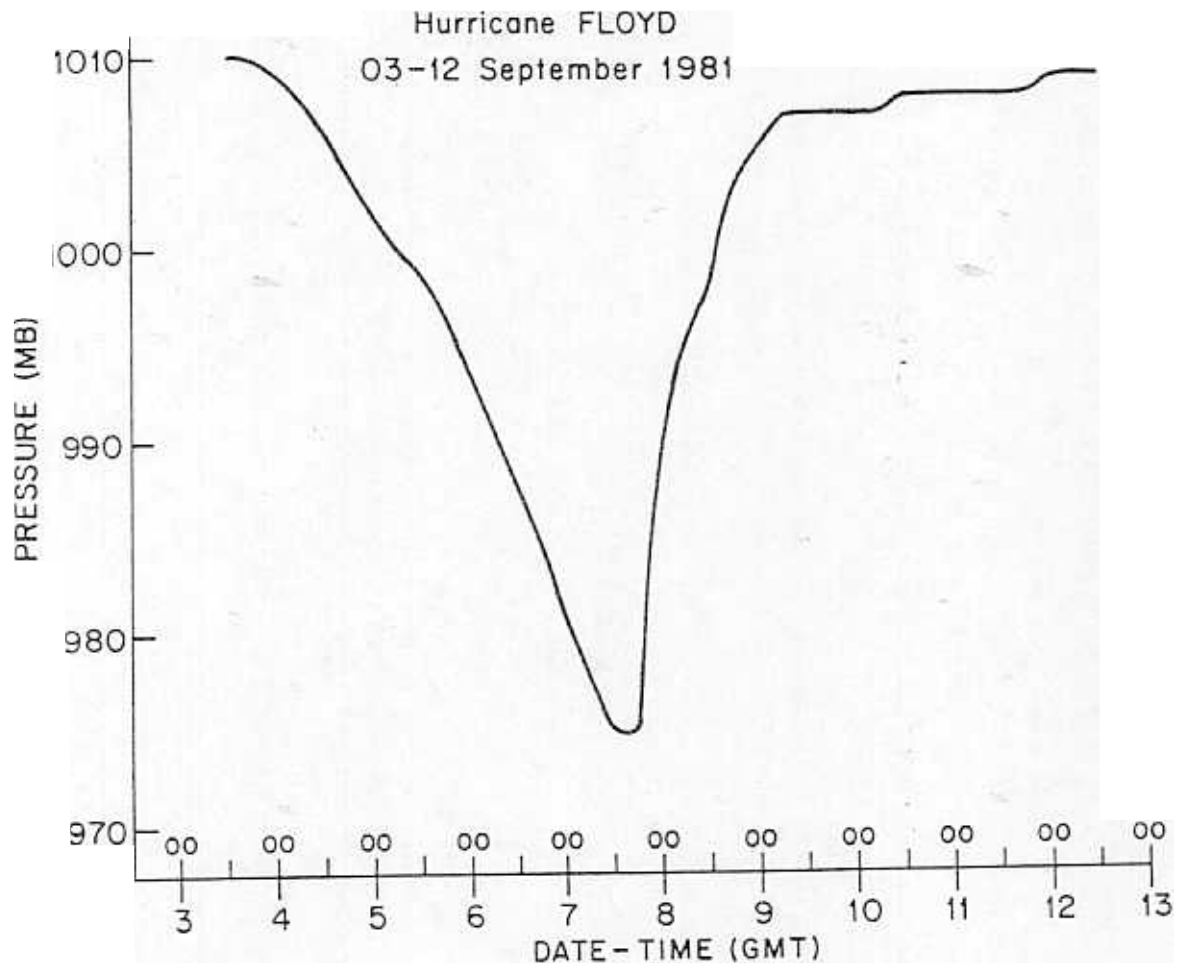


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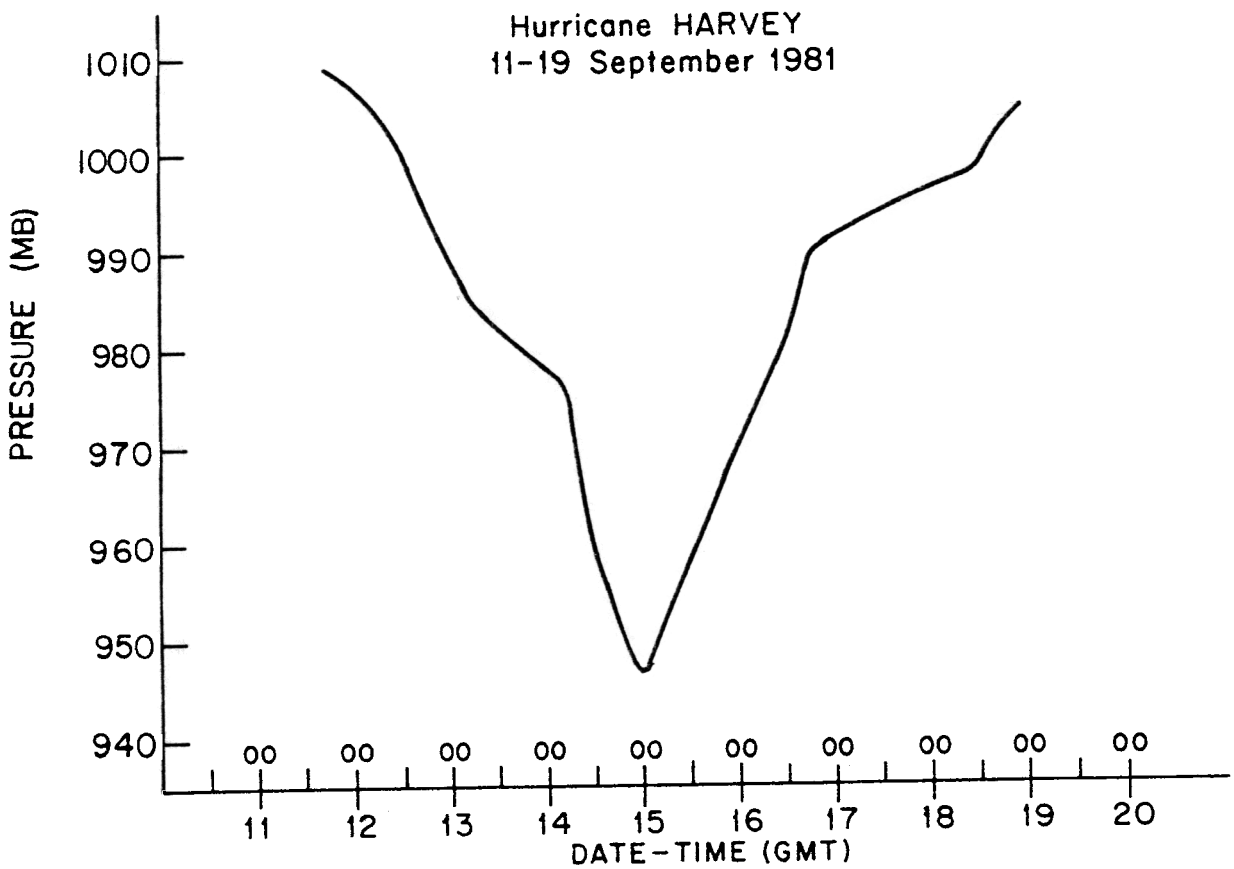
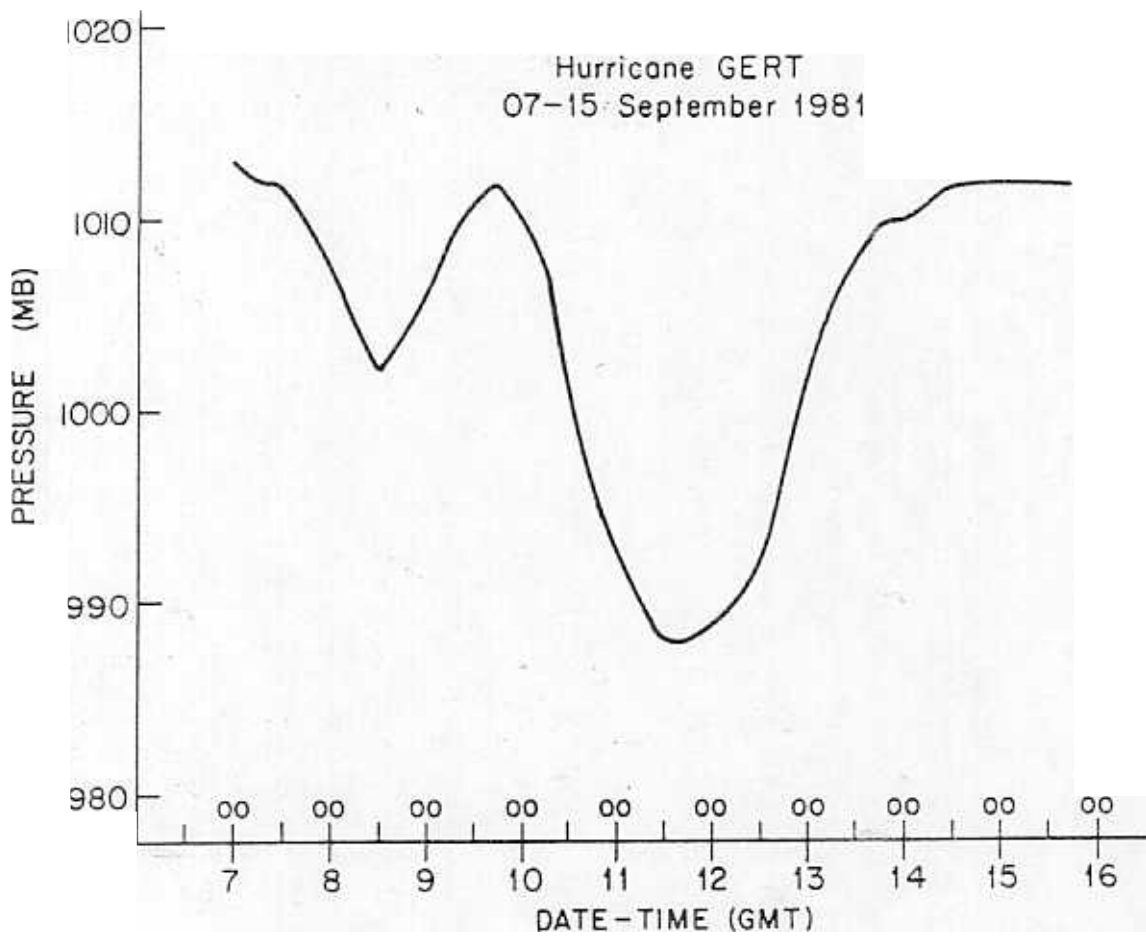


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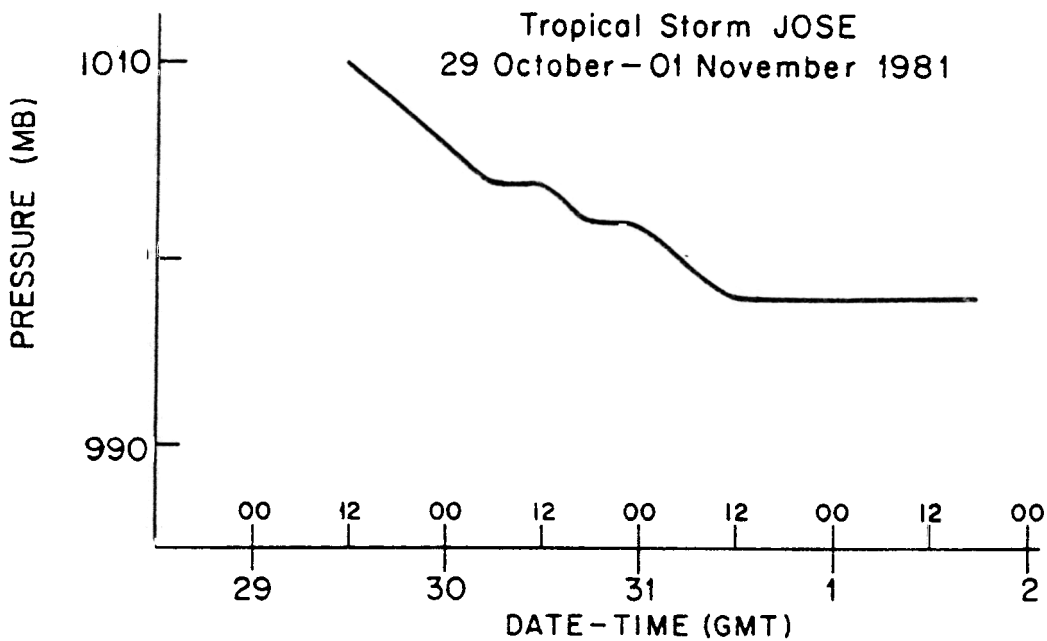
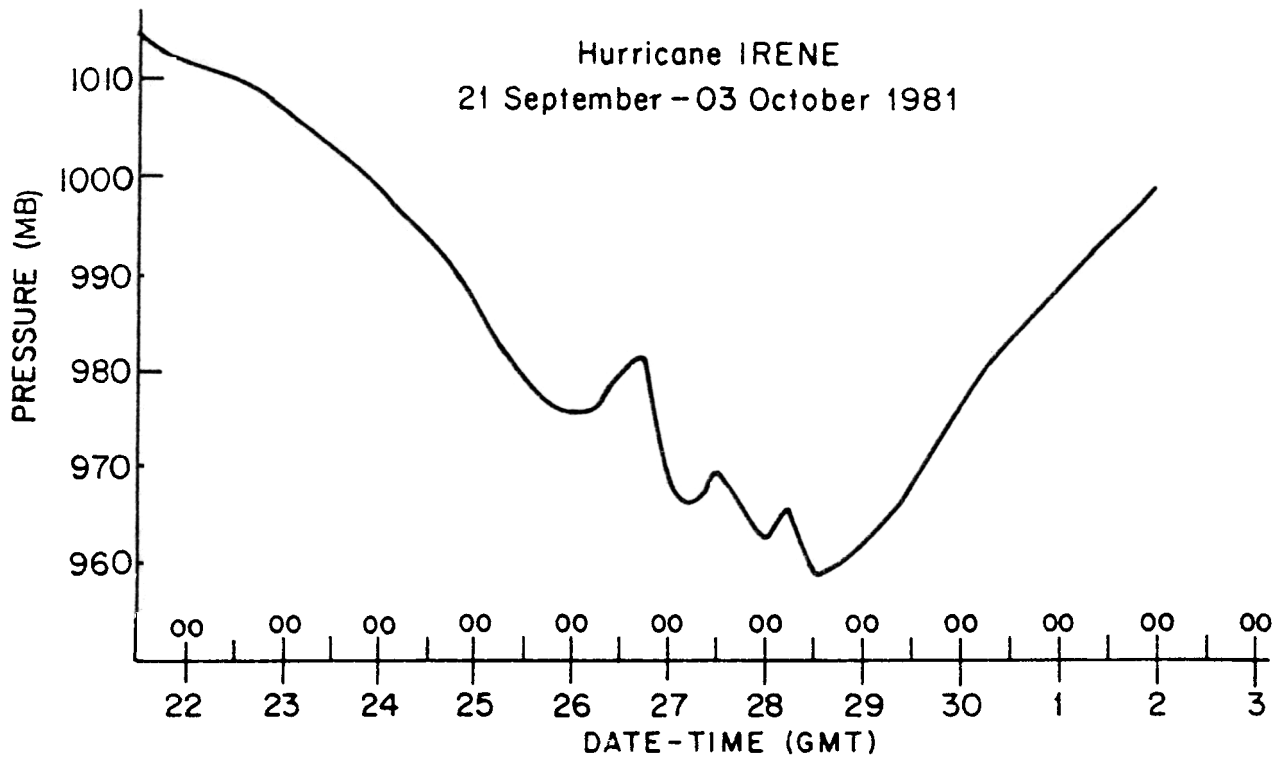
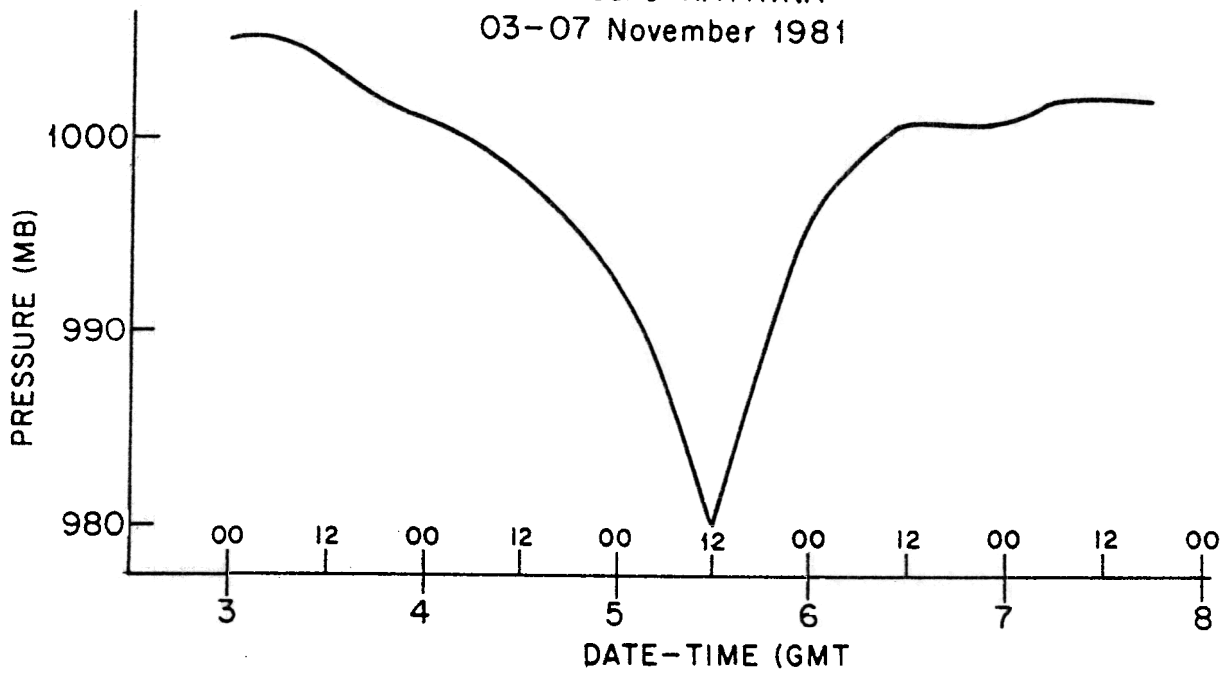


Figure 3 continued.

Hurricane KATRINA
03-07 November 1981



Subtropical Storm
12-17 November 1981

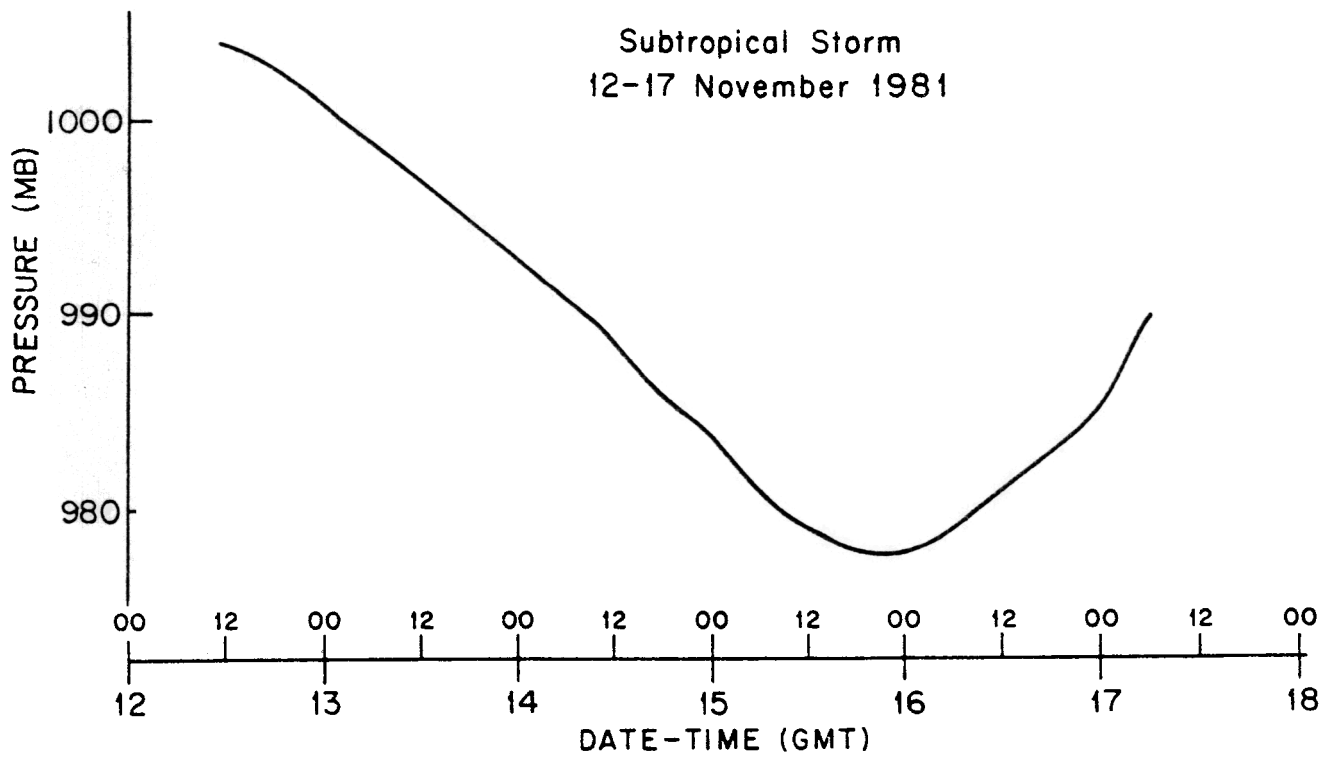
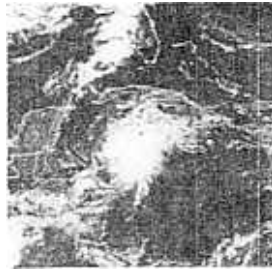


Figure 3 continued.



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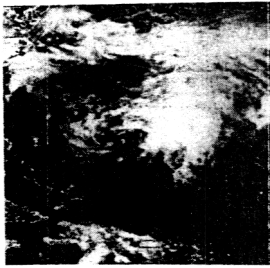


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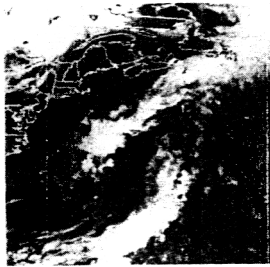


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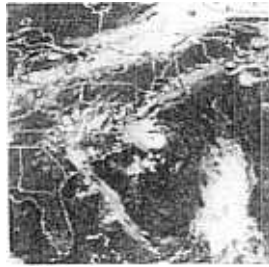
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1631 GMT 7/1/81
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BRET



1901 GMT 8/2/81
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1931 GMT 8/3/81
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1831 GMT 8/4/81
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CINDY

Figure 4. Daily satellite photographs of 1981 tropical and subtropical cyclones.



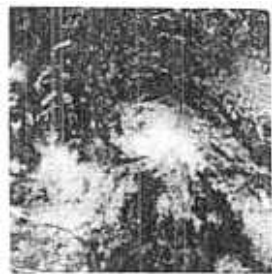
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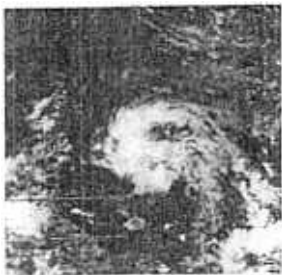
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ENNIS



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DENNIS



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1831 GMT 8/21/81
1003 MB



1431 GMT 8/31/81
1006 MB



1831 GMT 9/1/81
993 MB



1931 GMT 9/2/81
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EMILY



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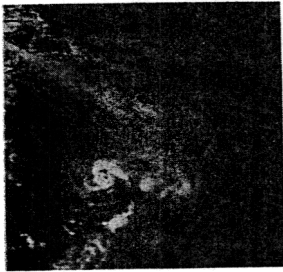
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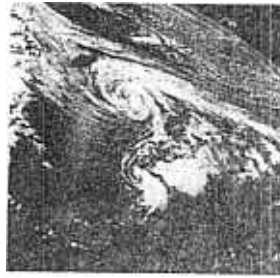


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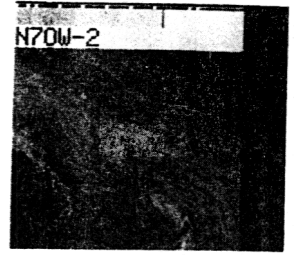
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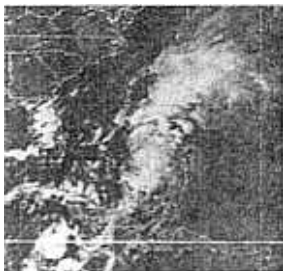


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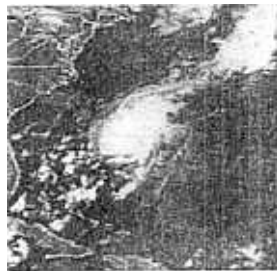


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GERT



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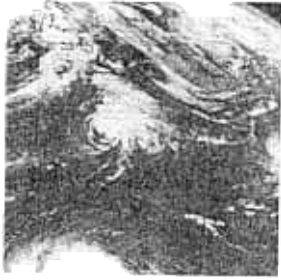


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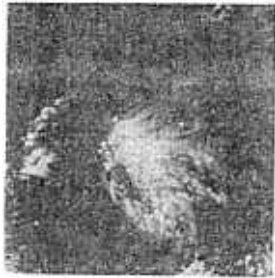
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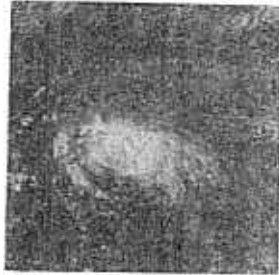
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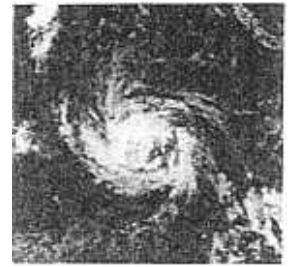
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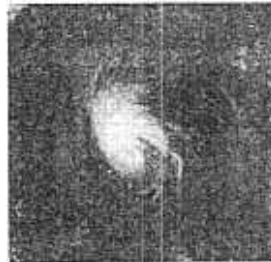
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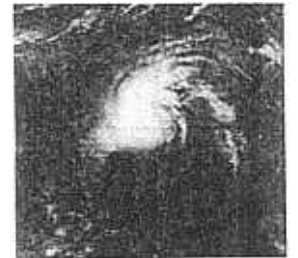
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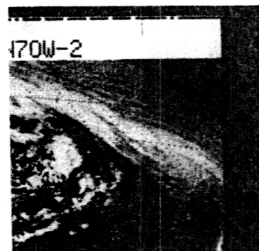
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JOSE'



1601 GMT 11/1/81
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KATRINA



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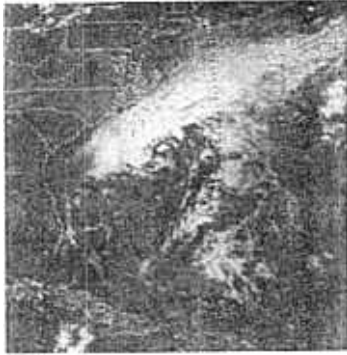
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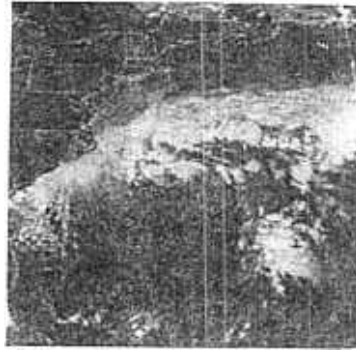
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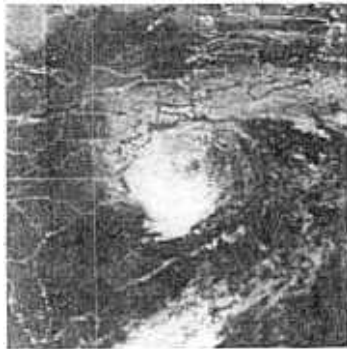


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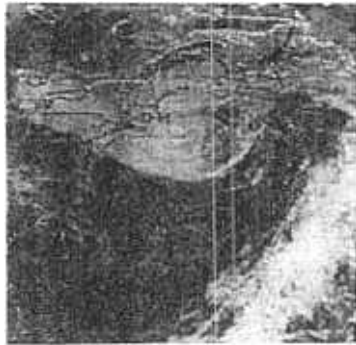


1601 GMT 11/14/81
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**SUBTROPICAL
STORM**



1601 GMT 11/15/81
978 MB



1601 GMT 11/16/81
982 MB

APPENDIX A

CODE FOR SUPPLEMENTARY VORTEX DATA MESSAGES.

DATE		AIRCRAFT NUMBER		FLIGHT METEOROLOGIST			
MANOP HEADING (PRECEDENCE IMMEDIATE)							
MISSION IDENTIFIER AND OBSERVATION NUMBER							
SUPPLEMENTARY VORTEX DATA MESSAGE							
1	2 dd	3 FLZZZ					
	DEG	DEG FL					
4	5	6					
LEFT	FRONT	QUAD					
RIGHT	REAR						
7 DjHHH	8 DTTQQ	9 DjHHH	10 DTTQQ	11 DjHHH	12 DTTQQ	13 DjHHH	14 DTTQQ
8	8	4	4	3	3	1	1
15 DjHHH	16 DTTQQ	17 64RRR	18 50RRR	19 34RRR	20 MXFFF	21 BBBRR	22 hhhhh
8	8	64	50	34	MX		
23	24	25					
LEFT	FRONT	QUAD					
RIGHT	REAR						
26 DjHHH	27 DTTQQ	28 DjHHH	29 DTTQQ	30 DjHHH	31 DTTQQ	32 DjHHH	33 DTTQQ
8	8	4	4	3	3	1	1
34 DjHHH	35 DTTQQ	36 64RRR	37 50RRR	38 34RRR	39 MXFFF	40 BBBRR	41 hhhhh
8	8	64	50	34	MX		
42	43	44					
LEFT	FRONT	QUAD					
RIGHT	REAR						
45 DjHHH	46 DTTQQ	47 DjHHH	48 DTTQQ	49 DjHHH	50 DTTQQ	51 DjHHH	52 DTTQQ
8	8	4	4	3	3	1	1
53 DjHHH	54 DTTQQ	55 64RRR	56 50RRR	57 34RRR	58 MXFFF	59 BBBRR	60 hhhhh
8	8	64	50	34	MX		
61	62	63					
LEFT	FRONT	QUAD					
RIGHT	REAR						
64 DjHHH	65 DTTQQ	66 DjHHH	67 DTTQQ	68 DjHHH	69 DTTQQ	70 DjHHH	71 DTTQQ
8	8	4	4	3	3	1	1
72 DjHHH	73 DTTQQ	74 64RRR	75 50RRR	76 34RRR	77 MXFFF	78 BBBRR	79 hhhhh
8	8	64	50	34	MX		
Remarks							
CODE FIGURES	dd	- True direction in tens of degrees (pattern orientation based on direction of storm motion).					
	zzz	- Flight level in hundreds of feet (absolute altitude below 5500 feet).					
	D	- Group indicator designating the distance from the center in nautical miles (8-80, 4-45, 3-30, 1-15, #-center).					
	hhhh	- Height of the eyewall in feet.					
	jHHH	- Pressure height data in RECCO format.					
	TTQQ	- Temperature/dewpoint in degrees Celsius. Add 50 for negative values.					
	FFF	- Maximum observed wind speed in knots.					
	BBRR	- Bearing and range from the center of MXFFF.					
	RRR	- Radial extent of 64 kt, 50 kt, and 34 kt winds from the center in nautical miles.					
	//	- Data are unknown or unobtainable.					

Table 1. Verification of 1981 tropical storm and hurricane forecasts.

Figures in parentheses are number of cases.

METHOD	INITIAL POSITION ERROR (N.MI.)	FORECAST DISPLACEMENT ERRORS (N.MI.)			
		12 HR	24 HR	48 HR	72 HR
OFFICIAL	20 (210)	58 (210)	120 (190)	246 (146)	426 (106)
NHC67	20 (176)	57 (176)	129 (164)	290 (139)	443 (110)
NHC72	21 (202)	58 (202)	134 (184)	276 (145)	406 (112)
HURRAN	18 (137)	53 (137)	120 (124)	297 (97)	481 (73)
CLIPER	20 (206)	59 (206)	126 (188)	263 (149)	436 (115)
NHC73	19 (85)	53 (85)	113 (78)	219 (70)	418 (56)
SANBAR	19 (91)	61 (91)	116 (81)	225 (65)	374 (52)
MFM	19 (20)	83 (20)	131 (20)	191 (18)	--

Table 2a Landfal prediction errors for 1981 tropical storms and hurricanes.

Following is a list of landfall prediction errors for tropical storms and hurricanes during 1981. Each error represents the distance (in nautical miles) from the predicted landfall point determined from the "Official" forecast issued 24 hours prior to landfall to the actual landfall point determined from the Best Track. Only tropical storms and hurricanes are included. In some cases the storm crossed an island when predicted to pass offshore. In such cases, the perpendicular distance from the landfall point to the forecast track is taken as the landfall prediction error.

Storm name	Category at Landfall	Date/Time (Z) of Landfall	Landfall Forecast Error (n.mi.)	Location and Remarks
Arlene	Trop. Storm	05/08/02Z	*	Eastern Cuba.
Bret	Trop. Dep	07/01/06Z		Virginia eastern shore. Trop. Depression at time of landfall.
Cindy	(No landfa			
Dennis	Trop. Storm	08/16/21Z	*	Florida Keys
Dennis (11)	Trop. Storm	08/17/06Z	15 mi. S	Southwest tip of Florida
Dennis (1	Trop. Storm	08/20/02Z	35 mi. NE	Near Cape Fear, NC
Emily Floyd	(No landfall) (No landfall)			
Gert	Trop. Storm	09/08/20Z	55 mi. S	Landfall in Puerto Rico. Storm forecast to remain offshore to the south of P.R.
Harvey Irene Joe	(No landfall) (No landfall) (No landfall)			
Katrina	Trop Storm	11/06/03Z	35 mi. NW	Landfall in eastern Cuba

*Storm developed within 24 hours of making landfall, therefore no forecast was made 24 hours prior to landfall.

Table 2b Twelve-year summary of errors in the prediction of the points of landfal of Atlantic tropical storms and hurricanes during the period 1970-1981.

	<u>United States Landfalls</u>	<u>All Landfalls</u>
1981 Mean 24-Hour Landfal Prediction Error (number of cases)	25 n.mi. (2)	35 n.mi. (4)
12 year average 1970-1981	39 n.mi. (21)	50 n.mi (55)

Table 3a. Tropical cyclone warning lead times of 981 United States landfalling tropical storms and hurricanes.

Storm Name	Category at Landfall	Date/Time (Z) of Landfall	Location of Landfall	Type and Time (Z) of warnings issued for point of landfall	Warning lead time (hours)
Arlene	(No US landfall)				
Bret	(Trop. Depression at time of landfall-no warnings required)				
Cindy	(No U. S. landfall)				
Dennis (I)	Trop. Storm	08/16/21Z	Florida Keys	08/16/04Z, Gale Warnings issued for the Florida Keys.	17 hours
Dennis (II)	Trop. Storm	08/17/06Z	SW tip of Florida	(No Gale Warnings were issued for the southwest tip of the Florida peninsula)	0 hours
Dennis (III)	Trop. Storm	08/20/02Z	Near Cape Fear, NC	08/19/16Z, Gale Warnings issued Little River, SC, to Cape Lookout, North Carolina	10 hours
Emily)					
Floyd)					
Gert)					
Harvey)	(No landfalls on U.S. mainland)				
Irene)					
Jose)					
Katrina)					

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Table 3b. Average warning lead times for all tropical storms and hurricanes and for hurricanes alone, which made landfall on the mainland of the United States during 1981 and during the 12-year period of 1970-1981).

	All Tropical Storms and Hurricanes		All Hurricanes	
	1981	1970-1981	1981	1970-1981
Average Lead Time (hours)	9	18	--	21
(number of cases)	(3)	(28)	(0)	(12)

NO.	NAME	CLASS ¹	DATES ²	MAXIMUM SUSTAINED WINDS (KT)	LOWEST PRESSURE (MB)	U.S. DAMAGE (\$ MILLION)	DEATHS
1	Arlene	T	6-9 May	50	999		
2	Bret	T	29 Jun - 1 Jul	60	996	Minor	
3	Cindy	T	2-5 Aug	50	1002		
4	Dennis	H	7-21 Aug	70	995	25	
5	Emily	H	31 Aug - 11 Sep	80	966		
6	Floyd	H	3-12 Sep	100	975		
7	Gert	H	7-15 Sep	90	988		
8	Harvey	H	11-19 Sep	115	946		
9	Irene	H	21 Sep - 3 Oct	105	959		
10	Jose	T	29 Oct - 1 Nov	45	998		
11	Katrina	H	3-7 Nov	75	980		Cuba 2
12		ST	12-17 Nov	60	978	Minor	

1. T - tropical storm (winds 34-63 knots)
H - hurricane (winds 64 knots or higher)
ST - subtropical storm (winds 34-63 knots)

2. The day starts at 0000 GMT

Best track, initial and forecast positions, initial position error
and forecast errors for 1981 tropical cyclones.

TROPICAL STORM ARLENE 6-9 MAY 1981

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12 HOUR FORECAST			24 HOUR FORECAST			48 HOUR FORECAST			72 HOUR FORECAST		
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)
0712	19.0	80.6	19.1	80.4	13	20.0	78.0	37	21.0	76.0		23.0	74.0		26.0	72.0	
0718	19.6	79.7	19.7	79.6	8	21.0	78.0		22.0	76.5	134	25.0	74.0		28.0	73.0	
0800	20.3	78.7	20.3	78.8		21.5	77.0		23.0	75.5		26.0	74.0		28.0	74.0	
0818	23.0	74.5	23.0	74.6		24.5	71.0		26.0	67.0		27.0	63.0				
MEAN VECTOR ERRORS (NM)					11			37			134						
NUMBER OF CASES					2			1			1						

TROPICAL STORM BRET 29 JUNE - 1 JULY 1981

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12 HOUR FORECAST			24 HOUR FORECAST			48 HOUR FORECAST			72 HOUR FORECAST		
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)
3018	36.2	73.8	36.1	73.7		36.5	76.5		38.0	79.0							
0100	36.6	74.7	36.5	74.7		37.5	77.0										
MEAN VECTOR ERRORS (NM)					0			0			0						
NUMBER OF CASES					0			0			0						

TROPICAL STORM CINDY 2 - 5 AUGUST 1981

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12 HOUR FORECAST			24 HOUR FORECAST			48 HOUR FORECAST			72 HOUR FORECAST		
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)
0318	38.7	64.9	38.7	65.1	9	40.0	63.0	45	42.0	60.0	76	47.0	52.0		51.0	40.0	
0400	39.0	63.8	39.0	64.7	42	40.0	61.0	37	42.0	58.0	64	46.0	50.0		50.0	40.0	
0406	39.4	62.2	39.4	62.1	5	40.8	59.3	54	42.5	56.5	178	47.0	48.0		51.0	38.0	
0412	40.4	60.7	40.6	60.7	12	42.0	57.5	84	43.5	54.5		47.5	45.5				
0418	41.3	58.4	41.2	58.3	8	43.0	55.0	106	45.0	51.0		49.0	42.0				
0500	42.2	55.7	42.2	56.0		44.0	50.0		46.0	43.0							
0506	43.3	52.7	43.2	53.2													
MEAN VECTOR ERRORS (NM)					15			65			106						
NUMBER OF CASES					5			5			3						

Table 5 continued

HURRICANE DENNIS 7 - 21 AUGUST 1981

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12 HOUR FORECAST ERROR			24 HOUR FORECAST ERROR			48 HOUR FORECAST ERROR			72 HOUR FORECAST ERROR		
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	(N.MI.)	LAT.	LONG.	(N.MI.)	LAT.	LONG.	(N.MI.)	LAT.	LONG.	(N.MI.)
0800	11.3	31.3	11.2	31.2	8	11.5	34.5	34	11.8	37.5	84	12.0	43.0	243	12.5	48.5	
0806	11.7	33.1	11.5	32.6	32	11.5	35.5	63	11.7	38.6	123	12.5	44.5	239	13.0	50.0	
0812	12.0	35.0	12.0	35.0	0	12.5	38.5	22	13.0	42.0	61	14.0	48.0	177	15.0	54.0	
0818	12.5	36.7	12.5	36.5	12	13.3	40.0	37	14.0	43.5	82	15.2	50.5	160	16.5	57.5	
0900	12.8	38.7	13.0	38.2	32	13.5	41.5	58	14.5	45.0	100	15.5	50.5		16.5	57.0	
0906	13.1	40.8	13.4	40.8	18	14.3	44.0	66	15.0	47.0	137	16.0	53.0		18.0	59.0	
0912	13.3	43.0	13.3	43.0	0	13.7	47.0	12	14.0	51.0	30	15.5	58.0		18.0	64.0	
0918	13.5	45.0	13.5	45.0	0	13.8	49.2	21	14.5	52.5	59	16.0	59.0		17.5	63.0	
1000	13.5	47.0	13.5	47.0	0	14.0	51.0	30	14.5	54.5		16.0	60.5		17.5	65.0	
1006	13.5	49.0	13.5	49.0	0	13.5	53.0	8	14.5	56.0		16.0	61.0		18.0	67.0	
1012	13.5	51.0	13.4	51.4		13.5	55.5		14.0	60.0		15.5	66.0		17.0	71.0	
1018	13.6	52.9	13.5	53.0		13.5	57.0		14.0	61.0		15.5	67.0		17.0	72.0	
1600	22.4	81.0	22.5	80.5	28	24.0	81.0	8	25.0	81.0	11	27.0	81.0	29	29.0	81.0	39
1606	23.0	81.2	23.3	80.8	28	24.5	81.0	19	25.5	81.0	11	27.5	81.0	29	29.5	81.0	43
1612	23.8	81.4	23.7	81.3	8	24.5	81.4	21	25.5	81.5	25	27.5	81.5	40	29.5	81.5	94
1618	24.5	81.3	24.7	81.3	12	25.5	81.3	8	26.5	81.3	8	27.5	81.3	24	29.5	81.3	188
1700	24.9	81.3	24.9	81.3	0	25.2	81.3	36	25.6	81.4	55	27.5	81.5	81	29.0	81.5	298
1706	25.2	81.2	25.2	81.3	5	26.5	81.3	18	27.5	81.3	42	29.5	81.0	13	31.5	80.0	241
1712	25.8	81.2	25.0	81.3	48	27.2	81.0	91	28.5	80.5	130	30.5	79.5	75	32.5	77.5	172
1718	26.2	81.2	26.8	81.3	36	28.0	81.0	38	29.5	80.5	84	31.0	80.0	108	33.0	79.0	373
1800	26.5	81.2	26.8	81.2	18	26.8	81.2	43	28.0	81.2	64	30.0	81.0	249	32.0	80.0	573
1806	26.8	81.1	26.8	81.2	5	26.8	81.2	48	27.0	81.0	162	28.0	81.0	449	30.0	80.0	754
1812	27.2	81.0	26.8	81.2	26	26.8	81.2	91	27.0	81.0	216	28.0	81.0	513	30.0	80.0	852
1818	27.6	81.0	27.5	81.0	6	29.0	80.3	45	30.0	80.0	126	31.5	78.5	393	33.5	77.0	747
1900	28.7	80.8	28.7	80.7	5	31.0	80.0	36	33.0	79.0	28	36.0	76.0	283	38.0	73.0	
1906	29.7	80.8	29.7	81.0	10	31.5	80.5	47	33.0	80.0	173	36.0	77.0	436	38.0	73.0	
1912	31.0	80.8	30.0	80.9	60	33.0	80.5	88	35.0	79.0	185	40.0	74.0	435	42.0	65.0	
1918	32.2	79.9	32.5	79.5	27	34.5	77.5	54	37.0	74.5	94	38.0	66.0	175	39.0	56.0	
2000	33.4	78.8	33.5	78.5	16	35.1	75.7	49	37.0	73.5	163	40.0	68.0		42.0	60.0	
2006	34.7	77.0	34.4	77.1	19	36.5	74.0	53	38.0	70.0	95	40.0	62.0		41.0	55.0	
2012	35.5	75.2	35.5	75.5	15	37.5	72.0	67	39.5	68.0	137	40.5	60.0		41.0	53.0	
2018	36.3	73.0	36.2	73.5	25	37.5	69.0	27	39.0	65.0	90	42.0	56.0		44.0	46.0	
2100	37.1	70.4	36.6	71.2	49	37.5	65.5	34	38.5	60.5							
2106	37.8	68.0	38.0	67.5	27	40.0	60.0	136									
2112	38.1	65.4	37.6	65.0		38.5	60.0		39.5	54.0		40.6	41.0		40.0	28.0	
2118	38.4	62.8	37.5	63.4		39.0	58.0		39.5	52.0		40.0	39.0				
MEAN VECTOR ERRORS (NM)					18			44			92			207			364
NUMBER OF CASES					32			32			28			20			12

Table 5 continued

HURRICANE EMILY 31 - 11 1981

DATE/TIME (GMT)	BEST LAT.	ACK LONG.	OPERATIONAL POSITION			12 HOUR FORECAST			24 HOUR FORECAST			48 HOUR FORECAST			72 HOUR FORECAST		
			LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)
0118	31.3	66.6	31.5	67.0	24	32.0	66.0	54	33.0	65.0	82	34.5	64.0	70	36.0	63.5	120
0200	31.9	65.9	31.8	65.6	16	33.3	63.8	16	34.5	63.0	42	36.5	62.0	136	38.5	60.5	25
0206	32.6	65.1	32.5	65.0	8	33.7	64.7	39	34.5	64.0	95	36.0	63.0	52	38.0	62.0	68
0212	33.3	64.4	33.0	64.0	27	35.5	63.5	48	37.0	62.5	197	39.0	62.0	188	41.0	61.5	147
0218	34.1	64.1	34.5	63.8	28	36.0	63.3	72	37.8	62.7	199	40.0	62.2	162	42.0	62.0	171
0300	35.0	64.0	35.1	63.5	25	36.5	63.0	140	38.0	62.7	199	40.0	62.2	132	42.0	62.0	199
0306	36.0	65.0	35.5	63.5	79	36.7	63.5	180	37.5	63.5	197	39.5	63.5	214	41.5	63.0	296
0312	35.0	65.8	35.0	64.5	64	35.0	66.0	184	35.5	67.0	314	37.0	68.0	419	39.5	68.0	524
0318	34.2	65.0	34.5	64.5	31	34.5	64.5	131	34.5	64.5	254	34.5	65.5	427	35.0	66.0	579
0400	34.6	63.6	34.5	64.0	21	34.5	63.5	113	34.5	63.5	241	34.5	63.5	374	34.5	63.5	515
0406	35.3	62.7	35.0	62.5	21	36.0	62.0	68	36.8	61.8	107	38.5	61.0	158	40.5	61.0	249
0412	36.2	61.9	36.0	62.0	13	38.0	61.0	0	39.5	60.5	46	42.5	59.0	121	45.0	58.5	243
0418	37.1	61.2	37.1	61.0	10	39.0	60.5	25	40.5	60.0	67	43.5	58.5	150	46.0	58.0	284
0500	38.2	60.9	38.1	60.5	20	40.3	59.8	89	42.0	59.5	138	43.0	59.0	146	44.0	58.5	254
0506	38.6	60.8	39.1	60.9	30	41.5	60.5	99	43.0	60.5	159	44.0	59.0	163	44.0	59.0	280
0512	39.0	60.8	39.1	60.8	6	39.1	60.8	99	39.1	60.8	168	41.0	60.5	256	43.0	60.5	382
0518	39.4	59.9	39.2	60.2	18	39.2	60.2	88	39.2	60.2	158	41.5	60.5	275	43.0	60.5	410
0600	39.9	59.0	39.5	59.3	28	40.8	58.5	26	42.0	58.0	63	43.0	57.5	173	44.0	57.5	371
0606	40.3	58.4	40.0	58.5	19	41.5	57.0	43	42.5	56.5	58	43.5	56.0	159	45.0	56.0	399
0612	40.8	58.0	40.9	57.8	11	42.0	57.0	25	43.0	56.5	93	44.5	56.0	229			
0618	41.2	57.4	41.3	57.5	8	42.0	57.0	45	43.0	56.5	108	44.5	56.0	262			
0700	41.6	56.8	41.5	57.2	19	42.5	56.8	72	43.5	56.0	111	46.0	54.0	340			
0706	41.9	55.9	42.8	57.3	82	42.5	56.0	47	43.5	54.5	32	46.0	52.0	260			
0712	42.0	55.0	41.7	55.5	29	42.5	53.5	19	42.5	52.5	36						
0718	42.3	54.1	42.5	54.0	13	43.0	52.0	19	43.5	50.0	108						
0800	42.7	53.4	42.7	53.0	18	43.5	50.4	92	44.0	43.5	332						
0806	42.9	52.5	42.9	52.3	9	43.5	50.0	117	44.0	48.0	190						
0812	42.2	51.9	42.5	52.0	19	42.8	50.5	90	43.0	49.0	117	44.5	46.0	113			
0818	41.7	51.2	41.7	51.8	27	42.0	51.5	104	43.0	51.5	215	45.0	50.0	271			
0900	41.0	50.2	41.0	50.5	14	40.7	49.5	60	41.0	48.0	82	44.0	45.0	124			
0906	40.9	49.1	41.1	49.1	12	41.5	46.5	26	43.0	45.0	54	45.0	43.0	163			
0912	40.9	47.9	41.0	47.5	19	41.0	45.0	29	41.0	42.0	144	41.0	36.0	263			
0918	41.0	46.9	40.9	46.5	19	40.5	43.5	95	40.2	40.5	201	40.0	35.0		40.0	29.0	
1000	41.2	45.9	41.0	45.5	22	41.0	43.0	100	41.0	40.0	144	41.0	34.5		41.0	28.5	
1006	41.9	45.1	41.8	45.0	7	41.8	43.0	63	42.0	40.0	116	42.0	35.0				
1012	42.5	44.8	42.5	44.8	0	44.0	44.0	112	46.0	43.0	232	51.0	40.0				
1018	42.7	44.0	42.5	45.0	46	44.0	44.0	127	45.0	43.0		47.0	41.0				
1100	42.2	43.3	42.3	44.0	32	43.0	43.0	44	44.0	41.0		47.0	38.0				
1106	42.1	42.7	42.0	42.8		43.0	41.0		44.0	39.5		46.5	37.5				
1111	42.2	42.0	42.3	42.0		42.5	40.5		43.5	39.0		46.0	37.0				
MEAN VECTOR ERRORS (NM)					23			74			142			207			290
NUMBER OF CASES					38			38			36			28			19

Table 5 continued

HURRICANE FLOYD 3 - 12 SEPTEMBER 1981

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12 HOUR FORECAST			24 HOUR FORECAST			48 HOUR FORECAST			72 HOUR FORECAST		
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)
0418	19.0	64.0	19.2	63.8	17	20.5	65.5	16	22.0	67.0	8	24.0	69.0	102	27.0	70.0	196
0500	19.5	64.7	19.5	64.6	6	21.0	66.0	8	23.0	68.0	33	26.0	70.0	59	30.0	70.0	151
0506	20.1	65.5	20.0	65.2	18	21.5	67.0	13	22.5	68.0	62	25.0	70.0	163	28.0	71.0	293
0512	20.9	66.2	21.0	66.0	13	22.3	67.3	26	23.5	68.5	70	25.5	70.0	202	28.0	70.0	319
0518	21.7	67.1	22.0	67.0	19	23.0	68.3	55	24.0	69.5	111	26.5	70.5	238	28.5	71.0	402
0600	22.6	67.7	22.6	67.8	6	24.0	69.0	32	25.5	70.0	69	27.5	71.0	242	29.5	71.0	454
0606	23.6	68.6	23.5	68.5	8	26.0	69.5	45	27.5	70.0	64	29.0	70.0	208	30.5	70.0	513
0612	24.5	69.1	24.4	68.7	23	26.5	69.5	45	28.5	70.0	101	31.5	70.0	246	34.0	69.5	567
0618	25.5	69.1	25.5	69.3	11	27.5	69.6	27	29.5	70.0	105	32.5	70.0	261	35.0	69.5	647
0700	26.4	69.1	26.6	69.2	13	28.2	68.9	29	29.6	68.5	69	32.0	67.0	208	35.5	63.0	452
0706	27.5	68.9	27.4	69.0	8	29.3	68.2	17	31.0	67.0	36	33.0	64.0	165	35.0	59.0	387
0712	28.4	68.5	28.5	68.5	6	30.5	67.5	34	32.0	65.5	30	33.5	61.5	157	35.0	57.0	414
0718	29.3	67.8	29.5	68.0	16	31.0	66.5	16	32.0	65.0	13	33.5	60.0	177	34.5	55.0	416
0800	29.9	67.2	30.0	66.8	22	31.5	65.0	10	32.5	63.0	36	34.0	58.0	221	35.0	53.0	465
0806	30.6	66.5	30.5	66.5	6	31.5	64.5	26	32.5	62.0	93	34.0	57.0	286	35.0	51.0	460
0812	31.4	65.6	31.3	65.5	8	32.0	63.4	54	33.0	61.0	146	34.0	56.0	368	35.0	50.0	510
0818	32.0	64.7	31.6	64.7	24	32.4	62.3	97	33.0	60.0	187	34.0	55.0	429	35.0	48.0	479
0900	32.9	63.0	32.6	62.1	49	33.5	58.0	31	34.0	54.0	66	34.5	49.0	295	35.0	45.0	457
0906	33.7	60.7	33.5	60.2	28	34.5	56.0	55	35.0	52.0	113	35.5	46.0	247	36.0	40.0	303
0912	34.2	58.5	34.0	58.0	28	35.0	53.0	105	35.5	49.0	109	36.0	42.0	143	36.5	36.0	276
0918	33.8	56.3	33.8	56.5	10	33.0	52.0	44	32.5	48.0	114	32.0	40.0	286	32.0	32.0	
1000	33.5	54.0	33.3	54.1	13	32.7	49.7	80	32.4	45.5	97	32.0	38.0	328	32.0	31.0	
1006	33.6	51.3	32.5	52.0	75	32.5	47.5	31	32.0	43.0	89	32.0	36.0	354			
1012	34.0	48.7	34.0	48.5	10	36.0	43.0	139	38.0	38.0	166	43.0	29.0	237			
1018	34.0	46.4	34.2	46.3	13	36.0	42.0	80	38.0	37.0	92	43.0	30.0				
1100	33.8	44.1	35.0	44.8	80	37.5	41.0	56	40.5	36.5	114	46.0	29.0				
1106	34.5	41.7	34.6	41.7	6	35.5	37.5	82	36.5	33.5	176	40.0	25.0				
1112	35.5	39.7	36.0	40.0	33	36.8	35.0	131	38.5	30.0	231	42.0	22.0				
1118	36.6	38.3	36.6	38.4	5	37.8	34.5	81	39.0	30.5		43.0	22.0				
1200	37.6	36.9	37.5	36.7	11	38.6	33.0	114	40.0	29.5		43.0	21.5				
1206	39.0	35.2	39.0	35.0		40.5	31.5		42.5	28.0		47.0	22.0				
1212	40.6	33.4	40.4	34.0		43.5	29.0		46.0	25.0							
MEAN VECTOR ERRORS (NM)					19			53			93			234			408
NUMBER OF CASES					30			30			28			24			20

Table 5 continued

HURRICANE GERT 7 15 SEPTEMBER 1981

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12 HOUR FORECAST			24 HOUR FORECAST			48 HOUR FORECAST			72 HOUR FORECAST		
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG	ERROR (N.MI.)	LAT.	LONG	ERROR (N.MI.)	LAT.	LONG.	ERROR (M.MI.)	LAT.	LONG.	ERROR (N.MI.)
0800	15.6	60.6	16.0	60.0	42	16.5	63.2	44	17.5	65.5	117	19.5	69.5	235	22.0	73.5	282
0806	16.1	62.3	16.0	62.5	13	16.5	65.5	72	17.0	68.5	150	19.0	74.0	216	21.0	78.0	475
0812	16.8	64.0	16.6	63.8	17	17.5	67.0	74	18.5	70.0	97	21.5	75.0	126	25.0	78.0	402
0818	17.8	65.4	17.5	65.5	19	19.0	67.0	81	20.5	68.5	188	23.0	70.5	237	25.0	72.0	299
0900	18.9	66.9	19.0	66.5	23	21.5	69.0	74	23.0	70.0	141	27.0	70.0	191	30.0	68.5	103
0906	19.6	68.3	20.0	68.5	27	22.0	71.0	53	25.0	72.0	154	28.0	72.0	64	31.0	71.0	163
0912	20.3	70.0	20.3	70.2	11	22.2	72.8	13	25.0	75.0	80	28.5	77.5	280	31.5	78.5	578
0918	21.3	71.7	21.5	71.5	16	23.9	74.1	69	26.5	76.0	133	29.5	77.0	332	32.0	77.5	623
1000	22.1	72.8	22.5	73.5	46	24.5	75.5	29	27.5	76.5	112	31.5	76.5	317	35.0	73.0	432
1006	22.7	73.7	23.0	74.0	24	25.0	76.0	71	28.0	76.5	170	32.0	76.0	368	35.0	71.0	492
1012	23.7	74.5	23.7	75.0	27	25.2	74.8	69	27.0	75.0	179	29.5	75.0	445	32.0	74.0	865
1018	24.8	74.4	24.8	74.5	5	27.0	74.0	64	28.0	73.0	169	32.0	68.0	171	33.0	64.0	594
1100	26.3	73.9	26.4	73.9	6	29.2	72.3	17	31.4	69.0	33	34.0	64.0	65	36.0	59.0	481
1106	27.7	73.0	27.4	73.2	21	29.8	71.5	22	31.5	68.5	43	34.0	62.0	105	36.0	55.0	464
1112	29.0	72.0	28.8	72.1	13	30.8	69.8	30	32.5	65.5	95	34.5	60.0	190	36.5	53.5	565
1118	30.2	70.9	30.4	70.7	16	32.5	67.5	42	34.0	63.5	96	36.0	55.0	149	36.0	46.0	
1200	31.5	69.6	31.4	69.5	8	33.0	66.0	53	34.3	62.5	54	36.0	55.0	303	36.0	46.0	
1206	32.5	68.5	32.6	68.3	12	35.0	65.5	48	36.5	61.5	60	37.0	52.0	332	37.0	43.0	
1212	33.4	67.1	33.4	67.2	5	35.1	63.9	19	36.5	59.0	93	37.0	49.0	356	37.0	40.0	
1218	34.1	65.6	34.2	65.4	12	35.5	62.0	77	36.5	58.0	252	37.0	48.0		37.0	38.0	
1300	34.9	63.5	34.8	63.1	21	35.5	59.7	167	36.0	55.0	316	36.5	45.0		37.0	35.0	
1306	35.8	60.7	35.6	61.2	27	36.5	56.7	156	36.5	52.5	329	36.5	42.5		37.5	32.5	
1312	36.8	57.0	37.0	57.5	27	38.5	50.5	28	40.0	43.5	62	41.0	29.0				
1318	37.7	53.2	37.5	54.0	40	38.5	45.0	66	39.0	38.0		41.0	29.0		46.0	22.0	
1400	38.3	49.4	38.0	50.0	34	39.0	42.0	24	39.5	34.0		42.0	24.0		45.0	15.0	
1406	38.8	45.6	39.0	46.0		40.0	38.5		40.5	30.5							
1412	39.2	41.9	39.5	42.0	20	40.5	34.0		41.0	26.0							
MEAN VECTOR ERRORS (NM)					20			58			136			236			455
NUMBER OF CASES					25			25			23			19			15

Table 5 continued

HURRICANE HARVEY 11 - 19 SEPTEMBER 1981

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12 HOUR FORECAST			24 HOUR FORECAST			48 HOUR FORECAST			72 HOUR FORECAST		
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)
1218	19.4	56.3	19.4	56.5	11	20.5	60.5	70	21.5	64.0	164	22.5	68.0	409	23.0	72.0	819
1300	20.2	57.8	20.0	58.0	16	21.9	61.4	34	23.2	64.5	133	25.0	68.0	339	27.0	72.0	746
1306	21.2	59.3	21.3	59.5	13	23.0	62.5	51	24.0	65.0	148	26.0	68.5	385	28.0	72.0	802
1312	22.2	60.6	22.1	60.6	6	23.8	62.8	46	25.0	65.0	147	27.0	68.0	421	29.0	71.0	802
1318	23.1	61.4	23.1	61.5	6	24.6	63.5	61	26.0	65.0	148	28.0	67.5	443	30.0	70.0	784
1400	24.1	62.0	23.9	62.0	12	25.5	63.8	73	27.3	65.4	158	29.5	67.5	475	32.0	70.0	786
1406	25.2	62.5	25.0	62.6	13	26.5	63.7	69	27.9	64.7	147	30.6	65.8	440	33.5	66.0	612
1412	26.4	62.7	26.0	62.8	25	28.4	63.2	36	30.0	63.4	112	32.0	62.0	297	34.0	58.0	278
1418	27.6	62.8	27.2	62.8	24	29.5	63.0	44	31.0	62.5	120	33.5	60.5	253	35.0	56.0	239
1500	28.4	62.6	28.4	62.5	5	30.5	62.5	75	32.5	61.5	128	35.0	57.0	120	36.0	51.0	88
1506	29.5	62.3	29.2	62.4	19	31.5	62.0	84	33.2	60.5	127	35.5	55.0	54	37.0	49.0	36
1512	30.8	61.2	30.8	61.1	5	32.5	58.0	70	33.5	54.0	158	36.0	45.0	369	37.0	35.0	560
1518	32.1	60.3	32.0	60.4	8	34.0	58.5	21	36.0	55.5	50	39.0	49.0	193	41.0	40.0	297
1600	33.2	59.2	32.6	58.0	70	33.5	54.0	93	34.0	49.0	237	36.0	40.0	422	40.0	32.0	474
1606	34.2	58.0	32.5	56.3	133	32.5	52.5	100	32.7	48.5	201	34.5	40.0	328	38.0	31.0	
1612	34.9	56.8	35.0	56.5	16	37.5	52.0	158	39.5	46.0	359	41.0	39.0	391	42.5	29.0	
1618	35.3	55.7	36.0	55.5	43	38.0	52.5	99	40.5	47.0	275	42.5	40.0	309	43.5	30.0	
1700	35.7	54.8	36.5	55.0	49	38.2	52.0	84	39.5	48.5	122	41.0	39.0	218	42.0	28.0	
1706	35.9	53.8	37.5	53.0	103	39.0	50.0	59	40.5	46.0	106	42.0	36.0		43.0	25.0	
1712	36.2	52.7	36.2	52.5	10	36.5	50.0	39	37.0	47.0	57	37.5	41.0		38.0	33.0	
1718	36.5	51.3	36.6	51.2	8	37.0	48.5	41	37.5	45.5	57	38.0	39.0		38.5	31.0	
1800	37.1	49.9	37.0	50.0	8	37.8	47.5	28	38.2	44.5	67	39.5	38.0		40.0	30.0	
1806	37.5	48.2	37.8	48.7	30	38.5	46.0	15	39.0	43.0		40.0	36.0		40.0	28.0	
1812	37.9	46.8	38.0	47.0	11	38.5	44.0	38	39.0	41.0		40.0	34.0		40.5	26.0	
1818	38.3	45.2	38.3	45.3		39.0	42.0		39.5	38.5		40.5	30.5		41.0	22.0	
1900	38.5	43.0	38.6	43.0		38.8	38.0		39.0	32.5							
MEAN VECTORS ERRORS (NM)					27			62			146			326			523
NUMBER OF CASES					24			24			22			18			14

Table 5 continued

HURRICANE IRENE 21 SEPTEMBER - 3 OCTOBER 1981

DATE/TIME GMT	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12 HOUR FORECAST			24 HOUR FORECAST			48 HOUR FORECAST			72 HOUR FORECAST		
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)
2312	12.7	42.2	12.8	42.6	24	13.0	45.5	27	13.2	48.5	74	14.0	55.0	258	16.0	61.0	410
2318	13.0	43.8	12.9	43.8	6	13.2	47.0	35	14.0	50.0	84	15.5	55.5	220	18.0	61.0	347
2400	13.3	45.3	14.0	45.3	42	14.0	48.0	61	15.0	51.0	94	16.5	56.0	244	19.0	61.0	333
2406	13.8	46.7	14.0	47.2	31	14.8	50.0	42	15.5	53.0	108	17.0	57.0	214	19.0	61.0	300
2412	14.3	47.8	14.4	47.9	8	15.0	50.8	55	16.0	53.5	121	18.0	59.0	259	20.0	63.0	368
2418	15.0	48.9	15.2	49.2	21	16.9	51.8	18	18.3	54.0	52	20.5	57.5	94	23.0	61.0	202
2500	15.6	50.1	15.7	50.4	18	17.0	52.5	32	18.5	54.5	58	21.0	58.5	114	23.0	62.0	285
2506	16.6	51.2	16.6	50.9	17	18.0	52.7	17	20.0	55.0	59	22.0	57.0	37	25.0	60.0	196
2512	17.4	52.0	17.3	52.1	8	18.8	54.2	36	20.0	56.0	47	22.0	59.0	109	25.0	61.0	254
2518	18.2	52.8	18.2	53.0	11	20.0	54.5	18	21.5	56.0	31	24.0	58.0	35	26.0	60.0	240
2600	19.1	53.5	19.0	53.5	6	20.5	55.0	19	22.0	56.5	19	25.0	59.0	117	27.0	61.0	342
2606	19.7	54.3	19.9	54.5	16	21.6	56.1	27	23.3	57.8	61	26.5	60.0	164	30.0	61.0	362
2612	20.3	55.1	20.4	55.1	6	22.0	56.5	8	23.5	58.0	50	27.0	60.0	176	31.0	61.0	440
2618	21.0	55.7	21.0	55.8	6	22.5	57.0	8	24.0	58.5	67	28.0	60.5	223	32.0	61.0	543
2700	21.8	56.4	21.8	56.5	6	23.5	58.0	49	25.0	59.5	137	28.0	61.0	313	31.0	62.0	778
2706	22.4	56.8	22.5	56.7	8	23.9	58.0	49	25.2	59.4	152	28.5	61.0	408	32.0	62.0	901
2712	23.0	57.2	23.1	57.1	8	24.3	58.3	87	25.5	59.5	183	29.0	61.0	491	32.5	62.0	1033
2718	23.8	57.2	23.8	57.1	5	26.0	57.5	45	28.0	57.5	78	31.0	57.5	409	34.0	57.0	915
2800	24.7	56.9	24.9	56.9	12	27.0	56.8	13	29.0	56.5	87	32.0	56.0	489	35.0	55.5	991
2806	25.8	56.8	25.7	56.9	8	28.0	56.5	21	30.0	55.5	102	35.0	52.0	359	41.0	46.0	553
2812	27.0	56.7	27.0	56.4	16	29.4	56.1	62	31.5	55.0	152	36.0	51.0	458	41.0	45.0	611
2818	28.4	56.2	28.7	56.0	21	31.5	55.0	62	34.0	53.0	141	37.0	48.5	474	40.0	42.5	627
2900	29.8	55.3	30.0	55.5	16	33.0	54.0	62	35.0	51.5	197	40.0	44.0	361	44.0	35.0	615
2906	31.3	54.0	31.3	54.2	10	34.0	51.0	21	36.5	47.0	101	40.0	39.0	275	42.0	30.0	
2912	32.6	52.6	32.8	52.5	13	35.4	48.7	76	38.0	44.0	104	41.0	36.0	251	42.5	27.0	
2918	34.1	50.4	34.1	50.4	0	36.6	46.8	98	38.5	43.0	186	41.5	34.6	273	44.0	25.0	
3000	35.9	47.5	36.0	47.5	6	38.7	42.5	19	41.0	36.0	24	44.0	25.0	205	46.0	14.0	
3006	37.5	45.1	37.8	45.1	18	39.5	40.0	53	40.0	35.0	178	40.0	27.0		39.0	19.0	
3012	38.9	42.4	39.1	42.4	12	41.0	36.0	30	41.0	32.0	174	40.0	24.5		38.5	18.0	
3018	40.0	39.5	40.0	39.5	0	41.0	34.5	97	41.0	29.0	235	39.5	20.0		38.0	15.0	
0100	41.3	36.1	41.0	36.0	19	41.7	29.7	141	41.0	24.0	278	39.0	16.0				
0106	42.5	33.7	42.4	33.8	7	42.5	25.0	269	42.0	17.0							
0112	43.7	32.0	43.7	32.0	0	45.5	26.5	254	46.5	20.0							
0118	44.8	30.3	44.8	30.3		46.5	26.0		47.5	20.0							
0200	45.1	20.5	45.1	28.5		44.5	24.0		44.0	19.0							
MEAN VECTOR ERRORS (NM)					12			58			111			260			506
NUMBER OF CASES					33			33			31			27			23

Table 5 continued

TROPICAL STORM JOSE 29 OCTOBER - 1 NOVEMBER 1981

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12 HOUR FORECAST			24 HOUR FORECAST			48 HOUR FORECAST			72 HOUR FORECAST		
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)
3000	27.7	46.6	27.8	46.7	8	29.5	45.5	16	31.5	44.0	42	36.0	39.0	204	39.0	33.0	
3006	28.7	45.9	28.4	45.6	24	30.2	43.8	28	32.0	41.5	98	36.0	36.5	156	39.5	31.0	
3012	29.6	45.2	29.6	45.2	0	31.5	43.5	52	33.5	41.5	125	37.0	37.0	144	40.5	32.0	
3018	30.2	44.5	30.3	44.4	8	32.5	42.5	82	34.5	40.5	150	38.0	36.0		41.5	31.0	
3100	30.7	43.9	30.8	42.0	98	32.2	42.0	94	34.0	40.0	168	38.0	34.0				
3106	31.1	43.1	31.4	43.5	27	32.5	41.5	24	34.5	39.5	108						
3112	31.5	42.2	31.2	42.2	18	34.0	40.0	119	36.0	37.5	141	42.0	30.0				
3118	31.9	40.8	31.5	41.0	26	32.5	38.5	81	33.5	36.0		38.0	31.0				
0100	32.5	39.0	32.0	39.4	36	33.0	36.5	123	35.0	33.0		40.0	28.0				
0106	33.7	37.0	33.3	37.3		35.0	34.0		37.5	29.5							
0112	35.3	34.9	35.0	35.0		38.5	30.0		42.0	25.0							
MEAN VECTOR ERRORS (NM)					27			69			119			168			
NUMBER OF CASES					9			9			7			3			

TROPICAL STORM KATRINA 3 - 7 NOVEMBER 1981

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12 HOUR FORECAST			24 HOUR FORECAST			48 HOUR FORECAST			72 HOUR FORECAST		
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)	LAT.	LONG.	ERROR (N.MI.)
0406	18.3	81.4	18.8	81.7	35	19.5	81.7	13	21.0	81.6	61	23.5	80.5	135	27.0	78.0	393
0412	18.6	81.3	18.6	81.3	0	19.5	81.2	19	20.5	81.0	41	23.5	79.5	153	26.0	75.0	405
0418	18.9	81.2	18.6	81.5	25	19.7	81.3	27	20.7	81.0	49	23.5	79.5	207	26.0	75.0	550
0500	19.2	81.1	19.2	81.1	0	20.0	80.7	11	21.0	80.2	40	23.5	78.5	287	26.5	74.5	
0506	19.6	80.8	19.8	80.8	12	20.8	80.3	16	22.0	79.8	84	24.0	78.0	410	27.0	75.0	
0512	20.0	80.5	20.0	80.5	0	21.0	80.2	40	22.0	79.8	157	24.0	78.0	582	27.0	75.0	
0518	20.4	80.1	20.4	80.2	6	21.5	79.5	62	22.7	78.8	179	24.5	77.0	684	27.0	73.0	
0600	20.9	79.5	21.0	79.5	6	22.3	78.0	57	23.5	76.5	179	25.5	73.0		28.0	69.0	
0606	21.6	78.3	21.3	78.3	18	22.0	76.0	61	23.0	73.0	167	26.0	66.0		31.0	60.0	
0612	22.4	77.0	22.3	77.0	6	23.5	74.5	70	24.5	71.5	231	27.0	64.5		31.0	59.0	
0618	23.2	75.5	23.8	75.0	45	28.0	68.0	183	32.0	63.0	281	40.0	52.0				
0700	24.0	73.3	24.5	73.0	34	26.5	67.5	17									
0706	25.0	70.6	24.7	70.5	19	26.5	65.0	32									
0712	25.9	67.5															
0718	26.8	64.5															
MEAN VECTOR ERRORS (NM)					16			47			134			351			449
NUMBER OF CASES					13			13			11			7			3

LEGEND FOR TABLE 6

Key to Observational (obs. Unit and Resolution

OBSERVATIONAL UNIT

Reconnaissance

AF = Air Force
NOAA = National Oceanographic and Atmospheric Administration

Satellite

SMS-2 = Synchronous Meteorological Satellite
GOES-5 = Geostationary Operational Environmental Satellite

Radar

EYW-R = Key West, Florida National Weather Service Radar
MIA-R = Miami, Florida National Weather Service Radar
TBW-R = Tampa Bay, Florida National Weather Service Radar
DAB-R = Daytona Beach, Florida National Weather Service Radar
CHS-R = Charleston, South Carolina National Weather Service Radar
ILM-R = Wilmington, North Carolina National Weather Service Radar
HAT-R = Cape Hatteras, North Carolina National Weather Service Radar

RESOLUTION

Reconnaissance

Navigational Accuracy/Meteorological Accuracy. (Example-5/5).

Satellite

Classification confidence*, location and confidence**, visible or infrared, resolution (Km).

*1 = completely certain as to current intensity number used.
2 = tempted to vary up or down by 1/2 T or S number.
3 = might vary up or down by 1 T or S number, or more.

**1 = well defined eye with certain picture registration.
2 = well defined eye with uncertain picture registration.
3 = well defined circulation center with certain picture registration.
4 = well defined circulation center with uncertain picture registration.
5 = poorly defined circulation center with certain picture registration.
6 = poorly defined circulation center with uncertain picture registration.

(Example - 1,1, VSBL 1 = classification confidence 1, location confidence 1, visible picture with 1 kilometer resolution.)

(Example - 2,5, IR 8 = classification confidence 2, location confidence 5, infrared picture with 8 kilometer resolution.)

ations for 1981

TROPICAL STORM ARLENE
6 - 9 MAY 1981

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT ALT.
			LAT. (°N)	LONG. (°W)	SFC.	FLT. LVL.			IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.M.I.)			
1	06	1830	18.4	83.5	25								SMS-2	2,5 VSBLI	
2	07	0000	18.5	82.7	25								SMS-2	2,5 IR8	
3	07	0600	18.5	82.0	25								SMS-2	2,5 IR8	
4	07	1230	19.1	80.4	35								SMS-2	1,3 VSBLI	
5	07	1712	19.6	79.7	40	35	1000		26	24			AF	2/3	314M
6	07	1830	19.8	79.7	45								SMS-2	1,3 VSBLI	
7	07	2028	20.1	79.3	30	25	999		25	25			AF	2/2	314M
8	07	2130	20.1	79.1	45								SMS-2	1,3 VSBLI	
9	08	0000	20.2	78.8	45								SMS-1	1,3 IR8	
10	08	0300	20.6	78.0	45								GOES	1,3 IR8	
11	08	0600	20.8	77.7	45								GOES	1,5 IR8	
12	08	1230	22.4	76.4	30								SMS-2	2,5 VSBLI	
13	08	1455	22.7	76.0	15	15	1006		22	22			NOAA	5/10	420M
14	08	1815	23.0	74.6	50	55	1004		23	22			NOAA	5/5	340M
15	08	1830	23.0	74.6	30								SMS-2	2,3 VSBLI	
16	08	2200	23.0	73.5									SMS-2	3 VSBLI	
17	09	0000	23.4	72.8	30								SMS-2	2,5 IR8	
18	09	0500	23.9	71.3									SMS-2	5 IR8	
19	09	0600	24.0	71.0	30								SMS-2	2,5 IR8	
20	09	1230	25.4	68.1									SMS-2	5 VSBLI	
21	09	1905	27.7	70.5	15	18	1011		21	21			AF	3/15	430M
22	10	2000	30.0	67.3	35								SMS-2	2,3 VSBLI	
23	11	0000	30.0	62.0									SMS-2	5 IR8	

Table 6 continued.

TROPICAL STORM BRET
30 JUNE - 1 JULY 1981

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES.	MIN. 700MB	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	Lon. (°W)	SFC	FLT. LVL.			IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.MI)				
1	30	1230	36.1	72.6	25									SMS-2	2,3 VSBL 1	
2	30	1735	36.1	73.6									WELL DEFINED	HAT-R		
3	30	1800	36.2	73.8	35-40									SMS-2	2,3 VSBL 1	
4	30	2100	36.8	74.4	35-40									SMS-2	2,5 VSBL 1	
5	30	2100	36.4	74.3	65		997		22	21	C	5	POORLY DEFINED	AF	5,2	
6	30	2200	36.5	74.5										SMS-2	3 VSBL 1	
7	30	2200	36.6	74.3	65		999							AF		
8	01	2304	36.5	74.3	65									AF		
9	01	0030	36.7	74.6	35									SMS-2	2,3 IR 8	
10	01	0330	37.2	75.4	35									SMS-2	2,5 IR 8	

TROPICAL STORM CINDY
2 - 5 AUGUST 1981

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	Lon. (°W)	SFC	FLT. LVL.			IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.MI.)				
1	02	1730	36.1	67.9	35									SMS-2	1,3 VSBL 1	
2	02	2300	36.3	66.9										SMS-2	3 IR 8	
3	03	0000	36.3	66.7	35									SMS-2	2,3 IR 8	
4	03	0500	36.6	65.8										SMS-2	5 IR 8	
5	03	0600	36.7	65.7	35									SMS-2	2,5 IR 8	
6	03	1130	38.3	65.6	35-40									SMS-2	1,3 VSBL 1	
7	03	1830	38.7	65.1	45-50									SMS-2	1,3 VSBL 1	
8	04	0000	39.0	63.7	55									SMS-2	1,1 IR 8	
9	04	0600	39.4	62.1	55									SMS-2	1,3 IR 8	
10	04	1200	40.6	60.7	55									SMS-2	1,5 VSBL 1	
11	04	1800	41.2	58.3	55									SMS-2	1,3 VSBL 1	
12	04	1915	41.5	58.5	50		1002		23	23			POORLY DEFINED	AF	5/2	310M
13	05	0000	42.2	55.8	45									SMS-2	1,3 IR 8	
14	05	0400	42.7	54.3	45									SMS-2	2,5 IR 8	

cont.

HURRICANE DENNIS
6 - 11 AUGUST 1981

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ALT
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.M.I.)			
1	07	0000	9.9	25.5	25								GOES 5	3.5 IR 8	
2	07	0600	9.8	26.5	35								GOES 5	3.5 IR 8	
3	07	1130	11.0	27.0									GOES 5	3 VSBL 1	
4	07	1200	10.8	27.0	35								GOES 5	2,3 VSBL 1	
5	07	1400	10.9	28.3									GOES 5	3 VSBL 1	
6	07	1600	11.0	29.1									GOES 5	3 VSBL 1	
7	07	1700	11.1	29.3									GOES 5	3 VSBL 1	
8	07	1800	11.5	29.6	35								GOES 5	3 VSBL 1	
9	08	0000	11.5	31.0	45								GOES 5	2,3 VSBL 1	
10	08	0600	11.6	32.6	45								GOES 5	2.5 IR 8	
11	08	1200	12.1	35.0	45								GOES 5	2.5 IR 8	
12	08	1400	12.3	35.2									GOES 5	2,3 VSBL 1	
13	08	1600	12.5	36.0									GOES 5	3 VSBL 1	
14	08	1730	12.7	36.4									GOES 5	3 VSBL 1	
15	08	1900	12.8	37.0	45								GOES 5	3 VSBL 1	
16	08	2330	13.0	38.1									GOES 5	2,3 VSBL 1	
17	08	2330	13.0	38.1	45								GOES 5	3 IR 8	
18	09	0600	13.4	40.8	45								GOES 5	2,3 IR 8	
19	09	1100	13.3	42.7									GOES 5	2,3 IR 8	
20	09	1200	13.3	43.0	55								GOES 5	3 VSBL 4	
21	09	1400	13.3	43.7									GOES 5	2,3 VSBL 1	
22	09	1600	13.4	44.5									GOES 5	3 VSBL 1	
23	09	1800	13.3	45.2	55								GOES 5	3 VSBL 1	
24	10	0000	13.3	47.0	55								GOES 5	2,3 VSBL 1	
25	10	0600	13.3	49.0	55								GOES 5	2,3 IR 8	
26	10	1300	13.4	51.6	55								GOES 5	5,2 IR 8	
27	10	1730	13.4	52.8	55								GOES 5	2.5 VSBL 1	
28	10	1908	14.0	53.4	30	35	1009	25	24	C	40	POORLY DEFINED.	GOES 5	2.5 VSBL 1	
29	10	2100	13.8	54.4	55								AF	5/10	311M
30	11	0000	14.0	55.8	55								GOES 5	2.5 VSBL 1	
31	11	0300	14.0	56.8	55								GOES 5	2.5 IR 8	
32	11	0600	13.5	58.0	45								GOES 5	2.5 IR 8	
33	11	0900	13.5	59.0	45								GOES 5	2.5 IR 8	

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Table 6 continue

Hurricane Dennis continued.

FIX NO.	DATE	TIME (GHT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE C=CIR. DIA. E=ELIP. (N.M.I.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.					
34	11	1100	13.3	59.3	12	17	1013						AF	5/5	
35	11	1200	14.2	58.2									GOES 5	5 VSBL 1	
36	11	1230	14.2	58.3	45								GOES 5	2.5 VSBL 1	
37	11	1730	14.8	60.0									GOES 5	5 VSBL 1	
38	11	1830	14.8	60.0	30								GOES 5	2.5 VSBL 1	
39	11	2330	15.5	61.7	30								GOES 5	2.5 IR 8	
40	12	0600	16.0	63.5	25								GOES 5	2.5 IR 8	
41	12	1230	15.6	65.7	25								GOES 5	1.5 VSBL 1	
42	12	1730	15.3	68.0									GOES 5	5 VSBL 1	
43	12	1830	15.5	68.0	25								GOES 5	1.5 VSBL 1	
44	13	0000	16.0	71.0	25								GOES 5	2.5 IR 8	
45	13	1230	16.3	74.0									GOES 5	5 VSBL 1	
46	14	1200	15.7	78.6									GOES 5	5 VSBL 1	
47	15	1130	19.8	81.1									SMS-2	5 VSBL 1	
48	15	1230	20.7	80.2	30								SMS-2	1.5 VSBL 1	
49	15	1630	21.6	80.7	33								SMS-2	1.5 VSBL 1	
50	15	1730	21.7	80.4									SMS-2	5 VSBL 1	
51	15	1830	21.8	80.9	35								SMS-2	1.5 IR 8	
52	15	1930	21.8	80.9									GOES 5	5 VSBL 1	
53	15	1930	22.8	81.1								POSSIBLE CENTER.	EYW-R		
54	15	2010	22.5	81.0								POSSIBLE CENTER.	EYW-R		
55	15	2130	22.0	80.9	35								GOES 5	2.5 VSBL 1	
56	15	2310	23.1	81.2						10	GOOD FIX.		EYW-R		
57	15	2330	22.7	80.5									GOES 5	5 IR 8	
58	16	0030	23.4	81.3						20	FAIR FIX.		EYW-R		
59	16	0030	23.1	80.4									GOES 5	2.5 IR 8	
60	16	0110	23.1	80.8						18			EYW-R		
61	16	0130	23.1	80.7						20	FAIR FIX.		EYW-R		
62	16	0205	23.1	80.6						20	GOOD FIX.		EYW-R		
63	16	0230	23.0	80.8						18	GOOD FIX.		EYW-R		
64	16	0300	22.9	81.0									GOES 5	2.5 IR 8	
65	16	0310	23.2	80.9						30	FAIR FIX.		EYW-R		
66	16	0330	23.3	80.9						20	FAIR FIX.		EYW-R		
67	16	0408	23.1	81.1						35	POOR FIX.		EYW-R		

continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.	C-CIR. DIA. E-ELIP. (N.MI.)	CHARACTERISTICS			
68	16	0435	23.3	81.1							45	POOR FIX.	EYW-R		
69	16	0500	23.4	80.7									GOES 5	2,5 IR 8	
70	16	0506	23.0	81.0							50	POOR FIX.	EYW-R		
71	16	0535	23.0	81.0							50	POOR FIX.	EYW-R		
72	16	0600	23.4	80.5	45								GOES 5	2,5 IR 8	
73	16	0900	23.5	80.7	45								GOES 5	2,5 IR 8	
74	16	0910	23.6	81.3							40	FAIR FIX.	EYW-R		
75	16	0930	23.6	81.4							35	FAIR FIX.	EYW-R		
76	16	1010	23.7	81.4							25	FAIR FIX.	EYW-R		
77	16	1030	23.7	81.5							25	FAIR FIX.	EYW-R		
78	16	1105	23.7	81.5							25	FAIR FIX.	EYW-R		
79	16	1130	23.7	81.5							20	FAIR FIX.	EYW-R		
80	16	1159	23.7	81.3	35	40	1001		24	21			NOAA	5/5	510M
81	16	1200	23.8	81.3									GOES 5	3 VSBL 1	
82	16	1205	23.8	81.5							30	FAIR FIX.	EYW-R		
83	16	1230	23.8	81.5							30	FAIR FIX.	EYW-R		
84	16	1230	23.8	81.3	45								GOES 5	2,3 VSBL 1	
85	16	1305	23.8	81.5							30	FAIR FIX.	EYW-R		
86	16	1330	23.8	81.5							25	GOOD FIX.	EYW-R		
87	16	1405	23.9	81.3							18	GOOD FIX.	EYW-R		
88	16	1430	24.0	81.2							12	GOOD FIX.	EYW-R		
89	16	1458	24.2	81.2	50	50	1002		26	24			NOAA	5/10	402M
90	16	1500	24.2	81.1	45								GOES 5	2,3 VSBL 1	
91	16	1505	24.2	81.2							20	GOOD FIX.	EYW-R		
92	16	1530	24.2	81.2							20	GOOD FIX.	EYW-R		
93	16	1605	24.3	81.2							20	GOOD FIX.	EYW-R		
94	16	1630	24.5	81.3							30	FAIR FIX.	EYW-R		
95	16	1710	24.6	81.5							30	POOR FIX.	EYW-R		
96	16	1730	24.6	81.5							40	POOR FIX.	EYW-R		
97	16	1730	24.5	81.2									GOES 5	3 VSBL 1	
98	16	1759	24.6	81.3	35	40	1001		25	24			NOAA	5/10	510M
99	16	1800	24.7	81.3	45								GOES 5	2,3 VSBL 1	
100	16	1805	24.6	81.5							35	POOR FIX.	EYW-R		

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Table 6 continued.

Hurricane Dennis continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.	C=CIR. DIA. E=ELIP. (N.M.I.)					
101	16	1830	24.6	81.5												
102	16	1930	24.6	81.5							35	POOR FIX.	EYW-R			
103	16	2005	24.7	81.5							25	FAIR FIX.	EYW-R			
104	16	2030	24.6	81.5							35	FAIR FIX.	EYW-R			
105	16	2100	24.8	81.5	45						35	FAIR FIX.	EYW-R			
106	16	2103	24.7	81.4									GOES 5	2.5	VSBL 1	
107	16	2105	24.7	81.4								FAIR FIX.	MIA-R			
108	16	2130	24.8	81.3								FAIR FIX.	EYW-R			
109	16	2132	24.8	81.3								POOR FIX.	EYW-R			
110	16	2235	25.0	81.4								POOR FIX. 15° OVERLAY	MIA-R			
111	16	2305	24.9	81.4								POOR FIX.	EYW-R			
112	16	2330	24.9	81.3								POOR FIX.	EYW-R			
113	16	2344	24.9	81.4	30	30	998					POOR FIX.	EYW-R			
114	17	0000	25.0	81.5	35							NOAA	2/2			523M
115	17	0005	24.9	81.2								GOES 5	2.5	IR 8		
116	17	0105	25.0	81.3								POOR FIX.	EYW-R			
117	17	0135	25.0	81.2							25	POOR FIX.	EYW-R			
118	17	0259	25.1	81.3		40	999		25	23	25	POOR FIX.	EYW-R			
119	17	0300	25.2	81.4	35							NOAA	3/2			538M
120	17	0305	25.1	81.2								GOES 5	2.5	IR 8		
121	17	0335	25.1	81.2							25	POOR FIX.	EYW-R			
122	17	0409	25.2	81.4							30	POOR FIX.	EYW-R			
123	17	0428	25.2	81.4							38	FAIR FIX.	EYW-R			
124	17	0510	25.3	81.5							18	FAIR FIX.	EYW-R			
125	17	0531	25.3	81.4							30	FAIR FIX.	EYW-R			
126	17	0559	25.3	81.3		50	999		25	24	25	FAIR FIX.	EYW-R			
127	17	0600	25.3	81.3	35							NOAA	2/2			530M
128	17	0606	25.2	81.4								GOES 5	2.5	IR 8		
129	17	0630	25.2	81.2							22	FAIR FIX.	EYW-R			
130	17	0706	25.2	81.2							16	FAIR FIX.	EYW-R			
131	17	0723	25.5	81.3		45	999		25	24	18	FAIR FIX.	EYW-R			
132	17	0730	25.3	81.3								NOAA	2/2			522M
133	17	0808	25.6	81.3		25	998		25	24	30	FAIR FIX.	EYW-R			
134	17	0831	25.3	81.4								NOAA	2/2			520M
135	17	0900	25.4	81.2	35						35	FAIR FIX.	EYW-R			
136	17	0909	25.5	81.2								GOES 5	2.5	IR 8		
137	17	0929	25.6	81.2							40	POOR FIX.	EYW-R			
											40	POOR FIX.	EYW-R			

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Table 6 continued.

Hurricane Dennis continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.					
138	17	1014	25.8	81.3							60	POOR FIX.	EYW-R		
139	17	1035	25.9	81.3							60	POOR FIX.	EYW-R		
140	17	1110	25.9	81.5							55	POOR FIX.	EYW-R		
141	17	1135	25.8	81.4							50	POOR FIX.	EYW-R		
142	17	1200	25.4	81.4	45										
143	17	1205	25.8	81.4							48	POOR FIX.	GOES 5	2,5 VSBL 1	
144	17	1500	26.6	80.5											
145	17	1800	26.3	81.2											
146	17	1830	25.8	81.3								FAIR FIX.	GOES 5	5 VSBL 1	
147	17	1905	25.8	81.3								FAIR FIX.	GOES 5	5 VSBL 1	
148	18	0000	25.6	80.6								EYW-R	EYW-R		
149	18	0600	25.2	81.1									GOES 5	5 IR 8	
150	18	0830	25.5	80.8									GOES 5	5 IR 8	
151	18	0900	24.9	81.4	45							POSSIBLE CENTER	EYW-R		
152	18	1830	27.6	80.9									GOES 5	3,5 IR 8	
153	18	2020	27.6	80.6									GOES 5	5 VSBL 1	
154	18	2045	27.6	80.5							18	FAIR FIX.	TBW-R		
155	18	2100	27.6	80.5							14	FAIR FIX.	DAB-R		
156	18	2119	27.7	80.5							23	POOR FIX.	TBW-R		
157	18	2132	27.8	80.4							23		TBW-R		
158	18	2246	28.4	80.8							20	FAIR FIX.	DAB-R		
159	18	2300	28.5	80.8							20	GOOD FIX.	TBW-R		
160	18	2317	28.5	80.8							26	GOOD FIX.	TRW-R		
161	18	2318	28.5	80.7							16	GOOD FIX.	DAB-R		
162	19	0000	28.9	81.0							20	POOR FIX.	TBW-R		
163	19	0103	28.9	80.6									GOES 5	5 IR 8	
164	19	0130	29.7	81.1							10	FAIR FIX.	DAB-R		
165	19	0300	29.5	81.3									TBW-R		
166	19	0530	29.6	81.0									GOES 5	5 IR 8	
167	19	0600	29.8	81.1	40				16	16			AF	1/3	1765M
168	19	0900	30.4	81.1	45								GOES 5	2,5 IR 8	
169	19	0900	30.4	81.0									GOES 5	1,5 IR 8	
170	19	1200	30.9	80.5	45				24	24			AF	3/10	433M
171	19	1200	31.0	80.8	20				25	24			GOES 5	2,3 VSBL 1	
172	19	1400	31.3	80.0									AF	3/5	229M
173	19	1444	31.7	80.2	22				25	24		POORLY DEFINED	GOES 5	3 VSBL 1	
													AF	3/3	244M

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Table 6 continued.

Hurricane Dennis continued

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (HB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.M.I.)				
174	19	1500	31.6	79.8												
175	19	1515	31.9	79.6	45											
176	19	1535	31.8	79.7												
177	19	1554	31.9	80.1												
178	19	1610	31.8	79.7	25	20	1001		25	25			GOOD FIX.	CHS-R	2,3 VSBL 1	
179	19	1700	32.3	79.4									GOOD FIX.	CHS-R		
180	19	1755	32.2	79.9									POOR FIX.	AF	3/3	268M
181	19	1800	32.6	79.4	40	43	999		25	24				CHS-R		
182	19	1804	32.4	79.6	45									GOES 5	3 VSBL 1	
183	19	1910	32.5	79.6										AF	3/3	241M
184	19	1935	32.7	79.5									POOR FIX.	GOES 5	2,3 VSBL 1	
185	19	2030	32.7	78.9										CHS-R		
186	19	2033	32.7	79.4									POOR FIX.	CHS-R		
187	19	2058	33.1	78.6									20° OVERLAY.	ILM-R		
188	19	2100	32.8	79.2									10° OVERLAY.	CHS-R		
189	19	2100	32.8	78.9	45								POOR FIX.	ILM-R		
190	19	2130	32.8	78.7										CHS-R		
191	19	2131	32.9	79.2									10° OVERLAY.	GOES-5	2,3 VSBL 1	
192	19	2158	33.0	78.9									POOR FIX.	ILM-R		
193	19	2200	33.0	79.0									10° OVERLAY.	CHS-R		
194	19	2228	33.2	78.7									POOR FIX.	ILM-R		
195	19	2230	33.3	78.7									10° OVERLAY.	CHS-R		
196	19	2231	33.0	79.0									POOR FIX.	ILM-R		
197	19	2254	33.5	78.6									10° OVERLAY.	ILM-R		
198	19	2305	33.2	78.9									POOR FIX.	GOES 5	5 VSBL 1	
199	19	2358	33.7	78.7										CHS-R		
200	20	0000	33.1	78.1	45								POOR FIX.	ILM-R		
201	20	0000	33.1	78.3										CHS-R		
202	20	0024	33.0	78.6										ILM-R		
203	20	0025	33.8	78.5									POOR FIX.	GOES 5	1,5 IR 8	
204	20	0030	33.5	78.5									GOOD FIX.	CHS-R		
205	20	0100	33.1	78.6	25	25	999							CHS-R		
206	20	0214	33.2	78.0										ILM-R		
207	20	0255	33.2	77.7									GOOD FIX.	NOAA	20/30	
208	20	0300	33.3	77.8									GOOD FIX.	CHS-R		
209	20	0311	33.4	77.5	55								FAIR FIX.	ILM-R		
210	20	0315	34.1	78.1										ILM-R		
					30								FAIR FIX.	GOES 5	5 IR 8	
													OVER LAND.	ILM-R		
														AF		700MB

Table 6 continued.

Hurricane Dennis continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.		IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.M.I.)			
211	20	0347	33.5	77.3							8	ILM-R		
212	20	0415	33.8	77.1							6	ILM-R		
213	20	0435	33.9	77.1								ILM-R		
214	20	0448	34.1	77.6							20	ILM-R		
215	20	0502	34.2	77.4							20	ILM-R		
216	20	0505	34.3	77.3		47		3034	11	11		ILM-R		
217	20	0600	34.0	76.8	55							AF	10/5	700MB
218	20	0603	34.1	77.5								GOES 5	1,3 IR 8	
219	20	0614	34.2	77.4								ILM-R		
220	20	0633	34.0	77.3								ILM-R		
221	20	0653	34.2	77.1								ILM-R		
222	20	0717	34.2	76.8								ILM-R		
223	20	0800	34.0	77.3								ILM-R		
224	20	0831	34.2	77.1								HAT-R		
225	20	0900	35.0	75.6	55							HAT-R		
226	20	0905	34.8	76.6							20	GOES 5	1,5 IR 8	
227	20	0923	35.2	76.5		35		3038	11	10		HAT-R		
228	20	0956	34.8	75.8								AF	3/15	700MB
229	20	1033	34.9	75.9								HAT-R		
230	20	1056	35.1	75.8							15	HAT-R		
231	20	1130	36.0	75.6	40	30		3052				AF	3/5	700MB
232	20	1201	35.1	75.3							6	HAT-R		
233	20	1211	35.6	75.1	45	50	1000					AF	3/5	
234	20	1230	35.6	74.6	55							GOES 5	2,3 VSBL 1	
235	20	1235	35.1	75.2								HAT-R		
236	20	1412	35.6	74.5	50	40	999		23	23		AF	5/3	421M
237	20	1730	36.5	72.5	65							GOES 5	2,3 VSBL 1	
238	20	1745	36.2	73.5	65	68	996					AF	2/2	37M
239	20	2000	36.4	72.5	35	38	995		25	25		AF	5/4	41M
240	20	2307	36.5	71.6	70	66	995		25	22		AF	5/8	44M
241	21	0000	36.7	70.9	65							GOES 5	2,5 IR 8	
242	21	0600	38.1	67.5	55							GOES 5	2,6 IR 8	
243	21	0607	37.9	67.9		45	999	3034	11	15		AF	5/5	700MB
244	21	1130	37.5	65.5								GOES 5	3 VSBL 2	
245	21	1200	37.5	65.4	45							GOES 5	2,3 VSBL 1	
246	21	1730	37.5	63.5	35							GOES 5	2,3 VSBL 1	
247	22	0000	38.3	59.4	35							GOES 5	2,5 IR 8	

Table 6 continued.

HURRICANE EMILY
29 AUGUST - 6 SEPTEMBER 1981

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LN. (°W)	SFC	FLT. LVL.			IN.	OUT	C=CIR. DIA. E=ELIP. (N.M.I.)					
1	29	1230	30.0	67.5	25											
2	29	1900	30.0	68.5	25									GOES 5	1,5 VSBL 1	
3	01	1730	31.3	66.8	35									GOES 5	1,3 VSBL 1	
4	01	2330	31.6	65.4										GOES 5	2,5 VSBL 1	
5	02	0030	31.8	65.2	40									GOES 5	5 IR 8	
6	02	0600	32.6	64.8	40									GOES 5	2,5 IR 8	
7	02	1200	33.5	64.3	40									GOES 5	2,5 IR 8	
8	02	1530	34.1	63.9										GOES 5	2,5 VSBL 1	
9	02	1800	34.5	63.8	40									GOES 5	3 VSBL 1	
10	02	2300	35.0	63.5										GOES 5	2,3 VSBL 1	
11	03	0000	35.1	63.5	45									GOES 5	5 IR 8	
12	03	0600	35.5	63.5	55									GOES 5	2,5 IR 8	
13	03	1200	35.0	64.8										GOES 5	2,3 IR 8	
14	03	1200	35.0	64.8	55									GOES 5	3 VSBL 1	
15	03	1530	34.8	64.7										GOES 5	2,3 VSBL 1	
16	03	1800	34.5	64.5	60									GOES 5	3 VSBL 1	
17	03	2300	34.5	64.0										GOES 5	3 VSBL 1	
18	04	0100	34.4	63.7	60									GOES 5	2,3 VSBL 1	
19	04	0600	35.2	62.4	60									GOES 5	3 IR 8	
20	04	1200	36.5	61.7	77	60								GOES 5	2,3 VSBL 1	
21	04	1325	36.5	61.8	55	40								GOES 5	2,2 VSBL 1	
22	04	1500	36.9	61.8			971	2833	12	9	E12/40/20	POORLY DEFINED.	AF		2/5	700MB
23	04	1601	36.9	61.5		45	967	2801					GOES 5	1	IR 8	
24	04	1704	37.0	61.3	65	60	967	2797	14	9	C 35	CLOSED WALL.	AF		2/5	700MB
25	04	1800	37.1	61.1	77								GOES 5	2,2	IR 8	
26	04	2315	38.1	60.8		42	970	2823	15	14	C 30	POORLY DEFINED.	AF		3/5	700MB
27	05	0000	38.1	60.4	77								GOES 5	1,1	IR 8	
28	05	0220	38.6	60.8		50	969	2824			C 4	POORLY DEFINED.	AF		3/5	700MB
29	05	0513	39.1	60.9		53	970	2820	15	12	C 4	POORLY DEFINED.	AF		3/5	700MB
30	05	0600	39.3	60.4	77								GOES 5	2,5	IR 8	
31	05	1137	39.0	60.9		60	967	2812	12	10	C 30	POORLY DEFINED.	AF		3/3	700MB
32	05	1200	39.1	60.8	77								GOES 5	2,3 VSBL 1		
33	05	1730	39.2	60.2	65								GOES 5	2,1 VSBL 1		
34	05	1806	39.3	60.2	45	48	971	2810	12	14	E10/30/20	POORLY DEFINED.	AF		3/5	700MB
35	05	2050	39.4	59.6	55	56		2797					AF			
36	05	2237	39.5	59.4									AF			
37	05	2354	39.6	59.2		59	966	2309	13	10	C 20	OPEN SW.	AF		2/2	700MB

able 6 continued.

Hurricane Emily continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	Lon. (°W)	SFC	FLT. LVL.			IN.	OUT	C=CIR. DIA. E=ELIP. (N.MI.)					
38	06	0030	39.5	59.1	65									GOES 5	1,1 IR 8	
39	06	0604	40.1	58.4		41							OPEN NE.	AF	2/3	700MB
40	06	0630	40.1	58.3	65		970	2812	13	09	C	30		GOES 5	1,1 IR 8	
41	06	0748	40.3	58.2		49		2799						AF		700MB
42	06	0937	40.4	58.1		40		2803						AF		700MB
43	06	1100	40.6	57.9		48		2810	14	10	C	40	OPEN SW.	AF	2/4	700MB
44	06	1130	40.9	57.7	65									GOES 5	1,1 VSBL 1	
45	06	1700	41.2	57.7	71									GOES 5	1,1 VSBL 1	
46	06	1708	41.2	57.7		43	971	2826	13	12	C	40	OPEN SE-SW.	AF	3/5	700MB
47	06	2015	41.2	57.7		46		2823	12	12				AF	3/5	700MB
48	06	2305	41.3	57.3		51	971	2817	13	11	C	15	OPEN E-SW.	AF	3/5	700MB
49	07	0000	41.5	57.2	77									GOES 5	1,1 IR 8	
50	07	0600	41.8	56.5	77									GOES 5	1,1 IR 8	
51	07	1119	41.8	55.6		15	975		12	10			POORLY DEFINED.			700MB
52	07	1230	42.0	55.2	77									GOES 5	2,1 VSBL 1	
53	07	1730	42.4	54.1	77									GOES 5	2,1 VSBL 1	
54	08	0000	42.7	53.0	77									GOES 5	1,3 IR 8	
55	08	0600	42.9	52.3	77									GOES 5	2,3 IR 8	
56	08	1230	42.4	51.9	55									GOES 5	2,3 VSBL 1	
57	08	1430	42.2	51.8										GOES 5	3 VSBL 1	
58	08	1800	41.7	51.8	55									GOES 5	2,3 VSBL 1	
59	08	2300	41.0	50.5	55									GOES 5	2,3 IR 8	
60	09	0600	41.1	49.1	55									GOES 5	2,5 IR 8	
61	09	1230	41.0	47.5	55									GOES 5	2,3 VSBL 1	
62	09	1400	40.9	47.2										GOES 5	3 VSBL 1	
63	09	1700	40.8	46.8	45									GOES 5	2,3 VSBL 1	
64	10	0000	41.1	45.5	45									GOES 5	3 IR 8	
65	10	0600	41.8	45.0	45									GOES 5	5 IR 8	
66	10	1130	42.4	44.8	45									GOES 5	2,3 VSBL 1	
67	10	1730	42.5	44.9	35									GOES 5	2,3 VSBL 1	
68	11	0030	42.3	44.0	35									GOES 5	2,5 IR 8	
69	11	0600	42.0	42.8	30									GOES 5	2,5 IR 8	
70	11	1230	42.1	42.3										GOES 5	3 VSBL 1	
71	11	1800	42.3	41.8										GOES 5	3 VSBL 1	

Table 6 continued.

HURRICANE FLOYD
5 - 12 SEPTEMBER 1981

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	Lon. (°W)	SFC	FLT. LVL.			IN.	OUT	C=CIR. DIA.	E=ELIP. (N.MI.)				
1	02	1330	15.5	60.0	25									GOES 5	2,5 VSBL 1	
2	02	1830	15.3	59.3	25									GOES 5	3,5 VSBL 1	
3	03	0030	16.0	59.5	25									GOES 5	2,5 IR 8	
4	03	0600	16.0	60.0	25									GOES 5	2,5 IR 8	
5	03	1200	16.2	60.3	25									GOES 5	2,5 VSBL 1	
6	03	1800	16.7	60.7	25									GOES 5	2,5 VSBL 1	
7	04	0030	17.5	61.5	25									GOES 5	2,5 IR 8	
8	04	0600	18.0	62.5	25									GOES 5	2,5 IR 8	
9	04	1230	18.5	62.8	30									GOES 5	2,5 VSBL 1	
10	04	1500	18.5	63.5										GOES 5	5 VSBL 1	
11	04	1830	18.9	63.9	30									GOES 5	2,5 VSBL 1	
12	04	1832	19.3	64.0	35	30	1004		25	24				AF	2/5	216M
13	05	0030	19.5	64.7	35									GOES 5	2,5 IR 8	
14	05	0630	20.0	65.5	35									GOES 5	2,5 IR 8	
15	05	1130	21.0	66.1	45									GOES 5	2,5 VSBL 1	
16	05	1430	21.5	67.7	60	20	999		23	23	C	30	OPEN NE-E.	AF	3/3	378M
17	05	1700	21.9	67.0	70	20	997		26	24	C	30	OPEN NE-E.	AF	3/3	280M
18	05	1800	22.3	67.3	50									GOES 5	2,5 VSBL 1	
19	05	2314	22.7	67.6		40	994	3050	17	12	C	10	OPEN S.	AF	5/2	700MB
20	06	0000	22.5	68.0	55									GOES 5	1,5 IR 8	
21	06	0232	23.1	68.0		60	994	3038						AF		
22	06	0517	23.5	68.3		27	997	3065	16	10	C	15	OPEN SE.	AF	5/2	700MB
23	06	0600	24.1	68.3	60									GOES 5	2,5 IR 8	
24	06	1137	24.4	68.7	90	61	987	3008	16	16			POORLY DEFINED.	AF	3/3	300M
25	06	1200	24.4	69.0	63									GOES 5	1,4 VSBL 1	
26	06	1402	24.9	69.1	100	76	987	3004	18	9	E05/30/20		POORLY DEFINED.	AF	3/3	700MB
27	06	1430	25.2	69.2										GOES 5	1 VSBL 1	
28	06	1700	25.4	69.2	71									GOES 5	1,1 VSBL 1	
29	06	1703	25.4	69.2	70	95	985	2965	16	11	E05/30/20		CLOSED.	AF	3/3	700MB
30	06	1910	25.8	69.2	100	90	982	2931	15	9	C	15	CLOSED.	AF	3/3	700MB
31	06	2100	26.1	69.2	110	60	981	2925						AF		
32	06	2219	26.3	69.2	95	75	979	2920	17	8	C	20	OPEN E-S.	AF	3/3	700MB
33	06	2310	26.4	69.2	95	95	979	2909	19	8	C	20	OPEN E-S.	AF	3/3	700MB
34	07	0000	26.5	68.9	72									GOES 5	2,3 IR 8	
35	07	0500	27.4	69.1		80	978	2924	17	9	E17/20/10		OPEN SE.	AF	5/2	700MB

Table 6 continued.

Hurricane Floyd continued

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LOH. (°W)	SFC	FLT. LVL.			IN.	OUT	C=CIR. DIA.	E=ELIP. (N.MI.)				
36	07	0600	27.4	68.5	77											
37	07	1200	28.4	68.0	77									GOES 5	2,5 IR 8	
38	07	1224	28.4	68.0	100									GOES 5	2,1 VSBL 1	
39	07	1456	28.8	68.3	77	100	975	2935	21	12	C	22	OPEN W-S.	NOAA	10/5	700MB
40	07	1700	29.1	68.0	77		975	2878	20	10	C	20	OPEN SE	NOAA	10/5	
41	07	1701	29.2	68.1		110	975	2872	19	11	E11/25/15		CLOSED.	GOES 5	2,1 VSBL 1	
42	07	1930	29.3	67.6										NOAA	10/5	700MB
43	17	2100	29.6	67.2	77									GOES 5	3 IR 8	
44	08	0020	29.9	67.2		38	991	3035	21	17	E03/30/20		OPEN SW.	GOES 5	2,3 VSBL 1	
45	08	0030	30.0	66.5	77									AF	3/5	700MB
46	08	0300	30.3	66.6	77									GOES 5	2,5 IR 8	
47	08	0355	30.3	66.9		39	995	3044						GOES 5	1,5 IR 8	
48	08	0501	30.4	66.9		47	995	3057						AF		
49	08	0630	30.5	66.6	55						C	25	POORLY DEFINED.	AF	3/5	700MB
50	08	0930	30.6	66.3	55									GOES 5	2,3 IR 8	
51	08	1130	31.5	65.5	55									GOES 5	1,3 IR 8	
52	08	1230	31.3	65.5	45	50		3093						GOES 5	2,3 VSBL 1	
53	08	1335	31.2	65.2	85	50	994	3027	10	5	E07/20/10		OPEN SW.	AF		
54	08	1500	31.8	65.1	64									AF	5/2	700MB
55	08	1613	31.4	65.0	85	38		3110						GOES 5	2,3 VSBL 2	
56	08	1708	31.6	64.7	60	46	1003	3117	10	9			POORLY DEFINED.	AF		
57	09	0000	32.7	63.0	65									AF	5/2	
58	09	0030	32.7	62.1	40									GOES 5	2,5 IR 8	
59	09	0534	33.5	60.3		44	1007	3022						AF	5/5	
60	09	0630	33.7	60.5	55			3067	8					AF	5/8	700MB
61	09	1230	34.2	58.4	55									GOES 5	2,5 IR 8	
62	09	1400	34.0	57.4										GOES 5	2,3 VSBL 1	
63	09	1700	33.7	56.4										GOES 5	3 VSBL 1	
64	10	0000	33.3	54.1	55									GOES 5	2,1 VSBL 1	
65	10	0600	32.5	52.0	55									GOES 5	2,3 IR 8	
66	10	1130	34.0	48.6	55									GOES 5	2,3 IR 8	
67	10	1730	34.2	46.5	45									GOES 5	2,3 VSBL 1	
68	11	0030	35.1	44.8	35									GOES 5	2,5 VSBL 1	
69	11	0600	34.6	41.7	65									GOES 5	2,5 IR 8	
70	11	1230	35.8	39.7	65									GOES 5	2,1 IR 8	
														GOES 5	3,3 VSBL 1	

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Table 6 continued.

Hurricane Floyd continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.MI.)				
71	11	1800	36.7	38.3	65									GOES 5	1,3 VSBL 1	
72	12	0000	37.6	36.8	45									GOES 5	2,3 IR 8	
73	12	0600	39.2	35.1										GOES 5	3 IR 8	
74	12	0630	39.3	35.0	45									GOES 5	2,3 IR 8	
75	12	1230	40.8	33.2	45									GOES 5	2,5 VSBL 1	
76	12	1800	42.0	31.5	35									GOES 5	1,5 VSBL 1	

HURRICANE GERT
31 AUGUST - 11 SEPTEMBER 1981

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.MI.)				
1	04	1930	17.0	39.0	25									GOES 5	2,5 IR 8	
2	05	0000	16.8	39.7	25									GOES 5	1,5 IR 8	
3	05	0630	17.0	42.2	25									GOES 5	1,5 IR 8	
4	05	1300	15.0	44.5	25									GOES 5	2,5 VSBL 1	
5	05	1830	14.5	45.7	25									GOES 5	2,5 VSBL 1	
6	06	0000	14.7	47.2	25									GOES 5	2,5 IR 8	
7	06	0600	14.7	48.7	25									GOES 5	1,5 IR 8	
8	06	1200	14.7	51.5	25									GOES 5	2,5 VSBL 1	
9	06	1800	14.5	53.8	30									GOES 5	1,5 VSBL 1	
10	07	0030	14.6	54.9	32									GOES 5	2,5 IR 8	
11	07	0630	15.0	56.5	35									GOES 5	2,5 IR 8	
12	07	1130	15.0	57.5	35									GOES 5	2,5 VSBL 1	
13	07	1500	15.6	57.8	30	25	1012							AF		
14	07	1715	15.5	57.7	25	22	1010							AF		
15	07	1800	15.3	59.0	35									GOES 5	2,5 VSBL 1	
16	08	0300	15.8	61.6	41									GOES 5	2,5 IR 8	
17	08	0505	15.4	62.2			1002	3114						AF		700MB
18	08	0900	15.8	63.3	45									GOES 5	1,5 IR 8	

Hurricane Gert continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT	C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS			
19	08	1105	16.6	63.8	45	50	1001		24	29			AF	3/2	271M
20	08	1200	16.9	63.9	45								GOES 5	2,3 VSBL 1	
21	08	1350	17.0	64.5	30	33	1003						AF		
22	08	1500	17.1	64.7	45								GOES 5	2,3 VSBL 1	
23	08	1620	17.3	65.0	35	43	1005						AF		
24	08	1700	17.5	65.2									GOES 5	3 IR 8	
25	08	1711	17.5	65.1	20	25	1004		24	27			AF	5/4	308M
26	08	2030	18.4	65.6	45								GOES 5	2,3 VSBL 1	
27	08	2330	19.0	66.5	45								GOES 5	2,5 IR 8	
28	09	0630	19.8	68.5	35								GOES 5	2,5 IR 8	
29	09	1200	20.3	70.1	35								GOES 5	2,5 VSBL 1	
30	09	1700	21.4	71.3									GOES 5	5 VSBL 1	
31	09	1800	21.5	71.4	35								GOES 5	2,3 VSBL 1	
32	09	2100	22.5	72.0									GOES 5	3 VSBL 1	
33	10	0000	22.3	73.2	35								GOES 5	2,5 IR 8	
34	10	0226	22.4	72.8		20	1010		25	25			AF	5/5	375M
35	10	0300	22.7	73.6	35								GOES 5	2,5 IR 8	
36	10	0600	23.5	74.0	35								GOES 5	2,5 IR 8	
37	10	0640	22.8	73.2		50	1009		23	23			AF	2/2	408M
38	10	0908	23.0	74.5		26	1009		25	24			AF	2/5	381M
39	10	1200	24.2	74.0	35								GOES 5	2,5 VSBL 1	
40	10	1230	23.5	74.3	50	55		1440	20	17			NOAA	2/5	850MB
41	10	1456	24.0	74.3		60		1440	22	17			NOAA	2/4	850MB
42	10	1500	24.0	74.3	45								GOES 5	2,5 VSBL 1	
43	10	1545	24.1	74.5	70		998		26	23	C 20		NOAA		403M
44	10	1800	24.9	74.2	55								GOES 5	2,3 VSBL 1	
45	10	1819	24.9	74.5	75	68	996		25	22			NOAA	2/4	561M
46	10	1918	25.1	74.4		68	996	1405	22	16			NOAA	2/4	850MB
47	10	2103	23.6	74.2	65	70		1403	21	17	C 35		NOAA	5/4	850MB
48	10	2330	25.9	74.0									GOES 5	3 IR 8	
49	10	2359	26.3	73.9		75	994		22	18	C 25		NOAA	4/6	850MB
50	11	0000	26.3	73.7	65								GOES 5	3 IR 8	
51	11	0303	25.9	73.6		70	994	1391	22	17	E04/35/25		NOAA	7/7	850MB
52	11	0600	27.5	72.9	65								GOES 5	2,5 IR 8	
53	11	0610	27.4	72.8		70	995		23	17	C 40		NOAA	2/2	850MB

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Table 6 continued.

Hurricane Gert continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	Lon. (°W)	SFC	FLT. LVL.			IN.	OUT	C=CIR. DIA.	E=ELIP. (N.M.I.)				
54	11	0909	28.2	72.6		65	989	1356	26	19	C	30	OPEN SE.	NOAA	2/2	850MB
55	11	1200	29.7	71.3	65									GOES 5	2,6 VSBL 1	
56	11	1202	28.8	72.1	75	82	992		27	18	C	30	OPEN SW.	NOAA	4/2	1540
57	11	1515	29.7	71.3	75	58	994		20	17	C	25	OPEN SE.	NOAA	2/4	1547
58	11	1800	30.5	70.8	64									GOES 5	1,3 IR 8	
59	11	1806	30.4	70.7	85	68	990		25	16	C	25	OPEN SE.	NOAA	2/4	1539
60	11	2015	30.7	70.4	80	80	988		24	17			NORTH WALL ONLY.	NOAA	2/4	1546
61	11	2300	31.3	68.8										GOES 5	3 IR 8	
62	12	0000	31.4	68.8	65									GOES 5	2/3 IR 8	
63	12	0020	31.4	69.5		90	989		23	16	C	40	OPEN SE + SW.	NOAA	2/2	1543
64	12	0122	31.6	69.3		80	989		23	15	C	40	OPEN SE-SW.	NOAA	3/5	1550
65	12	0231	31.8	69.1		80	991		26	16	C	40	OPEN SE-SW.	NOAA	4/6	1545
66	12	0328	32.1	68.8		75								NOAA		
67	12	0411	32.2	68.7		75	991							NOAA		
68	12	0500	32.4	68.6		70	992							NOAA		
69	12	0600	32.7	68.2	65				23	16	C	40	OPEN SE-S-W.	NOAA	6/8	1550
70	12	0800	33.0	68.2										GOES 5	2,5 IR 8	
71	12	0900	33.0	67.9	65									GOES 5	3 IR 8	
72	12	0900	32.9	67.8		55	992		23	19			OPEN SE-S-W.	GOES 5	2,3 IR 8	
73	12	0954	33.1	67.7		70	992							NOAA	5/5	1540
74	12	1142	33.3	67.2	70	65	922		23	21			OPEN E-S-W.	NOAA		
75	12	1300	33.4	66.9	65									NOAA	6/6	1520
76	12	1437	33.4	66.6	80	52	1000	3076	16	14				GOES 5	1/3 VSBL 1	
77	12	1500	33.6	66.5	55									NOAA	2/10	700MB
78	12	1800	33.9	65.5	55									GOES 5	1,3 VSBL 1	
79	12	1821	34.2	65.3	50		998		24	24				GOES 5	2,3 VSBL 1	
80	12	2006	34.4	64.8	50		999		25	24	E03/30/20		POORLY DEFINED.	NOAA	6/6	
81	13	0030	34.8	63.1	45									NOAA	3/5	375M
82	13	0600	35.7	61.2	45									GOES 5	2,3 IR 8	
83	13	1200	37.2	57.0	45									GOES 5	2,3 IR 8	
84	13	1830	37.5	53.2	45									GOES 5	1,3 VSBL 1	
85	13	2300	38.4	50.3										GOES 5	1,3 VSBL 1	
86	14	0000	38.6	49.9	45									GOES 5	3 IR 8	
87	14	0400	38.7	46.9										GOES 5	2,3 IR 8	
88	14	0600	39.4	46.0	45									GOES 5	3 IR 8	
														GOES 5	2,3 IR 8	

Table 6 continued.

Hurricane Gert cont'd.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LON. (°W)	SFC	FLT. LVL.			IN.	OUT.					
88	-14	0600	39.4	46.0	45										
89	14	1230	40.0	41.7	35								GOES 5	2,3 IR 8	
90	14	1830	39.5	38.5	35								GOES 5	2,3 VSBL 1	
91	14	2300	39.5	35.9									GOES 5	1,3 VSBL 1	
92	15	0000	39.8	35.3	25								GOES 5	3 IR 8	
93	15	0400	40.0	33.5									GOES 5	2,5 IR 8	
94	15	0600	40.5	32.5	25								GOES 5	5 IR 8	
95	15	1230	40.2	31.1									GOES 5	2,5 IR 8	
96	15	1900	39.8	29.4									GOES 5	3 VSBL 1	
													GOES 5	5 IR 8	

HURRICANE HARVEY
11 - 19 SEPTEMBER 1981

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LON. (°W)	SFC	FLT. LVL.			IN.	OUT.					
1	11	0100	12.8	43.2	25								GOES 5	2,5 IR 8	
2	11	0630	12.8	45.5	25								GOES 5	2,5 IR 8	
3	11	1030	13.5	47.0	25								GOES 5	1,5 VSBL 1	
4	11	1830	13.9	49.0	30								GOES 5	2,5 VSBL 1	
5	12	0030	15.5	50.4	30								GOES 5	2,5 IR 8	
6	12	0630	17.9	53.6	35								GOES 5	3 IR 8	
7	12	1300	18.4	54.5	35								GOES 5	1,5 VSBL 1	
8	12	1344	18.5	54.9	30	35	1001						AF		
9	12	1607	19.0	55.7	70	73	997						AF		
10	12	1830	19.6	56.2	49								GOES 5	2,5 VSBL 1	

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Table 6 continued.

Hurricane Harvey continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE C-CIR. DIA. E-ELIP. (N.M.I.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
			LAT. (°N)	LN. (°W)	SFC	FLT. LVL.			IN.	OUT					
11	13	0000	20.3	57.6	65										
12	13	0003	20.2	57.9		40	990						GOES 5	2,3 IR 8	
13	13	0217	20.5	58.5		56		3005					AF		
14	13	0300	20.7	58.8									AF		700MB
15	13	0600	21.3	59.5	65								GOES 5	3 IR 8	
16	13	1118	22.0	60.5	40	40	984						GOES 5	2,3 IR 8	
17	13	1230	22.4	60.6	65								AF		
18	13	1322	22.3	60.7	70	47		2974					GOES 5	1 VSBL 1	
19	13	1830	23.2	61.6	77								AF		700MB
20	13	2300	23.7	62.2									GOES 5	3 VSBL 1	
21	13	2300	23.9	61.9		47	981						GOES 5	3 IR 8	
22	14	0048	24.3	62.1		55		2923					AF		
23	14	0100	24.1	62.3	77								AF		700MB
24	14	0400	24.7	62.3									GOES 5	2,3 IR 8	
25	14	0600	25.2	62.4	77								GOES 5	3 IR 8	
26	14	1110	25.8	62.8	90	86	960						GOES 5	2,3 IR 8	
27	14	1200	26.1	62.7	95								AF		
28	14	1255	26.5	62.9	95	75	960						GOES 5	2,1 VSBL 1	
29	14	1800	27.1	62.8	110								AF		
30	14	2100	27.6	62.7									GOES 5	2,1 VSBL 1	
31	14	2300	28.1	62.5									GOES 5	1 VSBL 1	
32	14	2309	28.2	62.6		77	946						GOES 5	1 IR 8	
33	15	0000	28.3	62.5	115								AF		
34	15	0039	28.4	62.7		107		2617					GOES 5	2,1 IR 8	
35	15	0100	28.4	62.5									AF		
36	15	0300	28.7	62.4									GOES 5	1 IR 8	
37	15	0400	28.9	62.3									GOES 5	1 IR 8	
38	15	0600	29.5	62.3	115								GOES 5	1 IR 8	
39	15	0800	30.0	61.9									GOES 5	2,1 IR 8	
40	15	1000	30.1	61.8											
41	15	1200	30.8	61.1	115								GOES 5	VSBL	
													GOES 5	2,3 VSBL	

Hurricane Harvey continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE C=CIR. DIA. E=ELIP. (N.M.I.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LN. (°W)	SFC	FLT. LVL.			IN.	OUT					
42	15	1205	30.8	61.1	110	95	958						AF		
43	15	1412	31.3	60.8		86		2744					AF		700MB
44	15	1800	32.2	60.0	115								GOES 5	2,3 VSBL 1	
45	15	1827	32.1	60.4	95	98	963						AF		
46	15	2300	32.6	58.2									GOES 5	3 IR 8	
47	16	0000	32.6	57.9	90								GOES 5	2,3 IR 8	
48	16	0100	32.6	57.2									GOES 5	3 IR 8	
49	16	0200	32.8	57.5									GOES 5	3 IR 8	
50	16	0400	32.5	56.7									GOES 5	5 IR 8	
51	16	0600	32.5	56.3	90								GOES 5	2,5 IR 8	
52	16	1200	35.1	56.5	77								GOES 5	2,3 VSBL 1	
53	16	1400	35.5	55.9									GOES 5	3 VSBL 1	
54	16	1800	35.8	55.7	65								GOES 5	2,3 VSBL 1	
55	16	2330	36.5	55.0									GOES 5	5 IR 8	
56	17	0030	36.7	54.6	65								GOES 5	2,5 IR 8	
57	17	0600	37.2	53.8	65								GOES 5	2,5 IR 8	
58	17	1200	36.2	52.6	65								GOES 5	2,3 VSBL 1	
59	17	1400	36.2	52.1									GOES 5	3 VSBL 1	
60	17	1800	36.6	51.2	65								GOES 5	2,3 VSBL 1	
61	17	2330	37.2	50.0									GOES 5	5 IR 8	
62	18	0030	37.3	49.9	65								GOES 5	2,5 IR 8	
63	18	0230	37.3	49.7									GOES 5	5 IR 8	
64	18	0600	38.3	48.7	65								GOES 5	2,5 IR 8	
65	18	1200	38.0	46.9	55								GOES 5	2,3 VSBL 1	
66	18	1400	38.0	46.3									GOES 5	3 VSBL 1	
67	18	1800	38.3	45.3	45								GOES 5	2,3 VSBL 1	
68	19	0000	38.6	43.0	35								GOES 5	1,5 VSBL 1	
69	19	0700	38.2	39.9	35								GOES 5	1,5 IR 8	
70	19	1230	38.3	38.0									GOES 5	3 VSBL 1	
71	19	1830	37.8	35.4									GOES 5	5 VSBL 1	
72	20	0030	36.9	33.0									GOES 5	5 IR 8	

Table 6 continued.

HURRICANE IRENE
3 SEPTEMBER - 2 OCTOBER 1981

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.	C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS			
1	21	1200	13.5	32.4	25								GOES 5	2,5 VSBL 1	
2	21	1800	13.3	34.0	25								GOES 5	2,5 VSBL 1	
3	22	0000	12.5	35.1	30								GOES 5	2,5 IR 8	
4	22	0600	12.7	36.6	30								GOES 5	2,5 IR 8	
5	22	1200	13.0	37.0	30								GOES 5	2,5 VSBL 1	
6	22	1830	12.5	38.5	30								GOES 5	2,5 VSBL 1	
7	23	0030	12.5	39.5	30								GOES 5	2,5 IR 8	
8	23	0700	12.5	41.0	30								GOES 5	1,5 IR 8	
9	23	1200	12.8	42.6	30								GOES 5	2,5 VSBL 1	
10	23	1800	13.0	43.7	35								GOES 5	2,5 VSBL 1	
11	24	0100	14.3	45.6	55								GOES 5	1,3 IR 8	
12	24	0600	14.0	47.2	55								GOES 5	1,5 IR 8	
13	24	1200	14.4	47.9	55								GOES 5	2,3 VSBL 4	
14	24	1330	14.3	48.3									GOES 5	3 VSBL 1	
15	24	1500	14.7	48.5									GOES 5	3 VSBL 1	
16	24	1700	15.1	49.0									GOES 5	3 VSBL 1	
17	24	1830	15.2	49.2	55								GOES 5	2,3 VSBL 1	
18	25	0000	15.7	50.4	65								GOES 5	2,3 IR 8	
19	25	0300	16.0	50.6									GOES 5	1 IR 8	
20	25	0600	16.6	50.9	77								GOES 5	2,3 IR 8	
21	25	1140	17.3	52.0	80	48	980	2933	17	18	35	OPEN EAST.	AF	5/3	700MB
22	25	1230	17.6	52.1	77								GOES 5	2,3 VSBL 1	
23	25	1330	17.6	52.2									GOES 5	1 VSBL 1	
24	25	1423	17.8	52.5	100	60	980	2921					AF		700MB
25	25	1530	18.0	52.5									GOES 5	1 VSBL 1	
26	25	1700	18.2	52.6									GOES 5	3 VSBL 1	
27	25	1700	18.1	52.8	90	88	977	2875	16		55	LOSED WALL.	AF	3/2	700MB
28	25	1800	18.3	52.8	77								GOES 5	2,3 VSBL 1	
29	25	1930	18.5	53.2									GOES 5	1 VSBL 1	
30	25	2354	19.0	53.5		78	976	2881	17	13	50	PEN SE.	AF	5/5	700MB
31	26	0000	18.8	53.6	77								GOES 5	2,5 IR 8	
32	26	0220	19.4	53.9		70	975	2876	16	8	50	PEN SE.	AF	5/5	700MB
33	26	0502	19.8	54.2		60	976	2886	19	11	03/40/30	PEN E-S.	AF	5/5	700MB

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Hurricane Irene continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.MI.)				
34	26	0600	19.9	54.4	77											
35	26	1200	20.7	55.0	77									GOES 5	2,5 IR 8	
36	26	1218	20.4	55.1	70	60	980	2953	18	15	E13/30/25		GOES 5	2,5 VSBL 1		
37	26	1425	20.6	55.4	65	58	982	2934					AF	5/5	700MB	
38	26	1630	20.8	55.7	100	72	979	2910					AF		700MB	
39	26	1744	20.9	55.8	80	72	977	2899	15	11			AF		700MB	
40	26	1800	21.1	55.6	77							POORLY DEFINED.	AF	5/5	700MB	
41	26	2357	21.8	56.5		65	968	2819	16	10			GOES 5	2,3 VSBL 1		
42	27	0000	21.9	56.5	77								AF	3/3	700MB	
43	27	0240	22.1	56.6		48		2815					GOES 5	2,3 IR 8		
44	27	0427	22.3	56.8		53	968	2815					AF		700MB	
45	27	0530	22.5	56.8		52	966	2799	15	11	C 25	OPEN S.	AF	3/3	700MB	
46	27	0600	22.4	56.5	77								GOES 5	2,3		
47	27	1110	22.9	57.2	60	80	970	2819	14	13		OPEN XCPN	AF	5/5	700MB	
48	27	1230	23.1	57.1	90								GOES 5	1,1 VSBL 1		
49	27	1336	23.2	57.2	85	80	968	2820					AF		700MB	
50	27	1506	23.4	57.2	65	76	966	2799					AF		700MB	
51	27	1703	23.7	52.2	100	77	966	2779	14	10		POORLY DEFINED.	AF	5/5	700MB	
52	27	1800	23.7	57.0	90								GOES 5	1,1 VSBL 1		
53	27	2349	24.9	56.9		105	962	2797	17	8	C 25	OPEN SE-S-W.	AF	5/5	700MB	
54	28	0000	24.6	56.8	90								GOES 5	2,1 IR 8		
55	28	0148	25.1	57.0		93	967	2801					AF		700MB	
56	28	0318	25.3	56.9			968	2811					AF		700MB	
57	28	0500	25.6	56.9		118	966	2807	15	10	C 25	OPEN S-SW.	AF	5/5	700MB	
58	28	0600	25.8	56.7	90								GOES 5	2,3 IR 8		
59	28	1153	26.9	56.5	90	73	959	2720	20	11			AF	3/3	700MB	
60	28	1230	27.3	56.4	77								GOES 5	1,3 VSBL 1		
61	28	1359	27.5	56.5	100	59	960	2747					AF		700MB	
62	28	1800	28.7	55.9	90								GOES 5	1,3 VSBL 1		
63	29	0000	30.0	55.5	90								GOES 5	2,5 IR 8		
64	29	0600	31.3	53.9	90								GOES 5	2,3 IR 8		
65	29	1200	32.8	52.5	77								GOES 5	1,3 VSBL 1		
66	29	1300	32.8	52.5	65	35	969	2807	12	12	C 15	POORLY DEFINED.	AF	4/5	700MB	
67	29	1500	33.4	51.5									GOES 5	3 VSBL 1		
68	29	1539	33.5	51.4	70	68	965	2786					AF		700MB	

Table 6 continued.

Hurricane Irene continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE C=CIR. DIA. E=ELIP. (N.M.I.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.					
69	29	1800	34.1	50.4	70										
70	29	2300	35.5	48.0									GOES 5	2,3 VSBL 1	
71	30	0000	35.9	47.5	77								GOES 5	3 IR 8	
72	30	0600	37.8	45.1									GOES 5	2,3 IR 8	
73	30	1200	39.1	42.4	77								GOES 5	2,3 IR 8	
74	30	1800	40.0	39.5	77								GOES 5	1,3 VSBL 1	
75	30	2300	41.0	36.7									GOES 5	1,5 VSBL 1	
76	01	0030	41.4	36.0	55								GOES 5	3 IR 8	
77	01	0630	42.5	33.5	55								GOES 5	2,3 IR 8	
78	01	1200	43.8	32.0	55								GOES 5	2,3 IR 8	
79	01	1500	44.2	51.5									GOES 5	2,3 VSBL 1	
80	01	1800	44.8	30.2	55								GOES 5	3 VSBL 1	
81	01	2300	45.0	29.0									GOES 5	2,5 VSBL 1	
82	02	0000	44.5	28.5	50								GOES 5	5 IR 8	
													GOES 5	2,5 IR 8	

TROPICAL STORM JOSE
29 OCTOBER - 2 NOVEMBER 1981

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE C=CIR. DIA. E=ELIP. (N.M.I.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT.					
1	29	1200	25.1	47.4	30										
2	29	1800	26.1	47.3	30								GOES 5	2,5 VSBL 1	
3	30	0000	27.6	46.5									GOES 5	2,5 VSBL 1	
4	30	0600	28.4	45.6	45								GOES 5	2,5 IR 8	
5	30	1200	29.6	45.2									GOES 5	2,2 IR 8	
6	30	1300	29.7	45.0	45								GOES 5	3 VSBL 1	
7	30	1730	30.2	44.4									GOES 5	2,3 VSBL 1	
8	30	1900	30.3	44.4	45								GOES 5	3 IR 8	
9	30	2330	30.6	44.0	35								GOES 5	1,3 VSBL 1	
													GOES 5	2,2 IR 8	

Tropical Storm Jose continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LON. (°W)	SFC	FLT. LVL.			IN.	OUT.	C=CIR. DIA.	E=ELIP. (N. MI.)			
10	31	0530	31.3	43.5	35										
11	31	1200	31.2	42.2									GOES 5	2,5 IR 8	
12	31	1230	31.3	42.0	35								GOES 5	5 VSBL 1	
13	31	1830	31.5	41.0	45								GOES 5	2,3 VSBL 1	
14	01	0000	32.0	39.4	45								GOES 5	2,3 VSBL 1	
15	01	0600	33.3	37.3	45								GOES 5	2,5 IR 8	
16	01	1200	35.4	34.9	45								GOES 5	2,5 IR 8	
17	01	1400	36.2	34.2									GOES 5	1,5 IR 8	
18	01	1730	37.8	32.6									GOES 5	3 VSBL 1	
19	01	1830	38.2	31.8									GOES 5	3 IR 8	
20	02	0000	41.5	29.5									GOES 5	1,5 VSBL 1	
													GOES 5	1,5 IR 8	

HURRICANE KATRINA
3 - 11 NOVEMBER 1981

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LON. (°W)	SFC	FLT. LVL.			IN.	OUT.	C=CIR. DIA.	E=ELIP. (N. MI.)			
1	02	1930	16.8	81.3	25										
2	03	0000	16.4	80.9	25								GOES 5	5 VSBL 1	
3	03	0600	17.3	81.4	25								GOES 5	1,5 IR 8	
4	03	1230	17.4	81.6	25								GOES 5	2,5 IR 8	
5	03	1800	18.0	81.7	35								GOES 5	2,3 VSBL 1	
6	03	1932	17.7	81.5	30		1002						GOES 5	2,3 VSBL 1	
7	03	2300	18.4	81.8									AF	2/10	
8	04	0000	18.5	81.8	35								GOES 5	5 IR 8	
9	04	0500	18.8	81.7									GOES 5	2,5 IR 8	
10	04	0600	18.8	81.6	35								GOES 5	5 IR 8	
11	04	1200	18.7	81.4	40								GOES 5	2,5 IR 8	
12	04	1400	18.5	81.4	45	51	997		13	12	C 18		GOES 5	2,3 VSBL 1	
13	04	1713	18.6	81.5	35	40	996	3053	11	11	E16/10/5	CLOSED WALL.	AF	2/5	700MB
												CLOSED WALL.	AF	2/5	700MB

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Table 6 continued.

Hurricane Katrina continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC	FLT. LVL.			IN.	OUT	C=CIR. DIA.	E=ELIP. (N.M.I.)				
14	04	1830	19.0	81.4	45											
15	04	2100	19.0	81.4	50											
16	05	0000	19.2	81.1	50											
17	05	0000	19.1	80.8	30	50	994	3039	14	12	E01/30/10					
18	05	0154	19.2	80.8		50	992	3022	13	11	E01/30/15	OPEN SE.	AF	5/3		700MB
19	05	0300	19.2	81.0	55							CLOSED WALL.	AF	3/3		700MB
20	05	0359	19.3	80.7		78	991	3011	15	10	C 15		GOES 5	2,5	IR 8	
21	05	0526	20.1	80.9		40	990	3010	17	8	C 15	CLOSED WALL.	AF	3/3		700MB
22	05	0600	19.7	80.7	60							CLOSED WALL.	AF	2/2		700MB
23	05	0730	19.9	80.8									GOES 5	2,3	IR 8	
24	05	0900	20.0	80.9	60								GOES 5	3	IR 8	
25	05	1118	19.9	80.6		75	983		30	24	C 15		GOES 5	2,3	IR 8	
26	05	1224	20.0	80.5		90	980		29	24	C 15	POORLY DEFINED.	NOAA	2/2		547M
27	05	1230	20.1	80.6	65							CLOSED WALL.	NOAA	2/2		602M
28	05	1530	20.2	80.5	71								GOES 5	2,3	VSBL 1	
29	05	1730	20.4	80.2	75	70	989		30	23			GOES 5	2,3	VSBL 1	
30	05	1830	20.5	80.2	71							N WALL ONLY.	NOAA	2/2		
31	05	2130	20.8	80.0	65								GOES 5	3,3	VSBL 1	
32	06	0022	21.0	79.4		50	996		27	22			GOES 5	2,5	VSBL 1	
33	06	0030	20.9	79.8	65								NOAA	2/2		550M
34	06	0301	20.9	78.9		60	998		31	21			GOES 5	2,5	IR 8	
35	06	0330	21.0	79.4	65								NOAA	5/5		548M
36	06	0546	20.9	78.3		50	1003						GOES 5	2,5	IR 8	
37	06	0630	21.2	78.5									NOAA			
38	06	0900	22.0	77.4									GOES 5	5	IR 8	
39	06	1215	22.3	77.0	20	20	1001		23	23			GOES 5	6	IR 8	
40	06	1230	22.4	77.0	55								NOAA	2/10		506M
41	06	1530	22.4	76.5	55								GOES 5	2,3	VSBL 1	
42	06	1739	23.7	75.2	45	45	1001		23	23			GOES 5	2,3	VSBL 1	
43	06	1830	23.0	75.2	45								NOAA	2/10		517M
44	07	0030	23.5	73.0	45								GOES 5	2,5	VSBL 1	
45	07	0530	24.5	71.0									GOES 5	2,5	IR 8	
46	07	0630	25.0	70.5	35								GOES 5	5	IR 8	
47	07	1230	25.5	67.1	35								GOES 5	2,5	IR 8	
48	07	1830	26.8	64.6	35								GOES 5	2,5	VSBL 1	
49	08	0000	28.0	61.5	35								GOES 5	2,5	VSBL 1	
													GOES 5	2,5	IR 8	

ARLENE

URNT12 KMIA 092130 COR
 AF985 0301 ARLENE OB 12 COR KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 09 DEG FL014
 RIGHT REAR QUAD
 80012 82220 40011 42119 30011 32020 10/// 12020
 00011 02120 64/// 50/// 34/// MX015 21080 /////
 RIGHT FRONT QUAD
 8/// 8/// 4/// 4/// 30011 32020 10011 12020
 00011 02120 64/// 50/// 34/// MX025 13015 /////
 LEFT FRONT QUAD
 8/// 8/// 4/// 4/// 30011 32020 10011 12020
 00011 02020 64/// 50/// 34/// MX022 05015 /////
 LEFT REAR QUAD
 8/// 8/// 4/// 4/// 30013 31919 10012 11919
 00011 02020 64/// 50/// 34/// MX019 33030 /////
 REMARKS SFC WINDS FOR RIGHT REAR QUAD 80NM - 34015 45NM - 33015
 SFC WINDS FOR LEFT REAR QUAD 30NM - 36015 15NM - 36015

DENNIS

URNT 12 KMIA 191311 COR
 AF553 1506 DENNIS OB 07 COR KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 36 DEG FL011
 RIGHT REAR QUAD MX042 12080
 90004 80004 60003 40001 30001 10001 00000
 924// 823// 623// 423// 323// 124// 024//
 92031 82042 61836 41827 31717 1/// 09905
 RIGHT FRONT QUAD MX029 01090
 90006 80004 60004 40003 30003 10003 00003
 925// 825// 625// 424// 325// 124// 025//
 91029 81322 61216 40814 31215 1/// 09903
 REMARKS SFC WND IN RR QUAD AT 30NM 19030
 SFC WINDS IN RF QUAD - 100NM 11020 80NM 12020 60NM 12015
 45NM 10010 30NM 12005 15NM 12003
 CNTR WND 990030

Table 7 continued.

URNT12 KMIA 191830
AF980 1606 DENNIS OB 10 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 36 DEG FL010
RIGHT FRONT QUAD MX027 05030
9///// 80005 60004 40004 30004 10002 00001
9///// 82524 62624 42523 32524 12523 02524
9///// 81831 61320 41814 31826 11612 09905
LEFT REAR QUAD MX026 23045
9///// 8///// 60005 40003 30003 10002 00001
9///// 8///// 62222 42222 32424 12424 02524
9///// 8///// 63318 43523 32617 13511 09905
RIGHT REAR QUAD MX043 14045
90007 80007 60005 40003 30002 10000 00000
92423 82322 62322 42323 32424 12424 02525
92435 82230 62330 42243 32021 12413 09905
REMARKS UNABLE TO DO LEFT FRONT QUAD
DUE TO PROXIMITY OF LAND.

URNT12 KMIA 192056
AF980 1606 DENNIS OB 15 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE -
AZIMUTH 05 DEG FL010 -
RIGHT FRONT QUAD MX036 09080
90006 80005 60004 40002 30001 10000 00000
92524 82523 62424 42524 32624 12424 02525
91936 82036 61925 41922 31921 12421 09905
LEFT FRONT QUAD MX018 36045
9///// 80006 60004 40003 30001 10000 00000
9///// 82523 62523 42424 32524 12524 02525
9///// 80716 60918 41018 31210 10712 09905
RIGHT REAR QUAD MX046 11060
9///// 8///// 60004 40004 30003 10001 00000
9///// 8///// 62424 42424 32424 12524 02525
9///// 8///// 62234 22133 32123 12619 09905
RIGHT FRONT QUAD MX045 09060
9///// 8///// 60004 40003 30001 10000 00999
9///// 8///// 62423 42423 32424 12524 02525
9///// 8///// 62045 41835 31827 11820 09905

URNT12 KMIA 200510 COR 02
 AF866 1706 DENNIS OB 06 COR 02 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 04 DEG FLO99
 RIGHT FRONT QUAD MX045 09075
 93114 83105 63093 43083 33068 13056 00999
 90909 80909 60909 40909 31008 11010 02322
 92137 82045 62039 42039 32035 12026
 RIGHT REAR QUAD MX030 16050
 93126 83113 63110 43095 33080 13062 0////
 90907 81007 61107 41008 31007 11010 01110
 92426 82505 62526 42726 32924 12926

EMILY

URNT12 KMIA 041648 COR
 AF967 0109 EMILY OB 11 COR KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 060 DEG FL 095
 RIGHT FRONT QUAD MX054 13080
 93013 8//// 63970 4//// 3//// 1//// 03833
 91005 80903 60805 40907 3//// 1//// 01208
 92235 82354 62351 42250 32140 12123 0////
 LEFT FRONT QUAD MX045 02015
 93982 8//// 63955 43933 33888 13868 03801
 90808 8//// 60906 40909 30909 11109 01409
 90719 80711 61039 41035 30940 10545 0////
 RIGHT REAR QUAD MX057 20030
 93011 83996 63978 43966 33940 13866 03801
 91103 81005 61005 41006 31006 11010 01409
 92379 82742 62752 43420 32957 12853
 LEFT REAR QUAD MX044 22060
 93984 83978 6//// 43931 33925 13838 03797
 90905 80905 6//// 40907 30909 11111 02409
 93533 83333 63444 40130 30233 10345 0////

URNT12 KMIA 050212 COR 02
 AF968 0209 EMILY OB 06 COR 02 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 020 DEG FL100
 LEFT REAR QUAD MX042 26015
 93997 83982 63979 43970 33930 13878 03823
 910// 811// 610// 409// 310// 114// 015//
 93030 83138 63127 4//// 33341 13342
 RIGHT REAR QUAD MX060 15020
 93019 83004 63989 43952 33928 13894 03823
 909// 810// 608// 409// 310// 111// 015//
 92438 82445 62549 42550 32459 12457
 LEFT FRONT QUAD MX050 32020
 93999 83977 63956 43929 33895 13837 03824
 909// 809// 608// 410// 311// 113// 015//
 90428 80434 60339 40446 30248 10230
 LEFT REAR QUAD MX036 25030
 93989 83974 63955 43945 33919 13882 03824
 909// 808// 610// 410// 311// 114// 015//
 93527 83532 63327 43335 33236 13121

ZCZC WBC 652

URNT12 KMIA 050617 COR
 AF968 0209 EMILY OB 14 COR KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 020 DEG FL100
 RIGHT FRONT QUAD MX 053 06050
 93007 83995 63980 43957 33912 13869 03820
 908// 808// 608// 408// 309// 110// 015//
 91240 81345 61245 41250 31233 11346
 LEFT FRONT QUAD MX055 34042
 93998 83974 63955 43927 33912 13855 03820
 908// 807// 608// 409// 310// 113// 015//
 90742 80844 60941 40853 30742 10637

URNT12 KMIA 051945 COR 03
 AF967 0409 EMILY OB 06 COR 03 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 360 DEG FL095
 LEFT FRONT QUAD MX048 32010
 93018 83983 63971 43961 33949 13928 03810
 90806 80807 60907 40907 31005 10908 01211
 90524 80540 60529 40528 30428 10538 09905
 RIGHT FRONT QUAD MX046 05020
 93967 83958 63932 4//// 33878 13817 03810
 90805 80905 61007 41007 31010 11210 01211
 91426 81629 61534 41434 31436 11212 09905
 LEFT REAR QUAD MX054 22035
 93990 83974 63956 43939 33924 13892 03797
 90905 81006 60907 41007 30908 11008 01210
 93136 83037 62940 43046 33045 13154 09905
 RIGHT REAR QUAD MX052 05030
 93978 83964 63950 43922 33887 13833 03797
 90906 80905 60908 41009 31009 11109 01210
 92338 82337 62344 42344 32252 12244 09905

ZCZC WBC 106
 URNT12 KMIA 061205
 AF967 0509 EMILY OB 16 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 05 DEG FL095
 RIGHT REAR QUAD MX 052 18030
 93983 83965 63942 43925 33915 13835 03803
 90808 80905 61007 41009 31010 11310 01409
 92641 82745 62843 42736 32752 12643 0////
 RIGHT FRONT QUAD MX 048 12060
 93986 8//// 63953 43938 33904 13872 03810
 90906 8//// 60908 41008 31007 11110 01410
 92242 82138 62148 42246 32346 12142 0////

URNT12 KMIA 061830 COR 02
 AF968 0609 EMILY OB 08 COR 02 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 04 DEG FL100
 LEFT REAR QUAD MX 043 30060
 93977 83958 63915 43851 33829 1//// 03826
 908// 809// 610// 411// 313// 1//// 013//
 90134 80140 60243 40221 30108 1////
 LEFT FRONT QUAD MX 050 35030
 93006 83988 63967 43946 33921 13875 03926
 908// 808// 608// 409// 309// 110// 013//
 90836 80941 61044 40948 31150 11246
 RIGHT FRONT QUAD MX 046 09015
 93991 83976 63958 43936 33912 13860 03823
 909// 810// 610// 410// 310// 112// 012//
 91941 81729 61742 41638 31538 11546
 RIGHT REAR QUAD MX 055 18060
 93030 83995 63964 43927 33906 13842 03823
 908// 808// 608// 409// 310// 111// 012//
 92940 82843 62855 42947 32947 13033

Table 7 continued.

URNT12 KMIA 071245 COR
AF968 0709 EMILY OB 06 COR KMIA
SUPPLEMENTARY FORTEX DATA MESSAGE
AZIMUTH 03 DEG FL100
LEFT REAR QUAD MX 049 28015
93022 83016 63010 43994 33982 13979 02848
90807 80808 60807 40807 30808 10909 01212
93522 83420 63432 43428 33525 13630
RIGHT REAR QUAD MX 061 17020
93012 83997 63979 47954 33930 13890 03848
90806 80807 60808 40909 30909 10909 01212
92739 82743 62650 42751 32752 12853
RIGHT FRONT QUAD MX 043 08045
93002 83970 63956 43928 33882 1//// 03847
90808 80808 60909 40909 31010 1//// 01211
91742 81528 61737 41743 31642 1////
LEFT FRONT QUAD MX 038 35015
93999 83983 63968 43950 33928 13901 03847
90807 80808 60808 40909 30909 10908 01211
91020 80930 60928 40931 30931 10838

FLOYD

URNT12 KMIA 051555 COR
AF972 0210 FLOYD OB 09 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 360 DEG FL012
RIGHT FRONT QUAD MX055 04015
90013 80013 60012 40012 30010 10007 00999
92522 82422 62422 42422 32322 12322 02322
91727 81627 61530 41535 31742 11855 0////
LEFT FRONT QUAD MX065 33020
90012 80012 60011 40009 30006 10998 00997
92522 82522 62422 42422 32522 12623 02623
90815 80419 60525 40530 30237 10565 0////

le 7 continued.

URNT12 KMIA 060433 COR
AF980 0310 FLOYD OB 11 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 31 DEG FL100
LEFT REAR QUAD MX026 16015
93175 83175 63163 43150 33130 13095 03050
90905 80906 60906 41006 30908 11407 01706
92212 82616 62316 42215 32021 12326
RIGHT FRONT QUAD MX060 36010
93178 3170/ 63170 43166 33144 13123 03038
91002 81005 61005 40806 30706 10808 01709
91115 80910 60924 40626 30944 1////
RIGHT REAR QUAD MX068 09020
93170 83166 6//// 43139 33107 13077 03038
90906 80908 6//// 40909 31208 11105 01709
91533 81413 6//// 41642 31468 11342
LEFT FRONT QUAD MX027 27015
93162 83161 63151 43143 33130 13106 03065
90906 80806 60805 40807 30907 11010 01606
93614 83308 63317 43516 33215 10127

URNT12 KMIA 061330 COR
AF964 0410 FLOYD OB 09 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 31 DEG FL100
LEFT FRONT QUAD MX061 34018
93160 83154 63148 43139 33118 13106 03008
90906 80906 60905 40806 30909 11008 01615
90112 83324 63225 43129 33135 12832
LEFT REAR QUAD MX025 18045
93164 83165 63159 43148 33135 13112 03008
91003 81003 60806 40908 30908 11010 01615
92511 82714 62618 42325 32322 12328
RIGHT REAR QUAD MX076 09006
93201 83171 63168 43166 33138 13147 03004
91006 80906 60907 40807 30808 10907 01809
92030 81834 61738 41930 31838 11845
RIGHT FRONT QUAD MX046 36045
93169 83159 63147 43138 33191 13107 03004
90606 80707 60707 40808 30908 10808 01809
91227 80935 61138 41246 30938 11031

URNT12 KMIA 070710
AF980 0610 FLOYD OB 06 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 36 DEG FL100
RIGHT REAR QUAD MX080 13010
93184 83173 63168 43162 33133 13077 03924
91001 80903 60905 40907 31006 10909 01706
91930 82038 62038 42135 32052 12173
LEFT FRONT QUAD MX048 30008
93166 83165 63154 43143 33129 13086 03924
90805 80806 60806 40907 30909 11110 01706
90207 80408 60108 40208 30521 10142

URNT12 KMIA 080150 COR 02
AF866 0810 FLOYD OB 09 COR 02 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 04 DEG FL100
LEFT REAR QUAD MX034 27015
93165 83167 63167 43161 33158 13124 03035
90802 80702 60703 40803 30903 10909 02108
90708 80425 60225 40130 30119 13634
RIGHT REAR QUAD MX050 22050
93176 83164 63149 43120 33106 13080 03035
91002 81005 61007 40909 31106 11105 02108
92431 82529 62636 42439 32648 12440
RIGHT FRONT QUAD MX046 04012
93182 83173 63158 43142 33106 13066 03038
90902 80904 60705 40806 31010 11307 02004
91731 81631 61835 41839 31944 11945
LEFT FRONT QUAD MX048 34009
93172 83163 63150 43145 33137 13092 03038
90803 80803 60707 40908 30909 11108 02004
91111 81121 61225 41134 3//// 10940

URNT12 KMIA 081715 COR
AF980 0910 FLOYD OB 12 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 04 DEG FL100
LEFT REAR QUAD MX033 26015
93155 83950 63147 43135 33126 13107 03027
90802 80904 61004 41007 31105 11104 01005
90214 80217 63520 43424 33332 13233
RIGHT REAR QUAD MX038 17045
93206 83162 63161 43152 33146 13132 03110
91001 80905 61004 41105 31205 11105 01004
92728 82538 62434 42434 32619 12830

GERT

URNT12 KMIA 081648 COR
AF969 0311 GERT OB 07 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 29 DEG FL010
LEFT REAR QUAD MX027 15015
90013 80013 60012 40012 30012 10010 00001
92318 82318 62316 42217 32217 12218 02724
99905 89905 62316 42327 32427 12127
RIGHT REAR QUAD MX033 36030
90013 80012 60012 40010 30007 1///// 00003
92420 82419 62318 42320 32421 1///// 02622
91233 81026 61031 41033 30832 /////
LEFT FRONT QUAD MX018 25060
90012 80012 60012 40012 30011 10009 00003
92621 82621 62420 42420 32320 12420 02622
92311 82217 62118 42415 32216 12610
LEFT REAR QUAD MX043 15025
90013 80014 60013 40013 30012 10012 00005
92518 82418 62316 42216 32119 12120 02422
91814 82018 62325 42527 32136 12143

Table 7 continued.

URNT12 KMIA 081932
AF969 0311 GERT OB 14 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 29 DEG FL010
RIGHT FRONT QUAD MX027 33030
9//// 8//// 6//// 40010 30009 10007 00005
9//// 8//// 6//// 42519 32420 12422 02422
//// 8//// 6//// 40626 30427 10620
LEFT FRONT QUAD MX023 25020
9//// 8//// 6//// 40011 30009 10007 00003
9//// 8//// 6//// 42521 32420 12421 02723
9//// 8//// 6//// 40113 33420 13123
REMARKS LAST REPORT OBS 01 - 14 TO KMIA.
ETA MKPA 08/1820Z.

URNT12 KMIA 101015
AF968 0811 GERT OB 13 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 32 DEG FL013
RIGHT REAR QUAD MX026 10030
90013 80013 60013 40012 30011 10011 00009
92424 82422 62422 42422 32423 12424 02524
91714 81523 61522 41523 31826 11925
LEFT FRONT QUAD MX019 27080
90012 80011 60011 40010 30010 10010 00009
92524 82522 62523 42623 32524 12523 02524
90919 80919 60918 40414 33615 13614

7 continued.

URNT12 KMIA 121630
AF906 1511 GERT OB 09 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 36 DEG FL099
LEFT REAR QUAD MX052 21032
93150 83135 63107 4//// 3//// 1//// 03076
91009 81107 61426 4//// 3//// 1//// 01609
93116 83036 62835 4//// 3//// 1////
LEFT REAR QUAD MX034 21015
9//// 8//// 6//// 4//// 3//// 13170 03076
9//// 8//// 6//// 4//// 3//// 11111 01609
9//// 8//// 6//// 4//// 3//// 13034

URNT12 KMIA 122136 COR
AF866 1611 GERT OB 09 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 04 DEG FL100
RIGHT REAR QUAD MX050 17060
9//// 83153 63141 43139 33104 13078 00998
9//// 80804 61005 41005 31208 11408 02424
9//// 82747 62746 42840 33033 13547
RIGHT FRONT QUAD MX060 10060
9//// 83115 63101 43070 3//// 1//// 00999
9//// 80808 61004 41111 3//// 1//// 02523
9//// 82060 61835 4//// 3//// 1////
LEFT REAR QUAD MX043 27030
93136 83133 63128 43124 33121 13115 00999
91052 80952 60802 40902 30904 11004 02523
93117 82915 63026 43128 30243 13533

Table 7 continued.

HARVEY

URNT12 KMIA 121705 COR
AF972 0212 HARVEY OB 12 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTE 29 DEG FLO10
RIGHT REAR QUAD MX050 08010
90012 80012 60010 40012 30009 10008 00001
92522 82421 62422 42322 32322 12422 02524
91222 81321 61236 41433 31348 11743
RIGHT FRONT QUAD MX073 36015
90011 80011 60009 40008 30005 1//// 00000
92421 82121 62420 42421 32121 1//// 02722
90822 80826 60633 40850 30757 1////
LEFT REAR QUAD MX030 15020
9//// 8//// 60008 40008 30008 10007 00997
9//// 8//// 62422 42422 32422 12322 02722
9//// 8//// 61910 41810 31725 11820

URNT12 KMIA 130642 COR 03
AF980 0312 HARVEY OB 13 COR 03 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 29 DEG FL100
LEFT REAR QUAD MX042 13030
93140 83131 63125 43120 33115 13085 03981
91108 80907 60908 41107 30907 10907 01607
91830 81830 61729 41839 32042 12031
RIGHT REAR QUAD MX053 03010
93115 83109 63097 43085 33067 13052 03981
90807 80807 60907 40806 30906 10907 01607
91353 81451 61244 41144 31040 10945
RIGHT FRONT QUAD MX045 33045
9//// 83091 63072 43048 33014 13987 03983
9//// 81009 60908 40909 31009 11309 01610
9//// 81037 60945 40945 30418 13107
LEFT FRONT QUAD MX039 21100
93095 83092 63090 43074 33059 13041 03983
90909 80909 60808 40909 30808 11111 01610
90439 83620 60623 43517 30212 13523

continued.

URNT12 KMIA 131430 COR 02
AF972 0412 HARVEY OB 08 COR 02 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 30 DEG FL100
RIGHT REAR QUAD MX048 08060
93123 83116 63098 43073 33054 13021 03982
90905 80908 60908 40808 31010 11210 01510
91845 81839 61848 41840 31743 11741
RIGHT FRONT QUAD MX047 35045
93122 83107 63089 43075 33054 13988 03974
90808 80907 60908 40907 31109 11312 01711
90837 80534 60741 40747 30746 10429
LEFT FRONT QUAD MX027 26060
93113 83105 63083 43074 33053 13015 03974
90908 80908 60908 41009 31009 11208 01711
90223 80123 63527 43520 33424 13125
LEFT REAR QUAD MX042 17015
93119 83113 63098 43081 33063 13031 03969
91008 80906 61005 41008 31008 11210 01609
92432 82039 62033 42432 32438 12642

URNT12 KMIA 140010 COR 02
AF967 0512 HARVEY OB 06 COR 02 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 31 DEG FL100
LEFT REAR QUAD MX047 18030
9//// 83094 63102 43079 33059 13016 03928
9//// 80902 60805 40903 31005 10908 01410
9//// 82426 63333 43137 33047 13235
RIGHT REAR QUAD MX054 09015
93128 83104 63089 43073 33031 13985 03928
90907 80805 61003 41003 31307 11210 01410
91642 81847 61848 41853 31854 11954
RIGHT FRONT QUAD MX055 08051
93107 83097 63064 43043 33995 13949 03923
90806 80707 60707 40907 30909 11109 01110
90941 80851 60841 40649 30255 13110
LEFT FRONT QUAD MX040 27015
93116 83095 63076 43055 33030 13970 03923
90804 80804 60707 40906 30908 11308 01110
93629 81406 60108 43527 33631 13440

Table 7 continued.

URNT12 KMIA 141303 COR
AF972 0612 HARVEY OB 07 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 30 DEG FL100
LEFT REAR QUAD MX086 22025
93086 83051 63036 43999 33803 13773 03760
90905 81108 61108 41107 31312 11511 01710
92442 82541 62542 42648 32764 12718
RIGHT REAR QUAD MX088 13015
93110 83093 63063 43053 33995 13893 03760
90905 80907 60909 41009 31110 11010 01710
91853 81860 61750 41759 31765 11988
RIGHT FRONT QUAD MX075 05030
93086 83069 63056 43958 33917 13920 03738
90907 81008 61009 41010 31110 11411 01619
91346 81048 60942 40753 31075 10735
LEFT FRONT QUAD MX065 31015
93121 83106 62099 43074 33041 13954 03738
90906 81008 61009 40909 31109 11110 01609
90121 83131 63636 43334 33438 13465

URNT12 KMIA 150200 COR 02
AF966 0712 HARVEY OB 13 COR 02 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 34 DEG FL098
RIGHT REAR QUAD MX107 12005
9//// 83111 63045 43045 33005 13935 03617
9//// 805// 607// 407// 307// 107// 015//
9//// 82065 62055 42163 32166 12282
LEFT FRONT QUAD MX079 30005
93121 83103 63078 43004 33996 13926 03617
909// 808// 606// 407// 307// 108// 051//
90429 80244 60347 40345 30251 10450

URNT12 KMIA 150725 COR
AF966 0712 HARVEY OB 20 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 36 DEG FLO98
LEFT REAR QUAD MX085 21005
93108 83112 63096 43077 33029 13968 03606
911// 811// 611// 409// 310// 108// 016//
92843 82837 62844 42846 32957 12965
RIGHT FRONT QUAD MX072 36020
93105 83069 63029 4//// 33902 13801 03606
905// 807// 606// 4//// 310// 108// 016//
91725 81542 61555 41468 31469 11472
LEFT FRONT QUAD MX066 30025
93104 83092 63043 43996 33924 1//// 03631
909// 810// 608// 407// 308// 111// 016//
90239 80142 63649 43553 33555 13555
RIGHT REAR QUAD MX080 18020
93126 83100 63070 43027 33965 13898 03631
907// 810// 609// 407// 309// 114// 016//
92543 82753 62667 42666 32675 12571

URNT12 KMIA 151340 COR
AF980 0812 HARVEY OB 08 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 36 DEG FL100
LEFT REAR QUAD MX095 21020
9//// 8//// 63067 43040 33006 13970 03730
9//// 8//// 60903 41003 30904 11104 01505
9//// 8//// 62961 42952 32961 12952
RIGHT REAR QUAD MX091 13045
93135 83107 63067 43031 33971 13877 03730
90905 80704 60805 40905 30806 11207 01505
92260 82268 62371 42291 32490 12580
RIGHT FRONT QUAD MX086 04060
93080 83046 63010 43917 33836 13781 03744
90606 80905 60906 41007 31307 11408 01709
91673 8//// 61486 4//// 31154 11152
LEFT FRONT QUAD MX072 05030
9//// 83081 63039 43991 33923 13847 03744
9//// 80806 61107 41107 31308 11809 01709
9//// 80641 60432 40450 30172 10247

Table 7 continued.

URNT12 KMIA 152019
AF972 0912 HARVEY OB 08 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 36 DEG FL100
RIGHT REAR QUAD MX098 15015
93123 83114 63087 43058 33030 13962 03737
90905 80906 60906 41006 31009 11106 01412
92267 82259 62271 42382 32375 12498
RIGHT FRONT QUAD MX065 06045
93065 83042 63006 43919 33739 13752 03737
90707 80808 61010 40707 31211 11511 01412
92217 82119 61556 41665 32140 12642

IRENE

URNT12 KMIA 251315 COR
AF972 0114 IRENE OB 07 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 31 DEG FL100
LEFT FRONT QUAD MX048 27050
93103 83085 63047 43982 3//// 1///// 03933
91005 80706 60707 40808 3//// 1///// 01706
90127 83648 60323 40436 3//// 1/////
RIGHT FRONT QUAD MX070 36030
93100 83070 63037 43009 33954 13936 03933
90808 80808 60909 40909 31111 11507 01706
91242 80850 61043 41140 31070 11062
LEFT REAR QUAD MX061 18015
93115 83106 63095 43080 33052 13990 03921
90904 80905 60805 41006 31007 11407 01310
92528 82527 62544 42444 32556 12461
RMKS ACFT CHANGED ALPHA PATTERN. RIGHT FRONT QUAD
NOT FLOWN DUE TO RADAR ATTENUATION.

URNT12 KMIA 260053 COR 02
AF967 0214 IRENE OB 06 COR 02 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 32 DEG FL099
LEFT REAR QUAD MX078 18020
93098 83084 63066 43022 33987 13928 03881
90803 80706 60905 40909 31305 11808 01706
92638 82736 62844 42847 32760 12678
RIGHT REAR QUAD MX090 12025
93110 83096 63068 43023 33970 13906 03881
90805 80804 61003 40908 31305 11707 01706
91850 81860 61775 41880 31890 12151
LEFT FRONT QUAD MX070 29030
93104 83089 63074 43057 33005 13907 03876
90604 80705 60804 40806 30807 11310 01606
90257 80241 60152 43552 33570 13225
RIGHT FRONT QUAD MX081 01030
93096 83084 63057 43032 33984 13919 03876
90706 80707 60808 40808 30707 11110 01606
91050 81050 60965 40975 31081 10963

URNT12 KMIA 261340
AF964 0314 IRENE OB 07 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 32 DEG FL100
RIGHT FRONT QUAD MX32 FL100
93058 83041 63016 43977 33952 13948 00353
90808 81010 61111 41609 31709 12105 01808
91157 81351 61449 41547 31840 12036
LEFT FRONT QUAD MX063 26100
93059 83040 63010 43978 33939 13/// 03934
90806 81008 61209 40909 31609 1//// 01610
90263 80161 63154 43158 32638 12840
LEFT REAR QUAD MX048 18045
93104 83079 63068 43052 33998 13957 03934
91008 80909 60909 40909 30909 11410 01610
92919 83045 62838 42748 32634 12533

URNT12 KMIA 270515 COR
 AF972 04 14 IRENE OB 15 COR KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 32 DEG FL100
 LEFT REAR QUAD MX052 15015
 93052 83043 63016 43987 33929 13887 03815
 91007 81008 61008 41109 31109 11310 01610
 92635 82639 62446 42545 32649 12752
 RIGHT FRONT QUAD MX053 36015
 93062 83030 63016 43984 33906 13849 03815
 90905 80807 60808 40908 30909 11210 01610
 90857 80746 6//// 40848 30950 10753
 LEFT FRONT QUAD MX047 25015
 93049 83032 63020 43971 33928 13860 03799
 90907 81008 61008 41008 31107 11411 01510
 93229 83336 63345 43237 33039 13147

URNT12 KMIA 271228 COR 02
 AF967 0514 IRENE OB 06 COR 02 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 32 DEG FL100
 LEFT REAR QUAD MX080 18045
 93049 83023 63997 43954 33903 13849 03819
 90906 80805 60806 41105 31307 11507 01410
 93145 83159 62958 42980 32956 12937
 LEFT FRONT QUAD MX074 28060
 93059 83048 63019 43989 33943 13876 03819
 90706 80705 61005 41005 31208 11110 01410
 90156 80154 63674 43568 30253 10147
 RIGHT REAR QUAD MX080 09080
 93064 83050 63004 43954 33895 13830 03820
 90807 80706 60808 40908 31208 11211 01509
 91966 81980 61874 41853 31862 11841
 RIGHT FRONT QUAD MX076 36045
 93067 83028 63998 43957 33912 13833 03799
 90806 80808 60808 40909 31210 11311 01608
 90851 80862 60855 40876 30751 10540

URNT12 KMIA 280107 COR
AF964 0614 IRENE OB 06 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 36 DEG FL100
RIGHT REAR QUAD MX100 12045
93092 83083 63051 43987 33883 13844 03797
90908 80808 60808 40808 31010 11313 01714
91955 82077 62173 47000 32180 11941

URNT12 KMIA 281315 COR
AF972 0714 IRENE OB 07 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 36 DEG FL100
LEFT REAR QUAD MX073 22070
93071 83050 63032 43013 33979 13947 03720
90805 80805 60907 40906 31005 11109 02008
92927 82937 63052 42358 32965 12949
RIGHT FRONT QUAD MX062 04080
93024 83037 63967 43939 33886 13738 03720
90606 81010 60909 50808 31111 11511 02008
91360 01462 61256 41261 31141 19905
LEFT FRONT QUAD MX059 29030
93045 83015 63978 43938 33875 13787 03747
90807 80707 60807 41009 31208 11411 02009
90638 80242 60348 40354 30159 13538
RIGHT REAR QUAD MX071 14060
93035 83999 63961 43909 3//// 1//// 03747
91103 81203 61206 41308 3//// 1//// 02009
92358 82369 62371 42459 32562 12526

URNT12 KMIA 291515 COR 02
 AF966 0814 IRENE OB 09 COR 02 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 04 DEG FLO99
 LEFT REAR QUAD MX040 26100
 93969 83941 63892 43862 33819 1//// 03807
 90907 80808 60808 41111 31212 1//// 01212
 93440 8//// 63525 43635 3//// 1////
 RIGHT REAR QUAD MX084 17045
 93016 83984 63938 43890 33874 13809 03807
 9//05 80707 60908 41009 31212 11313 01212
 92756 82766 62673 42684 32470 12423
 RIGHT FRONT QUAD MX068 09100
 93999 83933 6//// 43885 33820 1//// 03786
 90808 80908 61108 41109 31010 1//// 01313
 91868 81760 61753 41650 31340 1////
 LEFT FRONT QUAD MX035 32015
 93954 83939 63908 43884 33866 13820 03786
 90808 80808 60808 41010 30909 11111 01313
 91223 91220 61026 40522 30535 13635
 100NM INBND SFC WND 28065. 30NM OBND SFC WND 27085

KATRINA

URNT12 KMIA 041555 COR
 AF963 0217 CYCLONE OB 12 COR KMIA
 AZIMUTH 36 DEG FL100
 LEFT REAR QUAD MX/// ////
 9//// 8//// 6//// 4//// 3//// 1//// 03039
 9//// 8//// 6//// 4//// 3//// 1//// 013//
 9//// 7//// 6//// 4//// 3//// 1////
 RIGHT REAR QUAD MX033 13060
 93122 83116 63110 43108 33104 13086 03039
 908// 808// 608// 409// 311// 109// 013//
 92029 82331 62333 42629 32524 1////
 RIGHT FRONT QUAD MX040 05100
 93129 83113 43104 33088 13062 03053
 908// 808// 608// 409// 309// 111// 011//
 91540 81326 61128 41032 31734 10432
 LEFT FRONT QUAD MX016 27035
 93112 83109 63107 43100 33098 13083 03053
 909// 810// 611// 311// 112// 011//
 90413 83615 63615 43515 30116 13612

7 continued.

URNT12 KMIA 050257 COR
AF972 0317 KATRINA OB 09 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 045 DEG FL100
RIGHT FRONT QUAD MX035 02100
93117 83113 63108 43099 33090 13069 03039
90907 80907 61007 41009 310// 109// 01408
91730 81725 61726 4//// 31522 11916
LEFT FRONT QUAD MX040 34050
93115 83102 63093 43084 33072 13050 03022
91007 81106 61005 41007 30908 11010 01309
90932 80519 60326 40540 30437 1////
LEFT REAR QUAD MX050 25015
93112 83107 63088 43093 33083 13040 03022
91105 81205 61205 41207 30907 10907 01309
93115 83025 62919 43216 33623 13350
RIGHT REAR QUAD MX078 13015
93115 83111 63108 43092 33083 13077 03011
90908 80908 60908 41007 30908 10907 01509
92335 82050 61838 42221 32323 12478

Table 8. Tropical Cyclone Reconnaissance Summary for 1981.

1. Requirements Levied	Atlantic	Eastern & Central Pacific
Cyclones	143	0
Invest	34	0
	TOTAL 177	0
2. Requirements Accomplished	Atlantic	Eastern & Central Pacific
53 WRS (Cyclones/invest)	28/9	0/0
920 WRG (Cyclones/invest)	70/31	0/0
RFC (Cyclones/invest)	30/6	0/0
	TOTAL 128/46	0/0
3. Missions Flown		
53 WRS	25	0
920 WRG	66	0
RFC	15	0
	TOTAL 106	0
4. Flying Time (Hours)	Atlantic	Eastern & Central Pacific
53 WRS	242.3	0
920 WRG	650.7	0
RFC	138.3	0
	TOTAL 1031.3	0
5. Observations	Horizontal 1558	Vertical 58

Three unaccomplished requirements.

Does not include ferry missions or flying time.