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NOAA Technical Memorandum NWS NHC 19

ANNUAL DATA AND VERIFICATION TABULATION
ATLANTIC TROPICAL CYCLONES

Gilbert B. Clark and Staff,

National Hurricane Center
Miami, Florida
February 1983

UNITED STATES
DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary

National Oceanic and
Atmospheric Administration
John V. Byrne, Administrator

National Weather
Service
Richard E. Hallgren, Director



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

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

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

VERIFICATION

Verification statistics for the 1982 season are shown in Table

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

Tropical cyclone warning lead times for United States landfalling storms are given in Table 3a. A summary of warning lead times for the period 1970-1982 for hurricanes only and for both tropical storms and hurricanes is given in Table 3b. The length of time between the issuance of the warnings and the time that the center crossed the coast, as determined from the "best track," was taken as the warning lead time. A more complete discussion of the verification of tropical cyclone warning lead times, as well as verifications for individual storms from 1970-1977, can be found in the 1977 Annual Data and Verification Tabulation (Lawrence, Hebert, and Staff, 1979).

DATA SUMMARIES

A summary of 1982 North Atlantic tropical and subtropical cyclone statistics is given in Table 4. Tracks of 1982 named storms as well as the June subtropical cyclone are shown in Figure 1.

The best track, initial, and forecast positions for 1982 named storms are in Table 5, along with initial position and forecast errors, and storm average errors.

Table 6 lists all center fix positions and intensity evaluations used operationally at the National Hurricane Center during 1982. The center fixes are listed in chronological order, and include those obtained by aerial reconnaissance penetrations, satellite (Miami SFSS), and land-based radar. This section precedes the initial table.

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

Table 8 is an aerial reconnaissance summary for the 1982 season.

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

Daily GOES-5 satellite photographs of 1982 named tropical cyclones and the subtropical cyclone are shown in Figure 4.

ACKNOWLEDGMENTS

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

REFERENCES

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- - - - - , and M. B. Lawrence, 1973: "Statistical-Dynamical Prediction of Tropical Cyclone Motion (NHC-73)," NOAA Technical Memorandum NWS SR-69, 34 pp.
- - - - - , 1979: "A Guide to Atlantic and Eastern Pacific Models for the Prediction of Tropical Cyclone Motion," NOAA Technical Memorandum NWS NHC-11, 26 pp.
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INTRODUCTION

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

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

OBJECTIVE FORECAST TECHNIQUES

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

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

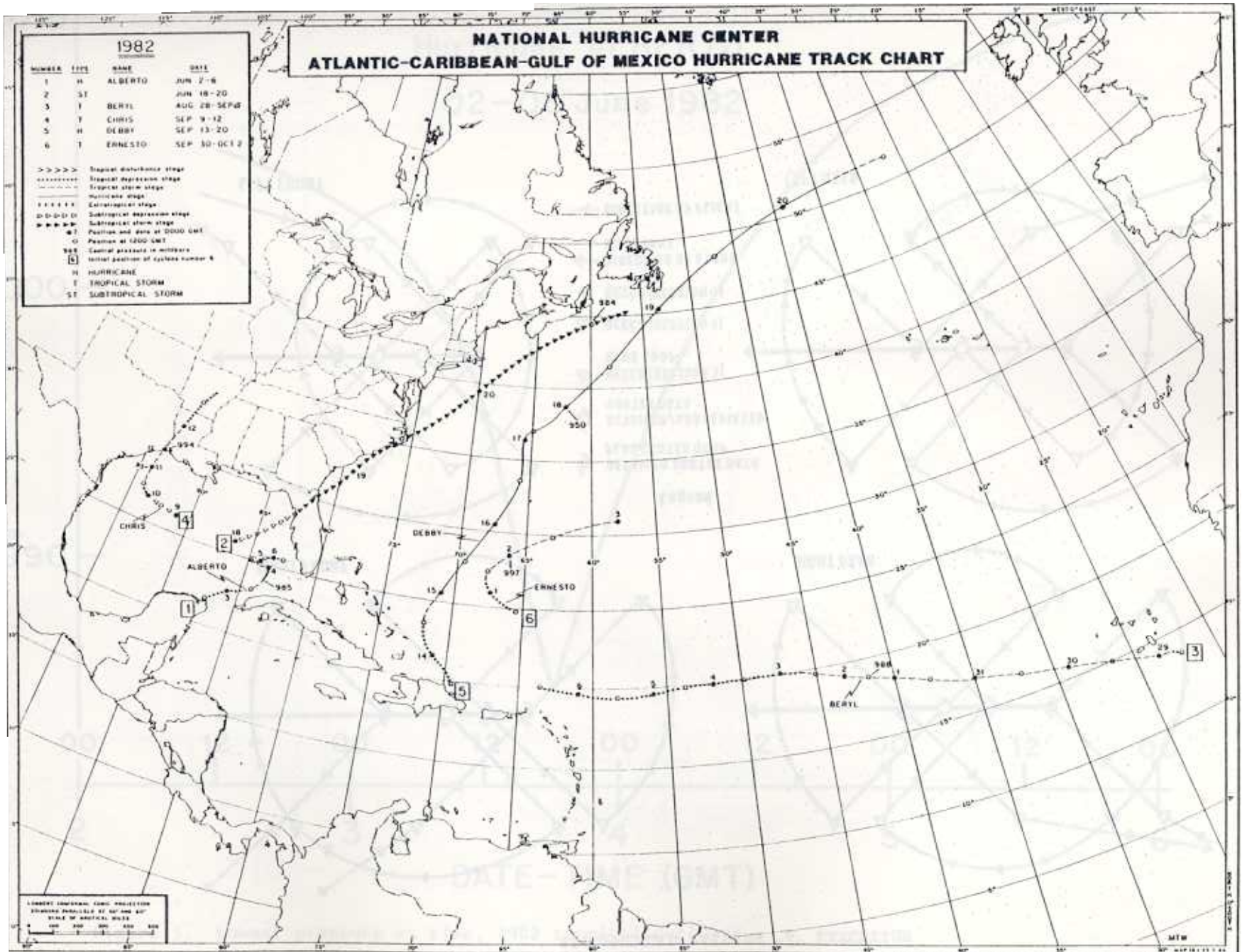
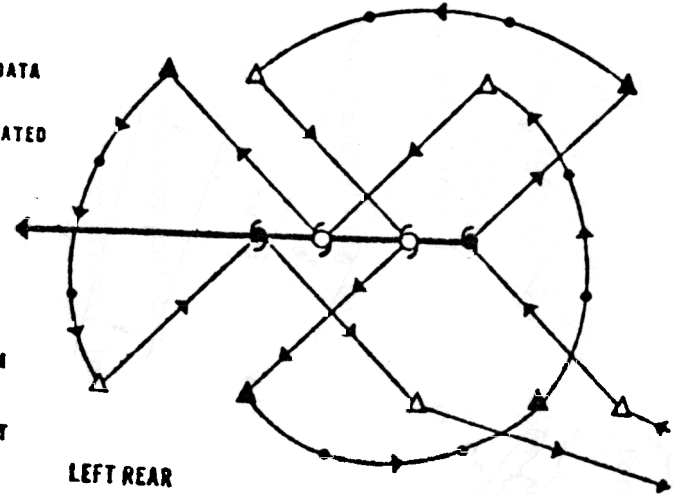
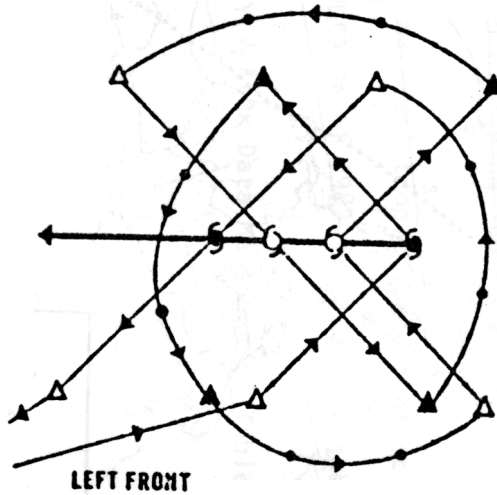
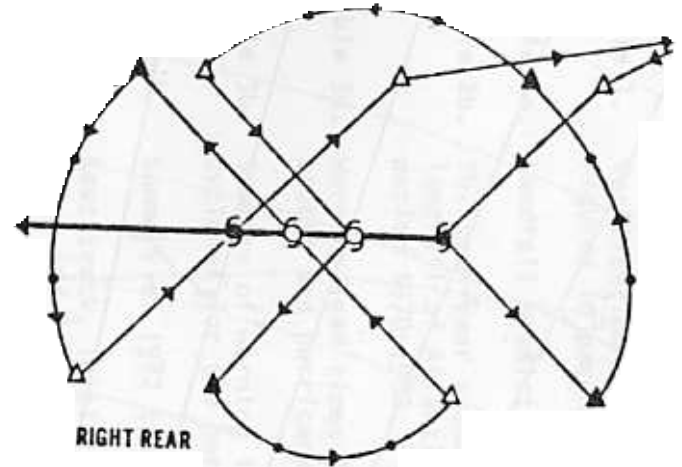
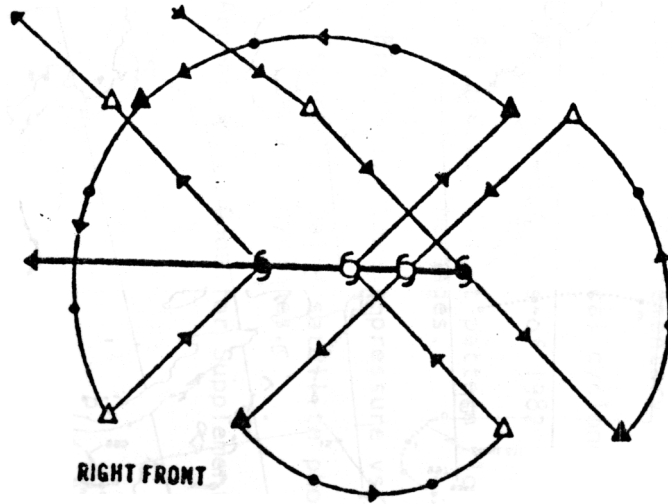


Figure 7. Tracks of 1982 tropical and subtropical cyclones.

RECOMMENDED PATTERN "A" EXECUTION



Legend

- ☉ DETAILED VORTEX DATA PLUS CENTER DROP
- ⊖ DETAILED/ABBREVIATED VORTEX DATA
- ▲ RECCO (SECTION 1) PLUS DROP
- △ RECCO (SECTION 1)
- RECCO (SECTION 3)
- ← DIRECTION OF STORM MOVEMENT
- ↔ DIRECTION OF FLIGHT

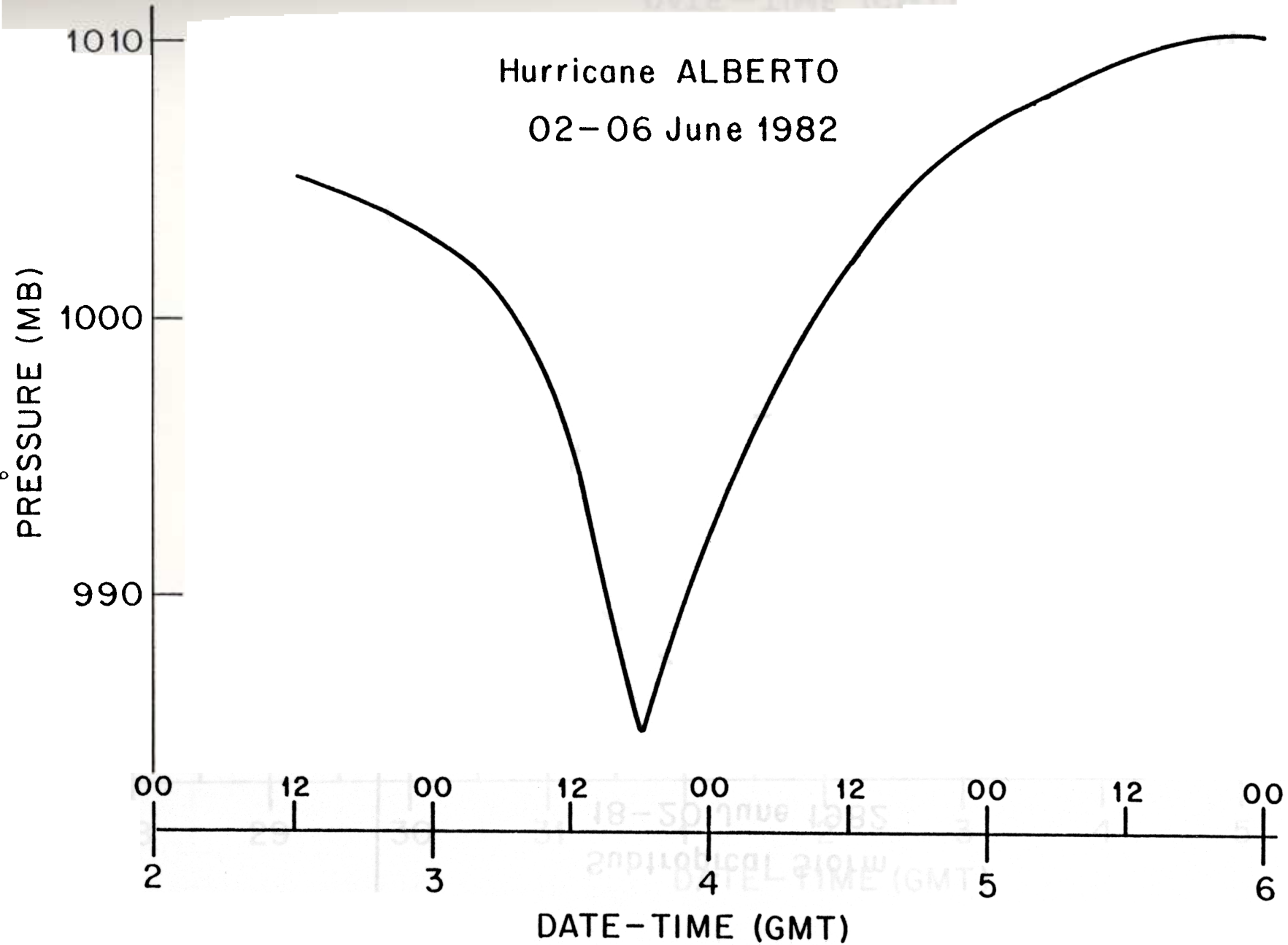
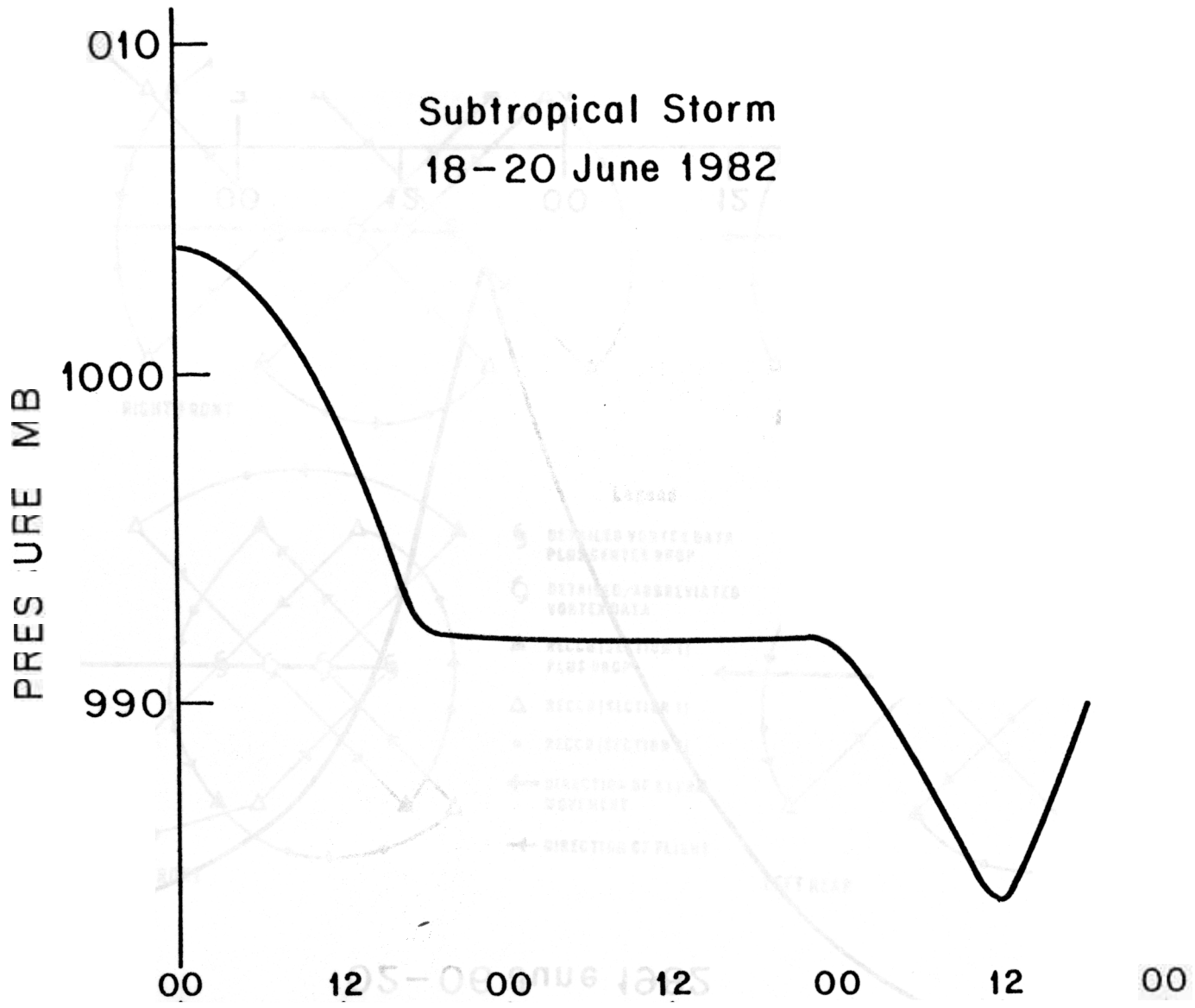


Figure 3. Lowest pressure vs time 1982 tropical cyclones.



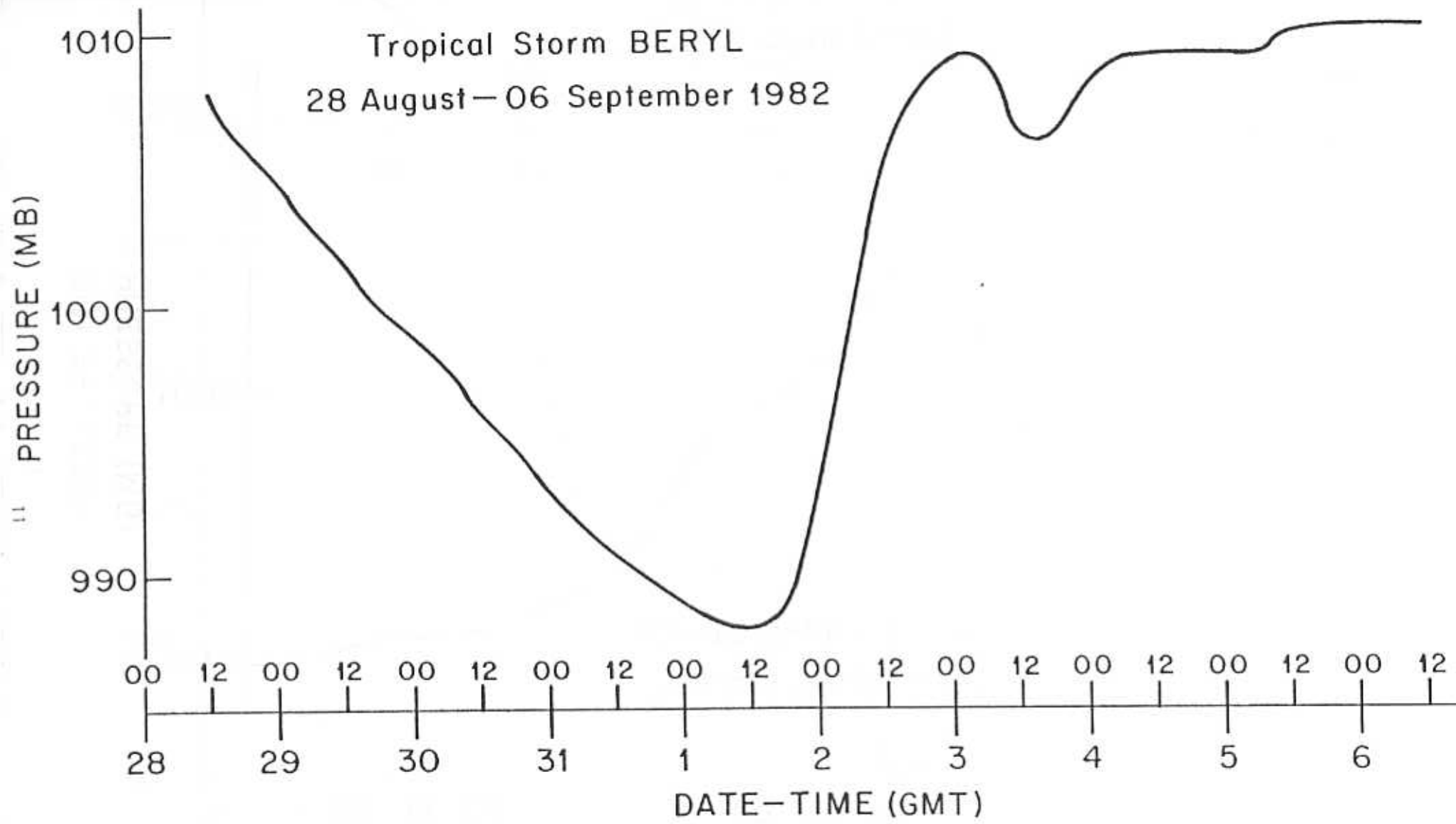
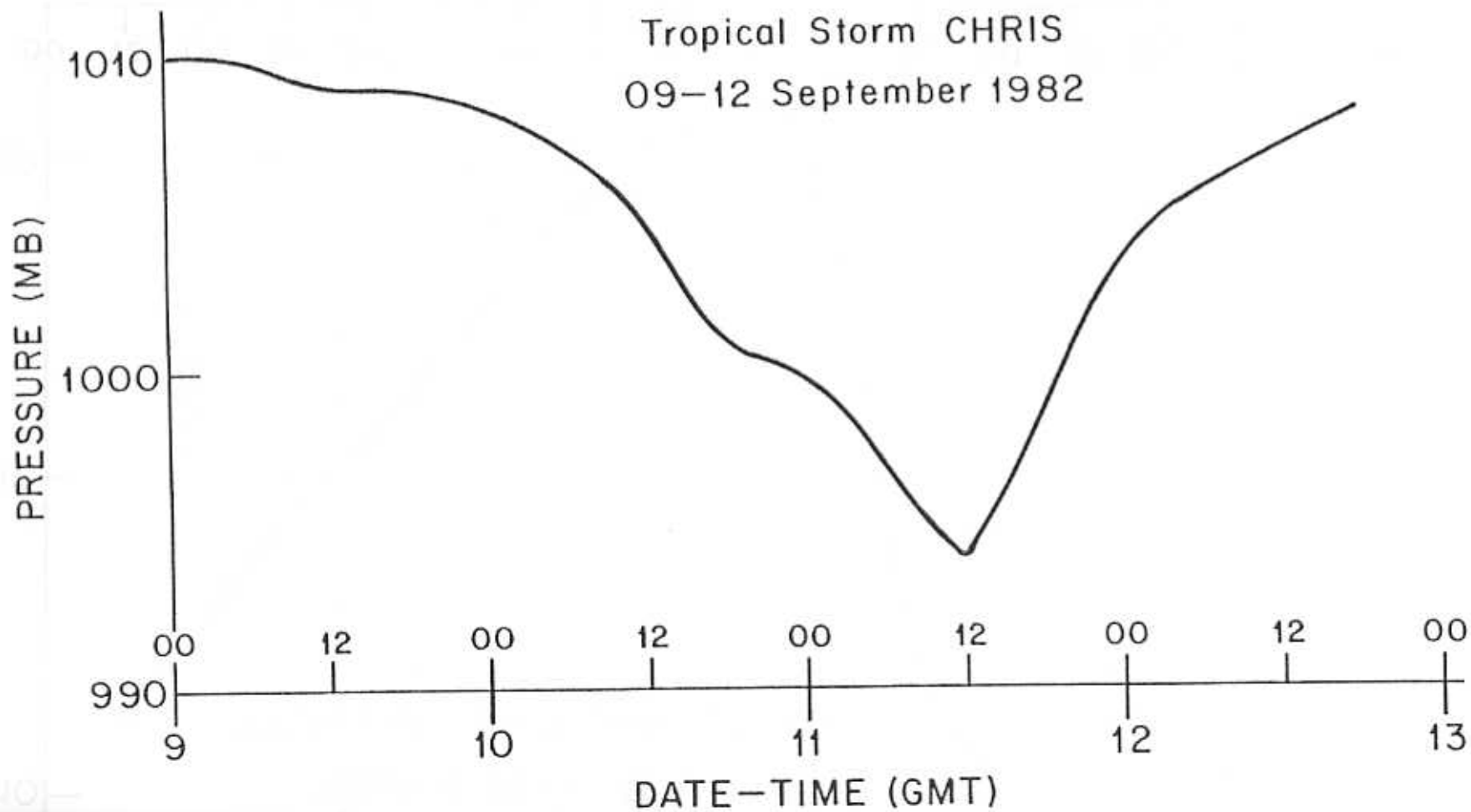


Figure 3 continued.

Tropical Storm CHRIS
09-12 September 1982



Hurricane DEBBY
13-20 September 1982

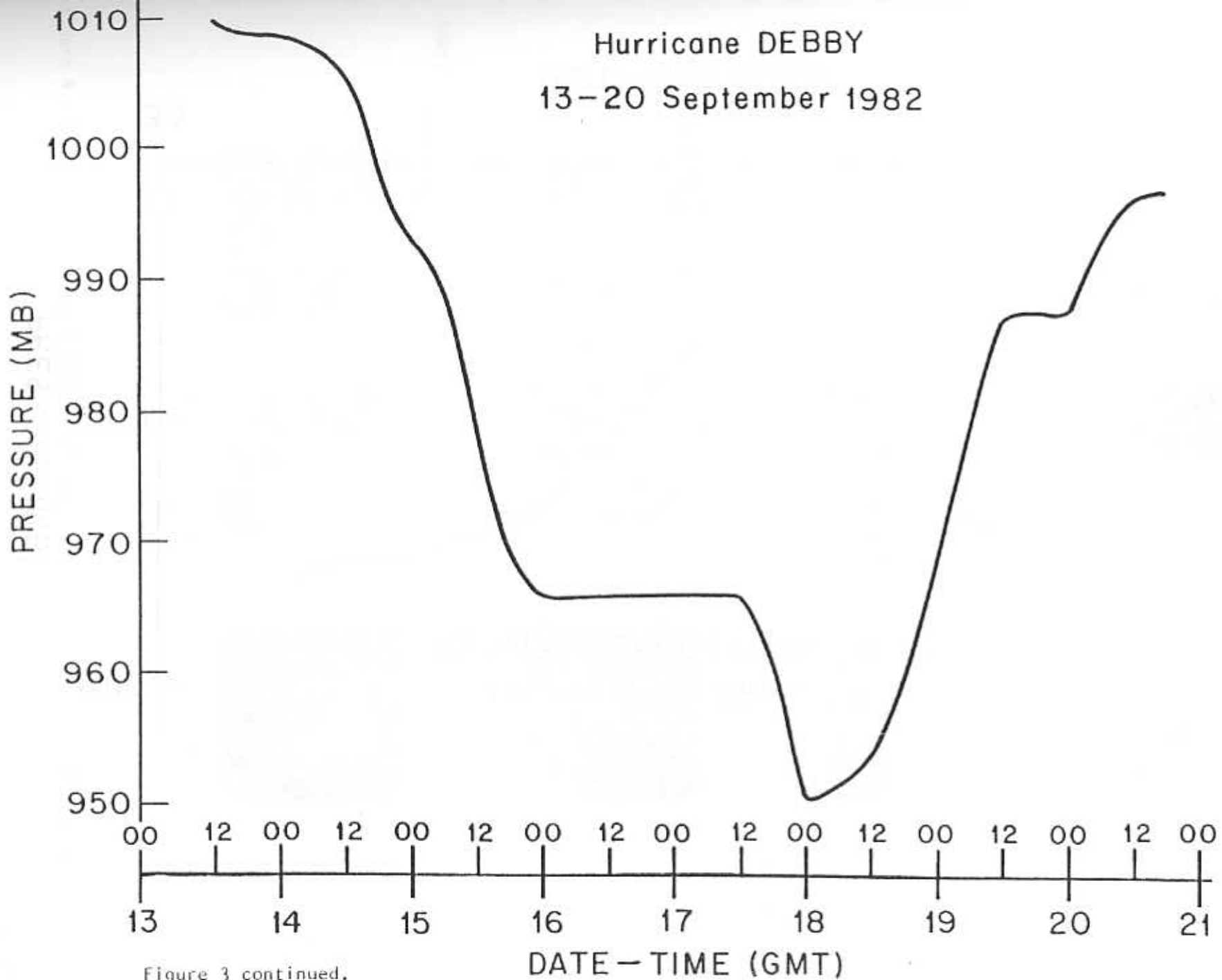
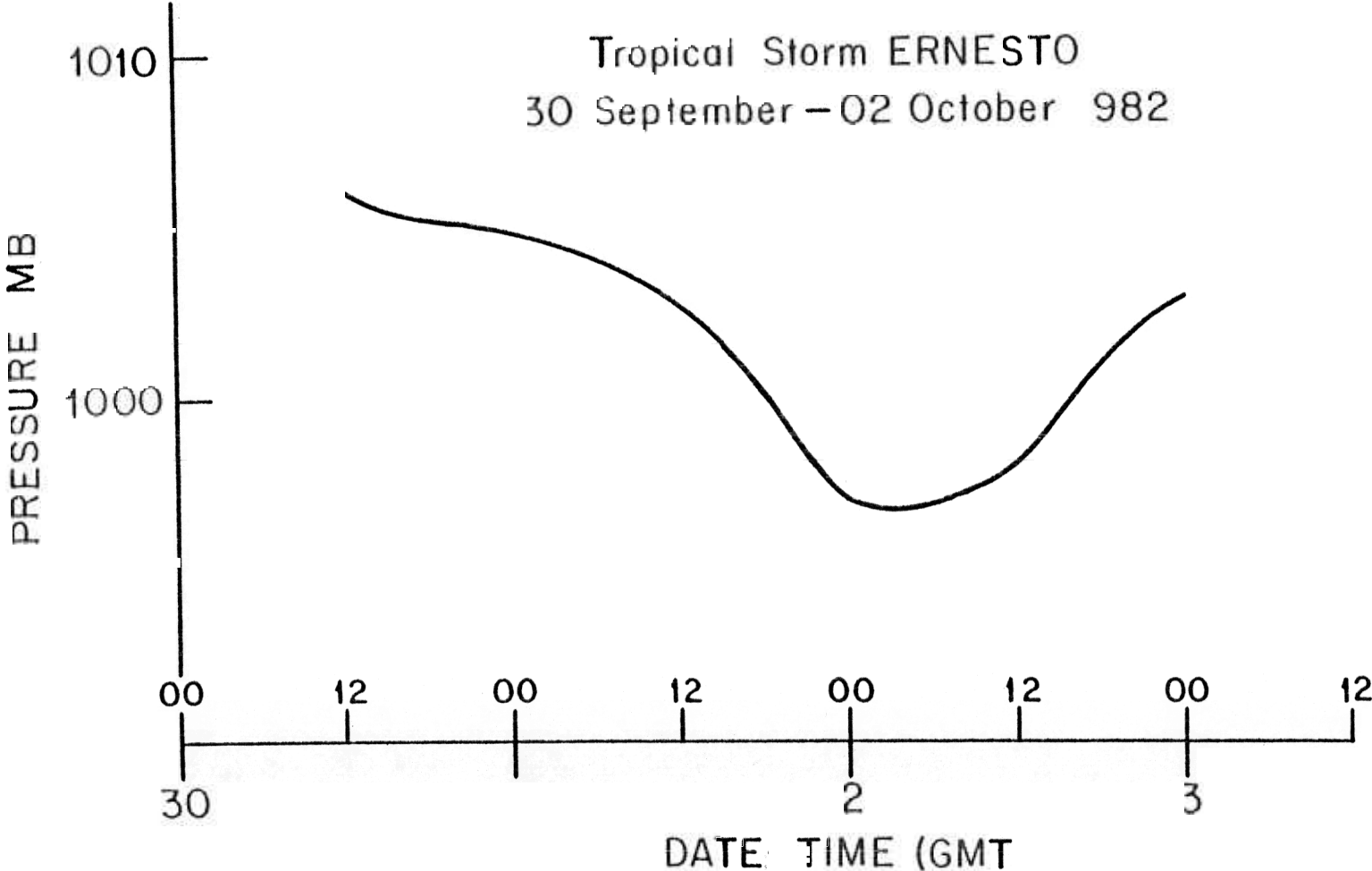


Figure 3 continued.

Tropical Storm ERNESTO
30 September - 02 October 1982



ALBERTO



1901 GMT 6/2/82
1004 MB



1631 GMT 6/3/82
985 MB



1831 GMT 6/4/82
1005 MB

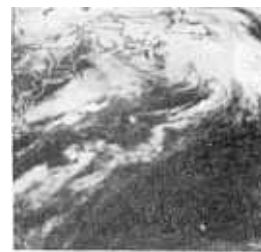
SUBTROPICAL
STORM



1930 GMT 6/18/82
992 MB



1731 GMT 6/19/82
992 MB



1331 GMT 6/20/82
985 MB



1731 GMT 8/28/82
1006 MB



1034 GMT 8/29/82
1002 MB



1101 GMT 8/30/82
996 MB

BERYL



1031 GMT 8/31/82
991 MB



1401 GMT 9/1/82
988 MB



1431 GMT 9/2/82
1005 MB

Figure 4. Daily satellite photographs of 1982 tropical and subtropical cyclones

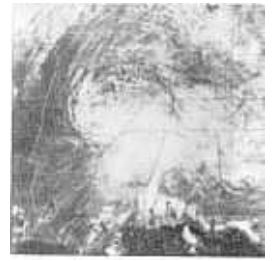
CHRIS



2001 GMT 9/10/82
1001 MB



1431 GMT 9/11/82
995 MB



1831 GMT 9/12/82
1010 MB

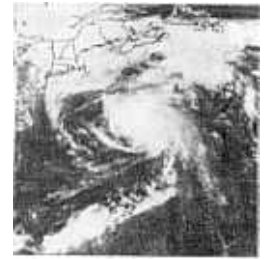
DEBBY



1531 GMT 9/14/82
1002 MB



1531 GMT 9/15/82
972 MB



1531 GMT 9/16/82
966 MB



1931 GMT 9/17/82
958 MB



1331 GMT 9/18/82
955 MB



1301 GMT 9/19/82
987 MB

ERNESTO



1401 GMT 9/30/82
1005 MB



1602 GMT 10/1/82
1000 MB



1602 GMT 10/2/82
1000 MB

Figure 4 continued.

SUPPLEMENTARY VORTEX DATA MESSAGE

MANOP HEADING (Completed by monitor only)

UR _____ 12 _____

MISSION IDENTIFIER AND OBSERVATION NUMBER (Completed by flight meteorologist and monitor)

AF _____

SUPPLEMENTARY VORTEX DATA MESSAGE

LEGEND

00	(L ₀ L ₀ L ₀)	0	(iHHH)	0	(TTT _d T _d)	(ddfff)
80	8	8	8	8		
60	6	6	6	6		
45	4	4	4	4		
30	3	3	3	3		
15	1	1	1	1		
CC	C	C	C	C		(YYGgg)
MF	(fff)	(BBRRR)	(ddd)	AZ		
15	(L ₀ L ₀ L ₀)	1	(iHHH)	1	(TTT _d T _d)	(ddfff)
30	3	3	3	3		
45	4	4	4	4		
60	6	6	6	6		
80	8	8	8	8		
00	0	0	0	0		
MF	(fff)	(BBRRR)				

00/0 = INDICATORS FOR DATA COLLECTED APPROX 100NM FROM SYSTEM CENTER

80/8 = INDICATORS FOR DATA COLLECTED APPROX 80NM FROM SYSTEM CENTER

60/6 = INDICATORS FOR DATA COLLECTED APPROX 60NM FROM SYSTEM CENTER

45/4 = INDICATORS FOR DATA COLLECTED APPROX 45NM FROM SYSTEM CENTER

30/3 = INDICATORS FOR DATA COLLECTED APPROX 30NM FROM SYSTEM CENTER

15/1 = INDICATORS FOR DATA COLLECTED APPROX 15NM FROM SYSTEM CENTER

CC/C = INDICATORS FOR DATA COLLECTED AT THE SYSTEM CENTER

ddd = TRUE DIRECTION IN TENS OF DEGREES OF STORM MOTION

MF = INDICATOR FOR MAX FLIGHT LEVEL WIND OBSERVED

AZ = INDICATOR FOR TRUE DIRECTION OF STORM MOTION

fff = SPEED OF WIND IN KNOTS

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

BBRRR = BEARING (BB) AND RANGE (RRR) FROM CENTER OF MF

YYGgg = ZULU DATE/TIME OF CENTER DATA

TTT_dT_d = TEMP/DEWPOINT IN DEGREES CELSIUS; ADD 50 FOR NEGATIVE VALUES

iHHH = PRESSURE HEIGHT DATA IN RECCO FORMAT

L₀ L₀ L₀ = LATITUDE IN DEGREES/TENTHS

L₀ L₀ L₀ L₀ = LONGITUDE IN DEGREES/TENTHS

/ = DATA UNKNOWN/UNOBTAINABLE

REMARKS (End of message)

SAMPLE MESSAGE

```

URNT 12 KMIA 241703
AF966 0411 FREDERIC OB 14
SUPPLEMENTARY VORTEX DATA MESSAGE
00178 00899 03107 00908 36027
80177 80895 83100 80908 35042
60178 60891 63092 60807 36052
45177 40887 43088 40907 35070
30178 30883 33070 30908 36088
15178 10880 13000 11010 35108
CC177 C0876 C3947 C1811 241647
MF148 27003 A2310
15177 10872 13000 11010 18120
30178 30868 33070 31009 17998
45178 40862 43088 40909 18080
60177 60858 63093 60908 17050
80177 80854 83102 80908 17048
00178 00850 03108 00905 18031
MF145 09005
REMARKS LAST REPORT OBS 01 THRU 14 TO KMIA ETA KBIX 241930Z
    
```

APPENDIX A CODE FOR SUPPLEMENTARY VORTEX DATA MESSAGE.

PREPARED BY:

TRANSMISSION TIME:

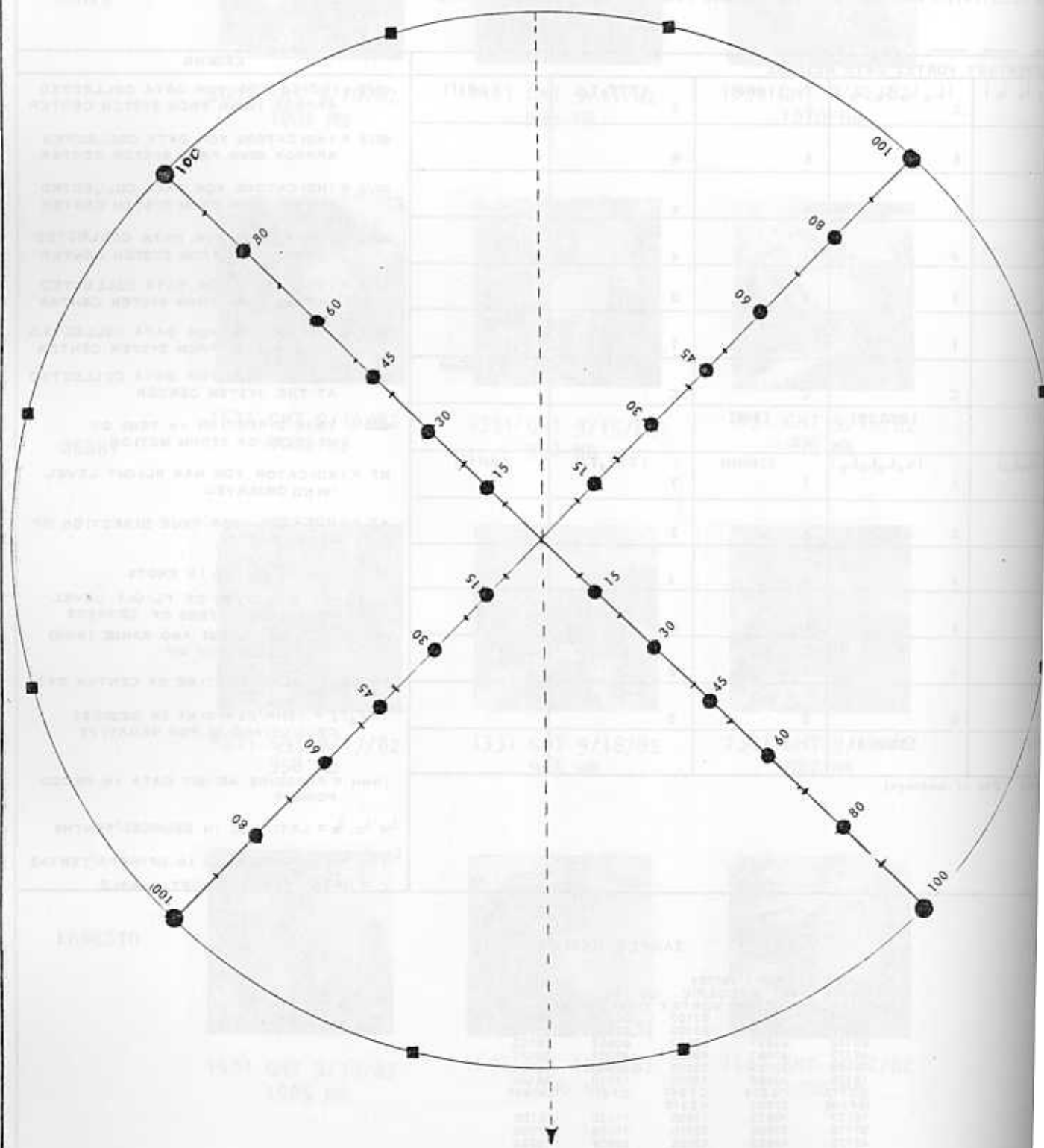


Table Verification of 1982 tropical storm and hurricane forecasts.

Figures in parentheses are number of cases.

METHOD	INITIAL POSITION ERROR (N.MI.)	FORECAST DISPLACEMENT ERRORS (N.MI.)			
		12 HR	24 HR	48 HR	72 HR
Official	17 (52)	54 (52)	119 (42)	230 (26)	211 (18)
NHC67	(32)	(32)	131 (24)	274 (12)	202 (9)
NHC72	17 (49)	54 (49)	103 (39)	183 (23)	370 (16)
HURRAN	16 (39)	60 (39)	146 (35)	260 (21)	207 (14)
CLIPER	17 (50)	62 (50)	141 (40)	254 (24)	222 (16)
NHC73	14 (16)	66 (16)	142 (12)	231 (7)	504 (5)
SANBAR	15 (19)	75 (19)	76 (14)	403 (7)	637 (5)
MFM	19 (6)	56 (6)	87 (5)	190 (4)	- (0)

Table 2a. Landfall prediction errors for 1982 tropical storms and hurricanes.

Following is a list of landfall prediction errors for tropical storms and hurricanes during 1982. Each error represents the distance (in nautical miles) from the predicted landfall point determined from the "Official" forecast issued 24 hours prior to landfall to the actual landfall point determined from the Best Track. Only tropical storms and hurricanes are included. In some cases the storm crossed an island when predicted to pass offshore. In such cases, the perpendicular distance from the landfall point to the forecast track is taken as the landfall prediction error.

Storm name	Category at Landfall	Date/Time(Z) of Landfall	Landfall Forecast Error (N.MI.)	Location and Remarks
Alberto	(No landfall)			
Bery	(No landfall)			
Chris	Trop. Storm	9/11/12Z	*	Southwest Louisiana
Debby	(No landfall)			
Ernesto	(No landfall)			

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

Table 2b. Thirteen-year summary of errors in the prediction of the points of landfall of Atlantic tropical storms and hurricanes during the period 1970-1982.

	<u>United States Landfalls</u>	<u>All Landfalls</u>
1982 Mean 24-Hour Landfall Prediction Error (number of cases)	0	0
12 year average 1970-1982	39 n.mi. (21)	50 n.mi. (55)

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	(No U.S. landfall)				
Chris	Trop. Storm	9/1 /12Z	Southwest Louisiana	Gale Warnings issued 9/9/01Z	59 hours*
Debby	(No U.S. landfall)				
Ernesto	(No U.S. landfall)				

* Gale Warnings were issued 35 hours prior to the development of Tropical Storm Chris.

Table 3b. Average warning lead times for all tropical storms and hurricanes and for hurricanes alone, which made landfall on the mainland of the United States during 1982 and during the 12-year period of 1970-1981).

	All Tropical Storms and Hurricanes		All Hurricanes	
	1982	1970-1981	1982	1970-1981
Average Lead Time (hours)	59*	18		21
(number of cases)	(1)	(28)	(0)	(12)

* Gale Warnings were issued 35 hours prior to the development of Tropical Storm Chris.

Table 4. Summary Atlantic Tropical Subtropical Cyclone Statistics, 1982.

NO.	NAME	CLASS ¹	DATES	MAXIMUM SUSTAINED WINDS (KT)	LOWEST PRESSURE (MB)	U.S. DAMAGE (\$ MILLION)	EATHS
	ALBERTO	H	2-6 JUN	75	985	MINOR	23 (CUBA)
2.		ST	18-20 JUN	60	984	10	3 (FLORIDA)
3.	BERYL	T	28 AUG-6 SEP	60	988		
	CHRIS		9-12 SEP	55	994		NONE
	DEBBY	H	13-20 SEP	115	950		
	ERNESTO	T	30 SEP-2 OCT	60	997		

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

Table 5. Best track, initial and forecast positions, initial position error and forecast errors for 1982 tropical cyclones.

HURRICANE ALBERTO 2-6 JUNE 1982

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR	12-HOUR FORECAST ERROR			24-HOUR FORECAST ERROR			48-HOUR FORECAST ERROR			72-HOUR FORECAST ERROR		
	LAT. (°N)	LONG. (°W)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)
0306	22.8	85.0	22.6	85.3	20	23.5	84.5	38	24.0	83.5	65	26.0	80.5				
0312	23.2	84.2	23.2	84.1	6	24.5	82.0	73	25.5	80.0	258	28.0	77.0				
0318	24.0	83.6	24.0	83.5	5	25.2	82.0	110	27.0	80.0	252	30.0	77.0	31.0	74.0		
0400	24.8	83.4	24.8	83.2	11	26.6	81.9	178	28.0	81.6		31.0	78.0	33.0	73.0		
0406	24.9	84.1	24.8	83.6	28	25.5	84.5	56	27.0	84.0		28.0	83.0	33.5	75.0		
0412	24.9	84.8	25.0	84.5		25.0	84.5		26.0	84.5		28.0	83.0	28.5	80.0		
0418	25.0	84.2	25.0	84.2		25.5	84.0		26.0	84.0		26.0	84.0	29.0	81.0		
MEAN VECTOR ERRORS (N.MI.)					14	91			191			0			0		
NUMBER OF CASES					5	5			3			0			0		

Table 5 continued.

ROPTICAL STORM BERYL 28 AUGUST - 6 SEPTEMBER 1982

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12-HOUR FORECAST ERROR			24-HOUR FORECAST ERROR			48-HOUR FORECAST ERROR			2-HOUR FORECAST ERROR					
	LAT. (°N)	LONG. (°W)	LAT. (°N)	LONG. (°W)		LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)			
2818	13.9	22.7	13.9	23.8	64	14.2	24.1	112	14.5	25.5	197	14.5	30.0	302	14.5	35.0	361			
2900	14.1	23.6	14.1	23.6	0	14.5	25.5	52	14.5	27.5	117	14.5	31.5	252	14.5	36.0	324			
2906	14.5	24.9	14.6	24.9	6	14.8	27.0	54	15.0	29.0	114	15.5	34.0	175	16.0	39.0	195			
2912	14.9	26.3	15.0	26.3	6	15.3	28.3	55	15.5	30.5	107	16.0	35.0	194	16.0	40.0	199			
2918	15.3	27.7	15.4	27.5	13	16.0	30.0	24	16.5	32.5	55	17.0	37.5	99	17.0	42.5	127			
3000	15.7	29.1	15.6	29.2	8	16.3	31.5	41	16.9	34.0	63	17.5	39.0	76	18.0	44.0	77			
3006	16.0	30.6	16.0	30.5	6	16.5	33.5	12	17.0	36.5	17	18.0	42.0	77	19.0	47.0	172			
3012	16.3	32.1	16.3	32.3	12	16.7	35.4	21	17.0	38.5	51	18.0	44.0	129	19.0	48.0	159			
3018	16.7	33.6	16.7	33.9	17	17.0	37.0	21	17.8	40.2	53	19.0	46.0	187	20.5	50.0				
3100	17.0	35.0	17.0	35.0	0	17.9	38.0	17	18.5	41.0	58	20.0	47.5	248	23.0	53.0				
3106	17.2	36.4	17.1	36.0	24	17.5	38.0	42	18.0	40.5	30	19.0	45.5	104	21.0	50.0				
3112	17.7	37.8	17.6	37.6	13	18.0	40.5	42	18.5	43.0	86	19.5	48.0	175	21.0	53.0				
3118	18.0	39.0	18.0	39.5	29	18.5	41.5	8	19.0	44.0	62	20.5	49.0		22.0	54.0				
0100	18.3	40.0	18.3	40.2	11	18.9	42.9	57	19.5	45.5	120	21.0	50.0		22.0	55.0				
0106	18.6	40.9	18.6	40.6	17	19.0	43.0	51	19.5	45.0	68	20.5	49.0		22.0	53.0				
0112	18.8	41.7	19.0	42.0	21	19.5	44.5	57	20.0	47.0	90	21.5	52.0		24.0	57.0				
0118	19.0	42.4	19.1	43.0	35	19.5	45.0	17	20.0	47.5		21.5	52.0		24.0	57.0				
0200	19.2	43.2	19.4	43.8	36	19.8	45.9	13	20.0	48.0		21.5	52.0		24.0	56.0				
0206	19.4	44.1	19.5	44.8		19.9	46.9		20.3	48.9		21.5	53.0		23.0	57.0				
0212	19.7	45.1	19.6	45.2		20.0	47.0		20.3	49.0		21.0	52.5		22.5	56.0				
MEAN VECTOR ERRORS (N.MI.)					18				39				81				168			02
NUMBER OF CASES					18				18				16				12			

Table 5 continued.

TROPICAL STORM CHRIS 9 - 12 SEPTEMBER 1982

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12-HOUR FORECAST ERROR			24-HOUR FORECAST ERROR			48-HOUR FORECAST ERROR			72-HOUR FORECAST ERROR		
	LAT. (°N)	LONG. (°W)	LAT. (°N)	LONG. (°W)		LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)
1012	27.3	94.2	26.8	94.3	30	27.7	94.3	13	28.5	95.0	75	30.5	94.5			34.0	91.0
1018	27.9	94.1	27.5	94.3	26	28.0	94.5	39	29.0	95.0	111	31.0	94.0			35.0	90.0
1100	28.4	94.1	28.2	94.0	13	29.7	93.8	8	31.0	93.5		33.0	91.0				
1106	29.0	94.0	29.0	94.5	26	31.0	94.0	13	33.0	93.0							
1112	29.8	93.8	29.9	93.6		32.5	93.0		35.0	92.0							
1118	30.8	93.4	30.8	93.4		32.5	93.0		35.0	92.0							
MEAN VECTOR ERRORS (N.MI)					24			18			93						
NUMBER OF CASES					4			4			2						

HURRICANE DEBBY 3 20 SEPTEMBER 1982

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12-HOUR FORECAST ERROR			24-HOUR FORECAST ERROR			48-HOUR FORECAST ERROR			72-HOUR FORECAST ERROR		
	LAT. (°N)	LONG. (°W)	LAT. (°N)	LONG. (°W)		LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)
1412	23.5	71.9	23.3	71.9	12	24.5	72.0	77	26.0	72.0	160	28.0	71.0	421	30.0	70.0	484
1418	24.6	71.8	24.0	72.0	38	26.5	70.5	24	28.0	69.5	49	31.0	66.0	210	34.0	63.0	183
1500	25.6	71.0	25.6	70.9	5	27.5	69.7	21	29.5	68.0	68	33.0	64.0	217	36.5	59.5	188
1506	26.7	70.3	26.5	70.5	16	28.5	69.5	46	30.0	68.0	127	33.0	65.0	220	36.0	62.0	240
1512	27.8	69.6	27.7	69.7	8	29.5	68.0	58	31.0	67.0	160	34.0	64.0	188	37.0	61.0	292
1518	29.0	68.5	29.2	68.4	13	32.0	66.0	35	35.0	63.0	124	40.0	59.0	244	44.0	54.0	88
1600	30.5	67.5	30.8	67.2	24	34.0	65.5	6	37.0	63.0	112	43.0	57.0	325	47.0	58.0	216
1606	32.1	66.7	31.8	66.8	19	35.0	64.5	60	38.0	62.0	198	44.0	56.0	331	47.0	46.0	190
1612	33.6	65.8	33.5	65.8	6	36.2	63.6	97	39.6	61.5	227	44.0	55.0	215	47.5	43.0	173
1618	35.1	65.6	35.2	62.5	152	38.4	65.0	149	41.5	64.0	282	46.0	57.0	223	48.0	44.0	190
1700	36.4	65.6	36.1	62.5	151	38.0	64.5	143	39.0	62.0	134	41.0	54.5	300	41.5	42.5	
1706	36.8	65.6	37.0	62.7	140	39.0	64.0	175	41.8	61.5	190	43.0	51.5	301	44.0	41.0	
1712	37.1	65.0	37.2	65.1	8	39.3	64.0	78	41.0	62.0	159	44.0	54.0	394	46.0	43.0	
1718	37.6	63.5	37.7	63.9	20	38.5	61.3	102	39.3	61.3	336	42.5	51.5	554	44.0	42.0	
1800	38.8	62.3	38.8	62.4	5	40.3	59.0	80	42.0	55.0	207	45.5	46.0		49.0	36.0	
1806	40.1	60.7	40.2	60.6	8	43.0	56.5	42	46.0	51.0	71	50.0	40.0				
1812	41.6	58.5	41.7	58.5	6	44.5	54.0	58	47.5	49.5	117	54.0	37.0				
1818	43.5	56.1	43.6	56.4	14	47.0	52.0	49	50.5	47.5	144	56.5	36.0				
1900	45.3	53.5	45.6	53.9	25	49.5	48.5	58	53.5	42.5		55.0	30.0				
1906	47.0	50.5	47.2	51.8	54	51.0	46.0	66	54.0	40.0							
1912	48.5	47.1	48.5	48.0		52.0	40.0		54.5	32.5		55.0	17.5				
1918	50.0	43.5	50.0	43.5		52.5	34.0		52.5	24.0							
MEAN VECTOR ERRORS (N.MI.)					36			71			159			296			224
NUMBER OF CASES					20			20			18			14			10

Table continued.

TROPICAL STORM ERNESTO 30 SEPTEMBER 2 OCTOBER 1982

DATE/TIME (GMT)	BEST TRACK		OPERATIONAL POSITION		POSITION ERROR (N.MI.)	12-HOUR FORECAST ERROR			24-HOUR FORECAST ERROR			48-HOUR FORECAST ERROR			72-HOUR FORECAST ERROR		
	LAT. (°N)	LONG. (°W)	LAT. (°N)	LONG. (°W)		LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)	LAT. (°N)	LONG. (°W)	(N.MI.)
0106	26.5	67.8	26.5	68.0	11	28.0	68.0	38	30.0	67.5	127	34.5	66.0	36.0	59.0		
0112	27.3	67.7	27.3	68.0	16	29.0	67.5	61	30.5	64.5	75	34.0	56.0	40.0	48.0		
0118	27.9	67.1	28.0	67.5	22	28.5	65.5	42	29.5	62.5	106	32.0	55.0	39.0	43.0		
0200	28.5	66.2	28.5	66.5	16	29.5	64.5	65	30.5	62.0		32.5	55.0	38.0	45.0		
0206	29.1	65.1	29.0	65.5	22	29.6	63.4	139	30.5	61.0		33.0	55.0	38.0	45.0		
0212	29.8	63.0	30.0	63.0		32.0	59.5		35.0	55.0		41.0	46.0				
0218	30.5	60.5	31.1	60.8		34.0	57.0		38.0	52.0							
MEAN VECTOR ERRORS (N.MI.)					17	69			103								
NUMBER OF CASES					5	5											

LEGEND FOR TABLE 6

Key to Observational (obs.) Unit and Resolution

OBSERVATIONAL UNIT

Reconnaissance

AF = Air Force
NOAA = National Oceanographic and Atmospheric Administration

Satellite

GOES-5 = Geostationary Operational Environmental Satellite

Radar

EYW-R = Key West, Florida National Weather Service Radar
DAB-R = Daytona Beach, Florida National Weather Service Radar
CHS-R = Charleston, South Carolina National Weather Service Radar
GLS-R = Galveston, Texas National Weather Service Radar
LCH-R = Lake Charles, Louisiana National Weather Service Radar

RESOLUTION

Reconnaissance

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

Satellite

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

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

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

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

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

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE =CIR. DIA. =ELIP. (N.M.I.)	OBS. UNIT	RESOLUTION	ACFT. ALT.	
			LAT. (°N)	LON. (°W)	SFC.	FLT. LVL.			IN.	OUT					
1	01	1200	18.4	88.2								GOES5	5 VSBL1		
2	01	1730	20.4	88.4								GOES5	5 VSBL1		
3	02	1230	21.8	86.8	27							GOES5	1,5 VSBL1		
4	02	1800	21.8	87.0	31							GOES5	2,5 VSBL1		
5	02	2016	22.0	86.7	20	30	1003		24	24		AF	3/5	370M	
6	02	2100	23.2	85.7	33						NEW CENTER FORMED.	GOES5	2,5 VSBL1		
7	02	2143	22.2	86.6	25	28	1003					AF			
8	03	0000	22.7	86.1	33							GOES5	1R8		
9	03	0600	22.6	85.3	35							GOES5	2,5 1R8		
10	03	0900	22.7	85.2	35							GOES5	1R8		
11	03	1200	23.2	84.5	45							GOES5	2,5 VSBL1		
12	03	1330	23.8	84.2								GOES5	5 VSBL1		
13	03	1405	23.5	83.8							60				
14	03	1430	23.6	83.7							45	FAIR FIX.	EYW-R		
15	03	1500	23.9	84.1	45							FAIR FIX.	EYW-R		
16	03	1510	23.7	83.6								GOES5	2,5 VSBL1		
17	03	1530	23.7	83.6							50	GOOD FIX.	EYW-R		
18	03	1545	23.6	83.9	65	61	990		25		35	GOOD FIX.	EYW-R		
19	03	1610	23.9	83.5								POORLY DEFINED.	AF	1/5	372M
20	03	1630	24.0	83.5							40	GOOD FIX.	EYW-R		
21	03	1632	23.8	83.8	75	80	985				40	GOOD FIX.	EYW-R		
22	03	1700	24.0	83.7								AF			
23	03	1710	24.0	83.5							40	GOOD FIX.	GOES5	3 VSBL1	
24	03	1728	24.0	83.5	70	75	987		27	25		EYW-R			
25	03	1730	24.0	83.5								AF	3/3	600M	
26	03	1810	24.0	83.4							20	GOOD FIX.	EYW-R		
27	03	1830	24.1	83.6	55							GOOD FIX.	EYW-R		
28	03	1830	24.1	83.4							20	GOOD FIX.	GOES5	2,3 VSBL1	
29	03	1902	24.0	83.3							20	GOOD FIX.	EYW-R		
30	03	1922	24.2	83.5	60	65	990		24	20		GOOD FIX.	EYW-R		
31	03	1930	24.1	83.3							20	GOOD FIX.	NOAA	3/3	621M
32	03	2010	24.2	83.2							15	GOOD FIX.	EYW-R		
33	03	2030	24.3	83.2							10	GOOD FIX.	EYW-R		
34	03	2058	24.4	83.4	60	65	988		24	21		GOOD FIX.	EYW-R		
35	03	2100	24.3	83.3	55							NOAA	3/5	580M	
												GOES5	2,5 VSBL1		

Table 6 continued.

hurricane Alberto continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC.	FLT. LVL.			IN.	OUT.	C=CTR. DIA. E=ELIP. (N.M.I.)	CHARACTERISTICS			
36	03	2100	24.4	83.2							18	GOOD FIX.	EYW-R		
37	03	2130	24.4	83.1							18	GOOD FIX.	EYW-R		
38	03	2200	24.5	83.2							25	FAIR FIX.	EYW-R		
39	03	2230	24.6	83.2							30	POOR FIX.	EYW-R		
40	03	2301	24.7	83.5	65	70	992		22	21			NOAA	6/6	565M
41	03	2305	24.6	83.2							30		EYW-R		
42	03	2330	24.6	83.2							30	PSBL CNTR POOR FIX	EYW-R		
43	04	0000	24.9	83.5	55							PSBL CNTR POOR FIX	EYW-R		
44	04	0010	24.8	83.2								10° OVERLAY	GOES5	2,3 IR8	
45	04	0030											EYW-R		
46	04	0300	25.1	83.4	55							NO CNTR	EYW-R		
47	04	0410	24.9	83.9		40	993		27	21			GOES5	IR8	
48	04	0540	24.8	84.2		35	997						NOAA	2/3	35M
49	04	0600	24.9	83.8	55								NOAA		
50	04	0645	25.0	84.5		30	997						GOES5	2,5 IR8	
51	04	0809	25.2	84.7		20	997						NOAA		
52	04	0900	25.0	84.7	55								GOES5	2,3 IR8	
53	04	0941	25.1	85.1		30	999						NOAA		
54	04	1130	24.9	84.4									GOES5	3 VSBL1	
55	04	1200	24.9	84.3	35								GOES5	2,3 VSBL1	
56	04	1208	24.9	84.4	25	23	1004	3114	14				AF	8/3	700MB
57	04	1400	24.9	84.3									GOES5	3 VSBL1	
58	04	1403	24.6	84.4	45	41	1005						AF	5/2	357M
59	04	1600	24.9	84.2									GOES5	3 VSBL1	
60	04	1600	24.8	84.2	25	27							AF		
61	04	1713	25.0	84.2	35	33	1007		24				AF	5/3	375M
62	04	1800	25.0	84.2	35								GOES5	2,3 VSBL1	
63	04	1930	25.1	84.1									GOES5	3 VSBL1	
64	04	2053	25.2	84.1	20	19	1005		26				AF	3/15	09M
65	04	2100	25.2	84.1									GOES5	3 VSBL1	
66	04	2321	25.2	84.1	20	23	1006		27				AF	3/15	10M
67	05	0000	25.2	84.1	25								GOES5	IR8	
68	05	0600	25.0	84.3	25								GOES5	2,3 IR8	
69	05	1200	25.2	83.9									GOES5	3 VSBL1	

Hurricane Alberto continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	Lon. (°W)	SFC.	FLT. LVL.			IN.	OUT.	C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS			
70	05	1204	25.1	84.1	20	16	1009		25	24			AF	2/5	165M
71	05	1412	25.1	83.9	25	27	1010						AF		
72	05	1622	25.3	83.9	15	13	1010						AF		
73	05	1800	25.4	83.6									GOES5	3 VSBL1	
74	05	1830	25.5	83.6	25	23	1010		25	23			AF	5/2	165M
75	06	0000	25.5	83.2									GOES5	3 IR8	
76	06	0600	25.7	82.7									GOES5	5 IR8	
77	06	1200	25.5	82.6									GOES5	5 VSBL1	

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Subtropical Storm Number 1
18-20 June 1982

CENTER FIXES

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

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE C=CIR. DIA. E=ELIP. (N.MI)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC.	FLT. LVL.			IN.	OUT.					
1	11	0000	14.3	81.5	25										
2	11	0600	14.3	81.5	25								GOES5	1,5 IR8	
3	15	0000	16.4	84.3	25								GOES5	2,5 IR8	
4	15	0600	16.5	85.4	25								GOES5	2,5 IR8	
5	15	1230	17.0	85.7	25								GOES5	2,5 IR8	
6	15	1830	17.7	88.2									GOES5	2,5 VSBL 1	
7	17	1230	22.0	89.0	25								GOES5	5 VSBL 1	
8	17	1620	23.0	89.1	15	21	1008		23	24	C40		GOES5	2,5 VSBL 1	
9	17	1800	24.5	87.0	25								AF	5/10	265M
10	18	0000	25.8	86.9	25								GOES5	2,5 VSBL 1	
11	18	0600	27.1	84.5	25								GOES5	2,5 IR8	
12	18	1230	29.0	82.5									GOES5	2,5 IR8	
13	18	1500	30.3	81.0	40								GOES5	5 VSBL 1	
14	18	1535	29.9	80.7									GOES5	2,5 VSBL 1	
15	18	1700	30.7	80.5									DAB-R		
16	18	1730	31.2	80.4									GOES5	5 VSBL 1	
17	18	1800	31.5	80.2	50								GOES5	5 VSBL 1	
18	18	2100	32.6	80.0									GOES5	2,5 VSBL 1	
19	18	2130	32.3	80.0									GOES5	5 VSBL 1	
20	18	2135	32.2	79.9	50	48	992						CHS-R		
21	18	2230	32.3	79.3									AF	1/1	375M
22	18	2330	32.5	79.2									CHS-R		
23	18	2344	32.6	79.2	50								CHS-R		
24	19	0120	33.0	78.8			995						GOES5	2,3 IR8	
25	19	0220	33.3	78.6					17	17			AF		
26	19	0300	33.3	78.4	50								AF	1/1	159M
27	19	0600	33.9	78.0	50								GOES5	2,3 IR8	
28	19	0841	34.7	77.1		17							GOES5	2,3 IR8	
29	19	0900	34.6	76.9	50					10			AF	3/15	700MB
30	19	1040	35.5	76.4		20							GOES5	2,3 IR8	
31	19	1127	36.1	76.3		32	3025						AF		
32	19	1130	35.2	75.8									AF	3/15	700MB
33	19	1200	35.3	75.7	55								GOES5	3 VSBL 1	
34	19	1330	35.6	75.1									GOES5	2,3 VSBL 1	
													GOES5	3 VSBL 1	

Table 6 continued.

TROPICAL STORM BERYL
28 AUGUST -6 SEPTEMBER 1982

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND(KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT ALT.
			LAT. (°N)	LON. (°W)					IN.	OUT.	C=CIRC. DIA. E=ELLIP. (H.M.L.)	CHARACTERISTICS			
1	27	1300	13.0	19.0	25								GOES5	2,5 VSBL1	
2	27	1800	12.8	20.1	25								GOES5	2,5 VSBL1	
3	28	0000	13.2	20.4	25								GOES5	2,5 IR8	
4	28	0600	13.3	21.2	30								GOES5	2,5 IR8	
5	28	1200	13.7	22.1									GOES5	3 VSBL1	
6	28	1300	13.7	22.2	35								GOES5	2,3 VSBL1	
7	28	1800	13.9	22.8	45								GOES5	2,3 VSBL1	
8	29	0000	14.1	23.6	45								GOES5	2,5 IR8	
9	29	0600	14.6	24.9	45								GOES5	2,5 IR8	
10	29	1200	15.0	26.3	45								GOES5	2,5 VSBL1	
11	29	1800	15.4	27.5	45								GOES5	2,5 VSBL1	
12	30	0030	15.6	29.3	55								GOES5	1,5 IR8	
13	30	0630	16.0	30.6	55								GOES5	1,5 IR8	
14	30	1100	16.3	32.1									GOES5	5 VSBL1	
15	30	1200	16.3	32.3	55								GOES5	2,5 VSBL1	
16	30	1500	16.7	33.1									GOES5	5 VSBL1	
17	30	1800	16.9	33.8	55								GOES5	2,5 IR8	
18	31	0030	17.0	34.9	59								GOES5	2,3 IR8	
19	31	0630	17.2	36.1	59								GOES5	2,5 IR8	
20	31	1130	17.6	37.6									GOES5	5 IR8	
21	31	1200	17.6	37.8	65								GOES5	2,3 VSBL1	
22	31	1300	17.5	38.2									GOES5	1 VSBL1	
23	31	1800	18.2	39.3	65								GOES5	2,3 VSBL1	
24	01	0000	18.3	39.8	65								GOES5	2,5 IR8	
25	01	0630	18.6	40.6	70								GOES5	2,3 IR8	
26	01	1200	18.9	42.2	70								GOES5	2,5 VSBL1	
27	01	1800	19.1	42.9	65								GOES5	2,5 VSBL1	
28	02	0000	19.4	43.8	55								GOES5	2,5 IR8	
29	02	0600	19.5	44.8	45								GOES5	2,3 IR8	
30	02	1200	19.6	45.2	35								GOES5	2,3 VSBL1	
31	02	1800	19.9	46.2	30								GOES5	2,3 VSBL1	

Tropical Storm Beryl continued

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE E-CIR. DIA. E-ELIP. (N.M.I.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LON. (°W)	SFC.	FLT. LVL.			IN.	OUT.					
32	03	0000	20.1	47.4	30										
33	03	0600	20.3	48.5	30								GOES5	2,5 IR8	
34	03	1200	20.2	49.8	35								GOES5	2,5 IR8	
35	03	1800	19.6	50.8	35								GOES5	2,5 VSBL1	
36	03	2300	19.7	51.5									GOES5	3 VSBL1	
37	04	0000	19.8	51.7	30								GOES5	5 IR8	
38	04	0400	20.0	52.5									GOES5	2,5 IR8	
39	04	0600	20.0	53.0	30								GOES5	5 IR8	
40	04	1200	20.0	53.7	30								GOES5	2,5 IR8	
41	04	1800	19.6	55.1	30								GOES5	2,5 VSBL2	
42	05	0000	19.5	56.0	30								GOES5	2,5 VSBL1	
43	05	0600	19.5	57.0	25								GOES5	2,5 IR8	
44	05	1200	19.3	58.4	25								GOES5	2,5 IR8	
45	05	1510	19.4	59.3	30		30	1010					GOES5	2,5 VSBL1	
46	05	1725	19.6	60.0	60		50	1010					AF		
47	05	1830	19.8	60.0	30								AF	5/5	166M
48	06	0000	20.5	61.0	30								GOES5	3,5 VSBL1	
49	06	1200	20.0	63.7	25								GOES5	2,5 IR8	
													GOES5	2,5 VSBL1	

Table 6 continued.

TROPICAL STORM CHRIS
9 - 12 SEPTEMBER 1982

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT) SFC.	FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	Lon. (°W)					IN.	OUT.					
1	09	0000	26.7	90.6	25										
2	09	0600	26.3	92.0	25								GOES5	2,5 IR8	
3	09	1300	26.8	93.0	25								GOES5	2,5 IR8	
4	09	1900	26.7	92.8	30								GOES5	2,5 VSBL1	
5	10	0600	26.8	93.8	30								GOES5	2,5 VSBL1	
6	10	0603	26.8	94.4		17	1007		23	24			GOES5	2,3 IR8	
7	10	0812	27.0	94.8		23		3119					AF	10/10	415M
8	10	1215	27.6	94.2	25	20	1006		23	25			AF		700MB
9	10	1230	27.4	94.3	35								AF		223M
10	10	1518	27.5	94.2	25	25	1004						GOES5	2,5 VSBL1	
11	10	1530	27.6	94.2									AF		
12	10	1615	27.7	94.1								15° SPIRAL OVERLAY.	GLS-R		
13	10	1700	27.4	94.5	45							20° SPIRAL OVERLAY.	GLS-R		
14	10	1706	27.6	94.1	45	25	1001						GOES5	2,5 VSBL1	
15	10	2025	27.7	94.0									AF	5/2	
16	10	2100	28.1	93.9	45							15° SPIRAL OVERLAY.	GLS-R		
17	10	2135	28.1	94.0									GOES5	2,5 VSBL1	
18	11	0000	28.3	93.8	50							10° SPIRAL OVERLAY.			
19	11	0100	28.3	94.0	25	20	1005						GOES5	3 IR8	
20	11	0217	28.6	94.1		27	1000						AF	5/5	
21	11	0300	28.6	93.8	50								AF		
22	11	0407	28.8	94.3		43	999			24			GOES5	2,3 IR8	
23	11	0430	28.8	94.0									AF	5/5	402M
24	11	0552	29.0	94.5		25	1000					POSSIBLE CENTER.	LCH-R		
25	11	0600	28.8	94.1	50					23			AF	5/5	451M
26	11	0730	28.6	94.1									GOES5	2,5 IR8	
27	11	0735	29.1	94.7		27	3089					POSSIBLE CENTER.	LCH-R		
28	11	0900	29.2	93.9	55								AF		700MB
29	11	1100	29.6	94.1									GOES5	2,5 IR8	
30	11	1203	29.7	93.6								POSSIBLE CENTER.	LCH-R		
31	11	1230	29.9	93.5									LCH-R		
													LCH-R		

Tropical Storm Chris continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND(KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LON. (°W)	SFC.	FLT. LVL.			IN.	OUT.					
32	11	1230	29.8	93.9											
33	11	1300	30.0	93.5											
34	11	1330	30.1	93.4											
35	11	1404	30.1	93.4									GOES5	VSBL1	
36	11	1502	30.3	93.3									LCH-R		
37	11	1530	30.3	93.3									LCH-R		
38	11	1830	30.9	93.4									LCH-R		
39	11	1831	30.7	93.4									LCH-R		
40	11	1935	30.8	93.3									GOES5	VSBL1	
41	11	2035	31.0	93.2								POSSIBLE CENTER.	LCH-R		
42	11	2135	31.0	93.1								POSSIBLE CENTER.	LCH-R		
												POSSIBLE CENTER.	LCH-R		
												POSSIBLE CENTER.	LCH-R		

Table 6 continued.

HURRICANE DEBBY
13 - 20 SEPTEMBER 1982

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT. ALT.	
			LAT. (°N)	LONG. (°W)	SFC.	FLT. LVL.			IN.	OUT.	C=CIR. DIA.	E=ELIP. (N.MI.)				CHARACTERISTICS
1	07	1800	12.5	44.3	25								GOES5	1,5 VSBL1		
2	08	0000	12.5	45.3	25								GOES5	2,5 IR8		
3	08	0600	12.5	46.5	25								GOES5	2,5 IR8		
4	08	1200	12.5	47.0									GOES5	5 VSBL1		
5	11	1450	14.5	61.8	25		1013						AF			
6	12	1830	18.3	65.7	25								GOES5	1,5 VSBL1		
7	13	1200	20.1	69.3	25								GOES5	2,5 VSBL1		
8	13	1315	20.0	69.9	35	29	1011						AF			
9	13	1800	20.6	70.4	30								GOES5	2,3 VSBL1		
10	13	2100	21.3	70.8	30								GOES5	2,3 VSBL1		
11	14	0000	21.5	71.0	30								GOES5	2,5 IR8		
12	14	0100	22.1	71.4		30	1007	23	23				NOAA	5/5	457M	
13	14	0300	22.0	71.5	30								GOES5	2,5 IR8		
14	14	0345	22.1	71.5		45	1007	24	23				NOAA	5/5	464M	
15	14	0630	22.3	71.7	30								GOES5	2,5 IR8		
16	14	0900	22.5	71.7	35								GOES5	2,5 IR8		
17	14	1200	23.3	71.8	45								GOES5	2,3 VSBL1		
18	14	1228	23.3	71.9			1006						AF			
19	14	1500	23.7	71.8	45								GOES5	2,5 VSBL1		
20	14	1513	23.6	71.7	45	47	1005						AF			
21	14	1552	23.7	71.6			1005	24					AF	5/5		
22	14	1800	24.0	72.0	45								GOES5	2,3 VSBL1		
23	14	1955	25.0	71.2	80	70	990	26	21	C	12	OPEN SOUTHEAST.	NOAA	5/5	590M	
24	14	2100	25.1	71.4	60								GOES5	5 VSBL1		
25	14	2307	25.5	71.0		60	993	25	22	C	20	CLOSED WALL.	NOAA	5/2	560M	
26	15	0000	25.7	71.4	60								GOES5	2,3 IR8		
27	15	0116	25.9	70.9		29	991	3011	14	11	E09/30/20	CLOSED WALL.	AF	2/4	700MB	
28	15	0300	26.3	70.8	60								GOES5	2,5 IR8		
29	15	0308	26.1	70.7		70		3013					AF		700MB	
30	15	0600	26.4	70.6	60								GOES5	2,5 IR8		
31	15	0605	26.2	70.6		48	991	3007	13	11	C	25	OPEN SOUTHEAST-SOUTHWEST.	AF	4/6	700MB
32	15	0700	26.8	70.5									GOES5	5 IR8		

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SEC.	FLT. LVL.			IN.	OUT.	C=CIR. DIA. E=ELIP. (N.MI.)					
33	15	0900	26.7	70.0	65											
34	15	1200	27.6	69.7	65											
35	15	1208	27.6	69.6	65	64	980	2920	16	11	C	15		GOES5	2,1 IR8	
36	15	1500	28.3	68.7	77								CLOSED EYE.	GOES5	2,3 VSBL1	
37	15	1504	28.3	69.2	80	68		2883						AF	5/5	700MB
38	15	1800	29.2	68.4	90									GOES5	2,1 VSBL1	
39	15	1804	29.1	68.5	90	85	974	2842	14	11	C	30		AF		700MB
40	15	2030	29.9	68.0		65	965	2788					OPEN SOUTHWEST.	GOES5	2,1 VSBL1	
41	15	2100	29.9	67.8	102									AF	5/5	700MB
42	15	2100	30.0	67.9		95		2776	13	11	C	30		AF		700MB
43	16	0000	30.6	67.3	102								CLOSED WALL.	GOES5	2,1 VSBL1	
44	16	0017	30.8	67.4		81	968	2796	14	11	C	20		AF	5/5	700MB
45	16	0217	31.1	67.1		115	966	2790					CLOSED WALL.	GOES5	1,1 IR8	
46	16	0300	31.3	67.0	102									AF	5/3	700MB
47	16	0304	31.3	67.2		85	966	2788	15	11	C	18		AF		700MB
48	16	0549	31.8	66.8			968	2797	12	11	C	15	CLOSED WALL.	GOES5	1,1 IR8	
49	16	0600	32.1	66.6	90								CLOSED WALL.	AF	5/3	700MB
50	16	0736	32.3	66.6		45	966	2785	15	12	C	15		AF	5/5	700MB
51	16	0900	32.5	66.0	90								LESS CLEARLY DEFINED.	GOES5	1,1 IR8	
52	16	1200	33.6	65.7	90									AF	5/5	700MB
53	16	1226	33.5	66.0	70	49	968	2821	17	9	C	20		GOES5	2,3 IR8	
54	16	1443	34.1	65.9	80	58		2818					POORLY DEFINED.	GOES5	2,3 VSBL1	
55	16	1800	32.5	65.6	77								WALL CLOUD NORTH-EAST.	AF	5/3	700MB
56	16	1828	35.3	65.8	40	48		2794	17	14				GOES5	2,3 VSBL1	700MB
57	16	2028	35.5	65.8		54		2803						AF	5/5	700MB
58	16	2230	35.8	65.7	70	70		2816	15	12				AF		700MB
59	17	0000	36.5	65.5	77									AF	5/5	700MB
60	17	0600	36.8	65.5	77									GOES5	1,3 IR8	700MB
61	17	1200	37.2	64.9	65									GOES5	1,3 IR8	
62	17	1203	37.1	65.1	50	70	965	2793	16	10	C	20		GOES5	2,1 VSBL1	
63	17	1406	37.3	64.9	35	70		2799					OPEN WEST.	AF	5/5	700MB
64	17	1515	37.4	64.6	60	92		2792	16	13	E36/20/15			AF		700MB
65	17	1730	37.7	63.8	77								CLOSED WALL.	AF	5/5	700MB
66	17	2330	38.7	62.4										GOES5	2,1 VSBL1	700MB
67	18	0010	38.8	62.4		75		2660	17	11	C	20	WELL DEFINED.	GOES5	1 IR8	
														AF	2/5	700MB

Table 6 continued.

Hurricane Debby continued.

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	LONG. (°W)	SFC.	FLT. LVL.			IN.	OUT.	C=CIR. DIA. E=ELIP. (N.MI.)					
66	18	0000	38.2	62.1	95											
69	18	0000	39.2	61.5		55								GOES5	2,1 IR8	
70	18	0306	39.5	61.7							E36/25/20	TRACEY WALL.		AF	2/5	700MB
71	18	0600	40.1	60.6	95				18	14	E36/25/20	CLEARLY DEFINED.		AF	2/5	700MB
72	18	1130	41.7	58.5										GOES5	1,1 IR8	
73	18	1214	41.7	58.5	70	65		2692	13	12	C	10	WEAK SOUTH.	GOES5	1 VSBL1	
74	18	1230	41.9	58.2	90									AF	5/2	700MB
75	18	1328	42.0	58.1		83		2711						GOES5	2,1 VSBL1	
76	18	1730	43.5	56.5	90									AF		700MB
77	18	1930	44.2	55.7										GOES5	2,1 VSBL1	
78	19	0000	45.6	53.9	90									GOES5	1 VSBL1	
79	19	0630	47.3	51.7	77									GOES5	1,3 IR8	
80	19	1130	48.1	47.5										GOES5	2,3 IR8	
81	19	1230	48.5	46.7	65									GOES5	1 VSBL1	
82	19	1530	49.8	44.8										GOES5	2,1 VSBL1	
83	19	1730	50.1	43.4	65									GOES5	1 VSBL1	
84	20	0000	50.7	39.0	65									GOES5	2,3 VSBL1	
85	20	0700	51.4	31.5	55									GOES5	2,3 IR8	
86	20	1130	52.0	27.5										GOES5	2,5 IR8	
87	20	1230	52.0	26.0	55									GOES5	5 VSBL1	
88	20	1730	52.0	20.0										GOES5	2,5 VSBL1	
														GOES5	VSBL1	

TROPICAL STORM ERNESTO
30 SEPTEMBER - 2 OCTOBER 1982

CENTER FIXES

FIX NO.	DATE	TIME (GMT)	POSITION		MAX. WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. °C		EYE		OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT. (°N)	Lon. (°W)	SFC.	FLT. LVL.			IN.	OUT.	C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS			
1	29	1330	20.7	59.0	25										
2	29	1730	21.2	59.3	25								GOES5	2,5 VSBL1	
3	29	2300	22.5	60.9	25								GOES5	2,5 IR8	
4	30	0600	21.6	61.2	25								GOES5	5 IR8	
5	30	1200	25.1	65.0	30								GOES5	2,5 IR8	
6	30	1800	25.5	66.7	30								GOES5	2,3 VSBL1	
7	30	2100	25.7	67.1	25	32	1005		25	26			GOES5	2,3 VSBL1	
8	01	0000	25.8	67.5	30								AF	3/3	250M
9	01	0630	26.9	68.0	35								GOES5	2,5 IR8	
10	01	1130	27.4	67.7	35								GOES5	1,5 IR8	
11	01	1205	27.3	67.9	35	25	1003					5	GOES5	2,5 VSBL1	
12	01	1422	27.5	68.0	25	27	1006			25			AF		
13	01	1730	27.9	67.1	35								AF	2/2	244M
14	01	1945	27.9	67.3	20	19	1001						GOES5	2,5 VSBL1	
15	01	2151	28.4	66.7	65	62	997		24	25			AF	3/2	326M
16	02	0000	28.5	66.7	51								AF		
17	02	0600	28.8	65.5	51								GOES5	2,5 IR8	
18	02	1200	30.0	63.0	45								GOES5	2,5 IR8	
19	02	1500	30.4	62.2									GOES5	2,5 VSBL1	
20	02	1830	31.2	60.7	45								GOES5	5 VSBL2	
21	03	0000	32.4	58.2	40								GOES5	2,5 VSBL1	
22	03	0600	32.8	55.8	40								GOES5	2,5 IR8	
													GOES5	1,5 IR8	

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Table 7. Supplementary vortex messages, 1982 tropical and subtropical cyclones.

ALBERTO

URNT12 KMIA 041310
AF967 0801 ALBERTO OB 05 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00267 80847 03123 01103 02012
80263 80845 03123 81203 04019
60260 60845 63115 61202 03023
45257 40845 43118 41301 01022
30254 30846 33118 31301 36022
15252 10847 13117 11303 35020
CC249 C0844 C3114 C1403 041208
MF023 36030 AZ070
15248 10843 10006 12422 28019
30245 30844 30007 32422 27019
45243 40844 40008 42421 26023
60240 60845 60008 62322 28022
80237 80845 80011 82421 26031
00233 00844 00010 02422 27028
MF031 18080

URNT12 KMIA 041455
AF967 0801 ALBERTO OB 09 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00250 00827 00011 02321 18031
80250 80830 80010 82321 15027
60249 60833 60010 62321 14017
45248 40835 40010 42321 15020
30247 30838 30009 32321 16022
15247 10841 10010 12322 16039
CC246 C0843 C0005 C2422 041403
MF041 09021 AZ170
15245 10845 10007 12422 34011
30245 30847 30008 32322 35017
45245 40850 40009 42321 36017
60245 60853 60010 62421 01009
80246 80857 80010 82421 36009
00246 00862 00010 02420 35013
MF017 27030

Table 7 continued.

URNT12 KMIA 041653
AF967 0801 ALBERTO OB 13 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00263 00843 00011 02321 11021
80260 80844 80011 82221 12015
60256 60843 60010 62321 10014
45254 40844 40009 42321 10018
30251 30843 30008 32322 07023
15249 10842 10007 12422 07011
CC248 C0842 C0006 C2523 041600
MF024 36027 AZ030
15248 10838 10010 12322 19034
30248 30836 30010 32322 18030
45248 40833 40011 42322 18039
60248 60831 60011 62321 15028
80248 80828 80011 82421 18032
00248 00823 00012 02321 18034
MF041 09042

URNT12 KMIA 041815
AF967 0801 ALBERTO OB 16 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00248 00823 00012 02321 18034
80248 80826 80011 82421 17034
60249 60831 60011 62321 17027
45249 40835 40010 42421 18023
30249 30836 30010 32322 18033
15249 10839 10008 12423 18029
CC250 C0842 C0007 C2423 041713
MF033 09028 AZ360
15250 10844 10008 12422 04014
30252 30846 30009 32322 05021
45254 40848 40010 42321 06018
60256 60849 60010 62321 08019
80259 80851 80011 82321 07023
00261 00853 00011 02321 07019
MF024 27033

Table 7 continued.

URNT12 KMIA 042230
AF972 0901 ALBERTO OB 07 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00261 00856 00009 02421 36019
80259 80853 80009 82421 01015
60258 60848 60008 62422 02012
45257 40845 40007 42423 01019
30255 30843 30006 32524 05014
15/// 1///// 1///// 1///// 1/////

CC252 C0841 C0005 C2625 042053
MF019 33045 AZ///

15251 10839 10006 12624 25017
30250 30837 30006 32524 24026
45248 40835 40007 42624 24009
60246 60833 60008 62523 19017
80243 80831 80009 82522 20020
00241 00828 00009 02521 19022
MF026 14030

URNT12 KMIA 051328 COR
AF963 1001 ALBERTO OB 06 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00266 00846 00011 023// 01008
08263 80845 80010 823// 04009
60260 60845 60010 624// 03009
45258 40844 40010 424// 03012
30255 30842 30009 325// 03016
15252 10841 10009 124// 03008
CC251 C0841 C0009 C25// 051204
MF016 33030 AZ000

15248 10840 10009 125// 27009
30246 30840 30010 325// 27007
45243 40840 40010 425// 26006
60241 60840 60011 625// 25006
80238 80840 80012 825// 27013
00/// 0/// 0/// 0/// /////

MF013 18080

Table 7 continued.

URNT12 KMIA 051533
AF963 1001 ALBERTO OB 10 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0/// 0/// 0/// /////
80250 80827 80012 824// 18027
60251 60827 60011 624// 19021
45252 40832 40011 424// 18016
30252 30835 30010 325// 17022
15252 10838 10009 125// 20011
CC251 C0838 C0009 C25// 051412
MF027 09070 AZ000
15251 10841 10011 124// 36008
30251 30845 30011 325// 34012
45252 40847 40012 424// 36013
60251 60850 60012 625// 01011
80251 80853 80012 824// 01014
00251 00857 00013 024// 36013
MF014 27080

URNT12 KMIA 051801
AF963 1001 ALBERTO OB 14 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0/// 0/// 0/// /////
80238 80841 80013 824// 26009
60241 60839 60012 625// 25012
45244 40839 40012 425// 25013
30246 30839 30012 324// 26011
15249 10839 10012 124// 28010
CC253 C0839 C0010 C25// 051622
MF013 19045 AZ000
15256 10839 10011 124// 02009
30258 30839 30011 324// 07008
45260 40839 40011 424// 36009
60264 60839 60012 624// 05005
80266 80839 80012 824// 09007
00272 00840 00013 024// 99005
MF009 36045

Table 7. continued.

URNT12 KMIA 052006
AF963 1001 ALBERTO OB 18 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0//// 0//// 0//// /////
80254 80823 80012 823// 19022
60255 60828 60011 623// 19017
45255 40831 40011 424// 19023
30255 30833 30011 324// 20013
15254 10836 10010 125// 99005
CC254 C0836 C0010 C24// 051830
MF023 09035 AZ000
15253 10842 10011 125// 32009
30253 30845 30011 325// 35014
45253 40847 40011 425// 01006
60253 60850 60011 625// 35012
80253 80853 80013 825// 01015
00253 00857 00013 021// 34009
MF015 27080

Table 7 continued.

SUBTROPICAL STORM NUMBER ONE

URNT12 KMIA 191034 COR
AF554 04XX CYCLONE OB 05 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0///// 0///// 0///// /////
80/// 8///// 8///// 8///// /////
60/// 6///// 6///// 6///// /////
45/// 4///// 4///// 4///// /////
30/// 3///// 3///// 3///// /////
15/// 1///// 1///// 1///// /////
CC347 C0771 C///// C0909 190841
MF017 04030 AZ045
15346 10767 13996 10909 24002
30347 30763 33002 30909 19012
45347 40760 43017 40908 19013
60348 60758 63030 60808 19035
80348 80755 83042 80808 21030
00349 00751 03049 00706 21038
MF038 09100

URNT12 KMIA 191157
AF554 04XX CYCLONE OB 08 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00365 00772 09/// 00807 18009
80362 80772 89/// 80906 03008
60358 60772 69/// 60906 36010
45356 40771 49/// 40808 02020
30354 30767 39/// 30707 34004
15/// 1///// 19/// 1///// /////
CC355 C0764 C9/// C0707 191040
MF020 28035 AZ045
15/// 1///// 1///// 1///// /////
30/// 3///// 3///// 3///// /////
45/// 4///// 4///// 4///// /////
60/// 6///// 6///// 6///// /////
80/// 8///// 8///// 8///// /////
00/// 0///// 0///// 0///// /////
MF/// /////

Table 7 continued.

URNT12 KMIA 191529
AF554 04XX CYCLONE OB 18 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0//// 0//// 0//// /////
80362 80758 83031 809// 30016
60363 60757 63028 609// 02017
45364 40753 43028 409// 33020
30365 30751 33029 308// 30016
15367 10748 13032 107// 28008
CC370 C0748 C3042 C08// 191421
MF020 22043 AZ045
15/// 1//// 1//// 1//// /////
30/// 3//// 3//// 3//// /////
45/// 4//// 4//// 4//// /////
60/// 6//// 6//// 6//// /////
80/// 8//// 8//// 8//// /////
00/// 0//// 0//// 0//// /////
MF/// /////
LAST REPORT OBS 01-18 TO KMIA ETA KPOB 19/1535Z

URNT12 KMIA 191922
AF967 05XX CYCLONE OB 05 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00369 00750 00002 01816 31029
80369 80746 80000 82117 33034
60368 60743 60999 62118 32021
45367 40740 40998 42218 32023
30369 30737 30996 32019 32014
15/// 1//// 1//// 1//// /////
CC372 C0731 C0992 C2220 191745
MF034 26080 AZ050
15372 10728 10993 12019 27022
30372 20724 30993 32120 21043
45372 40721 40993 42120 18074
60370 60717 60996 62220 19078
80371 80714 80998 82120 19064
00372 00711 00998 02120 18066
MF085 09070
IMC 0-50 KM FROM CNTR. SFC WND 50-75 KTS AT 75-100 KM
FROM CENTER

Table 7 continued.

CHRIS

URNT12 KMIA 100710 COR
AF967 04XX INVEST OB 08 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
CC268 C0944 C0007 C2317 100603
MF017 05015 AZ000
15272 10943 13103 10904 99005
30274 30944 33108 30906 08010
45276 40944 43120 40908 08013
60278 60944 63128 60906 11010
80281 80944 83134 81002 06015
00282 00946 03137 00903 09023
MF023 36010

URNT12 KMIA 100926 COR
AF967 04XX INVEST OB 12 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00266 00963 03136 01003 03007
80265 80958 83136 80903 35007
60265 60955 63127 61002 99005
45265 40951 43124 40905 28012
30266 30948 33124 40904 26013
15268 10944 1///// 10905 23008
CC270 C0948 C3119 C1005 100812
MF017 35090 AZ000
15/// 1///// 1///// 1///// /////
30/// 3///// 3///// 3///// /////
45270 40940 43100 40805 99005
60268 60939 63121 60904 23014
80268 80937 83106 80904 20025
00270 00933 03112 00804 20027
MF 027 09100
HEIGHT DATA DOUBTFUL

Table 7 continued.

URNT12 KMIA 101411
AF866 05XX INVEST OB 06 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0///// 0///// 0///// /////
80/// 8///// 8///// 8///// /////
60/// 6///// 6///// 6///// /////
45273 40929 40008 42321 20032
30276 30934 30007 32424 17023
15276 10939 10006 12321 19020
CC276 C0942 C0006 C2523 101215
MF032 09045 AZ///
15279 10942 10008 12424 04016
30281 30942 30008 32524 07012
45283 40942 40009 42524 09027
60286 60943 60010 62522 07020
80289 80943 80011 82524 06013
00292 00943 00011 02524 06023
MF027 35045

URNT 12 KMIA 101635
AF866 05XX INVEST OB 11 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00276 00961 00010 02524 36015
80276 80958 80009 82622 04013
60277 60954 60008 62623 03022
45277 40951 40007 42524 02020
30/// 3///// 3///// 3///// /////
15/// 1///// 1///// 1///// /////
CC275 C0941 C0004 C//24 101518
MF022 ///// AZ///
15273 10942 10006 12524 26025
30271 30942 30007 32423 23030
45268 40941 40009 42323 23038
60265 60941 60008 62524 23039
80262 80941 80007 82525 24020
00260 00941 00009 02624 24023
MF039 18030

Table 7 continued.

URNT12 KMIA 101835 COR
AF866 05XX INVEST OB 14 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00275 00924 00010 02523 22029
80/// 8///// 8///// 8///// /////
60276 60930 60007 62522 21028
45277 40933 30007 32423 19032
30277 30935 30006 32423 19019
15276 10938 10004 12423 19025
CC276 C0941 C0001 C2525 101706
MF032 09045 AZ///

URNT12 KMIA 110539
AF968 0604 CHRIS OB 13 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00286 00924 00008 02621 16038
80287 80928 80006 82521 13034
60288 60930 60006 62421 12036
45291 40934 40005 42321 11028
30290 30938 30003 32322 09043
15288 10941 10001 12323 12016
CC288 C0941 C0999 C2422 110407
MF043 06030 AZ340
15287 10945 10002 12321 29018
30285 30947 30004 32321 34027
45283 40951 40005 42320 01027
60282 60954 60006 62321 02013
80/// 8///// 8///// 8///// /////
00/// 0///// 0///// 0///// /////
MF027 24030

Table continued.

URNT12 KMIA 110729
AF968 0604 CHRIS OB 17 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0/// 0/// 0/// /////
80282 80956 80006 82320 25015
60283 60953 60006 62421 29015
45283 40950 40004 42422 27019
30286 30947 30002 32421 24025
15/// 1/// 1/// 1/// /////
CC290 C0945 C1000 C2322 110552
MF025 22030 AZ300
15287 10949 13098 11000 34022
30/// 3/// 3/// 3/// /////
45286 40956 43110 40908 35015
60/// 6/// 6/// 6/// /////
80/// 8/// 8/// 8/// /////
00/// 0/// 0/// 0/// /////
MF022 26036

700 MB CNTR LOCATED AT 28 DEG 54 MIN N 94 DEG 28 MIN W
TIME 11/0645Z 700MB HEIGHT 3078M TEMP - 11 DEG C DP - 5 DEG C

URNT12 KMIA 110800
AF968 0604 CHRIS OB 20 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0/// 0/// 0/// /////
80/// 8/// 8/// 8/// /////
60/// 6/// 6/// 6/// /////
45282 40952 43094 40802 30027
30288 30948 3/// 30908 30020
15289 10947 13089 11208 25018
CC291 C0947 C3089 C1205 110735
MF027 23070 AZ350

Table 7 continued.

DEBBY

URNT12 KMIA 141725
AF980 0505 DEBBY OB 11 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00252 00717 00013 02222 12021
80246 80722 80010 82523 08026
60245 60723 60010 62523 10028
45243 40723 40009 42523 07024
30240 30722 30008 32423 03026
15237 10718 10005 12523 01018
CC236 C0717 C0005 C2524 141513
MF047 09080 AZ/// 15233 10715
15233 10715 10007 12624 21030
30233 30713 30008 32624 19020
45232 40710 40009 42424 20045
60233 60706 60009 62424 18036
80233 80704 80012 82424 18047
00230 00700 00012 02523 14034
MF028 36060

URNT12 KMIA 141740
AF980 0505 DEBBY OB 13 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0//// 0//// 0//// /////
80/// 8//// 8//// 8//// /////
60/// 6//// 6//// 6//// /////
45229 40718 40008 42524 26030
30231 30171 33008 32524 23028
15234 10717 10007 12524 25027
CC237 C0716 C0005 C2424 141552
MF/// ///// AZ/// ///// /////
15/// 1//// 1//// 1//// /////
30/// 3//// 3//// 3//// /////
45/// 4//// 4//// 4//// /////
60/// 6//// 6//// 6//// /////
80/// 8//// 8//// 8//// /////
00/// 0//// 0//// 0//// /////
MF/// /////

Table 7 continued.

URNT12 KMIA 150300 COR
AF866 0605 DEBBY OB 11 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00254 00727 03139 00904 01013
80255 80722 83133 80905 01016
60256 60719 63124 61005 34029
45258 40717 43109 41105 36026
30258 30714 33084 31007 34024
15259 10711 13051 11109 30008
CC259 C0709 C3012 C1409 150116
MF029 27060 AZ010
15259 10706 13042 11008 15039
30259 30703 33099 30707 18060
45259 40700 43112 40808 17037
60259 60697 63127 60907 17050
80259 80694 83145 80807 19043
00259 00690 03151 00606 13055
MF060 09030
HUY PRECIP 30-75NM OUTBOUND E OF CENTER

URNT12 KMIA 150403
AF866 0605 DEBBY OB 15 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00279 00708 03148 00804 13070
80275 80707 83142 80805 13067
60273 60707 63136 60805 12046
45271 40707 43130 40807 10022
30268 30706 33121 30907 10016
15265 10706 13089 10909 08017
CC261 C0707 C3013 C1310 150308
MF070 36100 AZ030
15256 10707 13062 10808 14013
30255 30707 33107 30707 22025
45253 40706 43121 40707 25033
60251 60706 63128 60807 27050
80246 80707 83143 80807 27036
00244 00707 03152 00806 28024
MF050 18060

Table 7 continued.

URNT12 KMIA 150559
AF866 0605 DEBBY OB 20 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0//// 0//// 0//// /////
80262 80693 83116 80707 21044
60262 60695 63113 60808 20045
45262 40698 43090 40808 20046
30266 30701 33070 30909 19048
15263 10704 13042 11111 16048
CC262 C0707 C3007 C1312 150501
MF048 09015 AZ030
15262 10711 13100 10907 06028
30262 30713 33105 30707 04032
45262 40716 43117 40905 07032
60261 60719 63127 60904 08031
80261 80722 83130 80904 35022
00262 00726 03130 01002 34035
MF035 27100

URNT12 KMIA 151358
AF968 0705 DEBBY OB 06 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00285 00713 03098 00805 32023
80283 80710 83095 80808 34036
60284 60705 63086 60906 32013
45281 40700 43058 40808 04028
30278 30700 33038 31006 36050
15276 10699 13979 11107 01064
CC277 C0698 C3920 C1603 151208
MF064 02015 AZ020
15274 10692 13028 10707 26096
30273 30691 33063 30806 26055
45270 40691 43088 40807 25053
60268 60690 63107 60805 24045
80264 80691 83125 80803 26035
00260 00693 03130 00803 28030
MF096 11015

Table 7 continued.

URNT12 KMIA 151654 COR
AF968 0705 DEBBY OB 10 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0//// 0//// 0//// /////
80277 80679 83098 80707 18068
60279 60683 63070 60806 19064
45279 40686 43029 40808 /////
30278 30688 33007 30808 /////
15278 10691 13002 10808 27052
CC283 C0691 C3883 C1507 151504
MF068 12080 AZ020
15288 10691 13033 10808 11036
30291 30692 33058 30806 11036
45294 40693 43080 40807 13033
60296 60693 63086 60707 /////
80298 80693 83089 808

URNT12 KMIA 152000
AF972 0805 DEBBY OB 08 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00290 00699 03063 00804 34039
80290 80697 83051 80804 34040
60291 60694 63031 61206 32053
45292 40691 43001 40909 35050
30291 30689 33965 31109 35053
15/// 1//// 1//// 1//// /////
CC291 C0685 C3842 C1408 151804
MF085 27025 AZ035
15294 10681 13824 11311 20041
30295 30678 33950 30808 18068
45296 40673 43016 40808 22065
60297 60670 63054 60907 18086
80295 80666 83071 80806 21064
00295 00663 03090 00705 21057

Table 7 continued

URNT12 KMIA 152157
AF972 0805 DEBBY OB 13 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00310 00681 03074 00707 14040
80308 80682 83045 80707 02010
60306 60681 63034 60808 11040
45304 40682 43005 40707 09050
30302 30682 33265 30908 06043
15300 10682 13919 11008 07065
CC299 C0680 C3788 C1410 152030
MF065 36065 AZ035
15/// 1///// 1///// 1///// /////
30/// 3///// 3///// 3///// /////
45291 40681 43006 40808 27070
60/// 6///// 6///// 6///// /////

80/// 8///// 8///// 8///// /////
00/// 0///// 0///// 0///// /////
MF070 18045

URNT12 KMIA 160507
AF967 0905 DEBBY OB 17 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0///// 0///// 0///// /////
80/// 8///// 8///// 8///// /////
60/// 6///// 6///// 6///// /////
45306 40680 43969 41009 32040
30307 30678 33923 31109 32052
15308 10675 1///// 1///// 30028
CC300 C0674 C3796 C1408 160017
MF081 23010 AZ///
15309 10671 13919 11010 17015
30309 30669 33983 31007 18076
45310 40666 43027 40806 19062
60310 60663 63053 60904 19054
80309 80658 83079 80707 20058
00308 00655 03103 00706 20038
MF115 09020

Table 7 continued.

URNT12 KMIA 160524
AF967 0905 DEBBY OB 19 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0//// 0//// 0//// /////
80/// 8//// 8//// 8//// /////
60/// 6//// 6//// 6//// /////
45304 40674 43019 40909 24046
30308 30675 33994 31107 27054
15310 10674 13882 11410 28074
CC310 C0673 C3788 C1509 160304
MF085 18020 AZ///
15313 10675 13974 11208 34073
30313 30677 33985 31008 35048
45313 40680 43019 40908 36031
60313 60683 63045 60806 35042
80313 80687 83060 80803 35029
00313 00692 03074 00960 33028
MF073 27015

URNT12 KMIA 160625
AF967 0905 DEBBY OB 18 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00325 00673 03086 00804 09017
80323 80673 83066 80807 10046
60320 60673 63044 60907 09039
45316 40673 43003 41009 09038
30314 30673 33976 31009 08051
15312 10673 13862 11010 05048
CC311 C0671 C3790 C1309 160217
MF115 09020 AZ///
15308 10671 13881 11408 26085
30307 30672 33973 31006 27064
45304 40673 43034 40909 28044
60/// 6//// 6//// 6//// /////
80/// 8//// 8//// 8//// /////
00/// 0//// 0//// 0//// /////
MF085 18018

Table 7 continued

URNT12 KMIA 160732
AF964 1005 DEBBY OB 09 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
CC318 C0668 C3797 C1212 160549
MF/// ///// AZ///
15320 10666 13835 11212 14059
30321 30663 33968 30909 12067
45320 40660 43007 40808 17067
60320 60657 63038 60808 18059
80319 80653 83045 80808 19053
00319 00649 03078 00805 19049
MF067 09030

URNT12 KMIA 160838
AF964 1005 DEBBY OB 13 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0/// 0/// 0/// /////
80335 80668 83048 80806 14016
60333 60669 63033 60808 13045
45329 40673 43008 40808 10021
30326 30673 33977 31110 04022
15325 10670 13932 11209 02036
CC323 C0666 C3785 C1513 160736
MF045 36060 AZ///
15324 10668 13942 11209 01030
30/// 3/// 3/// 3/// /////
45/// 4/// 4/// 4/// /////
60/// 6/// 6/// 6/// /////
80/// 8/// 8/// 8/// /////
00/// 0/// 0/// 0/// /////
MF/// /////

Table 7 continued.

URNT12 KMIA 161505
AF866 1105 DEBBY OB 12 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00330 00680 03050 00905 31030
80329 80675 83040 80906 33033
60329 60672 63026 60907 31036
45330 40668 43000 40909 31049
30333 30666 33955 30909 31038
15335 10661 13854 11610 36031
CC335 C0660 C3821 C1710 161226
MF049 22045 AZ040
15335 10657 13858 11708 23077
30335 30655 33935 31111 20072
45335 40652 43990 40909 20080
60336 60649 63021 60909 20066
80336 80645 83042 80808 16059
00336 00645 03074 00804 18054
MF087 09025

URNT12 KMIA 161555
AF866 1105 DEBBY OB 14 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00353 00659 03058 00505 12052
80350 80661 83034 80707 05021
60347 60660 63997 60707 02022
45345 40657 43959 40909 04014
30343 30657 33899 31110 11058
15/// 1///// 1///// 1///// /////
CC341 C0658 C3818 C1809 161443
MF058 36030 AZ010
15339 10663 13967 11208 31046
30337 30666 33003 30908 30037
45337 40668 43034 40904 30021
60336 60671 63046 60807 32020
80334 80675 83055 80805 31026
00/// 0///// 0///// 0///// /////
MF0046 26015

Table 7 continued.

URNT12 KMIA 161951
AF972 1205 DEBBY OB 06 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00/// 0//// 0//// 0//// /////
80348 80671 83008 80901 35040
60349 60668 63982 61006 /////
45350 40664 43920 40909 35037
30350 30660 33853 31307 31048
15351 10659 13800 11409 29028
CC353 C0658 C3794 C1710 161828
MF048 22030 AZ030
15354 10655 13873 11309 18060
30356 30653 33923 31003 16070
45358 40651 43982 41005 16062
60360 60649 63003 60905 15061
80359 80643 83024 80807 17060
00358 00638 03045 00705 16052
MF070 06030

URNT12 KMIA 162135 COR
AF972 1205 DEBBY OB 10 COR KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00369 00657 03025 00707 11042
80366 80659 83004 80806 11050
60363 60660 63979 60807 07046
45361 40660 43939 40807 07052
30358 30659 33887 31009 07054
15357 10659 13845 11209 07042
CC355 C0658 C3803 C1511 162028
MF054 34030 AZ020
15353 10656 13845 11310 24046
30351 30656 33911 31009 23060
45348 40656 43969 40907 25071
60346 60656 63002 60805 25051
80342 80656 83032 80807 25037
00339 00656 03047 00805 24024
MF071 17045

Table 7 continued

URNT12 KMIA 162353 COR 03
AF972 1205 DEBBY OB 14 COR 03 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00355 00637 03044 009// 18053
80356 80641 83026 80905 18055
60356 60646 63996 60805 18062
45356 40648 43956 40808 19070
30357 30651 33898 31008 19070
15357 10654 13838 11210 19066
CC359 C0657 C3816 C1511 162230
MF070 11030 AZ020
15356 10659 13911 11208 30034
30355 30662 33932 31108 31039
45354 40665 43965 40907 31033
60354 60668 63990 60806 33030
80353 80673 83031 80705 32028
00352 00676 03048 00705 34031
MF039 32030

URNT12 KMIA 171325
AF967 1305 DEBBY OB 06 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00372 00675 03055 00703 34040
80374 80671 83041 80803 35041
60374 60668 63028 60804 01054
45374 40665 43009 40802 01053
30371 30660 33963 30703 36069
15371 10657 13895 11005 32070
CC371 C0650 C3793 C1607 171203
MF070 27030 AZ360
15372 10648 13115 11209 21042
30372 30645 33940 31006 21021
45372 40642 43986 40808 19083
60373 60637 63011 60807 19055
80373 80635 83026 80706 19059
00373 00633 03035 00805 18055
MF083 08045

Table 7 continued.

URNT12 KMIA 171618
AF967 1305 DEBBY OB 14 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00361 00640 03049 00906 23051
80363 80641 83033 80905 23065
60366 60644 63004 61006 24064
45368 40644 43972 40907 25075
30371 30644 33892 31007 25092
15372 10645 13808 11311 24064
CC374 C0646 C3792 C1609 171515
MF092 17030 AZ360
15371 10646 13871 11405 28082
30371 30649 33932 31303 32082
45370 40653 43982 40806 32064
60369 60657 63018 60703 34040
80368 80660 83032 80804 33039
00367 00664 03053 00903 32029
MF082 24050

URNT12 KMIA 180103
AF866 1405 DEBBY OB 07 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00385 00639 03020 00853 32041
80387 80637 83004 80853 33046
60388 60634 63980 60953 34046
45388 40630 43958 40758 35049
30388 30628 33911 30959 36063
15388 10625 13746 11161 35035
CC388 C0624 C3660 C1762 180010
MF075 27020 AZ///
15387 10621 13732 10860 20075
30388 30619 33843 30962 19095
45388 40615 43859 40808 20072
60388 60613 63969 60803 20070
80388 80608 83011 80804 21067
00388 00604 03035 00805 19063
MF095 09030

Table 7 continued.

URNT12 KMIA 180246
AF866 1405 DEBBY OB 11 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00406 00623 03027 00804 12021
80403 80624 83012 80805 06021
60399 60623 63978 607// 06026
45397 40623 43944 408// 08038
30395 30622 33905 310// 07044
15392 10620 13700 114// 06057
CC392 C0619 C3656 C20// 180152
MF057 36015 AZ///
15389 10619 13824 112// 28104
30387 30619 33916 311// 28078
45384 40619 43968 408// 28071
60382 60620 63000 609// 28047
80379 80620 83031 809// 27046
00375 00620 03052 009// 27042
MF104 18015

URNT12 KMIA 180359
AF866 1405 DEBBY OB 13 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00375 00620 03052 009// 27042
80379 80619 83030 809// 26039
60383 60619 63006 609// 26051
45386 40619 43965 407// 28060
30388 30618 33917 309// 28077
15391 10617 13847 112// 28095
CC395 C0617 C3646 C18// 180306
MF107 18012 AZ///
15393 10619 13829 111// 31074
30392 30621 33916 311// 30067
45392 40626 43964 409// 33044
60391 60629 63994 608// 31039
80390 80632 83010 808// 33027
00389 00636 03022 008// 31036
MF074 27015

Table 7 continued

URNT12 KMIA 181338
AF972 1505 DEBBY OB 09 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00412 00611 03997 00703 32051
80412 80608 83984 80604 33045
60413 60603 63969 61102 31056
45413 40598 43950 4///// 31052
30415 30597 33929 31106 32058
15415 10594 13879 11007 32063
CC416 C0585 C3692 C1312 181214
MF063 26015 AZ///
15417 10581 13757 11111 20056
30418 30578 33858 31009 19059
45419 40574 43916 40808 /////
60419 60570 63950 60908 19083
80/// 8///// 8///// 8///// /////
00/// 0///// 0///// 0///// /////
MF083 10060

Table 7 continued

ERNESTO

URNT12 KMIA 011338
AF866 0208 ERNESTO OB 11 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00273 00660 00012 02222 17023
80273 80664 80009 82323 20025
60273 60667 60009 62524 20028
45273 40670 40008 42525 21029
30273 30673 30008 32424 20038
15273 10676 10005 12424 22022
CC273 C0679 C0003 C2625 011205
MF038 09030 AZ090

URNT12 KMIA 011538
AF866 0208 ERNESTO OB 15 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00292 00680 00012 02423 12025
80289 80680 80011 82424 10023
60286 60679 60010 62424 05018
45283 40679 40009 42524 07027
30280 30679 30007 32525 05027
15278 10679 10006 12525 03022
CC275 C0680 C0006 C2525 011422
MF027 36045 AZ360
15273 10680 10008 12525 30031
30270 30680 30009 32525 30026
45268 40680 40010 42524 29025
60266 60680 60011 62524 28021
80262 80680 80012 82524 26030
00259 00680 00013 02524 26024
MF031 18015

Table 7 continued

URNT12 KMIA 012320
AF964 0308 ERNESTO OB 13 KMIA
SUPPLEMENTARY VORTEX DATA MESSAGE
00281 00652 00005 02222 19045
80282 80655 80004 82222 17043
60281 60659 60003 62322 18021
45281 40662 40002 42322 18022
30281 30665 30001 32323 17062
15282 10667 10998 12525 26033
CC284 C0667 C0997 C2626 012151
MF062 09030 AZ060
15283 10671 10001 12424 32022
30283 30673 30002 32424 01013
45283 40676 40003 42424 32018
60283 60679 60004 62424 32020
80284 80683 80005 82424 33016
00284 00686 00005 02423 35014
MF022 27015
SFC WND 170 DEG 65 KT AT 28.IN 66.3W IN VCNTY OF AREA
OF STRONG TRW

Table 8. Tropical Cyclone REconnaisance Summary for 1982

1. Requirements Levied	<u>ATLANTIC</u>	<u>EASTERN PACIFIC</u>	<u>CENTRAL PACIFIC</u>
TD, Storms, Hurricanes	<u>52</u>	<u>0</u>	<u>17</u>
Invest	<u>30</u>	<u>0</u>	<u>0</u>
Total	<u>82</u>	<u>0</u>	<u>17</u>
2. Requirements Accomplished			
53WRS (Cyclones/Invest)	<u>13/11</u>	<u>0/0</u>	<u>3/0</u>
920WRG (Cyclones/Invest)	<u>31/15</u>	<u>0/0</u>	<u>14/0</u>
RFC (Cyclones/Invest)	<u>8/ 4</u>	<u>0/0</u>	<u>0/0</u>
Total	<u>52/30</u>	<u>0/0</u>	<u>17/0</u>
3. Missions Flown			
53WRS	<u>16</u>	<u>0</u>	<u>2</u>
920WRG	<u>34</u>	<u>0</u>	<u>8</u>
RFC	<u>7</u>	<u>0</u>	<u>0</u>
Total	<u>57</u>	<u>0</u>	<u>10</u>
4. Flying Time			
53WRS	<u>143.6</u>	<u>0</u>	<u>20.8</u>
920WRG	<u>299.3</u>	<u>0</u>	<u>77.0</u>
RFC	<u>56.2</u>	<u>0</u>	<u>0</u>
Total	<u>499.6</u>	<u>0</u>	<u>97.8</u>
5. Observations	Horizontal	<u>1033</u>	Vertical <u>92</u>

67 Omega Dropwindsondes were released during 2 research missions on T.S. Debby
 3 late fixes
 4 resources permitting missed

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