

ANNUAL DATA AND VERIFICATION TABULATION
ATLANTIC TROPICAL CYCLONES 1980

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National Hurricane Center
Miami, Florida
June 1981

UNITED STATES
DEPARTMENT OF COMMERCE
Philip M. Klutznick, Secretary

NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
Richard A. Frank, Administrator

National Weather
Service
Richard E. Hallgren, Director



INTRODUCTION

This is the seventh 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

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 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 field near the storm would conform to the current storm motion.

HURRAN (Hope and Neumann, 1970). An analog system using as a 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.

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. It is capable of predicting both track and intensity changes.

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 1980 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 - 1980 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 "best 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 1980 North Atlantic tropical cyclone statistics is given in Table 4. Tracks of 1980 named storms are shown in Figure 1. No storms were classified as subtropical during the 1980 hurricane season.

The best track, initial, and forecast positions for 1980 named storms are in Table 5, along with initial position and forecast errors, and storm average errors.

Table 6 lists all center fix positions and intensity evaluations used operationally at the National Hurricane Center during 1980. 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 1980 season

Graphs of the lowest central pressure versus time for 1980 tropical cyclones are presented in Figure 3.

Daily SMS-2 satellite photographs of 1980 named tropical cyclones are shown in Figure 4.

Selected radar photographs of Hurricane Allen are in Figure 5.

ACKNOWLEDGMENTS

Main contributors were Ms. Albertha Sanders, who listed the center fixes in chronological order; Dr. Joseph Pelissier, who computed the verification statistics; Mr. Noel Risnychok, who organized satellite and radar photographs and performed other miscellaneous tasks; Mr. Frank Marques who did all reduction work on the graphs and tables; and Ms. Liliias Wilson, who typed the tables and manuscript

REFERENCES

- Hope, J. R., and C. J. Neumann, 1970: "An Operational Technique for Relating the Movement of Existing Tropical Cyclones to Past Tracks," Monthly Weather Review, Vol. 98, No. 23, pp. 925-933.
- Hovermale, J. B., and R. E. Livezey, 1977: "Three-Year Performance Characteristics of the NMC Hurricane Model," Preprints 11th Technical Conference on Hurricanes and Tropical Meteorology, Miami Beach, Amer. Meteor. Soc., pp. 122-125.
- Lawrence, M. B., P. J. Hebert, and Staff, NHC, 1979: "Annual Data and Verification Tabulation Atlantic Tropical Cyclones, 1977," NOAA Technical Memorandum NWS NHC-8, 46 pp.
- Miller, B. I., E. C. Hill and P. P. Chase, 1968: "Revised Technique for Forecasting Hurricane Motion by Statistical Methods," Monthly Weather Review, Vol. 96, No. 8, pp. 540-548.
- Neumann, C. J., 1972: "An Alternative to the HURRAN Tropical Cyclone Forecast System," NOAA Technical Memorandum NWS SR-62, 24 pp.
- , J. R. Hope and B. I. Miller, 1972: "A Statistical Method of Combining Synoptic and Empirical Tropical Cyclone Prediction Systems," NOAA Technical Memorandum NWS SR-63, 32 pp.
- , and M. B. Lawrence, 1973: "Statistical-Dynamical Prediction of Tropical Cyclone Motion (NHC-73)," NOAA Technical Memorandum NWS SR-69, 34 pp.
- , 1979: "A Guide to Atlantic and Eastern Pacific Models for the Prediction of Tropical Cyclone Motion," NOAA Technical Memorandum NWS NHC-11, 26 pp.
- Pike, A. C., 1972: "Improved Barotropic Hurricane Track Prediction by Adjustment of the Initial Wind Field," NOAA Technical Memorandum NWS SR-66, 16 pp.
- 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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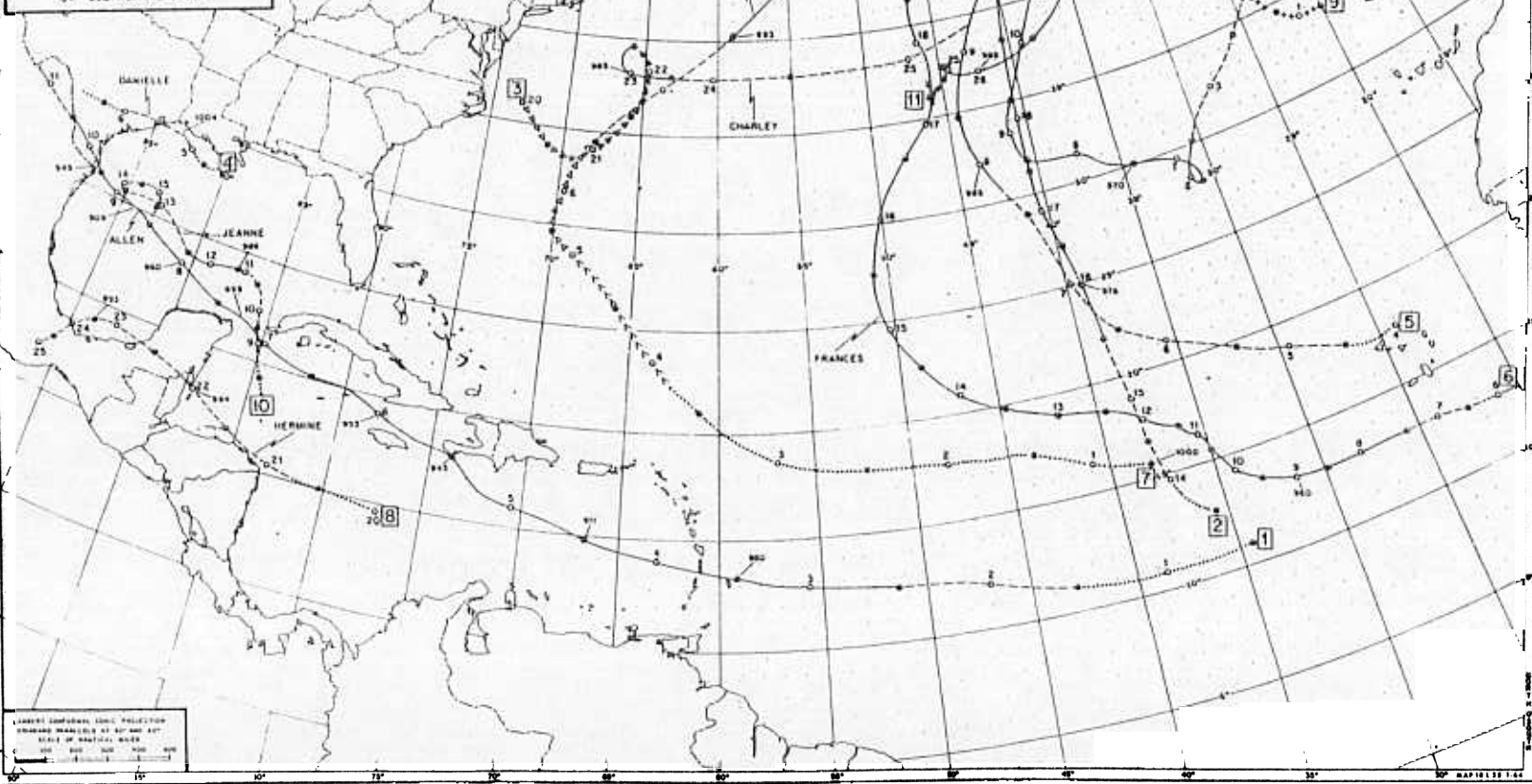
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- Table 2a. Landfall prediction errors for 1980 tropical storms and hurricanes.
- Table 2b. Eleven-year summary of errors in the prediction of the point of landfall of Atlantic tropical storms and hurricanes during the period 1970-1980.
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1980

NATIONAL HURRICANE CENTER ATLANTIC-CARIBBEAN-GULF OF MEXICO HURRICANE TRACK CHART

NUMBER	TYPE	NAME	DATE
1	H	ALLEN	AUG 1-11
2	H	BONNIE	AUG 14-19
3	H	CHARLEY	AUG 20-25
4	T	DANIELLE	SEP 4-7
5	H	EARL	SEP 4-10
6	H	FRANCES	SEP 6-20
7	H	GEORGES	SEP 1-8
8	T	HERMINE	SEP 20-25
9	H	IVAN	OCT 4-11
10	H	JEANNE	NOV 8-16
11	H	KARL	NOV 23-27

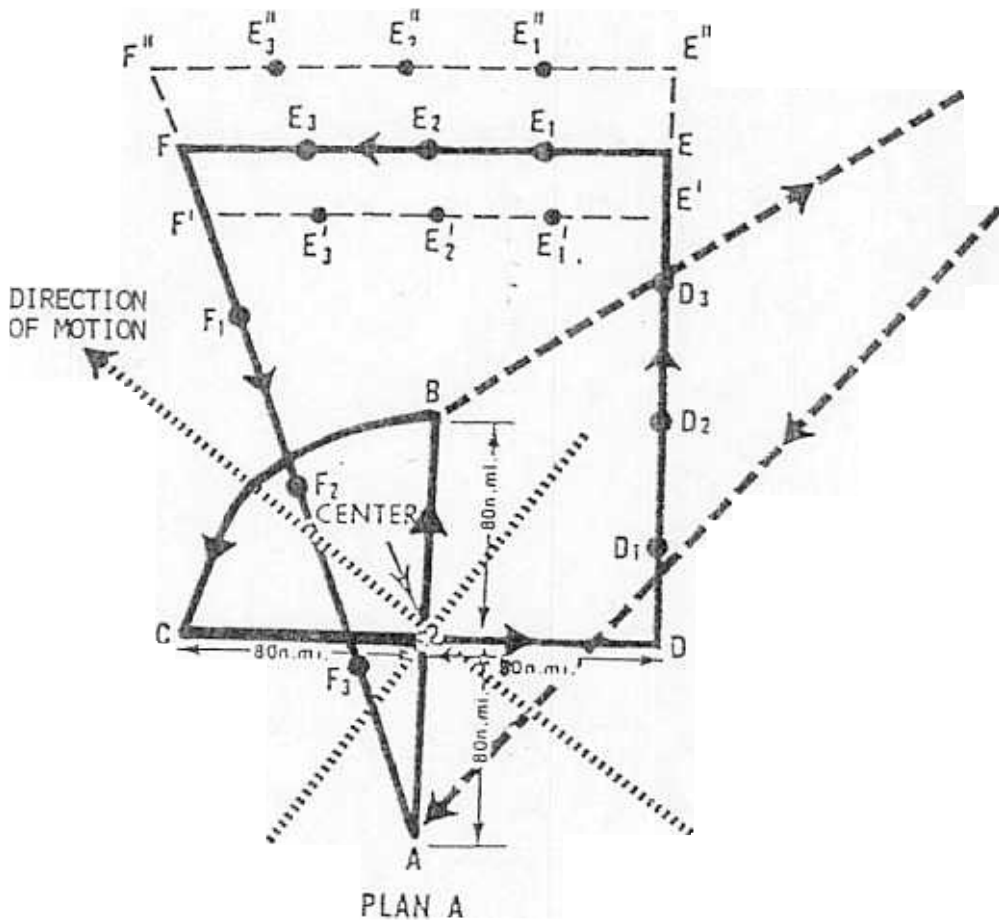
- >>>> Tropical disturbance stage
 - Tropical depression stage
 - Tropical storm stage
 - Hurricane stage
 - Extratropical stage
 - Subtropical depression stage
 - Subtropical storm stage
 - Position at 0000 GMT
 - Position and date at 1200 GMT
 - *** Central pressure in millibars
 - ⑤ Initial position of cyclone number 5
- H HURRICANE
 T TROPICAL STORM
 ST SUBTROPICAL STORM



LARGEST COMPARISON 100% PROJECTION
 HORIZONTAL MEASUREMENTS AT 500-MILLI-BAR
 LEVEL OF NEARLY ALL STORMS

MAP 18133 1-64

Figure 1. Tracks of 1980 Atlantic tropical cyclones.



FLIGHT ALTITUDES	
A B C D	-- 10,000 FEET
D E F A	-- 1,500 FEET

Figure 2. Flight pattern flown in obtaining Supplementary Vortex Data

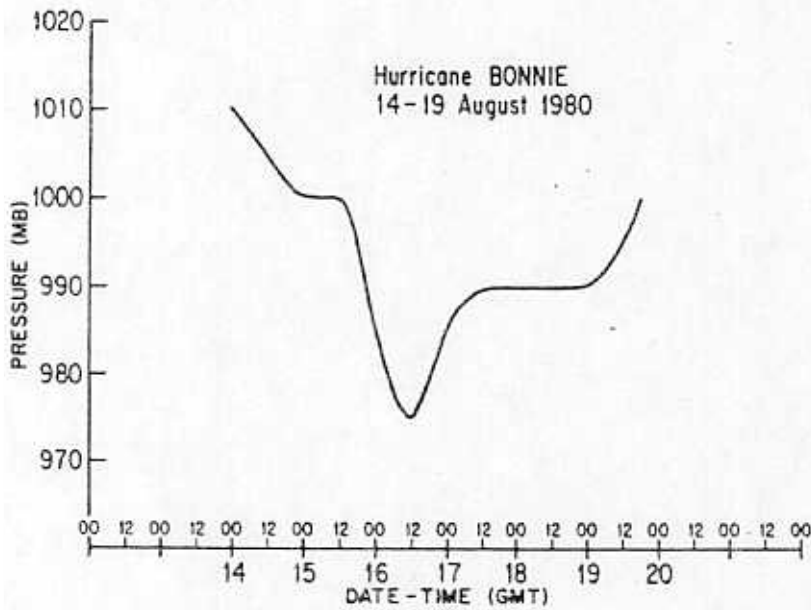
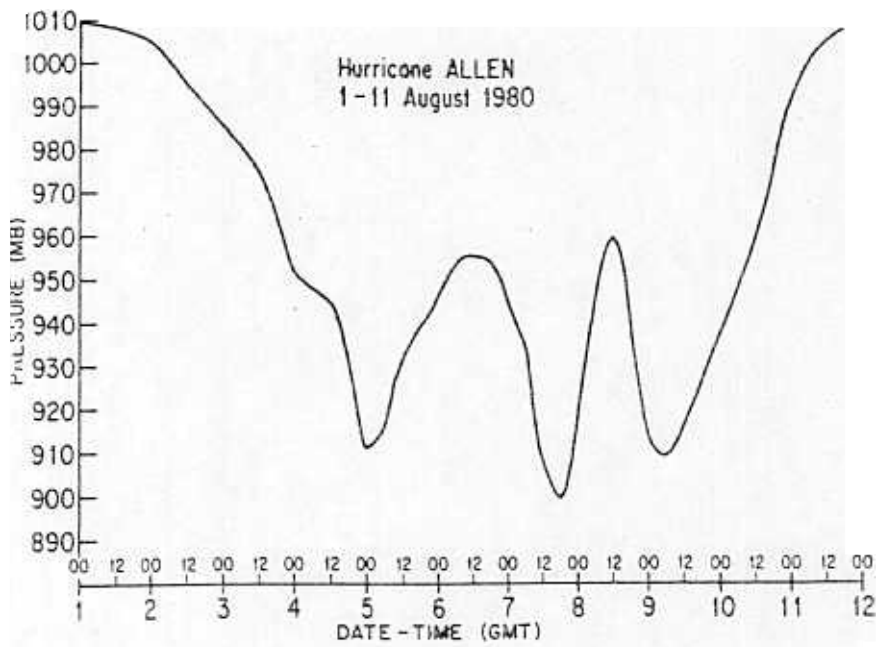


Figure 3. Lowest pressure vs time, 1980 tropical cyclones

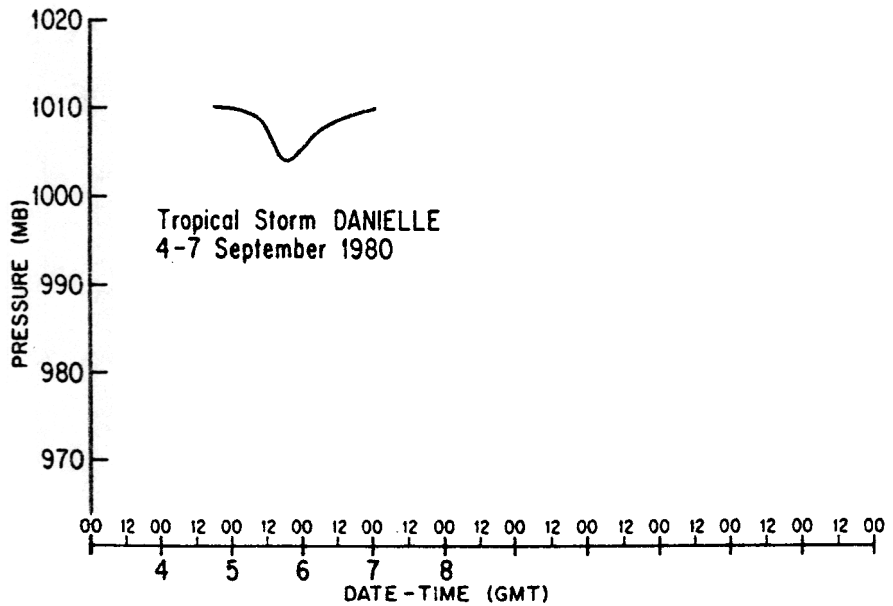
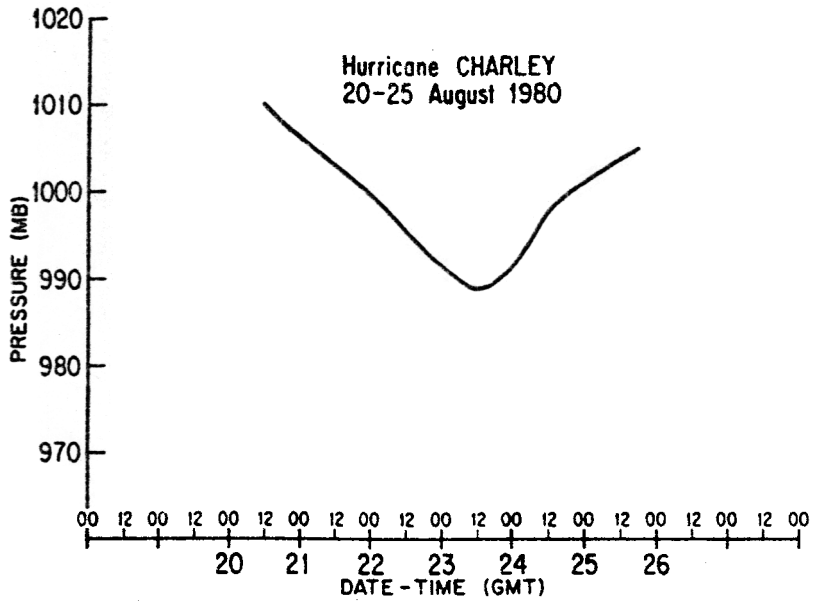


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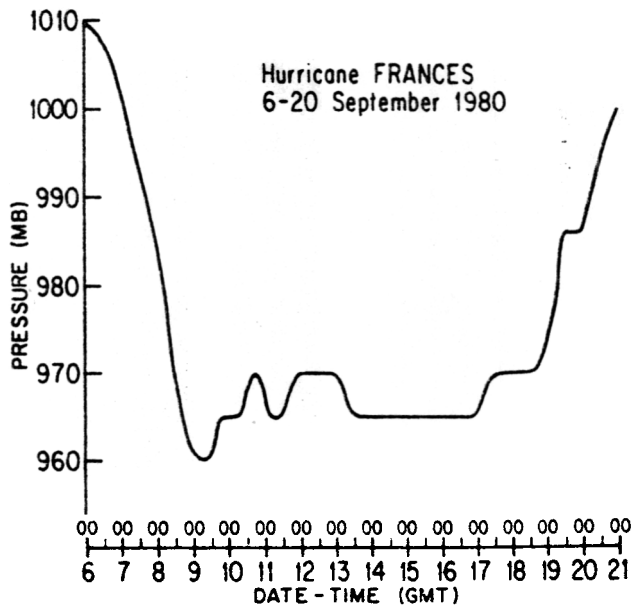
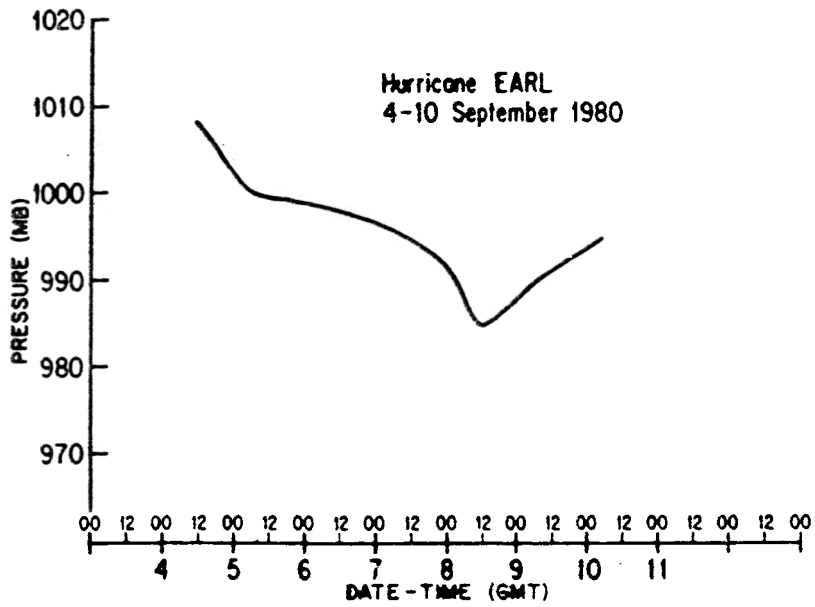


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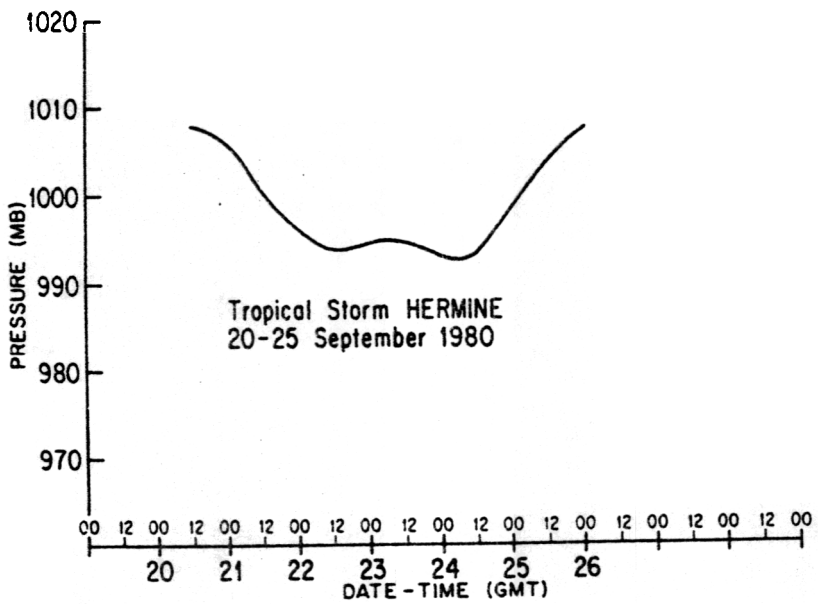
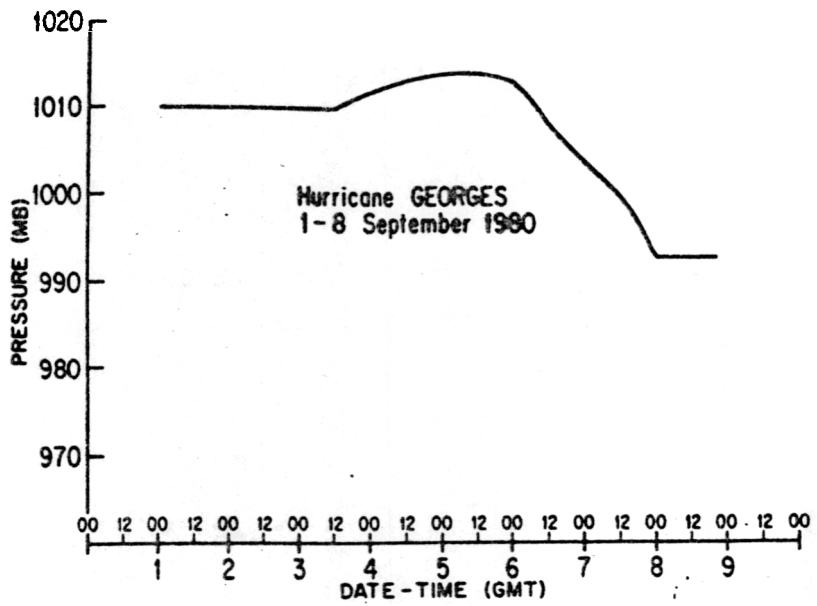


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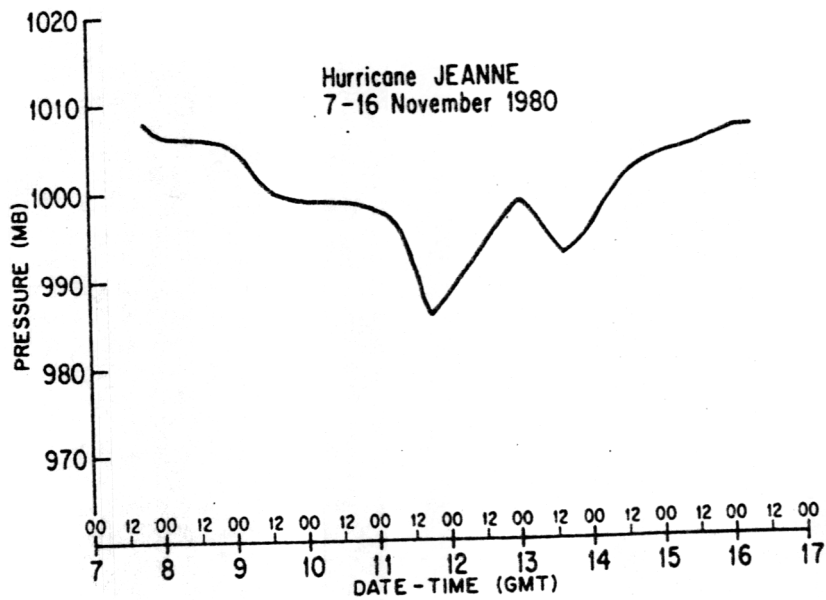
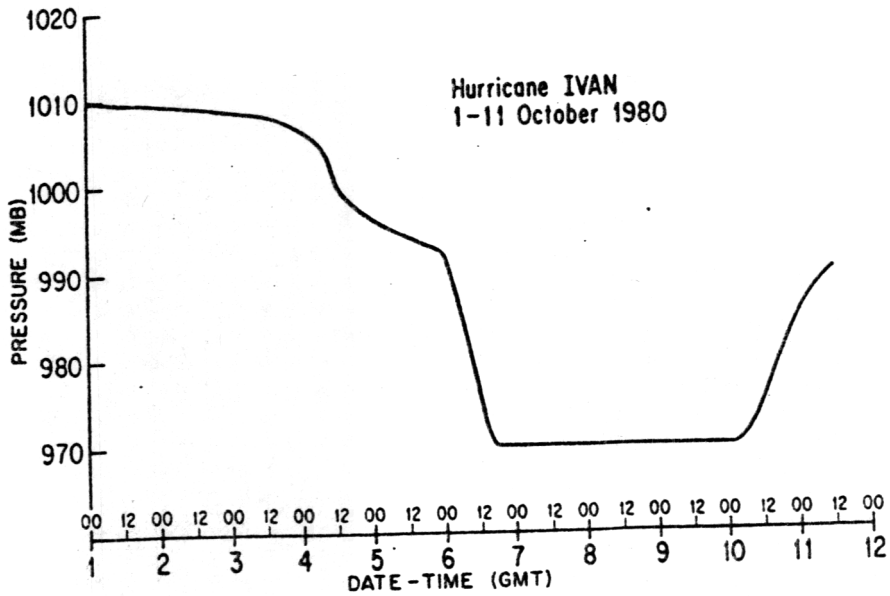


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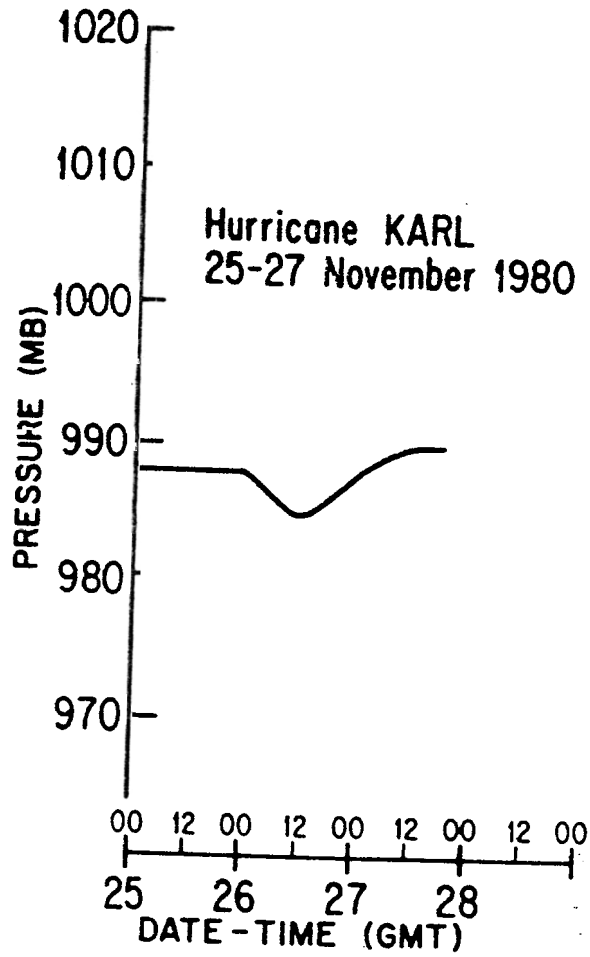
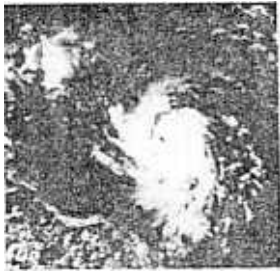
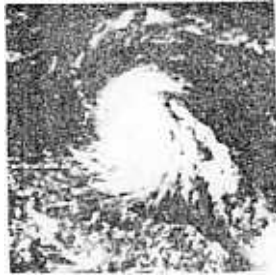


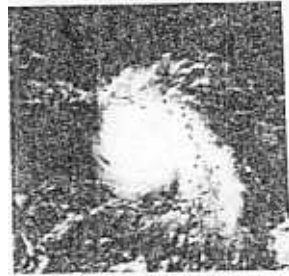
Figure 3 continued



1631 GMT 8/2/80
990 MB



1631 GMT 8/3/80
964 MB



1801 GMT 8/4/80
925 MB

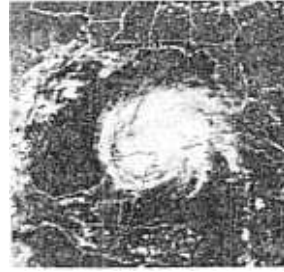
ALLEN



1901 GMT 8/5/80
940 MB



1901 GMT 8/6/80
953 MB



1931 GMT 8/7/80
899 MB



1831 GMT 8/8/80
933 MB



1830 GMT 8/9/80
925 MB



1530 GMT 8/10/80
970 MB

BONNIE



1101 GMT 8/14/80
1004 MB



1100 GMT 8/15/80
1000 MB



1100 GMT 8/16/80
975 MB

Figure 4. Daily SMS-2 satellite photographs of 1980 named tropical cyclones.

BONNIE CONT.



1630 GMT 8/17/80
991 MB



1530 GMT 8/18/80
991 MB



1430 GMT 8/19/80
991 MB

CHARLEY



1530 GMT 8/21/80
1002 MB



1330 GMT 8/22/80
995 MB



1830 GMT 8/23/80
989 MB



1730 GMT 8/24/80
1000 MB



1530 GMT 8/25/80
1005 MB

DANIELLE



1630 GMT 9/5/80
1005 MB



1431 GMT 9/6/80
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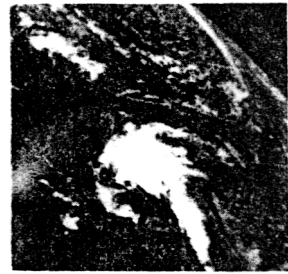
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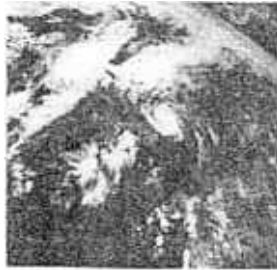
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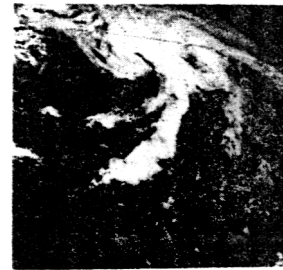
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1631 GMT 9/8/80
986 MB



1631 GMT 9/9/80
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FRANCES



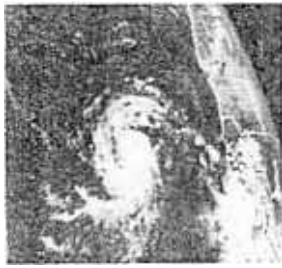
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1007 MB



1101 GMT 9/7/80
992 MB



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970 MB



1100 GMT 9/9/80
960 MB



1101 GMT 9/10/80
967 MB

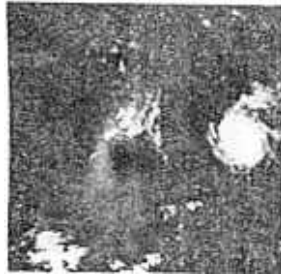


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964 MB

FRANCES CONT.



1100 GMT 9/12/80
970 MB



1331 GMT 9/13/80
965 MB



1631 GMT 9/14/80
965 MB



1531 GMT 9/15/80
965 MB



1631 GMT 9/16/80
965 MB



1631 GMT 9/17/80
970 MB



1631 GMT 9/18/80
970 MB

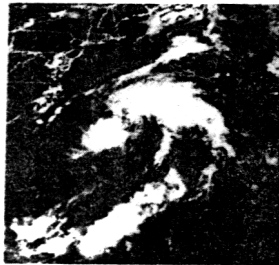


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GEORGES



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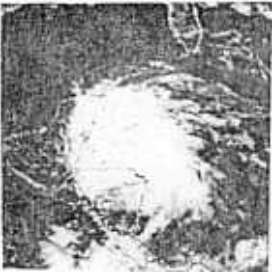


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1331 GMT 9/8/80
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HERMINE



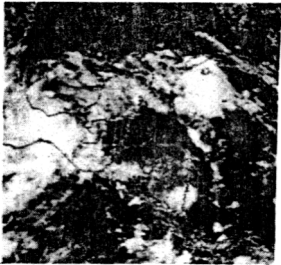
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1631 GMT 9/22/80
993 MB



1801 GMT 9/23/80
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1631 GMT 9/24/80
993 MB

IVAN



1101 GMT 10/4/80
1003 MB



1101 GMT 10/5/80
993 MB



1100 GMT 10/6/80
978 MB



1101 GMT 10/7/80
970 MB



1431 GMT 10/8/80
970 MB



1231 GMT 10/9/80
970 MB

IVAN CONT.



1531 GMT 10/10/80
981 GMT



1631 GMT 10/11/80
992 MB

JEANNE



1831 GMT 11/9/80
999 MB



1800 GMT 11/10/80
999 MB



1831 GMT 11/11/80
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995 MB



1431 GMT 11/13/80
993 MB



1800 GMT 11/14/80
1003 MB

KARL



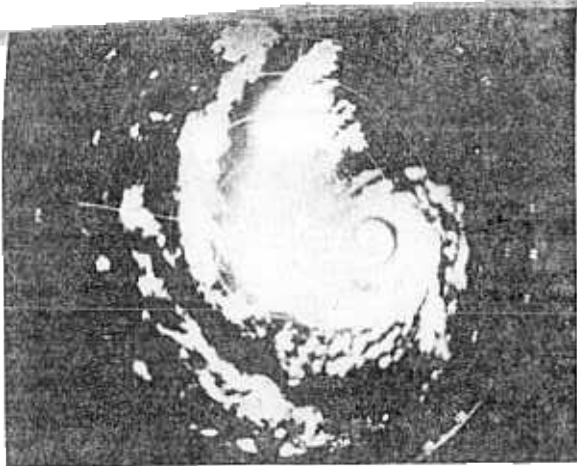
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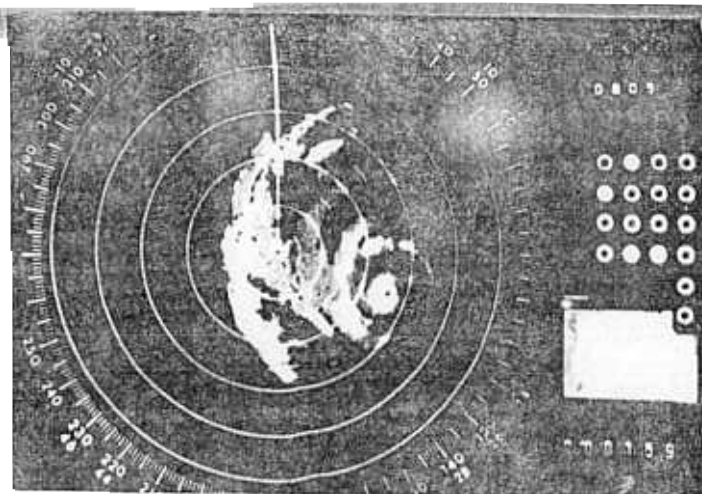
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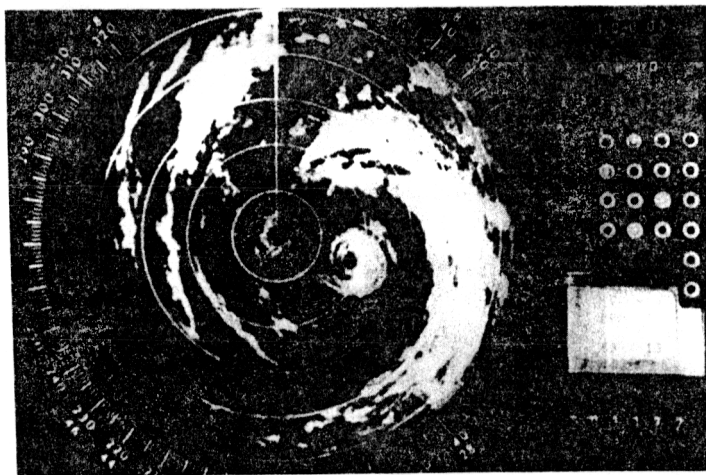
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0030 GMT 8/4/80
CARIBBEAN METEOROLOGICAL INSTITUTE-BARBADOS, W. I
125 MILE RANGE
950 MB



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BROWNSVILLE, TEXAS
250 MILE RANGE
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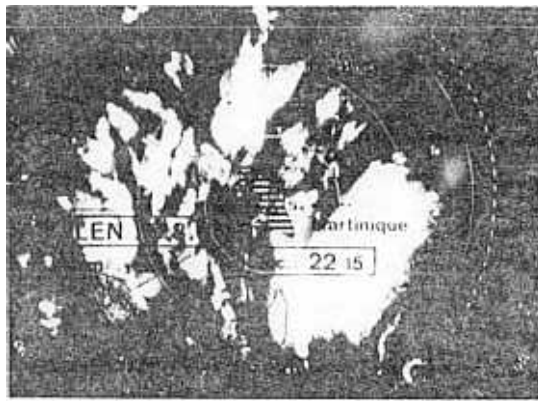


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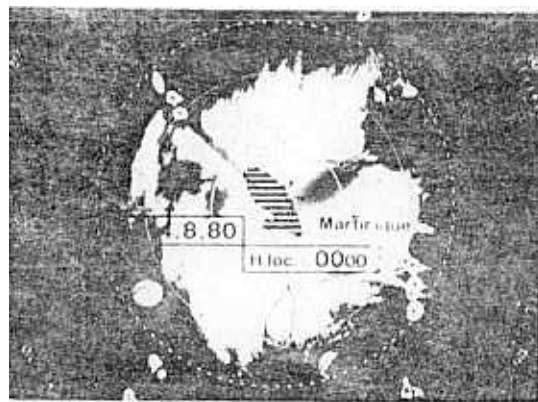
Figure 5. Selected radar photographs of Hurricane Allen.

THE FOUR PHOTOGRAPHS BELOW WERE TAKEN FROM THE
LAMENTIN, MARTINIQUE, RADAR, APPROXIMATE CENTRAL
PRESSURES ARE INDICATED AT PICTURE TIMES.

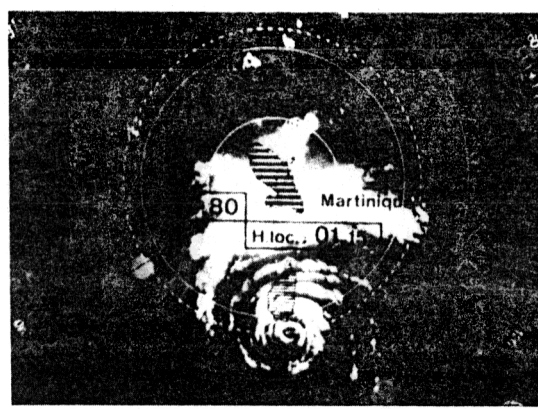
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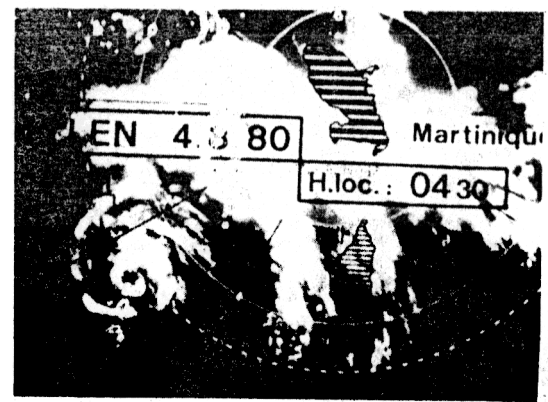
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0400 GMT 8/4/80
948 MB



0515 GMT 8/4/80
948 MB



0830 GMT 8/4/80
947 MB

CODE FOR SUPPLEMENTARY VORTEX DATA MESSAGES.

DATE		AIRCRAFT NUMBER		ARWO				
MANOP READING (PRECEDENCE IMMEDIATE)								
MISSION IDENTIFIER AND OBSERVATION NUMBER								
SUPPLEMENTARY VORTEX DATA MESSAGE								
1	AZIMUTH		2 dd DEG	3 FLZZ FL				
4	LEFT RIGHT	5 FRONT REAR	6 QUAD					
7	DjHHH	8 DTTQQ	9 DjHHH	10 DTTQQ	11 DjHHH	12 DTTQQ	13 DjHHH	14 DTTQQ
8	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	8	64	50	34	MX		
23	LEFT RIGHT	24 FRONT REAR	25 QUAD					
26	DjHHH	27 DTTQQ	28 DjHHH	29 DTTQQ	30 DjHHH	31 DTTQQ	32 DjHHH	33 DTTQQ
8	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	8	64	50	34	MX		
42	LEFT RIGHT	43 FRONT REAR	44 QUAD					
45	DjHHH	46 DTTQQ	47 DjHHH	48 DTTQQ	49 DjHHH	50 DTTQQ	51 DjHHH	52 DTTQQ
8	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	8	64	50	34	MX		
61	LEFT RIGHT	62 FRONT REAR	63 QUAD					
64	DjHHH	65 DTTQQ	66 DjHHH	67 DTTQQ	68 DjHHH	69 DTTQQ	70 DjHHH	71 DTTQQ
8	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	8	64	50	34	MX		
Remarks								
CODE FIGURES		dd - True direction in tens of degrees (pattern orientation based on direction of storm motion). xxx - 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, 0-center). hhhhh - 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. BBBRR - 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.						

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Table 1. Verification of 1980 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	16 (209)	55 (199)	126 (188)	274 (140)	405 (109)
NHC67	17 (105)	55 (105)	113 (94)	251 (73)	346 (55)
NHC72	16 (200)	63 (200)	133 (179)	281 (142)	370 (111)
HURRAN	15 (88)	50 (88)	103 (81)	219 (74)	348 (65)
CLIPER	16 (201)	59 (201)	131 (180)	265 (143)	384 (112)
NHC73	16 (49)	51 (49)	112 (94)	230 (34)	396 (26)
SANBAR	15 (61)	61 (61)	122 (55)	284 (40)	481 (27)
MFM	11 (19)	48 (19)	84 (17)	171 (12)	— (0)

Table 2a. Landfall prediction errors for 1980 tropical storms and hurricanes.

Following is a list of landfall prediction errors for tropical storms and hurricanes during 1980. 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
Allen (I)	Hurricane	08/04/01Z	90 mi. north	South part of eyewall brushed Barbados
Allen (II)	Hurricane	08/04/06Z	90 mi. north	North part of eyewall brushed St. Lucia
Allen (III)	Hurricane	08/06/00Z	80 mi. south	North part of eyewall brushed southwest tip of Haiti
Allen (IV)	Hurricane	08/06/18Z	20 mi. south	South part of eyewall skirted Cayman Brac and Little Cayman Island
Allen (V)	Hurricane	08/10/06Z	75 mi. north	North of Brownsville, TX
Bonnie, } Charley }	(no landfall)			
Danielle	Tropical Storm	09/06/00Z		Storm developed within 24 hours of landfall
Earl, Frances, } and Georges }	(no landfall)			
Hermine (I)	Tropical Storm	09/22/13	25 mi. north	Northern Belize
Hermine (II)	Tropical Storm	09/24/12		Storm crossed coast of Mexico in southern Gulf of Mexico, but forecast to remain offshore
Ivan, Karl } and Jeanne }	(no landfall)			

Table 2b. Eleven-year summary of errors in the prediction of the points of landfall of Atlantic tropical storms and hurricanes during the period 1970-1980.

	<u>United States Landfalls</u>	<u>All Landfalls</u>
1980 Average 24-Hour Landfall Prediction Error (number of cases)	75 miles (1)	63 miles (6)
11 Year Average, 1970-1980 (number of cases)	41 miles (19)	51 miles (51)

Table 3a. Tropical cyclone warning lead times for 1980 United States landfalling storms/hurricanes.

STORM NAME	CATEGORY AT LANDFALL	DATE/TIME (GMT) OF LANDFALL	LOCATION OF LANDFALL	TYPE AND TIME (GMT) OF WARNINGS ISSUED FOR POINT OF LANDFALL	WARNING LEAD TIME (HOURS)
Allen	Hurricane	08/10/06	North of Brownsville, Texas	08/08/16, Hurricane Warnings Brownsville to High Island, including Galveston Bay	38 hours
Bonnie	(no U.S. landfall)				
Charley	(no U.S. landfall)				
Danielle	Tropical Storm	09/06/00	Near Galveston, Texas	09/05/17, Gale Warnings Freeport, Texas, to Vermilion Bay, Louisiana	7 hours
Earl, Frances, Georges, Hermine, Ivan, Jeanne, and Karl	} (no U.S. landfalls)				

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Table 3b. Eleven-year summary of warning lead times for all tropical cyclones and for only hurricanes making United States landfalls during the period 1970-1980.

	<u>ALL STORMS/HURRICANES</u>	<u>(1980)</u>	<u>ALL HURRICANES</u>	<u>(1980)</u>
AVERAGE LEAD TIME (HOURS)	19	23	21	38
STANDARD DEVIATION (HOURS)	8.6	--	5.7	--
NUMBER OF CASES	(25)	(2)	(12)	1)

Table 4. Summary of North Atlantic Tropical Cyclone Statistics, 1980.

NO.	NAME	CLASS ¹	DATES ²	MAXIMUM SUSTAINED WINDS (KT)	LOWEST PRESSURE (MB)	U.S. DAMAGE (\$ MILLION)	DEATHS
1.	ALLEN	H	1-11 AUGUST	165	899	300	U.S. 2 Caribbean 234
2.	BONNIE	H	14-19 AUGUST	85	975		
3.	CHARLEY	H	20-25 AUGUST	70	989		
4.	DANIELLE	T	4-7 SEPTEMBER	50	1004	MINOR	1
5.	EARL	H	4-10 SEPTEMBER	65	985		
6.	FRANCES	H	6-20 SEPTEMBER	100	960		
7.	GEORGES	H	1-8 SEPTEMBER	70	993		
8.	HERMINE	T	20-25 SEPTEMBER	60	993		
9.	IVAN	H	4-11 OCTOBER	90	970		
10.	JEANNE	H	8-16 NOVEMBER	85	986		
11.	KARL	H	25-27 NOVEMBER	75	985		

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

²Day starts at 0000 GMT

Table 5. Best track, initial and forecast positions, initial position error and forecast errors for 1980 tropical cyclones.

HURRICANE ALLEN 2-11 AUGUST 1980

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.)
0200	11.0	42.8	11.0	43.0	12	11.0	47.0	54	11.2	51.0	80	57.0	156	14.0	63.0	232	
0206	11.4	44.8	11.6	45.5	43	12.0	49.5	35	12.0	52.5	116	58.0	217	14.5	63.5	343	
0212	11.9	46.9	11.9	46.9	0	12.3	49.5	112	12.5	52.5	182	56.5	378	15.5	60.0	607	
0218	12.3	49.1	12.3	48.9	12	13.0	52.0	85	13.5	56.0	84	60.0	280	18.0	64.0	473	
0300	12.4	51.4	12.5	51.0	24	13.0	55.0	13	14.0	59.0	40	63.5	188	19.0	69.0	259	
0306	12.6	53.6	12.5	53.2	24	12.7	57.0	8	14.0	60.5	31	65.0	198	19.0	69.0	373	
0312	12.8	55.6	12.7	55.8	13	13.1	59.0	19	14.5	63.0	38	66.5	243	16.5	70.0	494	
0318	12.9	57.5	13.0	57.5	6	13.6	60.7	19	14.5	63.5	81	69.0	193	17.0	74.0	394	
0400	13.3	59.1	13.2	59.5	24	14.0	62.8	35	14.5	66.0	65	71.0	210	17.0	76.0	401	
0406	13.6	61.0	13.6	61.0	0	14.5	65.0	8	15.0	68.0	42	73.0	198	18.0	78.0	348	
0412	14.0	63.0	14.0	63.3	17	14.7	66.8	13	15.6	70.1	44	75.0	230	18.5	79.0	376	
0418	14.4	64.9	14.4	65.0	6	15.2	68.5	17	16.0	72.0	38	78.0	173	20.0	82.0	274	
0500	14.8	66.7	14.9	66.7	6	15.6	70.0	38	16.7	74.0	73	79.0	179	21.0	83.0	284	
0506	15.4	68.6	15.5	68.7	8	16.1	72.4	30	17.2	75.5	78	81.0	155	23.0	85.0	238	
0512	15.9	70.5	15.9	70.5	0	17.0	74.1	51	18.2	77.2	75	82.5	143	23.0	87.0	195	
0518	16.5	72.3	16.5	72.4	6	17.7	75.7	40	18.8	79.0	99	85.0	97	22.5	89.0	181	
0600	17.8	73.8	17.6	73.8	12	18.5	77.5	41	19.5	81.0	56	86.0	106	24.0	90.0	165	
0606	18.3	75.9	18.4	76.0	8	19.4	79.7	51	20.6	83.2	29	88.0	72	26.0	92.0	136	
0612	19.2	78.0	19.2	78.0	0	20.5	82.0	25	21.5	85.0	32	90.5	66	28.0	96.0	171	
0618	20.0	80.1	20.0	80.0	6	21.5	84.0	72	23.0	88.0	119	94.0	224	31.0	99.0	372	
0700	20.1	81.9	20.2	82.0	8	20.5	86.0	71	22.2	90.0	111	95.0	133	30.0	100.0	296	
0706	20.4	83.6	20.4	83.6	0	21.5	87.0	38	23.0	90.5	73	97.5	179	27.0	102.0	263	
0712	21.0	84.8	21.0	84.8	0	22.5	87.5	29	23.5	90.5	6	94.0	77	27.0	98.0	19	
0718	21.8	86.4	21.6	86.1	21	22.8	89.0	13	23.8	92.0	28	97.0	81	29.0	101.0	167	
0800	22.2	87.9	22.4	88.0	13	23.2	90.8	26	24.5	94.0	51	98.0	134	31.0	101.0	195	
0806	22.8	89.2	22.5	89.1	19	23.8	92.2	30	25.0	95.0	52	90.0	402	31.0	102.0	208	
0812	23.4	90.5	23.4	90.5	0	24.5	93.5	27	26.5	96.0	85	98.5	199	34.0	100.0		
0818	23.9	91.8	24.0	91.8	6	25.5	94.5	29	27.5	97.0	129	100.0	222	35.0	102.0		
0900	24.5	93.0	24.4	92.9	8	25.5	95.0	29	27.5	97.5	116	101.0	159				
0906	25.0	94.2	25.0	94.3	5	26.2	97.0	65	27.5	99.0	124	102.0	187				
0912	25.2	95.4	25.2	95.5	5	25.8	97.0	5	26.5	99.0	45	100.5		32.0	101.0		
0918	25.4	96.1	25.4	96.2	5	25.8	97.5	21	26.5	99.0	48	100.5		32.0	101.0		
1000	25.8	96.8	25.7	96.7	5	26.2	97.2	49	27.0	98.0	98	98.0					
1006	26.1	97.2	26.2	97.3	5	27.3	98.4	38	29.0	99.0	118	99.0					
1012	26.7	98.1	26.8	98.0	5	28.2	99.0	44	30.0	99.0		99.0					
1018	27.3	99.0	27.3	98.9	5	28.0	101.0	11	29.0	103.0		98.5					
1100	27.7	99.8	27.7	100.5	5	28.5	102.0		29.5	103.0							
1106	28.0	100.9	28.0	101.0	5	28.5	102.5		29.0	104.0							
MEAN VECTOR ERROR (N.MI.)								36			73						
NUMBER OF CASES								36			34						
												183				287	
												30				26	

Table 5 continued.

HURRICANE BONNIE 14-19 AUGUST 1980

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.)
1418	15.7	37.5	15.5	37.5	12	16.5	40.5	161	17.5	43.5	327	19.0	50.0	709	20.0	56.0	1027
1500	16.7	37.8	16.2	38.5	50	17.5	40.5	108	18.5	42.5	251	20.0	48.0	572	21.0	54.0	899
1506	17.7	37.9	17.8	37.9	6	19.0	38.5	90	20.5	40.0	207	22.0	44.0	426	23.0	48.5	710
1512	18.8	38.1	18.9	38.1	6	21.0	39.0	68	23.0	40.0	124	25.5	41.0	219	28.0	41.0	367
1518	20.4	38.5	20.4	38.6	6	23.2	39.1	31	26.0	40.5	55	30.0	41.0	21	33.0	38.0	216
1600	22.0	38.7	21.9	38.7	6	25.3	38.9	38	28.0	39.0	76	31.0	38.0	129	34.0	35.0	395
1606	23.7	38.9	23.6	38.9	6	27.0	39.0	81	30.0	38.0	164	35.0	34.0	363	38.0	28.0	588
1612	24.8	39.1	24.7	39.0	8	28.2	39.2	81	31.5	39.0	168	35.0	37.0	181	38.0	37.0	507
1618	25.8	39.4	26.2	38.9	36	28.8	38.8	44	31.0	38.0	109	34.5	35.0	267	38.0	29.0	
1700	27.0	39.7	27.7	38.6	72	30.0	38.0	65	32.0	37.0	123	34.5	35.0	379	37.0	31.0	
1706	28.0	40.0	28.1	40.0	6	29.5	41.5	63	32.0	41.0	39	36.0	39.0	362	41.0	35.0	
1712	29.0	40.3	28.7	40.5	21	30.5	40.5	21	32.0	40.5	103	36.0	39.0	612	41.0	35.0	
1718	30.0	40.5	30.0	40.5	0	33.2	40.4	48	36.0	39.0	73	41.0	35.0		45.0	29.0	
1800	31.1	40.5	30.9	40.5	12	33.0	40.3	49	36.0	39.5	183	41.0	36.0		47.0	30.0	
1806	32.4	40.5	32.5	40.3	12	35.0	39.5	72	37.5	38.0	280	42.5	33.5		47.0	28.0	
1812	34.0	40.5	34.0	40.5	0	36.5	41.0	166	38.5	39.5	482	42.5	35.5		47.0	30.5	
1818	35.9	40.5	35.9	40.5	0	38.5	39.5	205	42.5	36.5		49.0	31.5				
1900	39.2	40.2	38.1	40.1	66	44.0	40.0	111	50.0	38.0							
1906	41.9	39.8	42.0	39.8		50.0	38.0		56.0	31.0							
1912	46.5	38.4	50.0	37.0		55.0	30.0										
MEAN VECTOR ERRORS (N.MI.)					18			83			173			353			589
NUMBER OF CASES					18			18			16			12			8

Table 5 continued.

HURRICANE CHARLEY 23-25 AUGUST 1980

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	38.2	66.0	38.0	66.7	35	38.0	65.0	58	38.0	63.0	101	39.0	59.0	534	41.0	53.0	
2318	38.0	64.7	38.0	65.2	24	38.0	64.0	85	38.0	62.0	156	39.0	58.0	716	41.0	52.0	
2400	38.0	63.1	37.8	64.2	53	38.0	62.0	38	38.5	59.5	166	41.0	52.0		45.0	46.0	
2406	37.9	61.7	37.2	61.7	42	38.0	57.5	58	39.0	53.5	141	41.5	46.0		44.0	38.0	
2412	37.9	60.2	37.9	60.2	0	39.0	56.0	76	41.0	51.0	250	45.0	42.0				
2418	37.9	58.2	37.8	58.7	24	38.2	55.0	152	39.0	50.0	344	41.0	39.0				
2500	38.0	55.0	38.0	56.0	47	38.0	50.5	119	38.5	44.0							
2506	38.1	51.3	38.0	52.8	71	38.5	45.0	61	39.5	37.0							
2512	38.2	47.0	38.0	48.0		39.5	37.0		43.0	28.0							
2518	38.5	42.2	38.5	42.5		41.0	31.0										
MEAN VECTOR ERRORS (N.MI.)					37			81			193			625			
NUMBER OF CASES					8			8			6			2			0

TROPICAL STORM DANIELLE 5-6 SEPTEMBER 1980

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.)
0518	29.4	93.4	29.5	93.4	6	30.0	95.5	55	31.0	97.5							
0600	29.4	94.9	29.5	94.6		29.5	97.5										
0606	29.3	96.3	29.2	96.8					28.5	100.0							
MEAN VECTOR ERRORS (N.MI.)					6			55									
NUMBER OF CASES					1			1			0			0			0

Table 5 continued.

HURRICANE EARL 5-10 SEPTEMBER 1980

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.)
0500	17.8	26.7	17.5	27.5	49				17.0	32.5	145						
0506	18.2	28.0	17.2	28.0	60				17.0	34.0	139						
0512	18.8	29.5	18.7	30.5	57				19.0	35.0	142						
0518	19.2	31.0	19.0	32.0	58				20.0	37.0	83						
0600	19.7	32.0	19.5	32.0	12				21.0	38.0	61						
0606	20.3	33.8	20.0	34.0	21				21.5	40.5	118						
0612	21.0	35.5	21.0	35.5	0	21.8	38.1	29	22.5	41.0	166	24.0	46.0	498	28.0	50.0	693
0618	21.5	36.5	21.7	36.5	12	23.0	39.0	26	24.5	41.5	175	28.0	46.0	344	33.0	47.0	532
0700	22.2	37.8	22.3	38.0	13	25.0	40.0	8	27.5	42.5	112	31.0	45.0	229	35.0	46.0	580
0706	23.2	38.8	24.0	39.0	49	26.0	41.0	111	28.5	41.5	174	31.5	44.0	336	32.0	48.0	1002
0712	25.0	39.7	25.0	39.7	0	26.6	40.7	146	29.0	41.5	208	31.5	44.5	396	32.0	49.0	1197
0718	27.0	40.3	27.0	39.8	27	29.5	41.5	60	31.0	42.5	149	32.5	45.0	517	37.0	46.0	
0800	29.0	41.2	28.7	41.2	18	31.5	43.5	12	33.5	45.0	64	37.5	44.5	401	42.0	39.0	
0806	30.4	42.5	31.0	43.0	44	34.0	45.0	21	37.0	46.0	82	41.0	45.0	469	44.0	39.0	
0812	32.0	43.5	32.0	43.7	10	34.0	45.5	65	37.0	46.0	142	43.0	40.0	410	48.0	29.0	
0818	33.3	44.1	33.5	44.2	13	37.0	44.5	42	40.0	43.0	77	45.0	36.0		49.0	26.0	
0900	34.7	44.3	34.8	44.4	8	37.0	44.4	87	40.0	43.0	255	46.0	35.0		50.0	20.0	
0906	36.3	43.8	36.3	44.0	10	39.5	41.5	61	42.5	38.0	180	47.0	28.0		49.0	18.0	
0912	38.0	43.1	38.0	43.8	33	40.5	40.5	154	43.0	36.0	295	45.5	25.0		47.0	12.0	
0918	40.5	41.5	40.3	41.0	26	44.0	33.0	123	48.0	22.0							
1000	43.0	39.0	43.0	38.5	22	48.0	32.0	30	53.0	15.0							
1006	45.2	36.0	45.8	36.1		50.0	28.0		53.0	15.0							
1012	47.5	32.5	47.5	32.5		49.0	24.0		51.0	15.0							
MEAN VECTOR ERRORS (N.MI.)					26			65			146			400			800
NUMBER OF CASES					21			15			19			9			15

Property of
 NOAA Coral Gables Library
 Gables One Tower
 1320 South Dixie Highway, Room 520
 Coral Gables, Florida 33145
 HURRICANE FRANCIS 720 SEPTEMBER 1980

Table continued.

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	13.0	24.0	13.4	23.6	33	13.7	25.0	21	14.0	27.0	55	15.0	31.0	96	17.0	35.0	162
0718	13.0	24.8	13.2	24.5	21	13.8	26.0	46	14.5	28.0	99	16.0	33.0	171	18.5	38.6	320
0800	13.0	25.6	13.1	25.5	8	13.2	27.5	26	13.7	30.0	51	15.0	35.0	156	17.0	41.0	368
0806	13.0	26.8	13.0	27.0	12	13.0	29.0	17	13.0	31.0	19	13.5	36.0	135	14.0	41.0	357
0812	12.9	28.0	13.0	28.0	6	13.0	30.3	30	13.3	32.0	43	14.0	37.5	199	14.5	42.0	404
0818	12.8	29.0	12.7	29.0	6	12.8	31.5	59	12.9	34.0	112	13.5	39.5	296	14.0	45.0	548
0900	12.8	29.8	12.5	30.0	21	12.2	32.0	42	12.3	34.5	95	12.5	40.0	325	13.0	46.0	605
0906	12.9	30.5	12.7	30.5	12	12.7	32.5	30	12.7	34.5	80	13.0	38.5	264	13.5	43.0	411
0912	13.0	31.3	13.0	31.5	12	13.3	33.6	30	13.5	35.5	82	14.5	39.5	255	15.5	43.5	345
0918	13.2	32.1	13.3	32.3	13	13.8	33.8	8	14.7	36.0	72	16.0	40.0	228	19.0	44.0	303
1000	13.4	32.9	13.6	32.6	21	13.7	34.1	46	14.1	35.5	104	15.5	40.0	262	18.0	43.0	216
1006	13.8	33.5	13.8	33.9	23	14.3	35.6	50	14.7	37.3	135	15.5	40.5	211	16.0	44.0	240
1012	14.2	34.1	14.2	34.0	6	14.8	35.1	40	15.8	37.5	136	17.0	40.2	151	17.5	43.5	124
1018	14.9	34.6	15.0	34.8	13	16.2	36.2	58	17.2	37.8	102	18.2	40.0	75	19.0	42.5	67
1100	15.4	34.9	15.4	35.0	6	16.0	36.2	50	16.5	37.2	65	17.5	40.0	68	18.5	44.0	90
1106	16.0	35.0	15.6	35.0	24	16.6	35.7	27	17.5	36.5	48	19.5	38.5	136	21.5	40.5	320
1112	16.3	35.3	16.4	35.4	8	17.5	36.5	30	18.5	37.5	43	20.0	40.0	133	21.5	42.5	254
1118	16.6	35.9	16.5	35.9	6	17.0	37.0	8	17.2	38.0	67	18.0	41.0	154	19.0	45.0	226
1200	17.0	36.1	16.9	36.2	8	17.3	37.0	57	18.0	38.0	101	19.0	41.0	219	20.0	45.0	261
1206	17.2	36.9	17.5	37.0	19	17.8	37.7	70	18.6	38.6	123	19.5	40.6	310	21.0	43.0	403
1212	17.8	37.8	17.8	37.8	0	18.6	39.0	34	19.5	40.5	92	21.0	43.0	219	23.0	47.0	200
1218	18.3	38.5	18.4	38.7	13	19.5	40.5	40	20.5	42.5	91	22.0	47.5	43	23.0	53.0	205
1300	18.6	39.6	18.6	39.5	6	19.3	41.2	46	20.0	43.0	91	21.5	47.0	112	23.0	52.0	273
1306	18.8	40.6	18.6	40.7	13	19.0	43.0	29	19.0	45.0	83	20.0	50.0	187	21.0	55.0	513
1312	18.9	42.0	18.8	42.0	6	19.3	44.8	25	22.0	49.0	141	21.0	54.0	297	22.0	59.0	686
1318	19.3	43.4	19.4	43.3	8	20.0	46.5	43	20.5	50.0	138	22.0	55.0	332	24.0	59.0	706
1400	19.8	44.7	19.9	44.7	6	20.8	47.8	51	21.8	51.0	131	23.5	56.0	370	27.0	60.0	722
1406	20.2	45.9	20.1	45.5	23	20.8	48.0	48	21.8	51.0	130	23.5	56.0	441	27.0	60.0	795
1412	20.8	46.9	20.6	46.8	13	21.5	49.0	51	22.5	51.5	138	25.0	55.0	404	28.0	58.0	715
1418	21.6	48.0	21.5	48.0	6	23.0	51.0	78	25.0	53.0	127	28.0	58.0	509	31.0	59.0	712
1500	22.5	48.8	22.5	49.0	11	24.0	50.5	36	25.5	52.5	140	28.0	54.0	424	30.0	55.0	604
1506	23.3	49.6	23.4	49.6	6	25.0	51.0	55	26.5	52.5	176	30.0	54.5	442	34.0	54.5	483
1512	24.6	50.2	24.5	50.3	8	27.0	51.0	19	30.0	51.5	73	35.0	50.0	174	39.0	42.0	201
1518	25.8	50.8	25.8	50.8	0	28.5	51.3	41	31.0	51.3	118	35.0	50.0	205	38.5	43.0	186
1600	27.4	50.8	27.4	50.6	11	30.5	50.3	32	33.0	49.5	86	36.5	46.0	23	39.0	40.0	314

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.)
1606	28.8	50.6	28.8	50.5	5	32.8	50.0	75	34.0	49.0	95	37.5	44.5	60	39.5	38.5	370
1612	30.2	50.0	30.3	49.8	12	33.0	49.0	61	35.0	47.0	41	37.5	43.0	171	39.0	39.0	381
1618	31.8	49.2	31.6	49.0	16	34.5	47.5	54	36.5	45.0	69	39.0	40.0	296	41.0	35.0	405
1700	33.0	48.0	32.9	48.1	8	34.5	45.0	74	36.0	42.0	192	38.5	37.0	465	41.0	30.0	557
1706	33.9	47.2	33.8	47.0	12	35.3	44.0	85	36.7	41.3	214	38.5	36.5	474	40.0	32.0	509
1712	34.7	46.4	34.7	46.4	0	36.0	45.6	43	37.5	45.0	106	39.0	45.0	276	42.0	42.0	520
1718	35.7	45.9	35.6	45.8	8	37.5	45.5	15	39.0	45.0	84	41.0	45.0	221	43.0	41.0	611
1800	36.7	45.8	36.7	45.7	5	38.0	45.5	66	39.5	45.5	108	41.0	45.0	334	42.0	44.0	
1806	37.8	45.8	37.3	45.5	33	39.0	45.5	44	40.0	45.3	114	41.5	44.5	391	42.5	42.5	
1812	39.0	46.2	38.9	46.3	8	41.0	46.5	6	44.0	45.5	37	48.0	39.0	156	55.0	27.0	
1818	40.0	46.5	40.1	46.6	8	42.3	46.5	25	44.5	45.5	94	48.5	41.5	400	54.0	32.0	
1900	41.2	46.4	41.2	46.5	5	43.5	46.5	66	46.0	46.0	206	50.0	42.0		54.0	30.0	
1906	42.4	45.8	41.8	46.0	37	43.5	45.0	73	45.0	43.0	180	48.0	35.0		50.0	25.0	
1912	43.6	44.9	43.5	45.0	7	45.5	42.5	55	47.0	39.0	194	49.0	31.0		51.0	20.0	
1918	44.5	43.2	44.5	43.3	4	46.0	39.0	60	48.0	34.0	206	54.0	24.0				
2000	45.7	41.0	45.4	41.5	29	47.0	37.0	132	50.0	32.0							
2006	47.0	39.0	46.5	39.5	36	48.0	35.0	189	51.0	30.0							
2012	49.4	35.5	49.5	35.5		55.0	31.0										
2018	51.2	32.0	51.3	32.0		56.5	26.5										
MEAN POSITION ERRORS (N.MI.)					12			48			106			245			397
NUMBER OF CASES					52			52			50			46			42

HURRICANE GEORGES 7-8 SEPTEMBER 1980

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.)
0700	34.4	67.9	34.4	68.5	30				40.0	63.0	157						
0706	35.9	65.9	36.0	66.0	8				41.0	57.0	144						
0712	37.3	63.7	37.3	63.7	0				40.0	52.0	338						
0718	38.6	61.5	38.2	61.5	24	42.0	55.0	30	46.0	49.0	129	54.0	35.0				
0800	40.2	59.0	40.5	59.5	29	45.0	51.0	60	50.0	42.0							
0806	42.9	55.1	42.5	55.0	24	46.5	47.0	67	51.0	39.0							
0812	45.6	51.1	45.5	51.0		49.0	42.0		53.0	32.0							
0818	48.0	46.9	47.4	46.5													
MEAN POSITION ERRORS (N.MI.)					19			52			192						
NUMBER OF CASES					6			3			4			0			

Table 5 continued.

TROPICAL STORM HERMINE 21-25 SEPTEMBER 1980

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.	(N.MI.)	LAT.	LONG.	(N.MI.)	LAT.	LONG.	(N.MI.)	LAT.	LONG.	(N.MI.)	LAT.	LONG.	(N.MI.)
2106	15.1	81.6	15.0	80.5	64				17.0	86.0	23						
2112	15.3	83.0	15.5	84.0	59	16.5	85.5	59	17.0	87.0	119	19.5	91.5	119	21.0	95.0	145
2118	15.8	84.2	16.2	85.0	52	16.5	86.5	83	17.2	88.0	137	19.0	92.0	121	20.0	96.0	90
2200	16.5	85.5	16.3	86.2	42	17.0	88.6	37	17.7	91.0	54	18.6	95.0	37			
2206	17.1	86.7	17.0	86.7	6	18.7	88.7	27	20.0	90.5	75	22.0	94.0	199	25.0	96.0	468
2212	17.8	87.8	17.7	87.7	8	19.3	89.6	46	20.7	92.0	94	22.5	94.5	246	24.5	95.0	459
2218	18.4	88.9	18.5	89.0	8	19.8	91.2	38	21.0	93.0	98	23.5	95.0	318	25.5	95.5	
2300	18.8	90.2	19.0	90.3	13	19.5	92.5	11	20.5	94.5	74	23.5	96.5	340	26.0	97.5	
2306	19.1	91.3	19.1	91.2	6	20.0	93.0	42	21.5	95.0	167	25.0	97.0	468	29.0	97.0	
2312	19.3	92.6	19.1	92.6	12	19.8	95.0	83	21.0	97.0	204	25.0	99.0	520			
2318	19.3	93.2	19.3	93.5	17	20.0	96.8	139	21.0	98.0	228						
2400	19.2	93.8	19.0	94.0	17	18.7	94.5	37	18.6	95.3	70						
2406	18.8	94.4	18.5	94.5	19	18.4	95.5	40	18.2	96.5	80						
2412	18.5	94.8	18.3	94.8	12	18.0	95.5	30	18.0	96.0	72						
2418	18.1	95.1	18.5	94.7	33	18.2	95.0	38									
2500	17.7	95.5	18.3	95.1	43	18.2	95.1	46									
2506	17.3	95.8															
2512	17.0	96.0															
MEAN VECTOR OF ERRORS (N.MI.)					26			50			107			263			291
NUMBER OF CASES					16			15			14			9			4

HURRICANE IVAN 5-11 OCTOBER 1980

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.)
0512	32.4	28.3	32.4	28.3	0	30.0	31.0	27	29.0	34.0	147	30.0	38.0	330	32.0	41.0	189
0518	31.3	29.6	31.3	29.6	0	29.5	32.0	53	29.0	35.0	213	31.0	39.0	334	33.0	42.0	177
0600	30.1	30.5	30.0	30.6	8	28.0	33.0	87	28.5	36.0	277	29.0	40.0	292	30.0	45.0	246
0606	29.1	31.1	29.1	31.2	5	27.7	32.3	63	27.5	33.5	160	27.5	35.5	191	27.5	37.5	344
0612	28.4	31.3	28.5	31.5	12	27.5	31.5	48	27.5	31.5	128	27.5	31.5	395	30.0	32.0	514
0618	28.1	31.1	28.0	31.0	8	28.0	31.0	36	28.0	31.0	132	28.0	31.0	459	30.0	30.0	607
0700	28.0	30.7	28.0	30.9	11	28.0	31.0	102	28.0	31.0	224	28.0	31.0	551	30.0	31.0	581
0706	28.5	30.6	28.5	30.7	5	29.0	30.5	130	29.0	30.5	317	29.0	30.5	582	29.0	30.5	649
0712	29.5	31.7	29.3	31.5	16	31.0	32.0	95	32.0	35.0	125	34.0	39.0	112	38.0	40.0	57
0718	29.8	32.7	29.9	32.6	8	30.5	34.5	84	31.5	37.0	97	33.5	41.5	31	37.0	44.0	336
0800	30.0	34.4	30.0	34.3	5	30.5	36.5	63	31.0	39.0	83	32.0	44.0	243	35.0	48.0	702
0806	30.6	36.2	30.6	36.2	0	31.0	38.5	40	31.5	41.0	48	32.5	45.0	333	36.0	48.5	828
0812	31.3	37.4	31.2	37.2	12	32.4	40.0	50	34.0	42.5	97	37.5	45.5	314	42.0	47.0	729
0818	31.5	39.0	31.5	39.4	20	32.2	43.0	81	34.0	46.0	219	39.0	49.0	498	44.0	46.0	815
0900	31.7	40.5	31.6	40.4	8	32.0	43.5	143	33.0	47.0	336	37.0	51.0	753			
0906	32.3	41.0	32.2	41.0	6	33.0	42.5	78	34.0	44.0	233	36.5	46.0	716			
0912	33.2	41.1	32.9	41.0	19	34.8	41.2	32	36.0	40.5	115	39.0	39.0	560			
0918	33.8	41.2	33.7	41.1	8	36.0	41.0	54	38.0	40.0	141	41.0	37.0	655			
1000	34.9	40.7	35.0	41.3	30	37.3	39.7	36	39.5	38.0	167						
1006	36.2	40.0	36.3	40.0	6	38.5	38.5	83	41.0	35.5	219						
1012	37.8	39.1	37.6	39.3	15	41.0	36.0	50	44.0	32.0	157						
1018	39.7	37.9	39.6	37.9	6	44.0	34.0	19	48.0	29.0	113						
1100	42.0	36.1	41.9	36.1	6	46.0	31.5	42									
1106	44.4	34.1	44.5	34.0	7	50.0	28.0	26									
1112	46.8	31.5	46.8	31.5		54.0	24.0										
1118	49.7	27.5	49.7	27.5		58.0	19.0										
MEAN VECTOR ERRORS (N.MI.)					9			63			170			08			484
NUMBER OF CASES					24			24			22			18			14

Table 5 continued.

HURRICANE JEANNE 9-14 NOVEMBER 1980

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.)
0912	20.8	85.1	21.5	84.8	45	23.0	85.0	42	24.5	84.0	102	27.0	80.0	385	28.0	79.0	562
0918	21.3	85.2	21.2	85.2	6	22.5	85.3	36	23.5	85.0	45	24.5	84.5	151	25.0	84.0	327
1000	21.6	85.3	21.7	85.8	29	23.0	87.0	60	24.0	88.0	78	25.0	89.5	100	26.5	90.0	150
1006	22.0	85.4	21.7	85.7	25	23.0	86.5	28	24.0	88.0	67	25.0	90.0	114	25.5	91.5	58
1012	22.5	85.5	22.6	85.5	6	23.2	85.6	45	24.0	86.0	56	25.0	87.0	128	26.0	88.0	260
1018	23.2	85.7	23.1	86.1	23	24.0	86.5	22	25.0	87.0	68	26.0	88.0	183	27.0	89.0	304
1100	23.7	86.1	23.7	86.1	0	24.5	86.7	29	25.5	87.0	87	28.0	88.0	270	31.0	86.5	557
1106	24.1	86.5	24.0	87.0	28	25.0	87.5	61	26.0	88.0	139	28.0	89.5	237	31.0	90.0	447
1112	24.1	87.0	24.4	86.8	21	25.5	87.8	74	26.6	88.4	152	28.5	89.5	227	31.0	89.0	432
1118	24.1	87.2	24.1	87.3	5	24.2	87.8	38	24.5	88.0	112	25.0	89.0	279	25.0	90.0	272
1200	24.1	87.4	24.0	87.3	8	24.0	87.7	68	24.0	88.0	121	24.5	89.0	325	25.0	90.0	
1206	23.9	88.3	23.9	88.5	11	24.0	90.0	12	24.0	91.0	70	24.0	93.0	162	24.0	95.0	
1212	23.8	89.0	23.7	89.4	23	24.0	90.0	39	24.0	91.0	150	24.0	92.0	221	24.0	92.0	
1218	23.8	89.8	24.0	89.5	20	24.0	90.7	74	24.5	92.0	121	26.0	93.0	82	28.0	90.0	
1300	24.0	90.3	24.0	90.1	11	24.1	91.2	118	24.7	92.3	144	26.5	93.0		28.5	90.0	
1306	24.9	91.6	25.0	91.0	33	26.5	92.0	89	28.0	92.5	178	31.0	92.0		34.0	87.0	
1312	25.6	92.8	25.6	93.0	11	27.0	95.0	91	29.0	93.0	231	33.0	85.0				
1318	25.6	94.0	25.7	94.2	12	25.8	96.0	33	28.5	95.0	144	32.0	86.0				
1400	25.5	95.0	25.5	94.9	5	26.3	96.0	57	27.3	96.2		32.0	86.0				
1406	25.6	95.2	25.5	95.2	6	26.0	96.0	65	27.0	97.0		31.0	94.0				
1412	25.8	95.2	25.7	95.2		27.0	95.0		29.0	92.0							
1418	26.0	94.8	25.8	94.8		25.8	94.0		25.0	93.0							
MEAN VECTOR ERRORS (N.MI.)					16			54			115			205			337
NUMBER OF CASES					20			20			18			14			

Table 5 continued.

HURRICANE KARL 25-27 NOVEMBER 1980

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.)
2518	37.7	44.7	37.6	44.6	8	39.0	44.5	127	41.0	44.0	293						
2600	37.4	44.8	37.5	44.7	8	37.5	44.5	107	38.0	44.5	298						
2606	37.0	44.2	37.0	44.2	0	38.0	43.0	131	40.0	42.0	263						
2612	36.8	42.5	36.7	43.3	39	38.0	39.0	19	43.0	37.0	172						
2618	37.1	40.5	37.0	40.5	6	39.0	36.0	26	43.0	32.0	68						
2700	37.8	38.3	37.6	38.3	12	40.5	33.0	89									
2706	38.9	36.5	38.7	36.7	15	41.5	32.5	51									
2712	40.4	34.9	40.0	34.8													
2718	42.3	33.1	42.2	32.7													
MEAN VECTOR ERRORS (N.MI.)					12			78			219						
NUMBER OF CASES					7			7			5			0			0

1980 SUMMARY FOR OFFICIAL	POS.ERR	12HR	24HR	8HR	72HR
AVERAGE ERROR FOR ALL STORMS (N.MI.)	16	55	126	274	405
NUMBER OF CASES	209	199	188	140	109

LEGEND FOR TABLE 6

Key to fix characteristics

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 $\frac{1}{2}$ 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

RECONNAISSANCE:

Navigational Accuracy/Meteorological Accuracy.

RADAR:

BRO = Brownsville, Texas

CRP = Corpus Christi, Texas

MKPB = Barbados, W. I. (Caribbean Meteorological Institute)

MKJP = Kingston, Jamaica

HURRICANE ALLEN
31 July - 10 August 1980

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND (KT)		MIN. ACFT. ALT.	MIN. PRESS. (MB)	MIN. 700MB HT. (M)	TEMP. °(C)		EYE		REMARKS
			LAT. °N	LON. °W			FLT. LVL.	SFC.				IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.M.)	
1	31	1900	10.0	32.0	SMS-2	1,5, VSBL 1		25								
2	01	0000	8.4	35.7	SMS-2	1,5, IR 8		25								
3	01	0600	8.7	37.7	SMS-2	1,5, IR 8		25								
4	01	1200	10.7	38.6	SMS-2	1,5, IR 8		25								
5	01	1930	10.7	40.6	SMS-2	2,5, VSBL 1		30								
6	02	0030	11.2	44.1	SMS-2	2,5, IR 8		32								
7	02	0600	11.6	45.5	SMS-2	2,5, IR 8		35								
8	02	1230	11.9	46.9	SMS-2	1,4, VSBL 1		55								
9	02	1830	12.4	49.1	SMS-2	1,3, VSBL 1		60								
10	03	0000	12.2	51.4	SMS-2	1,3, IR 8		65								
11	03	0630	12.1	52.9	SMS-2	2,3, IR 8		71								
12	03	1130	13.0	55.7	SMS-2	3, VSBL 1										
13	03	1230	12.8	55.7	SMS-2	2,3, VSBL 1		71								
14	03	1400	12.8	56.3	SMS-2	3, VSBL 1										
15	03	1500	12.8	56.6	SMS-2	3, VSBL 1										
16	03	1600	12.9	56.9	SMS-2	1, VSBL 1										
17	03	1700	13.0	57.2	SMS-2	1, VSBL 1										
18	03	1742	12.9	57.4	AF	2/3	71	95	700MB	972	2860	14	10	C	10	CLOSED WALL.
19	03	1800	12.9	57.5	RADAR	MKPB										
20	03	1830	13.1	57.6	SMS-2	2,1, VSBL 1		77								
21	03	1830	13.0	57.6	RADAR	MKPB										
22	03	1900	13.0	57.7	RADAR	MKPB										
23	03	1928	13.0	58.0	AF		85	110			2807					
24	03	1930	13.1	57.8	SMS-2	1, VSBL 1										
25	03	1930	12.9	58.0	RADAR	MKPB										
26	03	2000	12.9	58.1	RADAR	MKPB										
27	03	2030	12.9	58.2	RADAR	MKPB										
28	03	2058	13.1	58.3	AF	2/2	87	110	700MB	966	2810	14	10	C	8	CLOSED WALL.
29	03	2100	13.1	58.2	SMS-2	2,1, VSBL 1		90								
30	03	2100	13.0	58.3	RADAR	MKPB										

Table 6 continued.

Hurricane Allen continued.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX.WIND(KT)		MIN. ACFT. ALT.	MIN. PRESS. (MB)	MIN. HT. (M)	TEMP. °(C)		EYE		REMARKS	
			LAT. °N	LON. °W			FLT. LVL.	SFC.				IN.	OUT.	C=CIR. E=ELIP. (N.M.)	DIA.		
31	03	2130	13.1	58.4	RADAR	MKPB											
32	03	2200	13.1	58.5	RADAR	MKPB											
33	03	2230	13.2	58.6	SMS-2	1, IR 8											
34	03	2230	13.2	58.7	RADAR	MKPB											
35	03	2300	13.2	58.8	RADAR	MKPB											
36	03	2301	13.3	58.8	AF	2/2			700MB	951		17	11	C	6	CLOSED WALL	
37	03	2330	13.3	58.9	RADAR	MKPB											
38	04	0000	13.2	59.0	SMS-2	1,1, IR 8											
39	04	0000	13.3	59.1	RADAR	MKPB											
40	04	0030	13.4	59.3	RADAR	MKPB											
41	04	0100	13.5	59.5	RADAR	MKPB											
42	04	0130	13.4	59.5	SMS-2	1, IR 8											
43	04	0130	13.5	59.7	RADAR	MKPB											
44	04	0300	13.4	60.1	SMS-2	1,1, IR 8		102									
45	04	0430	13.4	60.5	SMS-2	1, IR 8											
46	04	0600	13.6	61.0	SMS-2	2,1, IR 8		102									
47	04	0730	13.8	61.6	SMS-2	1, IR 8											
48	04	0930	13.9	62.3	SMS-2	1,1, IR 8		102									
49	04	1130	14.0	62.8	SMS-2	1, VSBL 1											
50	04	1200	14.1	63.1	SMS-2	2,1, VSBL 1		115									
51	04	1225	14.0	63.4	AF	5/3	71	140	700MB	946	2628	15	9	E 10/18/09		POORLY DEFINED.	
52	04	1300	14.2	63.4	SMS-2	1, VSBL 1											
53	04	1400	14.2	63.7	SMS-2	1, VSBL 1											
54	04	1423	14.1	63.8	AF	3/3	80	140	700MB	944	2610	15	12	E 09/10/07		GOOD RADAR. POOR VISUAL.	
55	04	1500	14.3	64.0	SMS-2	1, VSBL 1											
56	04	1600	14.3	64.4	SMS-2	1, VSBL 1											
57	04	1700	14.4	64.7	SMS-2	1, VSBL 1											
58	04	1701	14.3	64.6	AF	3/5	107	130	700MB	935	2526	15	12	C	10	GOOD RADAR. POOR VISUAL.	
59	04	1830	14.5	65.1	SMS-2	2,1, VSBL 1		120									
60	04	2000	14.6	65.5	SMS-2	1, VSBL 1											
61	04	2033	14.6	65.6	AF	5/2	100	100	700MB	924	2425	15		C	8	CLOSED WALL.	
62	04	2230	14.7	66.2	AF						2355						
63	05	0000	14.8	66.6	SMS-2	2,1, IR 8		127									
64	05	0013	14.9	66.7	AF	5/2	110		700MB	911	2315	20	12	C	7	CLOSED WALL.	
65	05	0200	14.9	67.3	SMS-2	1, IR 8											
66	05	0203	15.0	67.3	AF	5/2	120		700MB	912	2329	19	13	C	7	CLOSED WALL.	

Table 6 continued.

Hurricane Allen continued.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND (KT)		MIN. ACFT. ALT.	MIN. PRESS. (MB)	MIN. 700MB HT. (M)	TEMP. °(C)		EYE		REMARKS		
			LAT. °N	LONG. °W			FLT. LVL.	SFC.				IN.	OUT.	C-CIR. DIA.	E-ELIP. (N.M.)			
67	05	0400	15.1	67.9	SMS-2	1, IR 8												
68	05	0418	15.3	68.2	AF						2368							
69	05	0600	15.4	68.6	SMS-2	2,1, IR 8		127										
70	05	0611	15.5	68.7	AF	3/3	85		700MB	916	2362	20	16	C	6		CLOSED WALL.	
71	05	0817	15.6	69.2	AF	3/3	119		700MB	916	2363	20	15	C	6		CLOSED WALL.	
72	05	1130	16.1	70.3	SMS-2	1, VSBL 1												
73	05	1143	15.9	70.4	NOAA	2/2	145		850MB	932		23	19	C	7/40		CLOSED WALL.	
74	05	1200	16.0	70.4	SMS-2	2,1, VSBL 1		127										
75	05	1300	16.1	70.7	SMS-2	1, VSBL 1												
76	05	1400	16.2	70.9	SMS-2	1, VSBL 1												
77	05	1500	16.3	71.3	SMS-2	1, VSBL 1												
78	05	1506	16.2	71.5	NOAA	2/2	155		850MB	937		24	17	C	40		CLOSED WALL.	
79	05	1600	16.4	71.6	SMS-2	1, VSBL 1												
80	05	1700	16.5	72.0	SMS-2	1, VSBL 1												
81	05	1728	16.5	72.2	NOAA	2/2	148		850MB	937	2567	22	18	C	15/40		CLOSED WALL.	
82	05	1800	16.6	72.3	SMS-2	2,1, VSBL 1		127										
83	05	1930	16.8	72.7	SMS-2	1, VSBL 1												
84	05	2030	17.0	72.8	AF	5/5	105	130	700MB	938	2541	18	10	C	40		CLOSED WALL.	
85	05	2100	17.1	73.1	SMS-2	2,1, VSBL 1		127										
86	05	2130	17.2	73.2	SMS-2	1, VSBL 1												
87	05	2135	16.5	73.3	RADAR	MKJP											20° SPIRAL OVERLAY. POOR FIX.	
88	05	2223	17.4	73.4	AF		75	120										
89	05	2300	17.5	73.7	SMS-2	1, IR 8												
90	05	2301	17.6	73.6	AF	5/5	140		700MB	956	2707			C	30		CLOSED WALL.	
91	05	2330	17.6	73.8	SMS-2	1, IR 8												
92	06	0000	17.6	74.0	SMS-2	2,1, IR 8		127										
93	06	0100	17.8	74.3	SMS-2	1, IR 8												
94	06	0200	17.8	74.7	SMS-2	3, IR 8												
95	06	0300	17.9	74.9	SMS-2	2,1, IR 8		127										
96	06	0330	18.1	74.7	AF	2/5			700MB					C	20		CLOSED WALL. RADAR FIX.	
97	06	0400	18.1	75.4	AF	5/3	95		700MB	950	2662	9	18	E	17/20/10		CLOSED WALL.	
98	06	0600	18.4	76.0	AF	3/3	91		700MB	951	2663	14	10	E	36/30/20		CLOSED WALL.	
99	06	0600	18.3	75.9	SMS-2	2,1, IR 8		115										
100	06	0800	18.6	76.3	RADAR	MUGM											POOR FIX.	
101	06	0900	18.7	77.1	AF	3/3	110		700MB	956	2710	13	08	C	20		CLOSED WALL.	
102	06	0900	18.7	77.1	SMS-2	2,3, IR 8		115										
103	06	0935	18.9	77.2	RADAR	MKJP											29	CLOSED WALL.

Table 6 continued.

Hurricane Allen continued.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND(KT)		ACFT. ALT.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °(C)		EYE		REMARKS
			LAT. °N	LON. °W			FLT. LVL	SFC				IN.	OUT.	C=CIR. E=ELIP. (N.M.)	DIA.	
141	07	1742	21.6	86.2	NOAA	1/1	165	170		899	2233	24	12			CLOSED WALL.
142	07	1830	21.7	86.4	SMS-2	2,1,VSBL 1		163								
143	07	1930	21.9	86.7	SMS-2	1,VSBL 1										
144	07	2030	22.0	86.9	SMS-2	1,VSBL 1										
145	07	2032	21.9	86.8	NOAA		138		700MB	904	2261	22	12	C	14	CLOSED WALL.
146	07	2130	22.1	87.2	SMS-2	2,1,VSBL 1		163								
147	07	2315	22.2	87.6	AF	3/5	85		700MB	921	2368	16	11	C	10	CLOSED WALL.
148	07	2330	22.1	87.7	SMS-2	1, IR 8										
149	08	0000	22.2	87.9	SMS-2	2,1, IR 8		163								
150	08	0100	22.2	88.2	SMS-2	1, IR 8										
151	08	0120	22.2	88.2	AF	3/3	105		700MB		2455	14	11	C	10	CLOSED WALL.
152	08	0200	22.1	88.3	SMS-2	1, IR 8										
153	08	0245	22.1	88.5	AF	5/5	73		700MB		2536	13	13	C	10	CLOSED WALL.
154	08	0300	22.3	88.6	SMS-2	2,1, IR 8		140								
155	08	0510	22.5	88.9	AF	0/5	67		700MB	945	2590	13	11	C	10	CLOSED WALL.
156	08	0600	22.5	89.0	SMS-2	2,3, IR 8		133								
157	08	0712	22.8	89.3	AF		82			946						
158	08	0900	23.0	89.9	SMS-2	2,1, IR 8		133								
159	08	0909	23.1	89.8	AF	0/5	111		700MB	950	2642	14	11	C	10	CLOSED WALL.
160	08	1000	23.2	90.1	SMS-2	1, IR 8										
161	08	1031	23.2	90.1	AF		82			950	2654	14				
162	08	1100	23.2	90.3	SMS-2	1, IR 8										
163	08	1144	23.3	90.4	AF	2/2	80		700MB	961	2728	15		C	10-30	OPEN SOUTHWEST.
164	08	1200	23.4	90.5	SMS-2	1,VSBL 1										
165	08	1230	23.5	90.6	SMS-2	2,1,VSBL 1		133								
166	08	1400	23.7	90.9	SMS-2	1,VSBL 1										
167	08	1449	23.6	91.0	AF	2/2	71	70	700MB	959	2721	15	13	C	20	OPEN SOUTHWEST.
168	08	1530	23.8	91.2	SMS-2	1,1,VSBL 1		121								
169	08	1630	23.9	91.4	SMS-2	1,VSBL 1										
170	08	1725	23.9	91.7	AF	2/2	110	120	700MB	949	2657	16	12	C	18	CLOSED WALL.
171	08	1830	24.1	92.0	SMS-2	1,1,VSBL 1		127								
172	08	2000	24.2	92.4	SMS-2	1,VSBL 1										
173	08	2036	24.2	92.4	NOAA	2/2	120		800MB	927		24	19	C	12	CLOSED WALL.
174	08	2100	24.2	92.5	SMS-2	1,1,VSBL 1		155								
175	08	2230	24.2	92.7	SMS-2	1,VSBL 1										
176	08	2319	24.3	92.8	NOAA	2/2	145		800MB	913		26	18	C	10	CLOSED WALL.

Table 6 continued.

Hurricane Allen continued.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND (KT)		ACFT. ALT.	MIN. MIN. PRES. 700MB		TEMP. °(C)		EYE		REMARKS	
			LAT. °N	LON. °W			FLT. LVL.	SFC.		(MB)	HT. (M)	IN.	OUT.	C=CIR.	DIA. E=ELIP. (N.M.)		
177	09	0000	24.3	93.0	SMS-2	1,1, IR 8		155									
178	09	0100	24.4	93.1	SMS-2	1, IR 8											
179	09	0200	24.6	93.3	AF	2/1	107		700MB	914	2331	19	15	C	12		CLOSED WALL.
180	09	0200	24.4	93.3	SMS-2	1, IR 8											
181	09	0210	24.6	93.3	RADAR	BRO									15		POOR FIX. POSSIBLE EYE.
182	09	0230	24.6	93.4	RADAR	BRO									12		POOR FIX. POSSIBLE EYE.
183	09	0300	24.7	93.6	AF	2/1			700MB	911	2331	23		C	12		
184	09	0300	24.6	93.6	SMS-2	2,1, IR 8		155									
185	09	0305	24.7	93.5	RADAR	BRO									10		POOR FIX. POSSIBLE EYE.
186	09	0330	24.6	93.7	RADAR	BRO									11		POOR FIX. POSSIBLE EYE.
187	09	0400	24.6	93.9	SMS-2	1, IR 8											
188	09	0405	24.6	93.8	RADAR	BRO									11		FAIR FIX.
189	09	0434	24.7	93.9	RADAR	BRO									10		FAIR FIX. POSSIBLE EYE.
190	09	0500	24.9	94.0	AF		96				2306	24					
191	09	0500	24.8	94.0	SMS-2	1, IR 8											
192	09	0510	24.8	94.0	RADAR	BRO									10		GOOD FIX.
193	09	0532	24.8	94.1	RADAR	BRO									9		15° SPIRAL OVERLAY. GOOD FIX.
194	09	0558	25.0	94.2	AF	2/1	103		700MB	909	2306	24	14	C	7		CLOSED WALL.
195	09	0600	24.9	94.2	SMS-2	2,1, IR 8		155									
196	09	0600	24.9	94.2	RADAR	BRO									10		20° SPIRAL OVERLAY. GOOD FIX.
197	09	0635	24.9	94.3	RADAR	BRO									9		20° SPIRAL OVERLAY. GOOD FIX.
198	09	0700	25.0	94.5	SMS-2	1, IR 8											
199	09	0703	25.0	94.4	RADAR	BRO									8		20° SPIRAL OVERLAY. GOOD FIX.
200	09	0735	25.0	94.6	RADAR	BRO									7		20° SPIRAL OVERLAY. GOOD FIX.
201	09	0800	25.1	94.7	SMS-2	1, IR 8											
202	09	0806	25.1	94.6	RADAR	BRO									6		15° SPIRAL OVERLAY. GOOD FIX.
203	09	0835	25.1	94.8	RADAR	BRO									6		15° SPIRAL OVERLAY. GOOD FIX.
204	09	0900	25.2	94.9	SMS-2	2,1, IR 8		155									
205	09	0906	25.2	94.9	AF	2/3	93		700MB	916	2356	20	13	E	36/10/08		CLOSED WALL.
206	09	0906	25.1	94.8	RADAR	BRO									7		GOOD FIX.
207	09	0935	25.0	95.0	RADAR	BRO									8		GOOD FIX.
208	09	0951	25.3	95.0	AF		104			915	2348	19					
209	09	1000	25.1	95.1	SMS-2	1, IR 8											
210	09	1010	25.1	95.1	RADAR	BRO									8		GOOD FIX. CLOSED WALL.
211	09	1027	25.3	95.0	AF		103			915	2516						
212	09	1030	25.0	95.2	RADAR	BRO									7		GOOD FIX.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND (KT)		ACFT. ALT.	MIN. MIN. PRES. 700MB		TEMP. °(C)		EYE		REMARKS	
			LAT. °N	LON. °W			FLT. LVL.	SFC.		(MB)	HT. (M)	IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.M.)		
213	09	1100	25.0	95.2	SMS-2	1, IR 8											
214	09	1110	25.2	95.2	AF	3/3											
215	09	1110	25.1	95.3	RADAR	BRO	92		700MB	916	2353	19	14	E 36/10/7			CLOSED WALL.
216	09	1130	25.1	95.3	RADAR	BRO								9			GOOD FIX.
217	09	1130	25.1	95.3	RADAR	CRP								7			GOOD FIX.
218	09	1200	25.1	95.3	SMS-2	1, IR 8								15			GOOD FIX.
219	09	1210	25.1	95.4	RADAR	BRO								8			GOOD FIX.
220	09	1216	25.2	95.4	AF		92			917	2365						
221	09	1230	25.2	95.5	SMS-2	2,3,VSBL 1		140									
222	09	1230	25.1	95.5	RADAR	BRO								8			GOOD FIX.
223	09	1233	25.2	95.5	RADAR	CRP								15			GOOD FIX.
224	09	1303	25.1	95.6	RADAR	CRP								15			GOOD FIX.
225	09	1310	25.2	95.5	RADAR	BRO								8			GOOD FIX.
226	09	1814	25.2	95.5	AF		98				2368						
227	09	1330	25.3	95.6	SMS-2	1,VSBL 1											
228	09	1334	25.1	95.6	RADAR	CRP								13			
229	09	1345	25.2	95.6	RADAR	BRO								6			D45 WALL. GOOD FIX.
230	09	1400	25.1	95.6	RADAR	CRP								16			
231	09	1410	25.2	95.6	RADAR	BRO								7			GOOD FIX.
232	09	1411	25.3	95.6	AF		91				2386						
233	09	1430	25.3	95.7	SMS-2	1,VSBL 1											
234	09	1430	25.2	95.7	RADAR	BRO								9			GOOD FIX. WALL D17.
235	09	1432	25.2	95.7	RADAR	CRP								10			GOOD FIX.
236	09	1501	25.2	95.8	AF	3/1	93		700MB	920	2405	21	13	E 36/12/9			CLOSED WALL.
237	09	1506	25.2	95.6	RADAR	CRP								8			GOOD FIX.
238	09	1510	25.3	95.7	RADAR	BRO								8			GOOD FIX.
239	09	1530	25.3	95.8	SMS-2	2,1,VSBL 1		140									
240	09	1530	25.3	95.8	RADAR	BRO								8			GOOD FIX. WALL D8.
241	09	1534	25.3	95.9	RADAR	CRP								18			GOOD FIX.
242	09	1610	25.3	95.9	RADAR	BRO											GOOD FIX. EYE ELLIPTICAL NW/SE.
243	09	1630	25.4	96.0	SMS-2	1,VSBL 1											
244	09	1630	25.3	96.0	RADAR	BRO											GOOD FIX. EYE ELLIPTICAL NW/SE.
245	09	1630	25.3	95.8	RADAR	CRP								11			GOOD FIX.
246	09	1702	25.3	96.1	RADAR	CRP								9			GOOD FIX.
247	09	1710	25.3	96.0	RADAR	BRO								11			GOOD FIX. DILATING EYE 6-10.
248	09	1730	24.4	96.1	SMS-2	1,VSBL 1											
249	09	1730	25.3	96.0	RADAR	BRO								13			FAIR FIX.

Table 6 continued.

Hurricane Allen continued.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER,	MAX. WIND (KT)			MIN. MIN. PRES. 700MB		TEMP. °(C)		EYE		REMARKS	
			LAT. N	LONG. W			FLT. LVL.	ACFT. SFC.	ALT.	(MB)	HT. (M)	IN.	OUT.	C=CIR. E=ELIP. (N.M.)	DIA.		
250	09	1732	25.4	96.1	RADAR	CRP											
251	09	1800	25.4	96.2	SMS-2	1, VSBL 1									11		FAIR FIX.
252	09	1802	25.4	96.2	RADAR	CRP											
253	09	1810	25.4	96.2	NOAA	2/2	100		700MB	921	2453	19	14		10		FAIR FIX.
254	09	1810	25.4	96.2	RADAR	BRO								C	8		CLOSED WALL.
255	09	1830	25.4	96.2	SMS-2	2, 1, VSBL 1		133							7		GOOD FIX. HOOK 342/72.
256	09	1835	25.4	96.2	RADAR	BRO											
257	09	1835	25.4	96.2	RADAR	CRP											GOOD FIX.
258	09	1903	25.5	96.3	RADAR	CRP									10		FAIR FIX.
259	09	1910	25.4	96.2	RADAR	BRO									10		GOOD FIX.
260	09	1930	25.5	96.3	RADAR	BRO									5		GOOD FIX.
261	09	2000	25.5	96.4	SMS-2	1, VSBL 1									6		GOOD FIX.
262	09	2002	25.5	96.3	RADAR	BRO											
263	09	2030	25.5	96.3	RADAR	BRO									9		GOOD FIX. WALL D27.
264	09	2036	25.6	96.3	NOAA	4/4	95		700MB	929	2510	17	12		7		GOOD FIX.
265	09	2100	25.6	96.4	RADAR	BRO								C	10		CLOSED WALL.
266	09	2130	25.6	96.4	SMS-2	2, 1, VSBL 1		133							8		GOOD FIX.
267	09	2130	25.6	96.5	RADAR	CRP											
268	09	2151	25.6	96.5	RADAR	BRO									6		
269	09	2156	25.6	96.5	RADAR	BRO									9		GOOD FIX.
270	09	2200	25.7	95.6	SMS-2	1, VSBL 1									7		GOOD FIX. WALL D27.
271	09	2208	25.6	96.5	RADAR	CRP											
272	09	2234	25.6	96.6	RADAR	BRO									6		GOOD FIX.
273	09	2235	25.6	96.6	RADAR	CRP									8		GOOD FIX.
274	09	2300	25.7	96.7	SMS-2	1, VSBL 1									5		GOOD FIX.
275	09	2303	25.6	96.7	RADAR	BRO											
276	09	2304	25.6	96.6	RADAR	CRP									10		GOOD FIX.
277	09	2333	25.6	96.7	RADAR	BRO									5		GOOD FIX.
278	09	2335	25.6	96.6	RADAR	CRP											
279	09	2344	25.7	96.6	NOAA	4/4	90		700MB		2539	15	12		5		GOOD FIX.
280	10	0000	25.7	96.7	SMS-2	2, 1, IR 8		27						C	7		CLOSED WALL.
281	10	0002	25.6	96.6	RADAR	CRP									6		GOOD FIX.
282	10	0003	25.7	96.7	RADAR	BRO									5		GOOD FIX.
283	10	0030	25.7	96.7	RADAR	BRO									8		GOOD FIX. WALL D23.
284	10	0030	25.7	96.7	RADAR	CRP									7		GOOD FIX.
285	10	0100	25.7	96.7	SMS-2	1, IR 8											
286	10	0100	25.7	96.7	RADAR	BRO									11		GOOD FIX. WALL D32.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND (KT)			MIN. MIN. PRES. 700MB (MB)	MIN. HT. (M)	TEMP. ° (C)		EYE		REMARKS
			LAT. N	LONG. W			FLT. LVL.	SFC.	ACFT. ALT.			IN.	OUT.	C=CIR.	DIA. E=ELIP. (N.M.)	
287	10	0106	25.7	96.7	RADAR	CRP								11		GOOD FIX.
288	10	0130	25.7	96.7	RADAR	BRO								10		GOOD FIX. WALL D30.
289	10	0135	25.7	96.8	RADAR	CRP								10		FAIR FIX.
290	10	0200	25.8	96.7	SMS-2	1, IR 8										
291	10	0202	25.7	96.6	RADAR	CRP								10		GOOD FIX.
292	10	0206	25.8	96.8	RADAR	BRO								7		FAIR FIX. WALL D 18.
293	10	0230	25.8	96.8	RADAR	BRO								10		GOOD FIX. WALL D 16
294	10	0235	25.8	96.8	RADAR	CRP								12		FAIR FIX.
295	10	0239	25.9	96.8	NOAA	3/2	80		700MB	942			16	E 110/20/12		WALL CLOSED.
296	10	0300	25.8	96.7	SMS-2	2,1, IR 8		115								
297	10	0301	25.9	96.8	RADAR	BRO								10		GOOD FIX. WALL D 27.
298	10	0331	26.0	96.9	RADAR	BRO								8		FAIR FIX. EYE PARTLY OBSCURED.
299	10	0335	25.9	96.9	RADAR	CRP								12		GOOD FIX.
300	10	0400	25.9	96.8	SMS-2	1, IR 8										
301	10	0400	26.0	97.0	RADAR	CRP								13		POOR FIX.
302	10	0402	26.0	97.0	NOAA	2/3	78		700MB	944			15			OPEN SOUTH.
303	10	0403	26.0	97.0	RADAR	BRO								8		GOOD FIX.
304	10	0432	26.0	97.1	RADAR	BRO								8		FAIR FIX.
305	10	0435	25.9	97.0	RADAR	CRP								10		POOR FIX.
306	10	0436	26.1	97.1	NOAA	2/3	60		700MB	945	2646		C	10		OPEN SOUTH.
307	10	0500	25.9	96.8	SMS-2	3, IR 8										
308	10	0500	26.0	97.1	RADAR	CRP								12		GOOD FIX.
309	10	0510	26.1	97.2	RADAR	BRO								5		FAIR FIX.
310	10	0532	26.1	97.2	NOAA	2/5 RADAR	70						11	C	10	OPEN SOUTH.
311	10	0532	26.1	97.2	RADAR	BRO								5		FAIR FIX.
312	10	0535	26.1	97.2	RADAR	CRP								10		GOOD FIX.
313	10	0558	26.1	97.2	RADAR	CRP								4		GOOD FIX.
314	10	0600	26.0	97.1	SMS-2	2,3, IR 8		102								
315	10	0602	26.1	97.3	NOAA	4/5 RADAR	60						13			POORLY DEFINED.
316	10	0633	---	---	RADAR	BRO										EYE WEAK. DIFFUSE. POOR FIX.
317	10	0635	26.3	97.3	RADAR	CRP								5		GOOD FIX.
318	10	0640	26.1	97.3	NOAA	5/5 RADAR	80									
319	10	0656	26.3	97.2	RADAR	CRP								7		GOOD FIX.
320	10	0700	26.1	97.2	SMS-2	3, IR 8										
321	10	0710	26.2	97.3	RADAR	BRO								10		20° SPIRAL OVERLAY. POOR FIX.
322	10	0732	26.3	97.4	RADAR	BRO								7		POOR FIX. EYE 100/24.

Table 6 continued.

Hurricane Allen continued.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND (KT)			MIN. PRES. (MB)	MIN. HT. (M)	TEMP. (°C)		EYE		REMARKS	
			LAT. °N	LONG. °W			FLT. LVL.	SFC.	ACFT. ALT.			IN.	OUT.	C=CIR.	DIA. E=ELIP. (N.M.)		
323	10	0735	26.3	97.4	RADAR	CRP											
324	10	0759	26.3	97.5	RADAR	CRP								6		FAIR FIX.	
325	10	0800	26.2	97.3	SMS-2	5, IR 8										15° SPIRAL OVERLAY.	POSSIBLE EYE.
326	10	0810	26.4	97.7	RADAR	BRO											
327	10	0830	26.5	97.5	RADAR	BRO								8		POOR FIX.	
328	10	0835	26.4	97.5	RADAR	CRP								8		POOR FIX.	
329	10	0933	---	---	RADAR	BRO										15° SPIRAL OVERLAY.	POSSIBLE EYE.
330	10	1030	26.6	97.7	RADAR	BRO										APPARENT CENTER 350/41.	
331	10	1035	26.5	97.5	RADAR	CRP										POSSIBLE CENTER. 337/46.	
332	10	1130	26.6	97.9	RADAR	BRO										POSSIBLE CENTER. POOR FIX.	
333	10	1130	26.6	97.9	RADAR	CRP										POSSIBLE CENTER. 332/51.	
334	10	1230	26.9	98.0	RADAR	BRO										FAIR FIX. POSSIBLE CENTER.	
335	10	1230	26.8	98.1	RADAR	CRP										POOR FIX.	
336	10	1330	26.9	98.1	RADAR	BRO								8		FAIR FIX. POSSIBLE CENTER.	
337	10	1330	26.9	98.1	RADAR	CRP										POOR FIX.	
338	10	1430	26.9	98.4	RADAR	BRO								13		POOR FIX.	
339	10	1530	27.2	98.8	RADAR	BRO								5			
340	10	1705	27.2	98.9	RADAR	BRO								18			
341	10	1734	27.2	98.9	RADAR	BRO								19		POSSIBLE CENTER.	

(NOTE: RADAR FIXES FROM FORT-DE-FRANCE, MARTINIQUE, AND GUANTANAMO, CUBA, WERE TAKEN, BUT WERE NOT AVAILABLE FOR THIS TABULATION.)

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND (KT)			MIN. MIN.		TEMP. °(C)		EYE		REMARKS
			LAT. ON	LONG. W			FLT. LVL.	ACFT. ALT.	PRES. (MB)	700MB HT. (M)	IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.M.)		
1	14	1200	14.8	37.3	SMS-2	2,3,VSBL 2			25							
2	14	1600	15.3	37.3	SMS-2	3,VSBL 2										
3	14	1730	15.5	37.5	SMS-2	2,3,VSBL 2			35							
4	15	0000	16.6	37.9	SMS-2	5, IR 8										
5	15	0030	16.7	37.9	SMS-2	2,5, IR 8										
6	15	0600	17.8	37.9	SMS-2	5, IR 8										
7	15	0630	17.8	37.9	SMS-2	1,3, IR 8			43							
8	15	1200	18.9	38.1	SMS-2	2,3,VSBL 2			43							
9	15	2000	20.4	38.6	SMS-2	2,3,VSBL 2			55							
10	16	0000	21.9	38.7	SMS-2	1, IR 8										
11	16	0030	22.1	38.7	SMS-2	2,1, IR 8			77							
12	16	0600	23.6	38.9	SMS-2	1, IR 8										
13	16	0630	23.7	38.9	SMS-2	1,1, IR 8			85							
14	16	1130	24.6	38.9	SMS-2	4,VSBL 2										
15	16	1200	25.0	39.1	SMS-2	2,3,VSBL 1			85							
16	16	1700	26.1	38.9	SMS-2	3,VSBL 1										
17	16	1800	26.2	38.9	SMS-2	2,3,VSBL 1			85							
18	17	0000	27.7	38.4	SMS-2	3, IR 8										
19	17	0030	27.7	38.6	SMS-2	1,3, IR 8			77							
20	17	0600	28.1	40.0	SMS-2	3, IR 8										
21	17	0630	28.2	40.1	SMS-2	1,3, IR 8			65							
22	17	1130	28.5	40.5	SMS-2	3,VSBL 1										
23	17	1200	28.7	40.5	SMS-2	2,3,VSBL 1			65							
24	17	1530	29.4	40.6	SMS-2	3,VSBL 2										
25	17	1700	29.7	40.7	SMS-2	3,VSBL 1										
26	17	1800	30.0	40.5	SMS-2	2,3,VSBL 1			65							
27	17	1900	30.4	40.5	SMS-2	3,VSBL 1										
28	18	0000	30.9	40.5	SMS-2	5, IR 8										
29	18	0030	30.9	40.5	SMS-2	1,3, IR 8			65							
30	18	0630	32.5	40.3	SMS-2	2,3, IR 8			65							
31	18	1130	33.9	40.5	SMS-2	3,VSBL 1										
32	18	1200	34.0	40.6	SMS-2	2,3,VSBL 1			65							
33	18	1300	34.3	40.8	SMS-2	3,VSBL 1										
34	18	1600	35.1	40.8	SMS-2	3,VSBL 1										
35	18	1800	35.9	40.5	SMS-2	2,1,VSBL 1			65							

Table 6 continued.

Hurricane Bonnie continued.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX.WIND(KT)			MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °(C)		EYE C=CIR.DIA. E=ELIP.(N.M.)	REMARKS
			LAT. °N	LONG. °W			FLT. LVL.	SFC.	ACFT. ALT.			IN.	OUT.		
36	19	0000	38.1	40.1	SMS-2	1,1, IR 8									
37	19	0100	38.9	40.1	SMS-2	1, IR 8									
38	19	0600	42.0	39.8	SMS-2	1, IR 8									
39	19	0630	42.3	39.8	SMS-2	1,3, IR 8									
40	19	1130	46.2	38.9	SMS-2	3,VSBL 1									
41	19	1200	46.5	38.7	SMS-2	2,3,VSBL 1									
42	19	1900	51.0	36.0	SMS-2	VSBL 1									

HURRICANE CHARLEY
20 - 25 August 1980

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX.WIND(KT)			MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °(C)		EYE C=CIR.DIA. E=ELIP.(N.M.)	REMARKS
			LAT. °N	LONG. °W			FLT. LVL.	SFC.	ACFT. ALT.			IN.	OUT.		
1	22	1230	38.3	64.6	SMS-2	1,5,VSBL 1									
2	22	1830	39.1	64.8	SMS-2	5,VSBL 1									
3	23	1230	38.0	66.0	SMS-2	2,3,VSBL 1									
4	23	1434	38.2	65.8	AF	2/20	70	70							
5	23	1733	38.1	65.2	AF	2/8	39		700MB	989	3014	22	21		
6	23	1830	37.9	65.3	SMS-2	1,3,VSBL 1									
7	23	2330	37.5	64.1	SMS-2	3, IR 8									
8	24	0000	37.5	64.1	SMS-2	2,3, IR 8									
9	24	0300	37.2	63.1	SMS-2	3, IR 8									
10	24	0500	37.1	61.7	SMS-2	5, IR 8									
11	24	0600	37.2	61.5	SMS-2	2,5, IR 8									
12	24	1138	37.9	60.3	AF	2/10	40	35	700MB	997	3042				
13	24	1200	37.7	60.8	SMS-2	3,VSBL 1									
14	24	1230	37.7	60.6	SMS-2	1,3,VSBL 1									
15	24	1530	37.9	59.6	AF	2/1	41	45	700MB	999	3060				
16	24	1800	37.8	58.7	SMS-2	3, IR 8									
17	24	1830	37.9	58.6	SMS-2	2,3,VSBL 1									
18	25	0000	38.0	55.9	SMS-2	2,5, IR 8									
19	25	0230	38.0	54.1	SMS-2	5, IR 8									
20	25	0530	37.8	53.2	SMS-2	5, IR 8									
21	25	0600	37.7	52.8	SMS-2	2,5, IR 8									
22	25	1200	37.8	48.0	SMS-2	5,VSBL 1									
23	25	1230	38.3	47.4	SMS-2	1,5,VSBL 1									
24	25	1800	38.5	42.4	SMS-2	1,5,VSBL 1									

Table 6 continued .

HURRICANE EARL
10 September 1980

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND(KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °(C)		EYE		REMARKS
			LAT. °N	LON. °W			FLT.	SFC.			ACFT.	IN.	OUT.	C=CIR. DIA. E=ELIP. (N.M.)	
1	04	1130	17.7	24.0	SMS-2	2,5,VSBL 1		25							
2	04	1730	17.4	25.3	SMS-2	1,5,VSBL 1		35							
3	05	0000	17.5	26.7	SMS-2	1,5, IR 8		45							
4	05	0600	17.2	28.0	SMS-2	3,5, IR 8		45							
5	05	1200	18.8	29.5	SMS-2	1,5,VSBL 1		45							
6	05	1800	19.2	31.0	SMS-2	1,3,VSBL 1		35							
7	06	0000	19.5	32.0	SMS-2	1,3, IR 8		35							
8	06	0600	20.0	34.0	SMS-2	1,5, IR 8		35							
9	06	1130	21.0	35.4	SMS-2	1,4,VSBL 2		45							
10	06	1730	21.7	36.5	SMS-2	1,3,VSBL 2		45							
11	07	0000	22.3	38.0	SMS-2	2,5, IR 8		45							
12	07	0300	23.5	38.5	SMS-2	5, IR 8									
13	07	0600	24.0	39.0	SMS-2	2,5, IR 8		45							
14	07	1130	25.0	39.6	SMS-2	4,VSBL 2		45							
15	07	1800	27.2	39.5	SMS-2	1,3,VSBL 2		45							
16	07	2330	29.0	40.8	SMS-2	2,5, IR 8		55							
17	08	0600	31.2	43.0	SMS-2	2,3, IR 8		65							
19	08	1230	32.1	43.6	SMS-2	1,3,VSBL 1		65							
20	08	1730	33.5	44.2	SMS-2	1,3,VSBL 1		65							
21	08	2300	34.1	45.1	SMS-2	3, IR 8									
22	09	0100	34.7	44.3	SMS-2	2,1, IR 8		65							
23	09	1200	38.0	43.8	SMS-2	1, VSBL 1									
24	09	1300	38.2	43.0	SMS-2	2,1,VSBL 1		65							
25	09	1800	40.3	40.9	SMS-2	2,1,VSBL 1		65							
26	09	2330	42.7	39.0	SMS-2	3, IR 8									
27	10	0030	43.5	38.5	SMS-2	2,3, IR 8		65							
28	10	0400	44.7	37.1	SMS-2	5, IR 8									
29	10	0600	45.8	36.1	SMS-2	2,5, IR 8		65							
30	10	1330	47.5	31.3	SMS-2	2,3,VSBL 2		65							
31	10	1730	49.4	29.2	SMS-2	2,5,VSBL 1		55							
32	10	2330	51.0	24.0	SMS-2	5, IR 8									
33	11	0030	52.0	23.0	SMS-2	3,5, IR 8		55							

HURRICANE FRANCES
5 - 20 September 1980

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX.WIND(KT)		ACFT. ALT.	MIN.	TEMP. °(C)	EYE		REMARKS
			LAT. °N	LON. °W			FLT. LVL.	SFC.		PRES. (MB)		MIN. 700MB HT. (M)	C-CIR. DIA.	
1	05	1730	12.5	18.0	SMS-2	1,5,VSBL 2		25						
2	06	0000	12.5	19.0	SMS-2	3,5, IR 8		30						
3	06	1130	12.5	21.0	SMS-2	2,6,VSBL 2		35						
4	06	1900	12.5	22.0	SMS-2	2,6, IR 8		35						
5	06	2300	12.8	22.5	SMS-2	2,5, IR 8		35						
6	07	0300	13.0	23.5	SMS-2	5, IR 8								
7	07	0600	12.8	24.5	SMS-2	2,5, IR 8		35						
8	07	1200	13.4	23.6	SMS-2	2,4,VSBL 2		55						
9	07	1800	13.2	24.4	SMS-2	2,3,VSBL 2		61						
10	07	2300	13.1	25.5	SMS-2	3, IR 8								
11	08	0000	13.1	25.6	SMS-2	2,3, IR 8		65						
12	08	0400	13.0	26.5	SMS-2	3, IR 8								
13	08	0600	12.9	26.8	SMS-2	2,3, IR 8		65						
14	08	1200	12.8	27.9	SMS-2	2,1,VSBL 1		90						
15	08	1830	12.7	29.1	SMS-2	1,2,VSBL 1		102						
16	08	2330	12.5	29.8	SMS-2	1, IR 8								
17	09	0030	12.5	29.9	SMS-2	2,1, IR 8		102						
18	09	0600	12.7	30.5	SMS-2	2,1, IR 8		102						
19	09	1200	13.0	31.5	SMS-2	2,1,VSBL 1		102						
20	09	1730	13.5	32.0	SMS-2	1,VSBL 1								
21	09	1800	13.5	32.0	SMS-2	2,1,VSBL 1		90						
22	09	2300	13.6	32.5	SMS-2	1, IR 8								
23	10	0000	13.5	32.7	SMS-2	2,1, IR 8		90						
24	10	0400	13.7	33.4	SMS-2	3, IR 8								
25	10	0600	14.0	33.8	SMS-2	2,3, IR 8		90						
26	10	1200	14.2	34.0	SMS-2	1,3,VSBL 1		90						
27	10	1800	15.0	34.8	SMS-2	1,3,VSBL 1		77						
28	10	2300	15.4	35.0	SMS-2	3, IR 8								
29	11	0100	15.2	35.0	SMS-2	2,2, IR 8		90						
30	11	0400	15.4	35.0	SMS-2	IR 8								
31	11	0600	16.0	35.0	SMS-2	2,3, IR 8		90						
32	11	1200	16.4	35.4	SMS-2	1,1,VSBL 1		90						
33	11	1800	16.5	35.9	SMS-2	1,3,VSBL 1		80						
34	12	0000	16.9	36.2	SMS-2	1, IR 8								
35	12	0030	16.9	36.2	SMS-2	1,1, IR 8		80						
36	12	0700	17.6	37.0	SMS-2	1,5, IR 8		80						

Hurricane Frances continued.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND (KT)			MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °(C)		EYE		REMARKS
			LAT. °N	°W			FLT. LVL.	ACFT. SFC. ALT.	IN.			OUT.	C-CIR. DIA. E-ELIP. (N.M.)			
76	15	1600	25.6	50.5	SMS-2	1, VSBL 1										
77	15	1700	25.7	50.6	SMS-2	1, VSBL 1										
78	15	1800	25.8	50.8	SMS-2	2, 1, VSBL 1			77							
79	15	1900	26.1	50.9	SMS-2	1, VSBL 1										
80	16	0000	27.4	50.6	SMS-2	2, IR 8										
81	16	0030	27.5	50.6	SMS-2	2, 2, IR 8			90							
82	16	0630	29.0	50.5	SMS-2	1, 2, IR 8			90							
83	16	1100	30.1	49.9	SMS-2	1, VSBL 1										
84	16	1200	30.3	49.9	SMS-2	2, 1, VSBL 1			90							
85	16	1600	31.3	49.2	SMS-2	1, VSBL 1										
86	16	1700	31.5	49.1	SMS-2	1, VSBL 1										
87	16	1830	31.8	48.9	SMS-2	2, 1, VSBL 1			90							
88	16	1900	31.9	48.9	SMS-2	1, VSBL 1										
89	17	0000	32.9	48.1	SMS-2	2, 1, IR 8			90							
90	17	0600	33.8	47.2	SMS-2	2, 3, IR 8			77							
91	17	1100	34.5	46.5	SMS-2	1, VSBL 1										
92	17	1200	34.7	46.4	SMS-2	2, 3, VSBL 1			77							
93	17	1300	34.8	46.3	SMS-2	3, VSBL 1										
94	17	1400	34.9	46.3	SMS-2	3, VSBL 1										
95	17	1500	35.1	46.3	SMS-2	3, VSBL 1										
96	17	1800	35.6	45.9	SMS-2	2, 3, VSBL 1			77							
97	17	1900	35.9	45.9	SMS-2	3, VSBL 1										
98	18	0000	36.7	45.9	SMS-2	2, 3, IR 8			77							
99	18	0600	37.3	45.5	SMS-2	2, 3, IR 8			77							
100	18	1130	38.9	46.3	SMS-2	2, 3, VSBL 1			77							
101	18	1800	40.1	46.6	SMS-2	2, 3, VSBL 1			77							
102	19	0000	41.2	46.5	SMS-2	2, 3, IR 8			77							
103	19	0600	41.8	46.0	SMS-2	IR 8			77							
104	19	1130	43.5	45.0	SMS-2	1, 3, VSBL 1			65							
105	19	1800	44.5	43.3	SMS-2	2, 3, VSBL 1			65							
106	20	0000	45.4	41.5	SMS-2	2, 3, IR 8			65							
107	20	0600	47.0	39.0	SMS-2	3, 3, IR 8			55							
108	20	1330	49.6	34.4	SMS-2	1, 5, VSBL 1			55							
109	20	1800	51.3	32.0	SMS-2	2, 5, VSBL 1			55							

Table 6 continued.

HURRICANE GEORGES
31 August - 8 September 1980

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND (KT)		ACFT.	MIN.	MIN.	TEMP. °(C)		EYE		REMARKS
			LAT. °N	LONG. °W			FLT.	SFC.		PRES. (MB)	HT. (M)	IN.	OUT.	C-CIR. E-ELIP. (N.M.)	DIA.	
1	31	0030	15.7	32.2	SMS-2	1,5, IR 8		25								
2	31	0630	15.0	32.0	SMS-2	2,5, IR 8		27								
3	31	1100	15.6	34.8	SMS-2	5, VSBL 2										
4	31	1200	15.5	34.9	SMS-2	2,5, VSBL 1		25								
5	31	1800	15.5	36.4	SMS-2	2,5, VSBL 1		25								
6	01	0030	15.5	38.3	SMS-2	1,5, IR 8		30								
7	01	0700	15.8	39.4	SMS-2	2,5, IR 8		30								
8	01	1100	16.4	40.9	SMS-2	5, VSBL 2										
9	01	1200	16.5	41.1	SMS-2	2,5, VSBL 1		30								
10	01	1400	16.5	41.7	SMS-2	5, VSBL 2										
11	01	1800	16.8	42.0	SMS-2	2,5, VSBL 1		30								
12	02	0000	17.7	43.8	SMS-2	5, IR 8										
13	02	0030	17.7	43.9	SMS-2	1,5, IR 8		35								
14	02	0600	17.5	45.4	SMS-2	5, IR 8										
15	02	0630	17.5	45.5	SMS-2	2,5, IR 8		35								
16	02	1100	17.5	48.5	SMS-2	5, VSBL 2										
17	02	1200	17.6	48.8	SMS-2	2,5, VSBL 1		35								
18	02	1400	17.8	49.4	SMS-2	5, VSBL 1										
19	02	1730	18.0	50.8	SMS-2	5, VSBL 4										
20	02	1900	18.0	51.0	SMS-2	2,5, VSBL 1		30								
21	03	0000	18.0	52.5	SMS-2	3,5, IR 8		30								
22	03	0630	18.0	54.5	SMS-2	3,5, IR 8		30								
23	03	1200	19.0	56.9	SMS-2	VSBL 1		28								
24	03	1800	20.0	58.8	SMS-2	2,5, VSBL 1		28								
25	04	0000	21.0	61.0	SMS-2	3,5, IR 8		28								
26	04	0600	22.0	61.0	SMS-2	5, IR 8										
27	05	1330	28.6	68.1	SMS-2	2,5, VSBL 1		30								
28	05	1800	29.4	69.7	SMS-2	2,5, VSBL 1		30								
29	06	0000	29.5	70.0	SMS-2	1,5, IR 8		30								
30	06	0600	30.5	70.0	SMS-2	1,5, IR 8		30								
31	06	0910	31.2	69.7	NOAA	2/5	30		457M	1008		23	23			
32	06	1200	32.2	69.3	SMS-2	2,6, IR 8		35								
33	06	1210	32.0	69.6	NOAA	2/10	40	30	448M	1008		24	22			
34	06	1411	32.5	69.3	NOAA	2/10	40	40	440M	1008		24	24			CALM SFC. CNTR. DIAM. 30 N.M.

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Table 6 continued.

Hurricane Georges continued.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND (KT)		ACFT.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. (°C)		EYE C=CIR. DIA. E=ELIP. (N.M.)	REMARKS
			LAT. °N	°W			FLT. LVL.	SFC.				IN.	OUT.		
35	06	1749	33.1	69.2	AF	2/3	24	20	290M	1007		25	24		
36	06	1830	33.3	68.5	SMS-2	5, VSBL 2		35							CALM SFC. CNTR. DIAM. 30 N.M.
37	06	2000	33.5	68.9	AF	2/4	25	20	277M	1004		24	21		CALM SFC. CNTR. DIAM. 17.1 N.M.
38	06	2330	34.3	68.5	SMS-2	2,5, IR 8		35							
39	07	0330	35.5	67.5	SMS-2	5, IR 8									
40	07	0600	36.0	66.0	SMS-2	2,5, IR 8		35							
41	07	1230	35.1	63.8	SMS-2	1,3, VSBL 2		35							
42	07	1530	37.6	62.7	SMS-2	1,3, VSBL 1		45							
43	07	1730	38.2	61.8	SMS-2	3, VSBL 4									
44	07	1830	38.7	61.6	SMS-2	1,5, VSBL 1		55							
45	07	2230	39.0	60.6	SMS-2	5, IR 8									
46	08	0000	40.4	59.4	AF	2/5	65	90	700MB	993	2955	10	9		
47	08	0030	40.5	58.5	SMS-2	2,5, IR 8		55							
48	08	0600	43.3	56.4	SMS-2	2,3, IR 8		65							
49	08	1300	45.5	50.5	SMS-2	1,5, VSBL 1		65							
50	08	1900	48.7	45.5	SMS-2	3,6, VSBL 1		45							

TROPICAL STORM HERMINE
17 - 25 September 1980

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX. WIND (KT)		ACFT.	MIN. MIN.		TEMP. (°C)		EYE		REMARKS
			LAT. °N	LONG. °W			FLT. LVL.	SFC.		PRES. (MB)	700MB HT. (M)	IN.	OUT.	C=CIR. DIA. E=ELIP. (N.M.)		
1	17	1230	13.5	53.0	SMS-2	2,5,VSBL 1		25								
2	17	1830	13.0	56.0	SMS-2	2,5,VSBL 1		25								
3	17	2219	13.5	57.4	AF	5/5	15	10		1013		25	25			
4	18	0000	12.5	59.0	SMS-2	2,5, IR 8		25								
5	18	0600	12.5	62.0	SMS-2	5, IR 8										
6	18	1230	11.6	62.5	SMS-2	5,VSBL 1										
7	18	1830	12.0	65.0	SMS-2	5,VSBL 1										
8	19	1930	13.5	73.4	SMS-2	1,5,VSBL 1		25								
9	20	1300	13.0	78.0	SMS-2	2,5,VSBL 1		28								
10	20	1830	15.7	78.7	SMS-2	2,5,VSBL 1		40								
11	21	0000	15.5	80.0	SMS-2	2,5, IR 8		40								
12	21	0600	15.0	80.5	SMS-2	2,5, IR 8		40								
13	21	1200	15.0	83.0	SMS-2	3,5,VSBL 1		45								
14	21	1530	15.3	83.8	SMS-2	1,3,VSBL 1		55								
15	21	1800	15.8	84.3	SMS-2	1,5,VSBL 1		55								
16	21	2100	16.3	85.3	SMS-2	1,5,VSBL 1		55								
17	21	2300	16.5	86.0	SMS-2	5, IR 8										
18	22	0030	16.1	86.2	SMS-2	2,5, IR 8		55								
19	22	0300	16.3	86.5	SMS-2	2,5, IR 8		55								
20	22	0600	17.0	86.7	SMS-2	2,3, IR 8		65								
21	22	0830	17.3	87.2	SMS-2	2,3, IR 8		65								
22	22	0840	17.5	87.2	AF	5/5	39		700MB	998	3067	12	8			
23	22	1035	17.7	87.6	AF		53		700MB		3053					
24	22	1200	17.7	87.7	SMS-2	3,VSBL 2										
25	22	1210	17.6	87.8	AF	1/1	48	50	700MB	994	3040	13	10			
26	22	1230	17.8	87.9	SMS-2	2,4,VSBL 1		72								
27	22	1300	17.9	87.9	SMS-2	3,VSBL 1										
28	22	1400	18.2	88.1	SMS-2	VSBL 1										
29	22	1430	18.3	88.4	SMS-2	3,VSBL 1										
30	22	1530	18.3	89.0	SMS-2	2,5,VSBL 1		72								
31	22	1630	18.4	88.8	SMS-2	5,VSBL 1										
32	22	1830	18.6	89.3	SMS-2	5,VSBL 1										
33	22	1930	18.6	89.4	SMS-2	5,VSBL 1										
34	22	2330	18.6	90.0	SMS-2	5, IR 8										

Table 6 continued.

HURRICANE IVAN
4 - 11 October 1980

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX.WIND(KT)		MIN. ACFT.	MIN. PRES.	MIN. 700MB HT. (M)	TEMP. (°C)		EYE		REMARKS
			LAT. °N	°W			FLT. LVL.	SFC.				IN.	OUT.	C=CIR. DIA. E-ELIP. (N.M.)		
1	04	1730	35.6	24.3	SMS-2	2,3,VSBL 1		50								
2	04	2330	34.6	25.3	SMS-2	2,3, IR 8		50								
3	05	0700	33.4	27.9	SMS-2	2,2, IR 8		55								
4	05	1200	32.4	28.3	SMS-2	2,4,VSBL 1		61								
5	05	1800	31.3	29.6	SMS-2	2,4,VSBL 1		63								
6	05	2300	30.2	30.5	SMS-2	3, IR 8										
7	06	0000	30.0	30.7	SMS-2	2,3, IR 8		65								
8	06	0400	29.2	31.2	SMS-2	1, IR 8										
9	06	0600	29.1	31.2	SMS-2	2,1, IR 8		77								
10	06	1130	28.4	31.3	SMS-2	1,VSBL 1										
11	06	1230	28.4	31.3	SMS-2	2,1,VSBL 1		85								
12	06	1800	28.2	31.1	SMS-2	2,1,VSBL 1		85								
13	06	2300	28.0	30.9	SMS-2	1, IR 8										
14	07	0000	28.0	30.9	SMS-2	2,1, IR 8		90								
15	07	0200	28.1	30.8	SMS-2	1, IR 8										
16	07	0400	28.2	30.7	SMS-2	1, IR 8										
17	07	0600	28.5	30.7	SMS-2	2,1, IR 8		90								
18	07	1230	29.6	31.7	SMS-2	1,1,VSBL 1										
19	07	1800	29.9	32.6	SMS-2	2,3, IR 8										
20	08	0000	30.0	34.3	SMS-2	2,3, IR 8		90								
21	08	0600	30.6	36.2	SMS-2	2,3, IR 8		65								
22	08	1200	31.2	37.2	SMS-2	1,2,VSBL 1		90								
23	08	1730	31.5	39.4	SMS-2	1,1,VSBL 1		77								
24	08	2300	31.6	40.2	SMS-2	1, IR 8										
25	09	0000	31.6	40.3	SMS-2	2,1, IR 8		90								
26	09	0400	31.9	40.9	SMS-2	1, IR 8										
27	09	0600	32.2	41.0	SMS-2	2,1, IR 8		90								
28	09	1200	32.9	41.0	SMS-2	1, IR 8										

Table 6 continued.

Hurricane Ivan continued.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX.WIND(KT)		ACFT.	MIN. PRES.	MIN. 700MB HT. (M)	TEMP. (°C)		EYE		REMARKS	
			LAT. N	LONG. W			FLT. LVL.	SFC.				IN.	OUT.	C=CIR. DIA. E=ELIP. (N.M.)			
29	09	1230	33.1	41.1	SMS-2	1,1,VSBL 1											
30	09	1730	33.7	41.1	SMS-2	2,VSBL 1											
31	09	1830	34.0	41.2	SMS-2	2,1,VSBL 1											
32	10	0000	34.9	40.5	SMS-2	2,1, IR 8											
33	10	0600	36.2	40.0	SMS-2	2,1, IR 8											
34	10	1130	37.6	39.3	SMS-2	1,VSBL 1											
35	10	1230	38.0	39.0	SMS-2	2,1,VSBL 1											
36	10	1800	39.6	37.9	SMS-2	1, IR 8											
37	10	1830	39.9	37.8	SMS-2	1,1,VSBL 1											
38	10	2000	40.5	37.3	SMS-2	1, IR 8											
39	11	0000	41.9	36.1	SMS-2	1,1, IR 8											
40	11	0530	44.3	34.3	SMS-2	1,1, IR 8											
41	11	1030	46.6	31.8	SMS-2	1,VSBL 1											
42	11	1230	47.4	31.0	SMS-2	2,3,VSBL 1											
43	11	1500	48.3	29.7	SMS-2	3,VSBL 1											
44	11	1800	49.6	27.5	SMS-2	2,5,VSBL 1											

Table 6 continued.

HURRICANE JEANNE
7 - 16 November 1980

CENTER FIXES.

FIX NO.	DATE	TIME (GMT)	POSITION		UNIT	CHARACTER.	MAX.WIND(KT)		ACFT.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. (°C)		EYE		REMARKS
			LAT. N	LONG. W			FLT. LVL.	SFC.				IN.	OUT.	C=CIR. DIA. E=ELIP. (N.M.)		
1	07	1330	13.5	82.5	SMS-2	1,5,VSBL 1		25								
2	07	1830	13.6	82.6	SMS-2	2,5,VSBL 1		25								
3	08	1330	17.1	84.2	SMS-2	2,5,VSBL 1		27								
4	08	1830	18.6	84.3	SMS-2	2,5,VSBL 1		30								
5	09	0000	19.8	84.1	SMS-2	2,5, IR 8		30								
6	09	0600	20.2	84.0	SMS-2	2,5, IR 8		30								
7	09	1300	21.4	84.9	SMS-2	1,5,VSBL 1		45								
8	09	1400	20.8	85.2	SMS-2	1,4,VSBL 1		45								
9	09	1450	20.8	85.2	AF	2/2	40	45	302M	1000		25	23	C	20	OPEN SOUTHWEST-NORTHWEST
10	09	1600	20.9	85.3	SMS-2	3,VSBL 1										
11	09	1628	20.9	85.3	AF	2/2	56	60	302M	999		26	25	C	20	CLOSED WALL.
12	09	1700	21.1	85.3	SMS-2	3,VSBL 1										
13	09	1830	21.3	85.3	SMS-2	2,4,VSBL 1		49								
14	09	1930	21.3	85.4	SMS-2	3,VSBL 1										
15	09	2130	21.4	85.8	SMS-2	1,3,VSBL 1		49								
16	10	0000	21.7	85.8	SMS-2	5, IR 8										
17	10	0300	21.8	85.8	SMS-2	2,5, IR 8		49								
18	10	0600	21.7	85.7	SMS-2	2,5, IR 8		49								
19	10	1258	22.6	85.4	NOAA	1/1	60	50	487M	999		26	22			POORLY DEFINED.
20	10	1330	22.6	85.8	SMS-2	1,5,VSBL 1		55								
21	10	1502	22.9	85.8	NOAA	1/1	40	40	446M	1002		25	24			
22	10	1601	23.1	86.1	NOAA											
23	10	1718	23.0	86.0	NOAA	3/3	45	40		999			24			
24	10	1830	23.0	86.0	SMS-2	2,3,VSBL 1		55								
25	10	2030	23.2	86.0	AF	3/3	42	50	235M	997		26	22	C	30	POORLY DEFINED.
26	10	2330	23.7	86.1	AF		45	55		998						
27	11	0000	23.3	86.5	SMS-2	2,3, IR 8		55								
28	11	0230	23.9	86.9	AF	10/5	40		850MB							
29	11	0554	24.0	87.0	AF	5/7	45		700MB	997	3053	12	10			
30	11	0600	23.9	87.0	SMS-2	2,3, IR 8		60								
31	11	0831	24.2	86.7	AF		45			993						
32	11	1214	24.4	86.8	AF		62									
33	11	1330	24.6	87.1	SMS-2	2,5,VSBL 1		65								

Table 7. Supplementary vortex messages, 1980 Atlantic tropical cyclones.

ALLEN

URNT12 KMIA 040020 COR
AF972 0102 ALLEN OB 19 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 32DEG FL100
RIGHT FRONT QUAD
83117 81004 43055 40908 33017 31009 13968 11009
03860 01413 64035 50080 34120 MX095 32005 /////
RIGHT REAR QUAD
83116 80907 43085 40908 33058 31008 13968 11010
03860 01413 64035 50100 34130 MX095 05005 /////
LEFT FRONT QUAD
08309 81007 43060 41008 33031 31009 13981 11208
03807 01413 64025 50060 34110 MX110 32005 /////
LEFT REAR QUAD
83108 80909 43070 40908 33035 31008 13990 11008
03810 01414 64025 50030 34090 MX110 04004 /////

URNT12 KMIA 041340
AF967 0202 ALLEN OB 04 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 27DEG FL100
RIGHT FRONT QUAD
83061 80807 4///// 4///// 33960 31010 13823 10909
03628 01512 64046 55058 34068 MX071 09030 /////

Table 7 continued.

URNT12 KMIA 041759 COR
AF985 0302 ALLEN OB 16 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 15DEG FL100
RIGHT FRONT QUAD
83044 41110 4//// 4//// 33910 31210 13866 11210
03610 01514 64100 50110 34190 MX080 33010 40000
LEFT REAR QUAD
83094 80909 43048 41007 33977 31110 13918 11410
03610 01514 64053 50100 34/// MX080 15015 40000
RIGHT REAR QUAD
83078 80808 43039 40903 33947 31110 13868 11209
03526 01515 64/// 50/// 34/// MX107 04007 40000
LEFT REAR QUAD
83037 80909 43000 40909 33955 30909 13785 11111
03526 01516 64/// 50/// 34/// MX090 21030 40000
REMARKS LTG S.W. QUAD. LEFT REA AZIMUTH ALTERED TO 090

URNT12 KMIA 070455
AF972 1102 ALLEN OB 15 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 29DEG FL100
LEFT FRONT QUAD
83072 80907 43025 41107 33002 31010 13924 11211
03645 01910 64018 50029 34088 MX072 23013 ////
LEFT REAR QUAD
83061 80909 43035 41006 3//// 3//// 13792 11010
03655 01811 64025 50045 34074 MX075 15018 ////
RIGHT FRONT QUAD
8//// 8//// 43041 41109 33008 31111 13887 11212
03576 01811 64025 50040 34/// MX082 29012 ////
RIGHT REAR QUAD
8//// 8//// 43064 41010 33015 31010 13881 11010
03629 01811 64038 50050 34/// MX108 07011 ////

Table 7 continued.

URNT12 KMIA 071024
AF964 1202 ALLEN OB 11 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 28DEG FL100
LEFT FRONT QUAD
83043 81110 43973 41111 33925 31212 13742 11313
03437 02310 64035 50060 34090 MX090 25015 /////
LEFT REAR QUAD
83050 81111 43998 41010 33954 31111 13704 11212
03388 02210 64040 50070 34/// MX120 16010 /////

URNT12 KMIA 071456
AF964 1202 ALLEN OB 20 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 28DEG FL100
RIGHT FRONT QUAD
83028 81111 43997 41212 33995 31310 13778 11313
03327 02110 64040 50080 34/// MX085 31030 40000
LEFT REAR QUAD
83065 81010 43028 41111 33995 31111 13851 11111
03278 02314 64030 50050 34/// MX110 15015 45000

URNT12 KMIA 080835
AF985 1502 ALLEN OB 11 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 30DEG FL100
RIGHT FRONT QUAD
83025 81109 43982 41110 33939 31111 13739 11312
03590 01313 64030 50/// 34/// MX067 35015 /////
LEFT REAR QUAD
89/// 81009 43010 41108 33970 31110 13900 11211
03590 01313 64020 50025 34/// MX076 19015 /////
RIGHT REAR QUAD
83038 81009 43988 41111 33953 31111 13900 11111
03624 01414 64035 50/// 34/// MX082 08019 /////
LEFT FRONT QUAD
83019 81110 43986 41110 33948 31111 13872 11211
03624 01414 64/// 50022 34035 MX070 24007 /////

Table 7 continued.

GEORGES

URNT12 KMIA 062030
AF985 0407 CYCLONE OB 14 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 030DEG FL015
RIGHT FRONT QUAD
80008 82423 40006 42423 30006 32423 10006 12422
00007 02522 64/// 50/// 34120 MX040 06080 /////
LEFT FRONT QUAD
8///// 8///// 40008 42220 3///// 3///// 10006 12121
00004 02422 64/// 50/// 34/// MX025 36015 /////

Table 7 continued.

HERMINE

URNT12 KMIA 221340 COR
AF968 0811 HERMINE OB 19 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 310DEG FL100
RIGHT REAR QUAD
83089 80805 43069 40907 33060 30905 13056 11006
03053 01306 64/// 50070 34060 MX053 11070 /////
RIGHT FRONT QUAD
83099 80805 43085 40905 33069 30905 13056 10906
03053 01306 64/// 50/// 34100 MX046 36045 /////
RIGHT REAR QUAD
83099 80807 43072 41007 33060 31006 13053 11007
03040 01307 64/// 50/// 34040 MX048 06085 /////
RIGHT FRONT QUAD
83111 80705 43093 40706 3//// 3/// 13058 11005
03040 01307 64/// 50/// 34080 MX048 07045 /////

URNT12 KMIA 240346
AF977 1111 HERMINE OB 13 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 31DEG FL100
RIGHT FRONT QUAD
83091 81107 43049 41308 33036 31310 13027 11310
00993 02625 64/// 50050 34075 MX054 35545 /////
LEFT FRONT QUAD
83078 81109 43047 41210 33036 31410 13022 11312
03024 01412 64/// 50/// 34090 MX048 31080 /////
RIGHT REA QUAD
83109 81008 43061 41010 33036 31212 13017 11212
03024 01412 64/// 50/// 34/// MX026 05080 /////

Table 7 continued.

URNT12 KMIA 240610
AF977 1111 HERMINE OB 16 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 31DEG FL100
LEFT FRONT QUAD
83090 81008 43042 41311 33031 31311 13028 11810
03028 01310 64/// 50075 34090 MX048 31045 /////
RIGHT FRONT QUAD
8///// 8///// 43060 41111 33039 31212 13033 11210
03028 01310 64/// 50/// 34/// MX/// 3///// /////

Table 7 continued.

JEANNE

URNT12 KMIA 110054 COR
AF977 0513 JEANNE OB 10 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 360DEG FL015
RIGHT FRONT QUAD
80004 82424 40002 42424 30000 32525 10997 12626
00997 02626 64/// 50/// 34/// MX040 04590 /////
LEFT FRONT QUAD
80005 82121 40999 42424 30000 32424 10999 12624
00998 02624 64/// 50100 34/// MX050 315// /////
LEFT REAR QUAD
83079 81203 4///// 4///// 30001 32424 10000 12323
00998 02624 64/// 50/// 34/// MX045 21545 /////

URNT12 KMIA 111310
AF980 0613 JEANNE OB 15 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 350DEG FL100
RIGHT REAR QUAD
83104 81353 43089 41200 33067 31309 13058 11309
03053 01208 64/// 50/// 34/// MX026 14045 /////
RIGHT FRONT QUAD
83091 81010 4///// 4///// 33073 31108 13064 11009
03025 01309 64/// 50/// 34100 MX048 09014 /////
LEFT REAR QUAD
83093 80906 43071 41104 33060 31206 13042 11306
03025 01309 64/// 50010 34050 MX052 20010 /////
RIGHT REAR QUAD
83096 81154 43075 41202 33071 31303 13039 11107
03/// 0///// 64/// 50015 34030 MX062 10009 /////
REMARKS LAST REPORT OBS 01-15 TO KMIA

Table 7 continued.

URNT12 KMIA 120045
AF964 0713 JEANNE OB 11 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 03DEG FL015
LEFT REAR QUAD
89/// 8/// 49/// 42419 39/// 32521 19/// 12523
09/// 02308 64040 50050 34/// MX065 25040 05000
RIGHT REAR QUAD
89/// 8/// 49/// 42222 39/// 32522 19/// 12622
09/// 02722 64/// 50/// 34030 MX045 16025 /////
RIGHT FRONT QUAD
89/// 8/// 49/// 42222 39/// 32422 19/// 12522
09/// 02722 64035 50050 34/// MX065 07025 10000
LEFT FRONT QUAD
89/// 81919 49/// 42222 39/// 32422 19/// 12522
09/// 02623 64/// 50/// 34/// MX086 34080 12000
LAST REPORT ALL OBS THRU KMIA ETA KBIX 12/0500z

URNT12 KMIA 120740
AF964 0713 JEANNE OB 10 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 03DEG FL100
LEFT FRONT QUAD
83126 80505 43115 40706 33108 30908 13090 10909
03961 01810 64050 50080 34095 MX065 32030 12000

Table 7 continued.

URNT12 KMIA 121208 COR
 AF972 0813 JEANNE OB 17 COR KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 230DEG FL100
 LEFT REAR QUAD
 83104 807// 43089 410// 33079 311// 13043 115//
 03006 01406 64/// 50/// 34030 MX045 14015 /////
 RIGHT REAR QUAD
 83132 809// 43091 409// 33084 308// 1//// 114//
 03037 014// 64/// 50/// 34/// MX032 14015 /////
 RIGHT FRONT QUAD
 83100 808// 43094 408// 33075 310// 13065 114//
 03037 014// 64/// 50/// 34025 MX039 04515 /////
 LEFT REAR QUAD
 83093 807// 43084 408// 33078 308// 13053 111//
 03036 013// 64/// 50/// 34020 MX040 16018 /////
 UNABLE TO FLY RIGHT FRONT DUE TO TSTM/CB AND LTNG

URNT12 KMIA 122119
 AF964 0913 JEANNE OB 17 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 AZIMUTH 27DEG FL100
 LEFT FRONT QUAD
 83114 80606 43084 40907 33009 31005 13074 11003
 03066 01103 64/// 50/// 34/// MX014 21015 07000
 LEFT REAR QUAD
 83097 80909 43091 40952 33076 31153 19/// 19///
 03058 01104 64/// 50/// 34050 MX040 13550 08000
 RIGHT REAR QUAD
 83095 80800 42088 40758 33067 30906 13061 11104
 03058 01104 64/// 50/// 34/// MX030 04545 08000
 RIGHT FRONT QUAD
 83063 80707 43046 41104 39/// 39/// 19/// 19///
 03048 01103 64/// 50/// 34/// MX/// ///// 06000

Table 7 continued.

URNT12 KMIA 130116 COR 03
AF980 1013 JEANNE OB 07 COR 03 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 28DEG FLO10
RIGHT REAR QUAD
80008 82121 40004 42323 30002 32323 10001 12323
00999 02424 64/// 50090 34/// MX055 01060 06000
LAST REPORT ALL OBS THRU KMIA ATA KBIX 13/0035z

URNT12 KMIA 130943
AF972 1113 JEANNE OB 14 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 30DEG FLO50
RIGHT FRONT QUAD
82485 81512 42442 21515 32411 31515 1//// 1////
02401 02013 64045 50080 34/// MX065 06045 ////
LEFT FRONT QUAD
82475 81513 42460 41513 3//// 3//// 1//// 1////
0//// 0//// 64/// 50/// 34/// MX027 19030 ////
RIGHT FRONT QUAD
83098 80800 4//// 4//// 32420 31712 12385 11911
02337 02510 64/// 50040 34/// MX055 07030 ////
LAST REPORT OBS 01 THRU 14 TO KMIA
ETA TO KBIX AT 13/10000z

Table 7 continued.

URNT12 KMIA 131550
AF553 1213 JEANNE OB 11 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 34DEG FL100
RIGHT FRONT QUAD
83101 80702 43088 40700 33085 30605 13083 10702
03962 01151 64020 50040 34140 MX071 06020 25000
LEFT REAR QUAD
83060 80606 43036 40851 33997 30805 13974 11103
03962 01151 64/// 50/// 34/// MX033 22030 25000
RIGHT REAR QUAD
83072 80604 43063 40503 33033 30902 13994 10808
03985 01003 64/// 50/// 34050 MX042 18045 30000
LEFT FRONT QUAD
83076 80751 43034 40803 33009 30808 13984 10904
03072 00604 64/// 50080 34080 MX057 32045 30000
GROUPS 13 AND 14 POS 25.6N 91.3W WND LESS THAN
34KT IN LEFT REAR QUAD

URNT12 KMIA 140624
AF980 1313 JEANNE OB 17 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 27DEG FL999
LEFT FRONT QUAD
83106 80601 43082 40603 33066 60808 13039 11105
03018 01106 64/// 50/// 34/// MX033 22030 /////
LEFT REAR QUAD
83115 80403 43109 40505 39/// 3/// 19/// 1///
03024 01203 64/// 50/// 34/// MX028 12015 /////
RIGHT REAR QUAD
83109 80700 43126 40151 33075 307// 13059 10907
03044 01203 64/// 50/// 34/// MX031 07015 /////

Table 7 continued.

URNT12 KMIA 141132 COR
AF968 1413 JEANNE OB 10 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 36DEG FL100
RIGHT FRONT QUAD
83115 80500 43108 40601 33097 30806 13069 10906
03063 01004 64/// 50/// 34/// MX022 02045 /////
LEFT REAR QUAD
83111 80202 43102 40500 33092 30606 13090 10807
03063 01004 64/// 50/// 34045 MX037 22015 /////
RIGHT REAR QUAD
83119 80403 43097 40500 33086 30602 13086 11105
03073 01106 64/// 50/// 34/// MX027 12030 /////
LEFT FRONT QUAD
83117 80756 43106 40706 33094 30707 13082 11005
03073 01106 64/// 50/// 34030 MX035 36030 /////

URNT12 KMIA 141510
AF968 1413 JEANNE OB 15 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 32DEG FL100
LEFT FRONT QUAD
83121 80861 43118 40963 33112 30652 13103 10952
03091 01132 64/// 50/// 34015 MX038 27015 /////
RIGHT REAR QUAD
8//// 8//// 4//// 4//// 33113 30656 13099 11054
03091 01153 64/// 50/// 34/// MX020 09030 /////
LAST REPORT OBS 01-15 TO KMIA

URNT12 KMIA 142155
AF964 1513 JEANNE OB 09 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
AZIMUTH 05DEG FL010
RIGHT REAR QUAD
80012 82222 40010 42222 30006 32222 10004 12323
00002 02323 64/// 50/// 34/// MX030 18045 06000
LEFT FROMT QUAD
80011 82222 40008 42121 30005 32020 10003 12323
00002 02424 64/// 50/// 34030 MX035 34030 06000

Table 8. Tropical Cyclone Reconnaissance Summary for 1980.

1. Requirements Levied		
	Atlantic	Eastern & Central Pacific
Cyclones	130	0
Invest	<u>14</u>	<u>0</u>
TOTAL	144	0
2. Requirements Accomplished		
	Atlantic	Eastern & Central Pacific
53 WRS (cyclones/invest)	29/5	0/0
920 WRG (cyclones/invest)	76/9	0/0
RFC (cyclones/invest)	23/0	<u>0/0</u>
*TOTAL	128/14	0/0
3. Missions Flown		
	Atlantic	Eastern & Central Pacific
53 WRS	19	0
920 WRG	46	0
RFC	<u>11</u>	<u>0</u>
TOTAL	76	0
4. Flying Time		
	Atlantic	Eastern & Central Pacific
53 WRS	229.9	0
920 WRG	374.4	0
RFC	<u>94.5</u>	<u>0</u>
TOTAL	698.8	0
5. Observations		
	Horizontal 1340	Vertical 123

*Two unaccomplished requirements.
 Includes RFC photo damage survey mission.
 Does not include ferry missions or flying time.