NOAA TECHNICAL MEMORANDUM NWS NHC 42

ANNUAL DATA AND VERFICATION TABULATION ATLANTIC TROPICAL CYCLONES 1988

Gilbert B. Clark and Robert A. Case, NHC
Miami, Fl.

National Hurricane Center
Miami, Florida
March, 1989

INTRODUCTION

This is the Fifteenth 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 (Table 9).

OBJECTIVE FORECAST TECHNIQUES

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

1. 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.

2. 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.

3. CLIPER (Neumann, 1972). Stepwise multiple screening regression using the predictors derived from climatology and persistence.

4. NMC QLM MODEL (Mathur 1988). Beginning with the 1988 hurricane season, the quasi-Lagranglan model (QLM) replaced the NMC's operational hurricane prediction model. The MFM was developed in the early 1970's, well before NMC acquired the Cyber 205 computer. This advanced computer allowed higher resolution computational grids and more sophisticated procedures for parameterizing sub-grid scale physical processes to be used operationally. A new operational hurricane model was developed (i.e., the QLM) based largely on the model described by Mathur. The QLM is flexible; it can be integrated with any reasonable horizontal and vertical resolution over any limited area domain. Further, its easy to incorporate new physical parameterization procedures into the model.

5. NHC-83 MODEL (Neumann, 1983). NHC-83 is a Statistical-Dynamical model. That is, it uses the output from a numerical model but in a statistical prediction framework. Some features of the NHC-83 model are: "perfect prog" through 84 hours, deep-layer-mean height fields, avoidance of predictors in deep tropics, graphical output and forecasts available to meet advisory deadlines.

6. BAM is the Beta and Advection Model and is a modification of the Pocket Hurricane Model (Holland, 1983). Tropical cyclone motion is determined by the application of a barotropic vorticity equation on a beta plane to large-scale flow fields taken from NMC analyses and primitive equation model forecasts.

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 technique 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 analysis and prognoses produced by NMC and TSAC (Tropical Satellite and Analysis Center) in Miami.

VERIFICATION

Verification statistics for the 1988 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 the best-track positions. Landfall prediction errors for the official forecasts are given in Table 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 from the landfall point to the nearest point on the forecast track.

Tropical cyclone warning lead times for the United States landfalling storms are given in Table 3a. A summary of the warning lead times 1970-1988 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 the 1977 Annual Data and Verfication Tabulation (Lawrence, Herbert and Staff, 1979).

DATA SUMMARIES

A summary of the 1988 North Atlantic tropical cyclone statistics is given in Table 4. Tracks of the 1988 storms and hurricanes are shown in figure 1.

The best track, initial, and forecast positions for the 1988 systems are in Table 5, along with initial position and forecast errors, and average errors.

Table 6 lists all center fix positions and intensity evaluations used operationally at the National Hurricane Center during the 1988 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 1988 season.

Graphs of the lowest central pressure versus time for the 1988 named tropical cyclones are shown in Figure 4.

Table 9 gives the probability forecasts issued for the 1988 land-falling United States storms and hurricanes.

ACKNOWLEDGEMENTS

Main contributors were Miles Lawrence, who computed the verification statistics and Joan David, who drafted the track chart and pressure/time graphs. Brian Maher assisted in preparing the satellite pictures and Brian Petrovich the Supplementary Vortex Data Messages.

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.

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.

Mathur, Makut, 1988: "The NMC Quasi-Lagranglan Hurricane Model," Technical Procedures Bulletin, series number 377, NOAA National Weather Service Office of Meteorology.

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 Predition 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.

LIST OF FIGURES, TABLES, AND APPENDICES

Figure 1. Tracks of 1988 tropical cyclones.

Figure 2. Lowest pressure vs. time, 1988 tropical cyclones.

Figure 3. Daily satellite photographs of 1988 tropical cyclones.

Table 1. Verification of 1988 tropical storm and hurricane forecasts. Figures in parentheses are the number of cases.

Table 2a. Landfall prediction errors for 1988 tropical storms and hurricanes.

Table 2b. Nineteen-year summary of errors in the prediction of the point of landfall of Atlantic tropical storms and hurricanes during the period 1970-1988.

Table 3a. Warning lead times for 1988 landfalling United States tropical storms and hurricanes.

Table 3b. Summary of warning lead time for hurricanes only and all tropical cyclones for the period 1970-1988.

Table 4. Summary of 1988 tropical cyclone statistics.

Table 5a. Best track, initial and forecast positions, initial position error and forecast errors for 1988 tropical cyclones.

Table 5b. Best track forecast windspeed verification for 1988 tropical cyclones.

Table 6. Center fix positions and intensity evaluations for 1988 cyclones.

Table 7. Supplementary Vortex Data Messages, 1988 Atlantic Tropical Cyclones.

Appendix A. Code for Supplementary Vortex Data Messages of Table 7

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

Table 8. Tropical cyclone reconnaissance summary for 1988 hurricane season.

Table 9. Probability Forecasts issued for 1988 landfalling United States Tropical Storms and Hurricanes.

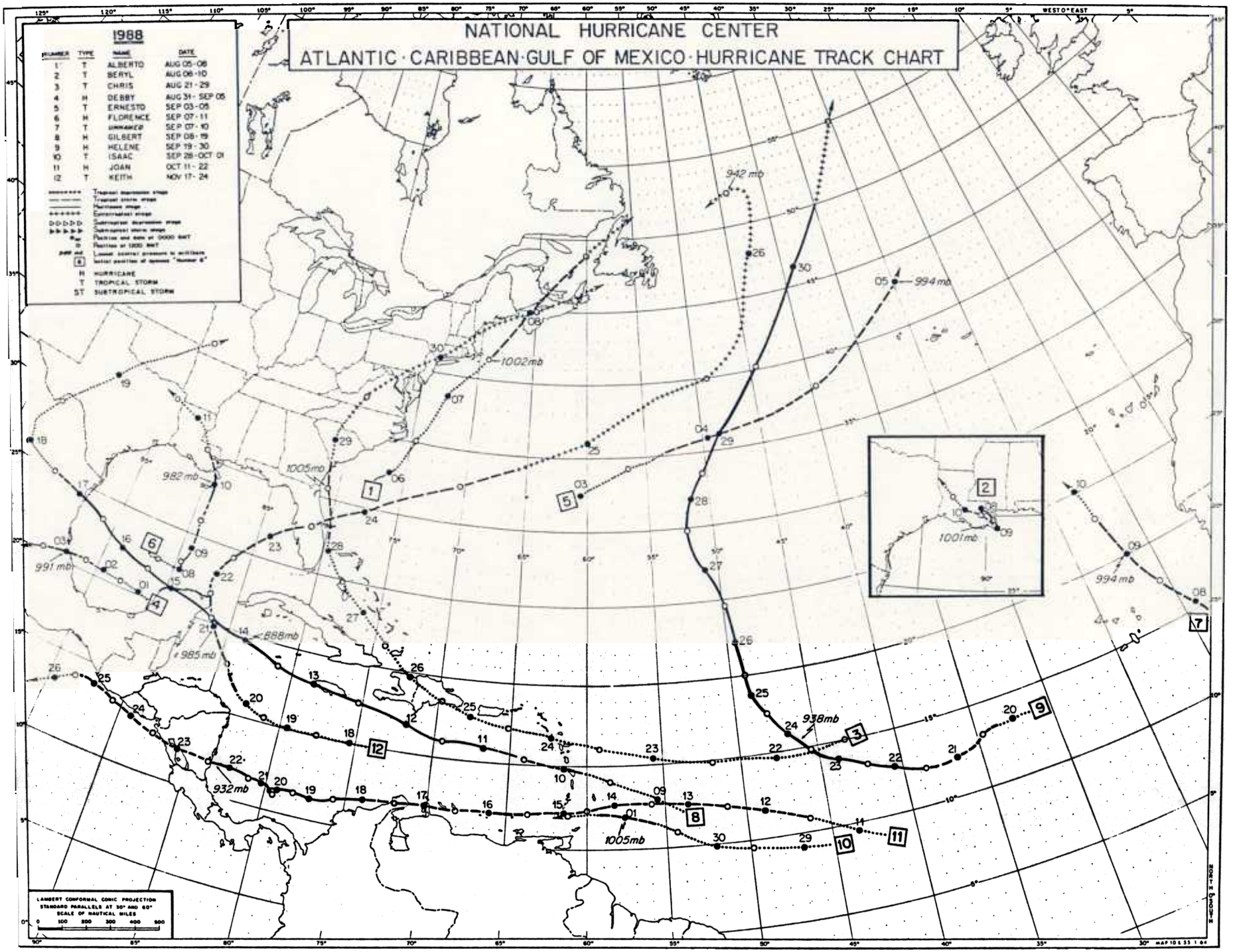


Fig. 1. Tracks of 1988 tropical cyclones.

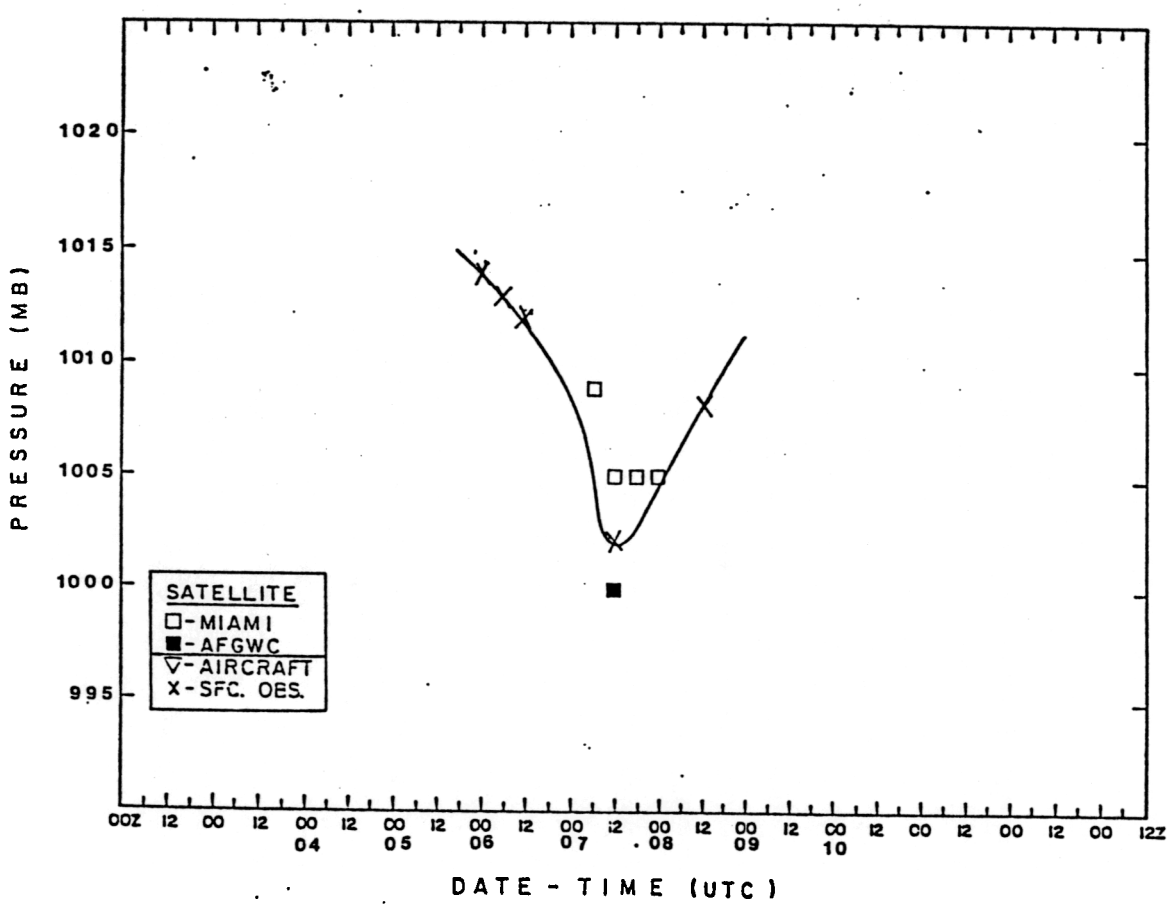


Fig. 2 Best track minimum central pressure curve for Tropical Storm Alberto, 5-8 August, 1988.

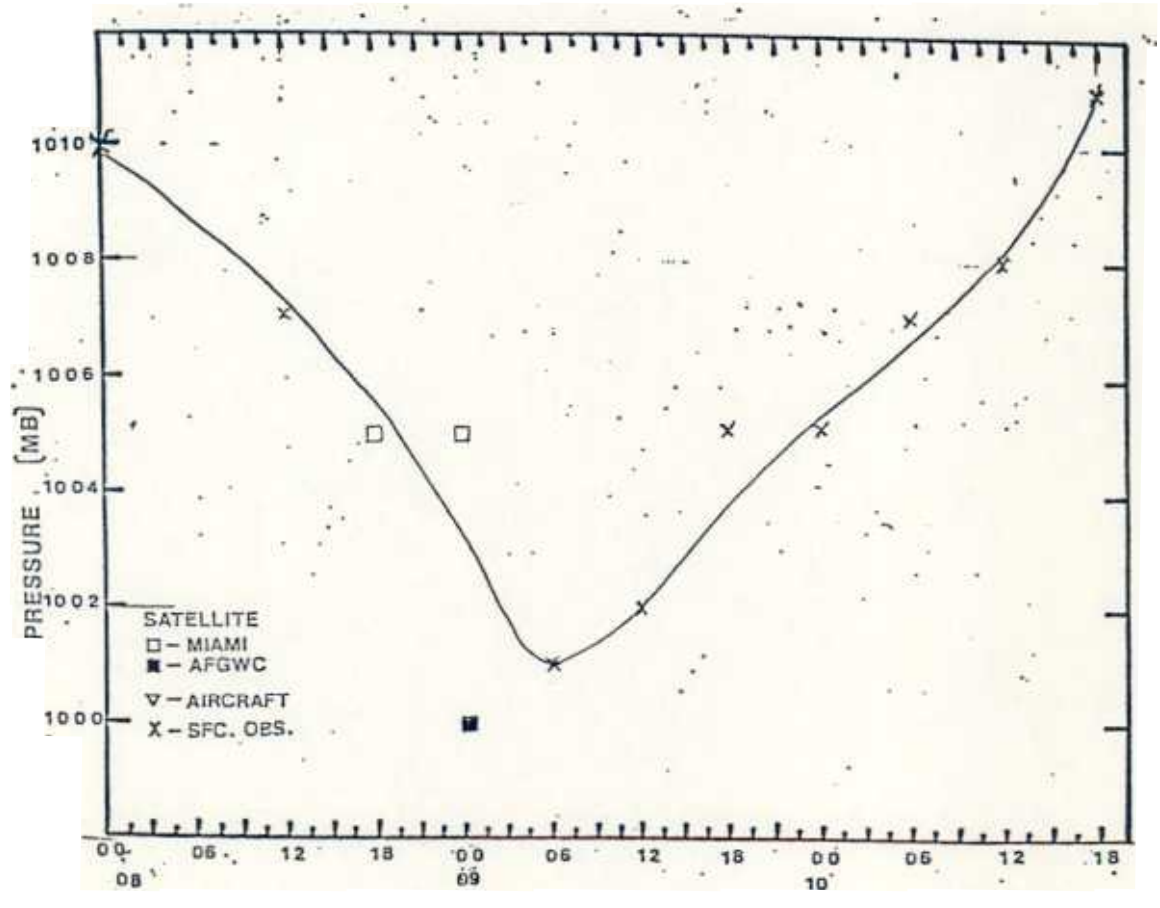


Fig. 3 Best track minimum central pressure curve for Tropical Storm Beryl, 8-10 August, 1988.

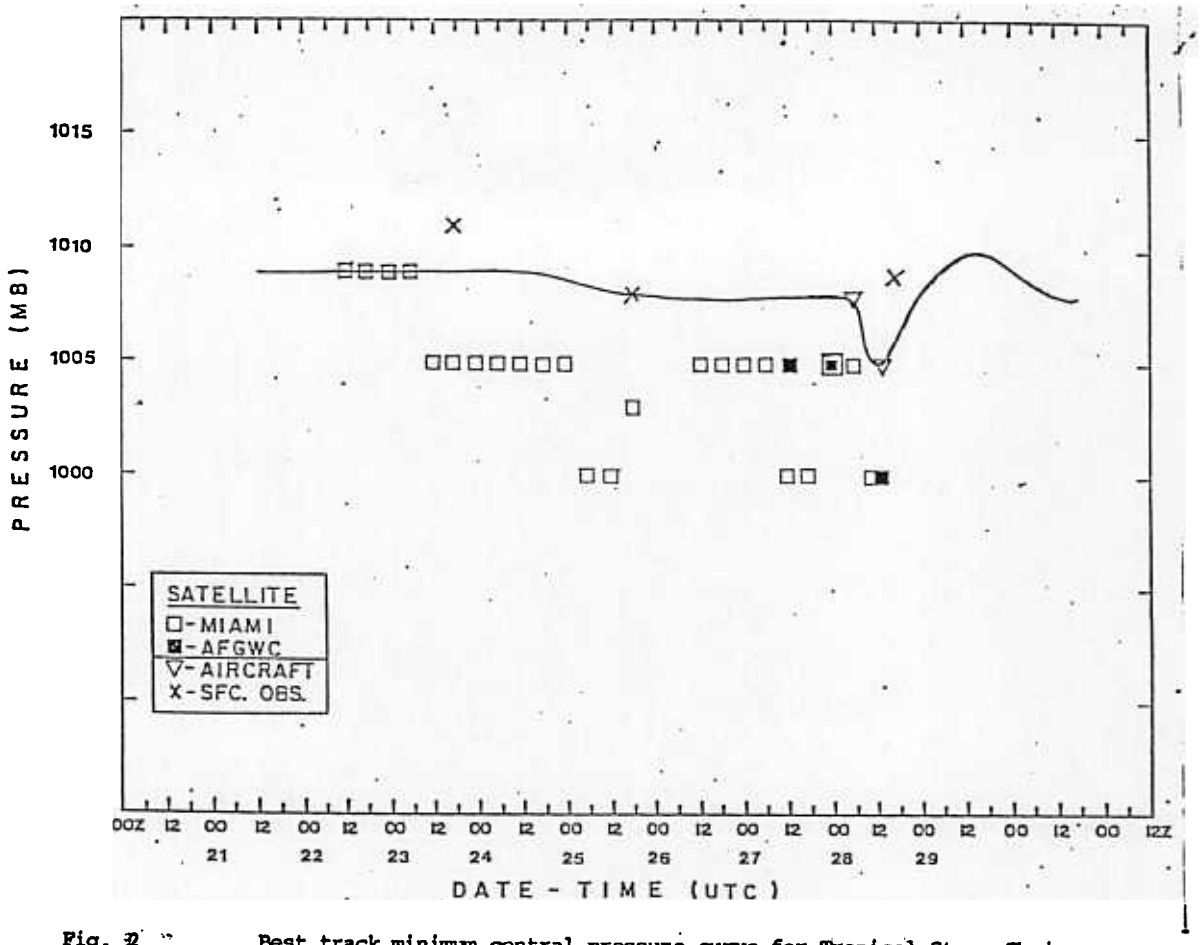


Fig. 2 Best track minimum central pressure curve for Tropical Storm Chris 21-29 August, 1988.

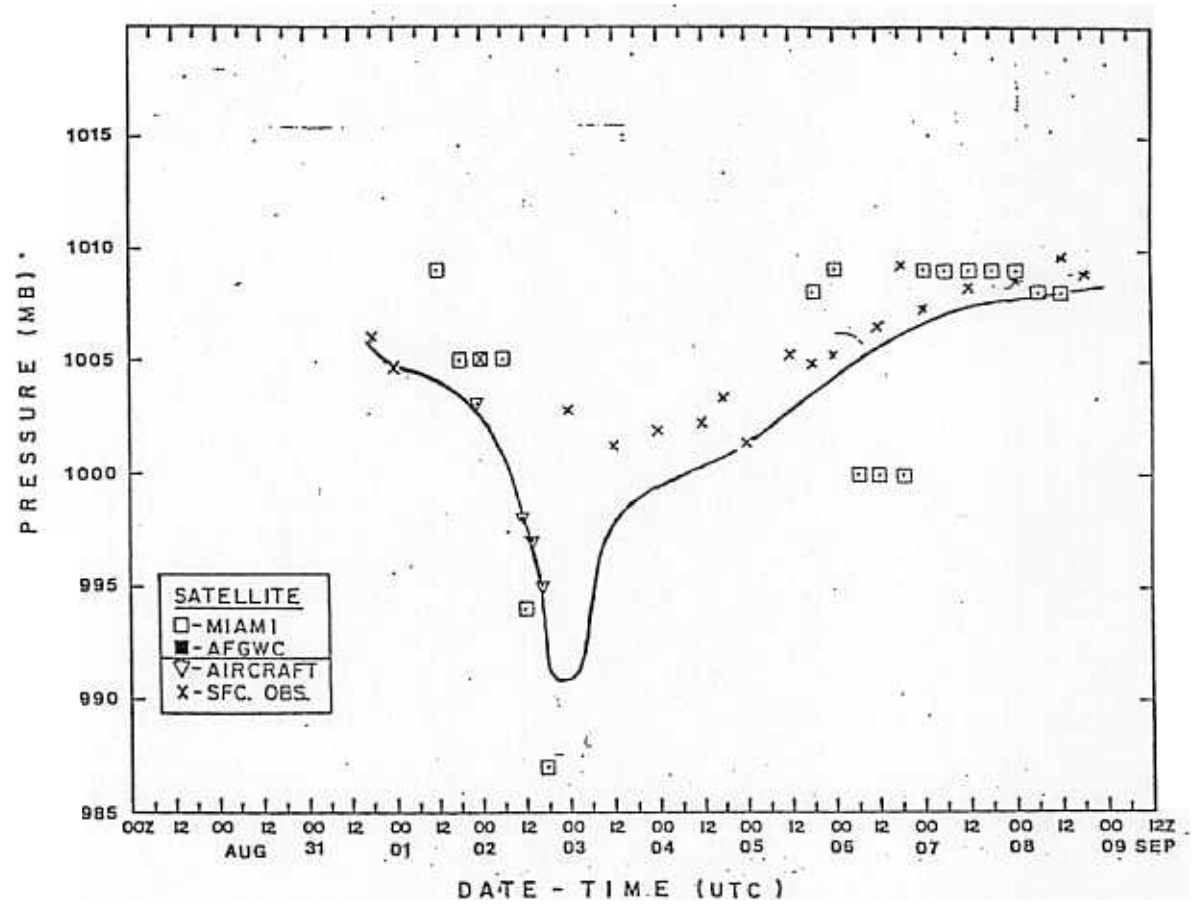


Fig. 3 Best track minimum central pressure curve for Hurricane Debby, 31 August-8 September, 1988.

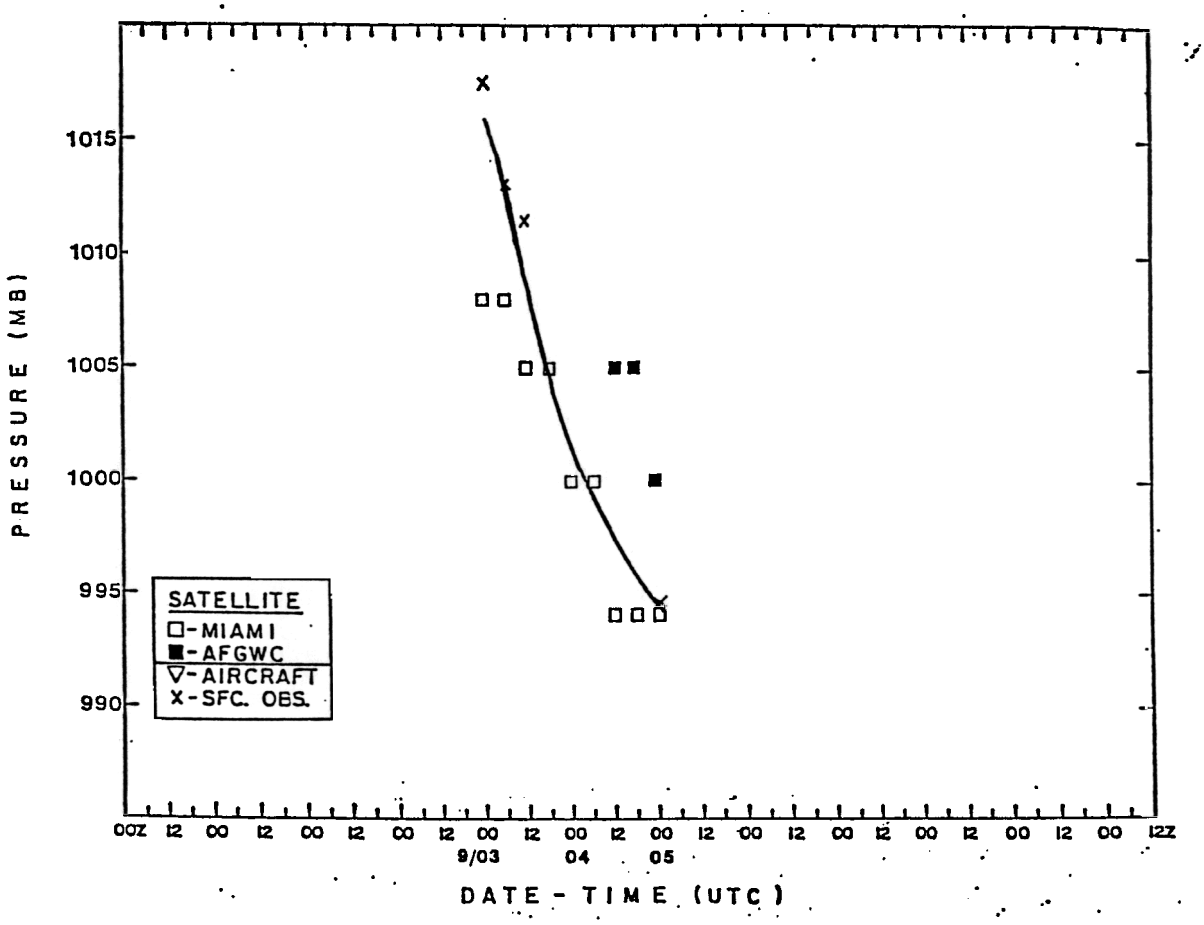


Fig. 2

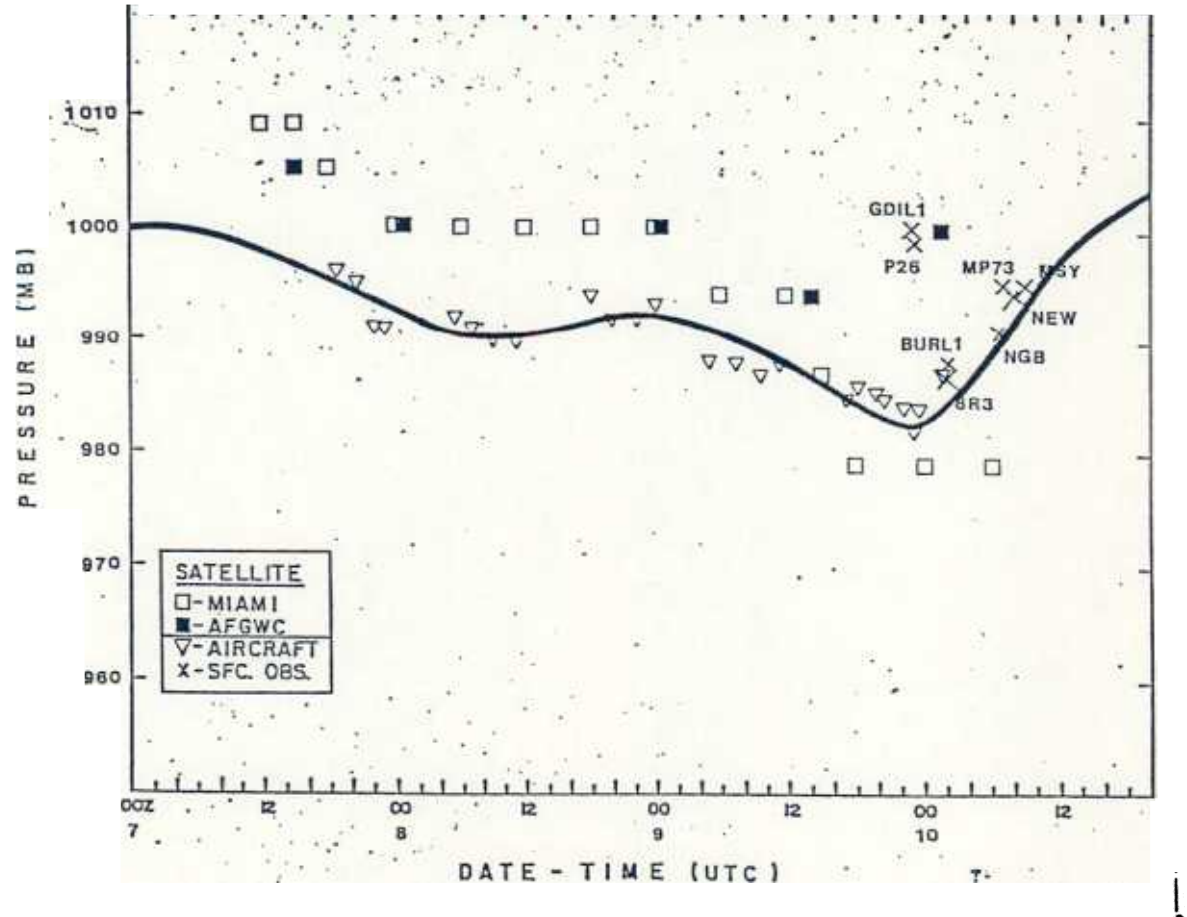


Fig. 2 Best track minimum central pressure curve for Hurricane Florence, 7-11 September, 1988.

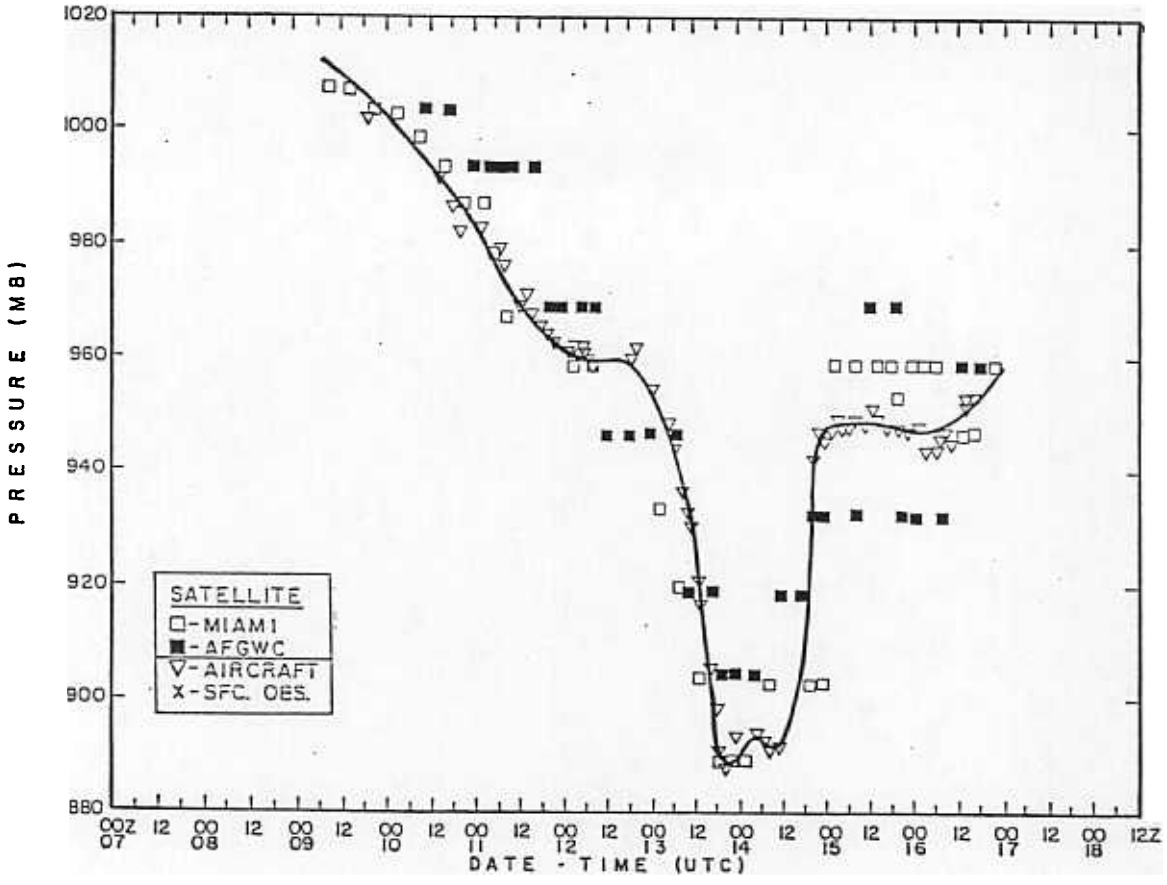


Fig. 2. Best track minimum central pressure curve for Hurricane Gilbert, 8-19 September, 1988.

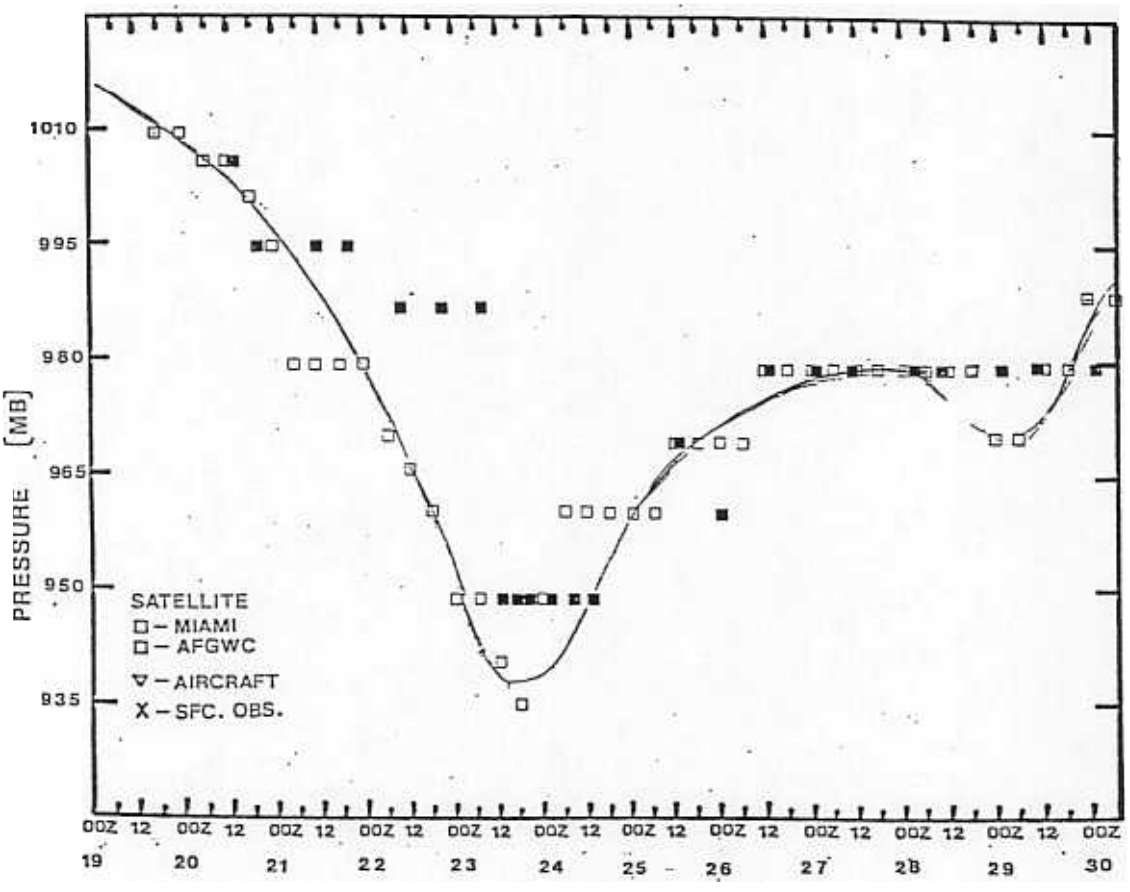


Fig. 2 Best track minimum central pressure curve for Hurricane Helene, 19-30 September, 1988.

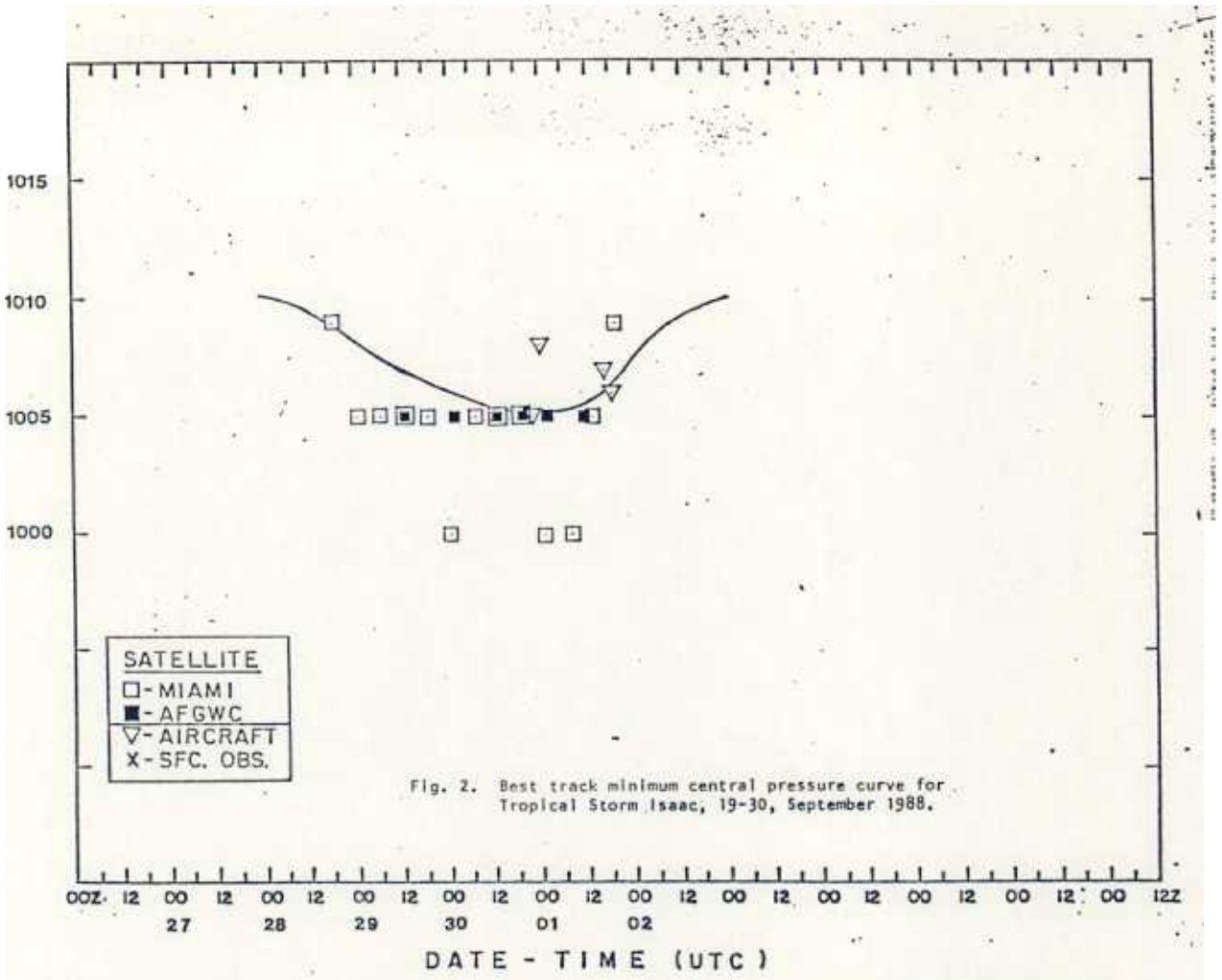


Fig. 2. Best track minimum central pressure curve for Tropical Storm Isaac, 19-30, September 1988.

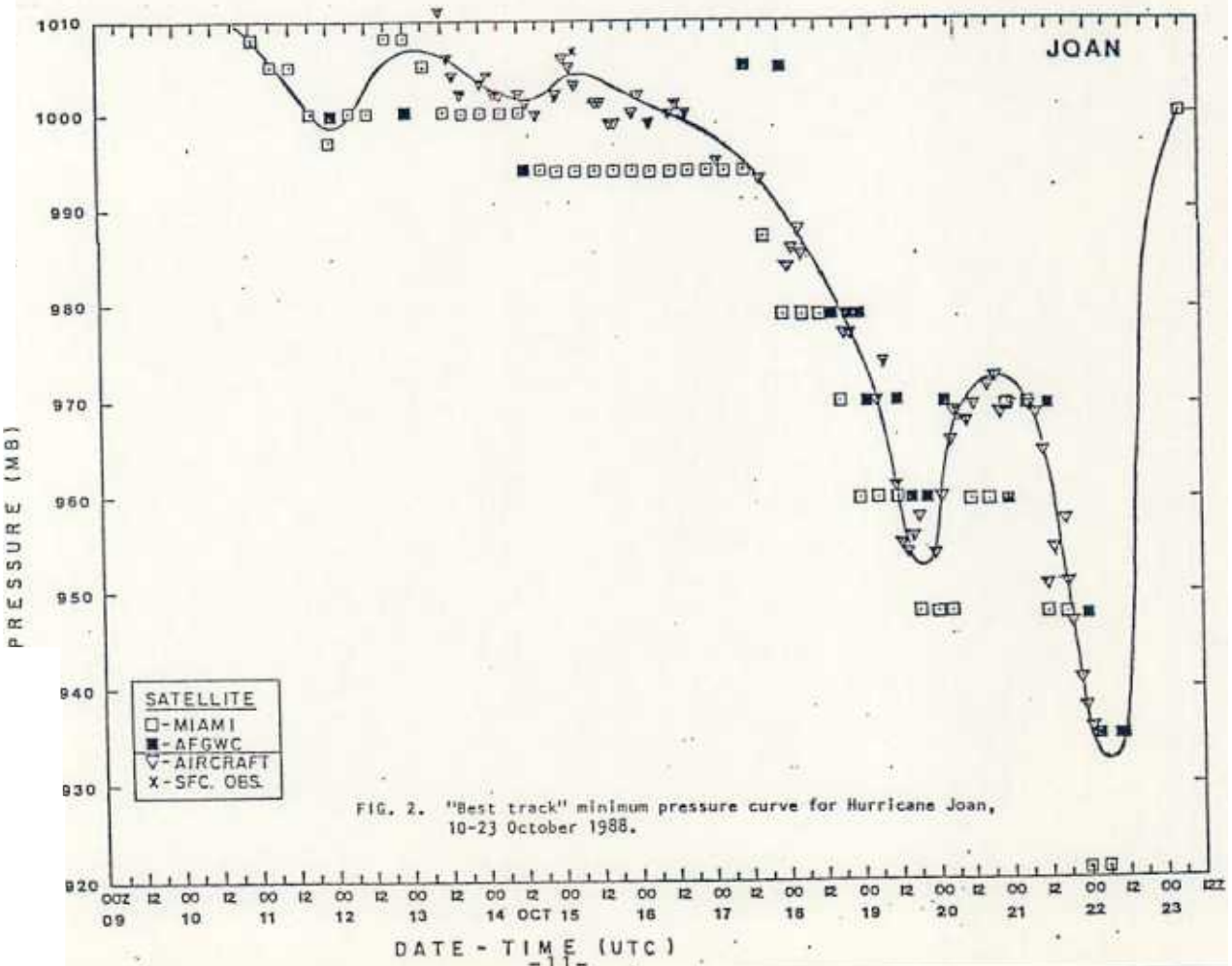


FIG. 2. "Best track" minimum pressure curve for Hurricane Joan, 10-23 October 1988.

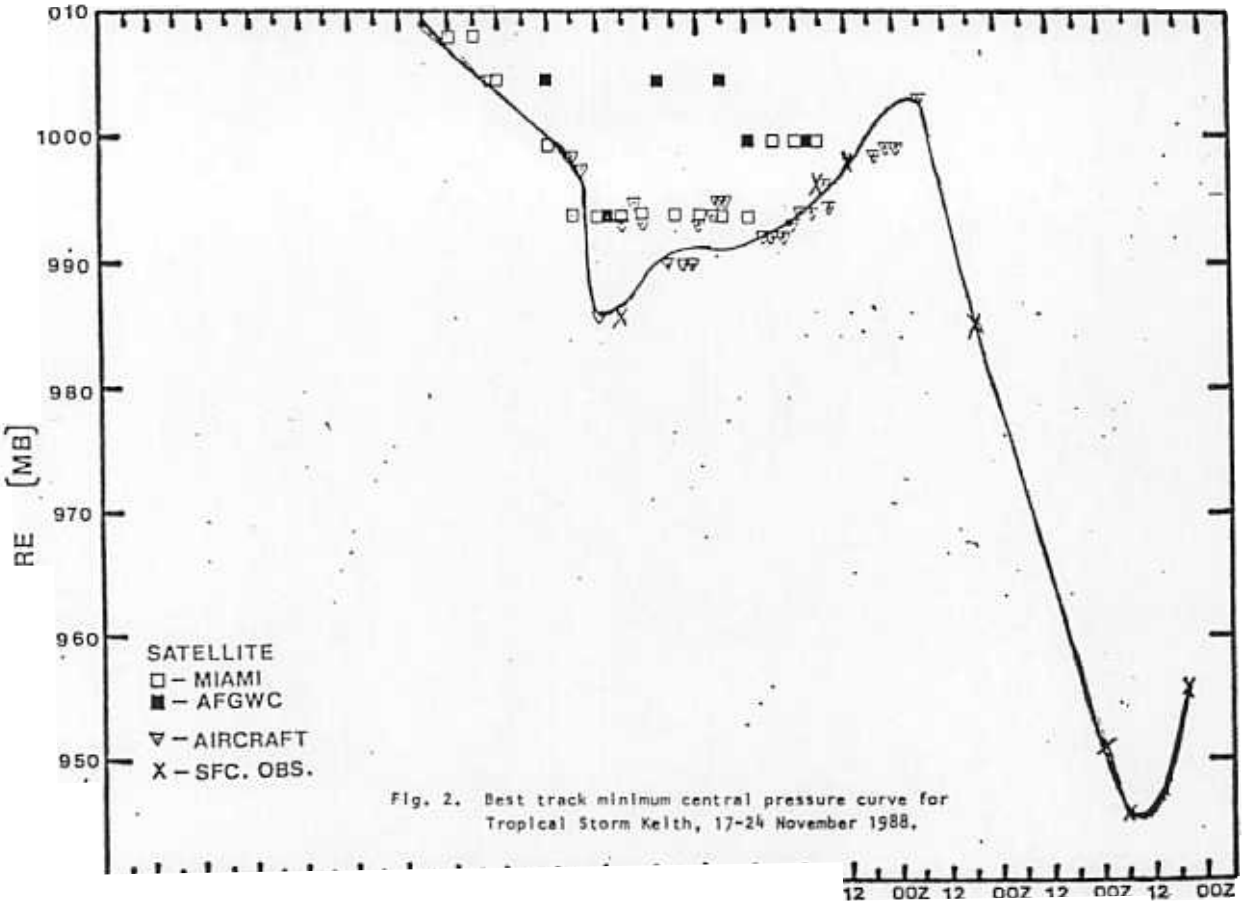


Fig. 2. Best track minimum central pressure curve for Tropical Storm Keith, 17-24 November 1988.

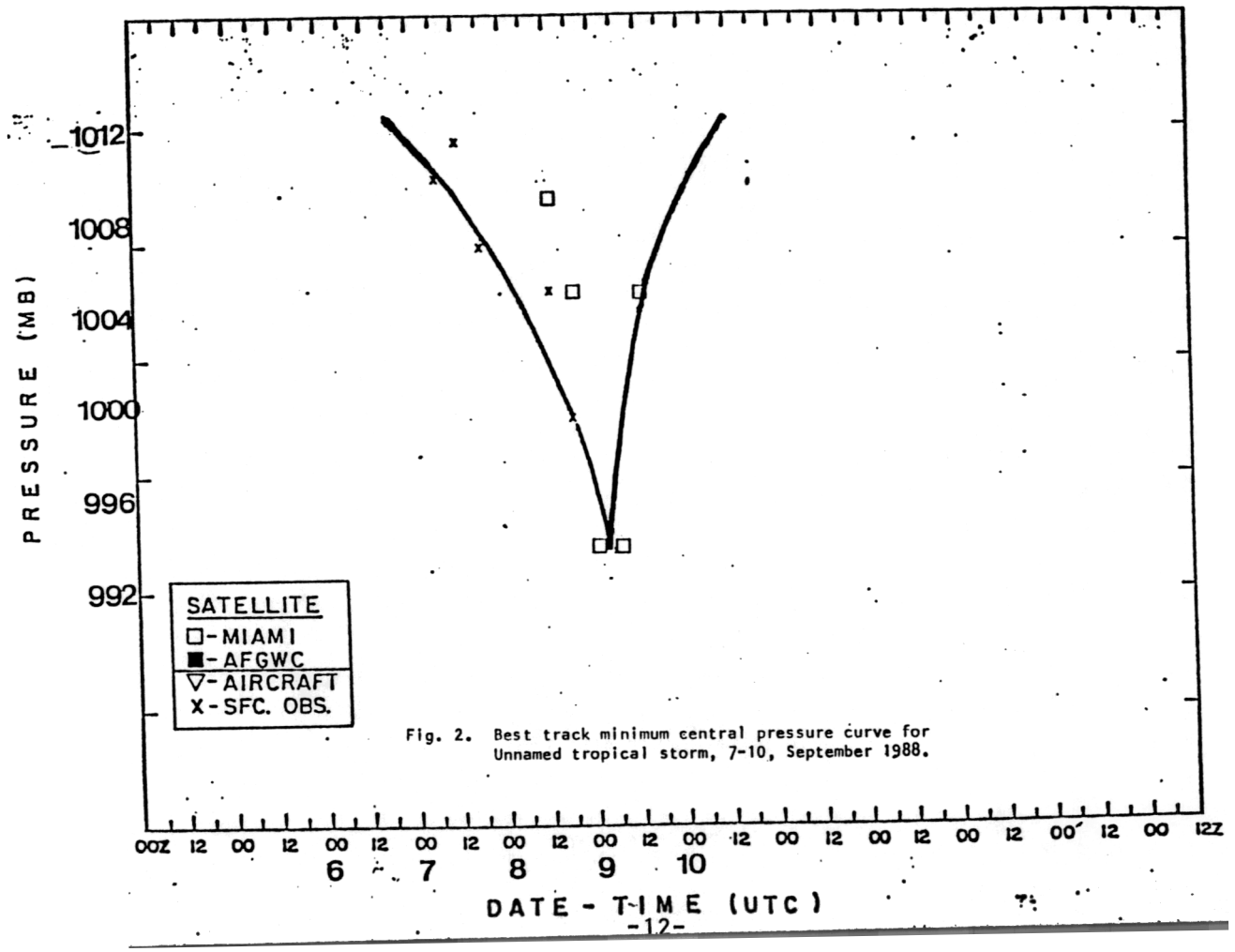
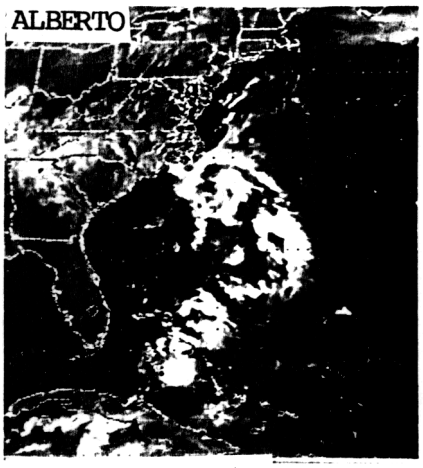
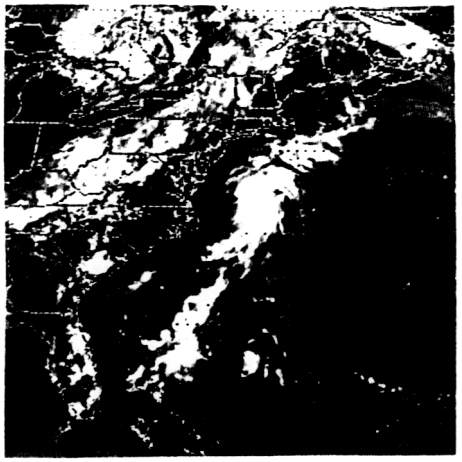


Fig. 2. Best track minimum central pressure curve for Unnamed tropical storm, 7-10, September 1988.

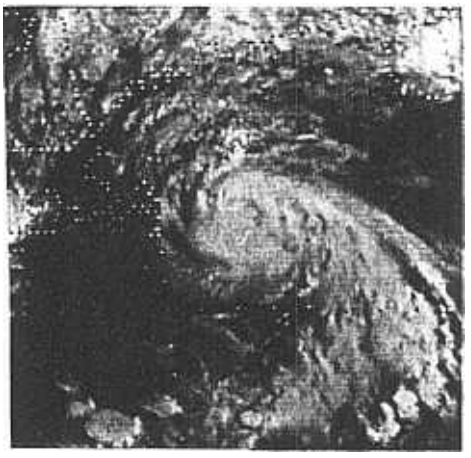
Figure 3. Daily satellite photographs of 1988 North Atlantic tropical cyclones.



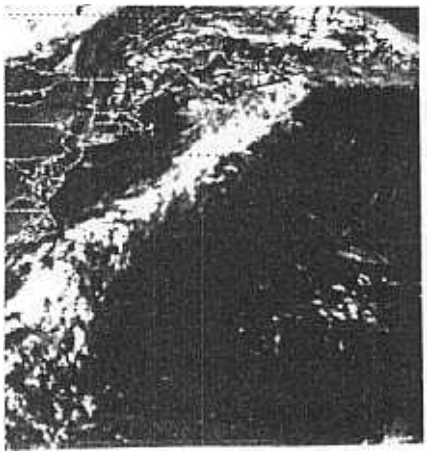
1601 UTC 8/05/88
1015 mb



1901 UTC 8/06/88
1011 mb

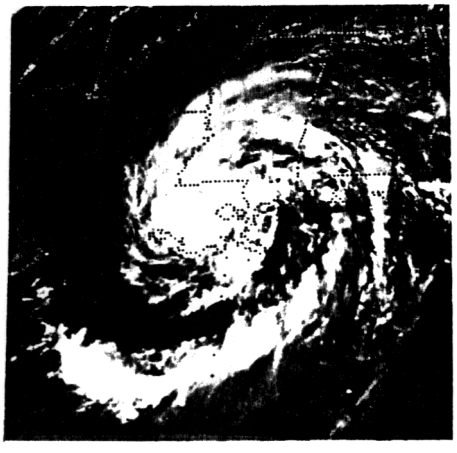


1231 UTC 8/07/88
1002 mb

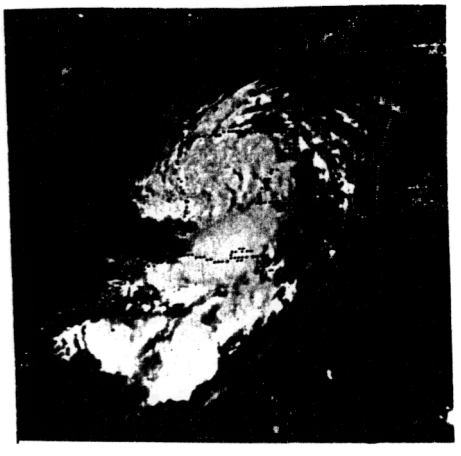


1801 UTC 8/08/88
1010 mb

1601 UTC 8/08/88
1006 mb

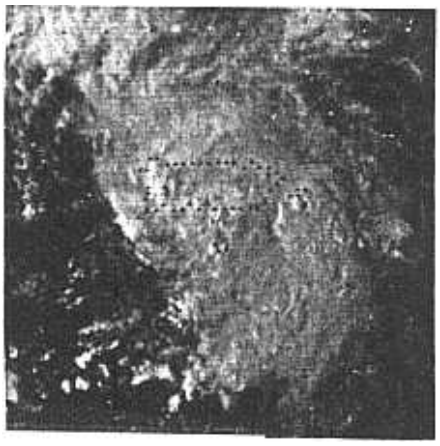


1701 UTC 8/09/88
1005 mb

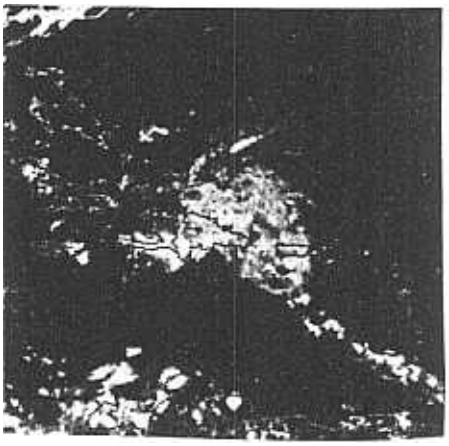


1501 UTC 8/10/88
1009 mb

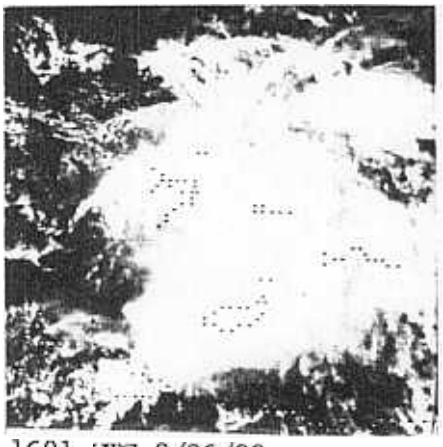
1801 UTC 8/23/88
1009



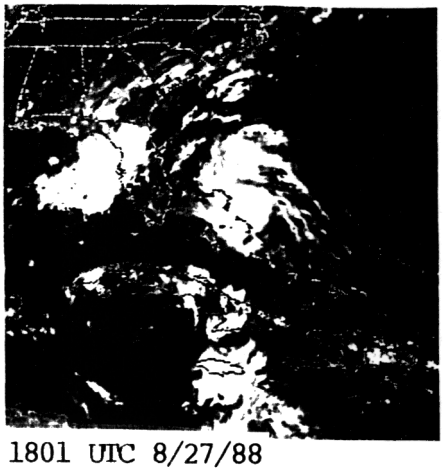
2001 UTC 8/24/88
1009



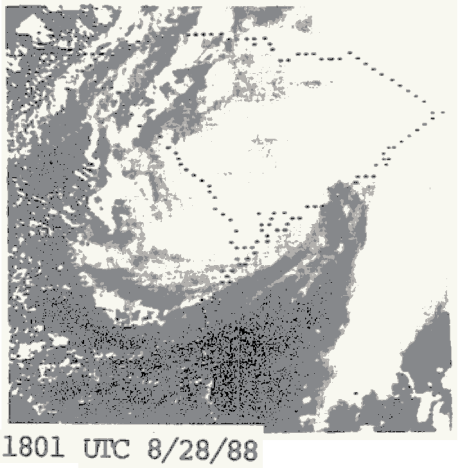
1801 UTC 8/25/88
1008 mb



1601 UTC 8/26/88
1008

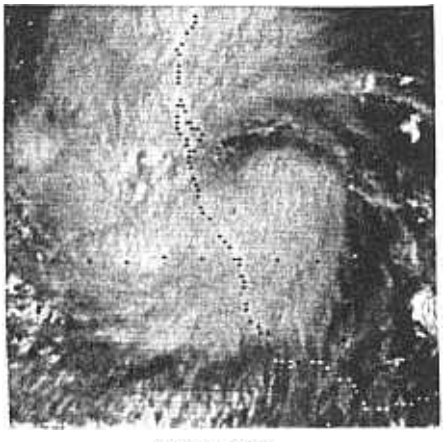


1801 UTC 8/27/88
1008



1801 UTC 8/28/88
1006 mb

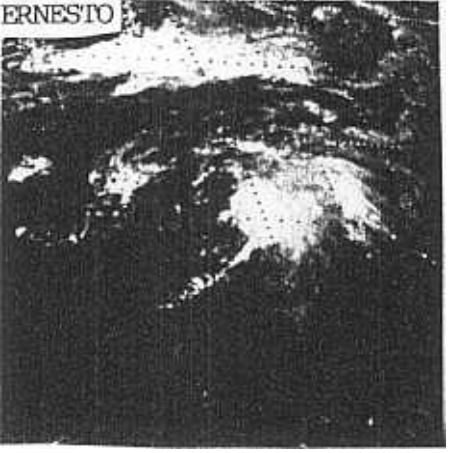
1931 UTC 9/01/88
1003 mb



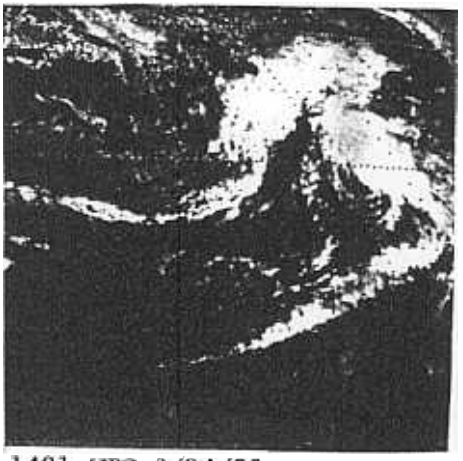
1531 UTC 9/02/88
994

1746 UTC 9/03/88
999

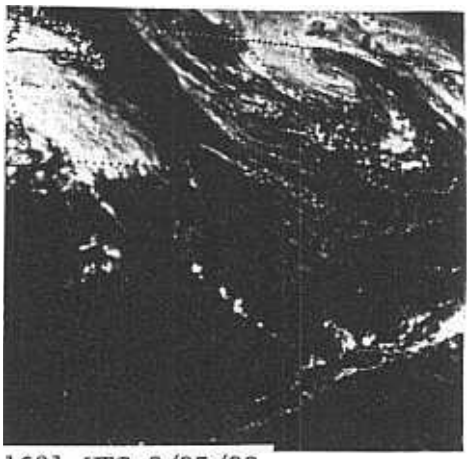
ERNESTO



1801 UTC 9/03/88
1004

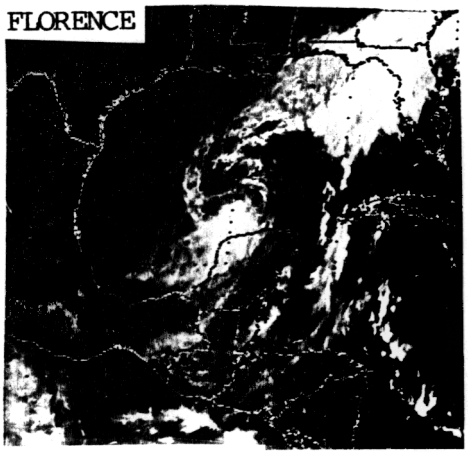


1401 UTC 9/04/88
997

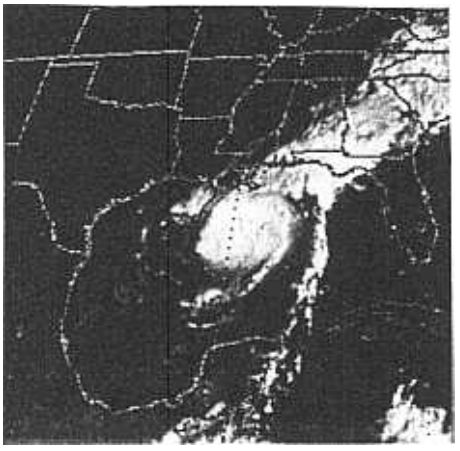


1601 UTC 9/05/88
994 mb

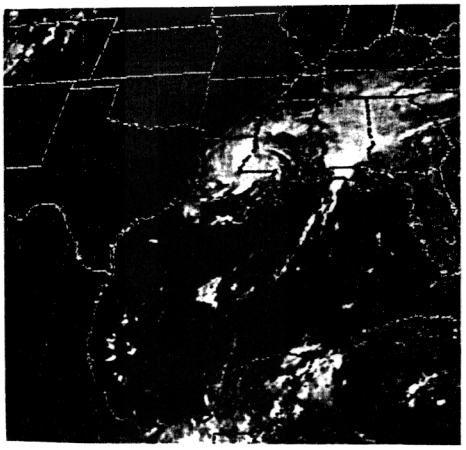
FLORENCE



1501 UTC 9/08/88
991

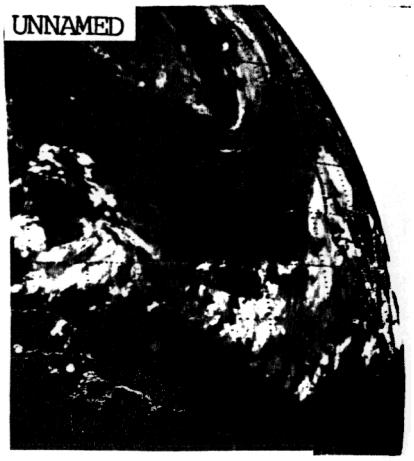


1501 UTC 9/09/88
987



1731 UTC 9/10/88
1003

UNNAMED

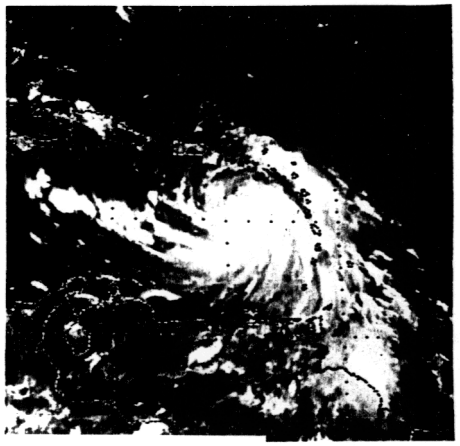


1801 UTC 9/07/88
1007

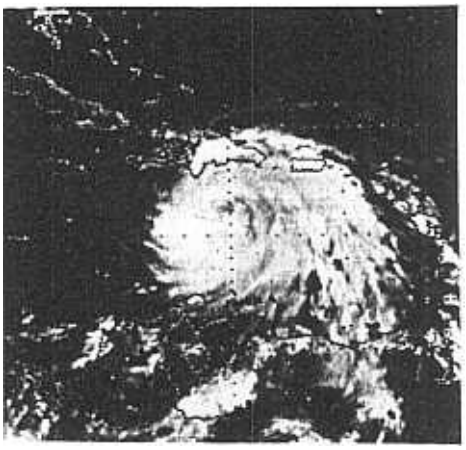
1401 UTC 9/08/88
1000 mb

2001 UTC 9/09/88
1006

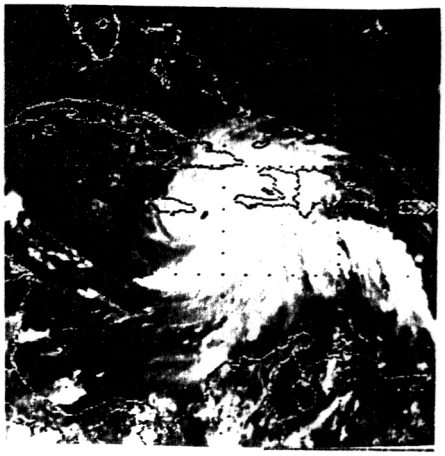
1601 UTC 9/09/88
1004



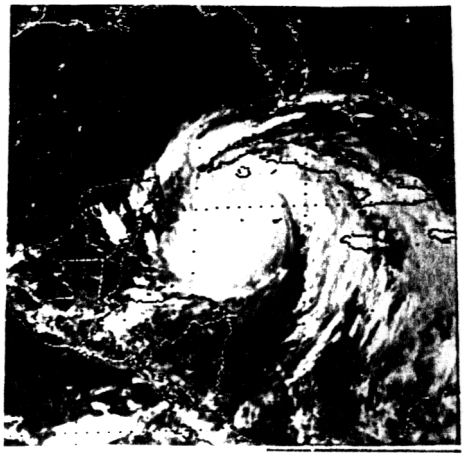
1501 UTC 9/10/88
994



1501 UTC 9/11/88
972 mb

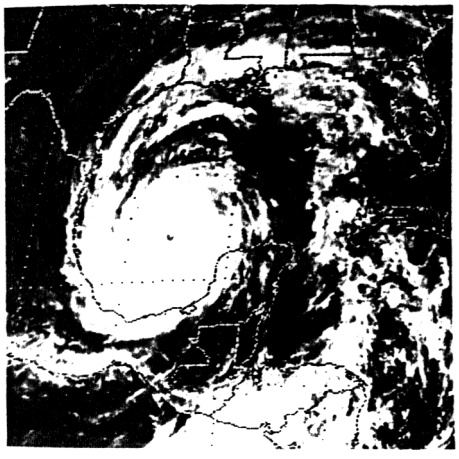


401 UTC 9/12/88
960

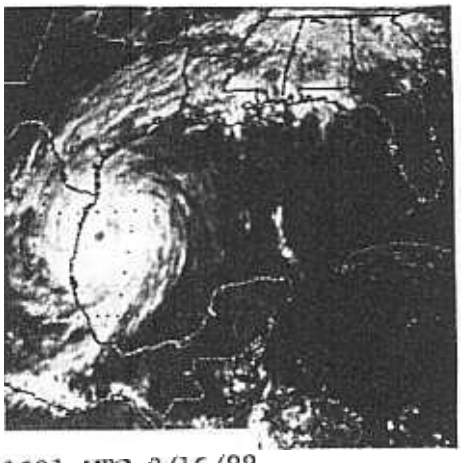


1901 UTC 9/13/88
902

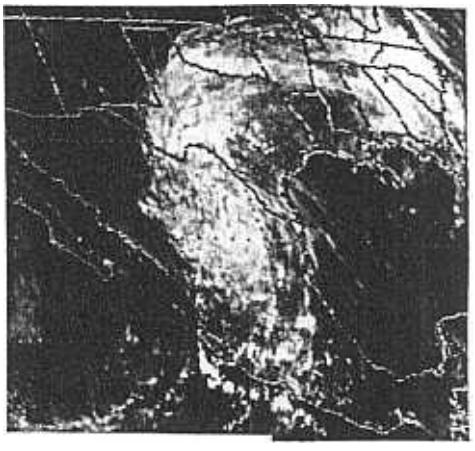
2001 UTC 9/14/88
930 mb



1801 UTC 9/15/88
950 mb

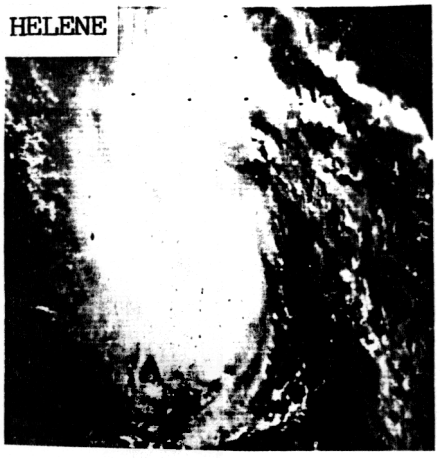


1601 UTC 9/16/88
950 mb

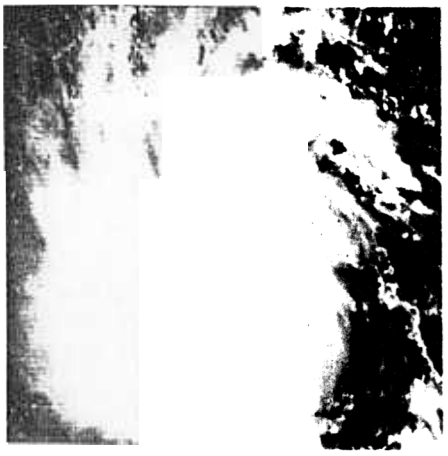


1646 UTC 9/17/88
1000

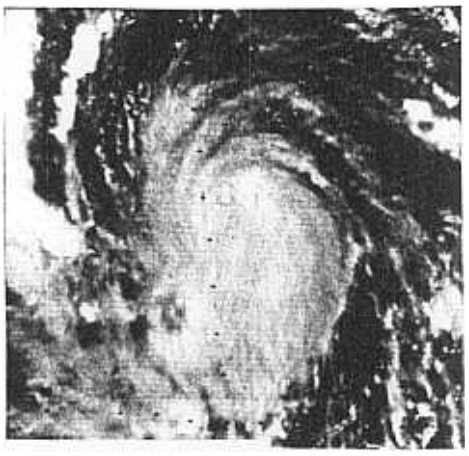
HELENE



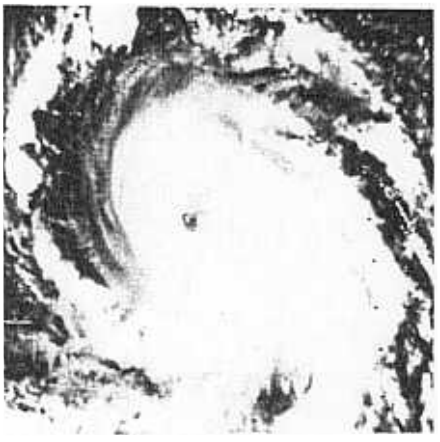
1501 UTC 9/19/88
1009 mb



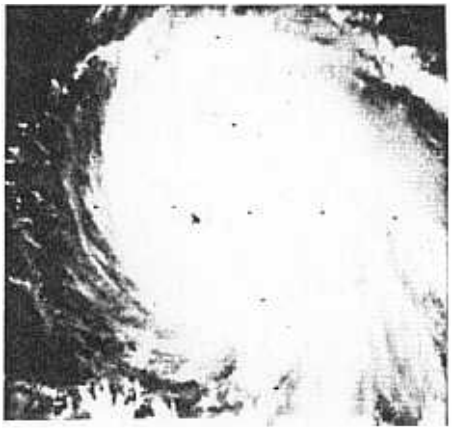
1401 UTC 9/20/88
1003 mb



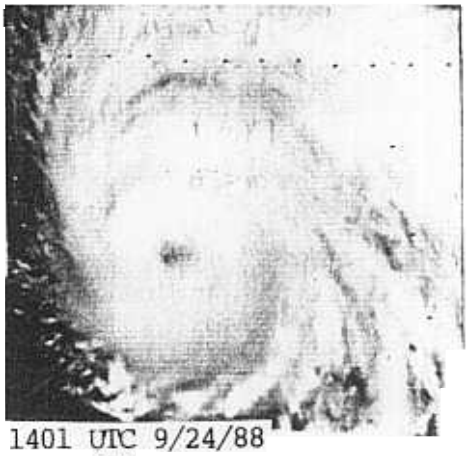
1601 UTC 9/21/88
984 mb



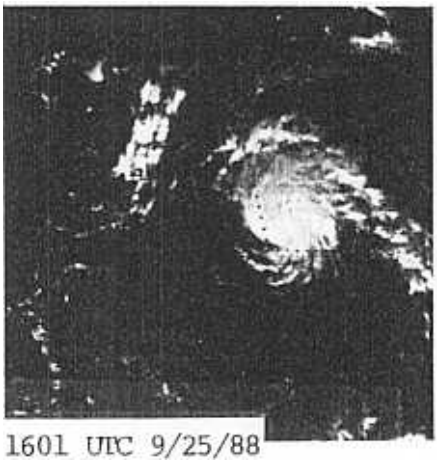
401 UTC 9/22/88
967



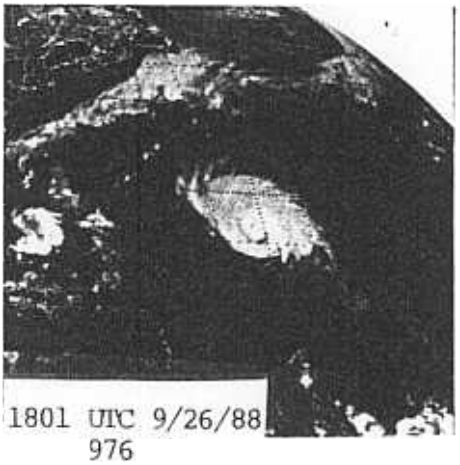
401 UTC 9/23/88
939



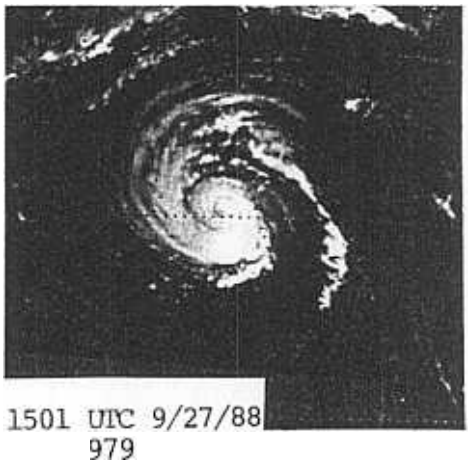
1401 UTC 9/24/88
950



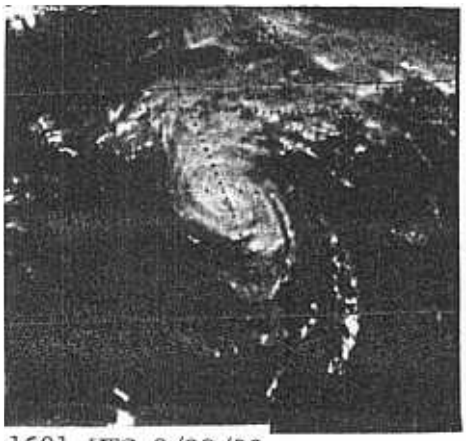
1601 UTC 9/25/88
968 mb



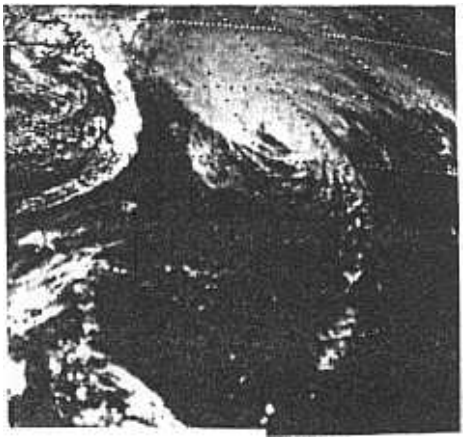
1801 UTC 9/26/88
976



1501 UTC 9/27/88
979

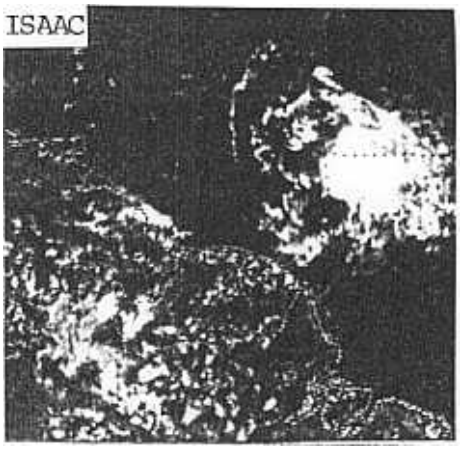


1601 UTC 9/28/88
973



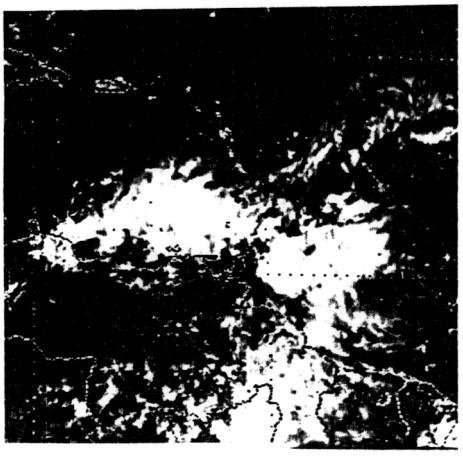
1601 UTC 9/29/88
978 mb

ISAAC



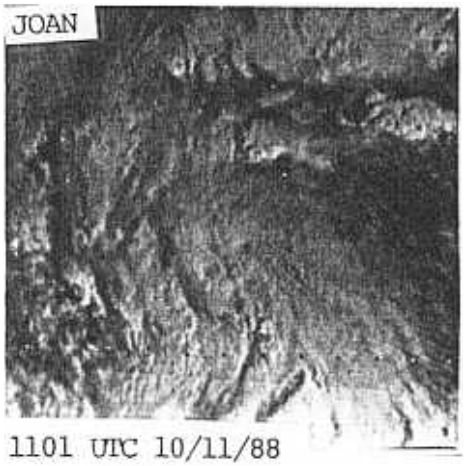
1501 UTC 9/29/88
1007

1431 UTC 9/30/88
1005

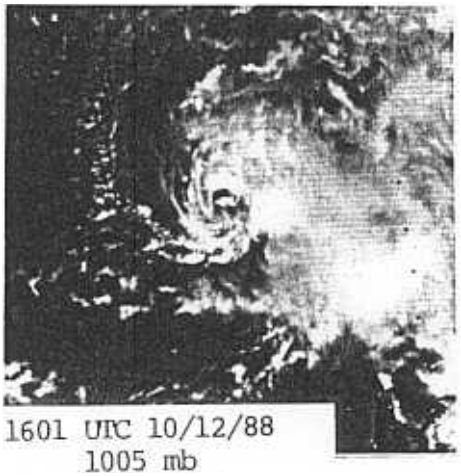


1601 UTC 10/01/88
1007

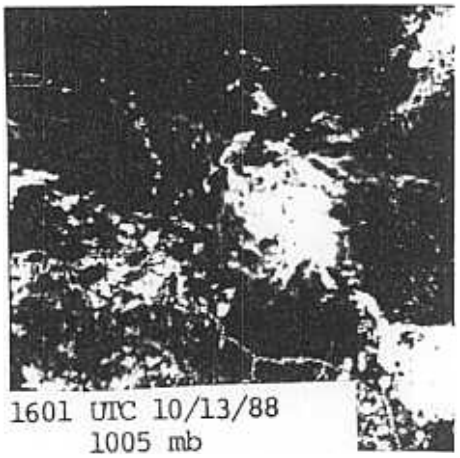
JOAN



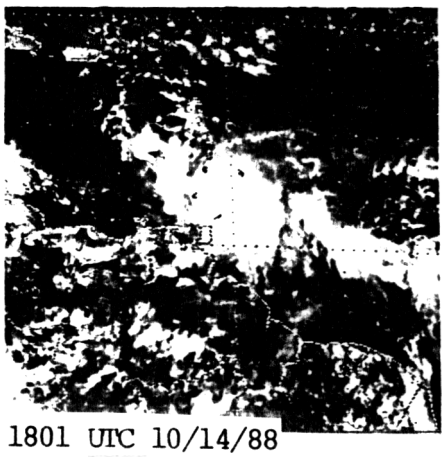
1101 UTC 10/11/88
1003 mb



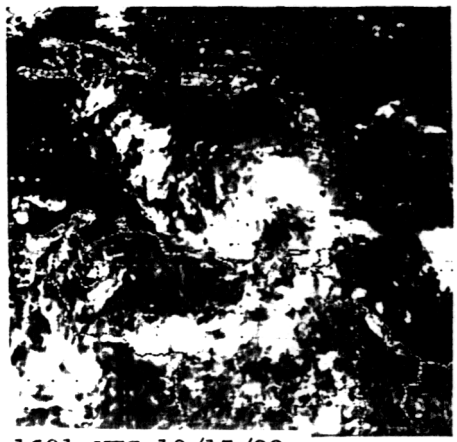
1601 UTC 10/12/88
1005 mb



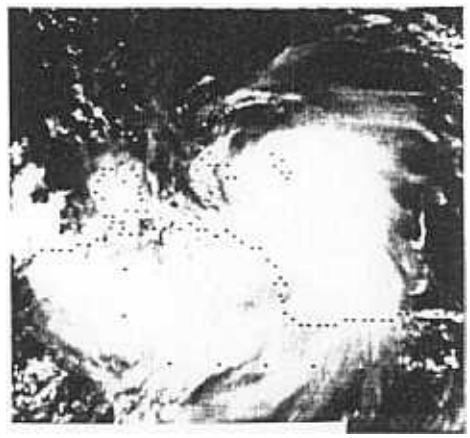
1601 UTC 10/13/88
1005 mb



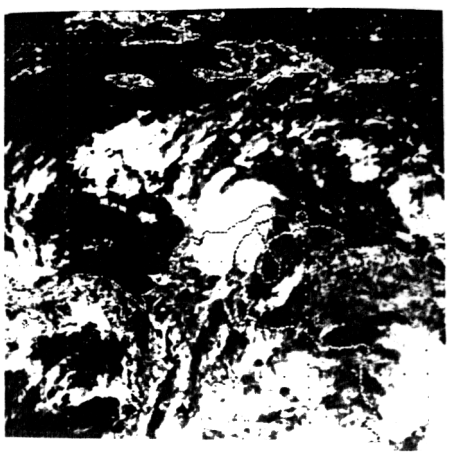
1801 UTC 10/14/88
1001 mb



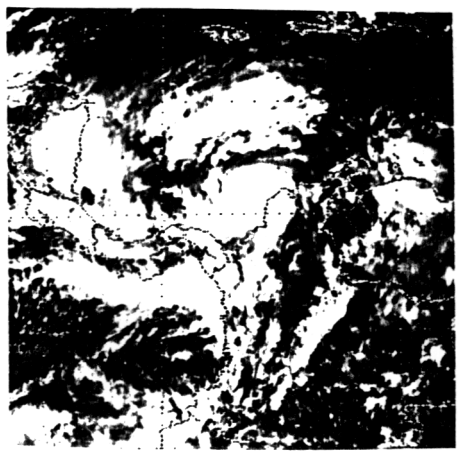
1601 UTC 10/15/88
1003



1401 UTC 10/16/88
1000 mb

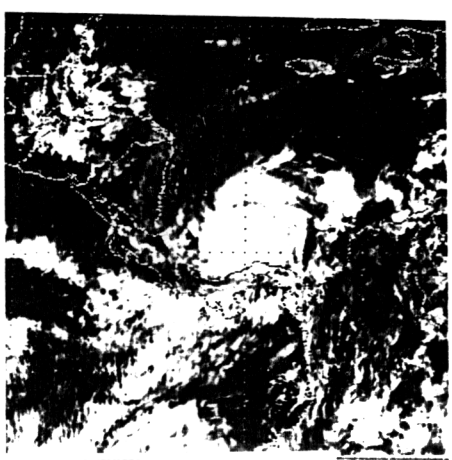


1601 UTC 10/17/88
994

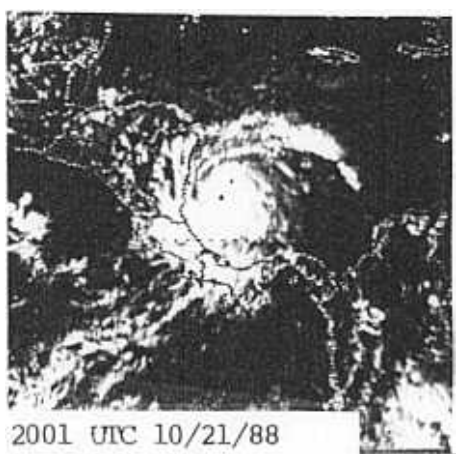


1901 UTC 10/18/88
980 mb

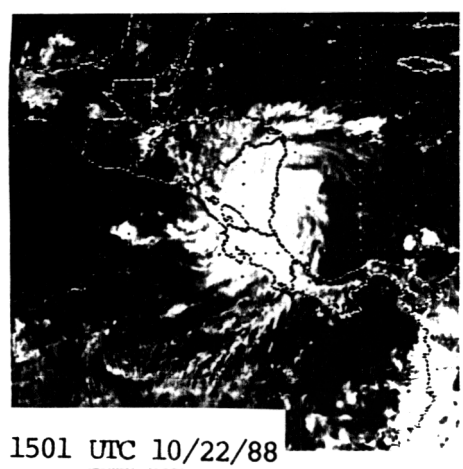
1601 UTC 10/19/88
955 mb



1501 UTC 10/20/88
972 mb

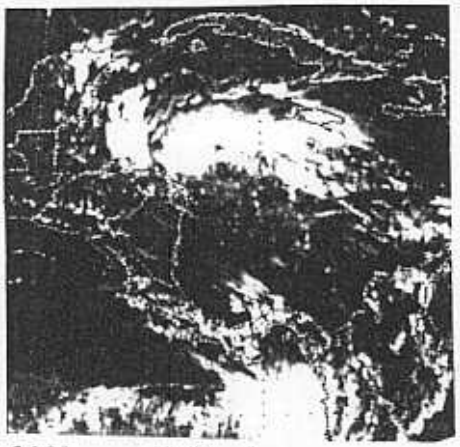


2001 UTC 10/21/88
950 mb

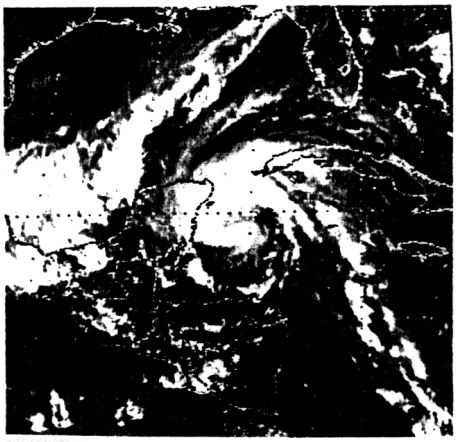


1501 UTC 10/22/88
960 mb

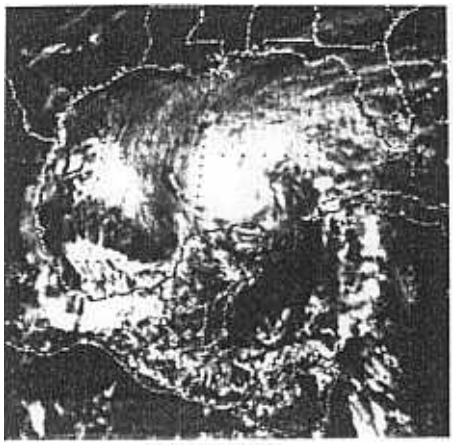
1801 UTC 11/18/88
1008



1901 UTC 11/19/88
1006 mb

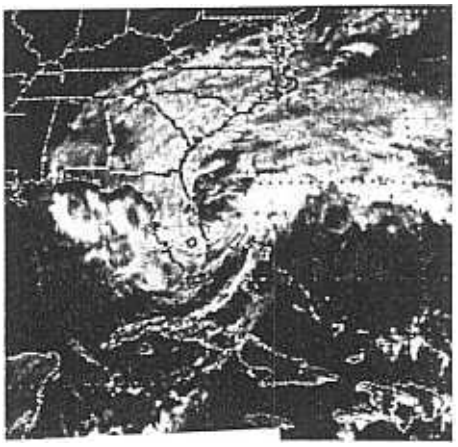


1901 UTC 11/20/88
996 mb

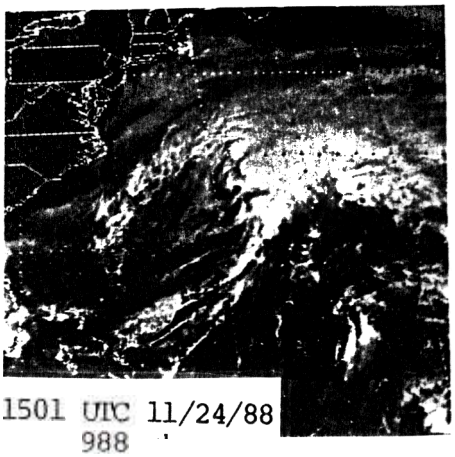


1910 UTC 11/21/88
990

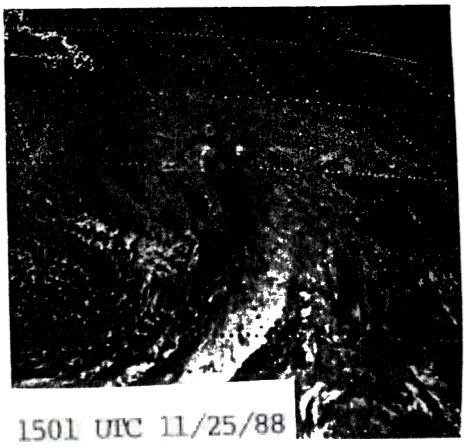
1801 UTC /22/88
993 mb



1804 UTC 11/23/88
998



1501 UTC 11/24/88
988



1501 UTC 11/25/88
962

Table 1. Verification of 1988 tropica storm and hurricane forecasts.

model	forecast period (hours) 0	12	24	36	48	72
Official	12	40	72	104	143	233
(number of cases)	(152)	(152)	(131)	(118)	(108)	(89)
BAM	58	50	99	146	187	295
	(54)	(54)	(50)	(43)	(40)	(36)
CLIPER	12	46	89	126	173	276
	(151)	(151)	(131)	(118)	(108)	(89)
MFM	26	79	134	190	274	406
	(56)	(56)	(52)	(48)	(45)	(37)
NHC72	12	47	88	145	209	344
	(93)	(93)	(79)	(63)	(58)	(48)
NHC83	12	41	68	93	128	186
	(144)	(144)	(128)	(115)	(105)	(87)
QLM	12	66	115	172	229	352
	(64)	(64)	(59)	(53)	(50)	(40)
SANBAR	10	36	63	101	127	240
	(53)	(53)	(46)	(43)	(39)	(30)

Track model forecast errors (average in nautical miles), Atlantic, 1988

Table 2a. Landfall prediction errors for 1988 tropical storms and hurricanes.

Following is a list of landfall prediction errors for tropical storms and hurricanes during 1988. 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 pointdetermined 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
ALBERTO	Tropical Storm	8/7/2200Z	75	Near Yarmouth, NS
BERYL	Tropical Storm	8/9/1200Z	75	Lake Borgne, LA
CHRIS	Tropical Storm	8/28/1500Z	200	Savannah, GA
DEBBY	Hurricane	8/31/0000Z	30	Tuxpan, MX
FLORENCE	Hurricane	9/10/0200Z	125	Southeast Louisiana
GILBERT	Hurricane	9/12/1700Z	60	Jamaica
"	"	9/14/1500Z	15	Cozumel, MX
"	"	9/16/2200Z	50	La Pesca, MX
JOAN	Tropical Storm	10/14/2200Z	130	Grenada, Windward Islands
"	"	10/17/0600Z	45	Guajira Peninsula
"	Hurricane	10/22/1000Z	10	Bluefields, Nicaragua
KEITH	Tropical Storm	11/21/0800Z	130	Cancun, MX
"	"	11/23/0700Z	5	Sarasota, FL

Table 2b. Nineteen-year summary of errors (n.mi.) in the prediction of landfall points for Atlantic tropical storms and hurricanes during the period of 1970-1988.

	United States Landfalls	All Landfalls
1988 Mean 24 Hour Landfall Prediction Error (number of cases)	100 (04)	69 (13)
19 year average 1970-1988	58 (40)	61 (87)

Table 3a. Tropical cyclone warning lead time of 1988 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)
ALBERTO	(No U.S. Landfall)				
BERYL	Tropical Storm	8/9/1200Z	Lake Borgne, LA.	Tropical storm warnings mouth of Miss. R. to Pensacola, FL 8/8/1000Z	14
CHRIS	Tropical Storm	8/9/1500Z	Savannah, GA.	Tropical storm warnings Savannah GA to Cape Hatteras, NC. 8/28/1200Z	3
DEBBY	(No U.S. Landfall)				
ERNESTO	(No U.S. Landfall)				
FLORENCE	Hurricane	9/10/0200Z	Southeast Louisiana (mouth of Miss. R.)	Hurricane warnings east of Cameron, LA to Pensacola, FL 9/9/1300Z	11
				Tropical storm warnings east of Pensacola, FL to Apalachicola, FL 9/9/1300Z	11
UNNAMED	(No U.S. landfall)				
GILBERT	Hurricane	9/16/2200Z	La Pesca, MX	Hurricane warnings Brownsville, TX to Port O Connor, TX 9/15/1200Z	34
HELENE	(No U,S. landfall)				
ISAAC	(No U.S. landfall)				
JOAN	(No U.S. landfall)				
KEITH	Tropical storm	11/23/0700Z	Sarasota, FL	Tropical storm warnings Cape Sable, FL to Cedar Key, FL 11/22/1000Z	21
				Tropical storm warnings Jupiter Inlet, FL to Savannah, GA 12/22/2200Z	9

Table 3b. Average warning lead times for all tropical storms and hurricanes and hurricanes alone, which made landfall on the mainland of the United States during 1988 and during the 19 year period of 1970-1988.

	All Tropical Storms and Hurricanes		All Hurricanes	
	1988	1970-1988	1988	1970-1988
Average Lead Time (hours)			22	
(number of cases)			2	

Table 4. 1988 Atlantic hurricane season statistics

number	name	class[1]	dates[2]	maximum sustained wind (kt)	lowest press. (mb)	U.S. damage ($millions)	deaths
1	Alberto	T	5-8 Aug	35	1002		
2	Beryl	T	8-10 Aug	45	1001	3.0	1
3	Chris	T	21-29 Aug	45	1005	0.5	4
4	Debby	H	31 Aug-5 Sep	65	991		10
5	Ernesto	T	3-5 Sep	55	994		
6	Florence	H	7-11 Sep	70	982	2.5	1
7	unnamed	T	7-10 Sep	50	994		
8	Gilbert	H	8-19 Sep	160	888	50.0	318
9	Helene	H	19-30 Sep	125	938		
10	Isaac	T	28 Sep-1 Oct	40			
11	Joan	H	10-23 Oct	125	932		216
12	Keith	T	17-24 Nov	60	985	3.0	

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

2 Dates begin at 0000 UTC and include tropical depression stage.

Table 5a. Best track, initial and forecast positions, initial position error and forecast errors 1988 Atlantic tropical cyclones.

OFFICIAL FORECASTS — ALBERTO AUG 07-AUG 08 1988

DATE/TIME GMT	BEST TRACK LAT.	BEST TRACK LONG.	OPERATIONAL POSITION ERROR LAT.	OPERATIONAL POSITION ERROR LONG.	OPERATIONAL POSITION ERROR NM	12HR FORECAST LAT.	12HR FORECAST LONG.	12HR FORECAST ERROR NM	24HR FORECAST LAT.	24HR FORECAST LONG.	24HR FORECAST ERROR NM	36HR FORECAST LAT.	36HR FORECAST LONG.	36HR FORECAST ERROR NM	48HR FORECAST LAT.	48HR FORECAST LONG.	48HR FORECAST ERROR NM	72HR FORECAST LAT.	72HR FORECAST LONG.	72HR FORECAST ERROR NM
080712	41.5	69.0	41.2	69.3	22	44.5	65.0	36	47.5	58.5										
080718	43.0	67.5	42.9	67.4	7	46.5	62.5	39	50.0	53.0		50.0	50.0							
080800	45.0	65.5				49.0	59.0													
080806	47.2	63.0																		
MEAN VECTOR ERRORS(NM)					15			38			0			0			0			0
NUMBER OF CASES					2			2			0			0			0			0

OFFICIAL FORECASTS — BERYL AUG 08-AUG 09 1988

DATE/TIME GMT	BEST TRACK LAT.	BEST TRACK LONG.	OPERATIONAL POSITION ERROR LAT.	OPERATIONAL POSITION ERROR LONG.	OPERATIONAL POSITION ERROR NM	12HR FORECAST LAT.	12HR FORECAST LONG.	12HR FORECAST ERROR NM	24HR FORECAST LAT.	24HR FORECAST LONG.	24HR FORECAST ERROR NM	36HR FORECAST LAT.	36HR FORECAST LONG.	36HR FORECAST ERROR NM	48HR FORECAST LAT.	48HR FORECAST LONG.	48HR FORECAST ERROR NM	72HR FORECAST LAT.	72HR FORECAST LONG.	72HR FORECAST ERROR NM
080812	29.7	89.4	30.0	89.5	18	29.6	87.5	15	28.3	90.0	70	29.0	92.2		28.5	94.0				
080818	29.4	89.2	29.7	88.9	35	29.5	85.5	43	28.5	88.5	137	28.5	89.5		28.5	89.5		31.0	92.0	
080900	29.3	88.1	29.6	87.9	19	29.5	83.0	55	29.0	89.0		29.5	90.0		29.5	91.0		29.5	93.0	
080906	29.6	86.5	29.5	86.5	7	29.8	81.8	69	29.5	90.5		29.5	91.2		30.0	92.0		29.5	94.5	
080912	30.1	90.1	30.2	90.1		30.2	91.5		31.2	92.5		31.5	93.5		32.0	95.0		33.0	95.0	
080918	30.1	90.9	30.1	90.8		30.3	91.9		30.5	92.9		30.7	93.9		31.0	95.0				
MEAN VECTOR ERRORS(NM)					17			54			104			0			0			0
NUMBER OF CASES					4			4			2			0			0			0

OFFICIAL FORECASTS — CHRIS AUG 28-AUG 28 1988

DATE/TIME GMT	BEST TRACK LAT.	BEST TRACK LONG.	OPERATIONAL POSITION ERROR LAT.	OPERATIONAL POSITION ERROR LONG.	OPERATIONAL POSITION ERROR NM	12HR FORECAST LAT.	12HR FORECAST LONG.	12HR FORECAST ERROR NM	24HR FORECAST LAT.	24HR FORECAST LONG.	24HR FORECAST ERROR NM	36HR FORECAST LAT.	36HR FORECAST LONG.	36HR FORECAST ERROR NM	48HR FORECAST LAT.	48HR FORECAST LONG.	48HR FORECAST ERROR NM	72HR FORECAST LAT.	72HR FORECAST LONG.	72HR FORECAST ERROR NM
282300	28.2	80.0	29.0	80.0	48	30.5	80.3	193	35.0	79.5		39.2	77.5		37.0	75.0		41.0	69.0	
290012	30.6	85.1	34.0	80.5		35.0	79.2		38.3	75.0		41.5	71.3		44.0	65.0		47.0	55.0	
290015	32.8	81.1				34.5	80.5		40.0	75.0		43.0	70.3		46.0	55.5				
MEAN VECTOR ERRORS(NM)					48			193			0			0			0			0
NUMBER OF CASES					1			1			0			0			0			0

OFFICIAL FORECASTS — DERBY SEP 02-SEP 03 1988

DATE/TIME GMT	BEST TRACK LAT.	BEST TRACK LONG.	OPERATIONAL POSITION ERROR LAT.	OPERATIONAL POSITION ERROR LONG.	OPERATIONAL POSITION ERROR NM	12HR FORECAST LAT.	12HR FORECAST LONG.	12HR FORECAST ERROR NM	24HR FORECAST LAT.	24HR FORECAST LONG.	24HR FORECAST ERROR NM	36HR FORECAST LAT.	36HR FORECAST LONG.	36HR FORECAST ERROR NM	48HR FORECAST LAT.	48HR FORECAST LONG.	48HR FORECAST ERROR NM	72HR FORECAST LAT.	72HR FORECAST LONG.	72HR FORECAST ERROR NM
090000	20.7	95.1	20.8	95.1	1	20.9	95.1	22	21.3	92.4		21.9	100.0							
090006	20.8	95.7	20.8	95.7		21.0	94.2	24	21.3	98.8										
090012	20.8	96.5	20.8	97.1		21.0	93.0		21.3	99.0		22.5	99.0							
090300	20.7	97.3	20.6	97.1																
MEAN VECTOR ERRORS(NM)					7			23			0			0			0			0
NUMBER OF CASES					2			2			0			0			0			0

ERNESTO

DATE/TIME GMT	BEST TRACK LAT.	BEST TRACK LONG.	OPERATIONAL POSITION LAT.	OPERATIONAL POSITION LONG.	OPERATIONAL ERROR NM	12HR FORECAST LAT.	12HR FORECAST LONG.	12HR FORECAST ERROR NM	24HR FORECAST LAT.	24HR FORECAST LONG.	24HR FORECAST ERROR NM	36HR FOR LAT.	36HR FOR LONG.	T RO NM	FORECAST LONG.	FORECAST ERROR NM	72	AST RROR NM
090318	35.2	53.1	35.2	53.1	0	37.0	46.5	103	40.0	39.0	193	44.0	32	0				
090400	35.9	49.5	36.1	49.5	12	39.5	41.5	121	44.0	35.0	233	48.0	32	0				
090412	38.0	39.5	38.0	39.5	0	40.5	30.0	155	43.0	27.0								
090418	40.2	35.0	40.6	35.0		47.0	27.0											
090500	43.1	29.7																
MEAN VECTOR ERRORS(NM)					6			112			9			0		0		0
NUMBER OF CASES					4			4			2			0		0		0

DATE/TIME GMT	BEST TRACK LAT.	BEST TRACK LONG.	OPERATIONAL POSITION LAT.	OPERATIONAL POSITION LONG.	OPERATIONAL ERROR NM	12HR FORECAST LAT.	12HR FORECAST LONG.	12HR FORECAST ERROR NM	24HR FORECAST LAT.	24HR FORECAST LONG.	24HR FORECAST ERROR NM	36HR FORECAST LAT.	36HR FORECAST LONG.	36HR FORECAST ERROR NM	48HR FORECAST LAT.	48HR FORECAST LONG.	48HR FORECAST ERROR NM	72HR FORECAST LAT.	72HR FORECAST LONG.	72HR FORECAST ERROR NM
091718	22.7	90.2	22.7	90.3	11	23.7	90.0	22	23.5	89.5	12	25.5	89.0	29	28.0	88.5	44	31.0	88.5	
091800	22.6	89.5	22.6	89.7	5	22.2	89.0	69	24.0	89.5	45	26.0	87.5	97	28.0	89.5	128	31.0	88.5	
091806	22.7	89.3	22.6	89.3	5	23.0	89.5	13	23.5	89.5	85	24.0	89.5	178	25.0	89.5	276	26.5	89.5	
091812	23.1	89.7	23.1	89.7	0	24.0	89.5	23	25.0	89.5	57	26.0	89.7	159	27.0	90.0		29.0	90.0	
091818	23.4	89.5	23.4	89.5	0	24.5	89.5	34	25.5	89.5	144	26.5	89.7	172	27.5	90.0		29.5	90.0	
091900	24.2	89.2	24.2	89.3	0	25.0	89.0	65	26.0	89.0	162	27.0	89.0		28.0	89.0		30.0	90.0	
091906	25.0	89.2	24.8	89.1	15	24.5	89.1	42	28.0	89.5	90	29.5	91.5		29.5	91.5		30.5	92.5	
091912	25.1	89.2	25.1	89.3	0	28.8	89.4	7	31.5	90.5		33.0	91.5							
091918	27.4	89.2	27.5	89.1	13	30.5	89.7	18	31.5	91.0		32.5	92.0							
091100	28.2	89.3	28.2	89.4		30.5	89.8		32.5	90.5										
091106	29.7	89.7	29.7	89.5		31.9	90.0		33.5	90.0										
MEAN VECTOR ERRORS(NM)					6			33			87			136			143			0
NUMBER OF CASES					9			9			7			5			3			0

****

Table 5a. continued.

OFFICIAL FORECASTS GT.BERT SEP 29-SE_ 5 17 199*

DATE/TIME AT	BEST TRACK LAT.	LONG.	OPERATIONAL POSITION LAT.	LONG.	ERROR NM	12HR FORECAST LAT.	LONG.	ERROR NM	24HR FORECAST LAT.	LONG.	ERROR NM	36HR FORECAST LAT.	LONG.	ERROR NM	48HR FORECAST LAT.	LONG.	ERROR NM	72HR FORECAST LAT.	LONG.	ERROR NM
391918	14.5	50.1	14.5	51.0	52	14.7	53.0	44	15.0	55.5	92	15.3	58.0	74	15.5	73.5	76	19.0	75.0	159
391003	14.4	51.3	14.5	51.3	10	16.5	48.9	5	16.0	65.0	86	16.0	69.5	57	17.0	70.5	74	19.5	71.5	216
391006	15.0	52.3	15.0	53.5	40	16.5	45.5	48	15.5	67.5	88	16.1	69.3	122	19.5	71.5	173	19.0	77.0	509
391012	15.3	54.1	15.1	55.8	21	15.8	58.5	16	15.8	68.5	40	16.3	70.3	52	17.0	73.0	117	19.0	77.0	217
391018	15.4	55.4	15.5	55.7	11	14.0	48.2	11	16.5	71.0	34	17.0	73.5	12	15.0	75.0	52	19.5	81.5	59
391100	15.9	58.3	15.8	58.9	5	14.4	52.5	24	17.5	72.0	18	17.5	74.5	51	18.5	77.0	98	20.0	83.5	137
391106	16.2	60.3	16.2	60.3	0	14.9	53.7	41	17.5	73.2	28	18.0	76.0	91	19.5	78.5	58	20.5	85.5	101
391112	16.1	62.5	16.5	61.5	25	14.7	72.3	34	17.5	75.0	34	18.2	77.3	49	19.0	80.5	36	20.5	85.5	33
391118	16.2	70.7	16.3	70.7	5	14.5	73.5	55	17.0	75.0	83	18.5	79.0	40	20.0	82.0	41	22.5	87.5	100
391200	16.8	72.0	16.8	72.0	0	17.2	74.7	38	17.5	77.5	74	18.5	80.5	58	19.5	83.5	54	22.5	88.5	156
391206	17.3	73.5	17.2	73.7	5	18.0	76.5	23	18.5	79.5	112	19.5	82.5	112	21.0	86.5	73	24.0	90.0	193
391212	17.7	75.3	17.7	75.3	0	18.8	81.5	5	19.5	81.5	37	20.3	84.5	57	22.0	87.5	76	25.5	90.0	208
391218	18.2	76.9	18.2	76.9	0	19.7	83.0	5	19.7	83.0	56	20.3	86.5	77	22.5	89.5	56	27.5	91.0	171
391300	18.8	78.5	18.8	78.5	0	19.2	81.5	30	19.5	84.5	21	21.5	87.5	33	24.5	90.0	59	27.5	94.5	95
391306	19.3	79.7	19.3	79.7	11	19.2	82.5	12	20.0	85.0	17	21.5	87.5	39	25.0	90.0	92	27.5	94.5	156
391312	19.8	81.1	19.9	81.2	5	19.5	84.2	50	21.5	87.0	64	23.2	89.5	108	25.5	92.0	210	28.5	95.5	283
391318	19.4	82.5	19.5	82.5	5	19.9	85.1	12	21.0	87.5	20	22.2	89.5	152	24.4	91.0	174	27.5	95.5	291
391400	19.7	83.7	19.7	83.7	0	20.3	85.5	5	21.5	89.0	25	23.0	91.5	56	25.0	93.5	154	29.0	95.5	309
391406	19.9	85.5	20.0	85.6	17	20.8	88.0	13	22.0	90.5	33	23.3	92.7	59	25.0	94.5	124	29.5	95.5	336
391412	20.4	86.5	20.3	86.5	5	21.5	89.2	21	22.4	91.4	37	23.5	93.4	68	25.0	95.5	95	30.0	97.0	355
391418	20.9	87.9	20.9	87.9	5	22.0	90.6	29	23.0	93.0	54	24.5	95.5	121	26.0	97.0	126	32.0	99.0	
391500	21.3	89.5	21.5	89.4	15	22.2	91.9	17	23.0	94.5	47	25.2	96.6	89	27.4	98.2	158	30.0	100.0	
391506	21.6	90.7	21.6	90.5	5	22.5	93.0	34	23.5	95.5	60	26.0	97.2	133	28.0	98.5	201	31.5	100.0	
391512	21.9	91.7	22.0	91.8	5	22.6	94.0	5	24.0	96.5	29	26.5	98.0	105	28.4	99.2	211	32.5	100.0	
391518	22.1	92.8	22.2	92.8	5	23.6	95.6	65	25.6	98.0	120	27.9	99.5	174	30.0	99.9		34.5	99.0	
391600	22.4	93.8	22.4	93.8	0	23.4	96.3	11	25.2	97.5	91	26.4	98.9	152	27.7	99.7		31.0	100.5	
391606	22.9	94.6	22.9	94.8	5	24.0	95.8	12	26.0	98.2	93	27.5	99.5		29.8	100.2				
391612	23.7	95.9	23.7	95.8	5	25.0	97.7	49	26.5	99.6	116	28.0	99.5		30.5	100.0		36.0	98.0	
391618	23.9	97.0	24.0	97.0	5	25.0	99.0	17	28.0100.5			28.0101.0								
391700	24.4	98.2	24.3	98.3	12	25.5100.0		39	27.5101.0			29.5101.5								
391706	24.8	99.3	24.8	99.3		25.7101.2			28.3102.0			30.5101.5								
391712	25.0100.5		25.1100.3			21.5102.5														
MEAN VECTOR ERRORS(NM)					11			27			51			73			110			195
NUMBER OF CASES					30			30			28			26			24			20

Table 5a. continued.

OFFICIAL FORECASTS HELENE SEP 20-SEP 30 1988

DATE/TIME GMT	BEST TRACK LAT.	BEST TRACK LONG.	OPERATIONAL POSITION LAT.	OPERATIONAL POSITION LONG.	OPERATIONAL ERROR NM	12HR FORECAST LAT.	12HR LONG.	12HR ERROR NM	24HR FORECAST LAT.	24HR LONG.	24HR ERROR NM	36HR FORECAST LAT.	36HR LONG.	36HR ERROR NM	48HR FORECAST LAT.	48HR LONG.	48HR ERROR NM	72HR FORECAST LAT.	72HR LONG.	72HR ERROR NM
092006	13.2	33.3	13.3	33.6	13	13.5	35.7	61	13.7	37.8	97	13.9	39.3	34	14.4	42.0	58	15.0	44.5	115
092012	13.0	34.3	13.0	34.7	5	13.0	35.5	45	13.0	39.5	55	13.2	40.5	29	13.5	42.5	25	14.0	47.0	102
092018	12.4	35.7	12.3	36.4	41	11.8	38.9	29	11.5	41.5	71	11.7	44.0	127	12.0	45.5	178	13.0	51.5	303
092100	12.2	36.7	12.0	37.4	42	12.0	39.8	13	12.0	42.5	76	12.2	45.0	126	12.4	47.5	[illegible]	13.0	52.5	327
092106	12.0	37.7	12.1	38.5	47	12.2	41.0	25	12.5	43.5	78	12.8	44.0	131	13.0	49.5	178	13.5	55.5	357
092112	12.1	38.8	12.0	39.5	41	13.0	41.5	37	12.2	43.5	61	12.5	45.0	108	13.0	49.0	139	13.5	55.5	359
092118	12.4	39.9	12.5	40.3	3	12.8	41.9	25	13.0	44.0	58	13.5	45.5	96	14.0	49.0	1?2	15.0	5?.5	340
092200	12.7	40.6	12.9	40.9	21	13.2	43.0	26	13.5	45.0	54	14.3	47.0	78	15.0	49.0	123	17.0	53.0	245
092206	13.0	41.5	12.9	41.7	13	13.2	43.2	13	13.5	45.0	30	14.3	47.0	57	15.0	49.0	117	17.0	53.0	256
092212	13.2	42.3	13.1	42.?	[illegible]	13.5	44.0	30	13.5	45.5	55	14.?	47.2	110	16.5	49.?	179	17.0	53.0	295
092218	13.5	43.1	13.6	43.1	5	14.1	44.5	18	14.5	46.2	48	15.?	47.7	70	15.8	49.2	1?9	18.0	55.0	276
092300	13.9	44.3	13.9	44.0	3	14.5	45.5	11	15.2	47.5	54	16.3	49.2	108	17.0	51.0	1?7	20.0	54.0	284
092306	14.1	44.9	14.0	44.9	5	14.7	45.6	41	15.5	48.2	52	16.2	49.3	131	17.0	51.5	198	19.5	54.5	351
092312	14.2	45.5	14.5	45.5	11	15.2	47.0	30	16.0	48.5	77	17.3	50.5	128	19.0	52.0	170	21.5	53.5	260
092318	15.3	46.1	15.2	46.2	3	16.5	47.5	5	18.0	49.0	22	20.0	50.0	55	22.0	50.5	74	25.0	51.0	37
092400	15.9	46.9	15.0	46.9	5	17.3	48.3	20	19.0	49.5	36	21.0	51.2	52	23.0	50.5	39	27.0	51.0	13
092406	16.6	47.5	15.6	47.7	11	18.0	48.9	12	19.5	49.9	40	21.?	51.0	55	23.0	52.?	118	[illegible]	51.?	115
092412	17.4	48.0	17.?	48.0	5	19.8	48.8	60	21.5	49.5	56	23.3	50.0	77	25.5	50.5	[illegible]	27.5	51.0	57
092418	18.1	48.5	18.1	48.5	3	19.7	49.2	21	21.3	50.0	45	23.0	50.5	50	25.0	51.0	51	31.0	51.5	21
092500	18.7	48.9	18.7	48.9	0	20.5	49.7	45	22.5	50.5	58	24.8	51.3	52	27.0	51.?	22	32.5	51.0	44
092506	19.4	49.0	19.2	49.0	11	21.3	49.5	37	23.5	49.8	18	26.0	50.0	29	28.5	4?.8	114	[illegible]	48.5	128
092512	20.0	49.1	20.0	49.0	5	21.5	49.0	47	23.3	49.0	100	24.5	49.0	139	26.0	49.0	274	31.?	48.0	156
092518	21.?	49.3	21.0	49.0	17	22.7	49.0	5?	24.2	49.0	115	25.0	49.0	135	28.0	49.0	2?5	[illegible]	[illegible]	178
092600	22.2	49.5	21.9	49.4	13	23.7	49.5	34	25.3	49.5	120	27.3	49.?	190	[illegible]	49.0	1?6	[illegible]	45.0	169
092606	23.4	49.7	22.9	49.4	34	24.7	49.5	45	26.5	49.3	130	[illegible]	49.3	155	[illegible]	49.?	1?8	[illegible]	44.5	330
092612	[illegible]	49.9	[illegible]	49.7	10	27.0	49.5	[illegible]	[illegible]	49.0	147	31.?	48.5	144	35.5	4?.0	135	37.0	[illegible]	209
092618	25.?	50.3	25.2	50.5	23	29.5	51.0	62	30.0	53.0	119	34.0	48.5	147	35.0	45.5	150	40.0	41.0	206
092700	27.3	51.1	27.7	51.1	35	30.5	51.1	45	[illegible]	52.0	9?	[illegible]	48.5	144	35.0	46.5	1?2	41.0	40.0	351
092706	[illegible]	51.9	[illegible]	52.0	24	30.8	52.3	[illegible]	32.3	52.9	93	[illegible]	47.0	115	37.8	50.0	174	[illegible]	41.5	559
092712	[illegible]	52.0	[illegible]	52.0	0	32.5	51.5	35	35.0	50.0	91	[illegible]	[illegible]	127	[illegible]	[illegible]	76	[illegible]	[illegible]	
092718	30.5	51.5	31.0	52.0	7	33.0	51.5	21	35.0	49.5	12	37.0	47.0	58	[illegible]	[illegible]	134	[illegible]	[illegible]	
092800	31.9	51.5	32.0	51.7	11	34.0	53.5	33	35.0	48.5	15	[illegible]	[illegible]	152	41.0	42.?	[illegible]	48.0	31.0	
092806	32.3	51.0	32.5	51.1	13	34.?	47.6	12	35.?	47.0	[illegible]	[illegible]	44.4	236	4?.6	37.1	339			
092812	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	35.5	[illegible]	[illegible]	37.3	45.5	139	[illegible]	[illegible]	[illegible]	47.0	34.0				
092818	[illegible]	49.5	34.7	49.5	[illegible]	36.5	47.0	[illegible]	39.0	44.0	249	43.?	39.0	440						
092900	37.1	48.5	36.?	46.5	5	39.?	45.0	13?	42.5	42.5	277	45.5	38.5							
092906	39.0	45.5	37.5	47.0	53	40.7	43.3	10?												
092912	40.?	44.4	40.1	44.3	13	45.0	37.0	94												
092918	42.9	42.0	42.5	42.3	25	49.0	35.0	112												
093000	45.?	38.?	47.0	38.5																
093006	5?.2	34.5				57.0	??.0													
MEAN VECTOR ERRORS(NM)					15			41			85			137			153			224
NUMBER OF CASES					39			39			36			35			33			29

OFFICIAL FORECASTS ISAAC SEP 30-OCT 01 1988

DATE/TIME GMT	BEST TRACK LAT.	BEST TRACK LONG.	OPERATIONAL POSITION LAT.	OPERATIONAL POSITION LONG.	OPERATIONAL ERROR NM	12HR FORECAST LAT.	12HR LONG.	12HR ERROR NM	24HR FORECAST LAT.	24HR LONG.	24HR ERROR NM	36HR FORECAST LAT.	36HR LONG.	36HR ERROR NM	48HR FORECAST LAT.	48HR LONG.	48HR ERROR NM	72HR FORECAST LAT.	72HR LONG.	72HR ERROR NM
093018	11.4	56.3	11.1	57.3	61	12.2	58.3	132	13.5	60.4		14.3	62.3		15.5	64.0		17.5	65.5	
100100	11.8	57.7	11.7	57.0		12.9	59.5		14.0	61.5		15.0	36.5		16.0	65.0		18.5	67.5	
100106	12.0	59.5	11.5	58.0		12.5	60.2		13.5	62.0		14.5	64.0		15.5	65.5		17.5	68.0	
MEAN VECTOR ERRORS(NM)					62			133			0			0			0			0
NUMBER OF CASES					1			1			0			0			0			0

5a

			OP POS LAT		R M			AS ERR N									DR M	LAT.	O	T OR NM
101118	11.2	47.9	11.2	47.8	5	12.2	50.5	3	13.1	53.5	80	13.6	56.0	6	14.0	53.5	117	15.0	67.0	195
101200	11.5	49.0	11.6	49.0	5	12.8	51.0	40	13.5	53.5	62	14.2	55.8	0	15.0	53.2	138	15.0	62.0	229
101206	11.8	50.1	12.0	50.0	13	12.8	52.5	13	13.5	55.0	49	14.3	57.5	8	15.0	53.0	149	15.5	64.0	263
101212	12.1	51.3	12.3	51.1	16	13.0	53.5	24	13.3	56.0	61	14.5	58.0	2	15.0	50.0	156	16.0	63.0	230
101218	12.3	52.5	12.4	52.5	5	12.5	55.0	3	12.5	57.5	29	12.5	59.5	5	15.0	51.0	55	14.5	63.0	186
101300	12.4	53.3	12.6	53.8	12	12.7	55.2	13	12.3	58.5	11	13.0	61.3	40	13.5	52.0	77	15.0	64.5	192
101306	12.5	54.9	12.8	55.1	21	13.0	57.6	17	13.2	60.2	46	13.6	62.3	138	14.0	54.5	129	15.0	68.0	165
101312	12.6	56.0	12.1	55.0	55	12.8	58.0	53	13.0	60.0	97	13.5	61.5	125	14.0	55.0	177	14.5	69.0	213
101318	12.7	57.1	12.3	57.2	3	13.0	59.5	29	13.5	62.0	105	13.7	64.3	121	14.0	56.5	148	15.0	71.0	200
101400	12.6	58.3	12.6	58.2	5	12.8	60.7	59	13.0	63.0	108	13.4	65.2	121	13.8	57.5	139	14.5	71.5	170
101406	12.4	59.4	12.5	59.0	4	12.8	61.2	62	13.0	63.5	30	13.5	65.4	104	14.0	57.5	121	15.0	71.5	237
101412	12.2	60.0	12.4	60.0	1	12.1	62.0	31	12.0	64.0	16	12.5	66.0	18	13.0	58.0	55	15.5	71.5	206
101418	12.0	60.5	12.1	60.9	3	11.8	63.0	24	12.0	65.0	0	12.5	67.0	29	13.5	59.0	85	15.0	72.0	196
101500	12.1	61.0	12.0	61.5	3	12.2	64.3	34	12.2	66.0	67	12.5	65.7	97	13.0	65.5	119	14.5	72.0	204
101506	12.1	62.3	12.2	62.0	3	12.2	65.0	12	12.5	67.0	29	13.0	69.0	56	13.5	71.0	85	14.5	75.0	162
101512	12.0	63.3	12.0	64.2	3	12.0	66.1	23	12.3	68.0	50	13.0	70.0	69	13.5	72.0	100	14.5	75.0	180
101518	11.9	64.9	12.0	65.1	3	12.0	67.0	24	12.5	69.0	30	13.0	71.0	58	13.5	73.0	96	15.0	77.0	216
101600	12.0	66.1	12.0	66.2	5	12.2	68.0	13	12.5	70.2	36	13.1	72.3	72	13.5	74.3	102	14.5	78.5	210
101606	12.0	67.2	12.0	67.1	5	12.1	69.0	[illegible]	12.5	71.0	30	13.0	73.0	72	13.5	75.0	108	14.5	79.0	206
101612	11.9	68.2	12.0	68.2	5	12.0	70.0	5	12.5	72.2	30	13.0	74.5	72	13.5	75.5	121	14.5	80.5	221
101618	12.0	69.2	12.1	69.2	5	12.3	71.0	15	12.5	73.5	46	13.0	75.5	77	13.5	77.5	138	15.0	81.5	264
101700	12.0	70.2	12.1	70.3	3	12.2	72.0	15	12.5	74.5	42	12.7	75.7	80	13.0	78.8	134	13.5	83.0	245
101706	12.0	71.2	12.1	71.3	3	12.2	73.0	25	12.4	75.5	42	12.7	77.7	101	13.0	79.8	147	13.7	84.0	283
101712	11.9	72.1	12.0	72.0	3	11.9	74.0	5	12.0	75.0	29	12.2	78.0	75	12.5	80.0	121	13.0	84.0	290
101718	11.8	73.0	11.8	73.0	0	11.9	75.0	11	12.0	77.0	51	12.2	79.0	88	12.5	81.0	142	13.5	84.5	300
101800	11.8	74.0	11.9	74.0	5	12.0	75.9	24	12.2	77.9	67	12.5	80.1	121	12.9	82.3	197	14.0	85.3	379
101806	11.7	75.0	11.8	75.1	3	11.5	77.2	35	11.6	77.5	83	11.8	81.1	125	12.0	83.0	138	13.5	85.5	352
101812	11.5	75.8	11.3	76.0	16	10.7	77.5	13	10.5	79.5	72	10.5	81.5	123	10.5	83.0	196	11.5	85.5	241
101818	11.3	76.5	11.1	76.4	13	11.0	77.5	13	10.5	79.0	37	10.5	81.0	80	10.5	83.0	192	11.5	85.5	223
101900	11.2	77.2	11.3	77.2	5	11.3	78.3	11	11.2	79.5	16	11.2	80.3	76	11.2	82.0	132	11.5	84.5	121
101906	11.3	77.8	11.3	77.7	5	11.2	79.1	13	11.2	80.3	35	11.2	81.7	111	11.2	82.9	136	12.0	85.0	111
101912	11.4	78.3	11.4	78.2	5	11.4	79.5	13	11.4	80.7	78	11.5	82.5	135	11.7	84.3	138	12.0	87.5	217
101918	11.3	78.9	11.3	79.0	5	11.3	80.2	21	11.3	81.5	88	11.4	83.2	141	11.6	84.9	176	12.0	89.5	199
102000	11.3	79.3	11.3	79.4	5	11.3	80.5	54	11.3	81.8	83	11.4	83.0	100	11.6	84.5	113	12.0	89.0	1 7
102006	11.1	79.8	11.2	79.7	3	11.2	80.0	15	11.2	81.0	33	11.2	82.0	45	11.2	83.5	53	11.5	85.0	
102012	11.1	79.5	11.2	79.5	5	11.2	80.2	24	11.2	81.2	30	11.2	82.2	51	11.2	83.7	49	11.5	85.2	
102018	11.3	79.9	11.3	79.8	5	11.3	80.4	15	11.3	81.4	34	11.3	82.4	54	11.3	83.9	72	11.5	85.4	
102100	11.5	80.3	11.5	80.2	5	11.6	81.0	3	11.7	82.0	26	11.3	83.5	18	12.0	85.0	47	12.5	88.0	
102106	11.5	80.7	11.5	80.8	5	11.7	82.0	3	11.8	83.5	15	12.0	85.0	5	12.5	85.0		13.0	88.5	
102112	11.6	81.2	11.6	81.2	0	11.7	82.2	21	11.8	83.7	13	12.1	85.2	41	12.5	86.8		13.1	89.7	
102118	11.8	81.3	11.7	81.3	5	11.8	82.8	23	11.9	84.0	55	12.1	85.3		12.5	86.9		13.1	89.0	
102200	11.9	82.5	11.9	82.5	5	11.9	84.0	0	12.0	85.5	29	12.0	87.0		12.5	88.5		13.0	91.0	
102206	11.9	83.2	12.0	83.3	3	12.2	85.0	3	12.3	85.5		12.5	88.0		13.0	89.5		14.0	92.0	
102212	11.9	83.9	11.9	84.1	11	12.0	85.4	41	12.2	85.8		12.5	88.0		13.0	89.5		14.0	92.0	
102218	12.0	85.0	12.0	84.8		12.1	86.4		12.3	87.9		12.8	89.2		13.4	90.5		14.0	92.5	
102300	12.1	85.7																		
MEAN VECTOR ERRORS(NM)					10			23			49			30			124			219
NUMBER OF CASES					4			4			42			40			38			34

****

continued.

OFFICIAL FORECASTS KEITH NOV 20-NOV 24 1988

DATE/TIME GMT	BEST TRACK LAT.	BEST TRACK LONG.	OPERATIONAL POSITION LAT.	OPERATIONAL POSITION LONG.	OPERATIONAL ERROR NM	12HR FORECAST LAT.	12HR FORECAST LONG.	12HR FORECAST ERROR NM	24HR FORECAST LAT.	24HR FORECAST LONG.	24HR FORECAST ERROR NM	36HR FORECAST LAT.	36HR FORECAST LONG.	36HR FORECAST ERROR NM	48HR FORECAST LAT.	48HR FORECAST LONG.	48HR FORECAST ERROR NM	72HR FORECAST LAT.	72HR FORECAST LONG.	72HR FORECAST ERROR NM
112006	13.3	63.4	16.0	33.4	13	14.5	34.9	140	16.8	36.3	216	17.4	37.7	293	18.0	39.0	352	19.5	41.0	637
112012	17.8	34.5	15.3	35.0	41	20.5	35.5	93	23.0	36.0	93	25.3	34.0	209	27.0	31.5	307	30.0	24.0	318
112018	19.1	35.4	17.0	35.2	12	21.5	35.5	54	24.0	35.5	131	26.3	33.3	239	28.0	30.0	305	31.0	23.5	343
112100	19.8	36.1	19.7	36.0	3	21.5	37.1	16	22.5	37.5	44	24.5	36.5	24	26.0	34.0	24	28.0	30.0	158
112106	20.7	36.9	20.7	36.7	5	22.5	37.5	12	23.5	37.8	52	24.5	37.5	143	25.2	36.8	244	26.5	35.0	575
112112	21.8	37.0	21.9	36.9	8	23.8	37.7	37	25.0	38.0	30	25.5	38.5	100	26.0	39.0	235	27.5	42.0	675
112118	22.4	37.2	22.5	37.2	5	24.2	37.4	37	26.0	37.2	115	26.8	38.1	128	27.2	39.0	200	29.5	42.0	
112200	23.1	37.3	23.0	37.3	5	24.1	36.1	13	25.0	35.0	94	26.0	33.0	141	27.0	30.5	214	30.0	26.0	
112206	23.6	36.8	23.9	36.8	5	25.8	35.2	15	27.3	33.0	12	28.5	30.2	36	29.5	25.5	97	32.0	20.0	
112212	24.4	36.2	24.8	36.0	26	26.5	34.5	35	27.8	32.0	56	29.3	29.0	102	30.0	25.0	339	32.0	19.0	
112218	25.3	35.1	25.4	35.1	5	27.0	32.5	20	28.0	29.5	50	29.5	26.0	131	29.8	22.0		33.0	21.0	
112300	26.5	34.2	26.6	34.2	5	28.0	32.0	73	30.5	28.0	44	32.0	23.5	156	33.0	19.0		35.5	17.5	
112306	27.3	33.3	27.3	33.3	3	28.2	29.9	42	29.2	26.5	127	30.0	22.0		30.6	17.2		36.5	16.0	
112312	27.9	31.3	27.8	31.0	17	28.8	28.0	57	29.5	24.5	281	30.5	20.5		31.0	13.0		35.0	10.0	
112318	28.9	29.3	28.8	29.8	5	30.3	26.0	54	31.5	20.5		32.5	13.5		34.0	06.5		38.0	05.0	
112400	29.7	27.7	29.7	27.7	3	31.0	22.0	119	32.5	16.5		35.0	07.0							
112406	31.0	25.2	31.5	25.5		34.0	16.0		38.5	04.0										
112412	32.5	20.5	32.5	20.5		34.5	02.5		39.0	11.0										
MEAN VECTOR ERRORS(NM)					11			42			97			1			232			452
NUMBER OF CASES					15			15			14			2			10			6

** ** **

1983 SUMMARY FOR OFFICIAL

	PSN.ERR	12HR	24HR	36HR	48HR	72
AVERAGE ERROR FOR ALL STORMS	12	33	69	121	140	231
NUMBER OF CASES	152	152	131	118	108	89

Table 5b. Best track forecast wind speed verification for 1988 Atlantic tropical cyclones.

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FOR STORM ALBERTO

	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 080712Z DATA	.0	.0				
FORECAST MADE FROM 080718Z DATA	.0	.0				
FORECAST MADE FROM 080800Z DATA						
FORECAST MADE FROM 080806Z DATA						
SUMMARY: STORM ALBERTO						
MEAN ERRORS (KTS)	.0	.0	.0	.0	.0	.0
MEAN ABSOLUTE ERROR (KTS)	.0	.0	.0	.0	.0	.0
STANDARD ERROR (KTS)	.0	.0	.0	.0	.0	.0
NUMBER OF CASES	2	2	0	0	0	0

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FOR STORM BERYL

	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 080812Z DATA	5.0	.0	5.0			
FORECAST MADE FROM 080818Z DATA	5.0	5.0	15.0			
FORECAST MADE FROM 080900Z DATA	.0	5.0				
FORECAST MADE FROM 080906Z DATA	.0	5.0				
FORECAST MADE FROM 080912Z DATA						
FORECAST MADE FROM 080918Z DATA						
SUMMARY: STORM BERYL						
MEAN ERRORS (KTS)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN ABSOLUTE ERROR (KTS)	2.5	3.8	10.0	.0	.0	.0
STANDARD ERROR (KTS)	2.9	2.5	7.1	.0	.0	.0
NUMBER OF CASES	4	4	2	0	0	0

****

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FOR STORM CHRIS

	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 082806Z DATA	.0	15.0				
FORECAST MADE FROM 082812Z DATA						
FORECAST MADE FROM 082818Z DATA						
SUMMARY: STORM CHRIS						
MEAN ERRORS (KTS)	0	15.0	.0	.0	.0	.0
MEAN ABSOLUTE ERROR (KTS)	.0	15.0	.0	.0	.0	.0
STANDARD ERROR (KTS)	.0	.0	.0	.0	.0	.0
NUMBER OF CASES	1	1	0	0	0	0

****

Table 5b. continued.

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FOR STORM DEBBY

	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 0921062 DATA	-10.0	-10.0	-10.0			
FORECAST MADE FROM 0921122 DATA	-10.0	-15.0	-10.0			
FORECAST MADE FROM 0921182 DATA						
FORECAST MADE FROM 0921002 DATA						
FORECAST MADE FROM 0921062 DATA						
FORECAST MADE FROM 0921122 DATA						

SUMMARY: STORM DEBBY

MEAN ERRORS (KTS)	-10.0	-15.0	-15.0	.0	.0	.0
MEAN ABSOLUTE ERROR (KTS)	4.7	15.0	15.0	.0	.0	.0
STANDARD ERROR (KTS)	5.3	15.0	7.1	.0	.0	.0
NUMBER OF CASES	3	3	2	0	0	0

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FOR STORM ERNESTO

	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 0921182 DATA	.0	-10.0	-10.0			
FORECAST MADE FROM 0921002 DATA	-5.0	-15.0	-10.0			
FORECAST MADE FROM 0921062 DATA	-10.0	-20.0				
FORECAST MADE FROM 0921122 DATA						
FORECAST MADE FROM 0921182 DATA						
FORECAST MADE FROM 0921002 DATA						

SUMMARY: STORM ERNESTO

MEAN ERRORS (KTS)	-5.0	-15.0	-10.0	.0	.0	.0
MEAN ABSOLUTE ERROR (KTS)	7.5	15.0	10.0	.0	.0	.0
STANDARD ERROR (KTS)	6.5	4.0	.0	.0	.0	.0
NUMBER OF CASES	2	2	1	0	0	0

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FOR STORM FLORENCE

	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 0921182 DATA	.0	.0	20.0	30.0	25.0	
FORECAST MADE FROM 0921002 DATA	5.0	10.0	15.0	25.0	20.0	
FORECAST MADE FROM 0921062 DATA	5.0	15.0	15.0	-5.0		
FORECAST MADE FROM 0921122 DATA	5.0	5.0	5.0			
FORECAST MADE FROM 0921182 DATA	5.0	5.0	-5.0			
FORECAST MADE FROM 0921002 DATA	.0	.0	-10.0			
FORECAST MADE FROM 0921062 DATA	5.0	-5.0				
FORECAST MADE FROM 0921122 DATA	5.0	15.0				
FORECAST MADE FROM 0921182 DATA						
FORECAST MADE FROM 0921002 DATA						

SUMMARY: STORM FLORENCE

MEAN ERRORS (KTS)	3.8	5.0	5.0	12.5	22.5	.0
MEAN ABSOLUTE ERROR (KTS)	3.8	10.0	11.0	15.0	22.5	.0
STANDARD ERROR (KTS)	2.5	6.5	11.5	17.5	3.5	.0
NUMBER OF CASES	3	3	2	2	2	0

Table 5b. continued.

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FOR STORM GILBERT

	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 09?:1?Z DATA	-5.0	-10.0	-15.0	-15.0	-15.0	-15.0
FORECAST MADE FROM 091200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 091800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 092112Z DATA	-5.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 092200Z DATA	-5.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 092212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 092300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 092312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100400Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100412Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100500Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100512Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100600Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100612Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100700Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100712Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100812Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100900Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 100912Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101400Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101412Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101500Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101512Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101600Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101612Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101700Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101712Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101812Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101900Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 101912Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 102000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 102012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 102100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 102112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 102200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 102212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 102300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 102312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110400Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110412Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110500Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110512Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110600Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110612Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110700Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110712Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110812Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110900Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 110912Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111400Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111412Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111500Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111512Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111600Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111612Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111700Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111712Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111812Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111900Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 111912Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 112000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 112012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 112100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 112112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 112200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 112212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 112300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 112312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120400Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120412Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120500Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120512Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120600Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120612Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120700Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120712Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120812Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120900Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 120912Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121400Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121412Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121500Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121512Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121600Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121612Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121700Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121712Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121812Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121900Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 121912Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 122000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 122012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 122100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 122112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 122200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 122212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 122300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 122312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130400Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130412Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130500Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130512Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130600Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130612Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130700Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130712Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130812Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130900Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 130912Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131400Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131412Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131500Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131512Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131600Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131612Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131700Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131712Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131812Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131900Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 131912Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 132000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 132012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 132100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 132112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 132200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 132212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 132300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 132312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140400Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140412Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140500Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140512Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140600Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140612Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140700Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140712Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140812Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140900Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 140912Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141400Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141412Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141500Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141512Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141600Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141612Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141700Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141712Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141812Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141900Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 141912Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 142000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 142012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 142100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 142112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 142200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 142212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 142300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 142312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150212Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150300Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150312Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150400Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150412Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150500Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150512Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150600Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150612Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150700Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150712Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150800Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150812Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150900Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 150912Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 151000Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 151012Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 151100Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 151112Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 151200Z DATA	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
FORECAST MADE FROM 151212Z DATA	-10.0	-10.0	-10.0	-

CO

FORECAST MADE FROM 092306Z DATA	-5.0	-10.0	-20.0	-30.0	-40.0	-52.0	
FORECAST MADE FROM 092312Z DATA	-10.0	-15.0	-28.0	-37.0	-45.0	-53.0	
FORECAST MADE FROM 092318Z DATA	-5.0	-15.0	-25.0	-35.0	-42.0	-55.0	
FORECAST MADE FROM 092100Z DATA	.0	-13.0	-22.0	-30.0	-40.0	-40.0	
FORECAST MADE FROM 092106Z DATA	15.0	5.0	-5.0	-12.0	-22.0	-18.0	
FORECAST MADE FROM 092112Z DATA	7.0	-2.0	-10.0	-20.0	-25.0	-15.0	
FORECAST MADE FROM 092118Z DATA	.0	-10.0	-17.0	-27.0	-30.0	-13.0	
FORECAST MADE FROM 092200Z DATA	-7.0	-15.0	-25.0	-30.0	-30.0	-12.0	
FORECAST MADE FROM 092206Z DATA	-15.0	-22.0	-32.0	-35.0	-29.0	-8.0	
FORECAST MADE FROM 092212Z DATA	-10.0	-20.0	-28.0	-25.0	-20.0	1.0	
FORECAST MADE FROM 092218Z DATA	-7.0	-17.0	-25.0	-18.0	-10.0	10.0	
FORECAST MADE FROM 092300Z DATA	-5.0	-15.0	-10.0	-5.0	9.0	25.0	
FORECAST MADE FROM 092306Z DATA	-2.0	-5.0	7.0	15.0	27.0	40.0	
FORECAST MADE FROM 092312Z DATA	.0	.0	10.0	23.0	31.0	45.0	
FORECAST MADE FROM 092318Z DATA	-5.0	2.0	5.0	12.0	15.0	32.0	
FORECAST MADE FROM 092400Z DATA	.0	5.0	13.0	16.0	18.0	23.0	
FORECAST MADE FROM 092406Z DATA	-13.0	-10.0	-3.0	.0	.0	3.0	
FORECAST MADE FROM [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
FORECAST MADE FROM 092418Z DATA	-10.0	2.0	5.0	5.0	7.0	5.0	
FORECAST MADE FROM 092500Z DATA	-2.0	5.0	8.0	10.0	8.0	5.0	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	-4.0	-5.0	[illegible]	-2.0	-7.0	-15.0	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	3.0	[illegible]	[illegible]	-2.0	[illegible]	[illegible]	
[illegible]	5.0	[illegible]	[illegible]	-2.0	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
FORECAST MADE FROM 092706Z DATA	2.0	[illegible]	-5.0	[illegible]	[illegible]	-55.0	
FORECAST MADE FROM 092712Z DATA	3.0	-3.0	-2.0	-10.0	-20.0	-40.0	
FORECAST MADE FROM 092718Z DATA	-2.0	[illegible]	[illegible]	[illegible]	[illegible]	-20.0	
FORECAST MADE FROM 092712Z DATA	-5.0	[illegible]	-10.0	-25.0	[illegible]		
FORECAST MADE FROM 092718Z DATA	-2.0	[illegible]	-15.0	-25.0	[illegible]		
FORECAST MADE FROM 092800Z DATA	-2.0	-5.0	-20.0	-20.0	[illegible]		
FORECAST MADE FROM 092806Z DATA	-3.0	-10.0	-20.0	-10.0	-5.0		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
FORECAST MADE FROM 092812Z DATA	-10.0	-20.0	-10.0	-5.0			
FORECAST MADE FROM 092900Z DATA	-15.0	-10.0	5.0				
FORECAST MADE FROM 092906Z DATA	-10.0	-5.0	.0				
FORECAST MADE FROM 092912Z DATA	-15.0	.0					
FORECAST MADE FROM 092918Z DATA	-5.0	.0					
FORECAST MADE FROM 093000Z DATA							
FORECAST MADE FROM 093006Z DATA							

SUMMARY: STORM HELENE

STANDARD ERROR (KTS)	6.7	8.9	12.7	15.4	20.1	27.1
NUMBER OF CASES	39	39	37	35	33	29

****

Table 5b, continued.

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FOR STORM JOAN

	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 101112Z DATA	-10.0	-15.0	-5.0	.0	.0	-10.0
FORECAST MADE FROM 101118Z DATA	-10.0	-5.0	.0	.0	.0	-5.0
FORECAST MADE FROM 101200Z DATA	-10.0	.0	10.0	10.0	10.0	5.0
FORECAST MADE FROM 101206Z DATA	.0	5.0	10.0	10.0	10.0	5.0
FORECAST MADE FROM 101212Z DATA	-5.0	.0	-5.0	-10.0	-15.0	-15.0
FORECAST MADE FROM 101218Z DATA	-5.0	-10.0	-15.0	-20.0	-20.0	-15.0
FORECAST MADE FROM 101300Z DATA	-5.0	-10.0	-15.0	-20.0	-20.0	-20.0
FORECAST MADE FROM 101306Z DATA	-5.0	-10.0	-10.0	-20.0	-20.0	-20.0
FORECAST MADE FROM 101312Z DATA	5.0	5.0	.0	.0	.0	-5.0
FORECAST MADE FROM 101318Z DATA	5.0	5.0	.0	5.0	5.0	5.0
FORECAST MADE FROM 101400Z DATA	5.0	.0	.0	5.0	5.0	.0
FORECAST MADE FROM 101406Z DATA	5.0	.0	.0	5.0	.0	.0
FORECAST MADE FROM 101412Z DATA	.0	.0	.0	5.0	.0	-5.0
FORECAST MADE FROM 101418Z DATA	10.0	15.0	15.0	10.0	10.0	.0
FORECAST MADE FROM 101500Z DATA	.0	.0	.0	-5.0	-10.0	-20.0
FORECAST MADE FROM 101506Z DATA	.0	-5.0	-10.0	-15.0	-20.0	-25.0
FORECAST MADE FROM 101512Z DATA	.0	-10.0	-10.0	-15.0	-15.0	-25.0
FORECAST MADE FROM 101518Z DATA	.0	-10.0	-15.0	-20.0	-20.0	-25.0
FORECAST MADE FROM 101600Z DATA	-10.0	-10.0	-15.0	-25.0	-25.0	-30.0
FORECAST MADE FROM 101606Z DATA	-10.0	-15.0	-20.0	-25.0	-30.0	-30.0
FORECAST MADE FROM 101612Z DATA	-15.0	-20.0	-25.0	-30.0	-40.0	-45.0
FORECAST MADE FROM 101618Z DATA	-10.0	-10.0	-15.0	-30.0	-35.0	-40.0
FORECAST MADE FROM 101700Z DATA	.0	-5.0	-10.0	-25.0	-35.0	-40.0
FORECAST MADE FROM 101706Z DATA	.0	-5.0	-15.0	-25.0	-35.0	-40.0
FORECAST MADE FROM 101712Z DATA	-5.0	-15.0	-25.0	-25.0	-10.0	-20.0
FORECAST MADE FROM 101718Z DATA	.0	-10.0	-20.0	5.0	20.0	-30.0
FORECAST MADE FROM 101800Z DATA	-5.0	-15.0	-15.0	20.0	15.0	-30.0
FORECAST MADE FROM 101806Z DATA	-10.0	-20.0	-25.0	20.0	.0	-25.0
FORECAST MADE FROM 101812Z DATA	-5.0	-5.0	30.0	25.0	-40.0	-20.0
FORECAST MADE FROM 101818Z DATA	-5.0	20.0	35.0	15.0	-60.0	-40.0
FORECAST MADE FROM 102000Z DATA	.0	35.0	30.0	5.0	-70.0	-25.0
FORECAST MADE FROM 102006Z DATA	15.0	30.0	10.0	-10.0	-25.0	-15.0
FORECAST MADE FROM 102012Z DATA	30.0	25.0	-5.0	-20.0	-20.0	
FORECAST MADE FROM 102018Z DATA	20.0	-5.0	-25.0	-40.0	-5.0	
FORECAST MADE FROM 102100Z DATA	15.0	-10.0	-35.0	-35.0	-15.0	
FORECAST MADE FROM 102106Z DATA	.0	-20.0	-35.0	-35.0	-20.0	
FORECAST MADE FROM 102112Z DATA	-5.0	-25.0	-25.0	-25.0		
FORECAST MADE FROM 102118Z DATA	-5.0	-20.0	15.0	-10.0		
FORECAST MADE FROM 102200Z DATA	-10.0	-30.0	-5.0			
FORECAST MADE FROM 102206Z DATA	-15.0	-15.0	-10.0			
FORECAST MADE FROM 102212Z DATA	-60.0	-15.0				
FORECAST MADE FROM 102218Z DATA	-25.0	-15.0				
FORECAST MADE FROM 102300Z DATA						
FORECAST MADE FROM 102306Z DATA						

SUMMARY: STORM JOAN

ERRORS (KTS)	-3.2	-5.4	-6.7	-2.3	-14.3	-23.3
MEAN ABSOLUTE ERROR (KTS)	8.2	11.5	13.5	16.4	19.0	31.1
STANDARD ERROR (KTS)	12.3	13.5	15.9	15.3	20.1	28.2
NUMBER OF CASES	45	45	45	43	40	36

Table 5b, continued.

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FOR STORM ISAAC

	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 093018Z DATA	.0	.0				
FORECAST MADE FROM 100100Z DATA						
FORECAST MADE FROM 100106Z DATA						

SUMMARY: STORM ISAAC

MEAN ERRORS (KTS)	.0	.0	.0	.0	.0	.0
MEAN ABSOLUTE ERROR (KTS)	.0	.0	.0	.0	.0	.0
STANDARD ERROR (KTS)	.0	.0	.0	.0	.0	.0
NUMBER OF CASES	1	1	3	3	3	3

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FOR STORM KEITH

	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 112000Z DATA	-5.0	-10.0	-20.0	-15.0	-25.0	-25.0
FORECAST MADE FROM 112006Z DATA	-5.0	-10.0	-20.0	-15.0	-25.0	-25.0
FORECAST MADE FROM 112012Z DATA	.0	-10.0	-5.0	10.0	10.0	10.0
FORECAST MADE FROM 112100Z DATA	-5.0	-10.0	-5.0	10.0	10.0	15.0
FORECAST MADE FROM 112106Z DATA	-5.0	-5.0	.0	.0	.0	.0
FORECAST MADE FROM 112112Z DATA	-5.0	-5.0	.0	.0	20.0	-15.0
FORECAST MADE FROM 112118Z DATA	-5.0	.0	.0	.0	15.0	
FORECAST MADE FROM 112200Z DATA	.0	.0	.0	20.0	-15.0	
FORECAST MADE FROM 112206Z DATA	.0	.0	.0	10.0	-25.0	
FORECAST MADE FROM 112212Z DATA	.0	.0	-10.0	-15.0	-15.0	
FORECAST MADE FROM 112218Z DATA	.0	.0	-5.0	-10.0		
FORECAST MADE FROM 112300Z DATA	.0	10.0	-5.0	-15.0		
FORECAST MADE FROM 112306Z DATA	.0	15.0	.0			
FORECAST MADE FROM 112312Z DATA	15.0	-5.0	-15.0			
FORECAST MADE FROM 112318Z DATA	5.0	-10.0				
FORECAST MADE FROM 112400Z DATA	-5.0	-15.0				
FORECAST MADE FROM 112406Z DATA						
FORECAST MADE FROM 112412Z DATA						

SUMMARY: STORM KEITH

MEAN ERRORS (KTS)	-.6	-3.4	-2.5	.8	-2.0	-4.2
MEAN ABSOLUTE ERROR (KTS)	3.8	6.6	5.4	8.3	11.0	14.2
STANDARD ERROR (KTS)	5.4	7.9	8.3	10.8	14.2	17.2
NUMBER OF CASES	15	15	14	12	10	5

LEGEND FOR TABLE 6

OBSERVATIONAL UNIT

Reconnaissance

AF = Air Force

NOAA = National Oceanographic and Atmospheric Administration

Satellite

GOES-7 = Geostationary Operational Environmental Satellite
DMSP-6 = Defense Meteorological Satellite Program (AF)
NOAA-9 = NOAA Polar Orbiting Satellite

Radar

National Weather Service Radar:

BRO-R = Brownsville, TX.
SIL-R = Slidell, LA.
BTR-R = Baton Rouge, LA.
MOB-R = Mobile, AL.
NPA-R = Pensacola, FL.
TBW-R = Tampa, FL.
DAB-R = Daytona Beach, FL.
AYS-R = Waycross, GA.
CHS-R = Charleston, SC.

RESOLUTION

Reconnaissance

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

Satellite

Classification confidence*, location and confidence**, visable 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 = classificition confidence 2, location confidence 5, infrared picture with 8 kilometer resolution.)

Table 6. Center Fix positions and intensity evaluations for 1988 North Atlantic Tropical Cyclones.

CENTER FIXES

TROPICAL STORM ALBERTO 5-8 AUGUST 1988

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	5	1800	32.1	77.5									GOES 7	-,3 VIS 1	
02	6	0000	32.8	76.3									GOES 7	-,5 VIS 1	
03	6	1700	36.9	73.8									GOES 7	-,3 VIS 1	
04	6	2100	37.4	73.5	25								GOES 7	-,3 VIS 2	
05	7	0000	38.0	73.0	25								GOES 7	2,5 IR 1	
06	7	0530	39.1	71.7	30		1009						GOES 7	2,5 IR 8	
07	7	1200	41.2	69.3	35		1005						GOES 7	2,5 VIS 1	
08	7	1320	41.3	68.6	45		1000						DMSP 6		
09	7	1800	42.9	67.4	35		1005						GOES 7	2,5 VIS 1	
10	8	0000	45.1	65.1	35		1005						GOES 7	2,5 VIS 1	

CENTER FIXES

TROPICAL STORM BERYL 8-10 AUGUST 1988

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
1	8	0000	30.4	90.0	25		987						GOES 7	2,3 VIS 1	
2	8	0600	30.1	89.8									GOES 7	-,3 IR 8	
3	8	1200	29.6	89.7	25								GOES 7	2,3 IR 8	
4	8	1530	29.3	88.6								psbl center	NPA-R		
5	8	1630	29.5	88.8								psbl center	NPA-R		
6	8	1700	29.6	88.8								center fair	MOB-R		
7	8	1730	29.6	88.9								center poor	MOB-R		
8	8	1730	29.4	88.8								psbl center	NPA-R		
9	8	1800	29.7	88.9	35		1005						GOES 7	2,3 VIS 1	
10	8	1803	29.7	88.9								center good	MOB-R		
11	8	1830	29,6	88.8								psbl center	NPA-R		
12	8	1833	29.4	88.8								center good	MOB-R		
13	8	1901	27.4	88.9								center good	MOB-R		
14	8	1932	29.6	89.0								center good	MOB-R		
15	8	2002	29.8	89.0								center good	GOES 6	2,2 VIS 1	
16	8	2030	29.7	88.9								psbl center	NPA-R		
17	8	2033	29.6	89.0								center fair	MOB-R		
18	8	2035	29.4	89.9							50	center fair	SIL-R		
19	8	2102	29.6	89.1								center poor	MOB-R		
20	8	2132	29.3	89.1								center poor	MOB-R		
21	8	2135	29.6	89.1							40	center fair	SIL-R		
22	8	2201	29.3	89.1								center poor	MOB-R		
23	8	2232	29.3	89.1								center poor	MOB-R		
24	8	2233	29.6	89.1							40	center fair	SIL-R		
25	8	2301	29.3	89.1								center poor	MOB-R		
26	8	2325	29.4	89.1								center poor	MOB-R		
27	9	0000	29.5	89.1	35		1005						GOES 7	2,3 VIS 1	
28	9	0028	29.5	89.0								center poor	MOB-R		
29	9	0033	29.6	89.0								center poor	SIL-R		
30	9	0058	29.6	89.1								center poor	MOB-R		

CENTER FIXES

TROPICAL STORM BERYL (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	EYE C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
61	9	1505	30.0	90.3					12	psbl center	BTR-R		
62	9	1525	30.2	90.7					30	psbl center	LCH-R		
63	9	1526	30.0	90.7					12	psbl center	BTR-R		
64	9	1533	27.9	90.6					10	center fair	SIL-R		
65	9	1600	30.1	90.9					30	psbl center	LCH-R		
66	9	1602	29.9	90.6					06	center fair	SIL-R		
67	9	1608	30.1	90.8					12	psbl center	BTR-R		
68	9	1625	30.1	90.0					25	psbl center	LCH-R		
69	9	1630	29.9	90.6					06	center fair	SIL-R		
70	9	1630	30.1	90.8					20	psbl center	BTR-R		
71	9	1703	29.9	90.6					05	center fair	SIL-R		
72	9	1706	30.1	90.8					06	center good	BTR-R		
73	9	1725	30.1	91.2					30	psbl center	LCH-R		
74	9	1727	30.1	90.9					10	center good	BTR-R		
75	9	1733	29.9	90.7						center fair	SIL-R		
76	9	1800	30.2	90.9							GOES 7	-,3 VIS 1	
77	9	1800	30.1	91.3						psbl center	LCH-R		
78	9	1800	30.1	90.8						center poor	SIL-R		
79	9	1806	30.1	90.7					10	psbl center	BTR-R		
80	9	1825	30.1	91.3						psbl center	LCH-R		
81	9	1827	30.1	90.9					07	psbl center	BTR-R		
82	9	1833	30.1	90.8						center poor	SIL-R		
83	9	1901	30.1	90.8						center fair	SIL-R		
84	9	1903	30.1	90.9					07	psbl center	BTR-R		
85	9	1925	30.1	91.4						psbl center	LCH-R		
86	9	1927	30.1	91.0					07	psbl center	BTR-R		
87	9	1933	30.1	90.8						center fair	SIL-R		
88	9	2001	30.3	90.8						center fair	SIL-R		
89	9	2005	30.2	91.1						psbl center	BTR-R		
90	9	2025	30.3	91.2						psbl center	LCH-R		

CENTER FIXES

TROPICAL STORM BERYL (continued)

FIX NO.	DATE	TIME (GMT)			MAX WIND (KT) SFC.	MAX WIND (KT) FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	TEMP. C IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
31	9	0128	29.6	89.1								center poor	MOB-R		
32	9	0133	29.4	88.8								center poor	SIL-R		
33	9	0201	29.6	89.1								center poor	MOB-R		
34	9	0204	29.4	88.9								center poor	SIL-R		
35	9	0228	29.6	89.1								center poor	MOB-R		
36	9	0234	29.6	89.0							35	center poor	SIL-R		
37	9	0305	29.6	89.1								center poor	MOB-R		
38	9	0307	29.6	89.2								center fair	SIL-R		
39	9	0335	29.6	89.3								center poor	MOB-R		
40	9	0335	29.6	89.2							25	center fair	SIL-R		
41	9	0401	29.6	89.3								center poor	MOB-R		
42	9	0405	29.8	89.3							20	center fair	SIL-R		
43	9	0431	29.6	89.3								center poor	MOB-R		
44	9	0435	29.7	89.7							20	center poor	SIL-R		
45	9	0502	29.8	89.3								center poor	MOB-R		
46	9	0528	29.6	89.7							20	center poor	SIL-R		
47	9	0530	29.5	89.6	45		1000						GOES 7	2,3 IR 8	
48	9	0535	30.0	89.3								center poor	MOB-R		
49	9	0610	29.8	89.5								center poor	MOB-R		
50	9	0628	29.6	89.5							20	center poor	SIL-R		
51	9	0635	29.5	89.5								center poor	MOB-R		
52	9	0728	29.6	89.6							20	center fair	SIL-R		
53	9	0735	30.0	89.6								center poor	MOB-R		
54	9	0802	29.7	89.6							18	center fair	SIL-R		
55	9	0930	29.8	89.7							18	center poor	SIL-R		
56	9	1200	30.0	90.1									GOES 7	-,3 VIS 1	
57	9	1328	30.1	90.2							30	center fair	SIL-R		
58	9	1428	30.1	90.4							30	center fair	SIL-R		
59	9	1428	30.0	90.7							10	center fair	BTR-R		
60	9	1502	30.1	90.6							30	psbl center	LCH-R		

CENTER FIXES

TROPICAL STORM BERYL (continued)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C IN	TEMP. C OUT	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
91	9	2028	30.3	90.1								psbl center	BTR-R		
92	9	2033	30.3	91.0								center fair	SIL-R		
93	9	2100	30.4	91.1								center fair	SIL-R		
94	9	2108	30.4	91.1								psbl center	BTR-R		
95	9	2128	3045	91.1								center fair	SIL-R		
96	9	2130	30.4	91.1								psbl center	BTR-R		
97	9	2206	30.5	91.2								psbl center	BTR-R		
98	9	2228	30.5	91.3								psbl center	BTR-R		
99	9	2305	30.5	91.4								psbl center	BTR-R		
100	10	0000	30.4	91.6									GOES 7	-,3 IR 8	
101	10	0003	30.3	91.4									DMSP		
102	10	0600	30.8	92.3									GOES 7	-,5 IR 8	
103	10	1200	31.2	92.6	25								GOES 7	2,5 IR 8	
104	10	1544	31.5	93.3									DMSP		
105	10	1800	31.6	93.1	25								GOES 7	1,3 VIS 1	

CENTER FIXES

TROPICAL STORM CHRIS 21-29 AUGUST 1988

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	21	0600	15.3	41.0									GOES 7	-,5 IR 8	
02	21	1200	15.1	43.8	25								GOES 7	2,5 VIS 1	
03	21	1206	15.3	43.3	25								DMSP		
04	21	1800	14.3	45.7	25								GOES 7	2,5 VIS 1	
05	21	2143	16.4	46.3	25								DMSP		
06	22	0000	15.7	46.6	25								GOES 7	2,5 IR 8	
07	22	0600	14.9	49.7	25								GOES 7	2,5 IR 8	
08	22	1230	15.2	52.7	35		1005						GOES 7	2,5 VIS 1	
09	22	1328	15.8	51.7	25								DMSP		
10	22	1800	15.1	54.0	30		1009						GOES 7	2,2 VIS 1	
11	22	2122	15.4	54.8	25								DMSP		
12	23	0000	15.6	54.7	30		1009						GOES 7	2,5 IR 8	
13	23	0600	14.9	57.8	30		1009						GOES 7	2,5 IR 8	
14	23	1200	15.1	58.9	35		1005						GOES 7	2,5 VIS 1	
15	23	1308	16.6	60.7	25								DMSP		
16	23	1800	16.3	61.0	35		1005						GOES 7	2,5 VIS 1	
17	24	0000	16.7	62.2	35		1005						GOES 7	2,5 IR 8	
18	24	0600	17.1	64.5	35		1005						GOES 7	2,5 IR 8	
19	24	1200	17.0	65.2	35		1005						GOES 7	2,5 VIS 1	
20	24	1430	16.9	66.8	25								DMSP		
21	24	1800	17.7	66.5	35		1005						GOES 7	2,5 VIS 1	
22	25	0000	17.6	66.9	35		1005						GOES 7	2,5 IR 8	
23	25	0600	17.8	69.3	45		1000						GOES 7	2,5 IR 8	
24	25	1200	18.6	70.2	45		1000						GOES 7	2,3 VIS 1	
25	25	1410	18.5	71.0	25								DMSP		
26	25	1800	19.3	70.6	40		1003						GOES 7	2,5 VIS 1	
27	26	0000	19.2	72.7	35		1005						GOES 7	2,5 IR 8	
28	26	0008	19.8	72.1	25								DMSP		
29	26	0600	20.1	74.1	25								GOES 7	-,5 IR 8	
30	26	1200	21.2	75.1	35		1005						GOES 7	2,6 VIS 1	

CENTER FIXES

TROPICAL STORM CHRIS (continued)

FIX NO.	DATE	TIME (UTC)			MAX WIND (KT) SFC.	MAX WIND (KT) FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)		EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
31	26	1350	21.3	74.5	25							DMSP		
32	26	1200	22.5	75.3	35		1005					GOES 7	2,5 VIS 1	
33	26	1800	22.5	75.3	35		1005					GOES 7	2,5 VIS 1	
34	26	2356	22.5	75.0	25							DMSP		
35	27	0000	22.7	76.1	35		1005					GOES 7	2,5 IR 8	
36	27	0600	23.2	77.1	35		1005					GOES 7	2,5 IR 8	
37	27	1200	24.3	77.0	45		1000					GOES 7	2,5 VIS 8	
38	27	1330	25.1	76.0	35		1005					DMSP		
39	27	1800	25.5	78.8	45		1000					GOES 7	2,5 VIS 1	
40	27	2343	27.3	77.4	35		1005					DMSP		
41	28	0000	26.2	79.6	35		1005					GOES 7	2,5 IR 8	
42	28	0439	29.1	80.4							psbl center	DAB-R		
43	28	0521	29.0	80.3							psbl center	DAB-R		
44	28	0556	29.0	80.3							center good	DAB-R		
45	28	0600	28.8	79.7	35		1005					GOES 7	2,2 IR 8	
46	28	0610	29.0	80.3							center good	DAB-R		
47	28	0622	29.1	80.2							center good	DAB-R		
48	28	0625	28.3	80.3	77	62	1008		23	23		AF	2/30	457M
49	28	0709	29.1	80.5							center poor	DAB-R		
50	28	0737	29.0	80.6							center poor	DAB-R		
51	28	0844	29.1	80.3							center poor	DAB-R		
52	28	0932	29.2	80.4							center poor	DAB-R		
53	28	1029	30.1	80.4							center poor	DAB-R		
54	28	1108	30.1	80.4							center poor	DAB-R		
55	28	1139	30.2	80.5							center poor	DAB-R		
56	28	1200	30.8	80.7	45		1000					GOES 7	2,3 VIS 1	
57	28	1203	30.5	80.4							center poor	DAB-R		
58	28	1231	30.5	80.5							center fair	DAB-R		
59	28	1244	30.3	80.5							center poor	DAB-R		
60	28	1304	30.4	80.4							center poor	DAB-R		

CENTER FIXES

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	POSITION LON.			(MB)			EYE C=CIR E=EL	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
61	28	1425	31.8	80.9	60	64	1005	23	23			NOAA2	1/3	457M
62	28	1425	32.0	80.8						10	center fair	AYS-R		
63	28	1452	31.7	80.9	45							DMSP		
64	28	1530	31.8	81.1						10	center poor	CHS-R		
65	28	1600	32.2	81.0						25	center poor	CHS-R		
66	28	1630	32.3	81.1								GOES 7	-,3 VIS 1	
67	28	1705	32.6	81.1						25	center poor	CHS-R		
68	28	1730	32.7	81.1							center poor	CHS-R		
69	28	1800	32.8	81.1						25	center poor	CHS-R		
70	28	2331	33.6	81.4								DMSP		

CENTER FIXES

HURRICANE DEBBY 1-5 SEPTEMBER 1988

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	01	0000	20.0	91.3	25								GOES 7	2,5 IR 4	
02	01	0600	20.2	92.2	25								GOES 7	2,5 IR 8	
03	01	1200	20.0	93.0	30		1009						GOES 7	2,5 IR 8	
04	01	1800	20.2	93.3	35		1005						GOES 7	2,5 VIS 1	
05	01	2251	20.7	94.3	25	24	1003		25	22			AF	10/6	457M
06	02	0000	20.3	94.6	35		1005						GOES 7	2,3 IR 4	
07	02	0600	21.0	95.6	35		1005						GOES 7	2,5 IR 8	
08	02	1106	20.8	94.7	35	35	998		23	24			AF	5/5	457M
09	02	1200	20.6	96.2	55		994						GOES 7	2,5 IR 2	
10	02	1321	20.7	96.1	25	30	997		23	25	C10	ragged	AF	3/4	457M
11	02	1435	20.4	96.6									DMSP 5		
12	02	1555	20.8	96.5	35	39	995		24	24	E15	closed	AF	3/4	457M
13	02	1800	21.0	97.0	40		987						GOES 7	2,5 VIS 1	
14	03	0023	20.5	97.6									DMSP 5	overland	

CENTER FIXES

TROPICAL STORM ERNESTO SEPTEMBER 2-5 1988

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION
01	02	1800	31.8	61.5	30		1009						GOES 7	2,3 VIS 1
02	03	0000	32.6	60.8	30		1009						GOES 7	2,5 IR 4
03	03	0600	33.4	59.1	30		1009						GOES 7	2,5 IR 8
04	03	1200	34.3	56.2	35		1005						GOES 7	2,5 VIS 1
05	03	1235	34.8	54.5	25								DMSP 6	
06	03	1800	35.2	53.1	35		1005						GOES 7	2,5 VIS 1
07	03	2340	35.1	49.7	25								DMSP 6	
08	04	0000	36.1	49.4	45		1000						GOES 7	1,5 IR 8
09	04	0600	36.7	43.9	45		1000						GOES 7	2,3 IR 8
10	04	1200	38.4	39.2	55		994						GOES 7	2,3 VIS 1
11	04	1234	38.8	39.0	35		1005						DMSP 6	
12	04	1748	40.0	35.7	35		1005						NOAA 6	
13	04	1800	40.3	35.2	55		994						GOES 7	2,3 VIS 1
14	04	2204	42.0	31.9	45		1000						DMSP 6	
15	04	2333	45.1	30.2	45		1000						DMSP 6	
16	05	0000	43.1	29.6	55		994						GOES 7	2,5 IR 8

CENTER FIXES

UNNAMED TROPICAL STORM 7-9 SEPTEMBER 1988

DATE	TIME (UTC)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	TEMP. C IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
07	1200	11.8	19.4									GOES 7	-,3 VIS 8	
07	1800	12.5	20.0	25								GOES 7	2,3 VIS 2	
08	0000	14.5	20.2	25								GOES 7	2,5 IR 8	
08	0600	15.1	19.6	30		1009						GOES 7	2,5 IR 8	
08	1114	17.8	20.1	25								DMSP		
08	1200	17.3	20.1	30		1009						GOES 7	2,3 VIS 1	
08	1800	19.6	20.4	35		1005						GOES 7	2,3 VIS 1	
08	1932	19.4	20.3	35		1005						DMSP		
09	0000	21.1	19.5	45		1000						GOES 7	2,5 IR 8	
09	0600	22.6	21.5	45		1000						GOES 7	2,5 IR 8	
09	1055	23.0	22.2	25								DMSP		
09	1200	23.5	22.1	45		1000						GOES 7	2,1 VIS 1	
09	1800	24.7	22.4	30		1009						GOES 7	2,1 VIS 1	
09	2102	24.8	22.3	25								DMSP		

CENTER FIXES

HURRICANE GILBERT 8-17 SEPTEMBER

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	TEMP. C IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
													GOES 7	2,5 VIS 1	
1	8	1800	12.0	54.0	25								GOES 7	2,5 IR 8	
2	9	0000	11.6	54.5	25								GOES 7	2,5 IR 8	
3	9	0600	12.2	55.8	25								GOES 7	2,5 VIS 1	
4	9	1200	13.7	58.9	30		1009						DMSP		
5	9	1236	15.0	56.6	25								GOES 7	2,5 VIS 1	
6	9	1800	15.2	60.8	30		1009						AF	2/15	457M
7	9	2210	15.2	60.2	40	40	1003		23	23			DMSP		
8	9	2244	14.6	61.5	25								GOES 7	2,5 IR 8	
9	10	0000	14.5	61.3	35		1005						AF	5/5	457M
10	10	0403	14.7	62.8			1003		27	28			GOES 7	2,5 IR 8	
11	10	0600	13.9	62.1	40		1003						DMSP		
12	10	0958	16.2	63.9	25								GOES 7	2,3 VIS 1	
13	10	1200	15.2	63.8	45		1000						DMSP		
14	10	1358	15.5	64.9	35		1005						GOES 7	2,3 VIS 1	
15	10	1800	15.6	65.5	55		994						AF	2/5	457M
16	10	1807	15.7	65.4	55		993		23	25			DMSP		
17	10	2005	1615	65.6	35		1005						AF	2/10	457M
18	10	2056	16.2	65.9	52		988				C20	open s	AF	3/10	457M
19	10	2346	15.9	66.7	45	55	984		23	25	C12	closed wall	GOES 7	2,3 IR 8	
20	11	0000	15.8	66.9	65		987						DMSP		
21	11	0238	16.2	67.2	55		994						AF	4/4	700MB
22	11	0554	16.2	68.0		70	985	2948	10	13	E03/50/25	open nw	GOES 7	2,3 IR 8	
23	11	0600	16.1	68.1	65		987						AF	4/4	700MB
24	11	0749	16.7	68.6		79	980	2923	12	14	C30	open nw	DMSP		
25	11	0851	16.6	68.7	55		994						GOES 7	2,3 IR 8	
26	11	0900	16.5	69.0	77		979						AF		700MB
27	11	0941	16.1	68.8		55	980	2924	12	15	C30	closed wall	DMSP		
28	11	1116	16.0	69.3	55		994						AF	2/2	700MB
29	11	1125	16.1	69.4	70	103	977	2901	14	18	C20	closed wall	GOES 7	1,1 VIS 1	
30	11	1200	16.1	69.4	90		970								

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C IN	OUT	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
31	11	1338	16.9	69.9	55		994						DMSP		
32	11	1642	16.9	70.5	90	78	971	2855	10	17	E15/65/45	closed wall	NOAA 3	3/4	700MI
33	11	1718	16.1	70.6	65		972	2853	10	15			AF	5/4	700MI
34	11	1800	16.2	70.7	90		970						GOES	1,1 VIS 1	
35	11	1836	16.2	70.8	105		970	2822	10	17	C50	comma-shaped	NOAA 3	5/5	700MI
36	11	1949	16.3	70.8	105	108	967	2810	10	17	C50	closed wall	NOAA 3	5/7	700MI
37	11	1953	16.4	70.9		85	967	2815	13	16	C40	closed wall	AF	5/10	700MI
38	11	1954	16.4	70.8	55		994						NOAA		
39	11	2219	16.6	71.4		60	966	2796	13	14	C40	closed wall	AF	5/10	700MI
40	12	0000	16.8	72.0	90		970						GOES 7	2,1 IR 8	
41	12	0001	16.9	71.6	90		970						DMSP		
42	12	0010	16.8	72.0		54	965	2782	10	15	C40	closed	AF	5/10	700MI
43	12	0219	17.1	72.5	90		970						DMSP		
44	12	0506	17.2	73.3		110	963	2773	15	17	C35	closed wall	AF	3/10	700MI
45	12	0649	17.4	73.8		60	964	2771	10	17	C35	closed wall	AF	3/10	700MI
46	12	0826	17.6	74.4		100	964	2774	11	18	E120/40/20	closed wall	AF	3/10	700MI
47	12	0840	17.7	74.6	90		970						NOAA		
48	12	1019	17.6	74.9		107	961	2767	11	17	C35	closed wall	AF	3/10	700MI
49	12	1104	17.7	75.2	90		970						DMSP		
50	12	1148	17.6	75.3	40	72	960	2765	10	19	C30	closed wall	AF	3/10	700MI
51	12	1200	17.7	75.9	102		960						GOES 7	1,1 VIS 1	
52	12	1500	17.8	76.2	115		948						GOES 7	2,1 VIS 1	
53	12	1500	17.6	76.2	115		948						DMSP		
54	12	1740	17.8	76.6		81		2792	10	17	C15	closed wall	AF	1/1	700MI
55	12	1800	18.0	76.8	115		948						GOES 7	2,1 IR 1	
56	12	2125	18.3	77.4	115		948						NOAA		
57	12	2245	18.3	78.0	65	86	962	2762					AF		700MI
58	12	2348	18.4	78.3	115		948						DMSP	overland	
59	12	2350	18.2	78.3		61	964	2781	10	16	C12	closed wall	AF	2/2	700MI
60	13	0000	18.3	78.5	115		948						GOES 7	2,1 IR 8	

CENTER FIXES

HURRICANE GILBERT (continued)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	TEMP. C IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
							948						DMSP		
61	13	0340	18.5	79.2	115		955	2700	11	19	C20	closed wall	AF	5/5	700MB
62	13	0453	18.4	79.4		104	935						GOES 7	1/1 IR 8	
63	13	0600	18.4	79.8	127		949	2647	14	21	C18	closed wall	AF	4/4	700MB
64	13	0613	18.5	79.8		80	943	2595	12	22	E14/20/15	closed wall	AF	5/5	700MB
65	13	0743	18.6	80.1		93	935						GOES 7	1,1 IR 8	
66	13	0900	18.7	80.5	127		938	2582	15	23	C20	closed wall	AF	8/5	700MB
67	13	0912	18.7	80.5		73	948						NOAA		
68	13	1010	18.7	80.5	115		948						DMSP		
69	13	1051	18.7	80.8	115		934	2521	16	23	E04/15/10	closed wall	AF	2/5	700MB
70	13	1102	18.7	80.9		90	921						GOES 7	1,1 IR 8	
71	13	1200	18.9	81.1	140		932	2496	12	23	C14	closed wall	AF	2/5	700MB
72	13	1233	18.8	81.2		90	922	2427	13	26	C13	closed wall	AF	2/5	700MB
73	13	1415	19.0	81.6	75	100	921						DMSP		
74	13	1440	19.0	81.8	140		921						GOES 7	1,1 IR 8	
75	13	1500	19.1	81.7	140		918	2396	12	24	C11	closed wall	AF	2/5	700MB
76	13	1537	19.1	81.9	75	70	903	2302	13	22	C08	closed wall	NOAA 3	2/3	700MB
77	13	1757	19.3	82.5	120	160	906						GOES 7	1,1 VIS 1	
78	13	1800	19.4	82.4	155		900	2222	16	25	C09	closed wall	NOAA 3	4/4	700MB
79	13	1913	19.4	82.8	100	168	893	2159	16	23	C08	closed wall	NOAA 3	3/3	700MB
80	13	2034	19.4	83.1	130	150	906						GOES 7	1,1 VIS 1	
81	13	2100	19.5	83.2	155		921						NOAA		850MB
82	13	2114	19.5	83.4	140		888	2118	14	26	C08	closed wall	NOAA 3	4/3	700MB
83	13	2152	19.5	83.3	150	162	890	2135	18	27	C08	closed wall	NOAA 3	4/4	700MB
84	13	2323	19.6	83.6	140	142	921						DMSP		
85	13	2336	19.6	83.8	155		890						GOES 7	1,1 IR 8	
86	14	0000	19.7	83.8	170		890						GOES 7	1,1 IR 8	
87	14	0300	19.8	84.6	170		921						DMSP		
88	14	0320	20.0	84.8	155		890						GOES 7	1,1 IR 8	
89	14	0600	19.9	85.4	170		894	2170	16	24	C08	closed wall	NOAA 3	2/3	700MB
90	14	0610	19.9	85.3		145									

CENTER FIXES

HURRICANE GILBERT (continued)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
91	14	1731	20.1	85.6		145		2160	17	24	C08	closed wall	NOAA 2	2/2	700MB
92	14	0900	20.1	86.0	170		890						GOES 7	1,1 IR 8	
93	14	0906	20.1	85.8				2140	16	24	C08	closed wall	NOAA 2	2/2	700MB
94	14	0939	20.2	86.1	155		906						NOAA		
95	14	1012	20.2	86.1		143	890	2136					NOAA 2		700MB
96	14	1107	20.4	86.2		132	891	2149	20	22	C08	closed wall	NOAA 3	8/3	700MB
97	14	1200	20.5	86.6	155		906						GOES 7	2,1 IR 8	
98	14	1221	20.5	86.6	155		906						DMSP		
99	14	1420	20.6	87.3	140		921						DMSP		
100	14	1800	20.9	87.8	overland								GOES 7	-,3 VIS 1	
101	14	2103	21.2	88.7	140		921						DMSP		
102	15	0000	21.5	89.4	155		906						GOES 7	2,1 IR 8	
103	15	0009	21.5	89.4		92	944	2596	14	14	C08-25	closed	AF	1/21	700MB
104	15	0105	21.4	89.5	127		935						DMSP		
105	15	0151	21.3	89.6		92	948				C12	closed	AF	1/2	700MB
106	15	0300	21.4	89.9	155		906						GOES 7	2,3 IR 8	
107	15	0301	21.4	89.9		92	947	2628	14	15	C12	closed	AF	1/2	700MB
108	15	0301	21.5	90.0	127		935						DMSP		
109	15	0435	21.5	90.3		58	949	2643	13	16		open ne-se	AF	1/2	700MB
110	15	0547	21.5	90.6		69	949	2653	12	15		open ne	AF	4/4	700MB
111	15	0600	21.5	90.7	102		960						GOES 7	2,3 IR 8	
112	15	0730	21.6	90.8		49	951	2665	15	15	C04-12	closed wall	AF	4/4	700MB
113	15	0843	21.7	91.1		76	950	2664	13	15	C08	closed wall	AF	4/3	700MB
114	15	0900	21.7	91.2	102		960						GOES 7	2,3 IR 8	
115	15	1111	21.8	91.4		67	950	2666	14	16	C10	closed wall	AF	4/4	700MB
116	15	1200	22.0	92.0	102		960						GOES 7	2,3 IR 8	
117	15	1208	21.9	91.6	127		935						DMSP		
118	15	1224	21.8	91.8	70	83	951	990	19	21	C25-80	closed wall	NOAA 3	2/3	850MB
119	15	1346	21.8	91.9	71	85		990					NOAA 3		850MB
120	15	1402	21.9	91.9	65	73	950	2670	13	15	E03/11/08	open n-ne	AF	2/4	700MB

CENTER FIXES

HURRICANE GILBERT (continued)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.			MIN. PRES. (MB)	MIN. 700MB HT.(M)			EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
121	15	1500	22.1	92.2	102		960						GOES 7	2,1 IR 8	
122	15	1542	22.0	92.0	90		970						DMSP		
123	15	1607	22.2	92.5	76	88	953	1005	18	22	CO-70/20	closed wall	NOAA 3	3/3	850MB
124	15	1633	22.1	92.6	80	78	953	2687	13	15	C10	closed wall	AF	2/4	700MB
125	15	1751	22.2	92.7		85	952	2680	14	14	C15	open ne-s	AF	2/4	700MB
126	15	1800	22.4	92.8	102		960						GOES 7	2,1 VIS 1	
127	15	2004	22.1	93.1		92	948	2655	12	15	E19/15/10	open ne	AF	2/6	700MB
128	15	2100	22.5	93.3	102		960						GOES 7	2,3 VIS 1	
129	15	2234	22.5	93.3	90		970						DMSP		
130	16	0000	22.6	93.7	110		954						GOES 7	2,3 IR 8	
131	16	0028	22.5	93.8	80	97	949	976	21	24		poorly def.	NOAA 3	2/2	850MB
132	16	0053	22.6	93.9	127		935						DMSP		
133	16	0154	22.6	94.0	80	79	949	984					NOAA 3		850MB
134	16	0300	22.8	94.3	102		960						GOES 7	2,3 IR 8	
135	16	0320	22.8	94.3	80	90	950	991	22	23	E24/55/45	open e-ne	NOAA 3	2/1	850MB
136	16	0422	22.8	94.6	127		935						DMSP		
137	16	0517	22.9	94.7	83	80	950	985	23	24	E22/50/45	open n-ne	NOAA 3	2/2	850MB
138	16	0600	23.0	94.6	102		960						GOES 7	2,1 IR 8	
139	16	0614	23.0	94.8		108	950	995	20	22	C40	closed wall	NOAA 2	1/1	850MB
140	16	0810	23.2	95.0		83	946	2619	12	16	C40	closed wall	AF	3/10	700MB
141	16	0900	23.3	95.3	102		960						GOES 7	2,2 IR 8	
142	16	0958	23.5	95.2		115	946	2615	12	16	C30	closed wall	AF	3/8	700MB
143	16	1142	23.7	95.6		70	948	2631	11	14	C30	closed wall	AF	3/8	700MB
144	16	1200	23.7	95.8	102		960						GOES 7	2,1 IR 8	
145	16	1234	23.1	95.8							50	psbl eye	BRO-R		
146	16	1213	23.6	96.0	127		935						DMSP		
147	16	1243	23.8	96.1		80	949	2640	12	15	C35	closed wall	AF		700MB
148	16	1310	23.6	96.0							45	psbl eye	BRO-R		
149	16	1336	23.6	96.1							36	psbl eye	BRO-R		
150	16	1410	23.6	96.2							36	psbl eye	BRO-R		

CENTER FIXES

HURRICANE GILBERT (continued)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	TEMP. C IN	EYE E=EL	DIA. (N.MI.)	ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
151	16	1415	23.7	96.2		86	948	2633	12	15	C35		closed wall	AF	3/9	700MB
152	16	1425	23.9	96.2							36		eye good	BRO-R		
153	16	1500	23.8	96.4	115		948							GOES 7	2,1 VIS 1	
154	16	1500	23.8	96.3		78	948	2639	12	16	C19		1 wall	AF	5/5	700MB
155	16	1510	23.7	96.3							40		eye good	BRO-R		
156	16	1522	23.6	96.5	102		960							DMSP		
157	16	1603	23.7	96.6							35		eye good	BRO-R		
158	16	1625	23.7	96.7							37		eye good	BRO-R		
159	16	1700	23.7	96.7							34		eye good	BRO-R		
160	16	1730	23.8	96.8							35		eye good	BRO-R		
161	16	1800	23.9	96.9							35		eye good	BRO-R		
162	16	1800	24.0	97.0	115		948							GOES 7	2,2 IR 8	
163	16	1825	23.9	97.0							32		eye good	BRO-R		
164	16	1851	24.0	97.1	100	115	954	1010	17	22	C30		closed	NOAA 2	3/2	850MB
165	16	1900	24.0	97.1							34		eye good	BRO-R		
166	16	1930	24.1	97.2							32		eye good	BRO-R		
167	16	1932	24.0	97.2		85	955	1015	17	23	C25		closed	NOAA 2	2/3	850MB
168	16	2002	24.2	93.3							30		eye good	BRO-R6		
169	16	2030	24.2	97.3							31		eye good	BRO-R		
170	16	2100	24.2	97.5							29		eye good	BRO-R		
171	16	2100	24.1	97.6	115		948							GOES 7	2,3 VIS 1	
172	16	2114	24.1	97.5		97	955	1022	21	22	C30		closed	NOAA 2	3/3	850MB
173	16	2125	24.2	97.5							28		eye good	BRO-R		
174	16	2202	24.3	97.7							22		eye good	BRO-R		
175	16	2223	24.3	97.5	101		960							NOAA		
176	16	2225	24.3	97.7							22		eye good	BRO-R		
177	16	2300	24.3	97.9							23		eye good	BRO-R		
178	16	2330	24.3	98.0							22		eye good	BRO-R		
179	17	0000	24.5	98.1	102		960							GOES 7	2,3 IR 8	
180	17	0003	24.3	98.0							22		eye good			

CENTER FIXES

HURRICANE GILBERT (continued)

	DATE	TIME (GMT)	POSITION LAT.	LON.		MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
181	17	0030	24.3	98.1						21	eye good	BRO-R		
182	17	0040	24.2	98.0	overland							DMSP		
183	17	0103	24.4	98.2						20	eye good	BRO-R		
184	17	0125	24.4	98.3						20	eye good	BRO-R		
185	17	0200	24.4	98.4						18	eye good	BRO-R		
186	17	0225	24.5	98.4						17	eye fair	BRO-R		
187	17	0300	24.5	98.6	overland							GOES 7	-,3 IR 4	
188	17	0308	24.5	98.5						10	eye good	BRO-R		
189	17	0403	24.8	98.6	overland							DMSP		
190	17	0600	24.7	99.0	overland							GOES 7	-,2 IR 8	
191	17	1200	25.0	100.4	overland							GOES 7	-,- IR 1	

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION
01	17	1200	13.0	22.7	25									
02	17	1800	12.7	23.6	25								GOES 7	2,5 VIS 1
03	18	0000	12.8	25.0	25								GOES 7	2,5 VIS 1
04	18	0600	12.5	26.2	25								GOES 7	2,5 IR 4
05	18	1119	12.3	27.7	25								GOES 7	5,2 IR 8
06	18	1200	12.1	27.0	25								DMSP 5	
07	18	1800	12.3	27.7	25								GOES 7	2,5 VIS 1
08	19	0000	12.5	28.6	25								GOES 7	2,5 VIS 1
09	19	0000	11.6	27.8	25								GOES 7	2,3 IR 8
10	19	0600	13.0	29.8	25								DMSP 6	
11	19	1059	13.3	30.1	30								GOES 7	2,3 IR 8
12	19	1200	13.3	30.7	30		1009						DMSP 5	
13	19	1800	13.5	31.6	30		1009						GOES 7	2,3 VIS 1
14	20	0000	13.3	32.7	30		1009						GOES 7	2,5 VIS 1
15	20	0600	13.3	33.8	35		1005						GOES 7	2,5 IR 8
16	20	1200	13.0	34.7	35		1005						GOES 7	2,5 IR 8
17	20	1221	12.7	34.4	35		1005						GOES 7	2,3 VIS 1
18	20	1800	12.3	36.7	45		1000						DMSP 6	
19	20	2027	12.5	37.1	55		994						GOES 7	2,3 VIS 1
20	21	0000	12.0	37.4	55		994						DMSP 6	
21	21	0331	12.0	37.8	77		979						GOES 7	2,5 IR 8
22	21	0600	12.1	38.5	77		979						GOES 7	2,5 IR 8
23	21	1200	11.1	39.4	77		979						GOES 7	2,5 IR 8
24	21	1201	12.0	39.3	55		994						GOES 7	2.3 VIS 1
25	21	1800	12.4	39.9	77		977						DMSP 6	
26	21	2014	12.9	40.9	55		994						GOES 7	2,1 VIS 1
27	22	0000	12.9	40.9	77		977						DMSP 6	
28	22	0600	13.0	41.7	90		970						GOES 7	1,1 IR 8
29	22	1142	13.3	42.4	65		987						GOES 7	2,5 IR 8
30	22	1200	13.1	42.2	90		970						DMSP 6	
													GOES 7	2,3 VIS 1

CENTER FIXES

HURRICANE HELENE (continued)

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	TEMP. C IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	A A
31	22	1800	13.6	43.1	102		960								
32	22	2144	13.7	43.7	65		987						GOES 7	2,3 VIS 1	
33	23	0000	13.9	44.0	115		948						DMSP		
34	23	0600	14.0	44.9	115		948						GOES 7	1,1 IR 8	
35	23	0847	14.4	45.1	65		987						GOES 7	1,1 IR 8	
36	23	1200	14.6	45.5	115		948						DMSP		
37	23	1303	14.6	45.9	115		948						GOES 7	2,3 VIS 1	
38	23	1800	15.4	46.2	127		935						DMSP		
39	23	1923	15.5	46.2	115		948						GOES 7	2,3 VIS 1	
40	23	2131	15.7	46.6	115		948						NOAA		
41	24	0000	16.0	46.9	115		948						DMSP		
42	24	0144	16.2	47.2	90		970						GOES 7	2,1 IR 8	
43	24	0600	16.6	47.7	102		960						DMSP		
44	24	0834	17.1	47.6	90		970						GOES 7	1,2 IR 8	
45	24	1200	17.4	47.8	102		960						DMSP		
46	24	1243	17.5	48.1	102		960						GOES 7	2,3 IR 8	
47	24	1800	18.1	48.5	102		960						DMSP		
48	25	0000	18.7	48.9	102		960						GOES 7	2,3 VIS 1	
49	25	0600	19.2	49.0	102		960						GOES 7	1,1 IR 8	
50	25	1200	20.0	49.0	90		970						GOES 7	1,1 IR 8	
51	25	1224	20.1	49.2	90		970						GOES 7	2,3 VIS 1	
52	25	1800	20.9	49.1	90		970						DMSP		
53	26	0000	22.1	49.6	90		970						GOES 7	2,3 VIS 1	
54	26	0104	22.2	49.6	102		960						GOES 7	2,5 IR 8	
55	26	0600	22.9	49.4	90		970						DMSP		
56	26	1200	24 5	49.9	77		979						GOES 7	2,5 IR 8	
57	26	1204	24.6	50.1	77		979						GOES 7	2,3 VIS 1	
58	26	1800	26.2	50.6	77		979						DMSP		
59	27	0000	27.6	51.1	77		979						GOES 7	2,3 VIS 1	
60	27	0045	27.5	51.1	77		979						GOES 7	2,5 IR 8	
													DMSP		

CENTER FIXES

HURRICANE HELENE (continued)

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	TEMP. C IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	A A
61	27	0600	28.6	52.0	77		979						GOES 7	2,3 IR 8	
62	27	1144	29.6	52.2	77		979						DMSP		
63	27	1200	29.8	52.0	77		979						GOES 7	1,1 VIS 1	
64	27	1800	30.9	51.9	77		979						GOES 7	1,1 VIS 1	
65	28	0000	31.8	51.7	77		979						GOES 7	2,2 IR 4	
66	28	0206	32.0	51.7	77		979						DMSP		
67	28	0600	32.6	51.1	77		979						GOES 7	2,1 IR 8	
68	28	1124	33.1	50.3	77		979						DMSP		
69	28	1200	33.5	50.3	77		979						GOES 7	1,1 VIS 1	
70	28	1800	34.7	49.6	77		979						GOES 7	1,1 VIS 1	
71	29	0000	36.2	48.5	90		970						GOES 7	2,3 IR 4	
72	29	0146	36.2	48.2	77		979						DMSP		
73	29	0600	37.5	47.0	90		970						GOES 7	2,5 IR 8	
74	29	1104	39.4	44.8	77		979						DMSP		
75	29	1200	40.1	44.2	77		979						GOES 7	1,1 VIS 1	
76	29	1800	42.6	42.2	77		979						GOES 7	1,1 VIS 1	
77	30	0000	47.1	37.9	65		987						GOES 7	2,3 IR 4	
78	30	0127	46.2	37.8	77		979						DMSP		
79	30	0600	50.1	34.3	65		987						GOES 7	2,5 IR 8	
80	30	1200	55.0	30.0	Extratropical								GOES 7	-,5 VIS 1	

CENTER FIXES

TROPICAL STORM ISAAC 28 SEPTEMBER - 1 OCTOBER 1988

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	A(AI
01	28	0600	9.0	43.5									GOES 7	-,5 IR 8	
02	28	1200	8.5	45.0									GOES 7	2,5 VIS 1	
03	28	1306	8.5	43.8	25								DMSP 6		
04	28	1800	8.7	45.7	30		1009						GOES 7	2,5 VIS 1	
05	29	0000	8.6	47.0	35		1005						GOES 7	2,5 IR 4	
06	29	0146	9.6	46.4	25								DMSP 6		
07	29	0600	8.5	48.3	35		1005						GOES 7	2,5 IR 8	
08	29	1200	9.5	50.0	35		1005						GOES 7	2,3 VIS 1	
09	29	1246	9.3	50.1	35		1005						DMSP 5		
10	29	1800	9.6	51.3	35		1005						GOES 7	2,3 VIS 1	
11	30	0000	9.8	51.7	45		1000						GOES 7	2,5 IR 4	
12	30	0127	9.8	52.4	35		1005						DMSP 6		
13	30	0600	9.3	52.5	35		1005						GOES 7	2,5 IR 8	
14	30	1200	10.6	54.6	35		1005						GOES 7	2,5 VIS 1	
15	30	1226	10.6	54.7	35		1005						DMSP 5		
16	30	1800	11.1	56.2	35		1005						GOES 7	2,5 VIS 1	
17	30	1951	11.5	56.1	25	35	1005		24	29			AF	6/5	4
18	30	2146	11.3	56.9	35		1005						DMSP 6		
19	30	2239	11.8	56.7		50	1007		23	26			AF	7/9	4
20	01	0000	11.7	57.0	45		1000						GOES 7	2,5 IR 8	
21	01	0107	11.6	57.2	35		1005						DMSP 6		
22	01	0600	11.0	57.8	45		1000						GOES 7	2,5 IR 8	
23	01	1031	11.9	58.2	35		1005						DMSP 5		
24	01	1200	11.1	60.3	35		1005						GOES 7	2,5 VIS 1	
25	01	1459	12.1	62.8	15	20	1007		25	24			AF	3/3	4
26	01	1701	12.1	62.8	20	18	1006		25	25			AF	3/3	4
27	01	1800	12.2	63.1	30		1009						GOES 7	2,5 VIS 1	

HURRICANE JOAN 9-23 OCTOBER 1988

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	TEMP. C IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
													GOES 7	2,3 VIS 1	
1	09	1200	7.2	36.5	25								GOES 7	2,3 VIS 1	
2	09	1800	7.3	37.2	25								GOES 7	2,5 IR 8	
3	10	0000	6.9	37.9	25								GOES 7	2,5 IR 4	
4	10	0600	7.7	38.2	25								GOES 7	-,5 VIS 1	
5	10	1200	7.0	40.0									DMSP		
6	10	1231	8.2	42.8	25								GOES 7	2,3 VIS 1	
7	10	1800	8.9	42.2	25								GOES 7	2,3 IR 8	
8	11	0000	9.1	43.7	30		1009						DMSP		
9	11	0112	9.1	43.6	25								GOES 7	2,5 IR 4	
10	11	0600	9.9	44.8	35		1005						GOES 7	2,3 VIS 1	
11	11	1200	11.0	46.3	35		1005						DMSP		
12	11	1211	10.4	46.6	35		1005						GOES 7	2,3 VIS 1	
13	11	1800	11.2	47.8	45		1000						GOES 7	2,5 IR 4	
14	12	0000	11.5	49.3	50								DMSP		
15	12	0052	11.8	48.8	45		1000						GOES 7	2,5 IR 4	
16	12	0600	11.6	49.7	45		1000						GOES 7	2,3 VIS 1	
17	12	1200	12.3	51.1	45		1000						DMSP		
18	12	1333	12.5	51.6	45		1000						GOES 7	2,3 VIS 1	
19	12	1800	12.4	52.5	35		1005						GOES 7	2,5 IR 4	
20	13	0000	12.6	53.8	30		1009						DMSP		
21	13	0032	13.2	53.7	45		1000						GOES 7	2,5 IR 4	
22	13	0600	12.5	55.5	35		1005						AF	2/8	457M
23	13	1114	12.0	55.3	20	21	1011		22	23			GOES 7	2,3 VIS 1	
24	13	1200	12.1	55.8	45		1000						DMSP		
25	13	1313	12.2	55.8	45		1000						AF	4/6	457M
26	13	1324	12.7	56.1	50	53	1006		22	24			AF	4/4	457M
27	13	1506	12.8	56.6		39	1004		24	26	C15	open s	AF	2/4	457M
28	13	1706	12.8	57.1		23	1002		25	24	C15		GOES 7	2,3 VIS 1	
29	13	1800	12.2	56.8	45		1000						DMSP		
30	13	2228	12.5	57.2	45		1000								

CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
31	14	0000	12.7	58.3	45		1000						GOES 7	2,5 IR 8	
32	14	0023	12.6	58.3		37	1003		19	21	C20	closed	AF	4/4	850MB
33	14	0154	12.5	58.0	45		1000						DMSP		
34	14	0203	12.5	58.3		35	1004						AF	4/4	850MB
35	14	0359	12.5	58.7		26	1002						AF	4/4	850MB
36	14	0550	12.4	59.0		38	1002		18	21	C20	closed	AF	4/4	850MB
37	14	0600	12.8	59.4	45		1000						GOES 7	2,5 IR 4	
38	14	0931	12.6	59.6	45		1000						DMSP		
39	14	1144	12.3	59.9	70	74	1002		22	21	C15	closed	AF	1/3	457M
40	14	1200	12.4	60.1	45		1000						GOES 7	2,5 VIS 1	
41	14	1253	12.4	60.3	55		994						DMSP		
42	14	1402	12.0	60.4	50	49	1001		22	24		poorly def.	AF	1/4	457M
43	14	1702	12.0	60.8	30	35	1000		22	23		poorly def.	AF	1/3	457M
44	14	1800	12.1	60.9	55		994						GOES 7	2,3 VIS 1	
45	14	2036	12.4	61.0	55		994						DMSP		
46	15	0000	12.2	61.4		31	1002		18	21			AF	4/4	850MB
47	15	0000	11.8	61.8	55		994						GOES 7	2,3 IR 8	
48	15	0134	11.3	61.5	55		994						DMSP		
49	15	0216	12.2	62.2		28	1006		17	19			AF	5/8	850MB
50	15	0420	12.2	62.7		16	1005		17	18			AF	5/8	850MB
51	15	0532	12.2	62.9		25	1003		20	21			AF	4/5	850MB
52	15	0600	11.8	62.9	55		994						GOES 7	2,3 IR 8	
53	15	0918	12.5	62.9	55		994						DMSP		
54	15	1200	11.7	64.2	55		994						GOES 7	2,3 VIS 1	
55	15	1228	11.9	64.2	40	43	1001		23	25	C07	open nw	AF	4/4	457M
56	15	1415	11.9	64.7	45		994						DMSP		
57	15	1415	11.8	64.5	55	36	1001						AF		457M
59	15	1551	11.9	64.7	75	60	999						AF		457M
60	15	1721	11.9	64.9	65	67	999		24	25	C12	closed	AF		457M

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
61	15	1800	11.5	65.2	55		994						GOES 7	2,3 VIS 1	
62	15	2025	12.0	65.4	55		994						NOAA 6		
63	15	2203	12.1	65.8	55		994						DMSP		
64	15	2310	12.1	65.9		35	1000	1412	18	21		poorly def.	AF	1/3	850MB
65	16	0000	12.1	66.1	55		994						GOES 7	2,3 IR 8	
66	16	0213	12.0	66.5		29	1002	1428	17	20		poorly def.	AF	4/3	850MB
67	16	0255	12.1	66.7	55		994						DMSP		
68	16	0500	12.0	66.9		32	999	1405	18	25			AF	1/3	850MB
69	16	0600	12.0	67.4	55		994						GOES 7	2,3 IR 8	
70	16	1048	11.9	68.1	45		1000						DMSP		
71	16	1148	11.8	68.2	50	50	1000		23	25	C10	open sw	AF	2/4	457M
72	16	1200	11.8	68.3	55		994						GOES 7	2,3 VIS 1	
73	16	1355	11.9	68.6	55		994						DMSP		
74	16	1355	11.9	68.7	55	64	1001		19	25	C15	closed wall	AF	4/2	457M
75	16	1540	12.0	68.9	20	18	1000		24	25	C15	open sw	AF	4/2	457M
76	16	1710	12.1	69.1	35	34	1000		24	23	C15	open w-sw	AF	4/2	457M
77	16	1800	12.0	69.2	55		994						GOES 7	2,3 VIS 1	
78	16	2014	12.2	69.7	55		994						NOAA 6		
79	16	2333	12.2	70.2	55		994						DMSP		
80	17	0000	12.2	70.5	55		994						GOES 7	2,3 IR 8	
81	17	0236	12.2	70.7	55		994						DMSP		
82	17	0318	12.0	70.9		64	995	1380	18	20	C18	closed wall	AF	2/2	850MB
83	17	0600	12.3	71.2	55		994						GOES 7	2,3 VIS 8	
84	17	1035	11.9	71.8	55		994						DMSP		
85	17	1200	12.0	72.0	55		994						GOES 7	2,3 VIS 1	
86	17	1335	12.0	72.4	35		1005						DMSP		
87	17	1714	11.8	73.0	70	65	993	1350	18	20	C20	closed wall	AF	1/1	850MB
88	17	1800	11.8	73.0	65		987						GOES 7	2,3 VIS 1	
89	17	2320	12.2	73.5	35		1005						DMSP		
90	17	2345	11.9	74.0		110	986		23	24	C20	closed wall	AF	5/4	457M

CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
91	18	0000	11.9	73.9	77		979								
92	18	0110	11.8	74.2		76	984	1289	18	25	C10	closd wall	GOES 7	2,1 IR 4	
93	18	0216	12.1	74.3	77		979						AF	5/4	850MB
94	18	0302	11.8	74.6		82	986	1306	16	23	C10	closed wall	DMSP		
95	18	0510	11.7	75.1		83	988	1328	15	24	C07	closed wall	AF	3/4	850MB
96	18	0546	11.6	75.9		66	985	2977	11	16	C15	closed wall	AF	2/4	850MB
97	18	0600	12.2	74.9	77		979						AF	10/4	700MB
98	18	1023	10.9	75.9	77		979						GOES 7	2,3 IR 8	
99	18	1200	11.3	76.0	77		979						DMSP		
100	18	1457	11.1	76.1	77		979						GOES 7	2,3 VIS 1	
101	18	1800	11.1	76.4	90		970						DMSP		
102	18	2019	11.3	76.7	60	61	977	2902	08	14	C15	closed wall	GOES 7	2,2 VIS 1	
103	18	2129	11.2	76.7	90	77	977	2890	09	14	E12/10	closed	AF	4/4	700MB
104	18	2134	11.4	76.6	77		979						AF	4/4	700MB
105	18	2308	11.3	76.9	77		979						NOAA		
106	19	0000	11.4	77.2	102		960						DMSP		
107	19	0337	11.4	77.5	90		970						GOES 7	2,2 IR 4	
108	19	0530	11.2	77.7		94	970	1147	18	22	C07	closed	DMSP		
109	19	0600	11.4	77.8	102		960						AF	1/2	850MB
110	19	0724	11.2	77.8		85	974	2804	08	14	C07	closed	GOES 7	2,2 IR 8	
111	19	1134	11.4	78.2	95	114	961	2749	11	15	C05	closed	AF	1/2	700MB
112	19	1152	11.6	78.0	90		970						AF	4/2	700MB
113	19	1200	11.5	78.2	102		960						DMSP		
114	19	1319	11.4	78.4	85	70	955	2708	14	17	E08/07/05	closed	GOES 7	1,2 VIS 1	
115	19	1437	11.5	78.6	102		960						AF	4/2	700MB
116	19	1507	11.4	78.4	120	83	954	2696	19	15	C05	closed	DMSP		
117	19	1725	11.3	78.9	110	87	956	2709	10	16	C06	closed	AF	4/2	700MB
118	19	1800	11.4	79.0	115		948						AF	3/3	700MB
119	19	1825	11.3	78.9	120	87	958	2727	10	18	C06	closed	GOES	1,2	
120	19	2123	11.3	79.3	102		960						AF	3/3	700MB
													NOAA		

CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	AC AL
121	19	2255	11.3	79.3	102		960						DMSP		
122	19	2344	11.2	79.8		80	954	2773	08	14	C08	closed	AF	3/3	700
123	20	0000	11.4	79.4	115		948						GOES 7	2,2 IR 4	
124	20	0116	11.3	79.5		77	960	2802	09	16	C08	closed	AF	4/4	700
125	20	0317	11.2	79.8	90		970						DMSP		
126	20	0600	11.1	79.8	115		948						GOES 7	2,3 IR 8	
127	20	0605	11.1	79.7		77	966	2797	09	15	C15	closed	AF	5/3	700
128	20	0710	11.1	79.6		62	969	2820	09	13	C15	closed	AF	5/3	700
129	20	0847	11.2	79.7		76	968	2800	08	13	C10	closed	AF	5/4	700
130	20	1008	11.1	79.4	90		970						NOAA		
131	20	1100	11.1	79.5			968	2803	12	15	C09	closed	AF	5/4	700
132	20	1140	11.0	79.8	90		970						DMSP		
133	20	1200	11.3	79.7	102		960						GOES	1,2 VIS 1	
134	20	1240	11.1	79.6			970	2828	11	14	C07	closed	AF	5/3	700
135	20	1417	11.2	79.7	102		960						DMSP		
136	20	1734	11.3	79.9		65	972	2836	12	14	C10	closed	AF	4/4	700
137	20	1800	11.4	79.9	102		960						GOES 7	2,1 VIS 1	
138	20	1931	11.4	79.9	40	62	973	2842	11	13	C10	closed	AF		700
139	20	2114	11.5	80.0	55	70	969	2809	11	13	C10	closed	AF		700
140	21	0000	11.7	80.3	90		970						GOES 7	2,1 IR 4	
141	21	0018	11.5	80.3		58	970	2821	11	15	C08	closed	AF	3/2	700
142	21	0025	11.5	80.3	102		960						DMSP		
143	21	0203	11.5	80.4		62		2829	12	13	C10	closed	AF	3/3	700
144	21	0258	11.5	80.5	90		970						DMSP		
145	21	0542	11.5	80.8		77		2823	10	12	C08	closed	AF		700
146	21	0600	11.6	80.8	90		970						GOES 7	2,3 IR 8	
147	21	0657	11.6	80.9		70	970	2817	12	13	C10	closed	AF	3/3	700
148	21	0821	11.6	81.0		70	969	2818	11	15	C10	closed	AFT	3/3	700
149	21	0957	11.5	80.9	90		970						NOAA		
150	21	1036	11.6	81.2		91	965	2809	11	15	C20	closed	AF	5/4	700

CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	A AI
151	21	1127	11.6	81.2	90		970						DMSP		
152	21	1200	11.6	81.0	115		948						GOES 7	2,1 VIS 1	
153	21	1203	11.6	81.2	100	82	951	2648	11	13	C20	closed	AF	5/4	70(
154	21	1357	11.5	81.3	115		948						DMSP		
155	21	1359	11.6	81.3	95	89	955	2721	12	16	C20	closed	AF	5/4	70(
156	21	1719	11.7	81.7	85	107	958	1041	19	21	C16	closed	NOAA 3	3/2	85(
157	21	1800	11.7	81.8	115		948						GOES 7	2,1 VIS 1	
158	21	1822	11.7	81.8	90	105	951	972	15	23	C16	closed	NOAA 3	4/5	85(
159	21	1927	11.8	81.9	70	110	947	937	20	25	C13		NOAA 3	2/2	85(
160	21	2212	11.9	82.2	95	108	941	2591	13	20	C20	closed	AF	2/4	70(
161	21	2328	11.8	82.4		102	938	2566	14	21	C17	closed	AF	2/3	70(
162	22	0000	11.9	82.7	140		921						GOES 7	2,1 IR 4	
163	22	0012	11.7	82.5	115		948						DMSP		
164	22	0055	11.9	82.7			936				Radar fix	5 mi.to cntr	AF	2/2	70(
165	22	0238	11.9	82.8	127		935						DMSP		
166	22	0530	11.8	83.2							Radar fix C20	closed	AF		70(
167	22	0600	12.0	83.3	140		921						GOES 7	2,3 IR 4	
168	22	0633	11.6	83.1							Radar fix C15		AF		70(
169	22	0946	11.8	83.5	127		935						NOAA		
170	22	1115	11.8	83.8	127		935						DMSP		
171	22	1200	11.9	83.9							Over land		GOES 7	VIS 1	
172	22	1800	12.0	85.0							Over land		GOES 7	VIS 1	

CENTER FIXES

HURRICANE HELENE (continued)

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	TEMP. C IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
31	22	1800	13.6	43.1	102		960						GOES 7	2,3 VIS 1	
32	22	2144	13.7	43.7	65		987						DMSP		
33	23	0000	13.9	44.0	115		948						GOES 7	1,1 IR 8	
34	23	0600	14.0	44.9	115		948						GOES 7	1,1 IR 8	
35	23	0847	14.4	45.1	65		987						DMSP		
36	23	1200	14.6	45.5	115		948						GOES 7	2,3 VIS 1	
37	23	1303	14.6	45.9	115		948						DMSP		
38	23	1800	15.4	46.2	127		935						GOES 7	2,3 VIS 1	
39	23	1923	15.5	46.2	115		948						NOAA		
40	23	2131	15.7	46.6	115		948						DMSP		
41	24	0000	16.0	46.9	115		948						GOES 7	2,1 IR 8	
42	24	0144	16.2	47.2	90		970						DMSP		
43	24	0600	16.6	47.7	102		960						GOES 7	1,2 IR 8	
44	24	0834	17.1	47.6	90		970						DMSP		
45	24	1200	17.4	47.8	102		960						GOES 7	2,3 IR 8	
46	24	1243	17.5	48.1	102		960						DMSP		
47	24	1800	18.1	48.5	102		960						GOES 7	2,3 VIS 1	
48	25	0000	18.7	48.9	102		960						GOES 7	1,1 IR 8	
49	25	0600	19.2	49.0	102		960						GOES 7	1,1 IR 8	
50	25	1200	20.0	49.0	90		970						GOES 7	2,3 VIS 1	
51	25	1224	20.1	49.2	90		970						DMSP		
52	25	1800	20.9	49.1	90		970						GOES 7	2,3 VIS 1	
53	26	0000	22.1	49.6	90		970						GOES 7	2,5 IR 8	
54	26	0104	22.2	49.6	102		960						DMSP		
55	26	0600	22.9	49.4	90		970						GOES 7	2,5 IR 8	
56	26	1200	24 5	49.9	77		979						GOES 7	2,3 VIS 1	
57	26	1204	24.6	50.1	77		979						DMSP		
58	26	1800	26.2	50.6	77		979						GOES 7	2,3 VIS 1	
59	27	0000	27.6	51.1	77		979						GOES 7	2,5 IR 8	
60	27	0045	27.5	51.1	77		979						DMSP		

CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX NO.	DATE	TIME (GMT)	LAT.	LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C OUT	TEMP. C IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
	14	0000	12.7	58.3	45		1000						GOES 7	2,5 IR 8	
	14	0023	12.6	58.3		37	1003		19	21	C20	closed	AF	4/4	850MB
	14	0154	12.5	58.0	45		1000						DMSP		
	14	0203	12.5	58.3		35	1004						AF	4/4	850MB
	14	0359	12.5	58.7		26	1002						AF	4/4	850MB
	14	0550	12.4	59.0		38	1002		18	21	C20	closed	AF	4/4	850MB
	14	0600	12.8	59.4	45		1000						GOES 7	2,5 IR 4	
	14	0931	12.6	59.6	45		1000						DMSP		
	14	1144	12.3	59.9	70	74	1002		22	21	C15	closed	AF	1/3	457M
	14	1200	12.4	60.1	45		1000						GOES 7	2,5 VIS 1	
	14	1253	12.4	60.3	55		994						DMSP		
	14	1402	12.0	60.4	50	49	1001		22	24		poorly def.	AF	1/4	457M
	14	1702	12.0	60.8	30	35	1000		22	23		poorly def.	AF	1/3	457M
	14	1800	12.1	60.9	55		994						GOES 7	2,3 VIS 1	
	14	2036	12.4	61.0	55		994						DMSP		
	15	0000	12.2	61.4		31	1002		18	21			AF	4/4	850MB
	15	0000	11.8	61.8	55		994						GOES 7	2,3 IR 8	
	15	0134	11.3	61.5	55		994						DMSP		
	15	0216	12.2	62.2		28	1006		17	19			AF	5/8	850MB
	15	0420	12.2	62.7		16	1005		17	18			AF	5/8	850MB
	15	0532	12.2	62.9		25	1003		20	21			AF	4/5	850MB
	15	0600	11.8	62.9	55		994						GOES 7	2,3 IR 8	
	15	0918	12.5	62.9	55		994						DMSP		
	15	1200	11.7	64.2	55		994						GOES 7	2,3 VIS 1	
	15	1228	11.9	64.2	40	43	1001		23	25	C07	open nw	AF	4/4	457M
	15	1415	11.9	64.7	45		994						DMSP		
	15	1415	11.8	64.5	55	36	1001						AF		457M
	15	1551	11.9	64.7	75	60	999						AF		457M
	15	1721	11.9	64.9	65	67	999		24	25	C12	closed	AF		457M

CENTER FIXES

HURRICANE GILBERT (continued)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C IN	TEMP. C OUT	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
31	11	1338	16.9	69.9	55		994						DMSP		
32	11	1642	16.9	70.5	90	78	971	2855	10	17	E15/65/45	closed wall	NOAA 3	3/4	700MB
33	11	1718	16.1	70.6	65		972	2853	10	15			AF	5/4	700MB
34	11	1800	16.2	70.7	90		970						GOES	1,1 VIS 1	
35	11	1836	16.2	70.8	105		970	2822	10	17	C50	comma-shaped	NOAA 3	5/5	700MB
36	11	1949	16.3	70.8	105	108	967	2810	10	17	C50	closed wall	NOAA 3	5/7	700MB
37	11	1953	16.4	70.9		85	967	2815	13	16	C40	closed wall	AF	5/10	700MB
38	11	1954	16.4	70.8	55		994						NOAA		
39	11	2219	16.6	71.4		60	966	2796	13	14	C40	closed wall	AF	5/10	700MB
40	12	0000	16.8	72.0	90		970						GOES 7	2,1 IR 8	
41	12	0001	16.9	71.6	90		970						DMSP		
42	12	0010	16.8	72.0		54	965	2782	10	15	C40	closed	AF	5/10	700MB
43	12	0219	17.1	72.5	90		970						DMSP		
44	12	0506	17.2	73.3		110	963	2773	15	17	C35	closed wall	AF	3/10	700MB
45	12	0649	17.4	73.8		60	964	2771	10	17	C35	closed wall	AF	3/10	700MB
46	12	0826	17.6	74.4		100	964	2774	11	18	E120/40/20	closed wall	AF	3/10	700MB
47	12	0840	17.7	74.6	90		970						NOAA		
48	12	1019	17.6	74.9		107	961	2767	11	17	C35	closed wall	AF	3/10	700MB
49	12	1104	17.7	75.2	90		970						DMSP		
50	12	1148	17.6	75.3	40	72	960	2765	10	19	C30	closed wall	AF	3/10	700MB
51	12	1200	17.7	75.9	102		960						GOES 7	1,1 VIS 1	
52	12	1500	17.8	76.2	115		948						GOES 7	2,1 VIS 1	
53	12	1500	17.6	76.2	115		948						DMSP		
54	12	1740	17.8	76.6		81		2792	10	17	C15	closed wall	AF	1/1	700MB
55	12	1800	18.0	76.8	115		948						GOES 7	2,1 IR 1	
56	12	2125	18.3	77.4	115		948						NOAA		
57	12	2245	18.3	78.0	65	86	962	2762					AF		700MB
58	12	2348	18.4	78.3	115		948						DMSP	overland	
59	12	2350	18.2	78.3		61	964	2781	10	16	C12	closed wall	AF	2/2	700MB
60	13	0000	18.3	78.5	115		948						GOES 7	2,1 IR 8	

CENTER FIXES

HURRICANE HELENE (continued)

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	TEMP. C IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
61	27	0600	28.6	52.0	77		979						GOES 7	2,3 IR 8	
62	27	1144	29.6	52.2	77		979						DMSP		
63	27	1200	29.8	52.0	77		979						GOES 7	1,1 VIS 1	
64	27	1800	30.9	51.9	77		979						GOES 7	1,1 VIS 1	
65	28	0000	31.8	51.7	77		979						GOES 7	2,2 IR 4	
66	28	0206	32.0	51.7	77		979						DMSP		
67	28	0600	32.6	51.1	77		979						GOES 7	2,1 IR 8	
68	28	1124	33.1	50.3	77		979						DMSP		
69	28	1200	33.5	50.3	77		979						GOES 7	1,1 VIS 1	
70	28	1800	34.7	49.6	77		979						GOES 7	1,1 VIS 1	
71	29	0000	36.2	48.5	90		970						GOES 7	2,3 IR 4	
72	29	0146	36.2	48.2	77		979						DMSP		
73	29	0600	37.5	47.0	90		970						GOES 7	2,5 IR 8	
74	29	1104	39.4	44.8	77		979						DMSP		
75	29	1200	40.1	44.2	77		979						GOES 7	1,1 VIS 1	
76	29	1800	42.6	42.2	77		979						GOES 7	1,1 VIS 1	
77	30	0000	47.1	37.9	65		987						GOES 7	2,3 IR 4	
78	30	0127	46.2	37.8	77		979						DMSP		
79	30	0600	50.1	34.3	65		987						GOES 7	2,5 IR 8	
80	30	1200	55.0	30.0	Extratropical								GOES 7	-,5 VIS 1	

CENTER FIXES

TROPICAL STORM ISAAC 28 SEPTEMBER - 1 OCTOBER 1988

FIX	DATE	TIME (UTC)	POSITION LAT.	LON.	MAX SFC.	FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION
01	28		9.0	43.5									GOES 7	-,5 IR 8
02	28		8.5	45.0									GOES 7	2,5 VIS 1
03	28		8.5	43.8	25								DMSP 6	
04	28		8.7	45.7	30		1009						GOES 7	2,5 VIS 1
05	29		8.6	47.0	35		1005						GOES 7	2,5 IR 4
06	29		9.6	46.4	25								DMSP 6	
07	29		8.5	48.3	35		1005						GOES 7	2,5 IR 8
08	29		9.5	50.0	35		1005						GOES 7	2,3 VIS 1
09	29		9.3	50.1	35		1005						DMSP 5	
10	29		9.6	51.3	35		1005						GOES 7	2,3 VIS 1
11	30		9.8	51.7	45		1000						GOES 7	2,5 IR 4
12	30		9.8	52.4	35		1005						DMSP 6	
13	30		9.3	52.5	35		1005						GOES 7	2,5 IR 8
14	30		10.6	54.6	35		1005						GOES 7	2,5 VIS 1
15	30		10.6	54.7	35		1005						DMSP 5	
16	30		11.1	56.2	35		1005						GOES 7	2,5 VIS 1
17	30		11.5	56.1	25	35	1005		24	29			AF	6/5 457M
18	30		11.3	56.9	35		1005						DMSP 6	
19	30		11.8	56.7		50	1007		23	26			AF	7/9 457M
20	01		11.7	57.0	45		1000						GOES 7	2,5 IR 8
21	01		11.6	57.2	35		1005						DMSP 6	
22	01		11.0	57.8	45		1000						GOES 7	2,5 IR 8
23	01		11.9	58.2	35		1005						DMSP 5	
24	01		11.1	60.3	35		1005						GOES 7	2,5 VIS 1
25	01		12.1	62.8	15	20	1007		25	24			AF	3/3 457M
26	01		12.1	62.8	20	18	1006		25	25			AF	3/3 457M
27	01	-	12.2	63.1	30		1009						GOES 7	2,5 VIS 1

CENTER FIXES

HURRICANE JOAN 9-23 OCTOBER 1988

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
1	09	1200	7.2	36.5	25								GOES 7	2,3 VIS 1	
2	09	1800	7.3	37.2	25								GOES 7	2,3 VIS 1	
3	10	0000	6.9	37.9	25								GOES 7	2,5 IR 8	
4	10	0600	7.7	38.2	25								GOES 7	2,5 IR 4	
5	10	1200	7.0	40.0									GOES 7	-,5 VIS 1	
6	10	1231	8.2	42.8	25								DMSP		
7	10	1800	8.9	42.2	25								GOES 7	2,3 VIS 1	
8	11	0000	9.1	43.7	30		1009						GOES 7	2,3 IR 8	
9	11	0112	9.1	43.6	25								DMSP		
10	11	0600	9.9	44.8	35		1005						GOES 7	2,5 IR 4	
11	11	1200	11.0	46.3	35		1005						GOES 7	2,3 VIS 1	
12	11	1211	10.4	46.6	35		1005						DMSP		
13	11	1800	11.2	47.8	45		1000						GOES 7	2,3 VIS 1	
14	12	0000	11.5	49.3	50								GOES 7	2,5 IR 4	
15	12	0052	11.8	48.8	45		1000						DMSP		
16	12	0600	11.6	49.7	45		1000						GOES 7	2,5 IR 4	
17	12	1200	12.3	51.1	45		1000						GOES 7	2,3 VIS 1	
18	12	1333	12.5	51.6	45		1000						DMSP		
19	12	1800	12.4	52.5	35		1005						GOES 7	2,3 VIS 1	
20	13	0000	12.6	53.8	30		1009						GOES 7	2,5 IR 4	
21	13	0032	13.2	53.7	45		1000						DMSP		
22	13	0600	12.5	55.5	35		1005						GOES 7	2,5 IR 4	
23	13	1114	12.0	55.3	20	21	1011		22	23			AF	2/8	457M
24	13	1200	12.1	55.8	45		1000						GOES 7	2,3 VIS 1	
25	13	1313	12.2	55.8	45		1000						DMSP		
26	13	1324	12.7	56.1	50	53	1006		22	24			AF	4/6	457M
27	13	1506	12.8	56.6		39	1004		24	26	C15	open s	AF	4/4	457M
28	13	1706	12.8	57.1		23	1002		25	24	C15		AF	2/4	457M
29	13	1800	12.2	56.8	45		1000						GOES 7	2,3 VIS 1	
30	13	2228	12.5	57.2	45		1000						DMSP		

CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	FT
91	18	0000	11.9	73.9	77		979						GOES 7	2,1 IR 4	
92	18	0110	11.8	74.2		76	984	1289	18	25	C10	closd wall	AF	5/4	850MB
93	18	0216	12.1	74.3	77		979						DMSP		
94	18	0302	11.8	74.6		82	986	1306	16	23	C10	closed wall	AF	3/4	850MB
95	18	0510	11.7	75.1		83	988	1328	15	24	C07	closed wall	AF	2/4	850MB
96	18	0546	11.6	75.9		66	985	2977	11	16	C15	closed wall	AF	10/4	700MB
97	18	0600	12.2	74.9	77		979						GOES 7	2,3 IR 8	
98	18	1023	10.9	75.9	77		979						DMSP		
99	18	1200	11.3	76.0	77		979						GOES 7	2,3 VIS 1	
100	18	1457	11.1	76.1	77		979						DMSP		
101	18	1800	11.1	76.4	90		970						GOES 7	2,2 VIS 1	
102	18	2019	11.3	76.7	60	61	977	2902	08	14	C15	closed wall	AF	4/4	700MB
103	18	2129	11.2	76.7	90	77	977	2890	09	14	E12/10	closed	AF	4/4	700MB
104	18	2134	11.4	76.6	77		979						NOAA		
105	18	2308	11.3	76.9	77		979						DMSP		
106	19	0000	11.4	77.2	102		960						GOES 7	2,2 IR 4	
107	19	0337	11.4	77.5	90		970						DMSP		
108	19	0530	11.2	77.7		94	970	1147	18	22	C07	closed	AF	1/2	850MB
109	19	0600	11.4	77.8	102		960						GOES 7	2,2 IR 8	
110	19	0724	11.2	77.8		85	974	2804	08	14	C07	closed	AF	1/2	700MB
111	19	1134	11.4	78.2	95	114	961	2749	11	15	C05	closed	AF	4/2	700MB
112	19	1152	11.6	78.0	90		970						DMSP		
113	19	1200	11.5	78.2	102		960						GOES 7	1,2 VIS 1	
114	19	1319	11.4	78.4	85	70	955	2708	14	17	E08/07/05	closed	AF	4/2	700MB
115	19	1437	11.5	78.6	102		960						DMSP		
116	19	1507	11.4	78.4	120	83	954	2696	19	15	C05	closed	AF	4/2	700MB
117	19	1725	11.3	78.9	110	87	956	2709	10	16	C06	closed	AF	3/3	700MB
118	19	1800	11.4	79.0	115		948						GOES	1,2	
119	19	1825	11.3	78.9	120	87	958	2727	10	18	C06	closed	AF	3/3	700MB
120	19	2123	11.3	79.3	102		960						NOAA		

CENTER FIXES

HURRICANE HELENE 17-30 SEPEMBER 1988

FIX	DATE	TIME (UTC)	POSIT LAT.		MAX WIND (KT SFC.	FLT	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARAC ER-	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	17		13.0	22.7	25								GOES	2,5 VIS 1	
02	17		12.7	23.6	25								GOES	2,5 VIS 1	
03	18		12.8	25.0	25								GOES	2,5 IR 4	
04	18		12.5	26.2	25								GOES	5,2 IR 8	
05	18		12.3	27.7	25								DMSP		
06	18		12.1	27.0	25								GOES	2,5 VIS 1	
07	18		12.3	27.7	25								GOES	2,5 VIS 1	
08	19		12.5	28.6	25								GOES	2,3 IR 8	
09	19		11.6	27.8	25								DMSP		
10	19		13.0	29.8	25								GOES	2,3 IR 8	
11	19		13.3	30.1	30								DMSP		
12	19		13.3	30.7	30		1009						GOES	2,3 VIS 1	
13	19		13.5	31.6	30		1009						GOES	2,5 VIS 1	
14	20		13.3	32.7	30		1009						GOES	2,5 IR 8	
15	20		13.3	33.8	35		1005						GOES	2,5 IR 8	
16	20		13.0	34.7	35		1005						GOES	2,3 VIS 1	
17	20		12.7	34.4	35		1005						DMSP		
18	20		12.3	36.7	45		1000						GOES	2,3 VIS 1	
19	20		12.5	37.1	55		994						DMSP		
20	21		12.0	37.4	55		994						GOES	2,5 IR 8	
21	21		12.0	37.8	77		979						GOES	2,5 IR 8	
22	21		12.1	38.5	77		979						GOES	2,5 IR 8	
23	21		11.1	39.4	77		979						GOES	2.3 VIS 1	
24	21		12.0	39.3	55		994						DMSP		
25	21		12.4	39.9	77		977						GOES	2,1 VIS 1	
26	21		12.9	40.9	55		994						DMSP		
27	22		12.9	40.9	77		977						GOES	1,1 IR 8	
28	22		13.0	41.7	90		970						GOES	2,5 IR 8	
29	22		13.3	42.4	65		987						DMSP		
30	22	"	13.1	42.2	90		970						GOES	2,3 VIS 1	

CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT)	. LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C OUT	IN	EYE C=CIR. E=ELIP. (N.MI.) DIA.	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
19	2255	11.3	79.3	102		960						DMSP		
19	2344	11.2	79.8		80	954	2773	08	14	C08	closed	AF	3/3	700MB
20	0000	11.4	79.4	115		948						GOES 7	2,2 IR 4	
20	0116	11.3	79.5		77	960	2802	09	16	C08	closed	AF	4/4	700MB
20	0317	11.2	79.8	90		970						DMSP		
20	0600	11.1	79.8	115		948						GOES 7	2,3 IR 8	
20	0605	11.1	79.7		77	966	2797	09	15	C15	closed	AF	5/3	700MB
20	0710	11.1	79.6		62	969	2820	09	13	C15	closed	AF	5/3	700MB
20	0847	11.2	79.7		76	968	2800	08	13	C10	closed	AF	5/4	700MB
20	1008	11.1	79.4	90		970						NOAA		
20	1100	11.1	79.5			968	2803	12	15	C09	closed	AF	5/4	700MB
20	1140	11.0	79.8	90		970						DMSP		
20	1200	11.3	79.7	102		960						GOES	1,2 VIS 1	
20	1240	11.1	79.6			970	2828	11	14	C07	closed	AF	5/3	700MB
20	1417	11.2	79.7	102		960						DMSP		
20	1734	11.3	79.9		65	972	2836	12	14	C10	closed	AF	4/4	700MB
20	1800	11.4	79.9	102		960						GOES 7	2,1 VIS 1	
20	1931	11.4	79.9	40	62	973	2842	11	13	C10	closed	AF		700MB
20	2114	11.5	80.0	55	70	969	2809	11	13	C10	closed	AF		700MB
21	0000	11.7	80.3	90		970						GOES 7	2,1 IR 4	
21	0018	11.5	80.3		58	970	2821	11	15	C08	closed	AF	3/2	700MB
21	0025	11.5	80.3	102		960						DMSP		
21	0203	11.5	80.4		62		2829	12	13	C10	closed	AF	3/3	700MB
21	0258	11.5	80.5	90		970						DMSP		
21	0542	11.5	80.8		77		2823	10	12	C08	closed	AF		700MB
21	0600	11.6	80.8	90		970						GOES 7	2,3 IR 8	
21	0657	11.6	80.9		70	970	2817	12	13	C10	closed	AF	3/3	700MB
21	0821	11.6	81.0		70	969	2818	11	15	C10	closed	AFT	3/3	700MB
21	0957	11.5	80.9	90		970						NOAA		
21	1036	11.6	81.2		91	965	2809	11	15	C20	closed	AF	5/4	700MB

CENTER FIXES

TROPICAL STORM KEITH (continued)

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
31	21	1800	22.5	87.3	55		994						GOES 7	2,3 VIS 1	
32	21	1925	22.6	87.2	40	55	990		22	22			AF	4/4	
33	21	2125	22.9	87.2	40	75	990		16	19			AF	6/9	
34	21	2349	23.0	87.0	55	51	993	1343	16	19			AF	4/5	
35	22	0000	23.5	87.3	55		994						GOES 7	2,3 IR 8	
36	22	0154	23.3	86.8		63	994	1359					AF		850ME
37	22	0330	23.7	87.0		57	995	1358	17	19			AF	4/5	850MB
38	22	0413	24.1	87.3	35		1005						DMSP		
39	22	0556	23.8	86.8		50	995	1362	19	20			AF	4/50	850MB
40	22	0600	24.2	86.8	55		994						GOES 7	2,5 IR 8	
41	22	1200	24.4	86.1	55		994						GOES 7	2,5 VIS 1	
42	22	1512	24.8	85.3	45		1000						DMSP		
43	22	1635	25.2	85.4	60	73	992		22	23			NOAA 3	2/3	457M
44	22	1800	25.5	85.0	45		1000						GOES 7	2,3 VIS 1	
45	22	1800	25.5	85.1	55	58	997		21	24			NOAA 3	3/3	457M
46	22	1924	25.8	84.8	45	50	992						NOAA 3		457M
47	22	2013	26.0	84.6	60	55	993		20	23			AF	5/8	457M
48	22	2300	26.7	84.3	55	75	994		22	24			AF	5/8	457M
49	23	0000	26.6	84.2	45		1000						GOES 7	2,3 IR 8	
50	23	0014	26.3	84.2								center poor	TBW-R		
51	23	0034	26.4	84.3								center poor	TBW-R		
52	23	0141	26.4	83.5								center poor	TBW-R		
53	23	0200	27.2	83.9		46	994		20	20			AF	8/15	850MB
54	23	0244	27.1	83.4								center fair	TBW-R		
55	23	0309	27.0	83.6								center poor	TBW-R		
56	23	0333	27.0	83.6								center poor	TBW-R		
57	23	0526	27.3	83.0		69	996		19	20			AF	3/8	850MB
58	23	0600	26.6	82.8	45		1000						GOES 7	2,3 IR 8	
59	23	0653	27.2	83.7		73	994		22	23			AF	3/9	
60	23	1200	27.9	81.3									GOES 7	-,3 IR 4	

CENTER FIXES

HURRICANE JOAN (CONTINUED)

DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
21	1127	11.6	81.2	90		970						DMSP		
21	1200	11.6	81.0	115		948						GOES 7	2,1 VIS 1	
21	1203	11.6	81.2	100	82	951	2648	11	13	C20	closed	AF	5/4	700MB
21	1357	11.5	81.3	115		948						DMSP		
21	1359	11.6	81.3	95	89	955	2721	12	16	C20	closed	AF	5/4	700MB
21	1719	11.7	81.7	85	107	958	1041	19	21	C16	closed	NOAA 3	3/2	850MB
21	1800	11.7	81.8	115		948						GOES 7	2,1 VIS 1	
21	1822	11.7	81.8	90	105	951	972	15	23	C16	closed	NOAA 3	4/5	850MB
21	1927	11.8	81.9	70	110	947	937	20	25	C13		NOAA 3	2/2	850MB
21	2212	11.9	82.2	95	108	941	2591	13	20	C20	closed	AF	2/4	700MB
21	2328	11.8	82.4		102	938	2566	14	21	C17	closed	AF	2/3	700MB
22	0000	11.9	82.7	140		921						GOES 7	2,1 IR 4	
22	0012	11.7	82.5	115		948						DMSP		
22	0055	11.9	82.7			936				Radar fix	5 mi.to cntr	AF	2/2	700MB
22	0238	11.9	82.8	127		935						DMSP		
22	0530	11.8	83.2							Radar fix C20	closed	AF		700MB
22	0600	12.0	83.3	140		921						GOES 7	2,3 IR 4	
22	0633	11.6	83.1							Radar fix C15		AF		700MB
22	0946	11.8	83.5	127		935						NOAA		
22	1115	11.8	83.8	127		935						DMSP		
22	1200	11.9	83.9							Over land		GOES 7	VIS 1	
22	1800	12.0	85.0							Over land		GOES 7	VIS 1	

CENTER FIXES

TROPICAL STORM KEITH 17-24 NOVEMBER 1988

FIX NO.	DATE	TIME (GMT)	POSITION LAT.	LON.	MAX WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
1	17	1300	14.3	74.0	25								GOES 7	2,5 VIS 4	
2	17	1800	14.9	74.3	25								GOES 7	2,5 VIS 4	
3	18	0000	15.3	74.3	25								GOES 7	2,5 IR 8	
4	18	0600	15.3	74.7	25								GOES 7	2,5 IR 8	
5	18	1200	14.0	78.5	25								GOES 7	2,5 VIS 4	
6	18	1800	14.8	78.8	25								GOES 7	2,3 VIS 4	
7	19	0000	15.1	79.3	25								GOES 7	2,3 IR 8	
8	19	0600	15.4	80.4	25								GOES 7	2,3 IR 8	
9	19	1200	15.2	81.1	30		1009						GOES 7	2,5 IR 4	
10	19	1430	15.5	81.4	25								DMSP		
11	19	1800	15.0	81.7	30		1009						GOES 7	2,3 VIS 4	
12	19	2142	15.6	82.1	20	26	1005		23	24			AF	4/11	457M
13	20	0000	15.8	82.6	35		1005						GOES 7	2,5 IR 8	
14	20	0311	16.2	83.4	35		1005						DMSP		
15	20	0600	16.2	83.4	35		1005						GOES 7	2,5 IR 8	
16	20	1200	18.2	84.8	45		1000						GOES 7	2,5 IR 8	
17	20	1410	18.3	84.7	35		1005						DMSP		
18	20	1752	19.0	85.3	45	55	997		24	25	E06/25/10		AF	3/2	457M
19	20	1800	19.2	85.5	55		994						GOES 7	2,5 VIS 1	
20	20	2010	19.5	85.6	45	55	996		24	27			AF		457M
21	20	2306	19.6	85.9	50	49	989	1316	24	27			AF		850MB
22	21	0000	20.0	86.3	55		994						GOES 7	2,5 IR 8	
23	21	0251	20.4	86.3	55		994						DMSP		
24	21	0600	20.4	87.2	55		994						GOES 7	2,5 IR 8	
25	21	0625	20.8	86.7		56	993	1349	15	24			AF	5/2	850MB
26	21	0830	20.9	86.6		48	995	1365	16	21			AF	5/4	850MB
27	21	1118	21.7	86.9		54	993	1351	14	20			AF	5/4	850MB
28	21	1200	22.0	86.8	55		994						GOES 7	2,3 IR 8	
29	21	1532	21.9	87.5	35		1005						DMSP		
30	21	1705	22.3	87.2	50	50	990		21	25			AF	4/8	457M

CENTER FIXES

TROPICAL STORM KEITH (continued)

FIX NO.	DATE	TIME (UTC)	POSITION LAT.	POSITION LON.	MAX WIND (KT) SFC.	MAX WIND (KT) FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT.(M)	TEMP. C OUT	TEMP. C IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER-ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
61	23	1452	28.3	80.6									DMSP		
62	23	1500	28.4	80.6	45		1000						GOES 7	2,3 VIS 4	
63	23	1800	28.8	80 0	45		1000						GOES 7	2,3 VIS 4	
64	23	1950	28.9	79.5	40	40	998		24	24			AF	3/3	457M
65	23	2158	29.3	78.4	25	28	999						AF		457M
66	23	2326	29.6	77.9		47	999		22	24			AF	3/5	457M
67	24	0000	29.7	77.6	45		1000						GOES 7	2,3 IR 8	
68	24	0333	30.1	76.2	35		1005						DMSP		
69	24	0514	31.5	76.0		27	1002		14	20			AF	1/10	457M
70	24	0600	31.2	75.3	35		1005						GOES 7	-,5 IR 8	
71	24	1200	32.5	73.0	35		1005						GOES 7	-,5 IR 8	
72	24	1432	32.9	69.0	25								DMSP		
73	24	1800	34.1	66.9	35		1005						GOES 7	-,5 VIS 1	

Table 7. Supplementary vortex data messages, 1988 Atlantic tropical cyclones.

SEP 07,1988
AF365 02XXA INVEST OB 15 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : Z - DZ
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 204 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
22.5	89.5	8		227/067	OBSERVED MAX	
22.6	89.6	CENTER	991			
21.8	90.0	52	001	220/037	24	22
22.1	90.0	37	999	240/053	24	24
22.3	90.0	28	998	290/031	25	23
22.8	89.7	13	997	110/012	24	22
23.1	89.7	30	999	140/023	24	22
23.4	89.7	48	000	140/022	24	22
23.6	89.7	60	001	100/032	24	23
23.8	89.7	72	002	100/018	25	22
24.2	89.8	96	003	120/021	25	22
24.5	89.8	114	004	130/022	25	23
23.6	89.7	60		084/032	OBSERVED MAX WIND	

SEP 08,1988
AF980 03115 FLORENCE OB 12 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0325Z - 0957Z
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 310 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.1	91.1	101	002	020/020	25	23
23.9	90.3	81	001	050/013	25	23
23.7	90.6	65	000	010/017	25	23
23.5	90.4	4[illegible]	999	030/025	25	22
23.3	90.2	32	997	030/023	24	23
23.1	90.0	17	995	360/021	24	22
23.0	89.[illegible]	5	991	310/025	25	24
23.3	90.2	32		033/028	OBSERVED MAX WIND	
23.0	89.7	CENTER	990			
22.9	89.4	17	995	210/026	25	24
22.8	89.3	25	997	190/041	23	23
22.7	89.1	37	99[illegible]	200/057	23	23
22.4	88.9	57	001	200/043	23	20
22.2	88.7	73	002	190/025	23	22
22.0	88.6	85	003	210/031	23	22
22.7	89.1	37		205/057	OBSERVED MAX WIND	

SEP 08,1988
AF301 0411A FLORENCE 08 04 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 17332 - 17522
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 330 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.2	90.0	55	001	060/029	25	22
24.0	90.0	45	300	040/031	26	23
23.8	89.9	32	998	020/025	26	23
23.7	89.7	21	996	090/013	27	24
23.3	89.5	6	994	090/018	28	26
24.0	90.0	45		052/031	OBSERVED MAX WIND	
23.4	89.5	CENTER	994			
23.1	89.5	18	997	250/025	27	25
23.0	89.7	26	998	280/034	27	25
22.5	90.0	60	002	280/031	27	25
22.3	89.7	66	004	220/047	22	22
22.2	89.5	72	004	220/042	23	22
22.0	89.5	84	006	230/035	24	23
	89.7	66		270/047	OBSERVED MAX WIND	

SEP 08,1988
AF301 0411A FLORENCE 08 04 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 17332 - 17522
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 330 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.2	90.0	55	001	060/029	25	22
24.0	90.0	45	300	040/031	26	23
23.8	89.9	32	998	020/025	26	23
23.7	89.7	21	996	090/013	27	24
23.3	89.5	6	994	090/018	28	26
24.0	90.0	45		052/031	OBSERVED MAX WIND	
23.4	89.5	CENTER	994			
23.1	89.5	18	997	250/025	27	25
23.0	89.7	26	998	280/034	27	25
22.5	90.0	60	002	280/031	27	25
22.3	89.7	66	004	220/047	22	22
22.2	89.5	72	004	220/042	23	22
22.0	89.5	84	006	230/035	24	23
	89.7	66		270/047	OBSERVED MAX WIND	

SEP 08,1988
AF361 0411A FLORENCE 08 10 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2142Z - 2211Z
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 174 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
22.2	89.2	108	004	240/026	25	24
22.4	89.2	96	003	230/029	24	24
22.6	89.3	84	001	230/041	25	24
22.9	89.4	66	002	250/025	25	25
23.2	89.4	48	999	280/032	27	25
23.5	89.4	30	997	260/022	27	25
23.8	89.4	12	995	280/029	27	25
22.6	89.3	84		266/041	OBSERVED MAX WIND	
24.3	89.4	CENTER	992			
24.3	89.3	18	995	050/015	27	27
24.6	89.3	36	998	050/033	26	25
24.8	89.4	48	000	060/031	25	24
25.1	89.4	66	001	090/023	27	24
25.3	89.5	78	002	080/024	27	24
25.6	89.5	96		070/024	27	24
25.8	89.5	108	002	060/023	27	24
24.8	89.4	48		090/031	OBSERVED MAX WIND	

SEP 09,1988
AF361 0411A FLORENCE 08 13 COR KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2336Z - 0005Z
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 270 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.2	91.2	109	003	350/022	27	25
24.1	90.9	93	002	340/018	27	25
24.1	90.6	78	002	350/025	27	25
24.1	90.3	60	001	360/023	27	25
24.2	90.2	54	000	340/032	27	24
	89.9	38	998	010/035	27	25
24.3	89.6	22	995	010/041	26	25
24.3	89.6	22		015/041	OBSERVED MAX WIND	
24.2	89.2	CENTER	993			

NNNN

ZCZC WBC931
URNT14 KMIA 090130
AF861 0411A FLORENCE OB 13 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
01242 10912 10003 12725 35022
02241 20909 20002 22725 34018
03241 30906 30002 32725 35025
04241 40903 40001 42725 36028
05242 50902 50000 52724 34032
06243 60899 60998 62725 01035
07243 70896 70995 72625 01041
MF243 M0896 MF041
OBS 01 AT 2336Z OBS 07 AT 0005
OBS 01 SFC WND 35015
REMARKS 242 892 993;

SEP 09,1985
AF763 0511A FLORENCE OB 10 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0543Z - 0814Z
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 104 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.6	87.2	113	004	170/042	25	21
24.7	87.5	95	002	180/046	25	21
24.7	87.7	83	001	180/054	24	22
24.7	88.0	69	999	180/062	24	22
24.7	88.3	54	998	180/064	24	23
24.8	88.5	42	996	190/062	23	23
24.9	88.8	24	993	210/045	25	24
25.0	89.0	12	991	230/025	25	25
24.7	88.3	54		205/064	OBSERVED MAX WIND	
25.1	89.2	CENTER	988			
25.1	89.5	16	991	350/037	25	25
25.1	89.9	38	994	350/044	24	23
25.1	90.2	54	998	340/039	24	22
25.1	90.4	65	998	340/034	24	22
25.1	90.6	76	998	330/025	24	22
25.1	90.9	92	999	310/023	23	22
25.2	91.1	103	000	320/018	24	22
25.1	89.9	38		360/044	OBSERVED MAX WIND	

SEP 09,1988
AF968 3511A FLORENCE 03 07 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0416Z - 0503Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 348 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
25.3	89.5	104	991	090/023	24	22
25.0	89.5	86	991	080/024	23	21
25.7	89.5	69	990	070/035	24	22
25.5	89.5	58	999	070/032	23	23
25.3	89.5	47	997	060/033	24	23
25.0	89.4	29	994	050/037	24	23
24.9	89.3	21	992	050/032	24	23.
24.7	89.2	8	990	010/017	24	24
24.5	89.1	6	990	280/017	25	25
25.0	89.4	29		055/037	OBSERVED MAX WIND	
24.6	89.1	CENTER	988			
24.6	89.1	0	989	280/015	24	24
24.4	89.1	12	992	250/027	25	24
24.2	89.0	24	995	270/059	24	24
23.9	88.9	43	441	210/045	19	15
23.7	89.0	54	449	230/045	19	15
23.5	89.1	66	456	240/033	12	15
23.3	89.1	78	467	250/030	18	14
23.0	89.1	96	471	250/035	19	15
24.2	89.0	24		257/059	OBSERVED MAX WIND	

SEP 09,1988
AF305 OSIIA FLORENCE 33 13 KNIK
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0952Z - 1008Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 180 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.2	89.2	84	000	270/034	24	23
24.4	89.2	72	995	270/035	24	24
24.7	89.2	54	996	270/037	24	24
24.9	89.2	42	995	280/039	24	24
25.1	89.2	30	991	280/037	25	25
25.3	89.2	18	989	290/017	25	25
24.9	89.2	42		270/035	OBSERVED MAX WIND	
25.6	89.2	CENTER	987			
25.7	89.2	6	988	130/030	25	25
25.0	89.2	24	991	110/050	24	24
25.3	89.3	42	994	100/042	24	23
25.5	89.3	54	996	040/033	21	21
25.8	89.3	72	996	100/032	21	21
27.1	89.3	90	428	110/032	13	16
27.3	89.3	102	438	060/024	13	14
25.0	89.2	24		090/050	OBSERVED MAX WIND	

SEP 10,1934
AF?5J 3212A CYCLONE 33 12 KNIK
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 3247Z - 3444Z
FLTALT : 01501 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 24 DEGREES

LAT	LON	DIST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
15.4	62.0	112	004	040/034	23	22
15.2	63.0	90	005	050/013	24	22
15.0	61.9	93	004	100/025	22	22
15.7	61.7	37	004	/	24	22
15.6	61.6	43	004	/	23	22
15.5	61.7	79	004	040/013	25	22
15.2	61.7	70	004	050/012	24	22
14.9	61.9	53	004	190/011	24	22
14.7	62.0	46	004	150/014	24	22
14.7	62.1	40	004	120/023	25	22
15.0	62.4	31		104/025	OBSERVED MAX WIND	
14.7	62.8	CENTER	003			
14.9	62.6	16	004	120/024	23	22
15.3	62.5	40	004	160/027	23	22
15.5	62.5	51	004	170/024	24	22
15.7	62.4	64	004	170/033	23	22
15.0	62.3	83	005	150/015	24	22
15.2	62.6	90	005	120/021	24	22
15.7	62.4	64		111/032	OBSERVED MAX WIND	

SEP 16,1988
AF968 1912A GILBERT OB 18 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1348Z - 1434Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 349 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.2	96.5	91	973	090/061	10	10
23.0	96.5	79	947	080/070	10	10
24.8	96.5	68	895	090/079	12	11
24.5	96.5	50	862	070/078	12	10
24.3	96.4	37	801	070/078	12	10
24.0	96.4	21		059/086	OBSERVED MAX WIND	
23.7	96.2	CENTER	533			
23.3	96.1	24	731	260/086	12	12
23.1	96.1	36	835	270/063	11	11
22.9	96.1	48	871	260/061	10	10
22.7	96.1	60	904	280/072	10	10
23.3	96.1	24		257/086	OBSERVED MAX WIND	

SEP 16,1988
AF968 1912A GILBERT OB 20 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1442Z - 1533Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 144 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
22.9	95.6	66	893	230/063	10	10
23.2	95.8	45	837	220/069	11	11
23.4	96.0	29	759	210/063	12	10
23.3	95.9	37		233/078	OBSERVED MAX WIND	
23.8	96.3	CENTER	539			
24.2	96.4	24	747	100/110	12	11
24.3	96.3	30	812	100/084	12	10
24.5	96.3	42	843	100/079	12	09
24.8	96.1	61	899	110/079	11	11
25.0	96.1	72	951	110/078	10	10
25.2	96.0	85	972	110/080	10	09
25.6	95.9	110	006	110/075	09	09
24.2	96.4	24		077/110	OBSERVED MAX WIND	

SEP 16,1988
AF968 1912A GILBERT OB 05 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0732Z - 0854Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS -99 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
25.3	95.6	-99	998	080/078	11	08
25.0	95.6	-99	982	080/075	11	08
24.8	95.6	-99	955	080/062	12	08
24.5	95.6	-99	925	060/063	11	10
24.2	95.6	-99	987	070/064	12	10
24.0	95.5	-99	845	060/063	12	10
23.7	95.3	-99	788	050/079	11	11
23.8	95.4	-99		/083	OBSERVED MAX WIND	
****	****	CENTER				
22.9	95.0	-99	598	250/040	12	12
22.6	95.0	-99	802	260/073	12	11
22.4	95.0	-99	830	250/052	12	11
22.2	95.0	-99	385	270/052	11	11
21.9	95.0	-99	924	270/049	11	10
21.6	95.0	-99	957	280/073	10	09
21.4	95.0	-99	970	270/055	10	10
1.9	94.6	-99		0/		
22.8	95.0	-99		/079	OBSERVED MAX WIND	

SEP 16,1988
AF968 1912A GILBERT OB 12 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1218Z - 1319Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 276 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.9	97.1	55	905	010/073	10	10
23.8	96.9	43	856	360/075	11	11
23.8	96.6	27	798	010/074	11	09
23.7	96.4	17	744	360/083	12	11
23.7	96.4	17		340/083	OBSERVED MAX WIND	
23.8	96.1	CENTER	540			
23.8	95.6	27	696	150/078	13	12
23.8	95.4	38	798	150/089	12	10
23.8	95.1	54	846	170/064	12	11
23.8	94.9	65	886	170/074	11	11
23.8	95.4	38		179/089	OBSERVED MAX WIND	

SEP 15,1988
AF968 1712A GILBERT OB 20 CMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1918Z - 2047Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 205 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
2047	93.8	92	951	310/060	11	10
2049	93.7	79	938	300/057	111	11
21.2	93.4	56	896	290/053	11	11
2143	93.3	49	878	290/061	11	10
21.5	93.1	36	832	270/064	12	10
21.7	92.9	26	781	260/051	11	11
2145	93.1	36		270/064	OBSERVED MAX WIND	
22.1	93.1	CENTER	655			
22.2	93.1	6	658	140/046	15	14
22.4	92.9	21	717	130/075	15	11
22.6	92.8	34	802	130/092	13	12
22.8	92.6	50	847	140/085	11	10
2249	92.5	58	874	140/084	12	09
23.1	92.3	74	905	140/075	111	11
2342	92.1	86	939	140/079	11	10
22.7	92.7	42		121/100	OBSERVED MAX WIND	

SEP 15,1988
AF284 1412A GILBERT OB OB CMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2252Z - 2356Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 260 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.1	90.5	73	949	350/061	11	11
21.2	90.2	56	922	360/053	11	10
21.3	90.0	44	897	360/058	11	10
21.3	89.7	27	805	360/071	11	11
2145	89.7	30	777	040/043	12	12
21.5	89.2	12	722	050/044	13	12
21.3	89.7	27		360/071	OBSERVED MAX WIND	
2143	89.2	CENTER	500			
21.7	89.0	26	741	100/052	13	12
21.3	88.8	37	500	110/083	13	13
22.0	88.6	53	856	130/078	11	10
22.1	88.2	73	902	140/074	12	09
22.2	88.0	86	930	140/074	12	09
22.2	87.9	90	957	140/074	12	09
22.5	87.5	118	978	140/022	12	07
21.3	88.8	37		126/083	OBSERVED MAX WIND	

SEP 15,1988
AF968 1712A GILBERT OB 12 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1601Z - 1707Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 328 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.0	93.2	63	938	060/061	11	11
22.8	93.1	50	923	060/068	11	11
22.6	93.0	37	866	060/078	11	11
22.5	92.8	26	800	060/067	12	12
22.3	92.6	12	726	050/065	13	13
22.6	93.0	37		053/078	OBSERVED	MAX WIND
22.1	92.6	CENTER	953			
22.0	92.4	12	733	220/049	14	12
21.8	92.2	28	790	220/058	13	12
21.7	91.9	45	842	220/068	12	11
21.5	91.7	61	891	210/060	11	11
21.3	91.5	77	924	220/062	12	10
21.1	91.3	94	967	200/069	11	10
21.0	91.1	106	997	200/062	11	08
21.2	91.4	86		218/083	OBSERVED	MAX WIND

SEP 15,1988
AF968 1712A GILBERT OB 16 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1725Z - 1844Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 79 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
22.6	91.5	67	907	160/073	12	10
22.5	91.7	58	880	150/073	13	09
22.4	92.1	35	829	150/085	13	12
22.4	92.3	25	781	150/074	13	12
22.3	92.6	8	717	140/065	14	13
22.4	92.1	35		160/085	OBSERVED	MAX WIND
22.2	92.7	CENTER	952			
22.4	92.9	16	700	060/055	14	14
22.3	93.1	23	726	020/058	13	13
22.2	93.5	44	812	350/083	11	11
22.1	93.6	50	839	360/077	12	10
22.1	93.9	67	888	360/072	11	10
22.1	94.1	78	917	360/070	11	11
22.1	94.4	94	943	360/075	11	10
22.2	93.5	44		360/083	OBSERVED	MAX WIND

SEP 15,1988.
AF768 1712A GILBERT OB 08 (MIA)
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1317Z - 1502Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 21 (DEGREES)

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.8	91.1	122	999	120/067	11	11
23.6	91.2	109	992	120/070	11	11
23.4	91.3	96	965	120/073	12	08
23.2	91.5	81	938	110/068	12	10
22.9	91.6	62	907	110/067	10	10
22.7	91.8	48	868	110/073	11	10
22.5	91.9	36	825	100/070	12	12
22.2	92.0	18	764	090/045	13	11
22.7	91.8	48		096/073	OBSERVED MAX WIND	
21.9	91.9	CENTER	950			
22.1	92.0	13	756	080/061	14	12
22.3	92.0	24	756	080/070	18	18
22.6	92.1	43	822	090/092	12	12
22.8	92.2	56	889	090/078	11	10
23.2	92.2	79	935	090/079	11	11
23.6	92.1	90	962	090/075	11	10
23.8	92.1	102	986	100/077	11	10
22.6	92.1	43		075/092	OBSERVED MAX WIND	

SEP 15,1988
AF963 1712A GILBERT OB 17 COR KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1034Z - 1200Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 274 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
2119	92.9	83	954	350/045	11	11
2149	92.8	78	929	360/046	11	11
2149	92.4	56	894	350/062	12	12
2149	92.2	44	876	350/047	11	11
2149	91.9	28	801	360/067	13	13
2149	91.7	17	751	360/064	14	14
2149		28		012/067	OBSERVED MAX WIND	
21.8		CENTER	666			
2149		17	764	170/059	14	12
2149		33	816	180/048	12	12
21.9		44	865	170/071	11	10
2149	90.3	61	904	170/060	11	11
2149	90.0	78	932	/	12	11
2240	89.8	89	958	170/023	11	11
2240	89.7	95	971	170/073	11	11
2240	89.7	95		172/073	OBSERVED MAX WIND	

SEP 15,1988
AF968 1712A GILBERT OB 08 (MIA)
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1317Z - 1502Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 21 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
2348	91.1	122	999	120/067	11	11
2346	91.2	109	992	120/070	11	11
2344	91.3	96	965	120/073	12	08
2342	91.5	81	938	110/068	12	10
2249	91.6	62	907	110/067	10	10
22.7	91.8	48	868	110/073	11	10
2245	91.9	36	825	100/070	12	12
2242	92.0	18	764	090/045	13	11
22.7	91.8	48		096/073	OBSERVED MAX WIND	
21.9	91.9	CENTER	950			
2241	92.0	13	756	080/061	14	12
22.3	92.0	24	756	080/070	13	13
2246	92.1	43	822	090/092	12	12
2248	92.2	56	889	090/078	11	10
2342	92.2	79	935	090/079	11	11

SEP 15,1988
AF963 1512A GILBERT OB 09 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0700Z - 0741Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 241 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.3	91.2	25	797	320/049	14	13
21.4	91.0	12	735	340/038	14	13
21.6	90.8	6	688	300/022	15	15
21.3	91.2	25		331/069	OBSERVED MAX WIND	
21.5	90.8	CENTER	951			
21.7	90.5	20	747	160/057	13	13
21.7	90.3	30	807	170/063	13	13
21.8	90.1	43	823	170/072	12	12
21.8	90.1	43		155/072	OBSERVED MAX WIND	

SEP 15,1988
AF963 1512A GILBERT OB 13 COR KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0812Z - 0944Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 6 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.5	90.9	102	979	110/065	11	11
23.3	91.0	90	960	100/067	11	11
23.0	91.1	72	930	090/056	11	11
22.9	91.1	66	906	090/075	11	09
22.6	91.1	48	896	090/071	11	11
22.3	91.2	30	805	080/076	12	12
22.0	91.2	13	750	060/056	13	13
22.3	91.2	30		079/076	OBSERVED MAX WIND	
21.8	91.1	CENTER	950			
22.0	91.3	16	745	040/055	13	13
22.1	91.5	28	798	040/060	12	12
22.2	91.8	45	872	/.	11	11
22.3	92.0	58	902	040/065	11	11
22.5	92.3	78	931	050/065	11	11
22.6	92.4	86	947	040/062	11	11
22.8	92.5	98	963	060/058	11	11
22.3	92.0	58		031/065	OBSERVED MAX WIND	

SEP 15,1988
AF304 1412A GILBERT OB 20 (MIA)
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0359Z - 0435Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 83 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.7	88.3	112	992	160/065	11	10
21.6	88.5	100	956	160/057	15	10
21.6	88.8	83	928	160/055	12	09
21.5	89.1	67	913	160/058	12	12
21.5	89.3	55	879	170/055	13	08
21.5	89.6	39	852	170/054	12	11
21.5	90.9	33	731	160/053	13	13
21.7	88.3	112		173/065	OBSERVED MAX WIND	
21.5	90.3	CENTER	949			

SEP 15,1988
AF303 1512A GILBERT OB 05 (MIA)
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0457Z - 0633Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 22 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.3	89.3	116	000	120/067	12	11
23.1	89.5	101	975	120/065	12	12
23.0	89.6	94	967	110/065	12	12
22.7	89.7	75	936	100/061	12	11
22.4	89.9	55	909	110/069	11	11
22.0	90.3	32	852	090/057	12	12
21.8	90.4	24	787	090/040	12	12
21.5	90.5	22	684	070/036	12	12
22.6	89.9	55		101/069	OBSERVED MAX WIND	
21.5	90.1	CENTER	949			
21.3	90.8	40	768	300/044	11	11
21.1	91.0	55	810	/	16	13
20.9	91.2	71	872	320/029	11	11
20.7	91.3	82	911	320/045	11	11
20.5	91.5	98	943	310/050	11	11
20.2	91.7	118	969	310/050	11	11
20.1	91.8	127	982	310/053	11	11
20.2	91.7	118		319/054	OBSERVED MAX WIND	

SEP 14,1988
AF284 1412A GILBERT OB 07 :OB <MIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2145Z - 2227Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 62 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.9	87.5	106	910	150/083	11	11
21.9	87.8	91	868	150/083	11	09
21.9	88.5	61	787	150/085	11	10
21.8	88.3	65	766	130/092	12	12
21.8	88.7	50	748	100/063	12	12
21.8	88.3	65		139/092	OBSERVED MAX WIND	
21.1	89.2	CENTER	500			
21.7	88.9	39	751	080/052	12	12
21.5	89.3	24	816	040/074	12	12
21.3	89.5	29	852	030/017	11	11
21.3	89.7	30	928	020/020	11	11
21.2	89.9	39	935	360/070	11	10
21.1	90.2	56	944	360/063	12	08
21.0	90.5	73	959	360/068	11	10
21.0	90.7	84	971	360/062	11	10
21.5	89.3	24		076/074	OBSERVED MAX WIND	

SEP 15,1988
AF284 1412A GILBERT OB 12 <MIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2344Z - 0058Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 63 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
22.2	87.9	93	940	130/075	11	11
22.1	88.0	85	923	130/082	12	10
22.0	88.2	73	897	130/071	11	10
21.9	88.5	55	881	190/073	12	10
21.7	88.7	40	835	140/074	13	10
21.5	89.0	22	740	140/063	14	12
21.5	89.1	16	591	150/079	14	13
22.1	88.0	85		154/082	OBSERVED MAX WIND	
21.3	89.4	CENTER	596			
21.8	89.5	18	811	100/067	12	12
22.0	89.5	30	838	110/092	11	11
22.3	89.5	48	891	100/070	11	11
22.8	89.5	78	935	100/061	12	11
22.9	89.5	84	956	100/063	11	11
23.0	89.5	90	974	110/072	12	08
23.1	89.5	96	980	110/073	12	08

SEP 14,1988
AF284 1412A GILBERT 08 05 (MIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 23452 - 21292
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 42 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.8	85.5	57	740	140/083	13	12
21.9	88.2	73	813	110/095	11	10
22.0	88.0	86	863	120/096	11	10
22.1	87.9	94	893	130/086	12	10
22.1	86.5	162	933	140/072	12	10
22.1	87.3	121	951	140/068	12	09
22.0	87.0	134	976	160/072	11	07
22.0	86.6	154	999	160/065	11	07
22.0	88.0	86		140/095	OBSERVED MAX WIND	
21.1	89.2	CENTER	500			

SEP 14,1988
AF284 1412A GILBERT 08 07 (MIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 21452 - 22272
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 62 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.9	87.5	106	910	130/083	11	11
21.9	87.8	91	868	150/080	11	09
21.9	88.5	61	787	150/085	11	10
21.8	88.3	65	766	130/092	12	12
21.8	88.7	50	748	100/063	12	12
21.8	88.3	65		130/092	OBSERVED MAX WIND	
21.1	89.2	CENTER	500			
21.7	88.9	39	751	080/053	12	12
21.5	89.3	24	816	040/074	12	12
21.5	89.5	29	852	030/017	11	11
21.3	89.7	30	928	020/020	11	11
21.2	89.9	39	935	360/070	11	10
21.1	90.2	56	944	360/063	12	08
21.0	90.5	73	959	360/068	11	10
21.0	90.7	84	971	360/062	11	10
21.5	89.3	24		076/074	OBSERVED MAX WIND	

AF963 0812A GILBERT 03 15 002 CMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 22532 - 23412
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 327 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.5	78.5	21	935	060/067	10	10
13.7	78.6	34	967	040/049	10	10
13.0	78.8	55	911	060/061	09	09
13.3	79.0	77	931	060/063	09	09
13.4	79.1	89	951	050/055	08	08
13.9	79.3	70	921	060/051	09	09
13.7	78.6	34		060/069	OBSERVED MAX WIND	
13.2	78.3	CENTER	781			
13.6	79.4	67	911	360/035	10	10
13.6	79.2	56	996	010/047	09	09
13.5	79.0	46	983	350/045	10	10
13.5	78.8	33	943	360/061	10	10
13.5	78.5	21	976	350/067	10	10
13.5	78.8	33		032/061	OBSERVED MAX WIND	

SEP 14,1988
AF984 1412A GILBERT 03 01 CMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 19482 - 20122
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 338 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.0	90.0	122	924	070/052	11	09
22.8	90.0	111	912	040/043	10	10
22.5	90.0	95	901	060/065	12	08
22.3	90.0	84	993	050/062	13	07
22.2	90.0	79	975	040/062	12	12
21.8	90.0	61	963	040/070	10	10
21.5	90.0	50	953	030/063	11	10
21.3	89.9	40	947	020/062	11	09
21.8	90.0	61		043/070	OBSERVED MAX WIND	
21.1	89.2	CENTER	500			

AF963 1112A GILBERT OB 14 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1201Z - 1319Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 223 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.7	82.3	91	028	310/035	11	09
17.8	82.2	82	019	320/037	11	11
18.0	82.0	66	004	320/045	11	11
18.2	81.8	49	980	320/052	11	11
18.4	81.6	33	944	320/055	12	12
18.6	81.4	16	886	300/053	12	12
18.4	81.6	33		313/055	OBSERVED MAX WIND	
18.8	81.2	CENTER	496			
19.0	81.1	13	803	140/110	12	12
19.3	80.9	34	933	140/082	12	12
19.4	80.7	45	976	130/060	11	10
19.6	80.6	58	997	130/062	11	11
19.7	80.5	67	012	130/057	11	11
19.9	80.3	83	030	130/067	11	11
20.1	80.1	99	044	120/045	10	10
19.0	81.1	13		115/110	OBSERVED MAX WIND	

AF963 1112A GILBERT OB 18 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1338Z - 1458Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 3 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
20.6	81.5	96	044	090/030	10	10
20.4	81.6	84	029	080/035	11	11
20.2	81.6	72	017	090/060	11	11
20.0	81.6	60	998	090/063	11	11
19.7	81.6	42	979	080/068	12	12
19.4	81.6	24	915	080/075	12	12
19.2	81.6	12	831	080/087	13	13
19.2	81.6	12		090/087	OBSERVED MAX WIND	
19.0	81.6	CENTER	427			
18.7	81.7	18	889	300/055	13	13
18.5	81.7	30	936	280/050	12	12
18.2	81.7	48	983	260/050	12	12
17.9	81.7	66	994	250/045	12	12
17.7	81.7	78	013	240/040	11	11
18.7	81.7	18		287/055	OBSERVED MAX WIND	

SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0712Z - 0920Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 46 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)		DEWPT(C)
13.5	79.1	70	976	120/066	11	
13.3	79.2	57	961	130/055	10	
13.1	79.5	37	943	130/063	12	
13.1	79.6	47	929	130/075	12	
13.8	79.4	34	854	130/093	12	
13.8	79.4	34		169/093	OBSERVED MAX WIND	
13.7	80.0	CENTER	595			
13.5	80.3	20	818	280/074	14	
13.3	80.4	33	900	290/042	13	
13.2	80.6	45	944	300/037	12	
17.9	80.9	70	969	330/028	12	
17.8	81.1	82	986	330/029	12	
17.5	81.3	99	000	290/030	11	
17.3	81.4	107	000	310/019	10	
13.5	80.3	20		324/074	OBSERVED MAX WIND	

AF963 1112A GILBERT OB 10 (MIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1028Z - 1143Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 85 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.8	79.5	79	015	180/010	11	11
13.8	79.7	68	993	150/020	11	11
13.9	79.9	58	969	170/050	12	12
13.9	80.1	47	944	160/070	13	10
13.9	80.4	30	917	160/085	12	11
13.8	80.6	18	944	140/090	12	12
13.8	80.8	8	582	160/074	16	14
13.8	80.6	18		160/090	OBSERVED MAX WIND	
13.7	80.9	CENTER	521			
13.7	81.2	17	384	340/070	13	11
13.7	81.4	28	928	350/055	12	12
13.7	81.7	45	966	010/030	12	12
13.7	81.9	56	990	010/040	11	11
13.7	82.2	73	007	360/040	11	11
13.7	82.5	90	025	010/040	10	10
13.7	82.7	102	032	360/035	11	11
13.7	81.2	17		360/070	OBSERVED MAX WIND	

SEP 12,1983
AF763 0512A GILBERT OB 16 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2319Z - 0104Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 265 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
15.7	73.4	80	060	350/048	09	09
15.7	73.1	63	051	350/046	08	08
15.7	72.9	52	035	360/051	09	08
15.7	72.7	40	011	360/048	09	08
15.8	72.5	28	971	010/053	08	08
15.8	72.2	11	906	010/054	10	10
15.8	72.2	11		360/054	OBSERVED MAX WIND	
15.8	72.0	CENTER	782			
15.9	71.6	23	910	180/059	11	11
15.9	71.5	29	962	190/067	10	10
15.9	71.2	46	016	170/075	08	08
15.9	70.9	63	045	180/065	08	08
15.9	70.7	74	066	170/055	08	08
15.9	70.3	97	087	170/045	08	08
15.9	70.2	103	096	170/045	08	08
15.9	71.2	46		172/075	OBSERVED MAX WIND	

SEP 12,1983
AF783 1012A GILBERT OB 06 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0426Z - 0527Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 140 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.5	77.7	54	049	180/049	11	
17.7	77.9	37	043	180/041	11	
17.8	78.0	29	016	180/043	10	
13.0	78.2	13	012	190/046	11	
13.2	78.5	11	989	180/055	11	
13.2	78.7	22	974	180/058	11	
13.3	79.1	46	869	180/104	11	
13.3	79.1	46		007/104	OBSERVED MAX WIND	
13.2	78.3	CENTER	781			
13.5	79.6	76	815	060/082	11	
13.7	79.7	85	915	070/083	13	
18.8	80.0	103	973	070/045	11	
17.0	80.1	113	994	070/042	11	
17.2	80.3	128	009	070/062	11	
17.3	80.5	141	015	080/047	10	
17.3	80.7	151	027	070/052	11	
13.6	79.7	83		016/083	OBSERVED MAX WIND	

SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1705Z - 1348Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 83 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.0	74.6	114	974	/	09	09
13.0	74.9	97	963	150/034	09	09
13.0	75.1	86	951	160/064	09	09
13.0	75.4	69	933	160/053	13	13
13.9	75.7	51	915	160/054	09	09
13.9	76.0	34	963	160/067	10	10
13.9	76.2	23		165/081	OBSERVED MAX WIND	
17.8	76.6	CENTER	792			
17.7	77.0	23	880	340/055	09	09
17.6	77.1	31	944	320/052	11	11
17.4	77.3	46	984	310/045	10	10
17.3	77.5	59	906	340/035	09	09
17.2	77.7	72	922	330/033	09	09
17.1	78.0	90	929	320/026	09	09
17.0	78.3	108	942	310/026	10	10
17.7	77.0	23		345/055	OBSERVED MAX WIND	

AF963 0812A GILBERT 09 05 COR KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1706Z - 1348Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 83 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.0	74.6	114	974	/	09	09
13.0	74.9	97	963	150/034	09	09
13.0	75.1	86	951	160/064	09	09
13.0	75.4	69	933	160/053	13	13
13.9	75.7	51	915	160/054	09	09
13.9	76.0	34	963	160/067	10	10
	76.2			165/081	OBSERVED MAX WIND	
17.8	76.6	CENTER	792			
17.7	77.0	23	880	340/055	09	09
17.6	77.1	31	944	320/052	11	11
17.4	77.3	46	984	310/045	10	10
17.3	77.5	59	906	340/035	09	09
17.2	77.7	72	922	330/033	09	09
17.1	78.0	90	929	320/026	09	09
17.0	78.3	108	942	310/026	10	10
17.7	77.0	23		345/055	OBSERVED MAX WIND	

OBSERVATION PERIOD : 0749Z - 0918Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 324 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.9	75.4	96	971	090/045	12	07
13.7	75.2	80	962	070/052	11	09
13.6	75.0	69	942	070/063	12	09
13.4	74.8	53	929	080/067	10	10
13.3	74.7	45	910	080/075	10	10
13.1	74.6	32	968	070/100	10	10
17.8	74.5	13	843	040/082	11	11
13.1	74.6	32		069/100	OBSERVED MAX WIND	
17.6	74.4	CENTER	774			
17.4	74.1	20	913	220/075	11	11
17.3	73.9	33	903	210/054	10	10
17.1	73.8	45	930	200/061	10	10
16.9	73.6	62	952	200/053	09	09
16.7	73.4	78	955	200/053	09	09
16.5	73.2	95	963	190/045	10	10
16.3	73.0	112	970	180/041	10	10
17.4	74.1	20		214/075	OBSERVED MAX WIND	

SEP 12,1988
AF930 0712A GILBERT 07 22 (MIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1115Z - 1236Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 227 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
16.8	76.2	70	946	330/030	10	10
17.0	76.1	58	943	320/037	11	10
17.2	75.9	41	933	320/038	10	10
17.3	75.7	29	904	340/050	10	10
17.4	75.4	13	925	320/072	10	10
17.4	74.5	47		194/072	OBSERVED MAX WIND	
17.5	75.3	CENTER	960			
17.7	75.0	18	936	200/095	13	13
17.7	74.8	29	979	170/087	10	10
17.7	74.5	46	928	180/061	10	10
17.7	74.3	57	940	170/048	10	10
17.7	74.0	74	958	170/045	10	08
17.7	73.8	89	971	120/054	10	10
17.7	73.5	103	977	160/069	13	09
17.7	74.9	23		155/101	OBSERVED MAX WIND	

SEP 11,1988
AF963 0512A GILBERT OB 12 (MIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2144Z - 2250Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 173 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
14.8	71.2	108	969	350/045	09	08
15.0	71.2	96	951	250/040	09	08
15.4	71.2	72	936	250/052	09	08
15.6	71.2	61	917	250/060	09	07
15.8	71.2	49	912	250/053	09	09
16.1	71.2	32	939	250/052	10	10
16.3	71.2	21	909	240/060	13	12
16.3	71.2	21		237/060	OBSERVED MAX WIND	
16.6	71.4	CENTER	704			
16.8	71.5	13	810	070/038	14	10
17.1	71.5	30	898	090/055	12	12
17.3	71.5	42	941	100/094	09	07
17.4	71.5	48	974	100/063	11	10
17.6	71.5	60	902	100/075	09	07
17.3	71.5	42		032/094	OBSERVED MAX WIND	

SEP 12,1988
AF930 0712A GILBERT OB 07 (MIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0453Z - 0556Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 17 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.8	73.1	37	942	110/102	10	05
17.6	73.3	24	825	120/110	15	07
17.5	73.3	18	806	100/050	17	09
17.6	73.3	24		090/111	OBSERVED MAX WIND	
17.2	73.3	CENTER	773			
17.1	73.6	18	951	330/047	11	11
15.9	73.7	29	968	330/065	10	10
15.7	73.7	37	915	300/057	08	08
15.5	74.1	62	936	290/047	09	09
15.4	74.3	74	962	310/031	10	09
15.2	74.5	91	968	330/025	09	09
15.0	74.7	108	974	320/015	09	09
15.9	73.7	29		321/065	OBSERVED MAX WIND	

OBSERVATION PERIOD : 1150Z - 1215Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 15 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.5	69.0	87	064	090/065	10	09
17.3	69.0	75	058	090/078	09	09
17.2	69.0	69	039	090/083	09	09
15.9	69.0	53	999	100/009	10	10
16.6	69.5	90	067	240/031	08	08
16.5	69.5	96	074	250/032	08	08
15.7	69.5	24		283/045	OBSERVED MAX WIND	
15.1	69.4	CENTER	977			

SEP 11,1988
AF963 0512A GILBERT OB 05 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1632Z - 1843Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 33 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.7	69.5	114	091	120/039	09	08
17.5	69.5	110	082	110/050	09	08
17.5	69.7	98	063	110/052	09	08
17.2	69.8	80	038	120/052	10	08
17.0	69.9	67	021	120/056	09	08
16.8	70.1	50	984	120/058	10	09
16.5	70.2	33	887	120/069	11	09
15.7	70.1	46		128/073	OBSERVED MAX WIND	
15.1	70.6	CENTER	972			
15.3	70.5	13	855	140/013	14	09
15.6	70.6	30	880	090/045	11	10
15.7	70.6	36	952	090/085	12	10
17.1	70.6	60	990	100/049	09	09
17.3	70.6	72	023	100/057	10	10
17.6	70.6	90	048	100/057	08	08
17.8	70.6	102	061	100/056	09	09
15.7	70.6	36		090/085	OBSERVED MAX WIND	

SEP 11,1988
AF980 0412A GILBERT OB 05 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0509Z - 0648Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 308 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.2	69.3	95	095	050/045	10	08
16.9	69.1	75	088	040/064	10	10
16.7	68.9	59	069	030/060	10	10
16.7	68.6	45	046	030/065	10	10
16.5	68.4	29	024	040/065	10	10
16.4	68.2	16	997	040/042	10	10
16.6	68.5	37		039/070	OBSERVED MAX WIND	
16.2	68.0	CENTER	985			
16.0	67.7	21	965	230/023	11	11
15.8	67.5	37	999	220/058	09	09
15.7	67.3	50	033	200/052	09	09
15.5	67.1	66	050	200/036	09	09
15.4	66.9	79	061	240/022	08	08
15.2	66.8	91	073	200/035	08	08
15.0	66.7	104	073	190/020	08	08
15.8	67.5	37		219/058	OBSERVED MAX WIND	

SEP 11,1988
AF980 0412A GILBERT OB 11 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0900Z - 1328Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 228 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
15.0	69.9	100	063	300/039	07	07
15.2	69.7	83	054	330/035	09	09
15.3	69.5	70	040	310/045	10	10
15.5	69.3	54	015	290/055	11	11
15.8	69.1	34	983	300/049	11	09
16.0	68.9	18	944	290/034	12	12
15.5	69.3	54		318/055	OBSERVED MAX WIND	
15.1	68.6	CENTER	985			
15.6	68.5	30	968	130/084	10	10
15.8	68.5	42	990	150/089	08	08
15.9	68.3	51	024	140/060	09	09
17.1	68.1	66	053	130/064	09	09
17.2	67.8	80	069	130/055	10	10
17.4	67.6	96	086	120/042	09	09
17.6	67.5	110	094	120/045	09	09
15.8	68.5	42		097/089	OBSERVED MAX WIND	

SEP 10,1988
AF980 0312A GILBERT OB 05 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1535Z - 1906Z
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 297 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
15.8	65.6	13	994	330/027	24	24
15.9	65.8	26	995	350/029	23	23
15.9	66.1	44	996	020/027	23	23
15.2	66.2	55	997	030/033	23	23
15.4	66.4	71	998	040/037	23	23
15.5	66.7	89	999	050/035	24	23
15.7	66.8	100	001	050/041	24	23
15.3	66.3	63		034/041	OBSERVED MAX WIND	
15.7	65.4	CENTER	993			

SEP 11,1988
AF980 0312A GILBERT OB 12 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2310Z - 0036Z
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 167 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
14.6	66.5	79	000	270/035	23	23
14.8	66.5	68	999	260/038	23	23
15.1	66.5	51	997	250/037	23	23
15.4	66.5	34	995	260/035	23	23
15.6	66.6	21	993	260/040	23	23
15.7	66.7	13	987	240/049	24	24
15.6	66.6	21		237/047	OBSERVED MAX WIND	
15.9	66.8	CENTER	984			
15.1	66.8	12	992	100/021	23	23
15.4	66.8	30	993	100/034	23	23
15.6	66.8	42	995	090/062	23	23
15.8	66.8	54	998	090/067	22	22
16.1	66.8	72	001	090/071	22	22
16.9	66.8	60		090/074	OBSERVED MAX WIND	

OBSERVATION PERIOD : 0119Z - 0244Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 89 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.5	56.6	99	504	170/023	18	15
12.5	56.9	82		130/035	18	15
12.5	57.2	64		130/035	18	15
12.5	57.5	46		140/035	18	15
12.5	57.7	35		140/021	18	17
12.5	57.9	23	485	160/027	18	17
	58.2	8	479	140/013	18	18
	58.5	13	473	240/005	19	
	56.9	82		170/036	OBSERVED MAX WIND	
	58.3	CENTER				
	58.7	23	476	060/012	21	16
	59.0	41		070/018	18	18
	59.5	71	493	060/011	19	17
12.3	60.0	100		050/016	19	16
12.3	60.1	106	501	050/015	19	15
12.5	59.0	41		360/018	OBSERVED MAX WIND	

OCT 13,1988
AF765 0117A JOAN 08 11 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1439Z - 1549Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 94 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.7	55.4	70	312	120/032	21	21
12.6	55.7	54	311	120/039	23	23
12.5	55.9	44	311	150/015	24	22
12.6	55.7	54		192/039	OBSERVED MAX WIND	
12.8	56.6	CENTER	304			
12.8	56.5	5	308	060/052	23	23
12.3	57.4	46	487	060/025	15	15
12.8	57.7	64	493	060/027	15	14
12.8	56.5	5		179/052	OBSERVED MAX WIND	

OBSERVATION PERIOD : 03032 - 03442
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 209 DEGREES

LAT	LON	RDST(NM)	RST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.3	59.4	82	498	290/019	19	15
11.5	59.2		494	280/014	18	15
11.5	59.0	62	492	290/021	18	16
11.7	58.9	49	488	270/024	18	17
11.9	58.7	36	482	230/017	18	17
12.0	58.5	32	479	240/020	18	17
12.1	58.3	33	475	240/024	18	
12.1	58.3	33		225/024	OBSERVED MAX WIND	
12.3	58.7	CENTER				
12.9	58.3	33	47[illegible]	140/033	19	17
13.1	58.1	50	4[illegible]2	130/029	18	14
13.2	58.0	58	4[illegible]5	130/025	18	
13.4	57.8	75	488	120/025	17	14
13.5	57.7	83	494	130/029	17	16
13.6	57.6	92	494	120/022	17	
13.7	57.5	100	497	120/019	17	15
12.3	58.3	33		134/033	OBSERVED MAX WIND	

OCT 15,1988
AF360 3417A JOAN 03 04 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 23202 - 00562
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 325 DEGREES

LAT	LON	RDST(NM)	RST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.2	62.1	72	4[illegible]9	110/031	20	10
13.1	62.0	64	441	090/023	19	12
12.9	61.7	29	4[illegible]0	090/024	17	13
12.4	61.[illegible]	16	441	070/031	18	10
12.2	61.5	5	4[illegible]5	360/013	20	14
12.4	61.6	16		045/031	OBSERVED MAX WIND	
12.2	61.4	CENTER	0[illegible]2			
11.9	61.2	21	462	240/014	17	13
11.8	60.9	37	4[illegible]	130/015	17	13
11.7	60.8	44	4[illegible]	130/021	16	13
11.5	60.7	55	457	160/015	19	11
11.5	60.5	75	4[illegible]	140/034	19	11
11.[illegible]	60.3	92	470	160/017	19	10
11.3	60.2	100	474	160/013	17	15
11.3	60.5	75		225/034	OBSERVED MAX WIND	

OCT 15,1935
AF300 0417A JOAN 03 07 CON KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0124Z - 0335Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 89 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.2	59.8	140		120/014	17	
12.2		134	476	130/027	17	15
12.2	60.2	117		120/012	18	12
12.2	60.4			140/015		13
12.2				120/019	16	
12.2		76		130/015	16	
12.2	61.2	5		140/019		
		41		220/025	17	
12.2	61.7	29		130/009	18	12
12.1	61.9			200/014	17	12
12.2	59.9	134		179/027	OBSERVED MAX WIND	
12.2	62.2	CENTER				
	62.5	17		350/011		
12.2	62.7		455	040/013		
12.1				040/021		
12.1						10
12.1	63.5	76			18	10
12.2					18	10
12.2			473	050/009	18	10
12.1	63.1	53		353/021	OBSERVED MAX WIND	

OCT 15,1935
AF300 0417A JOAN 03 10 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0339Z - 0442Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 185 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
10.9	62.9	73	466	270/004	18	13
11.1	62.9			280/013	18	13
11.4	62.8	46	464	280/014	18	11
11.6	62.8	66	461	270/011		10
11.8	62.8	24	456	240/012		12
12.1	62.8	9	449	300/009	17	15
11.4	62.8	46			OBSERVED MAX WIND	
12.2	62.7	CENTER	446			
12.5	62.8		453	070/014		14
12.7	62.8	30	446	080/024	16	15
12.9	62.7	42	449	120/017		14
12.7	62.8	30		078/024	OBSERVED MAX WIND	

OCT 15,1988
AF304 0417A JOAN 03 12 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0500Z - 0515Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 282 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.4	63.7	54	464	030/025	17	14
12.3	63.5	41	461	030/014	18	13
12.2	63.2	23	455	030/017	18	
12.1	63.1	19	446	350/019	20	11
12.4	63.7	54		012/025	OBSERVED MAX WIND	
12.2	62.8	CENTER	443			
12.5	62.6	18		120/013	17	13
12.6	62.0	26	449	090/011	15	15
12.8	62.3	46	465	140/014	16	15
13.0	62.1	63	462	150/019	17	14
13.1	62.0	71	468	180/009	15	15
13.2	61.8	93	460	100/025	17	15
13.3	61.7	92	471	120/015	15	15
12.2	61.8	58		179/025	OBSERVED MAX WIND	

OCT 15,1988
AF304 0517A JOAN 03 05 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1116Z - 1307Z
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 65 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.8	62.2	129	009	120/026	24	18
12.7	62.5	110	009	090/027	23	20
12.6	62.7	97	009	100/031	23	21
12.5	62.9	84	008	100/032	24	20
12.5	63.1	73	008	100/038	23	23
12.2	63.3	55	008	100/026	24	22
11.9	63.3	52	008	120/012	23	21
11.7	63.3	54	007	120/018	24	22
11.4	63.4	67	008	180/026	24	22
11.6	63.7	34		170/027		
11.7	64.0	16		180/043		
12.5	63.1	73		150/038	OBSERVED MAX WIND	
11.9	64.2	CENTER	001			
11.6	64.3	18	007	230/011	24	24
11.5	64.5	29	008	340/012	23	21
11.3	64.6	43	008	070/012	24	21
11.2	64.7	51	008	100/007	24	20
11.1	64.8	59	008	060/007	24	24
11.0	64.8	64	008	360/006	25	22

OCT 15,1988
AF360 0617A JOAN 03 04 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2227Z - 0304Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 356 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.7	66.0	96	463	130/025	18	14
13.5	66.0	84	460	110/030	17	13
13.3	66.0	72	460	110/019	17	13
13.0	66.0	54	453	110/035	18	13
12.7	66.0	36	450	090/034	17	12
12.5	66.0	24	447	110/030	17	14
	66.0	8	432	060/027	18	15
13.0	66.0	54		083/035	OBSERVED MAX WIND	
12.1	65.9	CENTER	412			
11.8	65.9	18	448	250/010	18	15
11.5	65.9	36	451	200/019	16	15
11.3	65.9	48	460	/	17	15
11.1	65.9	60	463	220/021	16	13
10.9	65.9	72	469	190/021	17	13
11.1	65.9	60		270/021	OBSERVED MAX WIND	

OCT 15,1988
AF360 0617A JOAN 03 07 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0341Z - 0510Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 89 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.0	64.4	123	475	140/018	19	10
12.0	64.6	111	476	160/014	18	12
12.0	64.9	93	473	170/013	17	12
12.0	65.2	76	473	170/021	17	14
12.0	65.5	58	470	160/029	17	13
12.0	65.7	46	463	160/012	17	14
12.0	65.9	35	457	160/010	17	14
12.0	65.5	58		179/029	OBSERVED MAX WIND	
12.0	65.5	CENTER	428			
12.3	66.6	18	441	090/029	20	14
12.5	66.5	30	459	110/029	19	12
12.8	66.5	48	466	130/023	19	13
13.0	66.5	60	469	100/029	18	13
13.3	66.5	78	475	120/029	18	12
13.5	66.5	90	478	100/027	18	12
13.8	66.5	108	491	100/029	19	12
12.5	66.5	30		090/029	OBSERVED MAX WIND	

OCT 15,1988
AF360 0617A JOAN 03 10 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0421Z - 0501Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 303 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.1	68.0	119	472	090/013	18	13
12.9	68.5	108	469	080/014	18	13
12.8	68.3	95	469	080/023	13	12
12.6	68.0	73	466	050/011	15	15
12.5	67.8	60	463	060/014	17	14
12.3	67.6	44	459	060/021	18	12
12.2	67.4	31	450	020/023		
12.1	67.0	8		045/032		
12.0	66.9	CENTER	405			
12.2	66.8	13	441	140/031	18	14
12.5	66.6	34	454	150/025	18	15
12.6	66.5	42	457	130/029	17	15
12.8	66.3	59	462	120/023	16	13
12.9	66.1	71	465	140/022	17	13
13.1	65.9	88	474	100/021	17	13
13.3	65.7	105	478	100/023	17	12
12.2	66.8	13		116/031	OBSERVED MAX WIND	

OCT 15,1988
AF965 0717A JOAN 03 05 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1214Z - 1244Z
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 35 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.5	66.8	130	310	140/007	23	22
13.4	67.0	119	310	120/011	23	23
13.2	67.2	102	311	130/007	23	23
13.0	67.5	82	310	160/015	23	22
12.9	67.6	74	309	140/023	23	21
12.7	67.8	58	309	110/024	23	22
12.5	68.0	43	309	110/029	22	23
12.3	68.2	30	307	100/037	22	20
12.1	68.2	18	306	120/033	23	22
11.9	68.2	6	301	080/025	24	24
12.0	68.2	12		090/051	OBSERVED MAX WIND	
11.8	68.2	CENTER	300			
11.9	68.2	0	303	210/049	23	23
11.6	68.0	16	309	130/039	21	21
11.5	67.8	27	310	200/025	22	22
11.3	67.6	46	311	220/027	23	18
11.1	67.5	59	311	240/011	22	21
10.9	67.3	75	311	250/014	23	20
10.7	67.2	88	311	220/015	23	21

OCT 15,1988
AF263 07177A JOAN 03 03 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1303Z - 1414Z
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 24 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.7	66.4	135	011	210/007	24	13
11.7	66.8	112	012	220/015	23	21
11.8	67.0	100	012	190/003	22	21
11.9	67.2	88	012	180/012	22	20
11.8	67.5	70	011	210/033	22	19
11.8	67.7	50	010	190/033	22	21
11.9	67.8	52	010	180/047	22	20
11.8	68.3	24	008	160/031	19	19
11.9	68.2	29		170/064	OBSERVED MAX WIND	
11.9	68.7	CENTER	001			
12.1	68.8	13	006	070/044	23	23
12.3	69.0	29	008	070/023	24	22
12.5	69.2	46	009	050/025	25	21
12.6	69.4	58	010	060/023	25	22
12.8	69.6	75	010	090/018	25	22
13.0	69.7	88	011	080/027	25	22
13.2	69.9	105	011	080/024	25	21
12.1	68.8	13		063/064	OBSERVED MAX WIND	

OCT 15,1988
AF263 07177A JOAN 03 11 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1523Z - 1527Z
FLTALT : 01503 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 270 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.0	69.6	41	008	360/014	25	20
12.0	69.3	23		350/019	24	21
12.0	69.0	5	002	350/018	24	23
12.0	69.3	23		360/014	OBSERVED MAX WIND	
12.0	68.9	CENTER	000			
12.0	69.0	5	001	070/007	25	24
12.2	68.8	13	005	120/055	23	22
12.5	68.9	30	007	100/041	23	22
12.8	69.0	48	008	100/033	24	21
13.1	68.9	66	009	090/023	24	21
12.2	68.8	13		116/055	OBSERVED MAX WIND	

OCT 15,1988
AF968 0717A JOAN OB 14 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1545Z - 1800Z
FLTALT : 01509 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 315 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.8	69.8	58	009	050/017	25	22
12.6	69.7	46	007	060/024	25	23
12.5	69.5	33	006	050/034	25	20
12.2	69.4	18	003	050/032	24	23
12.5	69.5	33		045/034	OBSERVED MAX WIND	
12.1	69.1	CENTER	000			
12.0	68.8	18	005	170/032	22	22
12.0	68.7	24	007	170/032	22	21
12.0	68.4	41	007	190/018	23	21
12.0	68.1	59	008	190/026	23	21
12.0	67.8	76	009	170/011	24	21
12.0	67.6	83	009	180/007	24	23
12.0	67.3	105	008	170/015	25	18
12.0	68.8	18		198/032	OBSERVED MAX WIND	

OCT 17,1988
AF984 0817A JOAN OB 05 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2323Z - 0027Z
FLTALT : 05003 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 56 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.0	68.5	98	493	100/024	13	13
12.9	68.7	85	487			
12.7	68.9	68				
12.5	69.1	52	480	110/029	19	13
12.4	69.5	29	474	120/035	17	13
12.3	69.6	21	471	130/034	18	14
12.3	69.8	13	460	120/043	18	13
12.3	69.8	13		116/049	OBSERVED MAX WIND	
12.1	69.9	CENTER	450			
12.7	70.5	50	479	090/044	17	17
12.7	70.7	59	477	080/043	17	15
12.8	71.0	74	434	090/035	17	13
12.9	71.4	100	497	080/034	18	13
13.0	71.7	118	491	080/034	18	13
13.0	71.9	129	490	100/021	19	12
13.1	72.1	142	495	080/007	19	11
12.7	70.5	50		045/044	OBSERVED MAX WIND	

AF763 0917A JOAN 03 05 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1114Z - 1259Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 345 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.7	72.5	117	483	070/033	17	14
13.5	72.5	106	494	080/024	17	15
13.2	72.5	89	484	070/029	17	14
12.9	72.5	72	491	070/033	17	13
12.7	72.5	61	471	060/047	17	14
12.6	72.5	56	474	060/040	17	15
12.7	72.5	61		061/047	OBSERVED MAX WIND	
11.8	72.0	CENTER	300			
12.4	73.0	68	486	070/037	17	15
12.7	73.1	84	494	060/027	15	15
12.9	73.3	100	496	060/033	17	14
13.1	73.3	109	496	090/031	17	14
13.3	73.5	125	499	050/024	17	14
13.5	73.6	138	499	070/019	17	14
13.8	73.8	159	502	080/027	15	14
14.0	73.8	168	512	070/017	13	14
12.4	73.0	61		331/037	OBSERVED MAX WIND	

OCT 17,1938
AF784 0817A JOAN 03 13 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2254Z - 3400Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 327 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.2	71.5	64	494	050/034	18	12
12.3	71.3	53	497	050/031	15	15
12.7	71.2	45	484	060/031	17	17
12.6	71.1	37	481	050/035	17	14
12.4	70.9	24	476	070/047	15	15
12.2	70.9	12	481	070/054	17	15
12.0	70.9	0	392	060/031	19	16
12.2	70.9	12		090/055	OBSERVED MAX WIND	
12.0	70.9	CENTER	590			
12.2	70.9	12	443	090/064	15	15
12.5	70.8	30	478	100/037	17	15
12.9	70.9	54	488	090/032	17	14
13.1	70.9	66	491	110/033	18	14
13.4	71.0	84	502	100/029	17	15
13.8	71.1	108	500	080/029	15	15
13.7	71.4	106	500	060/029	18	15
12.2	70.9	12		090/064	OBSERVED MAX WIND	

AF784 3817A JOAN 03 12 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2423Z - 2451Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 5 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.0	71.1	54	487	080/027	18	13
12.9	71.1	48	480	070/035	17	14
12.8	70.8	48	481	070/031	17	15
12.7	70.6	50	480	080/024	17	15
12.9	71.1	48		096/035	OBSERVED MAX WIND	
12.1	71.2	CENTER	480			
12.9	70.7	56	484	110/039	17	14
13.0	71.0	55	484	100/034	18	13
13.1	71.2	60	486	090/032	18	13
13.2	71.2	66	486	100/031	18	13
13.1	71.2	60		090/032	OBSERVED MAX WIND	

OCT 17,1933
AF708 3917A JOAN 03 08 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1403Z - 1546Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 273 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.8	74.2	94	498	020/011	15	15
11.8	73.9	70	496	090/007	16	15
11.3	73.6	59	495	040/009	17	15
11.8	73.4	47	495	042/023	17	14
11.8	73.4	47		007/023	OBSERVED MAX WIND	
11.7	72.8	CENTER	500			
12.3	72.8	36	474	100/045	17	14
12.4	72.4	43	482	110/039	18	13
12.6	72.2	56	499	110/037	18	12
12.8	72.1	72	495	100/029	18	12
13.1	71.9	93	494	110/032	18	12
13.2	71.8	101	495	100/031	17	12
13.5	71.6	122	500	100/031	18	13
14.0	71.4	154	501	120/017	17	14
12.5	72.8	36		090/045	OBSERVED MAX WIND	

OCT 17.1968
AF963 J917A JOAN 03 11 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1541Z - 1744Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 332 DEGREES

LAT	LON	RDST(NM)	HST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.3	73.8	101	494	100/025	18	12
13.1	73.6	85	491	120/024	15	14
12.9	73.5	72	488	110/035	17	14
12.6	73.4	53	485	090/024	16	14
12.4	73.3	40	476	080/036	16	13
12.2	73.3	29	461	060/041	15	13
12.0	73.1	13	433	060/065	17	13
12.0	73.1	13		063/065	OBSERVED MAX WIND	
11.8	73.0	CENTER	350			
12.1	73.0	18	448	090/051	18	13
12.4	73.0	36	464	070/044	17	13
12.6	73.0	48	473	090/031	17	13
12.9	73.0	66	482	070/024	16	13
13.1	73.0	78	442	060/013	15	15
13.3	73.0	93	486	080/032	15	14
11.9	72.9	6		134/073	OBSERVED MAX WIND	

AF984 1017A JOAN 03 02 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0352Z - 0704Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 229 DEGREES

LAT	LON	RDST(NM)	HST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.2	74.8	46	314	240/014	15	15
11.3	74.7	37	470	350/013	17	17
11.4	74.5	25	493	350/023	13	15
11.6	74.4	13	434	310/044	13	16
11.7	74.2	0		090/074	OBSERVED MAX WIND	
11.7	74.2	CENTER	230			
12.2	74.5	34	416	070/073	17	17
12.3	74.3	36	476	100/035	13	16
12.5	74.3	54	486	100/063	17	17
12.8	74.2	65	493	100/024	13	15
13.0	74.1	75	496	130/023	17	15
13.3	74.1	90	494	120/023	23	13
13.5	74.1	106	495	110/031	19	15
12.2	74.5	34		059/073	OBSERVED MAX WIND	

SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0233Z - 0347Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 315 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.8	75.6	83	495	050/020	19	15
12.6	75.4	67	492	050/027	19	15
12.5	75.2	54	488	060/032	19	13
12.3	75.0	38	479	050/037	18	16
12.2	74.8	26	473	040/045	18	15
12.0	74.7	13	419	040/067	15	15
11.8	74.6	0		090/082	OBSERVED MAX WIND	
11.8	74.6	CENTER	306			
11.9	74.4	13	458	140/041	17	16
11.8	74.1	29	490	120/021	18	15
11.8	73.9	41	485	160/025	17	15
11.8	73.6	58	456	130/017	17	16
11.7	73.3	76	482	110/021	18	15
11.7	73.1	85	481	130/010	18	17
11.7	72.9	100	485	100/015	18	18
11.9	74.5	8		134/071	OBSERVED MAX WIND	

OCT 13/1985
AF984 1017A JOAN 08 15 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0435Z - 0524Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 5 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.6	74.9	114	496	070/027	18	16
13.3	74.9	96	485	070/028	18	15
13.1	74.9	84	492	050/020	17	17
12.8	74.9	67	489	060/023	18	16
12.6	74.9	55	488	090/029	17	15
12.4	74.9	43	479	070/030	17	17
12.1	74.9	26	473	070/050	17	17
11.8	75.0	8	413	090/065	15	15
11.8	75.0	8		134/083	OBSERVED MAX WIND	
11.7	75.1	CENTER	326			
11.3	75.2	24	465	320/010	17	16
11.2	75.1	30	446	230/010	17	17
11.3	75.2	24		283/010	OBSERVED MAX WIND	

SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0522Z - 0543Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 101 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.5	74.7	30	10[illegible]	170/011	09	07
11.5	74.9	17	107	130/024	10	07
11.8	75.4	15	073	180/062	11	07
11.4	75.1	13		243/064	OBSERVED MAX WIND	
11.5	75.2	CENTER	999			

OCT 13,1988
AF360 1117A JOAN 08 07 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : [illegible] - [illegible]
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 79 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.2	75.2	30		191/043	OBSERVED MAX WIND	
11.3	75.7	CENTER	[illegible]			
11.5	75.9	55	[illegible]	100/015	13	56
11.3	75.6	34	[illegible]	100/007	13	05
11.2	75.8	03	[illegible]	120/013	09	05
11.1	75.7	53	[illegible]	150/035	13	07
11.1	75.0	42	[illegible]	150/035	13	05
11.2	75.2	30	[illegible]	170/043	09	05
11.2	76.4	1[illegible]	[illegible]	140/016	08	07
11.2	76.9	13	[illegible]	010/062	09	03
11.1	77.1	60	[illegible]	050/043	07	07
11.1	77.3	87	[illegible]	030/031	09	05
11.1	77.7	90	[illegible]	050/033	13	03
11.2	77.9	70	[illegible]	060/024	09	03
11.2	78.1	82	[illegible]	060/029	09	03
11.2	78.5	105	[illegible]	060/023	09	04
11.2	75.9	13		353/062	OBSERVED MAX WIND	

OCT 12,1988
AF963 1217A JOAN 08 07 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0335Z - 0531Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 85 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.3	76.2	82	472	140/014	15	14
11.2	76.4	76	463	150/023	16	14
11.2	76.7	55	454	170/034	15	15
11.3	76.9	47	442	160/028	15	15
11.3	77.2	30	419	150/033	16	15
11.3	77.5	13	387	160/064	18	15
11.3	77.5	13		152/094	OBSERVED MAX WIND	
11.2	77.7	CENTER	147			
11.2	77.8	5	320	020/061	39	03
11.2	78.1	23	356	010/055	39	05
11.2	78.4	41	375	030/049	38	09
11.2	78.6	55	387	030/044	38	05
11.2	78.9	70	392	040/043	38	08
11.2	79.2	84	392	060/023	38	05
11.2	79.4	100	395	050/031	38	05
11.2	77.7	0		090/087	OBSERVED MAX WIND	

ASSL OCT 19,1988
AF963 1217A JOAN KMIA
OBSERVATION PERIOD : 0724Z - 0744Z

TIME	LAT	LON	PRESS ALT(FT)	D-VALUE(FT)	HT OF STANDARD PRESSURE SURFACE (M) OR SLP (MB)
0729	11.18	77.77	9932	-180	2956
0730	11.23	77.77	10303	-233	2938
0731	11.22	77.73	10307	-200	2948
0732	11.19	77.75	9915	-140	2956
0733	11.22	77.83	9975	-223	2942
0734	11.24	77.77	10345	-217	2941
0735	11.22	77.73	10355	-177	2954
0736	11.15	77.74	9941	-115	2976
0737	11.20	77.73	9932	-200	2950
0738	11.25	77.81	9987	-207	2947
0739	11.25	77.77	9974	-164	2960
0740	11.21	77.75	9965	-187	2954
0741	11.21	77.81	10313	-207	2946
0742	11.24	77.73	9961	-161	2951
0743	11.20	77.74	9945	-187	2954
0744	11.19	77.77	10333	-164	2958
0745	11.24	77.73	10343	-128	2959
0746	11.27	77.73	10353	-200	2947
0747	11.32	77.71	9987	52	3026
0748	11.36	77.69	9991	226	3079

OCT 19,1988
AF968 1217A JOAN 08 10 COR KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0657Z - 0817Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 224 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
10.0	76.9	101	102	230/019	08	07
10.1	78.7	88	089	180/014	07	07
10.4	78.5	67	086	310/024	08	08
10.5	78.3	54	077	320/033	08	08
10.8	78.1	33	065	330/045	08	07
10.9	77.9	21	041	330/039	08	08
11.0	77.7	12		270/085	OBSERVED MAX WIND	
11.2	77.7	CENTER	304			
10.5	77.6	42	009	120/052	09	09
11.7	77.5	32	055	120/037	09	07
11.9	77.4	45	077	120/035	08	06
12.1	77.2	61	088	110/036	09	04
12.2	76.9	76	084	130/022	08	06
12.3	76.8	84	097	120/032	09	06
12.5	76.7	97	099	130/033	08	04
11.3	77.6	8		134/095	OBSERVED MAX WIND	

OCT 19,1988
AF360 1317A JOAN 08 07 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1107Z - 1221Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 38 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.3	77.3	84	096	090/039	10	05
12.4	77.4	76	091	110/029	10	05
12.2	77.7	55	064	090/052	10	04
12.0	77.8	43	073	100/038	09	07
11.8	77.9	29	045	110/054	10	07
11.6	78.1	13	070	090/074	11	07
11.3	78.1	6		134/114	OBSERVED MAX WIND	
11.4	78.2	CENTER	749			
11.5	78.4	13	017	050/053	10	08
11.7	78.6	29	067	040/039	10	05
11.9	78.8	46	077	060/045	10	03
12.2	79.0	67	084	060/038	09	04
12.3	79.1	75	102	080/025	09	04
12.5	79.3	92	108	090/019	09	05
12.7	79.5	109	108	090/025	09	03
11.5	78.3	6		045/095	OBSERVED MAX WIND	

OCT 19,1988
AF360 1317A JOAN 03 11 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1243Z - 1407Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 266 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.3	79.9	88	099	040/023	10	06
	79.7	76	105	010/025	09	05
11.4	79.4	58	101	010/039	09	04
11.4	79.2	47	084	030/049	08	04
11.4	78.9	29	065	020/039	09	06
11.4	78.7	17	026	360/056	10	09
11.4	78.6	11	798	360/055	14	10
11.3	78.5	8		314/070	OBSERVED MAX WIND	
11.4	78.4	CENTER	708			
11.4	78.1	17	049	210/044	09	09
11.4	77.9	29	077	190/029	09	05
11.4	77.6	47	089	170/025	10	04
11.3	77.3	65	099	170/019	09	06
11.3	77.1	76	105	150/017	09	05
11.4	76.8	94	108	130/013	09	08
11.4	76.6	105	114	170/020	10	05
11.4	78.1	17		179/044	OBSERVED MAX WIND	

OCT 19,1988
AF360 1317A JOAN 03 15 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1434Z - 1533Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 46 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.6	77.4	104	108	080/025	10	04
12.5	77.4	100	108	080/025	09	06
12.3	77.5	88	107	060/021	10	04
12.1	77.7	72	105	100/020	09	06
11.9	77.9	55	093	100/031	09	04
11.6	78.1	37	084	120/025	10	05
11.5	78.3	26	059	130/038	10	08
11.4	78.6	5	118	150/083	19	09
11.4	78.6	5		179/083	OBSERVED MAX WIND	
11.4	78.7	CENTER	696			
11.7	78.7	18	044		09	09
12.0	78.5	37	080	060/033	10	06
12.2	78.5	49	092	100/036	11	03
12.3	78.5	55	099	090/037	10	04
11.5	78.7	6		090/070	OBSERVED MAX WIND	

OCT 19,1988
AF361 1417A JOAN 03 06 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1648Z - 1756Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 357 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
1362	79.0	114	095	040/038	09	00
12.8	79.0	90	099	070/034	09	04
12.6	79.0	78	090	070/035	09	04
12.4	79.0	66	095	060/048	10	05
12.2	79.0	54	084	070/043	11	04
11.9	78.9	36	069	060/045	11	07
11.6	78.8	18	998	080/051	10	10
11.5	78.8	13		116/087	OBSERVED MAX WIND	
11.3	78.9	CENTER	709			
11.0	78.9	18	989	300/042	11	11
10.8	78.8	30	045	250/042	09	09
10.5	78.8	48	078	300/022	10	10
10.3	78.8	60	083	310/022	10	10
10.0	78.8	78	090	260/021	10	10
11.0	78.9	18		270/042	OBSERVED MAX WIND	

OCT 20,1988
AF968 1517A JOAN 03 07 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2317Z - 2339Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 39 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.5	78.2	101	088	100/034	08	08
12.2	78.4	80	078	050/019	08	08
12.2	78.5	76	075	070/043	08	08
12.1	78.7	64	[illegible]	090/024	08	08
11.9	78.9	48	056	110/032	08	06
11.7	79.1	32	043	080/027	07	07
11.6	79.2	13	970	100/059	08	08
11.4	79.2	13		116/059	OBSERVED MAX WIND	
11.2	79.3	CENTER	954			
11.0	79.5	16	323	230/083	08	05
10.9	79.7	29	048	250/049	08	07
10.7	79.9	46	059	360/043	08	07
10.5	80.1	59	073	360/038	08	07
10.4	80.3	76	083	350/023	07	07
10.3	80.7	98	086	360/021	08	06
10.1	81.1	125	092	340/018	08	05
11.0	79.5	16		314/083	OBSERVED MAX WIND	

OCT 20,1988
AF963 1517A JOAN 03 12 COR KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0351Z - 0112Z
FLTA.T : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 274 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.4	80.8	76	380	010/026	08	03
11.4	80.6	65	377	020/038	09	03
11.3	80.4	52	358	030/046	10	03
11.3	80.2	41	354	010/043	08	03
11.3	80.1	35	352	360/033	07	07
11.3	79.9	23	386	360/059	08	05
11.3	79.7	11	979	350/077	09	04
11.3	79.7	11		360/077	OBSERVED MAX WIND	
11.3	79.5	CENTER	803			

OCT 20,1988
AF963 1617A JOAN 03 13 COR KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0530Z - 0558Z
FLTA.T : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 354 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.1	79.9	120	103	080/037	08	08
12.8	79.9	102	398	070/039	09	08
12.6	79.9	90	395	060/043	08	08
12.3	79.9	73	392	060/042	07	08
12.1	79.9	61	376	060/041	09	08
11.9	79.8	48	358	060/059	09	09
11.6	79.8	30	341	060/052	08	08
11.3	79.7	12	965	050/064	08	08
11.2	79.7	6		090/077	OBSERVED MAX WIND	
11.1	79.7	CENTER	797			
11.0	79.6	6	993	280/074	11	10
10.7	79.6	24	321	280/057	07	09
10.5	79.6	36	359	280/033	07	07
10.3	79.6	48	371	270/022	08	08
10.0	79.6	66	370	270/034	08	08
11.0	79.6	6		225/074	OBSERVED MAX WIND	

OCT 20,1988
AF263 1617A JOAN 03 15 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0823Z - 0841Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 270 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.1	81.2	94	079	350/031	08	04
11.1	81.0	82	071	350/037	06	06
11.1	80.8	70	061	340/039	07	07
11.1	80.6	58	063	350/063	06	06
11.1	80.5	53	054	360/046	08	08
11.1	80.3	41	036	350/047	08	08
11.1	80.1	29	002	340/055	08	08
11.1	79.9	17		360/075	OBSERVED MAX WIND	
11.1	79.6	CENTER	800			
11.1	79.5	5	898	170/075	14	13
11.1	79.2	23	022	180/045	09	09
11.1	79.0	35	036	190/045	09	09
11.1	78.7	53	057	190/041	09	07
11.1	78.5	64	073	200/035	08	08
11.1	78.2	82	083	180/015	09	07
11.1	77.9	100	083	210/019	08	08
11.1	77.7	111	086	190/023	08	06
11.1	79.2	23		170/075	OBSERVED MAX WIND	

OCT 20,1988
AF261 1717A JOAN 03 05 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1027Z - 1038Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 62 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.5	78.8	52	059	150/022	09	09
11.5	78.9	47	044	160/034	10	10
11.4	79.1	34	026	170/037	10	10
11.3	79.3	21	007	180/034	12	10
11.1	79.6	CENTER	803			
11.1	79.9	17	002	060/048	11	10
11.1	80.1	29	027	020/047	10	
11.1	80.3	41	054	350/049	10	09
11.1	80.6	58	072	350/047	10	09
11.1	80.8	70	091	360/047	10	08
11.1	81.1	88	087	010/036	09	09
11.1	81.3	100	093	010/038	09	09

OCT 20,1988
AF361 1717A JOAN 08 07 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1211Z - 1235Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 222 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
9.9	80.7	96	995	300/031	11	07
10.0	80.5	84	992	290/031	10	09
10.1	80.3	72	983	290/032	10	09
10.3	80.2	59	977	320/014	10	09
10.5	80.0	38	956	300/025	10	10
10.8	79.9	25	928	310/035	10	10
10.9	79.8	16	962	310/047	11	10
11.1	79.6	CENTER	826			
11.5	79.5	24	910	100/049	11	10
11.7	79.3	40	955	110/048	11	10
11.8	79.1	51	977	120/045	11	08
11.9	78.8	67	982	130/037	10	10
12.0	78.6	79	992	130/033	09	09
12.2	78.5	92	101	120/034	10	10
12.4	78.3	109	110	130/032	10	08

OCT 20,1988
AF284 1817A JOAN 08 07 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1724Z - 1732Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 55 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.7	79.3	42	111	120/037	10	09
11.5	79.7	16	989	120/057	11	
11.4	79.7	13	906	120/065	12	10
11.4	79.7	13		152/065	OBSERVED MAX WIN	
11.3	79.9	CENTER	836			
11.3	79.9	0	913	060/019	11	11
11.3	80.1	11	977	030/053	11	09
11.4	80.5	35	990	030/039	11	07
11.4	80.6	41	996	030/033	10	09
11.3	80.9	58	996	010/035	10	08
11.3	81.2	76	106	010/019	09	09
11.3	81.4	83	989	030/029	10	09
11.2	81.6	100	999	060/017	09	09
11.3	80.0	5		360/065	OBSERVED MAX WIND	

OCT 20,1988
AF384 1817A JOAN 03 11 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1857Z - 2007Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 180 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
9.5	79.9	108	384	250/030	09	08
9.8	79.8	90	371	260/035	08	07
10.0	79.8	78	379	240/033	10	07
10.2	79.8	66	380	250/031	10	08
10.5	79.8	48	364	240/041	09	09
10.6	79.9	42	373	240/035	10	10
11.1	79.9	12	385	270/056	11	03
11.2	79.9	6	360	270/062	11	11
11.2	79.9	6		270/062	OBSERVED MAX WIND	
11.3	79.9	CENTER	342			
11.6	79.9	18	317	090/064	12	10
11.8	79.8	30	357	090/051	11	08
12.1	79.8	48	346	100/041	10	07
12.5	79.8	72	357	110/043	09	06
12.6	79.8	78	366	110/023	10	07
12.8	79.8	90	368	110/028	18	09
13.0	79.8	102	381	090/029	09	09
11.6	79.9	18		090/064	OBSERVED MAX WIND	

OCT 21,1988
AF365 1917A JOAN 03 03 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2351Z - 0056Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 10 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.1	80.0	97	377	080/035	10	09
13.0	80.0	91	373	030/027	11	07
12.7	80.0	74	370	080/031	12	06
12.5	80.1	61	354	070/045	11	05
12.2	80.1	43	342	080/042	11	06
11.9	80.2	24	990	070/058	11	08
11.6	80.3	6	343	070/043	13	11
11.9	80.2	24		104/054	OBSERVED MAX WIND	
11.5	80.3	CENTER	321			
11.3	80.3	12	950	280/057	11	10
11.0	80.2	30	318	330/033	11	10
10.3	80.3	42	342	280/044	11	08
10.5	80.2	60	362	330/014	10	08
10.3	80.2	72	373	250/022	10	08
10.0	80.3	90	379	260/023	11	05

OCT 21,1988
AF304 2317A JOAN 03 01 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2140Z - 2254Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 96 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.7	80.5	100	399	170/029	10	08
11.7	80.6	94	387	170/043	10	06
11.7	80.9	77	367	190/044	09	09
11.7	81.2	59	367	180/050	10	07
11.8	81.4	47	361	180/064	09	07
11.9	81.7	29	354	170/064	10	09
11.9	81.9	17	904	170/071	13	10
11.9	82.2	0		090/109	OBSERVED MAX WIND	
11.9	82.2	CENTER	591			
11.5	82.3	18	361	260/071	13	09
11.4	82.3	30	320	280/062	11	11
11.1	82.3	48	345	270/043	09	09
10.9	82.3	60	354	270/034	09	08
10.6	82.3	78	368	260/037	10	07
10.3	82.3	96	383	260/041	10	06

OCT 22,1988
AF304 2317A JOAN 03 11 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2304Z - 2313Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 155 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
10.5	81.8	85	375	220/043	09	05
10.7	81.9	72	369	210/045	09	06
10.9	81.9	61	356	210/059	10	07
11.2	81.9	46	342	210/047	09	07
11.3	82.1	34	335	240/056	11	09
11.5	82.2	21	843	220/087	14	10
11.7	82.3	6		225/102	OBSERVED MAX WIND	
11.8	82.4	CENTER	566			
12.1	82.4	18	874	100/071	12	10
12.3	82.2	32	324	120/035	10	09
12.4	82.1	40	328	130/065	10	08
12.6	81.9	56	357	130/052	09	07
12.8	81.8	69	380	130/044	09	07
12.9	81.6	81	346	140/039	09	08
13.1	81.4	97	102	140/037	09	07
12.3	82.3	13		116/102	OBSERVED MAX WIND	

OCT 21,1988
AF263-2117A JOAN 03 17 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1330Z - 1505Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 297 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.1	82.3	65	373	040/042	11	10
12.1	82.1	55	368	040/055	10	08
12.0	81.9	42	345	020/064	10	10
11.8	81.7	26	305	030/069	10	10
11.7	81.5	13	365	020/079	12	12
11.7	81.6	16		018/089	OBSERVED MAX WIND	
11.5	81.3	CENTER	701			
11.6	81.2	5	945	190/101	10	10
11.4	81.0	21	329	210/057	10	09
11.2	80.8	37	361	210/044	08	08
10.9	80.7	54	376	210/047	08	08
10.7	80.5	71	100	210/038	08	08
10.6	80.4	80	396	210/073	08	08
10.4	80.2	96	112	210/024	08	08
11.5	81.2	5		179/101	OBSERVED MAX WIND	

OCT 21,1988
AF263-2117A JOAN 03 11 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1000Z - 1126Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 93 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.5	79.4	106	385	160/043	10	10
11.5	79.7	86	383	160/057	09	09
11.5	79.9	76	359	170/045	09	09
11.6	80.2	58	346	170/054	10	10
11.6	80.5	41	322	170/059	10	10
11.5	80.7	29	958	160/075	11	11
11.6	80.8	23		179/091	OBSERVED MAX WIND	
11.6	81.2	CENTER	609			
11.4	81.5	21	982	330/081	10	10
11.2	81.6	33	327	320/053	10	10
10.9	81.7	51	360	320/047	10	10
10.7	81.9	67	374	330/043	09	09
10.5	82.0	81	386	320/027	10	10
11.4	81.5	21		325/081	OBSERVED MAX WIND	

OCT 21,1938
AF968 2017A JOAN 08 22 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0532Z - 0727Z
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 260 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.4	82.1	71	067	360/037	08	08
11.4	82.0	65	089	360/037	09	07
11.4	81.6	42	048	010/045	09	05
11.3	81.6	44	024	360/049	09	05
11.3	81.4	34	994	350/065	09	07
11.4	81.0	13	342	350/035	12	12
11.3	81.4	34		328/065	OBSERVED MAX WIND	
11.6	80.9	CENTER	817			
11.7	80.2	41	036	150/065	09	08
11.7	80.0	53	043	170/055	09	08
11.5	79.7	70	063	130/055	09	09
11.6	79.6	76	071	170/049	08	08
11.6	79.4	86	077	160/045	09	08
11.5	79.3	94		/		
11.5	79.1	106	088	170/036	08	08
11.7	80.2	41		171/065	OBSERVED MAX WIND	

NO/1 21,1988
AF308 3419A KEITH 3d 39 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0955Z - 1206Z
FLT LVL : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 275 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.8	88.0	61	452	350/054	14	11
21.3	87.7	45	434	320/027	14	12
21.3	87.4	28	403	360/029	14	14
21.8	87.2	17	399	040/019	14	14
21.7	86.9	0	365	060/034	17	17
21.6	86.8	8	361	060/013	17	17
21.8	88.0	61		005/054	OBSERVED MAX WIND	
21.7	86.9	CENTER	351			
22.4	86.7	43	421	130/041	15	15
22.5	86.7	55	443	100/033	15	15
22.8	86.7	66	456	100/044	15	15
23.2	86.8	90	466	090/047	15	15
23.3	86.8	96	472	070/047	14	14
23.5	87.0	114	480	040/042	15	12
23.7	87.0	120	485	050/046	15	12
23.2	86.8	90		093/047	OBSERVED MAX WIND	

NO/1 21,1988
AF308 3419A KEITH 3d 39 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1515Z - 1758Z
FLT LVL : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 7 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.4	86.9	127	309	330/044	21	20
21.0	86.9	103	306	360/043	21	21
21.8	86.9	91	307	350/051	22	22
21.5	86.9	79	305	370/051	24	24
21.3	86.9	62	303	370/051	24	23
21.1	86.9	45	301	360/043	24	21
22.8	86.9	34	299	370/051	21	21
22.6	86.9	24	296	090/043	21	21
22.4	86.9	17	293	110/045	21	21
23.3	86.9	62		105/053	OBSERVED MAX WIND	
22.3	87.2	CENTER	290			
22.2	86.9	17	291	230/029	22	22
21.0	86.7	33	294	220/041	21	21
21.9	86.5	45	297	210/051	23	23
21.3	86.3	58	300	220/051	21	20
21.7	86.2	66	303	220/034	21	21
21.5	86.1	77	304	220/034	21	20
21.9	86.5	45		211/051	OBSERVED MAX WIND	

NOV 21,1985
AF980-0519A-KEITH-OA-37-KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1940Z - 2027Z
FLT LVL : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 37 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.3	85.0	105	305	140/047	22	20
23.3	86.2	90	303	110/046	24	21
23.6	86.3	77	302	090/045	23	21
23.6	86.5	61	301	100/051	22	22
23.2	86.6	48	998	110/055	22	22
23.1	86.7	40	996	110/054	22	22
22.9	86.9	24	993	120/046	22	22
22.7	87.0	12	991	120/027	22	
23.2	86.6	48		132/055	OBSERVED MAX WIND	
22.5	87.2	CENTER	990			
22.7	87.6	22	993	010/021	22	22
22.6	87.8	33	996	360/062	21	21
22.6	88.1	49	410	360/054	16	16
22.5	88.3	61	423	350/059	16	16
22.5	88.5	72	438	360/057	17	13
22.6	88.9	94	449	340/029	17	13
22.5	89.1	105	456	010/049	17	13
22.3	88.4	66		355/075	OBSERVED MAX WIND	

NOV 21,1985
AF980-0519A-KEITH-OA-10-KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2100Z - 2237Z
FLT LVL : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 185 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.9	87.3	60	395	300/075	16	16
22.2	87.3	42	364	280/027	18	17
22.4	87.3	30	352	270/039		
22.6	87.3	18	339	280/017		16
21.9	87.3	60		275/075	OBSERVED	
22.9	87.2	CENTER	329			
23.2	87.2	18	344	130/039	17	17
23.5	87.3	36	368	110/031	17	
23.7	87.4	49	390	100/047	16	16
23.9	87.5	62	412	080/042	16	16
24.1	87.6	75	434	090/044	16	16
24.3	87.7	88	434	070/053	16	16
23.5	87.9	103	453	060/043	16	16
24.3	87.7	88		071/057	OBSERVED MAX WIND	

NOV 22,1988
AF365 3619A KEITH 3d 3S KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2245Z - 2351Z
FLIGHT : 05003 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 6 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.5	86.6	150	473	030/049	14	14
23.2	86.7			050/051	14	14
23.0	86.7		460	070/013	14	14
24.7	86.8	102	456	110/017	14	14
24.5	87.0	90	448	080/031	15	15
24.2	86.8	72	433	140/027	15	15
23.9	86.9	54	416	080/035	15	15
23.6	87.0	36	390	100/041	15	15
23.2	86.7	133		327/051	OBSERVED MAX WIND	
23.0	87.0	CENTER	367			
23.1	87.2	11	371	330/029	18	16
23.3	87.5	27	386	350/033	18	16
23.5	87.8	44	409	350/059	18	16
23.7	88.0	55	433	340/069	18	13
23.0	88.3	71	439	340/069	18	08
23.0	88.5	82	454	340/054	18	06
23.0	88.8	99	466	350/043	19	07
23.0	88.3	71		360/069	OBSERVED MAX WIND	

NOV 22,1988
AF365 3619A KEITH 3d 3S KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2113Z - 2238Z
FLIGHT : 05003 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 220 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.1	87.9	94	458	330/061	15	13
22.2	87.8	86	456	320/063	18	08
22.3	87.7	78	444	320/049	19	08
22.5	87.5	61	420	330/061	18	14
22.6	87.3	50	401	310/034	19	15
22.8	87.1	34	393	310/034	18	15
22.9	86.9	24	381	270/023	19	15
22.2	87.8	86		310/063	OBSERVED MAX WIND	
23.3	86.8	CENTER	359			
23.5	86.6	15	377	160/031	17	17
23.7	86.5	29	389	160/044	17	16
24.2	86.3	45	435	150/062	16	15
24.0	86.1	56	426	140/057	15	15
24.2	85.9	73	445	140/061	15	15
25.5	85.7	145	453	150/051	16	14
24.3	85.5	105	466	150/044	15	13
23.9	86.3	45		127/062	OBSERVED MAX WIND	

AF308 3619A KEITH 03 13 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0256Z - 0422Z
FLT LVL : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 20 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.9	85.5	77	460	110/045	15	14
23.7	85.5	65	435	120/041	15	15
23.4	85.5	50	423	130/057	15	15
23.2	85.6	37	435	120/057	15	15
----	85.9	8	377	090/021	17	
24.4	86.5	50		120/057	OBSERVED MAX WIND	
23.7	87.0	CENTER	35			
23.3	86.8	26	383	290/011	19	15
23.2	86.8	31	389	260/013	20	15
23.9	86.9	48	407	300/047	19	15
23.7	86.9	60	434	310/049	17	
23.4	86.9	64	453	290/051	17	14
23.1	86.9	96	463	320/041	15	13
21.9	87.0	108	469	310/044	14	11
22.6	86.9	66		255/051	OBSERVED MAX WIND	

AF308 3619A KEITH 03 13 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0508Z - 0546Z
FLT LVL : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 89 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.8	85.1	93	462	160/051	15	15
23.9	85.4	77	433	150/039	16	16
23.9	85.6	66	423	160/045	16	15
23.8	85.9	49	431	170/035	17	
23.7	85.2	33	387	130/027		
23.7	86.4	22	373	200/013	19	15
23.7	86.7	8	368	270/007	19	
23.8	85.1	93		170/051	OBSERVED MAX WIND	
23.3	86.8	CENTER	362			
23.3	87.1	16	379	360/011		
23.3	87.4	32	423	350/039	18	15
23.3	87.7	49	420	360/041	17	15
23.3	87.9	60	444	360/052	15	13
23.3	88.2	76	455	350/039	18	12
23.8	88.5	93	467	320/035	14	14
23.8	88.7	104	476	010/032	13	12
23.8	87.9	60		360/052	OBSERVED MAX WIND	

NOV 22 1988
AF303 3819A KEITH 30 36 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 13542 - 21122Z
FLT LVL : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 300 DEGREES

LAT	LON	DIST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
27.0	86.5	116	457	340/053	15	14
26.9	86.4	110	456	320/055	12	12
26.7	86.2	95	448	350/046	15	15
26.5	86.0	81	455	010/058	23	15
26.4	85.7	63	425	340/047	17	17
26.2	85.5	49	418	350/029	17	17
26.1	85.3	33	316	360/029	15	13
26.0	84.8	10	368	/	19	19
26.7	84.8	21	362	340/005	20	18
26.9	86.4	110		020/056	OBSERVED MAX WIND	
26.0	84.6	CENTER	993			
26.1	84.4	15	994	260/034	23	
26.5	84.2	32	995	240/034	24	24
26.4	84.0	48	997	220/051	22	
26.3	83.8	63	331	220/047	21	
	83.6	76	302	210/051	22	
26.9	83.4	92	305	210/051	23	
26.6	83.3	100	305	220/044	22	
26.4	84.0	66		227/051	OBSERVED MAX WIND	

NOV 23,1988
AF753 0819A KEITH OB 10 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0037Z - 0302Z
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 165 DEGREES

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
25.2	84.0	114	449	290/031	18	
25.3	83.9	96	455	280/045		
25.7	83.8	34	413	260/032	19	
25.3	83.8	66	403	260/029	19	
25.3	83.8	48	391	260/035	19	
25.5	83.9	36	376	240/030	19	
25.5	83.9	16	371	/	19	
25.6	83.9	30	379	280/017	20	
25.3	83.9	16	386	/	18	
25.3	83.9	96		273/045	OBSERVED MAX WIND	
27.1	83.8	CENTER	994			
27.2	83.8	6	396	/	17	
27.4	83.8	18	408	130/045	14	
27.5	83.9	30	429	080/032		
27.9	83.8	48	454	080/035		
28.2	83.9	66	466	080/038		
28.4	83.9	78	469	080/035		
28.7	83.8	96	473	080/029		
28.9	83.8	106	484	080/029		
27.4	83.7	18		105/045	OBSERVED MAX WIND	

NOV 23, 1983
AF/BD 0919A KEITH 08 05 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0037Z - 0510Z
FLIGHT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 343 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
29.0	83.3	104	007	100/054	21	17
28.7	83.3	86	006	100/055	19	17
28.5	83.3	75	006	100/067	18	18
28.3	83.2	62	005	050/059	19	19
28.0	82.9	42	003	020/059	20	20
27.9	83.0	36	999	100/049	14	15
27.5	83.3	24	994	020/041	14	14
27.3	83.3	21	997	050/015	17	17
27.0	83.3	27	996	340/022	19	19
25.8	83.1	51	995	290/021	19	19
27.0	82.8	15	995	230/023	19	19
28.0	82.9	42		090/054	OBSERVED	MAX WIND
27.3	82.9	CENTER	996			
27.0	82.9	13	996	320/020	23	23
25.8	82.9	30	996	320/019	23	23
25.5	82.9	42	996	320/023	24	23
25.3	82.9	60	996	230/032	24	23
25.1	82.9	72	000	280/048	21	
23.3	82.7	90	003	250/051	22	20
23.5	82.7	102	004	260/041	22	20
23.5	82.7	90		263/051	OBSER	MAX WIND

NOV 24,1988
AF365 1019A KEITH OB 10 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2307Z - 2359Z
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 89 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
29.5	76.7	62	002	150/047	21	20
29.5	76.8	57	001	140/034	22	
29.5	77.1	42	001	170/023	22	21
29.5	77.4	26	000	180/023	22	21
29.5	77.7	12	999	190/010	22	21
29.6	76.7	62		179/047	OBSERVED MAX WIND	
29.5	77.9	CENTER	999			
29.5	78.1	12	001	050/012	23	21
29.5	78.5	31	002	020/018	22	20
29.5	78.7	42	003	010/021	21	
29.5	79.1	62	005	360/020	21	19
29.5	79.6	88	005	340/025	22	19
29.5	79.7	94	005	310/029	22	19
29.5	79.7	94		356/029	OBSERVED MAX WIND	

NOV 24,1988
AF968 1119A KEITH OB 04 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0427Z - 0505Z
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 227 DEGREES

LAT	LON	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
30.3	77.5	105	006	300/027	20	16
30.5	77.2	86	004	320/019	20	16
30.7	76.9	66	004	320/014	20	17
30.9	76.7	50	003	310/014	20	16
31.0	76.5	39	002	310/007	20	16
31.2	76.3	23	002	290/005	20	16
31.4	76.1	7	002	280/003	21	15
30.3	77.5	105		317/027	OBSERVED MAX WIND	
31.5	76.0	CENTER	002			
31.4	75.8	11	002	250/010	19	16
31.4	75.4	31	000	300/007	20	16
31.4	75.1	46	999	270/010	20	17
31.4	74.8	61	000	210/022	20	17
31.4	74.6	71	999	180/018	19	17
31.4	74.3	87	000	180/012	19	16
31.4	74.0	102	000	180/015	19	16
31.4	74.8	61		125/022	OBSERVED MAX WIND	

NOV 23 1988
AFGWC 3919A KEITH DU 38 KMIA
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 05142 - 07512
FLIGHT : 31505 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 183 DEGREES

LAT	LON	DIST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
25.5	82.7	96	994	250/059	22	20
25.4	82.7	84	993	250/057	22	20
25.1	82.7	68	991	250/053	22	20
25.3	82.6	54	990	250/054	23	22
25.5	82.7	36	994	250/021	24	22
25.3	82.8	20	994	250/014		
25.0	82.7	72		274/074	OBSERVED MAX WIND	
27.2	82.6	CENTER	994			
25.7	82.7	30	994	240/029	23	23
25.5	82.6	42	993	01/021	24	22
25.4	82.4	59	992	250/043	22	22
25.2	82.2	83	990	240/058	21	21
25.1	82.1	71	991	240/058	21	21
25.9	82.0	44	993	230/059		20
25.7	81.9	97	994	240/052	22	19
25.6	81.8	105	995	230/043	22	21
25.4	81.7	116	995	230/054	22	22
25.2	81.6	131	996	40/052		24
25.0	81.5	144	997	240/029		19
25.9	82.0	64		247/059	OBSERVED MAX WIND	

TABLE 8. TROPICAL CYCLONE RECONNAISSANCE SUMMARY FOR 1988.

1. Requirements Levied	Atlantic	Eastern Pacific	Central Pacific
TDs, TStorms, Hurricanes	198	0	36
Invests	43	0	0
Total Levied	241	0	36
Requirements Cancelled	79	0	9
TOTAL REQUIREMENTS		0	27

2. Requirements Accomplished (Fixes/Invests)			(Fixes/Invests)
53rd WRS	94/8	0	18/0
815th TAS	30/3	0	9/0
NOAA/OAO	23/2	0	0/0
TOTAL ACCOMPLISHMENTS	147/13	0	27/0

Missed Fixes: AF980 0519A Keith 21 Nov, AF861 0719A Keith 22 Nov. Late Fixes: AF360 1117A Joan 18 Oct, AF366 1019A Keith 23 Nov.

3. Missions Flown			
53rd WRS	55/9	0	10/0
815th TAS	21/4	0	6/0
NOAA/OAO	11/2		0/0
TOTAL FLOWN	87/15	0	16/0

53WRS Deployment time: 258.8 hrs. 815TAS Deployment time: 147.3 hrs. OAO Deployment time: 2.5 hrs.

4. Flying Time			
53rd WRS	631.4 hrs	0	102.0
815th TAS	215.9 hrs	0	61.1
NOAA/OAO	107.0 hrs	0	0
TOTAL TIME	954.3 hrs	0	163.1

GRAND TOTAL 1988 RECON FLIGHT TIME 1526.0 hrs

5. Observations: Horizontal 1613 Vertical 136

TABLE 9. Probability Forecasts for 1988 Landfalling U.S. Tropical Cyclones.

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

ADVISORY DATE/TIME	07/10AM	07/NOON
PROBABILITY TIME	10/2AM	10/8AM
BAR HARBOR ME	7	21
EASTPORT ME	15	39
ST JOHNS NB	21	45
MONCTON NB	19	37
YARMOUTH NS	61	75
HALIFAX NS	55	58
SABLE ISLAND NS	24	14
SYDNEY NS	39	40
EDDY POINT NS	45	45
PTX BASQUES NLFD	29	34
BURGEO NFLD	30	32
ILE ST PIERRE	27	25
CAPE RACE NLFD	16	14
HIBERNIA OILFIELD	8	8

Table 9. Chance of the center of Beryl passing within 65 miles of the listed location by date and time (CDT) indicated. Probabilities in percent. X means probabilities of less than 2 percent.

Advisory Date/Time Probability Thru	08/11AM 11/7AM	08/5PM 11/1PM	08/11PM 11/7PM	09/5AM 12/1AM
Marathon, FL.	02	02	X	X
Key West, FL.	02	02	X	X
Marco Island, FL.	03	05	02	X
Ft. Myers, FL.	04	07	02	X
Venice, FL.	05	10	03	X
Tampa, FL.	06	14	04	X
Cedar Key, FL.	07	18	06	X
St. Marks, FL.	10	16	09	X
Apalachicola, FL.	12	20	11	X
Panama City, FL.	13	20	13	X
Pensacola, FL.	17	25	19	13
Mobile, AL.	20	34	29	18
Gulfport, MS.	46	57	58	59
Buras, MS.	97	88	81	96
New Orleans, MS.	85	35	44	93
New Iberia, LA.	17	12	18	38
Port Arthur, TX.	12	05	13	18
Galveston, TX.	11	03	12	15
Freeport, TX.	10	03	11	14
Port O Connor, TX.	09	02	10	12
Corpus Christi, TX.	08	X	08	09
Brownsville, TX.	07	X	08	08
GULF 29N 85W	12	22	10	06
GULF 29N 87W	21	30	20	11
GULF 28N 89W	44	29	26	17
GULF 28N 91W	23	14	21	22
GULF 28N 93W	15	04	15	18
GULF 28N 95W	11	02	12	14
GULF 27N 96W	10	X	10	11
GULF 25N 96W	08	X	08	08

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

($L_a L_a L_a$)	($L_o L_o L_o L_o$)	(jHHH)	($TTT_d T_d$)	(ddfff)
01	1	1	1	
02	2	2	2	
03	3	3	3	
04	4	4	4	
05	5	5	5	
06	6	6	6	
07	7	7	7	
($L_a L_a L_a$) MF	($L_o L_o L_o L_o$) M	(fff) MF		

OBS 01 AT: ——— Z | OBS ——— AT ——— Z | OBS 01 SFC WND: ———

($L_a L_a L_a$)	($L_o L_o L_o L_o$)	(jHHH)	($TTT_d T_d$)	(ddfff)
01	1	1	1	
02	2	2	2	
03	3	3	3	
04	4	4	4	
05	5	5	5	
06	6	6	6	
07	7	7	7	
($L_a L_a L_a$) MF	($L_o L_o L_o L_o$) M	(fff) MF		

OBS 01 AT: ——— Z | OBS ——— AT ——— Z | OBS 07 SFC WND: ———

REMARKS *(end of message)*

PREPARED BY: ———

TRANSMISSION TIME: ———

LEGEND

01 INDICATOR FOR DATA COLLECTED APPROXIMATELY 105 NM FROM STORM CENTER (INBOUND) OR APPROXIMATELY 15 NM FROM CENTER (OUTBOUND)

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.

MF = INDICATOR FOR MAXIMUM FLIGHT LEVEL WIND OBSERVED

fff = SPEED OF WIND IN KNOTS

dd = TRUE DIRECTION OF FLIGHT LEVEL WIND SPEED IN TENS OF DEGREES

$TTT_d T_d$ = TEMP/DEWPOINT IN DEGREES CELSIUS: ADD 50 FOR NEGATIVE VALUES

jHHH = PRESSURE HEIGHT DATA IN RECCO FORMAT

$L_a L_a L_a$ = LATITUDE IN DEGREES/TENTHS

$L_o L_o L_o L_o$ = LONGITUDE IN DEGREES/TENTHS

/ = DATA UNKNOWN/UNOBTAINABLE

SAMPLE MESSAGE

URNT 12 KMIA 241703
AF 966 0411 FREDERIC OB 14
SUPPLEMENTARY VORTEX DATA MESSAGE

01178	10899	13107	10908	36027
02177	20895	23100	20908	35042
03178	30891	33092	30807	36052
04177	40887	43093	40907	35070
05178	50883	53070	50908	36086
06178	60880	63000	61010	35108
07178	70877	73882	71211	35120
MF178	M0877	MF120		

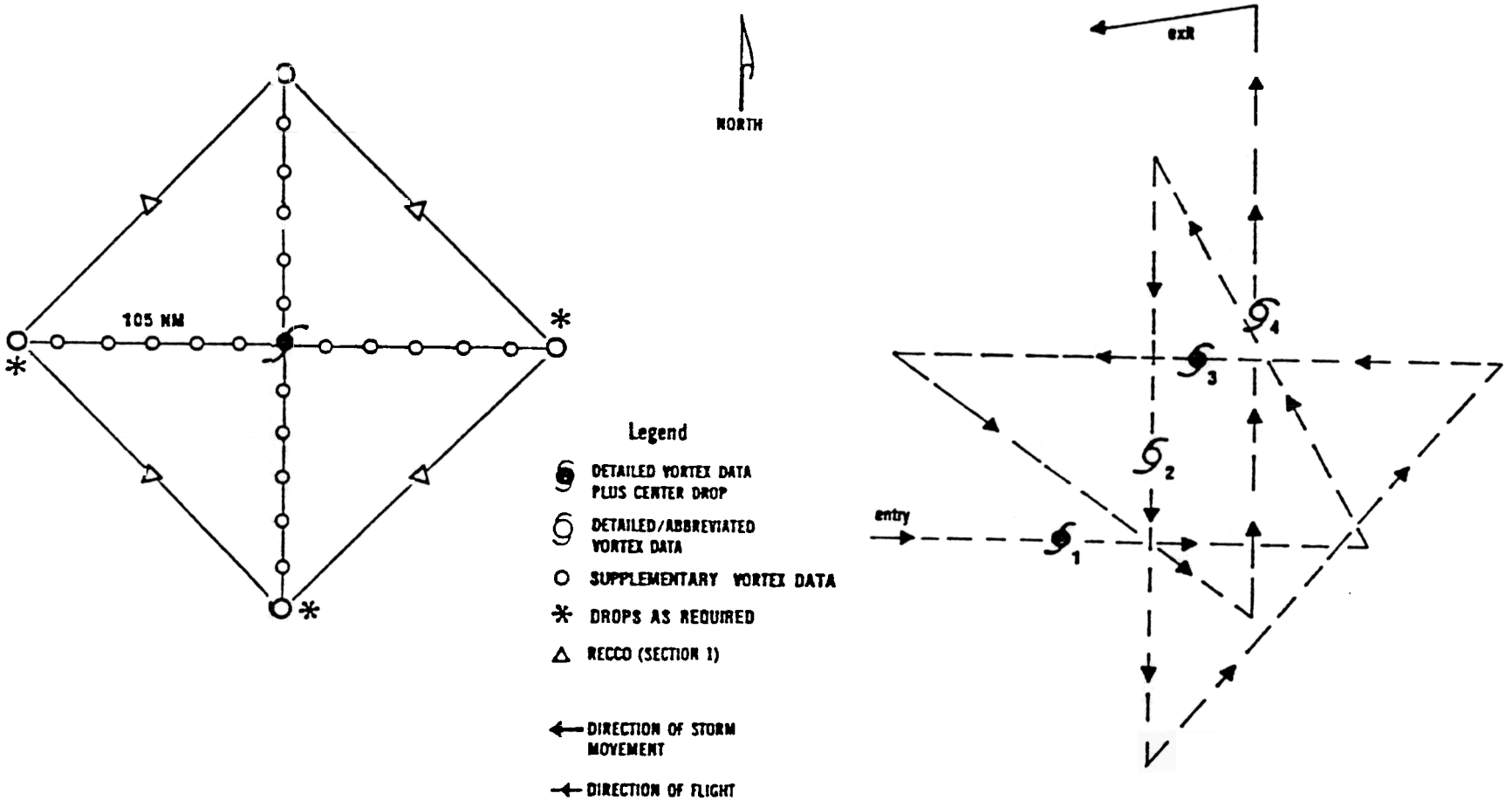
OBS 01 AT 1530Z OBS 07 AT 1600Z
OBS 01 SFC WND 36025

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
MF177	M0872	MF120		

OBS 01 AT 1630Z OBS 07 AT 1700Z
OBS 07 SFC WIND 16025
REMARKS HEAVY RAIN OUTBOUND

☆ U S GPU 1985 - 564 - 006/20570

RECOMMENDED PATTERN "A" EXECUTION



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

Table 9. 72-hour probability, in per cent, of center of Tropical
(contd) Depression Seven passing within 65 miles of listed locations

ADVISORY ISSUANCE TIME:	23/1030PM	24/6AM	24/NOON	24/6PM	24/1030PM
PROBABILITY END TIME:	26/8PM	27/2AM	27/8AM	27/2PM	27/8PM
SKPG 125N 717W	2	3	X	X	X
TAPA 171N 618W	4	X	X	X	X
TKPK 173N 627W	66	X	X	X	X
TNCM 181N 631W	17	X	X	X	X
TISX 177N 648W	69	4	X	X	X
TIST 183N 650W	47	X	X	X	X
TJPS 180N 666W	53	25	52	12	20
MDSD 185N 697W	29	27	42	45	73
MDCB 176N 714W	24	34	58	43	58
MTPP 186N 724W	21	22	36	30	48
MTCA 183N 738W	18	21	37	24	37
MKJP 179N 768W	13	16	23	17	19
MKJS 185N 779W	12	14	18	15	17
MWCG 193N 814W	9	10	11	10	12
MUGM 200N 751W	14	14	17	16	22
MUCM 214N 779W	11	10	11	11	13
MUCF 221N 805W	8	8	8	8	10
MUSN 216N 826W	6	7	7	7	8
MUHA 230N 824W	5	5	6	6	7
MUAN 219N 850W	4	5	5	5	6
MMCZ 205N 869W	3	4	5	4	5
MZBZ 175N 883W	2	4	5	4	4
MGPB 157N 886W	2	4	4	4	3
MHNJ 165N 859W	4	6	7	6	6
MNPC 141N 834W	4	7	7	6	5
MNBL 120N 839W	2	4	4	4	3
SKSP 126N 817W	3	5	6	5	4
MRLM 100N 831W	X	2	2	2	X
TJSJ 184N 661W	45	6	12	X	X
MDPP 198N 707W	19	13	10	18	26
MBJT 215N 712W	12	7	6	9	8
MYMM 224N 730W	11	7	7	8	9
MYSM 241N 745W	8	5	5	6	7
MYEG 235N 758W	9	7	7	7	9
MYAK 241N 776W	7	6	4	6	8
MYNN 251N 775W	6	4	2	5	6
MYGF 266N 787W	3	2	2	3	4
MMMD 210N 897W	X	2	2	2	2
ST CROIX VI	69	4	X	X	X
ST THOMAS VI	47	X	X	X	X
SAN JUAN PR	45	6	12	X	X
PONCE PR	53	25	52	12	20
MARATHON FL	4	4	4	4	6
MIAMI FL	3	3	3	3	5
W PALM BEACH FL	3	2	2	2	3
FT PIERCE FL	2	X	X	2	3
COCOA BEACH FL	X	X	X	X	2
KEY WEST FL	4	4	4	X	6
MARCO ISLAND FL	3	2	3	3	4
FT MYERS FL	2	2	2	2	3
VENICE FL	X	X	X	X	2
TAMPA FL	X	X	X	X	2

Table 9. 72-hour probability, in per cent, of center of Tropical
(contd) Depression Seven passing within 65 miles of listed locations.

ADVISORY ISSUANCE TIME:	25/6AM	25/NOON	15/6PM	25/1030PM	26/6AM
PROBABILITY END TIME:	28/2AM	28/8AM	28/2PM	28/8PM	29/2AM
MDSD 185N 697W	98	23	X	X	X
MDCB 176N 714W	48	27	X	X	X
MTPP 186N 724W	54	65	42	22	x
MTCA 183N 738W	31	35	9	15	X
MKJP 179N 768W	13	13	5	6	2
MKJS 185N 779W	13	14	8	12	4
MWCG 193N 814W	10	10	9	12	8
MUGM 200N 751W	29	38	39	72	X
MUCM 214N 779W	16	19	22	39	37
MUCF 221N 805W	12	14	15	21	19
MUSN 216N 826W	10	11	12	15	13
MUHA 230N 824W	9	11	13	16	15
MUAN 219N 850W	7	8	9	11	10
MMCZ 205N 869W	5	5	6	8	6
MZBZ 175N 883W	3	3	2	3	2
MGPB 157N 886W	2	2	X	X	X
MHNJ 165N 859W	3	3	2	3	2
MNPC 141N 834W	2	X	X	X	X
MDPP 198N 707W	53	70	9	X	X
MBJT 215N 712W	14	10	5	X	X
MYMM 224N 730W	15	15	22	4	4
MYSM 241N 745W	13	13	15	8	10
MYEG 235N 758W	15	16	22	14	23
MYAK 241N 776W	13	14	19	16	24
MYNN 251N 775W	11	12	16	13	16
MYGF 266N 787W	8	9	12	11	13
MMFR 185N 926W	X	X	X	2	X
MMMD 210N 897W	2	3	4	5	4
MARATHON FL	9	11	14	15	16
MIAMI FL	8	10	13	13	15
W PALM BEACH FL	7	9	12	11	13
FT PIERCE FL	6	7	10	10	12
COCOA BEACH FL	5	6	9	9	10
DAYTONA BEACH FL	3	4	7	7	9
JACKSONVILLE FL	2	3	5	5	6
SAVANNAH GA	X	3	3	3	4
CHARLESTON SC	X	X	3	2	3
MYRTLE BEACH SC	X	X	2	2	3
WILMINGTON NC	X	X	2	X	2
MOREHEAD CITY NC	X	X	X	X	2
KEY WEST FL	9	10	13	15	15
MARCO ISLAND FL	7	9	12	12	13
FT MYERS FL	6	8	11	11	12
VENICE FL	5	6	10	10	11
TAMPA FL	4	5	8	9	10
CEDAR KEY FL	3	4	7	7	8
ST MARKS FL	X	2	4	4	6
APALACHICOLA FL	X	2	5	5	6
PANAMA CITY FL	X	2	4	4	5
PENSACOLA FL	X	X	3	3	3
MOBILE AL	X	X	2	2	3
GULFPORT MS	X	X	2	2	2
BURAS LA	X	X	X	2	3
NEW ORLEANS LA	X	X	X	2	2

Table 9. (contd) 72-hour probability, in per cent, of center of Tropical Depression Seven passing within 65 miles of listed locations.

ADVISORY ISSUANCE TIME:	26/NOON	26/6PM	26/1030PM	27/6AM	27/NOON
PROBABILITY END TIME:	29/8AM	29/2PM	29/8PM	30/2AM	30/8AM
MWCG 193N 814W	5	3	X	X	X
MUGM 200N 751W	5	X	X	X	X
MUCM 214N 779W	39	23	X	X	X
MUCF 221N 805W	21	15	4	X	X
MUSN 216N 826W	13	10	2	X	X
MUHA 230N 824W	17	14	6	X	X
MUAN 219N 850W	10	8	2	X	X
MMCZ 205N 869W	6	4	X	X	X
MZBZ 175N 883W	2	X	X	X	X
MYSM 241N 745W	6	7	2	X	X
MYEG 235N 758W	27	48	90	X	X
MYAK 241N 776W	31	44	86	98	27
MYNN 251N 775W	19	27	59	61	79
MYGF 266N 787W	15	18	34	36	62
MMMD 210N 897W	4	3	X	X	X
MARATHON FL	21	21	19	20	10
MIAMI FL	19	21	34	35	44
W PALM BEACH FL	16	18	30	33	52
FT PIERCE FL	14	16	25	26	43
COCOA BEACH FL	13	14	21	21	36
DAYTONA BEACH FL	11	12	17	18	26
JACKSONVILLE FL	9	10	14	15	18
SAVANNAH GA	6	7	12	13	15
CHARLESTON SC	5	6	11	12	15
MYRTLE BEACH SC	4	5	10	11	14
WILMINGTON NC	3	4	9	10	13
MOREHEAD CITY NC	3	3	8	10	12
CAPE HATTERAS NC	2	3	7	9	11
NORFOLK VA	X	X	5	7	9
OCEAN CITY MD	X	X	3	6	7
ATLANTIC CITY NJ	X	X	2	5	6
NEW YORK CITY NY	X	X	X	X	4
MONTAUK POINT NY	X	X	X	X	4
PROVIDENCE RI	X	X	X	X	3
NANTUCKET MA	X	X	X	X	3
HYANNIS MA	X	X	X	X	3
BOSTON MA	X	X	X	X	3
KEY WEST FL	19	18	14	14	6
MARCO ISLAND FL	18	18	20	21	19
FT MYERS FL	16	17	20	21	22
VENICE FL	14	15	17	18	18
TAMPA FL	13	13	17	17	20
CEDAR KEY FL	11	11	14	15	17
ST MARKS FL	8	9	11	12	12
APALACHICOLA FL	8	9	10	11	9
PANAMA CITY FL	7	8	9	9	8
PENSACOLA FL	5	6	7	6	5
MOBILE AL	4	5	5	5	3
GULFPORT MS	4	4	4	4	3
BURAS LA	4	4	4	3	2
NEW ORLEANS LA	3	3	3	3	9
NEW IBERIA LA	2	2	2	X	X

Table 9. (contd) 72-hour probability, in per cent, of center of Tropical Depression Seven passing within 65 miles of listed locations.

ADVISORY ISSUANCE TIME:	27/6PM	27/1030PM
PROBABILITY END TIME:	30/2PM	30/8PM
MYNN 251N 775W	23	X
MYGF 266N 787W	72	98
MARATHON FL	4	X
MIAMI FL	60	31
W PALM BEACH FL	72	81
FT PIERCE FL	60	72
COCOA BEACH FL	46	59
DAYTONA BEACH FL	33	41
JACKSONVILLE FL	21	25
SAVANNAH GA	17	21
CHARLESTON SC	17	20
MYRTLE BEACH SC	15	18
WILMINGTON NC	14	17
MOREHEAD CITY NC	14	15
CAPE HATTERAS NC	12	14
NORFOLK VA	10	12
OCEAN CITY MD	8	10
ATLANTIC CITY NJ	7	8
NEW YORK CITY NY	5	6
MONTAUK POINT NY	5	6
PROVIDENCE RI	4	5
NANTUCKET MA	4	5
HYANNIS MA	4	5
BOSTON MA	3	4
PORTLAND ME	2	3
BAR HARBOR ME	2	2
EASTPORT ME	X	2
YARMOUTH NS	X	2
KEY WEST FL	2	X
MARCO ISLAND FL	16	X
FT MYERS FL	21	5
VENICE FL	16	6
TAMPA FL	20	10
CEDAR KEY FL	17	12
ST MARKS FL	11	8
APALACHICOLA FL	8	6
PANAMA CITY FL	6	5
PENSACOLA FL	4	3
MOBILE AL	2	2
GULFPORT MS	2	2

Table 9. (contd) 72-hour probability, in per cent, of center of Tropical Storm Chris passing within 65 miles of listed locations.

ADVISORY ISSUANCE TIME:	28/6AM	28/NOON
PROBABILITY END TIME:	01/2AM	01/8AM
JACKSONVILLE FL	39	X
SAVANNAH GA	35	X
CHARLESTON SC	36	X
MYRTLE BEACH SC	29	X
WILMINGTON NC	24	X
MOREHEAD CITY NC	20	X
CAPE HATTERAS NC	18	X
NORFOLK VA	16	44
OCEAN CITY MD	14	47
ATLANTIC CITY NJ	12	3
NEW YORK CITY NY	11	X
MONTAUK POINT NY	10	7
PROVIDENCE RI	9	27
NANTUCKET MA	10	51
HYANNIS MA	9	65
BOSTON MA	9	51
PORTLAND ME	7	23
BAR HARBOR ME	6	17
EASTPORT ME	6	15
ST JOHN NB	5	15
MONCTON NB	4	13
YARMOUTH NS	7	31
HALIFAX NS	5	29
SABLE ISLAND NS	4	18
SYDNEY NS	3	23
EDDY POINT NS	4	29
PTX BASQUES NFLD	2	13
BURGEO NFLD	2	15
ILE ST PIERRE	2	26
CAPE RACE NFLD	X	31
HIBERNIA OILFLD	X	27

X MEANS LESS THAN 2 PER CENT

TABLE 9. 72-Hour probabitity, in per cent, of center of Hurricane Florence passing within 65 miles of listed locations.
(Time - Day/Hour (CDT))

ADVISORY ISSUANCE TIME:	07/05PM	07/930PM	08/05AM	08/11PM	08/05PM
PROBABILITY END TIME:	10/1PM	10/7PM	11/1AM	11/7AM	11/1PM
MUCF 221N 805W	X	X	2	X	X
MUSN 216N 826W	X	X	3	X	X
MUHA 230N 824W	X	4	5	X	X
MUAN 219N 850W	5	8	8	X	X
MMCZ 205N 869W	5	11	8	X	X
MZBZ 175N 883W	X	X	2	X	X
MYAK 241N 776W	X	X	2	X	X
MYNN 251N 775W	X	X	2	X	X
MGYF 266N 787W	X	3	3	X	X
MMSO 238N 982W	3	2	4	4	4
MMTM 222N 979W	2	2	4	4	3
MMTX 210N 974W	2	X	4	3	X
MMVR 192N 961W	X	X	4	X	X
MMFR 185N 926W	X	X	4	X	X
MMMD 210N 897W	22	42	19	6	4
MARATHON FL	3	4	5	2	2
MIAMI FL	3	4	4	X	2
KEY WEST FL	3	5	5	3	2
MARCO ISLAND FL	5	7	6	4	4
FT MYERS FL	6	8	7	5	4
VENICE FL	7	10	8	6	6
TAMPA FL	8	10	8	7	7
CEDAR KEY FL	9	11	8	8	8
ST MARKS FL	11	12	8	9	9
APALACHICOLA FL	12	13	8	10	11
PANAMA CITY FL	12	13	8	11	11
PENSACOLA FL	12	12	8	11	12
MOBILE AL	12	12	7	11	12
GULFPORT MS	12	12	8	12	12
BURAS LA	13	12	9	13	14
NEW ORLEANS LA	12	11	8	12	13
NEW IBERIA LA	10	9	7	11	11
PORT ARTHUR TX	8	7	5	8	9
GALVESTON TX	7	6	5	8	9
FREEPORT TX	7	6	5	8	8
PORT O CONNOR TX	6	5	4	7	7
CORPUS CHRISTI TX	5	4	4	6	6
BROWNSVILLE TX	4	4	5	4	6

X MEANS LESS THAN 2 PER CENT

TABLE 9. 72-Hour probabitity, in per cent, of center of Hurricane (cont.) Florence passing within 65 miles of listed locations.
(Time - Day/Hour (CDT))

ADVISORY ISSUANCE TIME:	08/0930PM	09/05AM	09/11AM	09/05PM
PROBABILITY END TIME:	11/7PM	12/1AM	12/7AM	12/1PM
MUCF 221N 805W	X	X	X	X
MUSN 216N 826W	X	X	X	X
MUHA 230N 824W	X	X	X	X
MUAN 219N 850W	X	X	X	X
MMCZ 205N 869W	X	X	X	X
MZBZ 175N 883W	X	X	X	X
MYAK 241N 776W	X	X	X	X
MYNN 251N 775W	X	X	X	X
MGYF 266N 787W	X	X	X	X
MMSO 238N 982W	3	4	X	X
MMTM 222N 979W	X	2	X	X
MMTX 210N 974W	X	X	X	X
MMVR 192N 961W	X	X	X	X
MMFR 185N 926W	X	X	X	X
MMMD 210N 897W	X	X	X	X
MARATHON FL	2	X	X	X
MIAMI FL	2	X	X	X
KEY WEST FL	2	X	X	X
MARCO ISLAND FL	4	X	X	X
FT MYERS FL	5	2	X	X
VENICE FL	6	2	X	X
TAMPA FL	7	3	X	X
CEDAR KEY FL	9	5	X	X
ST MARKS FL	11	8	X	X
APALACHICOLA FL	13	9	X	X
PANAMA CITY FL	13	11	2	X
PENSACOLA FL	14	15	18	16
MOBILE AL	14	17	33	45
GULFPORT MS	14	19	45	66
BURAS LA	16	24	59	80
NEW ORLEANS LA	14	20	45	58
NEW IBERIA LA	12	17	23	21
PORT ARTHUR TX	9	13	3	12
GALVESTON TX	9	12	X	9
FREEPORT TX	8	11	X	7
PORT O CONNOR TX	7	10	X	5
CORPUS CHRISTI TX	5	8	X	X
BROWNSVILLE TX	5	4	X	X

X MEANS LESS THAN 2 PER CENT

TABLE 9. Probability Forecasts for 1988 Landfalling U.S. Tropical Cyclones.

Chances of the center of Hurricane Gilbert passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME	09/NOON	09/6PM	09/10PM	10/6AM	10/NOON	10/6PM	10/10PM	11/6AM
PROBABILITY TIME	12/8AM	12/2PM	12/8PM	13/2AM	13/8AM	13/2PM	13/8PM	14/2AM
SKPG 12.5N 71.7W	9	11	7	9	8	3	—	—
TNCC 12.2N 69.0W	11	11	6	8	5	—	—	—
SVMG 11.0N 64.0W	9	—	—	—	—	—	—	—
TTPP 10.6W 61.4W	11	—	13	—	—	—	—	—
TTPT 11.2N 60.8W	4	—	—	—	—	—	—	—
TGPY 12.0N 61.8W	17	—	—	—	—	—	—	—
TBPB 13.1N 59.5W	64	—	—	—	—	—	—	—
TVSV 13.1N 61.2W	47	13	—	—	—	—	—	—
TLPL 13.8N 61.0W	68	73	—	—	—	—	—	—
TFFF 14.6N 61.0W	66	96	—	—	—	—	—	—
TDPR 15.3N 61.4W	44	94	—	—	—	—	—	—
TFFR 16.3N 61.5W	21	31	—	—	—	—	—	—
TAPA 17.1N 61.8W	12	9	—	—	—	—	—	—
TKPK 17.3N 62.7W	13	12	—	—	—	—	—	—
TNCM 18.1N 63.1W	11	8	—	—	—	—	—	—
TISX 17.7N 64.8W	14	16	28	15	10	—	—	—
TIST 18.3N 65.0W	12	12	19	11	8	—	—	—
TJPS 18.0N 66.6W	13	16	22	19	19	11	—	—
TJSJ 18.4N 66.1W	12	14	19	14	12	3	—	—
MDSD 18.5W 69.7W	10	13	16	16	18	25	28	33
MDCB 17.6N 71.4W	10	13	15	16	19	32	43	59
MTPP 18.6N 72.4W	8	11	13	13	15	22	28	37
MDPP 19.8N 70.7W	8	10	13	12	13	14	14	11
MTCA 18.3N 73.8W	7	10	11	12	14	20	25	33
MBJT 21.5N 71.2W	5	7	9	9	10	9	9	6
MYMM 22.4N 73.0W	3	6	7	7	8	9	9	8
MYSM 24.1N 74.5W	—	—	—	4	5	7	7	6
MYEG 23.5N 75.8W	—	—	—	4	6	8	9	8
MYAK 24.1N 77.6W	—	—	—	2	4	7	8	8
MKJP 17.9N 76.8W	3	8	8	9	11	15	17	20
MKJS 18.5N 77.9W	4	6	7	7	9	13	15	17
MUGM 20.0N 75.1W	4	7	9	9	11	14	17	19
SKSP 12.6N 81.7W	2	3	2	2	4	4	4	4
MUCM 21.4N 77.9W	—	4	5	5	7	11	12	13
MNPC 14.1N 83.4W	—	2	2	2	3	5	5	6
MNBL 12.0N 83.9W	—	2	—	2	2	3	2	3
MWCG 19.3N 81.4W	—	3	3	3	5	9	11	12
MHNJ 16.5N 85.9W	—	—	—	—	2	5	5	7
MZBZ 17.5N 88.3W	—	—	—	—	—	3	4	5
MGPB 15.7N 88.6W	—	—	—	—	—	3	3	4
MMCZ 20.5N 86.9W	—	—	—	—	—	4	4	6
MARATHON FL	—	—	—	—	2		5	6
MIAMI FL	—	—	—	—	—	—	4	5
W PALM BEACH FL	—	—	—	—	—	—	3	4
FT PIERCE FL	—	—	—	—	—	—	2	3
KEY WEST FL	—	—	—	—	2	—	5	6
MARCO ISLAND FL	—	—	—	—	—	—	—	4
FT MYERS FL	—	—	—	—	—	—	—	3
VENICE FL	—	—	—	—	—	—	—	3
TAMPA FL	—	—	—	—	—	—	—	2

TABLE 9 (contd) Chances of the center of Hurricane Gilbert passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME	11/NOON	11/6PM	12/MID	12/6AM	12/NOON	12/6PM	13/MID	13/6AM
PROBABILITY TIME	14/8AM	14/2PM	14/8PM	15/2AM	15/8AM	15/2PM	15/8PM	16/2AM
MDCB 17.6N 71.4W	62	65	79	—	—	—	—	—
MTPP 18.6N 72.4W	35	14	23	—	—	—	—	—
MDPP 19.8N 70.7W	4	—	—	—	—	—	—	—
MTCA 18.3N 73.8W	42	38	65	83	—	—	—	—
MBJT 21.5N 71.2W	3	—	—	—	—	—	—	—
MYMM 22.4N 73.0W	5	3	2	—	—	—	—	—
MYSM 24.1N 74.5W	5	4	4	—	—	—	—	—
MYEG 23.5N 75.8W	7	6	6	3	—	—	—	—
MYAK 24.1N 77.6W	8	8	7	5	—	—	—	—
MYNN 25.1N 77.5W	6	6	6	5	—	—	—	—
MYGF 26.6N 78.7W	4	6	5	5	—	—	—	—
MMVR 19.2N 96.1W	—	2	2	3	4	5	6	6
MMFR 18.5N 92.6W	4	4	4	5	4	7	8	7
MMMD 21.0N 89.7W	6	7	8	10	11	13	17	17
MKJP 17.9N 76.8W	26	33	45	66	—	—	6	—
MKJS 18.5N 77.9W	22	27	34	56	—	—	98	—
MUGM 20.0N 75.1W	19	15	16	11	—	—	—	—
SKSP 12.6N 81.7W	3	—	2	—	—	—	—	—
MUCM 21.4N 77.9W	14	14	14	13	8	—	—	—
MUCF 22.1N 80.5W	12	14	13	16	15	12	5	3
MUSN 21.6N 82.6W	12		14	19	22	25	24	21
MUHA 23.0N 82.4W	10	12	12	14	16	14	9	8
MUAN 21.9N 85.0W	9	12	12	15	19	21	25	26
MNPC 14.1N 83.4W	6	4	—	2	—	—	—	—
MNBL 12.0N 83.9W	2	—	—	—	—	—	—	—
MWCG 19.3N 81.4W	15	17	19	28	42	55	74	86
MHNJ 16.5N 85.9W	8	7	9	8	6	6	5	3
MZBZ 17.5N 88.3W	7	7	8	4	7	8	9	8
MGPB 15.7N 88.6W	6	5	5	4	—	—	3	—
MMCZ 20.5N 86.9W	9	10	11	13	16	18	25	27
MARATHON FL	7	9	9	10	11	7	4	3
MIAMI FL	6	7	7	7	9	5	3	—
W PALM BEACH FL	4	6	5	6	6	5	—	—
FT PIERCE FL	3	5	5	5	5	4	—	—
COCOA BEACH FL	—	4	—	5	5	4	—	—
DAYTONA BEACH FL	—	3	—	4	4	4	—	—
KEY WEST FL	8	10	9	11	11	9	5	4
MARCO ISLAND FL	5	8	7	8	8	7	4	4
FT MYERS FL	4	7	6	7	8	7	4	4
VENICE FL	—	6	5	7	8	7	5	4
TAMPA FL	—	5	3	6	6	6	4	4
CEDAR KEY FL	—	3	3	5	5	5	4	4
ST MARKS FL	—	—	2	4	5	4	3	4
APALACHICOLA FL	—	—	2	4	5	5	4	5
PANAMA CITY FL	—	—	2	4	5	5	4	5
PENSACOLA FL	—	—	—	3	4	4	4	5
MOBILE AL	—	—	—	—	4	4	4	5
GULFPORT MS	—	—	—	—	4	4	4	5
BURAS LA	—	—	—	3	5	5	5	7
NEW ORLEANS LA	—	—	—	—	4	4	4	6
NEW IBERIA LA	—	—	—	—	—	—	4	6
PORT ARTHUR TX	—	—	—	—	—	—	3	5
GALVESTON TX	—	—	—	—	—	—	4	6
FREEPORT TX	—	—	—	—	—	—	4	6
PORT O CONNOR TX	—	—	—	—	—	—	3	6
CORPUS CHRISTI TX	—	—	—	—	—	—	5	5
BROWNSVILLE	—	—	—	—	—	—	5	7

TABLE 9 (contd) Chances of the center of Hurricane Gilbert passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME PROBABILITY TIME	13/NOON 16/8AM	13/6PM 16/2PM	14/MID 16/8PM	14/6AM 17/2AM	14/NOON 17/8AM	14/6PM 17/2PM	15/MID 17/8PM	15/6AM 18/2AM
MMVR 19.2N 96.1W	5	4	4	5	5	3		
MMFR 18.5N 92.6W	7	5	4	4	3	—	—	
MMMD 21.0N 89.7W	22	21	33	46	53	—	—	
MUAN 21.9N 85.0W	39	32	23	—	—	—	—	—
MZBZ 17.5N 88.3W	4	4	—	—	—	—	—	—
MMCZ 20.5N 86.9W	54	45	69	—	—	—	—	—
MMSO 23.8N 98.2W	6	7	9	11	12	14	18	20
MMTM 22.2N 97.9W	6	6	7	9	11	11	14	14
MMTX 21.0N 97.4W	6	5	6	8	9	8	9	7
MARCO ISLAND FL	4	3	—	—	—	—	—	—
FT MYERS FL	4	3	—	—	—	—	—	—
VENICE FL	5	4	—	—	—	—	—	—
TAMPA FL	4	4	2	—	—	—	—	
CEDAR KEY FL	4	4	2	—	—	—	—	
ST MARKS FL	4	5	3	2	2	—	—	4
APALACHICOLA FL	5	6	4	3	2	—	—	5
PANAMA CITY FL	5	6	5	4	3	—	—	5
PENSACOLA FL	5	7	6	5	4	3	2	5
MOBILE AL	5	7	7	6	5	4	3	5
GULFPORT MS	6	8	8	7	6	5	3	5
BURAS LA	7	9	9	8	7	6	4	6
NEW ORLEANS LA	6	8	9	8	7	6	5	6
NEW IBERIA LA	6	8	9	9	9	8	7	6
PORT ARTHUR TX	5	7	9	10	10	10	10	7
GALVESTON TX	5	8	10	10	11	12	12	9
FREEPORT TX	5	7	10	11	11	12	13	11
PORT O CONNOR TX	5	7	10	11	11	13	15	14
CORPUS CHRISTI TX	5	7	9	11	11	14	16	17
BROWNSVILLE	6	8	10	12	13	16	21	23

TABLE 9 (contd) Chances of the center of Hurricane Gilbert passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME PROBABILITY TIME	15/NOON 18/8AM	15/6PM 18/2PM	16/MID 18/8PM	16/6AM 19/2AM	16/NOON 19/8AM
MMSO 23.8N 98.2W	43	24	31	39	40
MMTM 22.2N 97.9W	26	10	13	10	--
MMTX 21.0N 97.4W	15	2	3	--	--
APALACHICOLA FL	4	--	--	--	--
PANAMA CITY FL	4	--	--	--	--
PENSACOLA FL	4	--	--	--	--
MOBILE AL	4	2	2	4	--
GULFPORT MS	4	2	2	4	--
URAS LA	5	2	2	5	
NEW ORLEANS LA	5	3	3	4	
NEW IBERIA LA	6	6	6	5	--
PORT ARTHUR TX	7	10	9	8	5
GALVESTON TX	9	12	11	11	7
FREEPORT TX	11	14	13	13	9
PORT O CONNOR TX	14	17	16	19	15
CORPUS CHRISTI TX	18	20	19	26	23
BROWNSVILLE	27	32	35	46	54

Table 9. 72-hour probability, in per cent, of center of Tropical
(contd) Depression Sixteen passing within 65 miles of listed locations.

ADVISORY ISSUANCE TIME:	29/NOON	29/6PM	29/1030PM	30/6AM	30/NOON
PROBABILITY END TIME:	02/8AM	02/2PM	02/8PM	03/2AM	03/8AM
SKPG 125N 717W	X	2	2	2	4
TNCC 122N 690W	3	4	4	5	6
SVMG 110N 640W	9	10	8	11	11
TTPP 106N 614W	12	14	11	15	15
TTPT 112N 608W	13	15	14	16	18
TGPY 120N 618W	11	14	12	15	17
TBPB 131N 595W	13	15	17	17	24
TVSV 131N 612W	11	13	14	15	18
TLPL 138N 610W	11	13	14	14	18
TFFF 146N 610W	10	12	13	13	17
TDPR 153N 614W	8	10	12	11	15
TFFR 163N 615W	7	9	11	10	13
TAPA 171N 618W	5	7	10	8	11
TKPK 173N 627W	5	7	9	7	11
TNCM 181N 631W	3	5	7	6	9
TISX 177N 648W	3	5	6	5	9
TIST 183N 650W	2	4	6	4	8
TJPS 180N 666W	2	3	4	3	7
MDSD 185N 697W	X	X	2	X	3
MDCB 176N 714W	X	X	X	X	3
MTPP 186N 724W	X	X	X	X	2
TJSJ 184N 661W	2	3	4	3	7
MDPP	X	X	X	X	2
ST CROIX VI	3	5	6	5	9
ST THOMAS VI	2	4	6	4	8
SAN JUAN PR	2	3	4	3	7
PONCE PR	2	3	4	3	7

X MEANS LESS THAN 2 PER CENT

Table 9. 72-hour probability, in per cent, of center of Tropical (contd) Storm Isaac passing within 65 miles of listed locations

ADVISORY ISSUANCE TIME:	30/6PM	01/0AM	01/6AM
PROBABILITY END TIME:	03/2PM	03/8PM	04/2AM
SKPG 125N 717W	5	5	6
TNCC 122N 690W	7	7	9
SVMG 110N 640W	9	8	10
TTPP 106N 614W	10	5	10
TTPT 112N 608W	17	12	27
TGPY 120N 618W	19	19	31
TBPB 131N 595W	50	71	68
TVSV 131N 612W	31	40	53
TLPL 138N 610W	33	46	46
TFFF 146N 610W	28	39	32
TDPR 153N 614W	23	30	23
TFFR 163N 615W	18	21	17
TAPA 171N 618W	16	17	14
TKPK 173N 627W	15	17	15
TNCM 181N 631W	13	14	13
TISX 177N 648W	13	15	14
TIST 183N 650W	12	14	13
TJPS 180N 666W	11	13	12
MDSD 185N 697W	7	9	9
MDCB 176N 714W	6	7	7
MTPP 186N 724W	4	5	5
MTCA 183N 738W	3	4	4
MKJP 179N 768W	X	2	2
MUGM 200N 751W	X	2	2
TJSJ 184N 661W	11	13	12
MDPP 198N 707W	5	6	6
MBJT 215N 712W	X	4	4
MYMM 224N 730W	X	2	2
ST CROIX VI	13	15	14
ST THOMAS VI	12	14	13
SAN JUAN PR	11	13	12
PONCE PR	11	13	12

X MEANS LESS THAN 2 PER CENT

TABLE 9. (contd) Chances of the center of Hurricane Joan passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME		11/6PM	11/1030PM	12/6AM	12/NOON	12/6PM	12/1030PM	13/6AM	13/NOON
PROBABILITY TIME		14/2PM	14/8PM	15/2AM	15/8AM	15/2PM	15/8PM	16/2AM	16/8AM
SKPG	12.5N 71.7W	2	2	3	2	2	4	7	8
TNCC	12.2N 69.0W	4	3	5	4	5	7	10	10
SVMG	11.0N 64.0W	7	6	7	7	11	12	13	13
TTPP	10.6W 61.4W	9	7	8	8	14	13	12	13
TTPT	11.2N 60.8W	10	8	9	10	16	16	16	18
TGPY	12.0N 61.8W	11	9	10	11	16	17	20	21
TBPB	13.1N 59.5W	15	13	16	16	24	30	44	46
TVSV	13.1N 61.2W	12	11	13	14	18	20	29	29
TLPL	13.8N 61.0W	13	12	14	15	18	21	32	30
TFFF	14.6N 61.0W	13	12	14	15	16	19	27	25
TDPR	15.3N 61.4W	12	12	14	14	14	16	21	20
TFFR	16.3N 61.5W	11	11	13	14	12	14	16	16
TAPA	17.1N 61.8W	10	10	12	12	10	12	13	13
TKPK	17.3N 62.7W	8	9	11	11	9	11	13	12
TNCM	18.1N 63.1W	7	8	10	10	7	9	11	10
TISX	17.7N 64.8W	6	7	9	8	6	8	11	11
TIST	18.3N 65.0W	5	6	8	7	5	7	10	10
TJPS	18.0N 66.6W	4	4	7	6	4	6	9	10
TJSJ	18.4N 66.1W	4	5	7	6	4	6	9	9
MDSD	18.5W 69.7W	—	2	3	3	2	3	6	6
MDCB	17.6N 71.4W	—	—	2	2	—	2	5	6
MTPP	18.6N 72.4W	—	—	2	—	—	—	3	4
MDPP	19.8N 70.7W	—	—	2	—	—	—	4	4
MTCA	18.3N 73.8W	—	—	—	—	—	—	3	3
MBJT	21.5N 71.2W	—	—	—	—	—	—	2	2
MKJP	17.9N 76.8W	—	—	—	—	—	—	—	—
MKJS	18.5N 77.9W	—	—	—	—	—	—	—	—
MUGM	20.0N 75.1W	—	—	—	—	—	—	—	—
MPCO	9.3N 79.9W	—	—	—	—	—	—	—	—
SKSP	12.6N 81.7W	—	—	—	—	—	—	—	—
MUCM	21.4N 77.9W	—	—	—	—	—	—	—	—
MNPC	14.1N 83.4W	—	—	—	—	—	—	—	—
MNBL	12.0N 83.9W	—	—	—	—	—	—	—	—
MRLM	10.0N 83.1W	—	—	—	—	—	—	—	—
MWCG	19.3N 81.4W	—	—	—	—	—	—	—	—
MHNJ	16.5N 85.9W	—	—	—	—	—	—	—	—
MZBZ	17.5N 88.3W	—	—	—	—	—	—	—	—
MGPB	15.7N 88.6W	—	—	—	—	—	—		
MMCZ	20.5N 86.9W	—	—	—	—	—	—		

TABLE 9. (contd) Chances of the center of Hurricane Joan passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME		13/6PM	13/9PM	13/MID	14/6AM	14/NOON	14/6PM	14/9PM	14/MID
PROBABILITY TIME		16/2PM	16/2PM	16/8PM	17/2AM	17/8AM	17/2PM	17/2PM	17/8PM
SKPG	12.5N 71.7W	9	9	10	10	11	12	12	12
TNCC	12.2N 69.0W	12	12	13	13	15	17	17	16
SVMG	11.0N 64.0W	13	13	16	16	28	39	39	29
TTPP	10.6W 61.4W	8	8	11	10	24	—	—	—
TTPT	11.2N 60.8W	16	16	23	24	49			
TGPY	12.0N 61.8W	26	26	40	42	72	94		
TBPB	13.1N 59.5W	71	71	91	97	78	—		
TVSV	13.1N 61.2W	45	45	65	72	73	71		
TLPL	13.8N 61.0W	48	48	57	58	41	—		
TFFF	14.6N 61.0W	39	39	35	32	10	—		
TDPR	15.3N 61.4W	27	27	19	18	8	6		
TFFR	16.3N 61.5W	16	16	11	10	7	5		
TAPA	17.1N 61.8W	12	12	9	9	6	5		—
TKPK	17.3N 62.7W	12	12	10	10	7	6		7
TNCM	18.1N 63.1W	10	10	8	9	7	6		6
TISX	17.7N 64.8W	12	12	11	11	9	9		8
TIST	18.3N 65.0W	10	10	9	10	8	8		8
TJPS	18.0N 66.6W	11	11	10	11	9	9		9
TJSJ	18.4N 66.1W	10	10	9	10	8	8		8
MDSD	18.5W 69.7W	8	8	8	9	8	8		7
MDCB	17.6N 71.4W	8	8	8	9	8	9		8
MTPP	18.6N 72.4W	6	6	6	7	6	7		6
MDPP	19.8N 70.7W	5	5	5	6	5	6		5
MTCA	18.3N 73.8W	5	5	5	6	5	6		5
MBJT	21.5N 71.2W	3	3	3	4	3	3		3
MKJP	17.9N 76.8W	3	3	3	4	3	4		3
MKJS	18.5N 77.9W	--	--	2	2	2	2		2
MUGM	20.0N 75.1W		—	2	3	3	3		3
MPCO	9.3N 79.9W		—	2	2	2	—		2
SKSP	12.6N 81.7W			--	--	—	—		2
MUCM	21.4N 77.9W			--	--	—	—		—
MNPC	14.1N 83.4W			--	--	—	—		
MNBL	12.0N 83.9W								
MRLM	10.0N 83.1W								
MWCG	19.3N 81.4W								
MHNJ	16.5N 85.9W								
MZBZ	17.5N 88.3W								
MGPB	15.7N 88.6W								
MMCZ	20.5N 86.9W								

TABLE 9. (contd) Chances of the center of Hurricane Joan passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME PROBABILITY TIME		15/6AM 18/2AM	15/NOON 18/8AM	15/6PM 18/2PM	15/MID 18/8PM	16/6AM 19/2AM	16/NOON 19/8AM	16/6PM 19/2PM	16/MID 19/8PM
SKPG	12.5N 71.7W	15	17	20	26	32	44	64	86
TNCC	12.2N 69.0W	22	28	37	56	72	—	—	—
SVMG	11.0N 64.0W	39	25	—	—	—	—	—	—
TTPP	10.6W 61.4W	—	—	—	—	—	—	—	—
TTPT	11.2N 60.8W	—	—	—	—	—	—	—	—
TGPY	12.0N 61.8W	—	—	—	—	—	—	—	—
TBPB	13.1N 59.5W	—	—	—	—	—	—	—	—
TVSV	13.1N 61.2W	—	—	—	—	—	—	—	—
TLPL	13.8N 61.0W	—	—	—	—	—	—	—	—
TFFF	14.6N 61.0W	—	—	—	—	—	—	—	—
TDPR	15.3N 61.4W	—	—	—	—	—	—	—	—
TFFR	16.3N 61.5W	—	—	—	—	—	—	—	—
TAPA	17.1N 61.8W	—	—	—	—	—	—	—	—
TKPK	17.3N 62.7W	—	—	—	—	—	—	—	—
TNCM	18.1N 63.1W	4	3	2	—	—	—	—	—
TISX	17.7N 64.8W	6	5	4	—	—	—	—	—
TIST	18.3N 65.0W	6	5	4	—	—	—	—	—
TJPS	18.0N 66.6W	8	7	6	4	—	—	—	—
TJSJ	18.4N 66.1W	7	6	5	3	—	—	—	—
MDSD	18.5W 69.7W	9	8	8	7	6	5	—	—
MDCB	17.6N 71.4W	10	10	11	10	9	8	7	4
MTPP	18.6N 72.4W	8	8	9	8	8	7	6	4
MDPP	19.8N 70.7W	6	6	6	5	5	4	4	—
MTCA	18.3N 73.8W	8	8	9	9	9	9	8	6
MBJT	21.5N 71.2W	4	4	4	3	3	3	3	2
MKJP	17.9N 76.8W	6	7	8	8	9	10	10	9
MKJS	18.5N 77.9W	4	5	6	7	7	8	9	8
MUGM	20.0N 75.1W	4	5	6	6	6	6	6	4
MPCO	9.3N 79.9W	4	5	5	6	6	7	8	9
SKSP	12.6N 81.7W	4	5	6	7	8	9	10	12
MUCM	21.4N 77.9W	2	2	3	3	3	4	4	3
MNPC	14.1N 83.4W	2	3	4	5	6	7	9	10
MNBL	12.0N 83.9W	2	3	3	5	5	7	8	10
MRLM	10.0N 83.1W	2	3	3	5	5	6	7	9
MWCG	19.3N 81.4W	—	2	3	3	4	5	6	5
MHNJ	16.5N 85.9W	—	—	—	2	2	4	5	5
MZBZ	17.5N 88.3W	—	—	—	—	—	2	2	2
MGPB	15.7N 88.6W	—	—	—	—	—	2	3	3
MMCZ	20.5N 86.9W		—	—	—	—	—	—	—

TABLE 9 (contd) Chances of the center of Hurricane Joan passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME			17/6AM	17/NOON	17/6PM	17/9PM	17/MID	18/6AM	18/NOON	18/6PM
PROBABILITY TIME			20/2AM	20/8AM	20/2PM	20/2PM	20/8PM	21/2AM	21/8AM	21/2PM
SKPG	12.5N	71.7W	96			—	—			
TNCC	12.2N	69.0W	—			—	—			
SVMG	11.0N	64.0W	—							
TTPP	10.6W	61.4W								
TTPT	11.2N	60.8W				—	—	—	—	
TGPY	12.0N	61.8W				—	—	—	—	
TBPB	13.1N	59.5W								
TVSV	13.1N	61.2W								
TLPL	13.8N	61.0W				—	—		—	
TFFF	14.6N	61.0W				—	—	—	—	
TDPR	15.3N	61.4W				—	—	—		
TFFR	16.3N	61.5W					—	—		
TAPA	17.1N	61.8W	—	—	—			—		—
TKPK	17.3N	62.7W	—	—	—			—		—
TNCM	18.1N	63.1W	—	—						
TISX	17.7N	64.8W	—	—						
TIST	18.3N	65.0W	—	—	—	—	—	—	—	
TJPS	18.0N	66.6W		—	—	—	—	—	—	
TJSJ	18.4N	66.1W	—	—	—	—	—	—	—	
MDSD	18.5W	69.7W	—	—	—	—	—	—	—	
MDCB	17.6N	71.4W	—	—	—	—	—	—	—	
MTPP	18.6N	72.4W	3	3	—	—	—			
MDPP	19.8N	70.7W	—	—	—	—	—			
MTCA	18.3N	73.8W	5	4	4	4	—		—	
MBJT	21.5N	71.2W	—	—		—	—	—	—	—
MKJP	17.9N	76.8W	8	7	7	7	6	5	3	3
MKJS	18.5N	77.9W	8	6	6	6	6	5	3	3
MUGM	20.0N	75.1W	4	3	3	3	3	2	—	—
MPCO	9.3N	79.9W	10	11	12	12	11	13	24	22
SKSP	12.6N	81.7W	14	14	16	16	18	22	18	18
MUCM	21.4N	77.9W	3	2	2	2	3	2	—	—
MNPC	14.1N	83.4W	11	11	12	12	14	15	12	12
MNBL	12.0N	83.9W	11	11	12	12	14	16	15	15
MRLM	10.0N	83.1W	9	10	11	11	12	14	17	17
MWCG	19.3N	81.4W	6	5	5	5	6	5	3	3
MHNJ	16.5N	85.9W	6	6	7	7	9	8	5	5
MZBZ	17.5N	88.3W	3	3	4	4	5	5	3	3
MGPB	15.7N	88.6W	4	4	5	5	7	7	4	4
MMCZ	20.5N	86.9W	2	—	2	2	3	2	—	—

TABLE 9. (contd) Chances of the center of Hurricane Joan passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME		18/MID	19/6AM	19/NOON	19/6PM	19/MID	20/6AM	20/NOON	20/6PM
PROBABILITY TIME		21/8PM	22/2AM	22/8AM	22/2PM	22/8PM	23/2AM	23/8AM	23/2PM
SKPG	12.5N 71.7W	—	—	—	—				
TNCC	12.2N 69.0W	—	—	—	—				
SVMG	11.0N 64.0W	—	—	—	—	—	—	—	
TTPP	10.6W 61.4W	—	—	—	—	—	—	—	
TTPT	11.2N 60.8W	—	—	—			—		
TGPY	12.0N 61.8W	—	—	—		—	—		
TBPB	13.1N 59.5W	—	—			—			
TVSV	13.1N 61.2W	—	—	—		—			
TLPL	13.8N 61.0W		—	—			—	—	
TFFF	14.6N 61.0W		—				—	—	
TDPR	15.3N 61.4W						—	—	
TFFR	16.3N 61.5W								
TAPA	17.1N 61.8W								
TKPK	17.3N 62.7W								
TNCM	18.1N 63.1W								
TISX	17.7N 64.8W		—	—					—
TIST	18.3N 65.0W		—	—					—
TJPS	18.0N 66.6W								—
TJSJ	18.4N 66.1W	—	—	—	—	—	—	—	—
MDSD	18.5W 69.7W	—	—	—	—	—	—	—	—
MDCB	17.6N 71.4W	—	—	—	—	—	—		—
MTPP	18.6N 72.4W	—	—	—	—	—	—		
MDPP	19.8N 70.7W	—	—	—	—	—	—	—	—
MTCA	18.3N 73.8W	—	—	—	—	—	—	—	—
MBJT	21.5N 71.2W			—	—				
MKJP	17.9N 76.8W	4	—	—	—	—	—		
MKJS	18.5N 77.9W	4	4	—	—	—	—		—
MUGM	20.0N 75.1W	—	—	—	—	—	—	—	—
MPCO	9.3N 79.9W		18	15	14	13	17	16	15
SKSP	12.6N 81.7W		23	27	33	35	27	28	31
MUCM	21.4N 77.9W			—	—	—	—	—	—
MNPC	14.1N 83.4W		14	16	16	16	14		15
MNBL	12.0N 83.9W		16	19	21	22	18		19
MRLM	10.0N 83.1W		17	17	19	20	18		19
MWCG	19.3N 81.4W		3	4	3	4	3		3
MHNJ	16.5N 85.9W		6	8	8	8	7		7
MZBZ	17.5N 88.3W		3	5	5	5	3		4
MGPB	15.7N 88.6W		5	7	8	7	5		6
MMCZ	20.5N 86.9W		—	2	2	2	—		

TABLE 9. (contd) Chances of the center of Hurricane Joan passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME		20/MID	21/6AM	21/NOON	21/6PM	21/MID
PROBABILITY TIME		23/8PM	24/2AM	24/8AM	24/2PM	24/8PM
SKPG	12.5N 71.7W					
TNCC	12.2N 69.0W					
SVMG	11.0N 64.0W					
TTPP	10.6W 61.4W					
TTPT	11.2N 60.8W	—	—	—	—	—
TGPY	12.0N 61.8W	—	—	—	—	—
TBPB	13.1N 59.5W					
TVSV	13.1N 61.2W					
TLPL	13.8N 61.0W	—	—	—	—	—
TFFF	14.6N 61.0W	—	—	—	—	—
TDPR	15.3N 61.4W	—	—	—	—	—
TFFR	16.3N 61.5W	—				
TAPA	17.1N 61.8W	—				
TKPK	17.3N 62.7W	—	—	—	—	
TNCM	18.1N 63.1W	—	—	—	—	
TISX	17.7N 64.8W	—				
TIST	18.3N 65.0W	—				
TJPS	18.0N 66.6W					
TJSJ	18.4N 66.1W					
MDSD	18.5W 69.7W	—	—	—	—	
MDCB	17.6N 71.4W	—	—	—	—	
MTPP	18.6N 72.4W	—	—			
MDPP	19.8N 70.7W	—	—			
MTCA	18.3N 73.8W	—	—	—	—	—
MBJT	21.5N 71.2W	—	—	—	—	—
MKJP	17.9N 76.8W	—	—	—	—	—
MKJS	18.5N 77.9W	—				
MUGM	20.0N 75.1W	—				
MPCO	9.3N 79.9W	9	—	—	—	
SKSP	12.6N 81.7W	45	63	68	79	
MUCM	21.4N 77.9W	—	—	—	—	—
MNPC	14.1N 83.4W	18	21	20	21	18
MNBL	12.0N 83.9W	22	36	38	46	78
MRLM	10.0N 83.1W	18	19	20	18	12
MWCG	19.3N 81.4W	4	4	4	—	—
MHNJ	16.5N 85.9W	9	11	11	11	11
MZBZ	17.5N 88.3W	6	7	8	8	9
MGPB	15.7N 88.6W	8	11	11	11	13
MMCZ	20.5N 86.9W	2	3	3	3	—

Table 9. Chance of the center of Tropical Storm Keith passing within 65 miles of the listed location by date and time (EST) indicated. Probabilities in percent.

---

dvisory Date/Time....	18/5AM		19/11PM		20/5AM
robability Through...	21/1AM		22/7PM		23/1AM
MDSD 185N 697W	3	MKJS 185N 779W	2	MWCG 193N 814W	5
MDCB 176N 714W	5	MWCG 193N 814W	9	MUCF 221N 805W	4
MTPP 186N 724W	9	MUCM 214N 779W	2	MUSN 216N 826W	7
MTCA 183N 738W	18	MUCF 221N 805W	5	MUHA 230N 824W	6
MKJP 179N 768W	34	MUSN 216N 826W	8	MUAN 219N 850W	10
MKJS 185N 779W	23	MUHA 230N 824W	6	MMCZ 205N 869W	14
MWCG 193N 814W	12	MUAN 219N 850W	10	MZBZ 175N 883W	22
MUGM 200N 751W	16	MMCZ 205N 869W	13	MGPB 157N 886W	17
MUCM 214N 779W	13			MHNJ 165N 859W	48
MUCF 221N 805W	10	MZBZ 175N 883W	17	MNPC 141N 834W	4
MUSN 216N 826W	8	MGPB 157N 886W	15	MMTM 222N 979W	2
MUHA 230N 824W	7	MHNJ 165N 859W	30	MMTX 210N 974W	4
MUAN 219N 850W	5	MNPC 141N 834W	19	MMVR 192N 961W	6
MMCZ 205N 869W	4	MNBL 120N 839W	2	MMFR 185N 926W	11
MZBZ 175N 883W	4	MYAK 241N 776W	2	MMMD 210N 897W	12
MGPB 157N 886W	3	MYNN 251N 775W	2	MARATHON FL	3
MHNJ 165N 859W	6	MYGF 266N 787W	2	MIAMI FL	2
MNPC 141N 834W	6	MMTM 222N 979W	2	W PALM BEACH FL	2
MNBL 120N 839W	3	MMTX 210N 974W	2	KEY WEST FL	4
SKSP 126N 817W	5	MMVR 192N 961W	4	MARCO ISLAND FL	3
MDPP 198N 707W	5	MMFR 185N 926W	9	FT MYERS FL	2
MBJT 215N 712W	6	MMMD 210N 897W	10	VENICE FL	2
MYMM 224N 730W	8	MARATHON FL	4	TAMPA FL	2
MYSM 241N 745W	7	MIAMI FL	3	GULF 28N 89W	2
MYEG 235N 758W	9	W PALM BEACH FL	2		
MYAK 241N 776W	8	FT PIERCE FL	2		
MYNN 251N 775W	6	KEY WEST FL	4	NNNN	
MYGF 266N 787W	3	MARCO ISLAND FL	3		
MMMD 210N 897W	2	FT MYERS FL	3		
MARATHON FL	5	VENICE FL	2		
MIAMI FL	4	TAMPA FL	2		
W PALM BEACH FL	3				
FT PIERCE FL	2				
KEY WEST FL	5				
MARCO ISLAND FL	3				
FT MYERS FL	2				
VENICE FL	2				

Table 9. Probabilities continued...

Advisory Date/Time....	20/11AM	20/5PM	20/11PM
Probability Through...	23/7AM	23/1PM	23/7PM
MWCG 193N 814W	2	2	2
MUCM 214N 779W	3	2	3
MUCF 221N 805W	7	6	6
MUSN 216N 826W	13	8	8
MUHA 230N 824W	16	15	12
MUAN 219N 850W	48	47	24
MMCZ 205N 869W		70	80
MZBZ 175N 883W			2
MYSM 241N 745W	4	4	3
MYEG 235N 758W	4	4	3
MYAK 241N 776W	7	7	6
MYNN 251N 775W	9	9	7
MYGF 266N 787W	13	14	10
MMMD 210N 897W	4	2	13
BERMUDA		3	
MARATHON FL	15	16	12
MIAMI FL	15	16	12
W PALM BEACH FL	15	17	12
FT PIERCE FL	15	17	12
COCOA BEACH FL	14	17	12
DAYTONA BEACH FL	13	15	11
JACKSONVILLE FL	10	11	9
SAVANNAH GA	7	8	7
CHARLESTON SC	7	7	5
MYRTLE BEACH SC	6	7	4
WILMINGTON NC	5	6	4
MOREHEAD CITY NC	5	6	3
CAPE HATTERAS NC	4	5	3
NORFOLK VA		3	
OCEAN CITY MD		2	
KEY WEST FL	17	18	13
MARCO ISLAND FL	18	20	14
FT MYERS FL	17	21	14
VENICE FL	17	21	14
TAMPA FL	15	18	13
CEDAR KEY FL	12	14	11
ST MARKS FL	8	8	9
APALACHICOLA FL	8	8	9
PANAMA CITY FL	7	6	8
PENSACOLA FL	4	3	5
MOBILE AL	2	2	4
GULFPORT MS	2		3
BURAS LA	2		4
NEW ORLEANS LA			3
GULF 29N 85W	10	10	11
GULF 29N 87W	6	6	8
GULF 28N 89W	4	3	7
GULF 28N 91W			4
GULF 28N 93W			2

Table 9. Probabilities continued....

Advisory Date/Time....	21/5AM	21/11AM	21/5PM
Probability Through...	24/1AM	24/7AM	24/1PM
24.5N 87.6W	30	MWCG 193N 814W 2	MWCG 193N 814W 2
26.5N 85.0W	15	MUCM 214N 779W 2	MUCM 214N 779W 3
MUCF 221N 805W	4	MUCF 221N 805W 6	MUCF 221N 805W 5
MUSN 216N 826W	6	MUSN 216N 826W 7	MUSN 216N 826W 6
MUHA 230N 824W	8	MUHA 230N 824W 11	MUHA 230N 824W 9
MUAN 219N 850W	18	MUAN 219N 850W 23	MUAN 219N 850W 8
MYAK 241N 776W	3	MMCZ 205N 869W 10	MMCZ 205N 869W 4
MYNN 251N 775W	4	MZBZ 175N 883W 2	MYSM 241N 745W 3
MYGF 266N 787W	6	MYSM 241N 745W 2	MYEG 235N 758W 4
MMVR 192N 961W	2	MYEG 235N 758W 3	MYAK 241N 776W 6
MMFR 185N 926W	3	MYAK 241N 776W 5	MYNN 251N 775W 7
MMMD 210N 897W	12	MYNN 251N 775W 6	MYGF 266N 787W 11
MARATHON FL	8	MYGF 266N 787W 9	MMMD 210N 897W 4
MIAMI FL	8	MMFR 185N 926W 2	MARATHON FL 11
W PALM BEACH FL	8	MMMD 210N 897W 7	MIAMI FL 12
FT PIERCE FL	8	MARATHON FL 11	KEY WEST FL 12
COCOA BEACH FL	9	MIAMI FL 11	MARCO ISLAND FL 14
DAYTONA BEACH FL	8	KEY WEST FL 13	FT MYERS FL 15
NNNN		MARCO ISLAND FL 14	VENICE FL 16
		FT MYERS FL 14	TAMPA FL 16
		VENICE FL 15	CEDAR KEY FL 15
		TAMPA FL 14	ST MARKS FL 12
		CEDAR KEY FL 12	APALACHICOLA FL 13
		ST MARKS FL 10	PANAMA CITY FL 12
		APALACHICOLA FL 11	PENSACOLA FL 8
		PANAMA CITY FL 9	MOBILE AL 5
		PENSACOLA FL 7	GULFPORT MS 5
		MOBILE AL 5	BURAS LA 7
		GULFPORT MS 5	NEW ORLEANS LA 4
		BURAS LA 6	NEW IBERIA LA 2
		NEW ORLEANS LA 4	GULF 29N 85W 16
		NEW IBERIA LA 3	GULF 29N 87W 14
		GULF 29N 85W 12	GULF 28N 89W 13
		GULF 29N 87W 11	GULF 28N 91W 6
		GULF 28N 89W 10	GULF 28N 93W 2
		GULF 28N 91W 6	
		GULF 28N 93W 3	
		GULF 25N 96W 2	

Table 9. Probabilities continued

Advisory Date/Time....	21/11PM	22/5AM	22/11AM
Probability Through...	24/7PM	25/1AM	25/7AM
MWCG 193N 814W	2	MUHA 230N 824W 6	MYMM 224N 730W 2
MUCM 214N 779W	4	MYMM 224N 730W 2	MYSM 241N 745W 5
MUCF 221N 805W	8	MYSM 241N 745W 6	MYEG 235N 758W 4
MUSN 216N 826W	9	MYEG 235N 758W 5	MYAK 241N 776W 6
MUHA 230N 824W	14	MYAK 241N 776W 7	MYNN 251N 775W 9
MUAN 219N 850W	16	MYNN 251N 775W 10	MYGF 266N 787W 16
MMCZ 205N 869W	4	MYGF 266N 787W 18	BERMUDA 7
MYMM 224N 730W	2	BERMUDA 6	MARATHON FL 12
MYSM 241N 745W	6	MARATHON FL 14	MIAMI FL 17
MYEG 235N 758W	6	MIAMI FL 18	W PALM BEACH FL 21
MYAK 241N 776W	9	W PALM BEACH FL 21	FT PIERCE FL 24
MYNN 251N 775W	11	FT PIERCE FL 23	COCOA BEACH FL 26
MYGF 266N 787W	14	COCOA BEACH FL 24	DAYTONA BEACH FL 23
MMMD 210N 897W	3	DAYTONA BEACH FL 21	JACKSONVILLE FL 15
MARATHON FL	16	JACKSONVILLE FL 15	SAVANNAH GA 9
MIAMI FL	16	SAVANNAH GA 8	CHARLESTON SC 9
W PALM BEACH FL	16	CHARLESTON SC 7	MYRTLE BEACH SC 8
FT PIERCE FL	16	MYRTLE BEACH SC 6	WILMINGTON NC 7
COCOA BEACH FL	15	WILMINGTON NC 6	MOREHEAD CITY NC 7
DAYTONA BEACH FL	13	MOREHEAD CITY NC 6	CAPE HATTERAS NC 7
JACKSONVILLE FL	10	CAPE HATTERAS NC 6	NORFOLK VA 4
KEY WEST FL	17	NORFOLK VA 3	OCEAN CITY MD 2
MARCO ISLAND FL	19	OCEAN CITY MD 2	KEY WEST FL 12
FT MYERS FL	18	KEY WEST FL 15	MARCO ISLAND FL 27
VENICE FL	18	MARCO ISLAND FL 25	FT MYERS FL 33
TAMPA FL	16	FT MYERS FL 28	VENICE FL 40
CEDAR KEY FL	12	VENICE FL 32	TAMPA FL 35
ST MARKS FL	8	TAMPA FL 28	CEDAR KEY FL 23
APALACHICOLA FL	8	CEDAR KEY FL 21	ST MARKS FL 10
PANAMA CITY FL	7	ST MARKS FL 10	APALACHICOLA FL 10
PENSACOLA FL	4	APALACHICOLA FL 10	PANAMA CITY FL 6
MOBILE AL	3	PANAMA CITY FL 7	PENSACOLA FL 2
GULF 29N 85W	10	PENSACOLA FL 2	GULF 29N 85W 16
GULF 29N 87W	7	GULF 29N 85W 15	GULF 29N 87W 4
GULF 28N 89W	4	GULF 29N 87W 5	
		GULF 28N 89W 2	

Table 9. Probabilities continued....

Advisory Date/Time....	22/5PM	22/11PM	23/5AM
Probability Through...	25/1PM	25/7PM	26/1AM
MUCM 214N 779W	2	MYGF 266N 787W 7	28.2N 79.9W 62
MUCF 221N 805W	2	BERMUDA 11	BERMUDA 12
MUHA 230N 824W	3	MIAMI FL 4	MIAMI FL 15
MBJT 215N 712W	2	W PALM BEACH FL 10	W PALM BEACH FL 49
MYMM 224N 730W	3	FT PIERCE FL 26	FT PIERCE FL 70
MY8M 241N 745W	7	COCOA BEACH FL 47	COCOA BEACH FL 69
MYEG 235N 758W	5	DAYTONA BEACH FL 57	DAYTONA BEACH FL 38
MYAK 241N 776W	7	JACKSONVILLE FL 39	JACKSONVILLE FL 5
MYNN 251N 775W	12	SAVANNAH GA 13	SAVANNAH GA 2
MYGF 266N 787W	25	CHARLESTON SC 11	
BERMUDA	10	MYRTLE BEACH SC 9	
MARATHON FL	14	WILMINGTON NC 8	
MIAMI FL	27	MOREHEAD CITY NC 9	
W PALM BEACH FL	35	CAPE HATTERAS NC 8	
FT PIERCE FL	39	NORFOLK VA 3	
COCOA BEACH FL	36	MARCO ISLAND FL 8	
DAYTONA BEACH FL	24	FT MYERS FL 30	
JACKSONVILLE FL	10	VENICE FL 75	
SAVANNAH GA	4	TAMPA FL 75	
CHARLESTON SC	4	CEDAR KEY FL 61	
MYRTLE BEACH SC	4	ST MARKS FL 10	
WILMINGTON NC	3	APALACHICOLA FL 5	
MOREHEAD CITY NC	4	PANAMA CITY FL 2	
CAPE HATTERAS NC	4	GULF 29N 85W 10	
NORFOLK VA	2		
KEY WEST FL	13		
MARCO ISLAND FL	48		
FT MYERS FL	56		
VENICE FL	60		
TAMPA FL	42		
CEDAR KEY FL	18		
ST MARKS FL	3		
APALACHICOLA FL	3		
PANAMA CITY FL	2		
GULF 29N 85W	4		

Advisory Date/Time....	24/11PM	24/5AM	24/11AM
Probability Through...	27/7PM	27/1AM	27/7AM
BERMUDA	28	BERMUDA 20	BERMUDA 36
			HIBERNIA OILFLD 7