

NOAA TECHNICAL MEMORANDUM NWS NHC 35

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ANNUAL DATA AND VERIFICATION TABULATION
ATLANTIC TROPICAL CYCLONES 1986

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National Hurricane Center
Miami, Florida
March, 1987

UNITED STATES
DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary

National Oceanic and
Atmospheric Administration
John V. Byrne, Administrator

National Weather
Service
Richard E. Hallgren, Director



INTRODUCTION

This is the Thirteenth 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 or 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 Tropical Satellite and Analysis Center of NHC, and the CARCAH (Chief Aerial Reconnaissance Coordination, all Hurricanes). This report also includes Probability Forecasts issued with advisories on landfalling United States tropical storms and hurricanes (Appendix B).

OBJECTIVE FORECAST TECHNIQUES

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

1. NHC-67 (Miller, Hill, Chase, 1968). A stepwise screening regression model using predictors derived from the current and 24-hour old 1000, 700, and 500 mb data, including persistence during the early forecast periods.
2. SANBAR (Sanders and Burpee, 1968). A filtered barotropic model using input data derived from the 1000 to 100 mb pressure weighted winds. The model requires use of "bogus" data in data-void areas. The system was modified by Pike (1972) so that the initial wind field near the storm would conform to the current storm motion.
3. HURRAN (Hope and Neumann, 1970). An analog system using as 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 CLIPER system into a single model.
6. NHC-73 (Neumann and Lawrence, 1973). Similar in concept to the NHC-72 except it also uses the "perfect prog" and MOS (model output statistics) methods to introduce NMC (National Meteorological Center) numerical prognostic data into the prediction equations.

7. NMC MFM MODEL (Hovermale, 1975). A ten-level baroclinic model which uses a moving fine mesh (MFM) grid nested within the coarser NMC fixed grid primitive equation (PE) model.

In addition, operational forecasts of tropical cyclone intensity changes in knots at 12-hourly intervals out to 72 hours are generated by a program named SHIFOR (Statistical Hurricane Intensity Forecasts). 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 TSAC (Tropical Satellite and Analysis Center) in Miami.

VERIFICATION

Verification statistics for the 1986 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 1970-1986 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 can be found in 1977 Annual Data and Verification Tabulation (Lawrence, Hebert, and Staff, 1979).

DATA SUMMARIES

A summary of 1986 North Atlantic tropical cyclone statistics is given in Table 4. Tracks of 1986 named storms are shown in Figure 1.

The best track, initial, and forecast positions for the 1986 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 the 1986 season. Fixes are in chronological order, and include those obtained by aerial reconnaissance penetrations, satellite (Miami TSAC), and land-based radar. The legend precedes the initial table.

Supplementary Vortex Data Messages 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 in Appendix A.

Table 8 is an aerial reconnaissance summary for the 1986 season

Graphs of the lowest central pressure versus time for the 1986 named tropical cyclones are shown in Figure 4.

Table 9 gives the probability forecasts issued for the 1986 land-falling United States storms and hurricanes.

ACKNOWLEDGEMENTS

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P

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.
- Neumann, C. J., 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.
- Neumann, C. J., and M. B. Lawrence, 1973: "Statistical-Dynamical Prediction of Tropical Cyclone Motion (NHC-73)," NOAA Technical Memorandum NWS SR-69, 34 pp.
- Neumann, C. J., 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.
- Carter, T. Michael, 1983: "Probability of Hurricane/Tropical Storm Conditions: A User's Guide for Local Decision Makers," NOAA National Weather Service Headquarters, 25 pp.

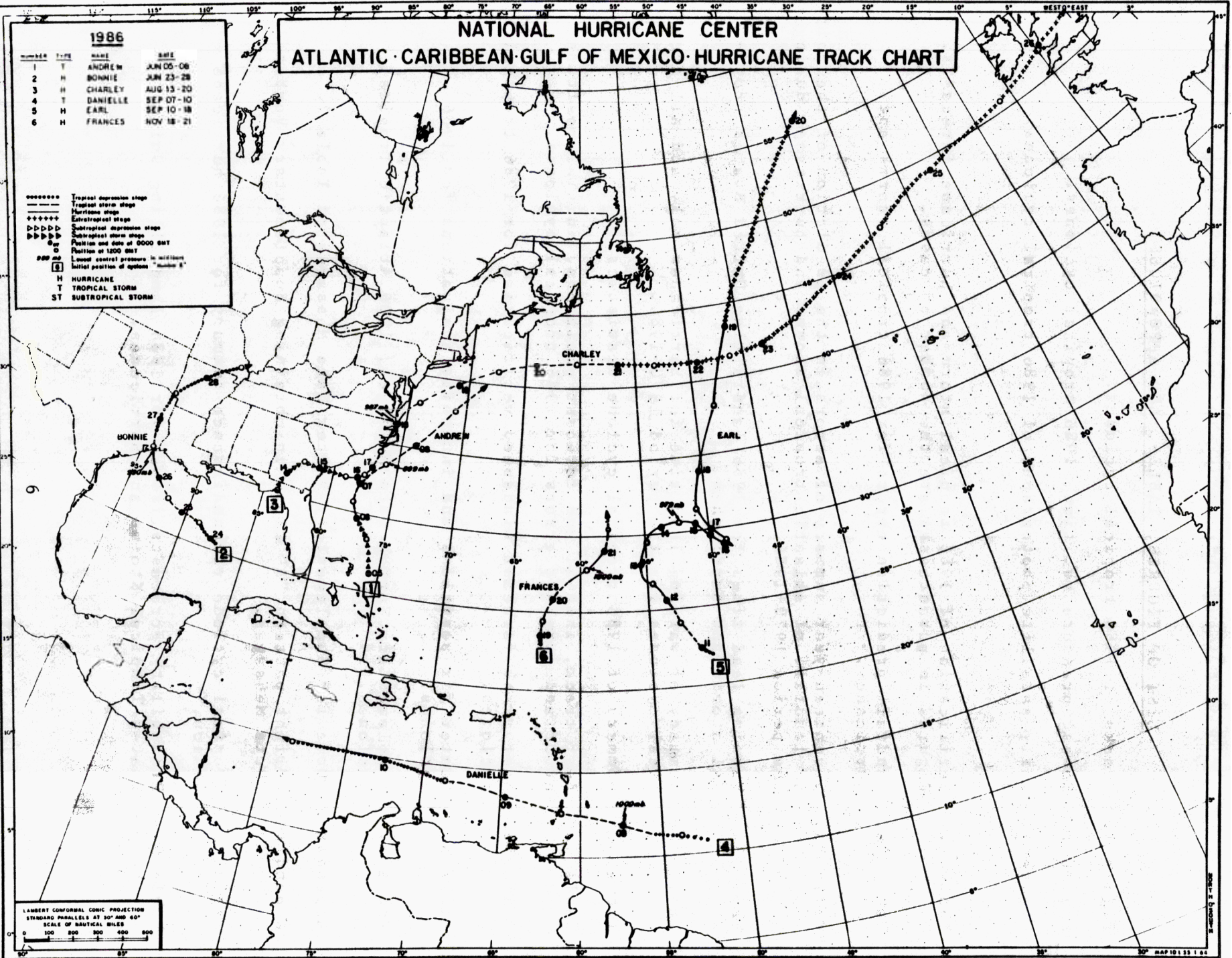
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NATIONAL HURRICANE CENTER ATLANTIC-CARIBBEAN-GULF OF MEXICO HURRICANE TRACK CHART

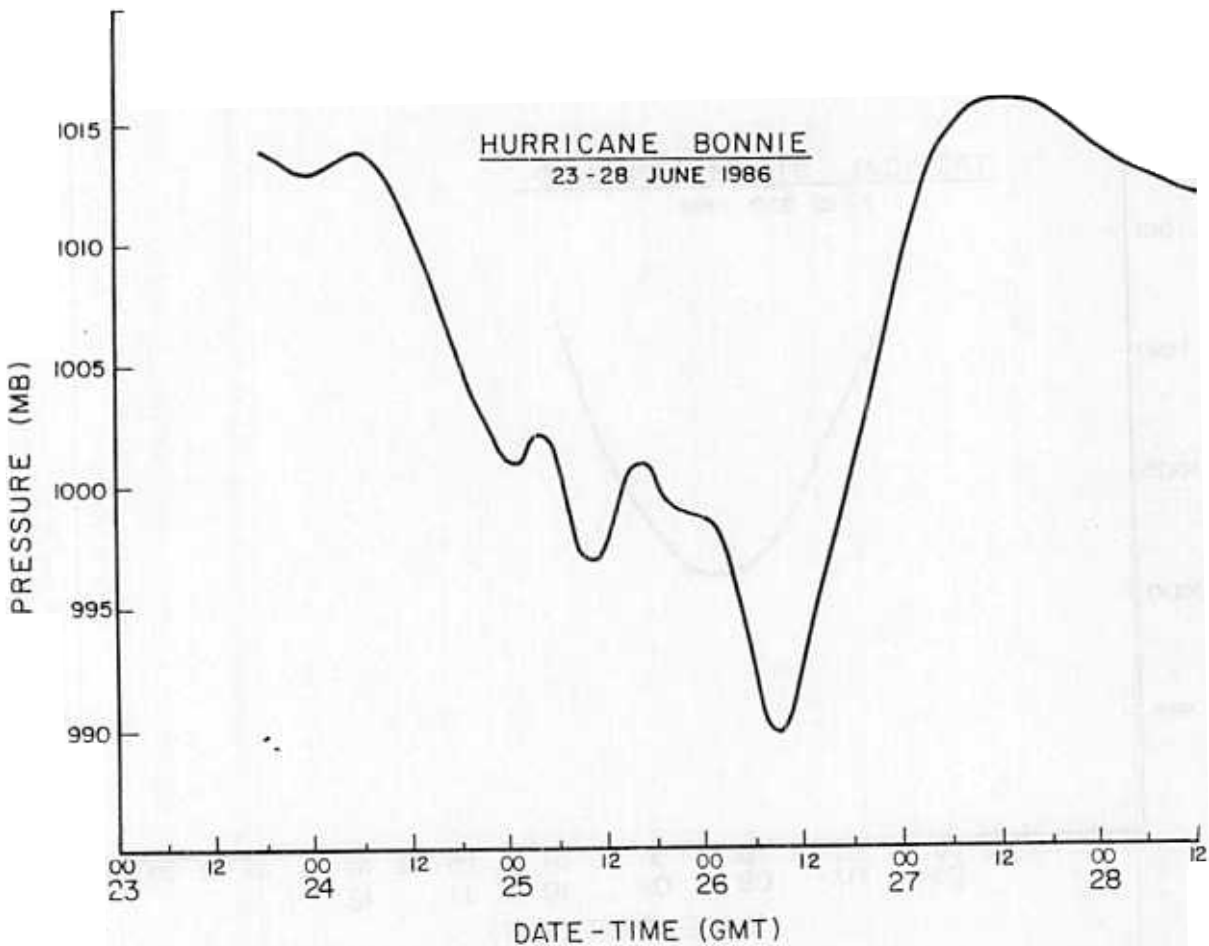
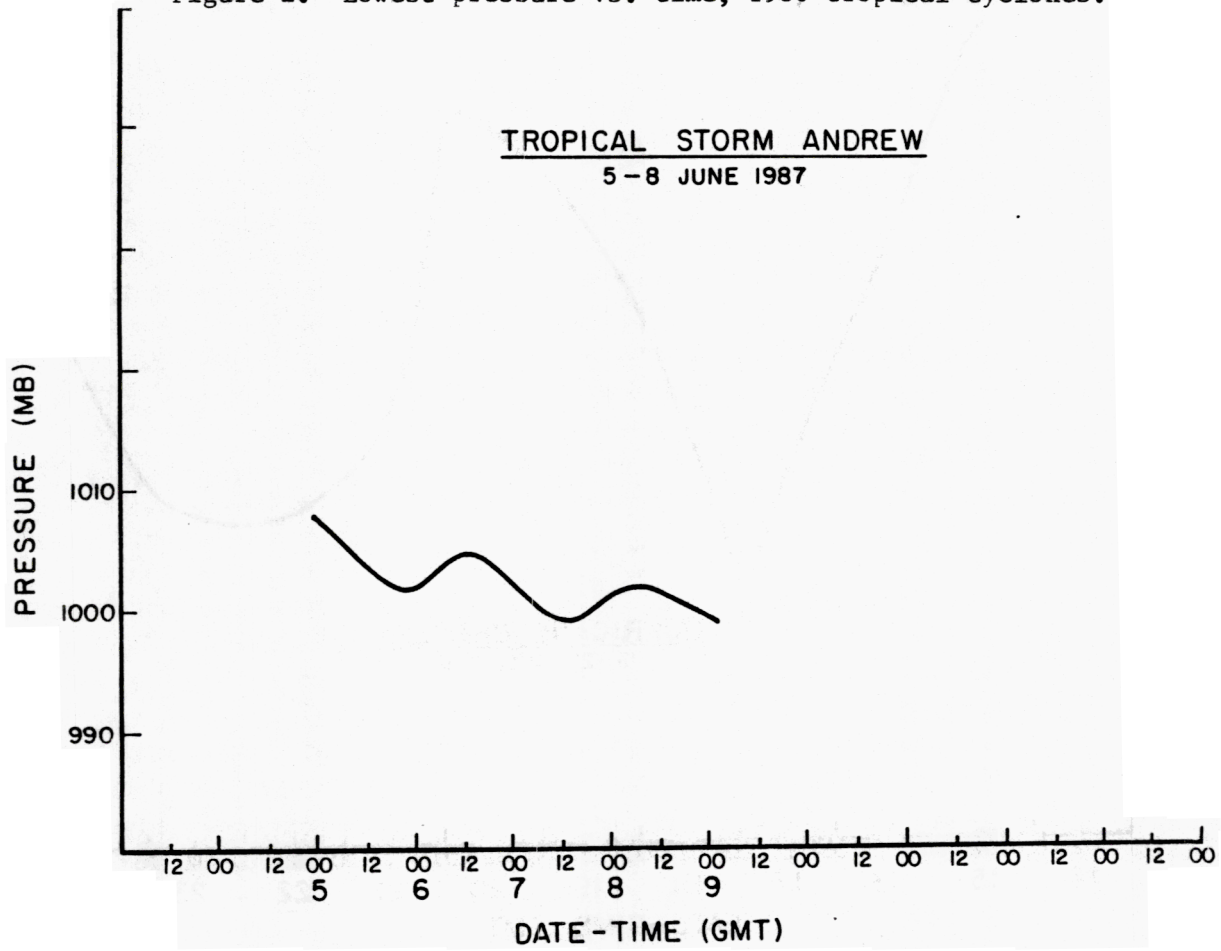
1986			
NUMBER	TYPE	NAME	DATE
1	T	ANDRE	JUN 05-08
2	H	BONNIE	JUN 23-28
3	H	CHARLEY	AUG 13-20
4	T	DANIELLE	SEP 07-10
5	H	EARL	SEP 10-18
6	H	FRANCES	NOV 18-21

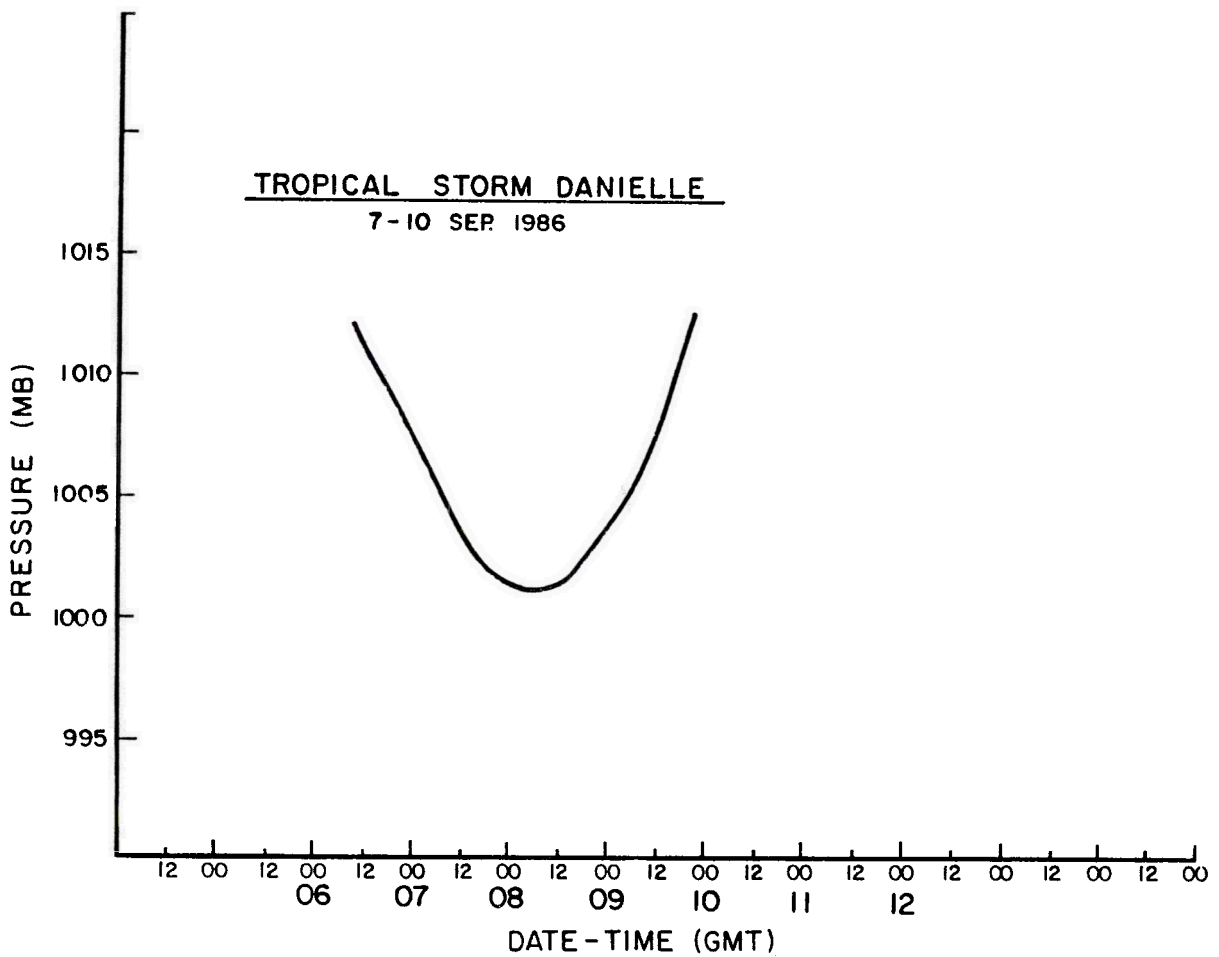
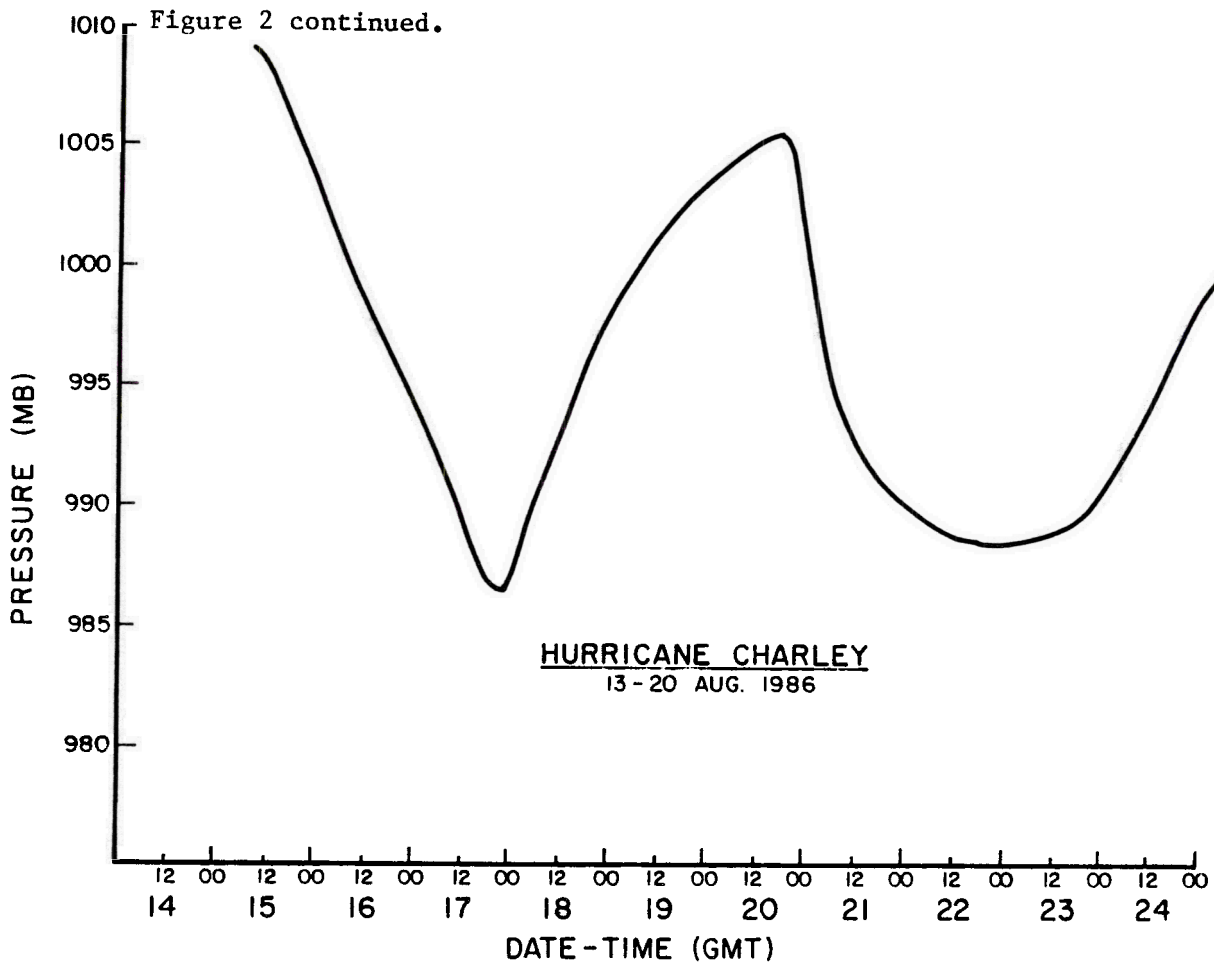
-----	Tropical depression stage
- - - - -	Tropical storm stage
-----	Hurricane stage
-----	Extratropical stage
-----	Subtropical depression stage
-----	Subtropical storm stage
○	Position and date at 0000 GMT
○	Position at 1200 GMT
○	Lowest central pressure in millibars
○	Initial position of system "made 1"
H	HURRICANE
T	TROPICAL STORM
ST	SUBTROPICAL STORM



LAMBERT CONFORMAL CONIC PROJECTION
STANDARD PARALLELS AT 30° AND 60°
SCALE OF STATISTICAL MILES
0 100 200 300 400 500

Figure 2. Lowest pressure vs. time, 1986 tropical cyclones.





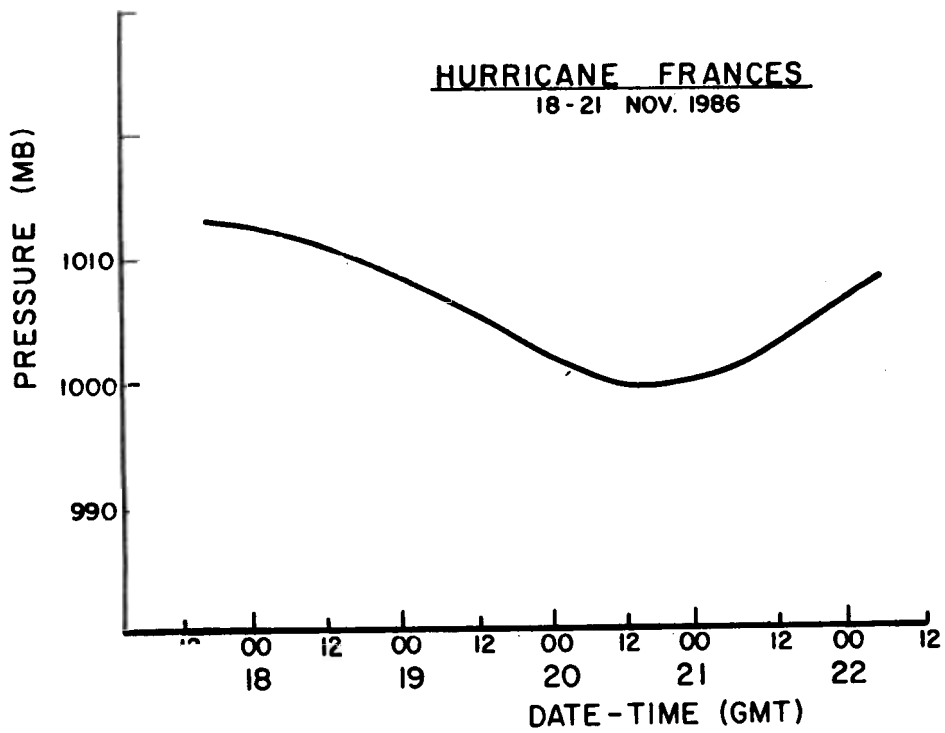
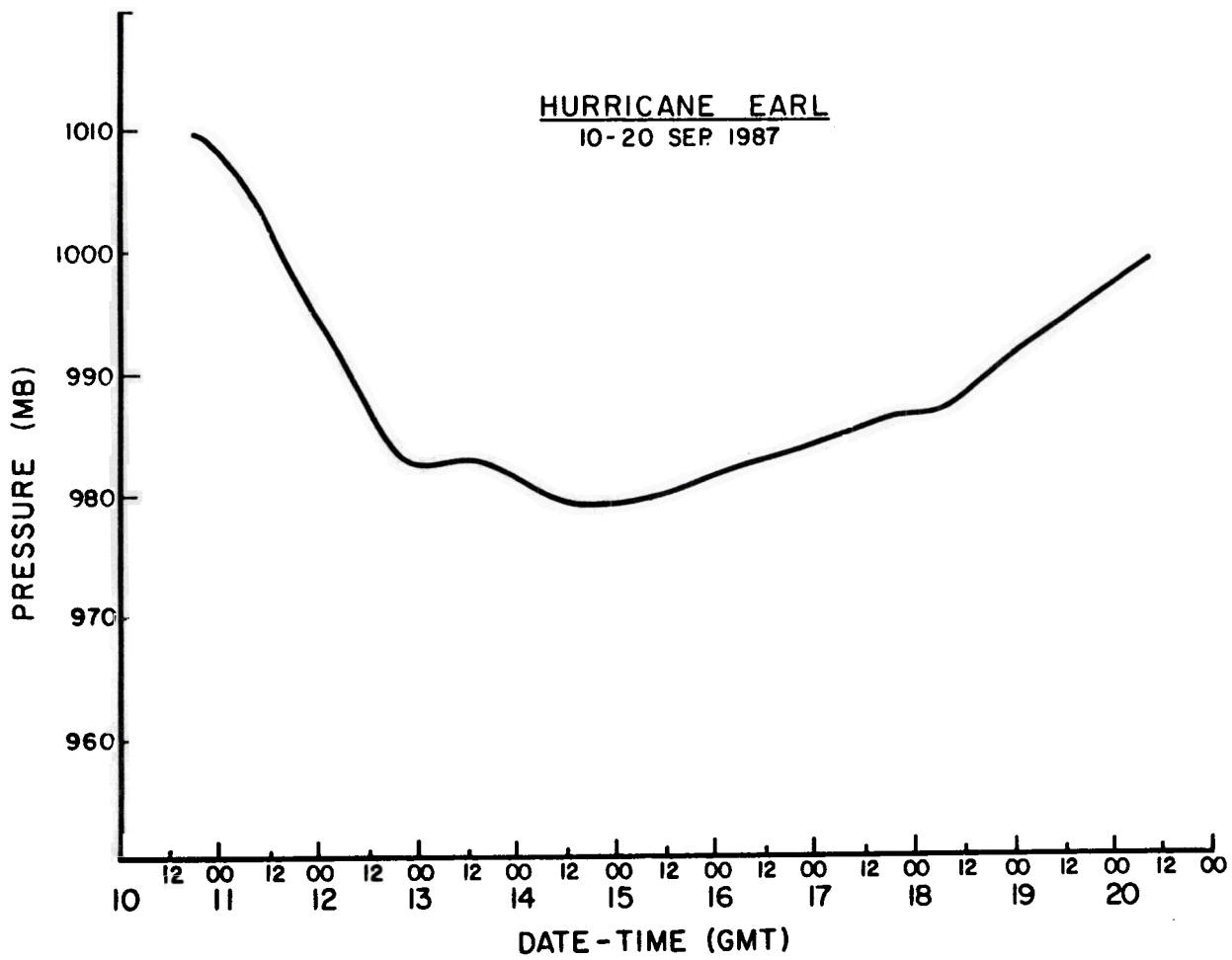
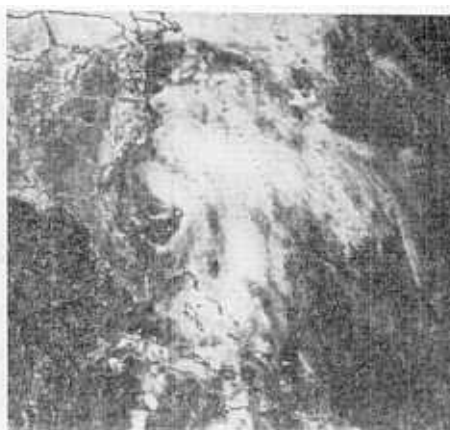


Figure 3. Daily satellite photographs of 1986 tropical cyclones.

ANDREW



1831 UTC 6/05/86
1003 mb



1801 UTC 6/06/86
1004 mb



1831 UTC 6/07/86
1000 mb



1830 UTC 6/08/86
1001 mb

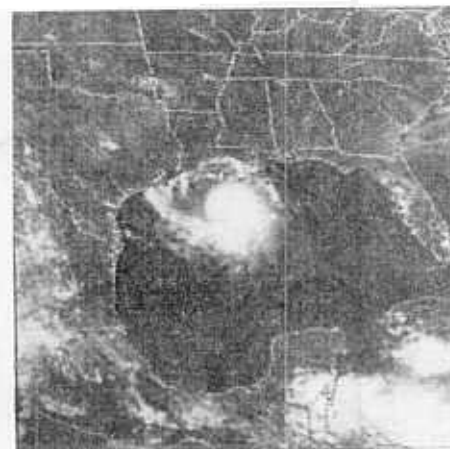
BONNIE



1931 UTC 6/23/86
1014 mb



1831 UTC 6/24/86
1006 mb



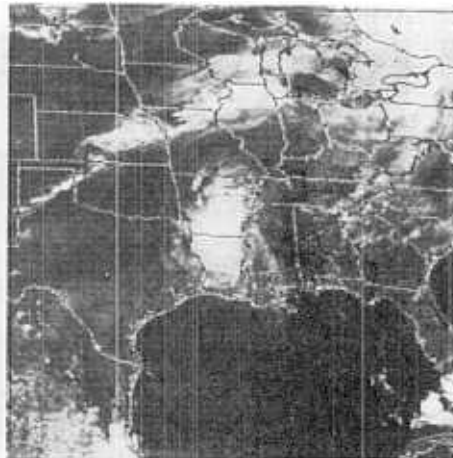
1701 UTC 6/25/86
1000 mb

Figure 3. continued

BONNIE (continued)



1600 UTC 6/26/86
998 mb

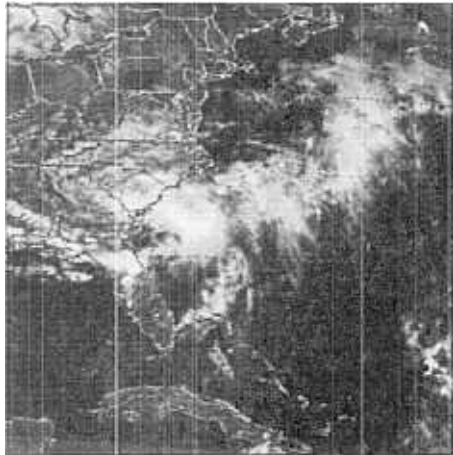


1831 UTC 6/27/86
1016 mb

CHARLEY



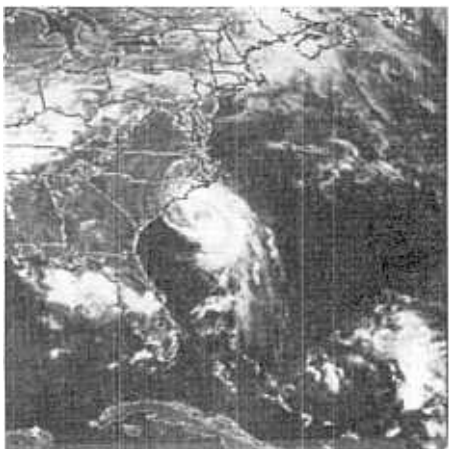
1800 UTC 8/13/86
1012 mb



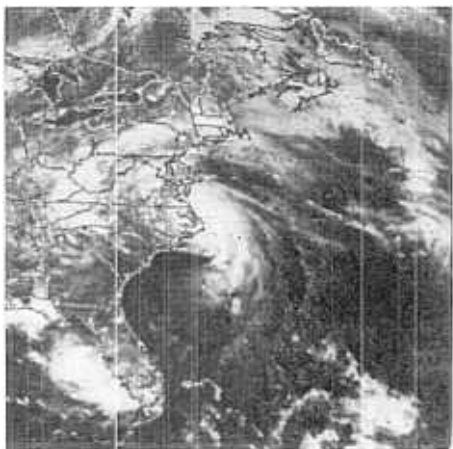
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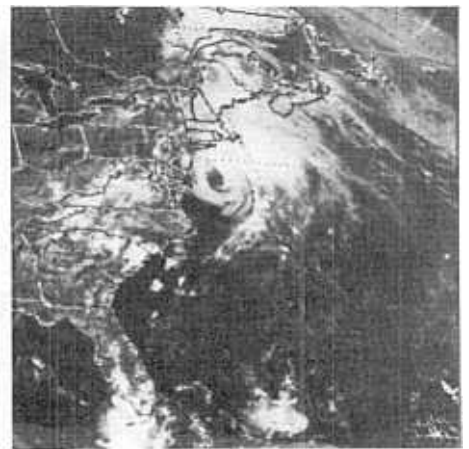
1500 UTC 8/15/86
1008 mb



1800 UTC 8/16/86
997 mb



1800 UTC 8/17/86
988 mb

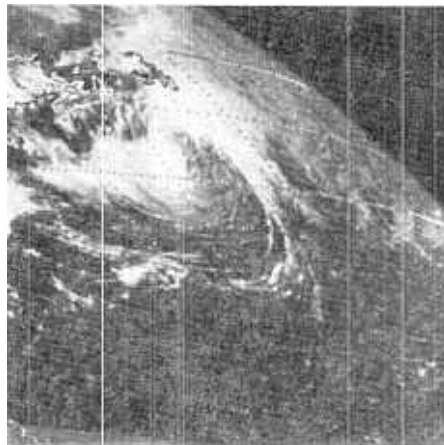


1801 UTC 8/18/86
994 mb

Figure 3 cont nued



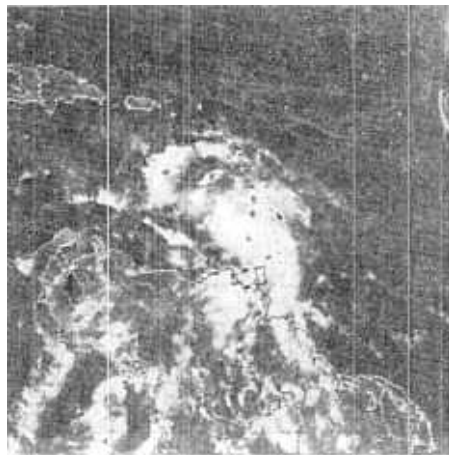
1801 UTC 8/19/86
1002 mb



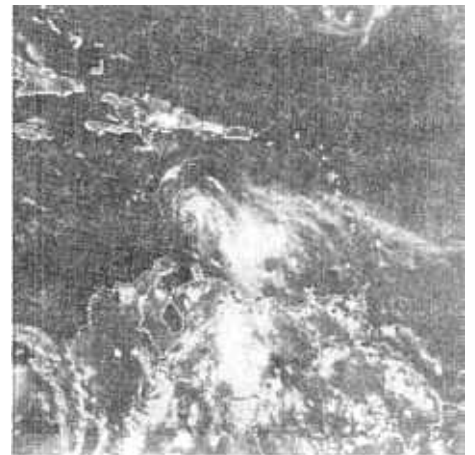
1830 UTC 8/20/86
1005 mb



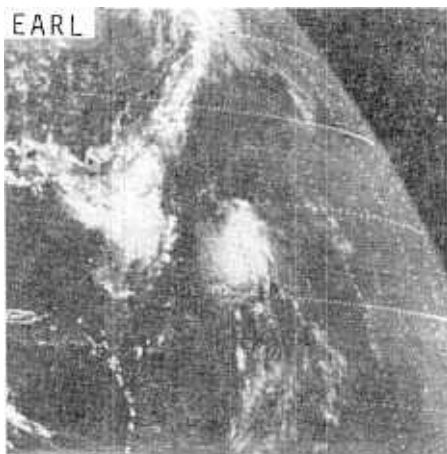
1831 UTC 9/07/86
1003 mb



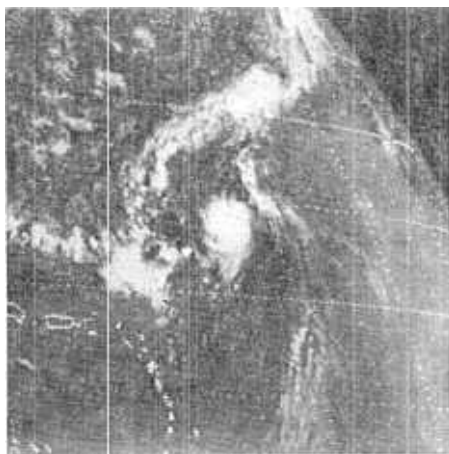
1801 UTC 9/08/86
1002 mb



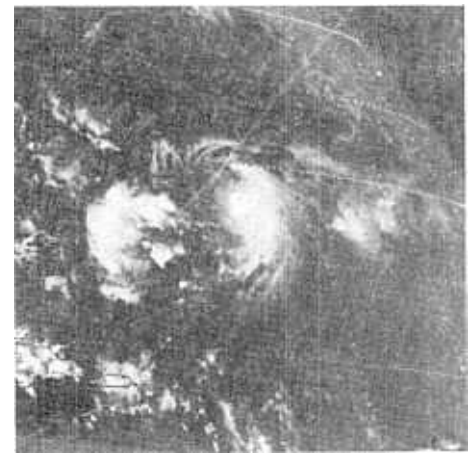
1800 UTC 9/09/86
1010 mb



1801 UTC 9/10/86
1010 mb



1201 UTC 9/11/86
1002 mb



831 UTC 9/12/86
985 mb

Figure 3. (continued)

EARL (continued)



1601 UTC 9/13/86
983 mb



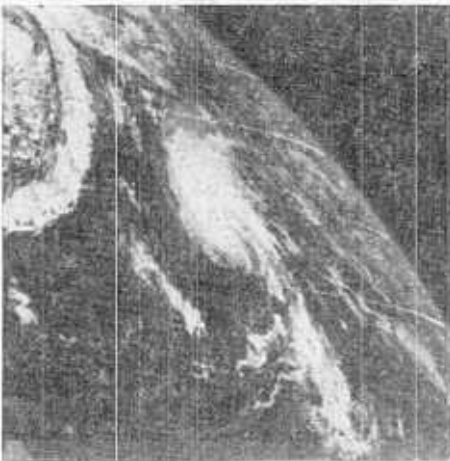
1501 UTC 9/14/86
979 mb



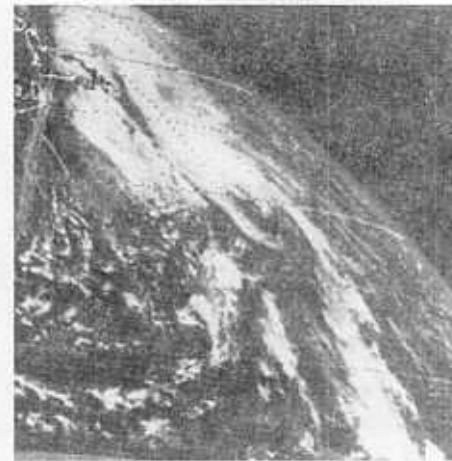
1831 UTC 9/15/86
982 mb



1801 UTC 9/16/86
984 mb



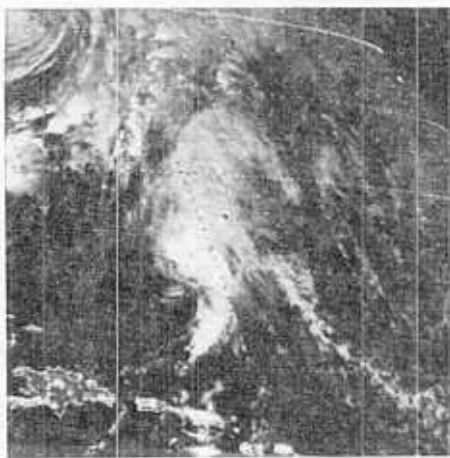
1701 UTC 9/17/86
986 mb



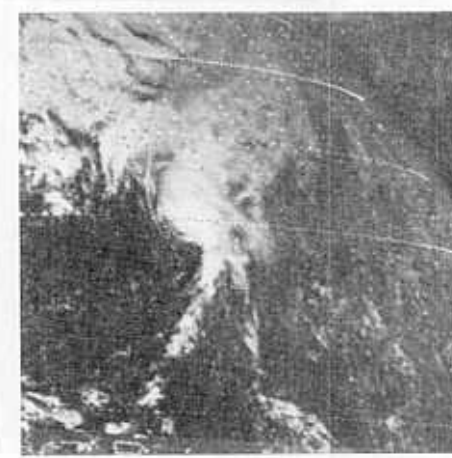
1601 UTC 9/18/86
990 mb



1801 UTC 11/18/86
1009 mb



1800 UTC 11/19/86
1004 mb
13



1800 UTC 11/20/86
1000 mb

Table 1. Verification of 1986 tropical storm and hurricane forecasts.

model	forecast period (hours)				
	0	12	24	48	72
Official (no. of cases)	20 (73)	56 (73)	111 (61)	241 (37)	388 (24)
NHC67	20 (73)	58 (73)	110 (61)	330 (37)	604 (24)
NHC72	20 (73)	55 (73)	107 (61)	225 (37)	385 (24)
HURRAN	18 (25)	58 (25)	134 (20)	301 (10)	536 (9)
CLIPER	20 (73)	61 (73)	123 (61)	258 (37)	385 (24)
NHC73	17 (35)	54 (35)	106 (29)	236 (17)	435 (11)
SANBAR	17 (35)	57 (35)	97 (27)	251 (16)	411 (11)
MFM	16 (25)	64 (25)	123 (20)	266 (9)	365 (6)

Table 2a. Landfall prediction errors for 1986 tropical storms and hurricanes.

Following is a list of landfall prediction errors for tropical storms and hurricanes during 1986. Each error represents the distance (in nautical miles) from the predicted landfall point determined from the "Official" forecast issued 24 hours prior 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.m.)	Location and remarks
Bonnie	Hurricane	6/26/1000Z	40	Near Port Arthur, TX.
Charley	Hurricane	8/17/1400Z	*	Near Cape Lookout, NC.

* No landfall forecast made 24 hours prior to landfall

Table 2b. Seventeen-year summary of errors (n.mi.) in the prediction of landfall points for Atlantic tropical storms and hurricanes during the period of 1970-1986.

	United States Landfalls	All Landfalls
1986 Mean 24 Hour Landfall Prediction Error (number of cases)	40 (02)	40 (02)
17 year average 1970-1986	53 (35)	55 (70)

Table 3a. Tropical cyclone warning lead time of 1986 United States Landfalling tropical storms and hurricanes.

Storm Name	Category at Landfall	Date/Time (Z) of Landfall	Location of landfall	Type and Time (Z) of Warnings Issued for Point of Landfall	Warning Lead Time (hours)
ANDREW	(No U.S. Landfall)				
BONNIE	Hurricane	6/26/10Z	Near Port Arthur, TX.	Gale Warnings, Port O'Connor, TX. to mouth of Miss. River. 6/25/16Z.	22
				Hurricane Warnings, West of Morgan City, LA. to Freeport, TX.	16
CHARLEY	Hurricane	8/17/14Z	Cape Lookout, NC.	Gale Warnings, Bouge Inlet, NC. to Oregon Inlet, NC. 8/16/22Z	16
				Hurricane Warnings, Bouge Inlet, NC. to Oregon Inlet, NC. 8/17/10Z	04
				Gale Warnings, Bouge Inlet, NC. to Topsail Beach, NC. 8/17/10Z.	04
		8/17/22Z	Kitty Hawk, NC.	Gale Warnings, Oregon Inlet, NC. to Virginia Beach, VA. 8/17/10Z.	12
				Hurricane Warning, Oregon Inlet, NC. to Virginia Beach, VA. 8/17/14Z.	08
				Gale Warnings, Virginia Beach, VA. to Fenwick Island, MD./DE. 8/17/14Z.	08
				Hurricane Warnings, Virginia Beach, VA. to Fenwick Island, MD./DE. 8/17/20Z.	Offshore
				Gale Warnings, Fenwick Island, MD./DE. to Chatham, MA. 8/17/22Z.	Offshore
				Hurricane Warnings, Fenwick Island, MD./DE. to Sandy Hook, NJ. 8/18/02Z.	Offshore
DANIELLE	(No U.S. Landfall)				
EARL	(No U.S. Landfall)				
FRANCES	(No U.S. Landfall)				

Table 3b. Average warning lead times for all tropical storms and hurricanes and for hurricanes alone, which made landfall on the mainland of the United States during 1986 and during the 17-year period of 1970-1986.

	All Tropical Storms and Hurricanes		All Hurricanes	
	1986	1970-1986	1986	1970-1986
Average Lead Time (hours)	14	25	11	27
(number of cases)	(2)	(41)	(2)	(21)

Table 4. Summary of North Atlantic Tropical Cyclones Statistics, 1986

Cyclone Number	Name	Class. ¹	Dates ²	Maximum Sustained Wind (kt)	Lowest Press. (mb)	U.S. Damage (\$millions)	Deaths
1	Andrew	T	6/05-6/08	45	999		1
2	Bonnie	H	6/23-6/28	75	990	2	3
3	Charley	H	8/13-8/20	70	987	15	5
4	Danielle	T	9/07-9/10	50	1000		
5	Earl	H	9/10-9/18	90			
6	Frances	H	11/18-11/21	75	1000		

1 T: tropical storm, wind speed 34 - 63 kt.
 H: hurricane, wind speed 64 kt or higher.
 ST: subtropical storm, wind speed 34 - 63 kt.

2 Dates begin at 0000 UTC and are for tropical and subtropical cyclone stages.

Table 5a. Best tracks, initial and forecast positions, initial position error and forecast errors 1986 tropical cyclones.

OFFICIAL FORECASTS ANDREW JUN 06-JUN 08 1986

DATE/TIME GMT	BEST TRACK		OPERATIONAL POSITION		ERROR NM	12HR FORECAST		24HR FORECAST		36HR FORECAST		48HR FORECAST		72HR FORECAST																					
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.																				
060612	31.7	73.0	31.7	73.0	24	32.0	73.0	33.5	77.5			35.5	74.0	221	37.0	69.0																			
060618	31.4	77.9	31.0	73.0	25	32.0	73.0	33.5	77.5	130		35.5	74.0		37.0	69.0																			
060700	31.3	77.9	31.0	73.0	25	32.0	73.0	33.5	77.5	130		35.5	74.0		37.0	69.0																			
060706	32.8	76.9	32.8	76.9	15	33.0	74.8	34.7	72.3	96		36.0	66.0		44.0	56.0																			
060712	33.8	76.0	33.8	76.0	16	34.0	73.0	35.0	72.0	118		40.0	64.0		43.0	52.0																			
060718	34.0	73.0	34.0	73.0	16	34.0	73.0	35.0	73.0			40.0	64.0		43.0	52.0																			
060800	35.2	73.9	35.1	73.7	11	35.0	71.0	37.0	67.0			41.0	59.0		45.5	50.0																			
060806	35.3	72.7	35.2	72.8		35.0	71.0	37.0	66.0			41.0	59.0		45.5	50.0																			
060812	37.9	71.0	37.0	71.7		43.0	65.5					45.0	51.0																						
MEAN VECTOR ERRORS(NM)					11						41						94						0						221						0
NUMBER OF CASES					7						7						5						0						1						0

OFFICIAL FORECASTS BONNIE JUN 21-JUN 26 1986

DATE/TIME GMT	BEST TRACK		OPERATIONAL POSITION		ERROR NM	12HR FORECAST		24HR FORECAST		36HR FORECAST		48HR FORECAST		72HR FORECAST																					
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.																				
062418	25.0	93.5	25.0	93.5	2	27.0	90.7	27.0	91.7	15		29.0	93.0	144	30.5	94.5																			
062500	25.7	91.3	25.0	91.0	2	27.0	90.7	27.0	91.7	15		29.0	93.0	144	30.5	94.5																			
062512	26.0	91.0	25.0	91.0	1	27.0	90.7	27.0	91.7	15		29.0	93.0	144	30.5	94.5																			
062518	27.7	91.7	27.0	91.0		27.0	90.7	27.0	91.7	15		29.0	93.0	144	30.5	94.5																			
062600	29.0	93.0	29.0	93.0		27.0	90.7	27.0	91.7	15		29.0	93.0	144	30.5	94.5																			
062606	29.0	93.0	29.0	93.0		27.0	90.7	27.0	91.7	15		29.0	93.0	144	30.5	94.5																			
062612	29.9	94.7	29.0	93.0		27.0	90.7	27.0	91.7	15		29.0	93.0	144	30.5	94.5																			
062618	30.9	94.7	31.0	94.4		27.0	90.7	27.0	91.7	15		29.0	93.0	144	30.5	94.5																			
MEAN VECTOR ERRORS(NM)					5						34						50						0						144						0
NUMBER OF CASES					5						7						5						0						1						0

* Note: Forecast errors are adjusted for the initial position error

Table 5a continued.

17 SEP 19 1966

DATE/TIME GMT	BEST TRACK		OFFICIAL POSITION		12HR FORECAST		24HR FORECAST		36HR FORECAST		48HR FORECAST		72HR FORECAST	
	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.
09 00 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
09 06 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
09 12 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
09 18 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
09 24 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
09 30 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
09 36 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
09 42 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
09 48 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
09 54 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
10 00 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
10 06 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
10 12 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
10 18 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
10 24 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
10 30 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
10 36 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
10 42 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
10 48 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
10 54 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 00 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 06 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 12 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 18 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 24 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 30 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 36 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 42 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 48 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 54 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0

MEAN VECTOR ERRORS (NM)	20	30	35	113	0	228	344
NUMBER OF CASES	20	30	35	7	0	23	19

OFFICIAL FORECASTS FRANCIS NOV 19-NOV 21 1966

DATE/TIME GMT	BEST TRACK		OFFICIAL POSITION		12HR FORECAST		24HR FORECAST		36HR FORECAST		48HR FORECAST		72HR FORECAST	
	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.
11 00 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 06 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 12 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 18 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 24 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 30 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 36 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 42 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 48 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0
11 54 00	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0	30.0	110.0

MEAN VECTOR ERRORS (NM)	4	8	13	0	115	0
NUMBER OF CASES	4	8	7	0	3	0

1966 SUMMARY FOR OFFICIAL POSN. ERR 12HR 24HR 36HR 48HR 72HR

AVERAGE ERROR FOR ALL STORMS	20	47	104	0	233	382
NUMBER OF CASES	20	73	51	0	37	24

Table 5b. Best Track Hurricane Andrew 10-20 September 1986
with 12/24/48/72 hour forecast windspeed verification.

DATE	TIME (UTC)	POSITION		PRESSURE (MB)	WIND (KT)	FORECAST WINDSPEED ERROR IN KNOTS*			
		LATITUDE	LONGITUDE			12	24	48	72
6/05	0000	26.2	75.8	1007	30				
	0600	27.4	76.0	1006	30				
	1200	28.4	76.4	1005	30				
	1800	29.1	77.0	1003	30				
	0000	29.7	77.5	1002	35	-05	00	00	
	0600	30.2	77.8	1003	40	-10	-10	-20	
	1200	30.7	78.0	1005	45	-10	-05	00	
	1800	31.4	77.9	1004	45	-10	-10	00	
6/07	0000	31.9	77.8	1003	45	-10	-10		
"	0600	32.8	76.9	1001	45	-05	-05		
"	1200	33.6	76.0	999	45	-05	00		
"	1800	34.3	75.0	1000	45	-05	00		
6/08	0000	35.2	73.9	1002	45	-05			
"	0600	36.3	72.7	1002	45	+05			
"	1200	37.9	71.0	1002	40				
"	1800	39.6	68.9	1001	35				

Best Track - Hurricane Bonnie - June 1986 with
12/24/48/72 hour forecast windspeed verification.

DATE	TIME (UTC)	POSITION		PRESSURE (mb)	WIND kt	FORECAST WINDSPEED ERROR IN KNOT			
		LATITUDE	LONGITUDE			12	24	48	72
8/23	1800	25.6	87.2	1014	25	+05	00	-15	+25
8/24	0000	25.7	87.8	1013	25	00	-05	-20	+30
	0600	26.0	88.4	1014	25	-10	-10	-25	+35
	1200	26.4	88.9	1011	30	00	-05	-05	+45
	1800	26.6	89.5	1006	40	-05	-15	+25	+15
8/25	0000	26.7	90.3	1001	45	+10	+10	+15	
	0600	26.8	91.0	1002	50	-05	-05	00	
	1200	27.2	91.7	997	55	00	+10	+05	
	1800	27.7	92.2	1001	65	00	+50	+10	
	0000	28.2	92.9	999	70	+05	+10		
	0600	29.0	93.7	995	75	00	00		
	1200	29.9	94.3	992	65	+05	+05		
	1800	30.9	94.7	1000	35	00	00		
8/28	0000	31.8	94.7	1009	30				
	0600	32.8	94.7	1015	25				
	1200	33.9	94.3	1016	20				
	1800	34.8	93.5	1016	20				
	0000	35.6	92.5	1014	15				
	0600	36.5	91.3	1013	10				
	1200	37.2	90.0	1012	10				

* Forecast wind speed error is computed by subtracting actual wind speed from the forecast wind speed.

Table 5b (continued). BEST TRACK - HURRICANE CHARLEY - AUGUST 1986 with
12/24/48/72 hour forecast windspeed verification.

DATE	TIME (UTC)	POSITION		PRESSURE (MB)	WIND (KT)	FORECAST WINDSPEED ERROR IN KNOTS			
		LATITUDE	LONGITUDE			12	24	48	72
8/13	1200	30.1	84.0	1009	10				
"	1800	30.8	84.0	1012	10				
8/14	0000	31.4	83.6	1013	10				
"	0600	32.0	83.1	1014	10				
"	1200	32.5	82.5	1015	10				
"	1800	32.4	82.0	1015	10				
8/15	0000	32.3	81.2	1013	15				
"	0600	32.3	80.0	1013	15				
"	1200	32.2	79.0	1009	30				
"	1800	32.2	78.5	1007	35	+15	+10	00	+10
8/16	0000	32.3	78.1	1004	40	+10	+05	-05	+15
"	0600	32.4	77.9	1002	40	00	-05	00	+20
"	1200	32.6	77.6	999	45	-05	-10	+05	+25
"	1800	32.9	77.4	997	50	-05	00	+10	+25
8/17	0000	33.2	77.1	995	55	00	00	+20	+20
"	0600	33.7	76.9	993	60	00	-05	-15	
"	1200	34.4	76.6	991	65	-05	+05	+20	+25
"	1800	35.4	76.2	988	65	00	+05	+20	+25
8/18	0000	36.5	75.8	987	70	+05	00	+10	+05
"	0600	37.4	75.2	990	65	00	00	+05	00
"	1200	38.2	74.1	992	60	00	+05	00	-15
"	1800	39.0	72.6	994	60	-05	-15	-15	-20
8/19	0000	39.7	70.9	997	55	-10	-10	-15	-20
"	0600	40.4	69.1	999	50	00	00	-05	
"	1200	40.9	67.5	1000	45	00	-05		
"	1800	41.3	65.8	1002	45	-05	-10		
8/20	0000	41.5	64.0	1003	40				
"	0600	41.6	62.5	1004	40				
"	1200	41.7	60.2	1005	40				
"	1800	41.7	58.4	1005	40				
8/21	0000	41.6	56.6	1000	40				
"	0600	41.5	54.8	997	40				
"	1200	41.4	53.2	992	40				
"	1800	41.3	51.2	991	45				
8/22	0000	41.3	49.4	990	45				
"	0600	41.3	47.6	989	45				
"	1200	41.4	46.2	989	45				
"	1800	41.5	44.8	989	45				
8/23	0000	41.8	43.2	988	45				
"	0600	42.3	41.6	989	45				
"	1200	43.0	39.6	989	45				
"	1800	43.9	37.2	989	45				

Table 5b (continued). BEST TRACK - Tropical Storm Danielle - 7 to 10 Sept 1986.
with 12/24/48/72 hour forecast windspeed verification

DATE	TIME (UTC)	POSITION		PRESSURE (MB)	WIND (KT)	FORECAST WINDSPEED ERROR IN KNOTS			
		LATITUDE	LONGITUDE			12	24	48	72
9/7	0600	10.5	52.0	1008	25	+05	+05	+10	+15
"	1200	11.0	54.0	1005	30	+15	+05	00	+20
"	1800	11.2	55.8	1003	35	+05	+05	+20	
9/8	0000	11.8	57.5	1000	45	+05	+15	+35	
"	0600	12.2	59.4	1000	50	00	+15	+35	
"	1200	12.5	61.2	1002	50	+05	+20	+35	
"	1800	13.0	63.0	1002	50	+10	+20		
9/9	0000	13.4	64.8	1004	45	+15	+30		
"	0600	13.8	66.5	1006	40	+25	+35		
"	1200	14.0	68.5	1008	35	+15	+25		
"	1800	14.5	70.5	1010	30	00			
9/10	0000	14.8	72.5	1012	30	00			
"	0600	14.9	75.5	1012	30				
"	1200	14.8	78.5	1013	30				

Table 5b (continued). Best Track Hurricane Earl 10-20 September 1986
with 12/24/48/72 hour forecast windspeed verification.

DATE	TIME (UTC)	POSITION		PRESSURE (MB)	WIND (KT)	FORECAST WINDSPEED ERROR IN KNOTS			
		LATITUDE	LONGITUDE			12	24	48	72
9/10	1800	21.8	50.8	1010	30	-10	-25	-35	-35
9/11	0000	22.4	51.6	1009	35	-25	-40	-45	-35
"	0600	23.2	52.3	1006	45	-35	-40	-45	-35
"	1200	24.1	52.9	1002	55	-45	-50	-55	-55
"	1800	25.0	53.4	999	70	-25	-25	-30	-40
9/12	0000	25.6	53.8	996	75	-20	-25	-30	-40
"	0600	26.3	54.3	993	80	-25	-25	-30	-40
"	1200	26.8	54.8	988	85	-20	-25	-25	-40
"	1800	27.2	55.4	985	90	-20	-20	-25	-30
9/13	0000	28.1	55.5	983	90	-10	-05	-10	-05
"	0600	28.8	55.3	983	90	-20	-25	-25	-15
"	1200	29.5	54.9	983	90	-15	-20	-25	-15
"	1800	30.1	54.7	983	90	-10	-15	-15	-10
9/14	0000	30.4	53.8	982	90	-10	-15	-10	-10
"	0600	30.5	53.1	980	90	-15	-20	-15	-10
"	1200	30.6	52.4	979	90	-10	-15	-10	-15
"	1800	30.6	51.7	979	90	-15	-15	-15	-20
9/15	0000	30.4	51.1	980	90	-10	-05	-05	-05
"	0600	30.0	50.6	980	90	-05	-05	-05	00
"	1200	29.6	50.1	981	90	00	00	-05	00
"	1800	29.2	49.6	982	85	-05	-05	-05	-05
9/16	0000	29.0	49.0	983	80	00	-05	-05	00
"	0600	28.7	48.5	983	80	-05	-05	-05	-10
"	1200	29.1	48.9	984	75	-05	-05	-05	-05
"	1800	29.5	49.3	984	75	-05	-05	-05	-05
9/17	0000	29.9	49.9	985	75	-05	-10	-05	-10
"	0600	30.6	50.3	985	70	-05	-05	-05	
"	1200	31.4	50.9	986	70	-05	00	-05	
"	1800	32.6	50.7	986	70	00	00	-05	
9/18	0000	34.0	50.4	987	70	00	+05	-05	
"	0600	36.0	49.6	988	65	00	00		
"	1200	38.3	48.4	989	65	+05	+05		
"	1800	41.0	47.5	990	65	-10	-10		
9/19	0000	43.5	46.3	992	60	-05	-10		
"	0600	46.2	44.8	993	60	00			
"	1200	49.0	42.0	995	55	-05			
"	1800	52.0	39.5	996	55				
9/20	0000	56.0	34.0	997	55				

Table 5b (continued). Best Track Hurricane Frances 18-21 November 1986
with 12/24/48/72 hour forecast windspeed verification.

<u>DATE</u>	<u>TIME</u> <u>(UTC)</u>	<u>POSITION</u>		<u>PRESSURE</u> <u>(MB)</u>	<u>WIND</u> <u>(KT)</u>	<u>FORECAST WINDSPEED ERROR IN KNOTS</u>			
		<u>LATITUDE</u>	<u>LONGITUDE</u>			<u>12</u>	<u>24</u>	<u>48</u>	<u>72</u>
11/18	1800	22.8	62.8	1009	30	00	-10	-30	00
11/19	0000	23.5	62.9	1008	30	-05	-15	-25	
"	0600	23.9	62.9	1007	35	-15	-25	-20	
"	1200	24.4	62.8	1006	40	-20	-30	-10	
"	1800	24.8	62.7	1004	50	-15	-25	+05	
11/20	0000	25.8	62.1	1002	55	-20	-15		
"	0600	27.0	61.0	1001	65	-25	-15		
"	1200	27.8	59.6	1000	75	-05	+05		
"	1800	28.5	58.7	1000	75	00	+15		
11/21	0000	29.1	58.2	1001	70	+10			
"	0600	29.7	58.0	1002	65	+20			
"	1200	30.4	57.9	1003	55				
"	1800	31.1	57.9	1005	45				

LEGEND FOR TABLE 6

OBSERVATIONAL UNIT

Reconnaissance

AF = Air Force

NOAA = National Oceanographic and Atmospheric Administration

Satellite

GOES-6 = Geostationary Operational Environmental Satellite

Radar

National Weather Service Radar:

GLS-R = Galveston, TX.

LCH-R = Lake Charles, LA.

CHS-R = Charleston, SC.

ILM-R = Wilmington, NC.

HAT-R = Cape Hatteras, NC

RESOLUTION

Reconnaissance

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

Satellite

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

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

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

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

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

Table 6. Center Fix positions and intensity evaluations for 1986 Tropical Cyclones.

CENTER FIXES

TROPICAL STORM ANDREW 4-8 JUNE 1986

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LONG.	SFC.	FLT.LVL.			OUT	IN					
01	04	1230	24.9	75.7	30								GOES 6	2,5 VIS 1	
02	04	1800	25.0	75.7	30								GOES 6	2,5 VIS 1	
03	05	0000	25.2	76.0	25								GOES 6	2,5 IR 8	
04	05	0600	27.5	75.7	30								GOES 6	2,5 IR 8	
05	05	1200	28.6	76.2	30								GOES 6	2,5 VIS 1	
06	05	1800	29.1	77.0	30								GOES 6	2,5 VIS 1	
07	05	2238	29.5	77.5	25	30	1002		21	22			AF	5/5	457M
08	06	0000	29.6	77.3	35		1005						GOES 6	2,5 IR 8	
09	06	0128	30.0	77.5		34	1003		21	21			AF	5/5	457M
10	06	0600	30.3	70.0	35		1005						GOES 6	2,3 IR 8	
11	06	1141	31.1	78.0	20	22	1005		22	22			AF	3/3	457M
12	06	1200	31.1	77.9	35		1005						GOES 6	2,3 VIS 1	
13	06	1340	30.9	78.1	20	21	1005		22	22			AF	3/3	457M
14	06	1523	30.9	78.0	40	45	1006		23	23			AF	3/3	457M
15	06	1800	30.9	78.0	35		1005						GOES 6	2,3 VIS 1	
16	07	0000	31.9	77.7	45		1000						GOES 6	2,3 IR 8	
17	07	0013	31.4	77.9	20	15	1004		24	24			AF	5/8	457M
18	07	0242	32.6	77.1			1002						AF		
19	07	0510	32.8	76.8		49	1003		22	23			AF	5/5	457M
20	07	0600	32.6	76.4	45		1000						GOES 6	2,5 IR 8	
21	07	1130	33.1	76.1								psbl center	HAT-R		
22	07	1154	33.7	76.2	35	19	1002		22	23			AF	5/5	457M
23	07	1200	33.8	76.0	45		1000						GOES 6	2,5 VIS 1	
24	07	1225	33.2	75.8								psbl center	HAT-R		
25	07	1300	33.5	75.7								psbl center	HAT-R		
26	07	1325	33.5	75.7								psbl center	HAT-R		
27	07	1416	33.7	75.7	20	26	999						AF		
28	07	1425	33.6	75.2								psbl center	HAT-R		
29	07	1500	33.8	75.3	45		1000						GOES 6	2,5 VIS 1	
30	07	1525	33.4	75.5								psbl center	HAT-R		

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CENTER FIXES

TROPICAL STORM ANDREW (continued)

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT. LVL.			OUT	IN					
31	07	1526	33.8	75.3								psbl center	ILM-R		
32	07	1702	34.0	75.2	35	39	1000		22	22			AF	5/3	457M
33	07	1725	33.6	75.1								psbl center	HAT-R		
34	07	1800	34.2	74.9	45		1000						GOES 6	2,3 VIS 1	
35	07	2025	34.0	74.6								psbl center	HAT-R		
36	08	0000	35.0	73.8	45		1000						GOES 6	2,3 IR 8	
37	08	0001	35.1	73.7	15	19	1002		24	21			AF	4/5	457M
38	08	0233	35.6	73.2		24	1002						AF		
39	08	0502	36.2	73.0		48	1003		21	21			AF	3/5	457M
40	08	0600	36.2	76.5	45		1000						GOES 6	2,5 IR 8	
41	08	1200	37.6	70.0	45		1000						GOES 6	2,5 VIS 1	
42	08	1230	38.2	71.7	20	24	1002		22	22			AF	5/10	457M
43	08	1507	39.5	71.8	15	19	1003						AF		700MB
44	08	1800	39.6	68.9	35		1005						GOES 6	2,5 VIS 1	

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CENTER FIXES

HURRICANE BONNIE 22-26 JUNE 1986

FIX NO.	DATE	TIME (UTC)	POSITION			MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LONG.				OUT	IN					
01	22	1800	26.5	85.0								GOES 6	- , 3 VIS 1	
02	23	0000	26.3	85.2								GOES 6	- , 5 IR 8	
03	23	0600	26.2	85.5								GOES 6	- , 5 IR 8	
04	23	1200	25.5	86.3								GOES 6	- , 5 VIS 1	
05	23	1800	25.6	87.1	25							GOES 6	2, 6 VIS 1	
06	24	0000	25.6	87.9	25							GOES 6	2, 3 IR 8	
07	24	0600	25.7	88.6	25							GOES 6	2, 3 IR 8	
08	24	1200	26.1	89.1	30	1009						GOES 6	2, 3 VIS 1	
09	24	1510	26.6	89.2	50	1009		23	25	C05	calm cntr	AF	5/3	457M
10	24	1750	26.8	89.5	40	1006		23	25	C03	calm cntr	AF	5/3	457M
11	24	1800	26.4	89.5	35	1005						GOES 6	2, 3 VIS 1	
12	24	1951	26.8	89.7	35	1004						AF		
13	24	2104	26.8	89.8	30	1006		24	25			AF	5/3	457M
14	24	2319	26.7	90.2	30	1003		23	25			AF	3/3	457M
15	25	0000	26.5	90.2	45	1000						GOES 6	2, 3 VIS 1	
16	25	0128	26.8	90.53	55	1001						AF		
17	25	0327	26.8	90.9	37	1002		23	26			AF	3/3	457M
18	25	0543	26.9	91.1	25	1002		24	26			AF	3/3	457M
19	25	0600	26.8	91.1	45	1000						GOES 6	2, 3 IR 8	
20	25	0828	27.0	91.5	27	999		24	24			AF	5/5	457M
21	25	1106	27.3	91.6	51	997		22	25			AF	5/5	457M
22	25	1200	27.8	91.7	50	997						GOES 6	2, 5 VIS 1	
23	25	1414	27.4	91.9	55	999		22	27	E21/27		AF	5/5	457M
24	25	1730	27.5	92.1	60	1001		13	17	C25		AF		850MB
25	25	1800	27.5	92.0	65	987						GOES 6	1, 3 VIS 1	
26	25	1907	27.7	92.3						18	psbl center	LCH-R		
27	25	1925	27.7	92.3							well defined	GLS-R		
28	25	1930	27.7	92.3						18	psbl center	LCH-R		
29	25	1945	27.7	92.2	80	999		19	19	C20	clsd wall	AF	4/3	850MB
30	25	2000	27.8	92.4						15	psbl center	LCH-R		

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CENTER FIXES

HU ANE BOI

FIX NO	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT ALT
			LAT.	LO.	SFC.	FLT.LVL.			OUT	IN					
38	25	2025	27.8	92.3								well defined	GLS-R		
	25	2033	27.8	92.4							15	psbl cntr	LCH-R		
	25	2100	28.0	92.3	65		987						GOES 6	1,3 VIS 1	
	25	2103	28.0	92.4							12	psbl cntr	LCH-R		
	25	2105	27.9	92.4	50	50	999	17	18		C20	closed wall	AF	4/3	OM
	25	2110	27.8	92.6							12	eye good	GLS-R		
	25	2125	28.0	92.5							12	psbl center	LCH-R		
	25	2130	27.7	92.7							10	eye fair	GLS-R		
	25	2200	28.0	92.6							12	eye good	LCH-R		
	25	2210	28.0	92.8							12	eye good	GLS-R		
	25	2229	28.0	92.8							12	eye fair	GLS-R		
	25	2230	27.9	92.7							12	eye good	LCH-R		
44	25	2301	28.1	92.5	65	39	999	18	19		E05/25/20	closed wall	AF	4/3	OMB
	25	2305	28.8	92.7							15	eye good	LCH-R		
	25	2310	28.2	92.6							12	eye fair	GLS-R		
	25	2325	28.2	92.8							15	eye good	LCH-R		
46	25	2330	28.2	92.7							15	eye good	GLS-R		
	26	0000	28.3	92.7	65		987						GOES 6	1,3 VIS 1	
50	26	0002	28.2	92.8							12	eye good	LCH-R		
	26	0005	28.2	92.8							10	eye good	GLS-R		
	26	0025	28.2	92.9							15	eye good	LCH-R		
	26	0030	28.2	92.9							10	eye good	GLS-R		
	26	0100	28.4	92.9							12	eye good	LCH-R		
	26	0105	28.3	92.9							10	eye good	GLS-R		
	26	0125	28.4	93.0							12	eye good	LCH-R		
	26	0130	28.4	93.0							10	eye good	GLS-R		
58	26	0202	28.5	93.1							10	eye good	LCH-R		
	26	0209	28.4	93.0							08	eye good	GLS-R		
60	26	0225	28.6	93.2							10	eye good	LCH-R		
	26	0228	28.5	93.1							10	eye good	GLS-R		

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CENTLE FIXES

HURRICANE BONNIE (continued)

Property of
NOAA Coral Gables
Coral Gables, Florida
1320 South Dixie Highway
Room 520
33145

FIX NO.	DATE	TIME (UTC)	POSITION			MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LO.				OUT	IN					
61	26	0300	28.6	93.3						08	eye good	LCH-R		
62	26	0300	28.7	93.1	65	987						GOES 6	1,3 IR 8	
63	26	0305	28.6	93.3		998		24	26	C25	open west	NOAA	4/4	457M
64	26	0329	28.5	93.3						10	eye good	GLS-R		
65	26	0330	28.6	93.3						10	eye good	LCH-R		
66	26	0400	28.7	93.5						08	eye fair	LCH-R		
67	26	0405	28.7	93.4						05	eye good	GLS-R		
68	26	0425	28.8	93.5						08	eye good	LCH-R		
69	26	0430	28.8	93.5	70	997		23	25	C20	open sw	NOAA	5/5	457M
70	26	0500	28.9	93.7						14	eye fair	LCH-R		
71	26	0505	28.8	93.5						08	eye good	GLS-R		
72	26	0525	28.9	93.8						13	eye fair	LCH-R		
73	26	0532	28.8	93.8						10	eye good	LCH-R		
74	26	0558	29.0	93.8	73	995		23	27	E10/25/18	open west	NOAA	3/4	457M
75	26	0600	29.0	93.8						12	eye good	LCH-R		
76	26	0600	28.9	93.8	65	987						GOES 6	1,3 IR 8	
77	26	0605	28.9	93.8						05	eye good	GLS-R6		
78	26	0625	29.1	93.8						12	eye good	LCH-R		
79	26	0700	29.2	93.9						12	eye good	LCH-R		
80	26	0708	29.2	93.9						10	eye good	GLS-R		
81	26	0725	29.2	93.9						12	eye good	LCH-R		
82	26	0730	29.2	94.0						08	eye good	GLS-R		
83	26	0800	29.3	94.0						12	eye good	LCH-R		
84	26	0802	29.3	94.0							eye good	GLS-R		
85	26	0815	29.3	94.0	51	992		25	25	C15	closed	AF	1/5	457M
86	26	0825	29.3	94.0						14	eye good	LCHS-R		
87	26	0826	29.3	94.0							eye good	GLS-R		
88	26	0900	29.5	94.0						14	eye good	LCH-R		
89	26	0900	29.4	94.0	65	987						GOES 6	1,3 IR 8	
90	26	0902	29.4	94.0						10	eye good	GLS-R		
91	26	0925	29.5	94.0						14	eye good	LCH-R		

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CENTER FIXES

HURRICANE BONNIE (continued)

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
92	26	0925	30.0	94.1							10	eye good	GLS-R		
93	26	0959	29.6	94.1							14	eye good	LCH-R		
94	26	1002	29.6	94.1							09	eye good	GLS-R		
95	26	1025	29.7	94.1							15	eye good	LCH-R		
96	26	1033	29.7	94.2								eye good	GLS-R		
97	26	1059	29.7	94.2							14	eye good	LCH-R		
98	26	1125	29.8	94.2							15	eye good	LCH-R		
99	26	1130	29.9	94.1							08	eye poor	GLS-R		
100	26	1200	29.8	94.2							15	eye good	LCH-R		
101	26	1200	29.7	94.5									GOES 6	- ,5 VIS 1	
102	26	1203	29.8	94.2							08	eye good	GLS-R		
103	26	1225	29.9	94.2							15	eye good	LCH-R		
104	26	1230	29.9	94.3							08	eye poor	GLS-R		
105	26	1259	30.0	94.2							14	eye good	LCH-R		
106	26	1304	30.0	94.2							09	eye good	GLS-R		
107	26	1330	30.0	94.4							09	eye poor	GLS-R		
108	26	1332	30.2	94.3							08	eye fair	LCH-R		
109	26	1359	30.2	94.3							10	eye good	LCH-R		
110	26	1430	30.3	94.5							10	eye poor	GLS-R		
111	26	1432	30.3	94.4							10	eye good	LCH-R		
112	26	1500	30.5	94.5									GOES 6	- ,3 VIS 1	
113	26	1503	30.3	94.5							10	eye good	LCH-R		
114	26	1533	30.4	94.5							05	eye poor	GLS-R		
115	26	1539	30.4	94.5							05	psbl eye	LCH-R		
116	26	1604	30.5	94.6							05	eye poor	GLS-R		
117	26	1730	30.8	94.7							10	eye poor	GLS-R		
118	26	1800	30.9	94.6									GOES 6	- ,5 VIS 1	
119	26	1830	30.8	94.6							10	psbl cntr	GLS-R		

CENTER FIXES

HURRICANE CHARLEY 15-20 AUGUST 1986

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER- ISTICS	RESOLUTION	ACFT ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN				
01	15	1300	32.0	79.0	25									
02	15	1800	32.1	78.0	30		1009							
03	15	1900	32.0	78.3	44	22	1007		24	25			2,5 VIS 1	
04	15	1934	31.7	78.5							60	psbl center	5/15	457M
05	15	2010	31.7	78.5							60	psbl center		
06	15	2030	31.7	78.6							70	psbl center		
07	15	2104	32.4	77.0	40	42	1005		22	24		poorly def.	5/5	457M
08	15	2313	32.9	78.0								psbl center		
09	15	2325	32.0	78.3							85	psbl center		
10	15	2332	32.6	77.9								psbl center		
11	15	2340	32.5	78.2	35	46	1002		23	27		poorly def.	15/15	
12	16	0000	32.3	78.1	35		1005						2,5 IR 8	
13	16	0008	32.1	77.8							60	psbl center		
14	16	0027	32.6	77.8								psbl center		
15	16	0030	32.1	77.7							45	psbl center		
16	16	0110	32.7	77.8								psbl eye		
17	16	0110	32.3	77.8							40	psbl center		
18	16	0130	32.3	77.7							40	psbl center		
19	16	0135	32.9	77.8								psbl eye		
20	16	0203	32.6	77.8								psbl eye		
21	16	0206	32.1	77.9							30	psbl center		
22	16	0230	32.2	77.9							30	psbl center		
23	16	0233	32.6	77.8								psbl eye		
24	16	0306	32.1	78.0							30	psbl center		
25	16	0308	32.9	77.8								psbl eye		
26	16	0334	32.3	77.8							20	psbl center		
27	16	0433	32.3	77.8							15	psbl center		
28	16	0532	32.4	78.0							25	eye fair		
29	16	0600	32.5	78.0	35		1005						2,5 IR 8	
30	16	0623	32.4	78.0		40	1001		23	24		poorly def.	5/5	457M

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CENTER FIXES

NE

FIX NO	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT AL'
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
38	16	0625	32.4	77.8								psbl center	ILM-R	5/3	
	16	0630	32.4	78.0							25	eye fair	CHS-R		
	16	0700	32.4	77.9							30	psbl center	ILM-R		
	16	0705	32.4	78.1							25		CHS-R		
	16	0725	32.4	77.8							30	psbl center	ILM-R		
	16	0730	32.4	77.9		36	1002						NOAA		
	16	0731	32.4	78.0							25		CHS-R		
	16	0755	32.4	77.8							40	psbl center	ILM-R		
	16	0805	32.4	78.0							25		CHS-R		
	16	0825	32.3	77.9							35	psbl center	ILM-R		
44	16	0830	32.4	78.0							35	psbl center	CHS-R	4/3	2,3 VIS 1
	16	0856	32.4	77.8		42	999		23	24	24	poorly def.	NOAA		
	16	0900	32.3	77.8							40	psbl center	ILM-R		
	16	0925	32.3	77.9							35	psbl center	ILM-R		
	16	1000	32.4	78.0							35	psbl center	CHS-R		
	16	1001	32.3	77.8							40	psbl center	ILM-R		
	16	1030	32.5	77.9							40	psbl center	CHS-R		
	16	1058	32.4	77.7							40	psbl center	ILM-R		
	16	1125	32.4	77.7							40	center good	ILM-R		
	16	1130	32.5	77.7							45	psbl center	CHS-R		
56	16	1145	32.5	77.6		35	30		23	24	C20	poorly def.	AF	4/3	2,3 VIS 1
	16	1200	32.6	77.5		35							GOES 6		
	16	1226	32.6	77.6							40	psbl center	CHS-R		
	16	1230	32.3	77.6							35	center poor	ILM-R		
	16	1330	32.6	77.5							40	psbl center	CHS-R		
	16	1330	32.3	77.7							40	psbl center	ILM-R		
	16	1337	32.6	77.5		35	34						AF		
	16	1405	32.6	77.6							40	psbl center	ILM-R		
	16	1428	32.7	77.4							40	psbl center	CHS-R		
	60	16	1430	32.6	77.6						30	psbl center	ILM-R		

CENTER FIXES

HUI JAN CHAR

FIX	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT
			LAT.	LO.	SFC.	FLT.LVL.			OUT	IN					
	16	1500	32.8	77.5	35		1005								
	16	1505	32.8	77.4							30	psbl center	GOES 6 ILM-R	2,3 VIS 1	
	16	1519	32.7	77.5	35	19	999		23	24	C20	poorly def.	AF	4/3	
	16	1530	32.7	77.6							40	center poor	CHS-R		
	16	1530	32.8	77.4							30	psbl center	ILM-R		
	16	1630	32.8	77.4							30	psbl center	ILM-R		
	16	1705	32.9	77.4							30	center poor	ILM-R		
	16	1711	32.8	77.5	35	33	998		23	23	C25	poorly def.	AF	4/3	
	16	1800	32.9	77.4	55		994						GOES 6	2,3 VIS 1	
	16	1830	32.7	77.4							20	psbl center	ILM-R		
	16	2015	32.8	77.3							18	psbl center	ILM-R		
	16	2100	32.9	77.3	55		994						GOES 6	1,3 VIS 1	
	16	2102	33.0	77.2	45	45	998		24	24			NOAA	5/5	
	16	2103	32.9	77.1							10	psbl center	ILM-R		
	16	2215	32.9	77.3							18	psbl center	ILM-R		
	16	2307	33.0	77.2							30	psbl center	ILM-R		
	16	2325	32.9	77.2							34	psbl center	ILM-R		
	16	2349	33.3	77.2	70	65	997		22	25			NOAA	5/5	
	17	0000	33.2	77.1	55		994						GOES 6	1,3 IR 8	
80	17	0014	33.0	76.9							E30/50		ILM-R		
	17	0032	33.0	76.9							E30/45		ILM-R		
	17	0116	33.3	76.9							42		ILM-R		
	17	0134	33.3	76.9							40		ILM-R		
84	17	0205	33.4	77.0							40		ILM-R		
	17	0234	33.4	76.9							40		ILM-R		
86	17	0242	33.4	77.0		60	998		23	24	C40	eye poor	NOAA	5/5	
	17	0256	33.4	76.9							E40/35		ILM-R		
	17	0300	33.4	76.9	65		987						GOES 6	2,3 IR 8	
	17	0312	33.4	76.9							E40/30		ILM-R		
90	17	0330	33.4	76.9							E40/30		ILM-R		

CENTER FIXES

HURRICANE CHARLEY (continued)

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
91	17	0400	33.4	76.9							35		ILM-R		
92	17	0430	33.4	76.9							35		ILM-R		
93	17	0430	33.6	76.1							E30/40	center fair	HAT-R		
94	17	0505	33.7	77.1							30	center fair	HAT-R		
95	17	0525	33.8	77.1							E30/40	eye fair	HAT-R		
96	17	0527	33.6	76.9		44	995		19	20	C40	closed	AF	3/2	850MB
97	17	0530	33.5	76.9							30		ILM-R		
98	17	0600	33.8	76.8							30		ILM-R		
99	17	0600	33.8	76.5	65		987						GOES 6	2,3 IR 8	
100	17	0605	33.9	77.0							E30/40	eye fair	HAT-R		
101	17	0630	33.8	77.0							E30/40	center fair	HAT-R		
102	17	0630	33.9	76.9							20		ILM-R		
103	17	0700	33.9	76.9							20		ILM-R		
104	17	0700	33.8	77.1							30	center fair	HAT-R		
105	17	0725	33.9	77.0							30	center fair	HAT-R		
106	17	0733	33.9	76.8							20		ILM-R		
107	17	0800	33.9	76.9							30		ILM-R		
108	17	0805	34.0	76.1							35	center fair	HAT-R		
109	17	0806	33.8	76.8	35		993		21	21	C35	closed	AF	3/2	850MB
110	17	0825	33.9	76.9							30		ILM-R		
111	17	0825	33.9	77.0							30	center fair	HAT-R		
112	17	0900	33.9	76.9							35	center fair	HAT-R		
113	17	0900	33.9	76.5	65		987						GOES 6	2,3 IR 8	
114	17	0901	33.9	76.8							30		ILM-R		
115	17	0925	33.9	76.8							E30/40	center fair	HAT-R		
116	17	0959	34.0	76.7							40		ILM-R		
117	17	1025	34.1	76.6							40		ILM-R		
118	17	1025	34.1	76.8							30	center fair	HAT-R		
119	17	1100	34.3	76.5	65		987						GOES 6	2,3 IR 8	
120	17	1100	34.2	76.5							40	center good	ILM-R		

CENTER FIXES

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FIX	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT ALT
			LAT.	LOX.	SFC.	FLT.LVL.			OUT	IN					
	17	1100	34.1	76.7							E30/40	center fair	HAT-R		
	17	1108	34.3	76.7		53	992		21	21	E04/50/40	closed	AF	3/2	
	17	1125	34.1	76.7							30	eye fair	HAT-R		
	17	1126	34.2	76.5							30	eye good	ILM-R		
	17	1203	34.3	76.4							30	eye good	ILM-R		
	17	1225	34.2	76.6							30	eye fair	HAT-R		
	17	1230	34.4	76.3							30	eye good	ILM-R		
	17	1245	34.3	76.5							25	eye fair	HAT-R		
	17	1300	34.5	76.3							25	eye fair	HAT-R		
	17	1306	34.4	76.3								eye fair	ILM-R		
	17	1325	34.5	76.3							20	eye fair	HAT-R		
	17	1330	34.5	76.3								eye fair	ILM-R		
	17	1345	34.5	76.3							20	eye fair	HAT-R		
	17	1400	34.5	76.3							18	eye good	HAT-R		
	17	1400	34.2	76.3							E35/15	eye fair	ILM-R		
	17	1425	34.6	76.3							12	eye good	HAT-R		
	17	1430	34.7	76.2								eye fair	ILM-R		
	17	1445	34.8	76.1							10	eye good	HAT-R		
	17	1500	35.0	76.1							E35/15		ILM-R		
	17	1500	35.0	76.1	65		987						GOES 6	2,3 VIS 1	
	17	1500	35.0	76.4	45	42	990		20		E01/30/20	closed	AF	1/3	850M
	17	1505	34.9	76.1							10	eye good	HAT-R		
	17	1525	35.1	76.1							10	eye good	HAT-R		
	17	1530	35.1	76.1							20		ILM-R		
	17	1545	35.1	76.2							08	eye good	HAT-R		
.46	17	1610	35.3	75.9							06	eye good	HAT-R		
	17	1630	35.2	76.2							05	eye good	HAT-R		
	17	1630	35.3	76.2							20		ILM-R		
	17	1700	35.4	76.2							25		ILM-R		
150	17	1700	35.2	76.3							12	eye good	HAT-R		

CENTER FIXES

ANE [RL]

FIX	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
	17	1712	35.3	76.3	75	55	989		20		C30	closed	AF	1/5	OM
	17	1730	35.4	76.2							25		ILM-R		
	17	1730	35.4	76.2							10	eye good	HAT-R		
	17	1800	35.5	76.1							12	eye good	HAT-R		
	17	1800	35.4	75.8	77		979						GOES 6	2,1 VIS 1	
	17	1800	35.6	76.1							25		ILM-R		
	17	1830	35.6	76.0							25		ILM-R		
	17	1830	35.6	76.2							10	eye good	HAT-R		
	17	1855	35.7	76.1							20	eye good	HAT-R		
	17	1900	35.7	76.0							20		ILM-R		
	17	1930	35.8	76.0							20		ILM-R		
	17	1930	35.8	75.9							15	eye good	HAT-R		
	17	1936	35.8	76.2	50	60			18 19		C30	poorly def.	AF	1/5	
	17	2000	35.9	76.0							15	eye fair	HAT-R		
	17	2030	36.0	76.1							18	eye fair	HAT-R		
	17	2035	36.0	76.0							30		ILM-R		
	17	2055	35.9	76.0							15	eye good	HAT-R		
	17	2100	36.0	75.7	65		987						GOES 6	2,1 VIS 1	
	17	2110	36.1	76.1	50	59	987		19				AF	1/5	
	17	2130	36.1	75.9							12	eye good	HAT-R		
	17	2155	36.3	74.8							08	eye good	HAT-R		
	17	2230	36.3	75.8							10	eye good	HAT-R		
	17	2255	36.4	75.8							17	eye fair	HAT-R		
	17	2330	36.7	76.0							40	eye fair	HAT-R		
	17	2355	36.6	76.0							45	eye fair	HAT-R		
	18	0000	36.4	75.5	65		987						GOES 6	2,5 IR 8	
	18	0008	36.6	75.8		52	987		17 19				AF	5/3	OM
	18	0026	36.6	75.9							50	eye fair	HAT-R		
	18	0201	36.8	75.7		63	988		16 20				AF	5/3	OM
180	18	0300	37.3	74.8	65		987						GOES 6	2,5 IR 8	

CENTER FIXES

HURRICANE CHARLEY (continued)

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
18		0313	36.9	75.5		49	987		18	20			AF	5/3	850MB
18		0502	37.3	75.4		66	989		17	18			AF	5/3	850MB
18		0600	37.5	74.8	65		987						GOES 6	2,5 IR 8	
18		0855	37.9	74.7		52	991		17	17			AF	6/5	850MB
18		0900	37.9	74.7	65		987						GOES 6	2,5 IR 8	
18		1200	38.1	74.0	55		994						GOES 6	2,3 VIS 1	
18		1500	38.3	73.3	45		1000						GOES 6	2,3 VIS 1	
18		1707	38.8	72.9		41	994		17	19			AF	3/3	850MB
18		1800	38.8	72.5									GOES 6	-,3 VIS 1	
18		1844	39.1	72.3	45	39	994		17	19			AF	3/3	850MB
18		1936	39.3	72.0		28	994						AF		850MB
18		2100	39.4	71.9									GOES 6	-,3 VIS 1	
18		2120	39.5	71.5		25	995		17	19			AF	5/3	850MB
18		2332	39.7	71.1		35	996		17	20			AF	5/3	850MB
19		0000	39.7	70.9									GOES 6	-,5 IR 8	
19		0303	40.0	69.9		66	999		18	19			AF	3/5	850MB
19		0506	40.3	69.3		48	999		17	17			AF	3/5	850MB
19		0600	40.4	69.2									GOES 6	-,5 IR 8	
19		1200	40.7	67.2									GOES 6	-,5 VIS 1	
19		1800	41.7	65.6									GOES 6	-,5 VIS 1	
20		0000	40.0	63.7									GOES 6	-,5 IR 8	

CENTER FIXES

TROPICAL STORM DANIELLE 3-10 SEPTEMBER 1986

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN				
01	03	0600	08.8	28.5	25							METEOSAT	2,5 IR 8	
02	03	1200	09.1	29.0	35		1005					METEOSAT	2,5 VIS 1	
03	03	1800	09.2	29.8	35		1005					METEOSAT	3,5 IR 8	
04	03	2100	09.2	29.8	35		1005					METEOSAT	2,5 IR 8	
05	04	0600	09.2	34.2	25							METEOSAT	2,5 IR 8	
06	04	1200	09.7	35.1	25							GOES 6	2,5 VIS 1	
07	04	1800	09.3	37.1	25							GOES 6	2,5 VIS 1	
08	05	0000	09.3	37.1	25							GOES 6	2,5 IR 8	
09	05	0600	10.3	38.1	25							GOES 6	2,5 IR 8	
10	05	1200	09.7	40.4	25							GOES 6	2,5 VIS 1	
11	05	1800	09.8	40.8	25							GOES 6	2,5 VIS 1	
12	06	0000	09.8	41.8	25							GOES 6	2,5 IR 8	
13	06	0500	09.6	42.5	25							GOES 6	-,5 IR 8	
14	06	1200	09.5	45.5	25							GOES 6	2,5 VIS 1	
15	06	1800	09.5	47.8	30		1009					GOES 6	2,5 VIS 1	
16	07	0000	09.5	49.0	30		1009					GOES 6	2,5 IR 8	
17	07	0500	11.9	51.0	35		1005					GOES 6	2,5 IR 8	
18	07	1200	11.0	54.0	35		1005					GOES 6	2,5 VIS 1	
19	07	1800	11.0	56.0	40		1003					GOES 6	2,5 VIS 1	
20	08	0000	11.3	57.6	45		1000					GOES 6	2,3 IR 8	
21	08	0300	11.6	58.1	45		1000					GOES 6	2,3 IR 8	
22	08	0500	11.7	58.8	45		1000					GOES 6	3,5 IR 8	
23	08	0900	12.0	59.8	55		994					GOES 6	3,5 IR 8	
24	08	1200	12.9	61.0	55		994					GOES 6	3,5 VIS 1	
25	08	1353	13.0	62.1	40	35	1004	23	25			AF	3/3	457M
26	08	1800	13.0	63.0	55		994					GOES 6	3,5 VIS 1	
27	08	1805	13.3	63.2	50	49	1006	25	25			AF	2/15	457M
28	08	2028	12.9	63.3	40	48	1008					AF	2/10	457M
29	08	2100	13.4	63.8	45		1000					GOES 6	2,3 VIS 1	
30	08	2312	13.4	64.5		47	1003	26	26			AF	2/5	457M

CENTER FIXES

TROPICAL STORM DANIELLE (continued)

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
31	09	0000	13.3	64.4	45		1000						GOES 6	2,3 IR 8	
32	09	0500	13.4	64.8	45		1000						GOES 6	2,5 IR 8	
33	09	0610	13.2	66.7		33	1006		25	25			AF	3/3	457M
34	09	1152	13.5	68.1	45	46	1009		25	25			AF	3/8	457M
35	09	1200	13.4	67.7	45		1000						GOES 6	2,5 VIS 1	
36	09	1500	14.2	68.8	45		1000						GOES 6	2,3 VIS 1	
37	09	1800	14.5	70.1	45		1000						GOES 6	3,3 VIS 1	
38	10	0000	15.0	72.2	35		1005						GOES 6	2,3 IR 8	
39	10	0500	14.9	75.3	30		1009						GOES 6	3,7 IR 8	
40	10	1200	14.6	78.7	25								GOES 6	2,3 VIS 1	
41	10	1800	14.3	80.9									GOES 6	-,5 VIS 1	

CENTER FIXES

HURRICANE EARL 10-19 SEPTEMBER 1986

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
01	10	1200	20.5	49.5	25								GOES 6	3,5 VIS 1	
02	10	1800	21.6	50.6	30		1009						GOES 6	3,5 VIS 1	
03	11	0000	22.7	52.6	30		1009						GOES 6	2,6 IR 8	
04	11	0500	23.6	54.2	30		1009						GOES 6	3,5 IR 8	
05	11	1200	24.3	52.7	30		1009						GOES 6	2,3 VIS 1	
06	11	1800	25.0	53.1	35		1005						GOES 6	2,3 VIS 1	
07	11	1947	25.3	53.4	75	75	998		24	26	C10	closed	AF	3/1	457M
08	11	2239	25.6	54.0	67		997		24	25	C08	closed	AF	3/1	457M
09	12	0000	25.6	54.3	45		1000						GOES 6	2,2 IR 8	
10	12	0500	25.8	54.4	55		994						GOES 6	2,5 IR 8	
11	12	1200	26.8	55.0	65		987						GOES 6	2,3 VIS 1	
12	12	1800	27.1	54.8	65		987						GOES 6	2,3 VIS 1	
13	12	2045	27.4	55.2	50	46	983	1280	17	21			AF	2/2	850MB
14	12	2305	28.0	55.5	80	66	983	1285	18	22	E09/25/10	open se	AF	2/2	850MB
15	13	0000	28.1	55.2	84		974						GOES 6	2,3 IR 8	
16	13	0500	28.2	55.6	84		974						GOES 6	2,5 IR 8	
17	13	1200	29.7	54.8	77		979						GOES 6	2,3 VIS 1	
18	13	1800	30.2	54.7	77		979						GOES 6	2,3 VIS 1	
19	13	1838	30.2	54.7	100	90	983		22	24	C25	open w	NOAA	1/1	457M
20	14	0000	30.5	53.7	83		975						GOES 6	2,3 IR 8	
21	14	0500	30.6	52.9	83		975						GOES 6	2,3 IR 8	
22	14	1200	30.6	52.0	77		979						GOES 6	2,3 VIS 1	
23	14	1800	30.9	51.5	77		979						GOES 6	2,3 VIS 1	
24	15	0000	30.5	50.0	77		979						GOES 6	1,5 IR 8	
25	15	0500	30.2	50.6	77		979						GOES 6	2,5 IR 8	
26	15	1200	29.5	50.3	77		979						GOES 6	2,3 VIS 1	
27	15	1730	29.3	49.2	77		979						GOES 6	2,3 VIS 1	
28	16	0000	29.0	49.0	77		979						GOES 6	1,5 IR 8	
29	16	0500	28.8	48.6	77		979						GOES 6	2,5 IR 8	
30	16	1200	28.9	49.0	77		979						GOES 6	2,5 VIS 1	

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CENTER FIXES

HUI EARL

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
31	16	1800	29.6	49.3	77		979						GOES 6	2,5 VIS 1	
32	17	0000	29.9	49.9	65		987						GOES 6	1,5 IR 8	
33	17	0500	30.3	49.9	65		987						GOES 6	2,5 IR 8	
34	17	1200	31.9	51.1	65		987						GOES 6	2,5 VIS 1	
35	17	1800	33.2	50.3	65		987						GOES 6	2,5 VIS 1	
36	18	0000	35.0	50.0	65		987						GOES 6	2,5 IR 8	
37	18	0500	36.5	49.5	65		987						GOES 6	2,3 IR 8	
38	18	1200	39.8	47.6	65		987						GOES 6	2,3 VIS 1	
39	18	1800	40.8	47.7	45		1000						GOES 6	2,3 VIS 1	
40	19	0000	43.2	45.8	55								GOES 6	2,5 IR 8	
41	19	0500	45.5	44.0	45								GOES 6	2,5 IR 8	
42	19	1200	49.0	42.0	45								GOES 6	2,5 VIS 1	
43	19	1800	52.0	39.5	55								GOES 6	2,5 VIS 1	
44	19	2100	54.0	34.0	50								GOES 6	3,5 IR 8	

CENTER FIXES

HURRICANE FRANCES 17-22 NOVEMBER 1986

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
17		1800	20.2	61.4											
18		0000	20.5	61.5	25								GOES 6	- ,5 VIS 1	
18		0600	20.8	61.7	25								GOES 6	2,5 IR 8	
18		1200	21.3	62.1	25								GOES 6	2,5 IR 8	
18		1800	22.9	62.7	30								GOES 6	2,2 VIS 1	
18		1800	22.9	62.7	30								GOES 6	2,3 VIS 1	
19		0000	23.2	62.8	35								GOES 6	2,5 IR 8	
19		0600	24.3	63.1	35								GOES 6	2,5 IR 8	
19		1200	25.1	62.9	35								GOES 6	2,5 VIS 1	
19		1500	25.1	62.5	45								GOES 6	2,5 VIS 1	
19		1726	24.9	62.6	50	48			23	26			AF	3/5	457M
19		1800	25.2	62.5	50								GOES 6	2,3 VIS 1	
20		0000	25.6	62.2	50								GOES 6	2,5 IR 8	
20		0600	26.1	62.1	50								GOES 6	2,5 IR 8	
20		1200	26.7	61.4	50								GOES 6	2,5 VIS 1	
20		1225	27.8	59.3	50	51			22	23	C35	closed	AF	2/3	457M
20		1300	28.0	59.2	55								GOES 6	2,1 VIS 1	
20		1440	28.1	59.1	75	75							AF		457M
20		1500	28.2	58.9	71								GOES 6	2,1 VIS 1	
20		1700	28.4	58.6	71								GOES 6	2,1 VIS 1	
21		0000	29.4	57.3	71								GOES 6	2,5 IR 8	
21		0600	29.8	56.2	71								GOES 6	2,5 IR 8	
21		1200	30.3	56.2	65								GOES 6	2,5 VIS 1	
21		1800	31.3	57.9	65								GOES 6	2,3 VIS 1	
22		0600	33.5	55.5	45								GOES 6	2,6 IR 8	

Table 7. Supplementary vortex data messages, 1986 tropical cyclones.

ZCZC WRC339

URNT14 KMIA 052345

AF967 01XX INVEST OB 10 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE

01296 10772 10003 12120 23011
02296 20770 10004 22120 19010
03297 30768 30004 32120 15040
04298 40765 40005 42120 16015
05295 50761 50007 52120 15023
06296 60758 60007 62120 16026
07297 70755 70009 72020 15025
MF297 M0768 MF040

OBS 01 AT 2249Z OBS 07 AT 2326Z

OBS 07 SFC WND 17025

REMARKS 294 775 002

OUTBOUND EAST FROM CENTER, NUMEROUS THUNDERSTORMS

40NM105NM EAST OF CENTER;

ZCZC WRC358

URNT14 KMIA 060205

AF967 01XX INVEST OB 14 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE

01315 10776 10008 12019 08020
02313 20775 20008 22119 08019
03310 30775 30007 32119 09025
04308 40775 40007 42119 07029
05306 50776 50005 52119 07034
06303 60775 60004 62120 08025
07301 70775 70003 72120 06008
MF306 M0776 MF034

OBS 01 AT 0055Z OBS 07 AT 0125Z

OBS 07 SFC WND //

REMARKS 300 775 003

LAST REPORT OBS 01 THRU 14 TO KMIA ETA KBIX 06/0500Z

URNT14 KMIA 061240

AF866 0201 CYCLONE OB 05 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE

01310 10777 10004 12222 26017
02311 20775 20007 22222 17028
03312 30772 30008 32222 16034
04312 40768 40009 42221 16028
05311 50764 50010 52221 16023
06311 60762 60010 62221 17018
07310 70760 70010 72221 18027
MF312 M0772 MF034

OBS 01 AT 1155Z OBS 07 AT 1226Z

OBS 07 SFC WND 18027

REMARKS 311 780 005

OB 01 SFC WIND 24015

CNTR APPEARS ELONGATED TO NE WITH SLP 1004MB 18NM E OF DETAILED
VORTEX CENTER REPORT;

ZCZC WRC437

URNT14 KMIA 061440

AF866 0201 CYCLONE OB 08 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE

01328 10780 10011 12221 06020
02326 20780 20010 22221 06024
03323 30780 30010 32221 06021
04320 40780 40009 42221 07013
05318 50780 50009 52222 04013
06315 60780 60008 62221 08019
07313 70780 70006 72221 08021
MF326 M0780 MF024

OBS 01 AT 1306Z OBS 07 AT 1333Z

OBS 01 SFC WND 07020

01307 10781 10005 12222 30012
02304 20780 20007 22222 29011
03302 30780 30007 32222 27017
04299 40780 40008 42222 27015
05297 50780 50009 52221 28011
06294 60780 60009 62321 29016
07292 70780 70009 72322 31011
MF302 M0780 MF017

OBS 01 AT 1354Z OBS 07 AT 1419Z

OBS 07 SFC WND 29010

REMARKS 292 784 005

URNT14 KMIA 061630

AF866 0201 CYCLONE OB 11 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE

01310 10764 10010 12221 15043
02309 20766 20009 22221 15045
03310 30769 30008 32121 16045
04310 40772 40007 42321 17031
05310 50775 50006 52222 17023
06309 60777 60006 62222 18010
MF310 M0769 MF045

OBS 01 AT 1458Z OBS 06 AT 1523Z OBS 06 SFC WND 16035

01309 10783 10006 12222 02011

02308 20786 20007 22321 02023

03308 30789 30008 32322 02018

04308 40792 40008 42322 02018

05309 50795 50009 52321 02021

06309 60798 60010 62222 02021

07309 70800 70010 72221 03022

MF308 M0786 MF023

OBS 01 AT 1535Z OBS 07 AT 1607Z OBS 06 SFC WND 01020

REMARKS 309 780 006

AREA OF HUY CONVECTION BTWN 60110 E OF CNTR, STRONGEST WINDS
APPEAR TO BE ASSOCIATED WITH THIS HEAVIER CONVECTION. LAST REPO

OBS 0111 TO KMIA, ETA KBIX 06/1800Z

Table 7 continued.

URNT14 KMIA 070119
 AF977 0301 ANDREW OB 03 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01310 10800 10008 12320 36016
 02310 20797 20007 22320 35008
 03309 30793 30007 32321 34013
 04309 40791 40007 42321 35018
 05309 50787 50006 52321 33017
 06310 60785 60005 62421 32017
 07312 70782 70005 72421 35022
 MF312 M0782 MF022
 OBS 01 AT 2338Z OBS 07 AT 0005Z OBS 07 SFC WND 36015
 01315 10777 10005 12321 22005
 02315 20774 20005 22321 23006
 03315 30771 30005 32321 23029
 04315 40767 40006 42321 21031
 05315 50764 50007 52221 20035
 06316 60762 60007 62220 18041
 07317 70759 70008 72220 19031
 MF316 M0762 MF041
 OBS 01 AT 0033Z OBS 07 AT 0100Z OBS 07 SFC WND /////
 REMARKS 314 779 004
 SCT TRM 45 TO 105 NM EAST OF CENTER
 MAX FL WND NOTED NEAR CONVECTION;

URNT14 KMIA 070400
 AF977 0301 ANDREW OB 06 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01332 10780 10007 12220 04013
 02329 20780 20006 22220 06017
 03327 30779 30005 32321 02018
 04325 40777 40005 42321 01018
 05323 50775 50004 52321 32020
 06324 60772 60002 62321 30023
 MF324 M0772 MF023
 OBS 01 AT 0215Z OBS 06 AT 0240Z
 01325 10771 10004 12321 23023
 02322 20771 20005 22221 24021
 03320 30771 30006 32221 25012
 04317 40771 40007 42221 24012
 05315 50771 50008 52221 21021
 06312 60770 60008 62220 21030
 07310 70770 70009 72219 23023
 MF312 M0770 MF030
 OBS 01 AT 0306Z OBS 07 AT 0336Z
 REMARKS 326 771 002;

URNT14 KMIA 070613
 AF977 0301 ANDREW OB 09 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01333 10745 10011 12120 18036
 02333 20748 20010 22120 18049
 03333 30752 30009 32120 17042
 04333 40755 40008 42221 17041
 05333 50758 50008 52221 16043
 06332 60760 60006 62221 16035
 07332 70763 70005 72221 14031
 MF333 M0748 MF049
 OBS 01 AT 0430Z OBS 07 AT 0500Z OBS 01 SFC WND /////
 01326 10768 10004 12321 29010
 02328 20770 20004 22221 34010
 03328 30773 30005 32221 01020
 04328 40776 40006 42221 33017
 05328 50779 50006 52221 33018
 06328 60782 60007 62221 34017
 07328 70785 70007 72220 33018
 08327 80789 80008 82120 36011
 MF328 M0773 MF020
 OBS 01 AT 0520Z OBS 08 AT 0558Z OBS 08 SFC WND /////
 REMARKS 328 768 003
 LAST REPORT OBS 0109 TO KMIA ETA KBIX AT 07/0755Z;

URNT14 KMIA 071310
 AF967 0401 ANDREW OB 03 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01335 10780 10007 12020 32017
 02336 20776 20007 22120 31015
 03336 30775 30006 32120 29018
 04337 40772 40005 42220 32018
 05338 50769 50005 52319 34007
 06339 60767 60004 62321 34009
 MF338 M0767 MF019
 OBS 01 AT 1110Z OBS 06 AT 1135Z OBS 01 SFC WND 330
 01337 10759 10002 12221 17026
 02337 20754 20003 22220 18032
 03337 30750 30005 32120 16025
 04337 40747 40007 42020 16030
 05338 50745 50007 52120 16031
 06338 60742 60008 62120 17035
 07339 70739 70009 72120 17033
 MF338 M0742 MF035
 OBS 01 AT 1212Z OBS 07 AT 1254Z OBS 07 SFC WND 170
 REMARKS 337 762 002;

URNT14 KMIA 071543
 AF967 0401 ANDREW OB 06 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01359 10755 10008 12220 13018
 02357 20755 20008 22220 13014
 03355 30755 30007 32220 11023
 04352 40756 40007 42220 10018
 05349 50756 50006 52220 12018
 06347 60756 60005 62220 10026
 07345 70756 70004 72220 10020
 08341 80757 80002 82221 08017
 09338 90757 90000 92221 10013
 MF347 M0756 MF026
 OBS 01 AT 1332Z OBS 09 AT 1415Z
 OBS 01 SFC WND 10005
 01335 10756 10001 12220 28039
 02333 20756 20004 22220 26034
 03331 30756 30005 32320 26030
 04328 40757 40006 42220 27016
 05325 50758 50008 52220 28022
 06323 60758 60009 62320 27017
 07320 70758 70009 72220 26022
 MF335 M0756 MF039
 OBS 01 AT 1444Z OBS 07 AT 1516Z
 OBS 07 SFC WND 27020
 REMARKS 337 757 999

Table 7 continued.

URNT14 KNIA 071800 COR
 AF967 0401 ANDREW OB 09 COR KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01337 10731 10010 12020 17039
 02337 20734 20009 22020 16039
 03337 30737 30009 32120 15039
 04337 40740 40007 42120 16032
 05337 50743 50006 52120 17039
 06337 60747 60005 62120 16032
 07337 70750 70002 72220 21020
 MF337 M0743 MF039
 OBS 01 AT 1616Z OBS 07 AT 1646Z
 OBS 01 SFC WND 16035
 01340 10755 10004 12221 35011
 02340 20758 20004 22221 01016
 03/// 3/// 3/// 3/// 3///
 04340 40764 40006 42220 34018
 05339 50767 50006 52220 34012
 06340 60770 60007 62320 34009
 07/// 7/// 7/// 7///
 MF340 M0764 MF018
 OBS 01 AT 1717Z OBS 07 AT 1739Z
 OBS 07 SFC WND 99005
 REMARKS 340 751 000
 LAST REPORT OBS 01 THRU 09 TO KNIA
 ETA KRIX 07/2000Z;
 URNT14 KNIA 080115
 AF866 0501 ANDREW CB 03 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01348 10761 10007 12420 30017
 02348 20757 20007 22320 31018
 03348 30754 30006 32220 33011
 04348 40751 40006 42220 32019
 05348 50748 50005 52121 34016
 06348 60744 60004 62221 29009
 MF348 M0751 MF019
 OBS 01 AT 2301Z OBS 06 AT 2327Z
 OBS 01 SFC WND 99005
 01351 10734 10004 12121 16037
 02351 20730 20005 22121 17042
 03352 30727 30007 32121 17037
 04351 40724 40008 42120 19044
 05351 50721 50009 52121 19043
 06351 60718 60010 62121 18051
 07352 70715 70010 72121 17056
 MF352 M0715 MF056
 OBS 01 AT 0030Z OBS 07 AT 0104Z
 OBS 07 SFC WND ////
 REMARKS 351 737 002
 OCNL IGT TO MDI TB AND NUMEROUS RAIN BANDS OUTBOUND;
 URNT14 KNIA 080628
 AF866 0501 ANDREW OB 09 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01363 10713 10009 12020 17048
 02363 20715 20008 22120 16037
 03363 30717 30006 32121 17043
 04362 40721 40005 42121 17035
 05362 50723 50004 52121 17028
 06362 60727 60003 62121 18013
 MF363 M0713 MF048
 OBS 01 AT 0434Z OBS 06 AT 0458Z
 OBS 01 SFC WND ////
 01361 10733 10005 12020 33015
 02361 20736 20005 22121 02010
 03361 30739 30006 32120 36014
 04361 40742 40007 42120 34015
 05361 50745 50007 52120 32009
 06361 60748 60007 62120 32011
 07361 70751 70007 72020 30009
 MF361 M0733 MF015
 OBS 01 AT 0520Z OBS 07 AT 0555Z
 OBS 07 SFC WND ////
 REMARKS 362 730 003
 HEAVY NS RAINBAND 90 NM TO 110 NM EAST OF CNTR
 LAST REPORT OBS 01 THRU 09 TO KNIA, ETA KRIX 08/0900Z;

URNT14 KNIA 081320 COR
 AF977 0601 ANDREW OB 04 COR KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01367 10728 10006 12220 29024
 02369 20727 20005 22220 29022
 03370 30726 30005 32220 29018
 04372 40725 40004 42221 29010
 05373 50724 50004 52221 30019
 06374 60723 60004 62221 31020
 07376 70721 70003 72221 31018
 08379 80717 80002 82221 30020
 MF367 M0728 MF024
 OBS 01 AT 1135Z OBS 08 AT 1204Z
 OBS 01 SFC WND 27020
 01385 10716 10002 12221 03004
 02387 20717 20002 22120 02005
 03389 30717 30003 32120 10004
 04392 40717 40003 42120 12007
 05394 50716 50003 52120 12010
 06397 60716 60004 62120 12010
 07399 70717 70004 72120 13011
 MF399 M0717 MF011
 OBS 01 AT 1239Z OBS 07 AT 1305Z
 OBS 07 SFC WND 14010
 REMARKS 382 717 002;

URNT14 KNIA 081605
 AF977 0601 ANDREW OB 07 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01390 10739 10004 12120 99005
 02390 20737 20004 22220 99005
 03390 30733 30004 32220 35011
 04390 40728 40004 42220 35012
 05390 50726 50004 52220 34019
 06390 60724 60003 62220 35008
 07390 70722 70003 72221 33008
 MF390 M0726 MF019
 OBS 01 AT 1421Z OBS 07 AT 1443Z
 OBS 01 SFC WND 99005
 01395 10714 10003 12221 18010
 02395 20711 20003 22221 17007
 03395 30707 30003 32220 14015
 04396 40705 40003 42220 13009
 05395 50701 50003 52220 12017
 06395 60698 60003 62220 13018
 07395 70695 70003 72220 13020
 MF395 M0695 MF020
 OBS 01 AT 1523Z OBS 07 AT 1549Z
 OBS 07 SFC WND 14015
 REMARKS 395 717 003;

Table 7 continued.

URNT14 KMIA 241543 COR
 AF866 0102 BONNIE OB 05 COR KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01278 10900 10011 12424 05022
 02275 20999 20014 22424 03018
 03272 30998 30013 32525 06026
 04270 40997 40013 42323 05011
 05267 50995 50012 52323 01020
 06265 60992 60010 62323 33018
 MF272 M0998 MF026
 OBS 01 AT 1410Z OBS 06 AT 1428Z
 OBS 01 SFC WND 06010
 01264 10892 10012 12121 21045
 02262 20892 20014 22121 23035
 03259 30891 30015 32121 23027
 04256 40892 40015 42121 25029
 05254 50892 50016 52320 25022
 06251 60892 60016 62220 24021
 07249 70891 70016 72220 27016
 MF264 M0892 MF045
 OBS 01 AT 1547Z OBS 07 AT 1620Z
 OBS 07 SFC WND 29010
 REMARKS 266 892 009
 OBSUN5 0104 TRANSMITTED AS AF866 0102 CYCLON
 COR'D FOR FORMAT ERROR:
 URNT14 KMIA 241850
 AF866 0102 BONNIE OB 09 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01267 10872 10017 12320 19010
 02267 20875 20017 22320 19010
 03267 30877 30016 32320 19017
 04267 40880 40016 42321 19017
 05268 50883 50015 52321 19025
 06269 60886 60014 62220 19027
 07269 70890 70011 72321 16030
 MF269 M0890 MF030
 OBS 01 AT 1705Z OBS 07 AT 1737Z
 OBS 01 SFC WND 17010
 01268 10897 10010 12322 36030
 02268 20900 20012 22321 36027
 03268 30903 30013 32420 02024
 04268 40906 40013 52321 01017
 05268 50909 50014 52421 03014
 06268 60911 60014 62521 35018
 07268 70914 70014 72521 36017
 MF268 M0897 MF030
 OBS 01 AT 1805Z OBS 07 AT 1832Z
 OBS 07 SFC WND 33010
 REMARKS 268 895 006;
 URNT14 KMIA 242043
 AF866 0102 BONNIE OB 12 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01252 10899 10015 12121 26010
 02255 20898 20015 22119 24024
 03258 30898 30014 32121 23029
 04261 40898 40013 42121 23030
 05262 50899 50012 52423 24019
 06266 60901 60010 62424 33017
 07267 70909 70008 72424 34026
 MF261 M0898 MF030
 OBS 01 AT 1913Z OBS 07 AT 1941Z
 OBS 01 SFC WND 30010
 1270 10897 10008 12424 10017
 2272 20897 20010 22322 08025
 3275 30897 30012 32321 07020
 4278 40897 40013 42321 07025
 5280 50897 50014 52321 09021
 6282 60897 60014 62421 10020
 7285 70897 70014 72321 10024
 F278 M0897 MF025
 OS 01 AT 2004Z OBS 07 AT 2032Z
 OS 07 SFC WND 10015
 REMARKS 268 897 004;

URNT14 KMIA 242210
 AF866 0102 BONNIE OB 14 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01271 10897 10009 12321 14035
 02273 20894 20012 22322 13021
 03275 30893 30013 32322 14019
 04277 40891 40013 42321 12019
 05279 50890 50014 52421 16020
 06281 60889 60014 62421 10015
 07284 70887 70014 72421 11019
 MF271 M0897 MF035
 OBS 01 AT 2120Z OBS 07 AT 2148Z
 OBS 01 SFC WND 10010
 REMARKS 269 898 006
 MAX WND BAND EXTENTS 15NM35NM OUT FROM CTR
 WND 30KT40KTS
 LAST REPORT OBS 0114 TO KMIA ETA KRIX 24/2230Z;
 URNT14 KMIA 250015
 AF964 0202 BONNIE OB 03 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01289 10901 10014 12323 09019
 02285 20901 20013 22424 09024
 03282 30900 30013 32424 09025
 04280 40900 40013 42424 09031
 05277 50900 50012 52424 11033
 06275 60901 60011 62323 11034
 07270 70902 70007 72424 07026
 MF275 M0901 MF034
 OBS 01 AT 2243Z OBS 07 AT 2311Z
 OBS 01 SFC WND 09015
 01265 10902 10006 12323 25029
 02264 20901 20008 22222 22041
 03262 30902 30010 32222 21026
 04257 40902 40012 42222 23019
 05255 50903 50013 52222 23011
 06253 60902 60013 62323 25006
 07250 70902 70014 72424 24007
 MF264 M0901 MF041
 OBS 01 AT 2327Z OBS 07 AT 0003Z
 OBS 07 SFC WND 99005
 REMARKS 267 902 003
 SFC WND 55KT FROM 10NM20NM S OF CTR UNDER CONVECTION
 SUSPECT DOPPLER ATTENUATION FOR MOST OUTBOUND FL WND5
 URNT14 KMIA 250221
 AF964 0202 BONNIE OB 06 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01268 10883 10015 12424 15011
 02268 20886 20014 22424 16016
 03268 30888 30013 32424 15016
 04268 40891 40013 42424 17024
 05268 50894 50013 52323 17028
 06269 60896 60012 62323 17032
 07268 70899 70009 72323 18041
 08268 80902 80005 82323 17058
 MF268 M0902 MF058
 OBS 01 AT 0051Z OBS 08 AT 0122Z
 OBS 01 SFC WND 16015
 01268 10907 10005 12525 30029
 02268 20910 20008 22525 35022
 03268 30913 30009 32525 35020
 04267 40917 40010 42626 34019
 05268 50918 50011 52626 35011
 06268 60922 60012 62626 36010
 07268 70925 70012 72727 34012
 MF268 M0907 MF029
 OBS 01 AT 0135Z OBS 07 AT 0208Z
 OBS 07 SFC WND / / / / /
 REMARKS 268 905 001;

Table 7 continued

URNT14 KNIA 250451
 AF964 0202 BONNIE OB 10 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01252 10905 10015 12525 21008
 02253 20905 20015 22424 20011
 03255 30904 30014 32424 20021
 04258 40905 40013 42323 19035
 05260 50904 50012 52323 19037
 06263 60905 60011 62323 19037
 07265 70908 70008 72525 23024
 MF263 M0905 MF037
 OBS 01 AT 0251Z OBS 07 AT 0320Z
 OBS 01 SFC WND /////
 01271 10909 10006 12525 19026
 02274 20909 20009 22323 09026
 03277 30910 30012 32424 07021
 04279 40910 40013 42424 10021
 05281 50910 50013 52424 09023
 06283 60910 60014 62424 09025
 07285 70909 70015 72424 08016
 MF271 M0909 MF026
 OBS 01 AT 0405Z OBS 07 AT 0433Z
 OBS 07 SFC WND /////
 REMARKS 269 209 002:

URNT12 KNIA 250640
 AF964 0202 BONNIE OB 13 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01269 10928 10014 12525 02011
 02269 20925 20013 22525 36013
 03267 30923 30012 32525 34015
 04267 40920 40011 42525 34015
 05267 50917 50010 52424 30022
 06267 60914 60008 62424 31025
 MF267 M0914 MF025
 OBS 01 AT 0515Z OBS 06 AT 0536Z
 OBS 01 SFC WND /////
 01271 10908 10007 12323 14056
 02271 20906 20010 22323 16044
 03269 30903 30012 32323 15037
 04269 40900 40013 42423 16030
 05269 50908 50014 52424 16031
 06269 60904 60015 62323 16027
 07269 70902 70015 72323 15017
 MF271 M0908 MF056
 OBS 01 AT 0547Z OBS 07 AT 0621Z
 OBS 07 SFC WND /////
 REMARKS 269 211 002
 LAST REPORT OBS 01 THRU 13 TO KNIA; ETA KBIX 25/0725Z.

URNT14 KNIA 251100
 AF554 0302 BONNIE OB 04 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01270 10931 10014 12422 /////
 02259 20929 20012 22420 32013
 03257 30927 30011 32421 34012
 04255 40923 40012 42422 27017
 05258 50919 50010 52422 30024
 06270 60917 60008 62322 32027
 07272 70915 70001 72423 35027
 MF270 M0917 MF027
 OBS 01 AT 0751Z OBS 07 AT 0828Z
 OBS 01 SFC WND /////
 01273 10912 10006 12222 14047
 02274 20909 20009 22222 15043
 03274 30907 30011 32221 16046
 04272 40904 40013 42220 18037
 05271 50901 50014 52319 18026
 06269 60897 60015 62320 19034
 07271 70905 70014 72321 17027
 MF273 M0910 MF047
 OBS 07 SFC WND /////
 REMARKS 270 215 000:

URNT14 KNIA 251308 COR
 AF554 0302 BONNIE OB 07 COR KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01286 10915 10014 12321 09023
 02285 20916 20013 22321 09021
 03282 30916 30013 32321 10026
 04280 40916 40011 42321 10023
 05277 50917 50010 52221 06035
 06275 60917 60006 62222 03036
 MF275 M0917 MF036
 OBS 01 AT 0707Z OBS 06 AT 1053Z
 OBS 01 SFC WND /////
 01268 10907 10013 12121 19031
 02265 20908 20014 22221 18026
 03264 30910 30014 32322 19014
 04262 40911 40014 42321 20016
 05260 50913 50015 52419 19023
 06257 60915 60014 52421 18026
 07255 70915 70015 72521 18020
 MF268 M0907 MF031
 OBS 01 AT 1159Z OBS 07 AT 1233Z
 OBS 07 SFC WND 17010
 REMARKS 273 216 997 MAX SUSTAINED SURFACE WINDS 13060 DRCM F
 CENTER 080 AT 20 MILES:

URNT14 KNIA 251556
 AF554 0302 BONNIE OB 09 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01270 10896 10016 12420 20027
 02270 20898 20016 22417 19026
 03270 30901 30015 32418 18038
 04270 40904 40015 42321 17034
 05271 50907 50015 52321 20028
 06271 60910 60013 62121 20045
 07272 70912 70012 72221 20059
 08273 80915 80008 82020 16068
 MF273 M0915 MF068
 OBS 01 AT 1315Z OBS 08 AT 1352Z
 OBS 01 SFC WND 20010
 01274 10920 10003 12526 32021
 02275 20924 20009 22221 34029
 03275 30926 30013 32221 36024
 04275 40930 40013 42222 36016
 05275 50933 50014 52421 02016
 06275 60936 60014 62423 02006
 07275 70938 70015 72423 02010
 MF275 M0924 MF029
 OBS 01 AT 1439Z OBS 07 AT 1511Z
 OBS 07 SFC WND 04015
 REMARKS 274 219 999:

Table 7 continued.

URNT14 KMIA 251846 COR
 AF967 0402 BONNIE OB 04 COR KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01293 10920 12552 11611 09030
 02290 20920 22542 21510 09028
 03287 30920 32539 31610 10031
 04285 40920 42533 41611 09028
 05283 50920 52524 51611 10030
 06280 60920 62510 61413 09036
 07276 70920 72423 71913 07052
 MF276 M0920 MF052

OBS 01 AT 1634Z OBS 07 AT 1719Z
 OBS 01 SFC WND 09020
 01272 10921 12433 11414 28035
 02271 20921 22517 21414 29024
 03267 30922 32529 31414 27028
 04264 40922 42535 41413 27028
 05263 50921 52539 51513 25027
 06261 60921 62550 61511 26025
 07260 70921 72551 71511 26025
 MF264 M0922 MF028

OBS 01 AT 1810Z OBS 07 AT 1836Z
 OBS 07 SFC WND 27015
 REMARKS 275 921 1421

URNT14 KMIA 251846 COR 02
 AF967 0402 BONNIE OB 07 COR 02 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01276 10903 12547 11510 17030
 02277 20906 22540 21515 18037
 03277 30908 32533 31410 18034
 04277 40911 42527 41512 17046
 05277 50913 52521 51613 17041
 06277 60916 62490 61908 17048
 07277 70920 72466 71512 18060
 MF277 M0920 MF060

OBS 01 AT 1914Z OBS 07 AT 2020Z
 OBS 01 SFC WND 16015
 01276 10925 12464 11710 33045
 02276 20927 22493 21810 33030
 03277 30930 32504 31809 32022
 04277 40933 42521 41612 34015
 05277 50936 52521 51613 35015
 MF276 M0925 MF045

OBS 01 AT 1945Z OBS 05 AT 2020Z
 OBS 05 SFC WND 33015
 REMARKS 277 922 1411

URNT14 KMIA 252218
 AF967 0402 BONNIE OB 10 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01268 10924 12523 11610 26022
 02271 20923 22511 21710 23025
 03274 30923 32497 31515 25040
 04276 40924 42469 41613 24056
 MF276 M0924 MF056

OBS 01 AT 2043Z OBS 04 AT 2058Z
 OBS 01 SFC WND /////
 01281 10924 12449 11810 11054
 02284 20924 22511 21710 11032
 03286 20924 32505 31613 11030
 04289 40924 42521 41514 11035
 05292 50924 52529 51611 11037
 06294 60924 62526 61612 10034
 07297 70924 72530 71613 10025
 MF281 M0924 MF054

OBS 01 AT 2120Z OBS 07 AT 2143Z
 OBS 07 SFC WND 10015
 REMARKS 279 924 1411

URNT14 KMIA 252351
 AF967 0402 BONNIE OB 14 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01282 10943 12520 11711 01013
 02282 20942 22520 21612 36020
 03282 30940 32511 31610 36022
 04282 40936 42508 41610 36027
 05282 50934 52505 51611 36029
 06282 60929 62481 61712 01039
 07281 70927 72444 71813 35037
 MF282 M0929 MF039

OBS 01 AT 2217Z OBS 07 AT 2244Z
 OBS 01 SFC WND 01010
 01281 10921 12462 11615 19037
 02281 20920 22505 21809 21040
 03281 30916 32517 31515 19031
 04280 40915 42528 41613 18025
 05281 50912 52529 51510 18030
 06281 60911 62529 61510 18030
 07283 70907 72535 71510 21020
 MF281 M0920 MF040

OBS 01 AT 2317Z OBS 07 AT 2338Z
 OBS 07 SFC WND 17015

REMARKS 281 925 141
 LAST REPORT OBS 0114 TO KMIA
 ETA KBIX 26/0015Z
 URNT14 KMIA 260930

AF985 0602 BONNIE OB 04 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01298 10921 10016 12423 16037
 02294 20924 20015 22523 15035
 03293 30926 30014 32322 16026
 04293 40930 40012 42322 16038
 05291 50933 50012 52222 14018
 06291 60936 60009 62322 18051
 07292 70939 70993 72525 10011
 MF291 M0936 MF051

OBS 01 AT 0728Z OBS 07 AT 0759Z
 OBS 01 SFC WND /////
 01292 10942 10006 12323 29043
 02290 20943 20010 22423 31022
 03288 30947 30012 32323 35006
 04288 40951 40012 42423 31007
 05288 50953 50012 52422 31009
 06287 60955 60012 62422 34012
 07286 70956 70012 72422 35007
 MF292 M0942 MF043

OBS 01 AT 0842Z OBS 07 AT 0913Z
 OBS 07 SFC WND /////
 REMARKS 293 940 992

DOPPLER ATTENUATED ! TNC 4 OWN 5 TUDN!

URNT14 KMIA 261122 COR
 AF985 0602 BONNIE OB 07 COR KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01276 10939 10014 12423 20042
 02281 20940 20012 22423 20042
 03283 30942 30012 32424 21030
 04287 40943 40011 42423 22030
 05289 50945 50011 52323 25022
 MF281 M0940 MF042

OBS 01 AT 0951Z OBS 05 AT 1011Z
 OBS 01 SFC WND /////
 01293 10939 10009 12323 24043
 02293 20935 20013 22220 19045
 03294 30933 30014 32318 20052
 04294 40930 40014 42322 20038
 05294 50927 50015 52423 21027
 06292 60923 60015 62423 15032
 MF294 M0933 MF052

OBS 01 AT 1026Z OBS 06 AT 1053Z
 OBS 07 SFC WND /////
 REMARKS 297 945 992

Table 7 continued.

URNT14 KMIA 251247 COR
AF985 0602 BONNIE OF 08 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
01292 10925 10014 12319 19048
02293 20927 20014 22321 17038
03293 30929 30014 32221 15039
04294 40932 40013 42221 16052
05296 50936 50010 52222 16035
MF295 M0940 MI071
OBS 01 AT 10577 OBS 05 AT 11247
OBS 01 SFC WND /////
REMARKS 297 945 992 CNTNS MDT TO SVR TURBC ON WEST SIDE. MAX OBSVD
WIND 20071 AT 29.5N 04.0W;

URNT14 KMIA 251251 COR
AF985 0602 PONNIE OF 09 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
01293 10938 10520 11515 23048
02292 20934 22529 21515 23050
03294 30931 33175 31008 20031
04295 40928 43177 41008 19031
05295 50923 53386 50906 20028
06294 60917 63192 61006 20030
MF292 M0934 MI050
OBS 01 AT 11467 OBS 06 AT 1222Z
OBS 07 SFC WND /////
REMARKS 297 945 500 ETA KBIX 25/1315Z. LAST REPORT OB 01 THRU 09
TO KMIA:

Table 7 continued.

URNT14 KMIA 161232
 AF967 0504 CHARLEY OB 05 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01306 10777 10011 12420 26016
 02309 20777 20009 22420 24023
 03311 30777 30008 32420 24026
 04314 40777 40037 42420 23030
 05316 50777 50007 52220 23031
 06319 60776 60005 62320 24030
 07322 70777 70003 72420 29009
 MF316 M0777 MF031
 OBS 01 AT 1105Z OBS 07 AT 1135Z
 OBS 01 SFC WND 26020
 01327 10776 10004 12321 11008
 02330 20776 20004 22320 11014
 03332 30776 30007 32320 12019
 04335 40776 40007 42420 09016
 05337 50775 50008 52320 07021
 06340 60775 60008 62220 08016
 07342 70775 70010 72220 08016
 MF337 M0775 MF021
 OBS 01 AT 1152Z OBS 07 AT 1221Z
 OBS 07 SFC WND 06020
 REMARKS 325 776 998;

URNT14 KMIA 161428
 AF967 0504 CHARLEY OB 08 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01325 10797 10010 12319 36020
 02324 20793 20009 22219 33022
 03324 30790 30010 32219 35020
 04324 40787 40007 42320 33035
 05324 50784 50006 52320 33034
 06324 60781 60005 62320 32024
 07325 70778 70003 72320 30017
 MF324 M0784 MF034
 OBS 01 AT 1304Z OBS 07 AT 1333Z
 OBS 01 SFC WND 36020
 01326 10772 10003 12321 10013
 02328 20769 20005 22320 17028
 03329 30765 30007 32219 19036
 04329 40762 40009 42420 15021
 05328 50759 50010 52319 10020
 06326 60757 60010 62320 16020
 07326 70754 70012 72320 15027
 MF329 M0765 MF030
 OBS 01 AT 1343Z OBS 07 AT 1414Z
 OBS 07 SFC WND 16025
 REMARKS 327 775 999 INBOUND LEG SFC GUST TO 45KT NEAR SHOWERS.
 OUTBOUND LEG HAD SFC WND 40KT.

URNT14 KMIA 161506
 AF967 0504 CHARLEY OB 11 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01342 10775 10010 12319 08032
 02341 20776 20010 22318 07028
 03338 30776 30009 32219 07032
 04336 40776 40007 42319 08033
 05333 50778 50006 52220 05028
 06330 60778 60004 62221 03017
 07328 70776 70002 72320 02019
 MF336 M0776 MF033
 OBS 01 AT 1451Z OBS 07 AT 1516Z
 OBS 01 SFC WND 12020
 01324 10774 10003 12320 30012
 02324 20775 20004 22320 28011
 03319 30775 30005 32320 24028
 04317 40775 40008 42219 25025
 05314 50774 50008 52320 24023
 06311 60774 60009 62320 26021
 07310 70773 70010 72419 24019
 MF317 M0775 MF025
 OBS 01 AT 1526Z OBS 07 AT 1554Z
 OBS 07 SFC WND 20025
 REMARKS 327 775 999-
 RR KCSF 151812

URNT14 KMIA 161606
 AF967 0504 CHARLEY OB 14 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01327 10754 10010 12320 18031
 02328 20752 20010 22320 15031
 03328 30750 30008 32420 15026
 04329 40763 40007 42320 17029
 05329 50766 50006 52220 16033
 06329 60769 60004 62320 15024
 07328 70771 70002 72320 15025
 MF329 M0766 MF033
 OBS 01 AT 1635Z OBS 07 AT 1702Z
 OBS 01 SFC WND 17030
 01328 10777 10001 12321 36025
 02328 20780 20003 22320 34029
 03328 30784 30005 32220 36025
 04328 40786 40006 42319 35026
 05328 50789 50007 52319 36018
 06328 60792 60008 62419 34020
 07329 70795 70008 72419 35012
 MF329 M0780 MF029
 OBS 01 AT 1716Z OBS 07 AT 1743Z
 OBS 07 SFC WND 36010
 REMARKS 327 775 998 ETA KBIX 16/1930Z LAST REPORT OBS 01 THRU 14
 TO KMIA;

URNT14 KMIA 170707
 AF969 0704 CHARLEY OB 03 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01335 10789 12500 11912 32022
 02335 20788 22486 21912 32029
 03335 30785 32481 21912 33031
 04335 40782 42479 41912 33044
 05335 50779 52472 51714 33038
 06335 60776 62438 61615 32020
 07335 70773 72402 71917 31009
 MF335 M0782 MF044
 OBS 01 AT 0500Z OBS 07 AT 0520Z
 OBS 01 SFC WND 00000
 01335 10765 12376 12015 22027
 02335 20763 22436 21615 22059
 03335 30759 32452 21615 20044
 04335 40757 42454 41917 19033
 05335 50753 52478 51715 19031
 06335 60751 62481 61714 19047
 07335 70748 72487 71911 19042
 MF335 M0763 MF059
 OBS 01 AT 0609Z OBS 07 AT 0635Z
 OBS 07 SFC WND 00000
 REMARKS 326 769 371

URNT14 KMIA 171013
 AF969 0704 CHARLEY OB 06 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01345 10770 12400 11916 08031
 02342 20769 22381 21916 06034
 03340 30769 32359 32116 06035
 MF340 M0769 MF035
 OBS 01 AT 0711Z OBS 03 AT 0718Z
 OBS 01 SFC WND 00000
 01336 10769 12395 11917 29047
 02333 20768 22424 21715 29042
 03331 30768 32432 21715 26043
 04328 40768 42468 41913 29028
 05326 50768 52471 51715 27031
 06323 60767 62430 61714 27033
 07320 70766 72494 71714 29016
 MF336 M0769 MF047
 OBS 01 AT 0857Z OBS 07 AT 0925
 OBS 07 SFC WND 00000
 REMARKS 328 769 054

URNT14 KMIA 171145
 AF969 0704 CHARLEY OB 09 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01339 10747 12507 11615 19048
 02339 20752 22469 21713 18040
 03340 30755 32458 31914 18043
 04340 40758 42434 41916 18047
 05341 50763 52384 51716 18053
 06341 60765 62352 62116 21021
 MF341 M0763 MF053
 OBS 01 AT 1014Z OBS 06 AT 1038Z OBS 01 SFC WND
 REMARKS 343 767 135

Table 7 Continued.

URNT14 KNIA 171613 COR
 AF966 0904 CHARLEY OB 05 COR KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01333 10755 10009 12423 23025
 02336 20755 20009 22423 23042
 03339 30755 30003 32423 24036
 04341 40755 40002 42423 25034
 05344 50757 50999 52323 26039
 MF336 M0755 MF042
 OBS 01 AT 1418Z OBS 05 AT 1438
 OBS 01 SFC WND 26025
 01350 10752 10991 12424 19031
 02350 20754 20993 22424 17055
 03351 30755 30001 32424 17044
 04350 40752 40005 42222 16044
 05350 50749 50006 52523 15042
 06350 50745 50008 62222 14040
 07350 70743 70009 72423 15040
 MF350 M0754 MF055
 OBS 01 AT 1519Z OBS 07 AT 1554Z
 OBS 07 SFC WND 19075
 REMARKS 359 754 989

URNT14 KNIA 171922
 AF966 0904 CHARLEY OB 09 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01337 10750 10006 12423 23034
 02341 20751 20005 22423 23039
 03342 30751 30003 32423 22036
 04345 40751 40001 42423 23042
 05349 50751 50999 52423 24043
 06350 50752 6//// 6//// 25042
 MF349 M0751 MF043
 OBS 01 AT 1645Z OBS 06 AT 1702Z
 OBS 01 SFC WND 23020
 01355 10757 10991 12524 18057
 02350 20755 20000 22423 12047
 03354 30755 20004 32423 12046
 04356 40755 40005 42322 13043
 05359 50755 50007 52523 12033
 MF355 M0757 MF057
 OBS 01 AT 1740Z OBS 05 AT 1807Z
 OBS 05 SFC WND 15050
 REMARKS 359 753 989

URNT14 KNIA 172045
 AF866 0804 CHARLEY OB 11 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01355 10741 10007 12521 15041
 02355 20743 20005 22522 15046
 03356 30746 30003 32423 14047
 04355 40750 40003 42423 18047
 05354 50754 50999 52424 18048
 06354 60756 60993 61818 22060
 07356 70760 70998 71918 25032
 MF354 M0756 MF060
 OBS 01 AT 1857Z OBS 07 AT 1934Z
 OBS 01 SFC WND 15035
 01358 10751 10999 12423 18057
 02360 20752 20000 22423 16059
 03362 30753 30000 32323 13051
 04365 40754 40001 42222 10048
 05366 50755 50003 52322 10050
 06369 60755 60004 62321 12048
 07373 70755 70005 72321 13031
 08375 80754 80006 82321 13037
 MF360 M0752 MF059
 OBS 01 AT 2002Z OBS 08 AT 2032Z
 OBS 08 SFC WND 15025
 REMARKS 359 752 989

ZCZC MRC692
 URNT14 KNIA 180100 COR 02
 AF972 0904 CHARLEY OB 03 COR 02 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01352 10755 12437 11607 24038
 02355 20755 22415 21704 24050
 03358 30755 32391 31815 24052
 04360 40756 42374 41814 25051
 05362 50757 52335 51715 26046
 06365 60758 62315 61913 26017
 MF358 M0755 MF052
 OBS 01 AT 2332Z OBS 06 AT 2352Z
 OBS 01 SFC WND 26035
 01369 10759 12358 11717 06032
 02372 20759 22387 21717 08042
 03374 30758 32422 317// 08051
 04376 40755 42440 418// 10044
 05378 50754 52458 517// 10046
 06381 60751 62471 616// 11046
 07382 70750 72480 716// 12038
 MF374 M0758 MF051
 OBS 01 AT 0012Z OBS 07 AT 0043Z
 OBS 07 SFC WND N/A
 REMARKS 366 757 313
 HYGROMETER FAILED ON OUTBOUND LEG

URNT14 KNIA 180220 COR
 AF972 0904 CHARLEY OB 06 COR KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01370 10735 12486 117// 17043
 02370 20738 22474 216// 16054
 03369 30741 32452 316// 18050
 04369 40744 42428 418// 19063
 05369 50747 52509 517// 18051
 06369 60750 62372 616// 18053
 07369 70753 72335 718// 18032
 MF369 M0744 MF063
 OBS 01 AT 0126Z OBS 07 AT 0151Z
 OBS 01 SFC WND ////
 REMARKS 368 757 321
 UNABLE TO FLY WEST OUTBOUND LEG DUE PROXIMITY TO LAND

URNT14 KNIA 180430
 AF972 0904 CHARLEY OB 08 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01352 10757 12461 117// 28033
 02354 20757 22452 215// 24043
 03356 30758 32439 317// 25049
 04359 40758 42421 417// 26039
 05362 50758 52405 518// 29030
 06364 60757 62381 618// 30037
 07366 70756 72347 718// 28037
 MF356 M0758 MF049
 OBS 01 AT 0238Z OBS 07 AT 0304Z
 OBS 01 SFC WND ////
 01371 10756 12324 118// 06015
 02374 20755 22363 217// 10033
 03376 30754 32393 316// 12039
 04379 40753 42425 416// 12057
 05381 50753 52442 516// 10051
 06383 60751 62458 616// 09040
 07385 70749 72470 715// 11041
 MF379 M0753 MF057
 OBS 01 AT 0318Z OBS 07 AT 0346Z
 OBS 07 SFC WND ////
 REMARKS 369 755 315

Table 7 continued.

URNT14 KNIA 180600
 AF972 0904 CHARLEY OB 11 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01374 10732 12479 115// 16052
 02373 20734 22456 216// 15050
 03374 30737 32436 315// 16066
 04374 40740 42428 416// 17043
 05374 50744 52404 517// 17047
 06374 60747 62385 617// 16044
 07374 70750 72358 717// 15032
 MF374 M0737 MF066
 OBS 01 AT 0430Z OBS 07 AT 0454Z
 OBS 01 SFC WND /////
 01371 10755 12326 118// 30021
 02369 20754 22348 219// 29023
 03367 30753 32375 319// 27042
 04364 40753 42400 418// 28035
 05362 50752 52426 518// 26031
 06359 60753 62441 618// 26030
 07347 70754 72452 717// 25030
 MF367 M0753 MF042
 OBS 01 AT 0516Z OBS 07 AT 0542Z
 OBS 07 SFC WND /////
 REMARKS 373 754 321
 LAST REPORT OBS 01 THRU 11 TO KNIA; ETA KBIX 18/0840Z;
 URNT14 KNIA 180951
 AF967 1004 CHARLEY OB 03 KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01363 10750 12432 11612 25052
 02366 20749 22412 21712 24040
 03368 30750 32398 31612 25046
 04371 40750 42383 41712 27031
 05373 50751 52364 51713 29022
 06376 60750 62351 61713 31023
 MF363 M0750 MF052
 OBS 01 AT 0825Z OBS 06 AT 0847Z
 OBS 01 SFC WND /////
 01391 10746 12347 11613 99005
 02383 20745 22374 21514 10011
 03386 30744 32399 31413 10027
 04386 40743 42414 41311 10038
 05390 50741 52433 51310 09039
 06393 60740 62448 61312 08033
 07394 70739 72455 71311 06036
 MF390 M0741 MF039
 OBS 01 AT 0911Z OBS 07 AT 0937Z
 OBS 07 SFC WND /////
 REMARKS 379 747 331
 OUTBOUND HEADING 035 DEG DUE TO COASTLINE;

 URNT14 KNIA 181828 COR
 AF964 1104 CHARLEY OB 04 COR KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01377 10750 12475 11511 35025
 02376 20745 22454 21513 34039
 03377 30743 32442 31513 34041
 04379 40740 42429 41713 32037
 05381 50738 52417 51913 32035
 06383 60735 62404 61913 29026
 07384 70733 72391 71914 31025
 MF377 M0743 MF041
 OBS 01 AT 1402Z OBS 07 AT 1653Z
 OBS 01 SFC WND 36025
 01390 10718 12393 11715 19030
 02391 20717 22414 21615 19039
 03393 30713 32429 31615 19038
 04393 40711 42442 41713 18048
 05395 50709 52443 51716 21038
 06396 60705 62433 61616 /////
 MF393 M0711 MF048
 OBS 01 AT 1732Z OBS 06 AT 1753Z
 OBS 07 SFC WND /////
 REMARKS 389 726 368
 OUTBOUND LEG CNTNS IN CLOUD
 CONVECTION EAST CNTR 39.3N 71.2W FLT LVL WND 17
 COR FOR REMARKS;

URNT14 KNIA 181905 COR
 AF964 1104 CHARLEY OB 08 COR KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01405 10722 12473 11412 08050
 02403 20723 22436 21412 07044
 03401 30723 32427 31513 09039
 04398 40722 42403 41616 11035
 05396 50723 52393 51716 08017
 06393 60723 62375 61716 05012
 MF405 M0722 MF050
 OBS 01 AT 1817Z OBS 06 AT 1840Z
 OBS 01 SFC WND 06040
 01389 10721 12376 11916 27014
 02389 20723 22379 21915 27028
 MF389 M0723 MF028
 OBS 01 AT 1903Z OBS 02 AT 1911Z
 OBS 07 SFC WND /////
 REMARKS 392 722 369
 COR FOR REMARKS;

URNT14 KNIA 182047 COR
 AF964 1104 CHARLEY OB 09 COR KNIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01392 10717 12378 11816 21025
 02393 20714 22396 21716 20030
 03394 30710 32408 31715 20039
 04395 40707 42421 41615 19054
 05395 50706 52430 51714 19058
 06395 60701 62439 61714 19054
 07396 70698 72451 71715 20065
 MF396 M0698 MF065
 OBS 01 AT 1952Z OBS 07 AT 2020Z
 OBS 07 SFC WND /////
 REMARKS 393 720 368
 SFC WND 39.5N 70.6W 18050
 FLT LVL WND 39.5N 70.3W 19062;

Table 7 continued.

URNT14 KMIA 192300
 AF964 1104 CHARLEY OB 12 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01400 10711 12411 11616 15025
 02398 20713 22395 21716 18017
 03396 30713 32385 31716 /////
 MF400 M0711 MF025
 OBS 01 AT 2047Z OBS 03 AT 2054Z
 OBS 01 SFC WND /////
 01397 10712 12397 11715 21019
 02397 20708 22403 21715 19027
 03398 30705 32419 31715 19040
 04398 40701 42428 41713 19043
 05398 50697 52442 51813 19048
 06397 60695 62445 61814 21045
 07396 70693 72463 71714 19050
 MF396 M0693 MF050
 OBS 01 AT 2135Z OBS 07 AT 2209Z
 OBS 07 SFC WND 18045
 REMARKS 395 715 378;

URNT14 KMIA 192345
 AF964 1104 CHARLEY OB 16 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01408 10705 12448 11411 05035
 02406 20706 2// 2// /////
 03404 30707 32423 31514 09035
 04403 40708 42412 41614 11018
 05401 50711 52408 51715 11011
 06399 60713 62406 61715 16007
 MF404 M0707 MF035
 OBS 01 AT 2242Z OBS 06 AT 2302Z
 OBS 01 SFC WND /////
 REMARKS 396 711 388;

URNT14 KMIA 190419
 AF969 1204 CHARLEY OB 04 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01399 10722 12476 11410 01044
 02398 20719 22460 21510 36037
 03398 30717 32454 31610 35044
 04398 40714 42436 41610 36066
 05397 50709 52417 51812 34012
 06397 60707 62411 61813 35020
 07397 70705 72408 71813 35011
 08399 80702 82408 81813 33018
 MF398 M0714 MF066
 OBS 01 AT 0226Z OBS 08 AT 0258Z
 OBS 01 SFC WND /////
 01400 10696 12411 11713 24013
 02400 20693 22420 21713 21022
 03400 30689 32426 31613 21030
 04400 40686 42432 41612 20039
 05400 50683 52439 51612 19049
 06401 60680 62451 61612 19056
 07400 70676 72460 71612 20046
 MF401 M0680 MF056
 OBS 01 AT 0320Z OBS 07 AT 0348Z
 OBS 01 SFC WND /////
 REMARKS 400 699 401
 EXTENSIVE CONNECTION FROM 55 NM TO 95 NM OUTBOU

URNT14 KMIA 190600
 AF969 1204 CHARLEY OB 07 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAG
 01416 10698 12448 11310 06048
 02414 20697 22436 21510 05043
 03410 30693 32426 31612 08011
 04409 40691 42423 41612 10006
 05408 50690 52420 51612 14016
 06406 60693 62414 61613 13011
 07405 70694 72411 71713 11009
 MF416 M0698 MF048
 OBS 01 AT 0430Z OBS 07 AT 0458Z
 OBS 01 SFC WND /////
 01400 10693 12404 11713 32013
 02397 20693 22410 21713 29020
 03394 30693 32417 31713 26035
 04392 40693 42420 41712 27028
 05389 50693 52426 51712 27031
 06387 60693 62435 61712 26036
 07385 70693 72444 71710 26052
 MF385 M0693 MF052
 OBS 01 AT 0514Z OBS 07 AT 0542Z
 OBS 01 SFC WND /////
 REMARKS 403 693 398
 INBD LEG ADJUSTED FOR COASTLINE;

Table 7 continued.

URNT14 KMIA 081510
 AF967 0207 DANIELLE OB 18 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01132 10622 10007 12321 09071
 02135 20622 20009 22320 10046
 03137 30621 30011 32319 10035
 04139 40621 40012 42420 10038
 05143 50621 50012 52519 10032
 06145 60621 60012 62520 10030
 07147 70621 70013 72420 09026
 MF132 M0622 MF071

OBS 01 AT 1412Z OBS 07 AT 1443Z OBS 07 SFC WND 10025
 REMARKS 130 621 004

BAND OF STRONG WINDS 6080KTS BOTH AT FL AND SFC ON NORTH SIDE OF
 CENTER FROM 1020 NM OUT. LAST REPORT OBS 0118 TO KMIA. ETR
 MKPA 081535Z

URNT14 KMIA 081908
 AF972 0307 DANIELLE OB 04 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01148 10630 10012 12419 10023
 02146 20630 20011 22519 11024
 03143 30630 30011 32519 11033
 04140 40631 40010 42419 09035
 05138 50632 50009 52419 12040
 06135 60632 60006 62520 10049
 MF135 M0632 MF049

OBS 01 AT 1720Z OBS 06 AT 1743Z
 OBS 01 SFC WND 10030

01130 10632 10008 12521 15009
 02128 20631 20009 22621 21014
 03125 30632 30009 32521 16009
 04122 40632 40009 42621 26009
 05120 50632 50009 52621 25008
 06119 60632 60009 62621 26007
 07115 07632 70009 72621 28008
 MF128 M0631 MF014

OBS 01 AT 1825Z OBS 07 AT 1856Z
 OBS 07 SFC WND 99005

REMARKS: 133 632 006 RW FROM 30NM N TO 45NM S

URNT14 KMIA 082135
 AF972 0307 DANIELLE OB 07 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01133 10614 10011 12518 13030
 02133 20616 20011 22517 13031
 03133 30619 30010 32518 13033
 04133 40622 40010 42418 13032
 05133 50624 50009 52418 13048
 06133 60626 60009 62419 12037
 07132 70630 70009 72419 10031
 MF133 M0624 MF048

OBS 01 AT 1947Z OBS 07 AT 2015Z
 OBS 01 SFC WND 13025

01129 10635 10008 12520 19014
 02128 20638 20007 22620 99005
 03128 30641 30007 32620 21011
 04128 40644 40008 42620 34007
 05128 50646 50008 52620 36009
 06128 60649 60008 62620 01016
 07128 70651 70008 72620 02016
 MF128 M0649 MF016

OBS 01 AT 2039Z OBS 07 AT 2111Z
 OBS 07 SFC WND 36015

REMARKS: 129 633 008

URNT14 KMIA 090010
 AF972 0307 DANIELLE OB 11 KMIA
 SUPPLEMENTARY VORTEX DATA MESSA
 01152 10641 10011 12620 11019
 02149 20640 20010 22620 10025
 03147 30641 30010 32620 10029
 04144 40642 40010 42620 10033
 05142 50643 50009 52620 10043
 06139 60644 60008 62619 10047
 07135 70645 70003 72621 11043
 MF139 M0644 MF047

OBS 01 AT 2237Z OBS 07 AT 2309Z
 OBS 01 SFC WND 09020

01133 10645 10006 12521 24011
 02130 20645 20008 22521 20011
 03127 30645 30008 32621 99005
 04125 40645 40008 42621 24008
 05123 50645 50009 52621 22008
 MF133 M0645 MF011

OBS 01 AT 2327Z OBS 05 AT 2347Z
 OBS 05 SFC WND //

REMARKS 134 645 003

MIAREPNT2
 URNT14 KMIA 090715
 AF866 0407 DANIELLE OB 06 KMIA
 SUPPLEMENTARY VORTEX DATA MESSA
 01160 10672 10012 12521 08034
 02157 20673 20011 22523 07055
 03155 30673 30011 32522 07022
 04153 40672 40011 42520 06024
 05151 50672 50010 52521 07025
 06148 60671 60010 62521 07025
 07145 70670 70009 72523 06023
 08143 80668 80009 82523 06023
 09141 90668 90008 92521 07033
 MF157 M0673 MF055
 OBS 01 AT 0518Z OBS 09 AT 0555Z
 OBS 01 SFC WND //
 01130 10667 10007 12523 29015
 02128 20667 20008 22523 28014
 MF130 M0667 MF015
 OBS 01 AT 0630Z OBS 02 AT 0635Z
 OBS 02 SFC WND //
 REMARKS 132 667 007
 WX RADAR INOP MISSION ABORTED

URNT14 KMIA 091325
 AF972 0507 DANIELLE OB 05 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01159 10680 10013 12518 10031
 02157 20680 20013 22518 08032
 03155 30680 30012 32518 08030
 04152 40680 40012 42518 08038
 05150 50679 50012 52518 08031
 06147 60679 60011 62518 09038
 07144 70679 70011 72518 10038
 08142 80680 80010 82518 09046
 09139 90680 90010 92519 10041
 MF142 M0680 MF046

OBS 01 AT 1052Z OBS 09 AT 1131Z OBS 01 SFC WND 09

01131 10681 10011 12519 27006
 02128 20679 20011 22519 27007
 03126 30679 30011 32519 21009
 04122 40678 40011 42520 12009
 05120 50678 50011 52520 09008
 06118 60678 60012 62520 11012
 07116 70677 70012 72520 03005
 MF122 M0678 MF009

OBS 01 AT 1230Z OBS 07 AT 1301Z OBS 07 SFC WND 99005

REMARKS 135 681 009

Table 7 continued.

URNT14 KMIA 112123
 AF866 0108 EARL OB 11 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01252 10534 10002 12323 25025-
 02251 20534 20006 22222 21030
 03248 30534 30009 31919 24049
 04245 40533 40010 42318 26032
 05243 50534 50011 52322 28023
 MF248 M0534 MF049
 OBS 01 AT 2023Z OBS 05 AT 2046Z
 OBS 05 SFC WND 27020
 REMARKS 253 534 998
 MAX OBSERVED SFC WND 23050
 OBS 01 THRU 11 TRANSMITTED AS
 AF866 0108 CYCLONE

URNT14 KMIA 112355
 AF866 0108 EARL OB 14 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01254 10515 10012 12421 14018
 02254 20519 20012 22421 15031
 03254 30521 30012 32421 16025
 04254 40522 40012 42420 17029
 05254 50525 50011 52311 17036
 06254 60528 60010 62121 16040
 07254 70531 70009 72120 17052
 08254 80524 80007 82119 17067
 09255 90536 90999 92423 20052
 MF254 M0534 MF067
 OBS 01 AT 2156Z OBS 09 AT 2234Z
 OBS 01 SFC WND /////
 01255 10542 10002 12422 36038
 02256 20545 10006 22422 36025
 03256 30548 30007 32421 02019
 04256 40551 40009 42422 03020
 05256 50553 50009 52422 04016
 06256 60555 50010 62521 02020
 07256 70554 70011 72421 06017
 MF256 M0542 MF038
 OBS 01 AT 2255Z OBS 07 AT 2324Z
 OBS 07 SFC WIND /////
 REMARKS 256 539 997

URNT14 KMIA 121932
 AF969 0208 EARL OB 08 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01256 10554 12515 11711 23028
 02259 20554 22510 21714 22039
 03261 30554 32501 31713 22035
 04263 40556 42493 41713 23036
 05266 50558 52486 51715 25030
 MF259 M0554 MF039
 OBS 01 AT 1757Z OBS 05 AT 1816Z
 OBS 01 SFC WND 24030
 01275 10559 12458 11715 34014
 02277 20559 22464 21814 05035
 03280 30559 32473 31714 07046
 04282 40559 42489 41614 09041
 05285 50559 52495 51614 09041
 05285 50559 52495 51614 09037
 06287 60559 62507 61613 10035
 07290 70559 72516 71612 10036
 MF280 M0559 MF046
 OBS 01 AT 1847Z OBS 07 AT 1916Z
 OBS 07 SFC WND 10030
 REMARKS: 273 559 007

URNT14 KMIA 122140 COR
 AF969 0208 EARL OB 11 COR KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01273 10578 12518 11812 33004
 02272 20574 22512 21814 32009
 03273 30572 32506 31713 29013
 04274 40569 42500 41713 30010
 05275 50566 52497 51715 99005
 06276 60564 62494 61714 35018
 07276 70561 72476 71714 35028
 MF276 M0561 MF028
 OBS 01 AT 1957Z OBS 07 AT 2029Z
 OBS 01 SFC WND 99005
 01278 10549 12377 11815 17066
 02278 20545 22454 21715 /////
 03279 30543 32486 31513 17054
 04279 40540 42507 51515 /////
 05279 50537 52525 51514 17044
 06278 60534 62530 61614 14022
 07277 70532 72537 71713 13011
 MF278 M0549 MF066
 OBS 01 AT 2057Z OBS 07 AT 2126Z
 OBS 07 SFC WND 13010
 REMARKS 274 552 280 HEAVY PRECIP MDT TURB OUTBOUND LEG SFC WND
 GUST TO 80 8NM EAST OF CENTER

URNT14 KMIA 130017
 AF969 0208 EARL OB 15 KMIA
 SUPPLEMENTARY VORTEX DATA MESSAGE
 01295 10553 12525 11610 11036
 02292 20553 22509 21612 11042
 03290 30554 32497 31513 09042
 04285 40553 42485 41713 08050
 05285 50555 52439 51814 07058
 06282 60554 62384 61914 06065
 MF282 M0554 MF065
 OBS 01 AT 2233Z OBS 06 AT 2257Z
 OBS 01 SFC WND /////
 01277 10553 12374 11916 28065
 02274 20554 22454 21715 29046
 03272 30553 32484 31715 26046
 04269 40553 42500 51813 27034
 05269 50554 52511 51715 26032
 06264 60554 62522 61712 25032
 07262 70555 72525 71714 25027
 MF277 M0553 MF065
 OBS 01 AT 2317Z OBS 07 AT 2345Z
 OBS 07 SFC WND /////
 REMARKS 280 555 285

Table 7 continued

URNT14 KNIA 201509
AF972 0209 FRANCES 08 11 KNIA
SUPPLEMENTARY VORTEX DATA MESSAGE
01283 10572 10016 12217 15046
02283 20573 20016 22218 14040
03282 30575 30015 32218 14040
04281 40576 40014 42318 15034
05279 50583 50013 52316 14035
06279 60584 60008 62117 18039
07279 70585 70007 72117 19065
MF279 M0589 MF075
OBS 01 AT 1404Z OBS 07 AT 1431Z OBS 01 SFC WND 16025
REMARKS 281 591 000 SFC WND GRTR THAN 60KT FM 45NM E INBD TO CNTR;

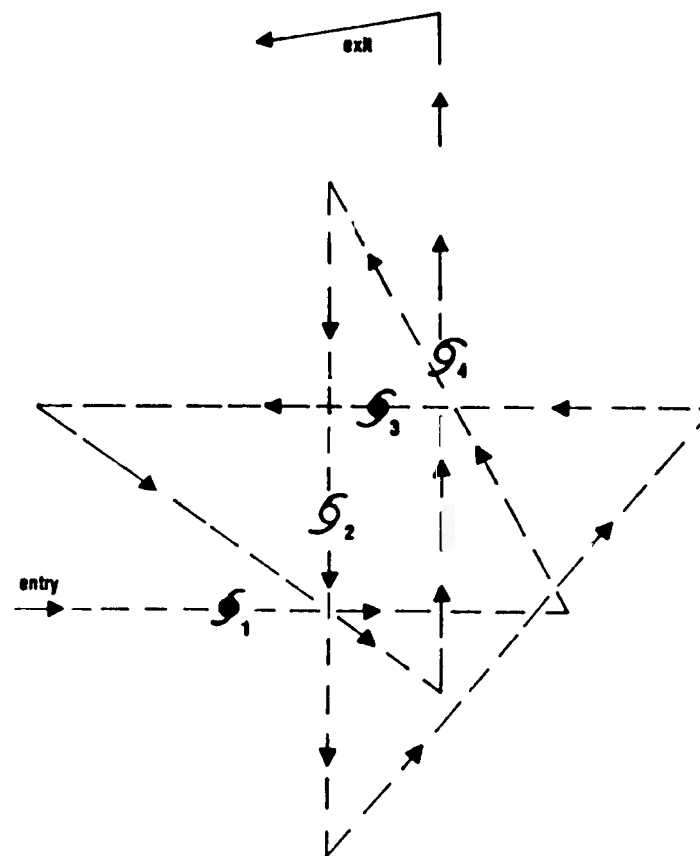
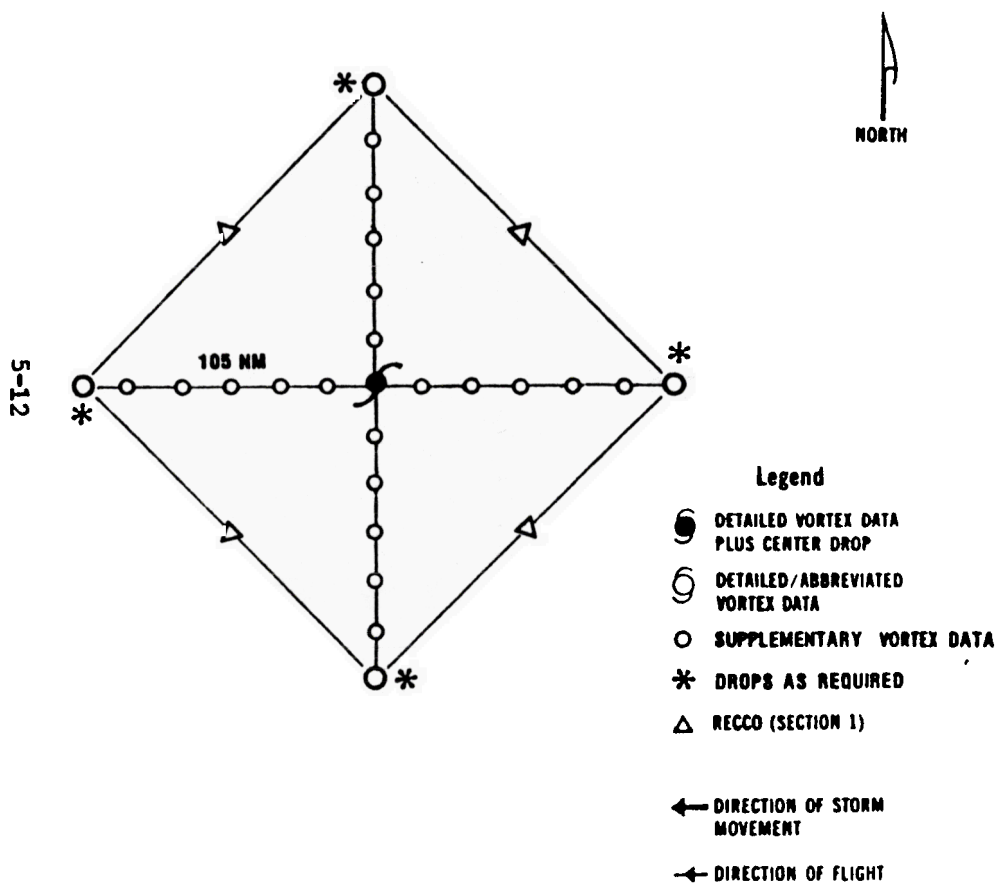
URNT14 KNIA 201355
AF972 0209 FRANCES 08 08 KNIA
SUPPLEMENTARY VORTEX DATA MESSAGE
01286 10615 10015 12217 05009
02285 20615 20016 22214 03013
03283 30615 30015 32216 03013
04280 40615 40015 42215 36015
05279 50612 50014 52215 35014
06279 60609 60014 62216 34012
07279 70607 70014 72216 01016
08279 80603 80013 82116 01020
09278 90601 90012 92217 01020
10277 00595 00004 02217 01051
MF277 M0595 MF051
OBS 01 AT 1137Z OBS 10 AT 1215Z OBS 01 SFC WND 06010
01275 10592 10008 12119 25060
02273 20592 20010 22218 25065
03271 30591 30014 32110 25040
04268 40592 40014 42415 25030
05264 50593 50015 52415 26026
06264 60592 60015 62218 26026
07262 70593 70016 72218 26030
MF274 M0592 MF075
OBS 01 AT 1247Z OBS 07 AT 1318Z OBS 07 SFC WND 23020
REMARKS 278 593 000 MAX SFC WND 25070 AT 27.4N 59.2W;

APPENDIX A.
Code for supplementary vortex data message.

SUPPLEMENTARY VORTEX DATA MESSAGE																																																																											
MANOP HEADING (completed by monitors only)																																																																											
UR _____ 12 _____																																																																											
MISSION IDENTIFIER AND OBSERVATION NUMBER (completed by flight meteorologist and monitor)																																																																											
AF _____																																																																											
SUPPLEMENTARY VORTEX DATA MESSAGE					LEGEND																																																																						
(L _a L _a L _a)	(L _o L _o L _o L _o)	(iHHH)	(TTT _d T _d)	(ddfff)	<p>01 INDICATOR FOR DATA COLLECTED APPROXIMATELY 105 NM FROM STORM CENTER (INBOUND) OR APPROXIMATELY 15 NM FROM CENTER (OUTBOUND)</p> <p>OTHER INDICATORS (02/2, 03/3...) FOR DATA AT APPROXIMATELY 15 NM INTERVALS INBOUND OR OUTBOUND FROM STORM CENTER. INDICATORS MAY BE EXPANDED BEYOND 07 (08, 09....) AS NECESSARY AT APPROXIMATELY 15 NM INTERVALS.</p> <p>MF = INDICATOR FOR MAXIMUM FLIGHT LEVEL WIND OBSERVED</p> <p>fff = SPEED OF WIND IN KNOTS</p> <p>dd = TRUE DIRECTION OF FLIGHT LEVEL WIND SPEED IN TENS OF DEGREES</p> <p>TTT_d T_d = TEMP/DEWPOINT IN DEGREES CELSIUS: ADD 50 FOR NEGATIVE VALUES</p> <p>iHHH = PRESSURE HEIGHT DATA IN RECCO FORMAT</p> <p>L_a L_a L_a = LATITUDE IN DEGREES/TENTHS</p> <p>L_o L_o L_o L_o = LONGITUDE IN DEGREES/TENTHS</p> <p>/ = DATA UNKNOWN/UNOBTAINABLE</p>																																																																						
01	1	1	1																																																																								
02	2	2	2																																																																								
03	3	3	3																																																																								
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06	6	6	6																																																																								
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OBS 01 AT:		OBS AT		OBS 01 SFC WND:																																																																							
Z		Z																																																																									
(L _a L _a L _a)	(L _o L _o L _o L _o)	(iHHH)	(TTT _d T _d)	(ddfff)	<p align="center">SAMPLE MESSAGE</p> <p>URNT 12 KMIA 241703 AF 966 0411 FREDERIC OB 14 SUPPLEMENTARY VORTEX DATA MESSAGE</p> <table border="0"> <tr><td>01178</td><td>10899</td><td>13107</td><td>10908</td><td>36027</td></tr> <tr><td>02177</td><td>20895</td><td>23100</td><td>20908</td><td>35042</td></tr> <tr><td>03178</td><td>30891</td><td>33092</td><td>30807</td><td>36052</td></tr> <tr><td>04177</td><td>40887</td><td>43088</td><td>40907</td><td>35070</td></tr> <tr><td>05178</td><td>50883</td><td>53070</td><td>50908</td><td>36085</td></tr> <tr><td>06178</td><td>60880</td><td>63000</td><td>61010</td><td>35108</td></tr> <tr><td>07178</td><td>70877</td><td>73882</td><td>71211</td><td>35120</td></tr> </table> <p>MF178 M0877 MF120</p> <p>OBS 01 AT 1530Z OBS 07 AT 1600Z</p> <p>OBS 01 SFC WND 36025</p> <table border="0"> <tr><td>01177</td><td>10872</td><td>13000</td><td>11010</td><td>18120</td></tr> <tr><td>02178</td><td>20868</td><td>23070</td><td>21009</td><td>17098</td></tr> <tr><td>03178</td><td>30862</td><td>23088</td><td>30909</td><td>18080</td></tr> <tr><td>04177</td><td>40858</td><td>43093</td><td>40908</td><td>17050</td></tr> <tr><td>05177</td><td>50854</td><td>53102</td><td>50908</td><td>17048</td></tr> <tr><td>06178</td><td>60850</td><td>63108</td><td>60905</td><td>18031</td></tr> <tr><td>07177</td><td>70844</td><td>73114</td><td>70902</td><td>18025</td></tr> </table> <p>MF177 M0872 MF120</p> <p>OBS 01 AT 1630Z OBS 07 AT 1700Z</p> <p>OBS 07 SFC WIND 16025</p> <p>REMARKS HEAVY RAIN OUTBOUND</p>	01178	10899	13107	10908	36027	02177	20895	23100	20908	35042	03178	30891	33092	30807	36052	04177	40887	43088	40907	35070	05178	50883	53070	50908	36085	06178	60880	63000	61010	35108	07178	70877	73882	71211	35120	01177	10872	13000	11010	18120	02178	20868	23070	21009	17098	03178	30862	23088	30909	18080	04177	40858	43093	40908	17050	05177	50854	53102	50908	17048	06178	60850	63108	60905	18031	07177	70844	73114	70902	18025
01178	10899	13107	10908	36027																																																																							
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07178	70877	73882	71211	35120																																																																							
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02178	20868	23070	21009	17098																																																																							
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07	7	7	7																																																																								
(L _a L _a L _a)	(L _o L _o L _o L _o)	(fff)																																																																									
MF	M	MF																																																																									
OBS 01 AT:		OBS AT		OBS 07 SFC WND:																																																																							
Z		Z																																																																									
REMARKS (end of message)																																																																											
PREPARED BY:				TRANSMISSION TIME:																																																																							

RECOMMENDED PATTERN "A" EXECUTION

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APPENDIX B.

Flight pattern "A" flown in obtaining Supplementary Vortex Data Messages.

Table 8. Tropical cyclone Reconnaissance Summary for 1986.

1. Requirements Levied	Atlantic	Eastern Pacific	Central Pacific
TDs, Storms, Hurricanes	91	00	31
Invests	52	00	00
Total	143	00	31
cancellations	64	00	08
2. Requirements Accomplished			
53rd WRS (Cyclone/Invest)	05/03	0/0	17/00
815th WRS	51/06	0/0	06/00
OAO	11/01	0/0	00/00
Total	67/10	0/0	23/00
3. Missions Flown			
53th WRS	05	00	08
815th WRS	34	00	04
OAO	06	00	00
Total	45	00	12
4. Flying Time			
53rd WRS	36.9	00	105.5
815th WRS	356.4	00	119.5
OAO	60.0	00	00.0
Total	453.3	00	225.0
5. Observations			
	Horizontal..... 742	Vertical.....25	

Table 9. Probability forecasts for 1986 landfalling U.S. tropical cyclones.

Chances in percent of Andrew passing within 65 miles of the listed locations by date and time(EDT)

Advisory number	2	3	4	5	6
Advisory Date/Time	06/2200	07/0430	07/1000	07/1600	07/2200
<u>Probability thru</u>	<u>09/1800</u>	<u>10/0000</u>	<u>10/0600</u>	<u>10/1200</u>	<u>10/1800</u>
Bermuda		5	4		
Ft Pierce FL	2				
Cocoa Beach FL	3	2			
Daytona Beach FL	4	2			
Jacksonville FL	5	3			
Savannah GA	10	15			
Charleston SC	21	17	2		
Myrtle Beach SC	28	14	3		
Wilmington NC	27	23	7	5	
Morehead City NC	24	30	20	29	12
Cape Hatteras NC	19	26	23	38	40
Norfolk VA	14	14	7	9	4
Ocean City MD	11	11	6	8	5
Atlantic City NJ	9	9	5	6	4
New York NY	7	7	5	5	4
Montauk Point NY	7	7	6	7	6
Providence RI	6	6	6	6	6
Nantucket MA	7	8	8	9	9
Hyannis MA	6	7	7	8	7
Boston MA	5	5	5	6	5
Portland ME	3	4	4	4	4
Bar Harbor ME	3	3	5	5	4
Eastport ME	2	3	5	5	5
St John NB	2	2	5	5	5
Moncton NB		2	5	5	4
Yarmouth NS		4	7	8	8
Halifax NS		3	8	8	8
Sable Island NS		3	9	10	10
Sydney NS		2	7	7	7
Eddy Point NS		2	7	7	7
Ptx Basques NFLD			5	5	5
Burgeo NFLD			6	5	5
Ile St Pierre			6	7	7
Cape Race NFLD			6	7	7
Hibernia OilFLd			4	5	6

Table 9 continued.

Chances of the center of Bonnie passing within 65 miles of the listed location by date and time (CDT) indicated. Probabilities in percent.

ADVISORY DATE/TIME PROBABILITY THRU	24/11AM 27/7AM	24/5PM 27/1PM	24/930PM 27/7PM	25/5AM 28/1AM	25/7AM 28/1AM	25/11AM 28/7AM	25/5PM 28/1PM	25/11PM 28/7PM	26/5AM 29/1AM
Cedar Key, FL	2	3							
St Marks, FL	3	5							
Apalachicola, FL	4	6							
Panama City, FL	5	7							
Pensacola, FL	8	11		2			2	2	
Mobile, AL	9	13	3	3	2	3	4	4	
Gulfport, MS	11	5	4	4	3	4	6	5	
Buras, LA	15	21	7	4	4	5	7	4	
New Orleans, LA	14	19	9	7	6	9	11	8	
New Iberia, LA	16	19	14	14	14	21	23	27	12
Port Arthur, TX	15	16	18	22	22	31	32	60	97
Galveston, TX	16	15	22	30	31	35	32	50	73
Freeport, TX	15	14	22	31	31	30	25	32	29
Port O'Connor, TX	14	12	19	26	26	19	16	10	
Corpus Christi, TX	12	10	15	18	17	12	10	4	
Brownsville, TX	12	9	11	10	9	5	5		
Gulf 29N 85W	4	5							
Gulf 29N 87W	7	11							
Gulf 28N 89W	24	34	7	2		2	3		
Gulf 28N 91W	38	41	60	42	51	68	40	10	
Gulf 28N 93W	27	22	46	61	70	76	88	93	
Gulf 28N 95W	17	15	30	38	38	29	23	23	
Gulf 27N 96W	15	12	19	24	23	13	12	3	
Gulf 25N 96W	13	9	10	7	6	3	3		

Table 9 continued.

Chances of the center of Charley passing within 65 miles of the listed locations by date and time (EDT) indicated (probabilities in percent).

ADVISORY DATE/TIME	15/4PM	16/12AM	16/6AM	16/12PM	16/6PM	17/12AM	17/6AM
<u>PROBABILITY THRU</u>	<u>18/2PM</u>	<u>18/8PM</u>	<u>19/2AM</u>	<u>19/8AM</u>	<u>19/2PM</u>	<u>19/8PM</u>	<u>20/2AM</u>
Miami, FL	5	4	4	3	2	X	X
W. Palm Bch., FL	7	6	5	5	2	X	X
Ft. Pierce, FL	9	8	7	7	3	X	X
Coacoa Bch, FL	11	9	8	8	4	2	X
Daytona Bch, FL	13	11	10	10	6	3	X
Jacksonville, FL	14	13	12	11	7	4	X
Savannah, GA	16	16	15	14	10	7	6
Charleston, SC	22	23	23	19	14	10	9
Myrtle Bch, SC	21	29	29	24	24	18	18
Wilmington, NC	18	21	21	21	35	36	53
Morehead City, NC	15	17	18	18	33	47	75
Cape Hatteras, NC	13	14	15	15	22	30	42
Norfolk, VA	9	10	11	11	14	17	22
Ocean City, MD	6	7	8	8	11	13	14
Atlantic City, NJ	4	5	6	6	8	11	9
New York City, NY	3	3	4	4	6	9	6
Montauk Point, NY	2	3	3	3	6	9	4
Providence, RI	2	2	3	3	5	8	3
Nantucket, MA	2	2	3	3	5	8	2
Hyannis, MA	2	2	3	3	5	8	2
Boston, MA	X	X	2	2	4	7	2
Portland, ME	X	X	X	X	3	5	X
Bar Harbor, ME	X	X	X	X	2	4	X
Eastport, ME	X	X	X	X	2	4	X
St. John, NB	X	X	X	X	X	3	X
Moncton, NB	X	X	X	X	X	3	X
Yarmouth, NS	X	X	X	X	2	5	X
Halifax, NS	X	X	X	X	2	4	X
Sable Island, NS	X	X	X	X	X	3	X
Sydney, NS	X	X	X	X	X	2	X
Eddy Point, NS	X	X	X	X	X	2	X
Bermuda	2	2	2	2	3	2	X

X MEANS LESS THAN 2 PERCENT

Table 9 continued.

Chances of the center of Charley passing within 65 miles of the listed locations by date and time (EDT) indicated (probabilities in percent).

ADVISORY DATE/TIME	17/12PM	17/6PM	18/12AM	18/6AM	18/12PM	18/6PM
<u>PROBABILITY THRU</u>	<u>20/8AM</u>	<u>20/2PM</u>	<u>20/8PM</u>	<u>21/2AM</u>	<u>21/8AM</u>	<u>21/2PM</u>
Morehead City, NC	86	62	X	X	X	X
Cape Hatteras, NC	83	97	X	X	X	X
Norfolk, VA	43	73	X	X	X	X
Ocean City, MD	32	51	68	87	75	X
Atlantic City, NJ	22	35	42	49	40	X
New York City, NY	18	25	28	33	23	X
Montauk Point, NY	16	20	24	29	28	24
Providence, RI	15	18	21	24	22	16
Nantucket, MA	14	16	21	23	26	41
Hyannis, MA	14	16	20	22	23	28
Boston, MA	14	16	18	19	17	11
Portland, ME	12	14	14	14	12	6
Bar Harbor, ME	11	12	13	13	11	7
Eastport, ME	10	11	12	12	11	7
St. John, NB	9	11	12	12	10	7
Moncton, NB	8	9	10	10	9	6
Yarmouth, NS	10	12	14	14	14	13
Halifax, NS	8	10	12	12	12	11
Sable Island, NS	6	7	10	10	11	12
Sydney, NS	6	7	10	10	10	7
Eddy Point, NS	7	8	11	11	11	9
Pix Basques, NFLD	5	6	8	8	8	5
Burgeo, NFLD	4	5	8	8	8	5
Ile St. Pierre	4	5	8	8	9	6
Cape Race, NFLD	X	3	7	7	8	6
Hibernia Oilfield	X	X	4	4	5	4

X MEANS LESS THAN 2 PERCENT