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NOAA TECHNICAL MEMORANDUM NWS NHC 43

ANNUAL DATA AND VERIFICATION TABULATION
EASTERN PACIFIC TROPICAL CYCLONES 1988

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March 1989

2883

UNITED STATES
DEPARTMENT OF COMMERCE
Robert A. Mosbacher, Secretary

National Oceanic and Atmospheric Administration
William E. Evans
Under Secretary and Administrator

National Weather Service
Elbert W. Friday
Assistant Administrator



INTRODUCTION

This is the First report by the National Hurricane Center (NHC) of a continuing annual series to provide a source of summarized data on Eastern Pacific 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).

OBJECTIVE FORECAST TECHNIQUES

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

1. EPSANBAR (Sanders and Burpee, 1968). A filtered barotropic model using input data derived from the 1000 to 100 mb pressure weighted winds.
2. EPHC81 A statistical-dynamical model.
3. EPCL84 A simulated-analog model based on persistence and climatology.
4. EPANALOG85 (Jarrell, Mauck, and Renard, 1975). An analog model.
5. EPSS87 A statistical-synoptical model

In addition, operational forecasts of tropical cyclone intensity changes in knots at 12-hourly intervals out to 72 hours are generated by a program named SHIFOR (Statistical Hurricane Intensity Forecasts). Generation of the forecast equations was done by multiple screening regression 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.

DATA SUMMARIES

A summary of the 1988 Eastern Pacific tropical cyclone statistics is given in Table 2. 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 3, along with initial position and forecast errors, and average errors.

Table 4 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.

Graphs of the lowest central pressure versus time for the 1988 named tropical cyclones are shown in Figure 2.

ACKNOWLEDGEMENTS

Main contributors were Miles Lawrence, who computed the verification statistics and Joan David, who drafted the track chart and pressure/time graphs.

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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.

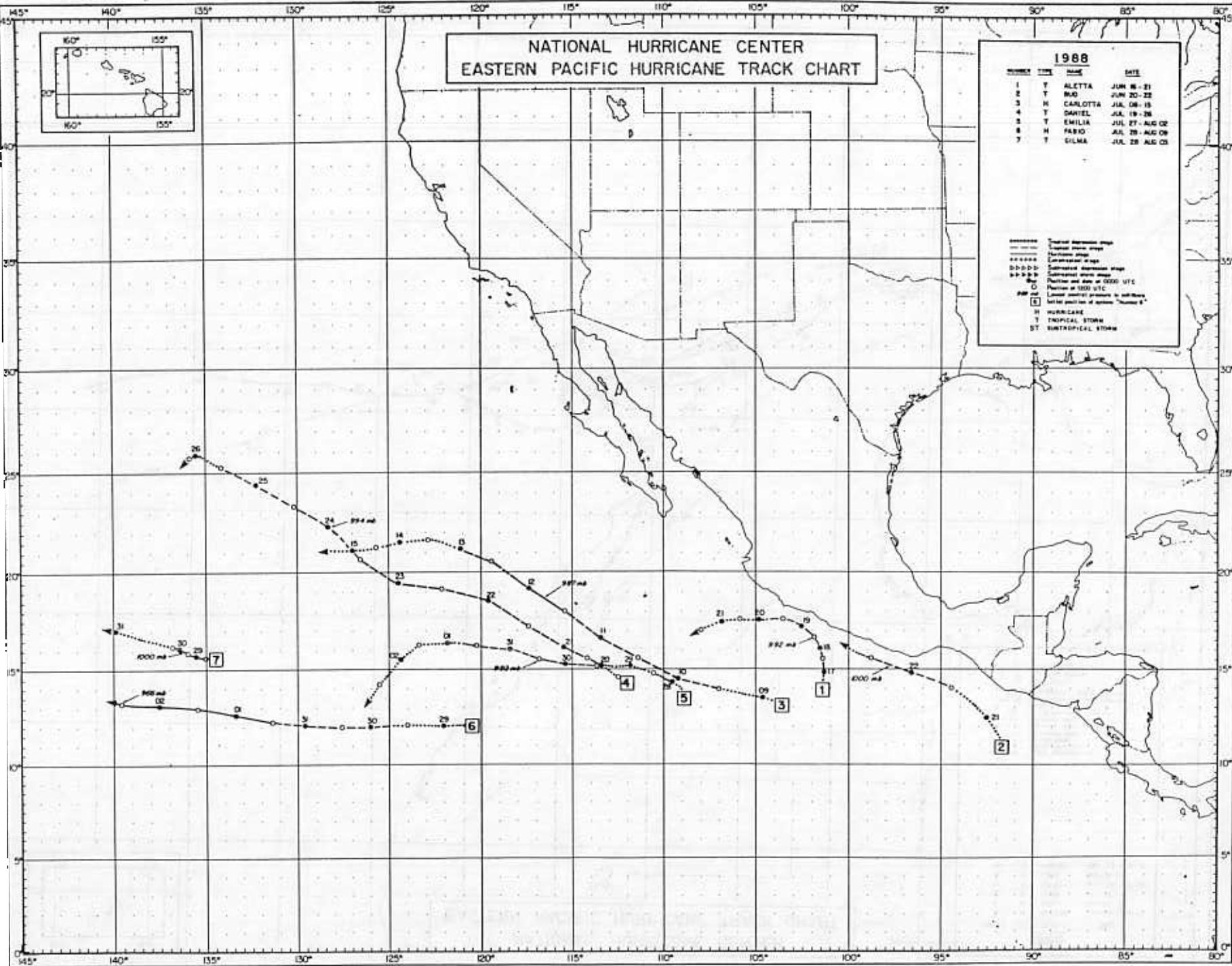
Table 1. Verification of 1988 tropical storm and hurricane forecasts.
Figures in parentheses are the number of cases.

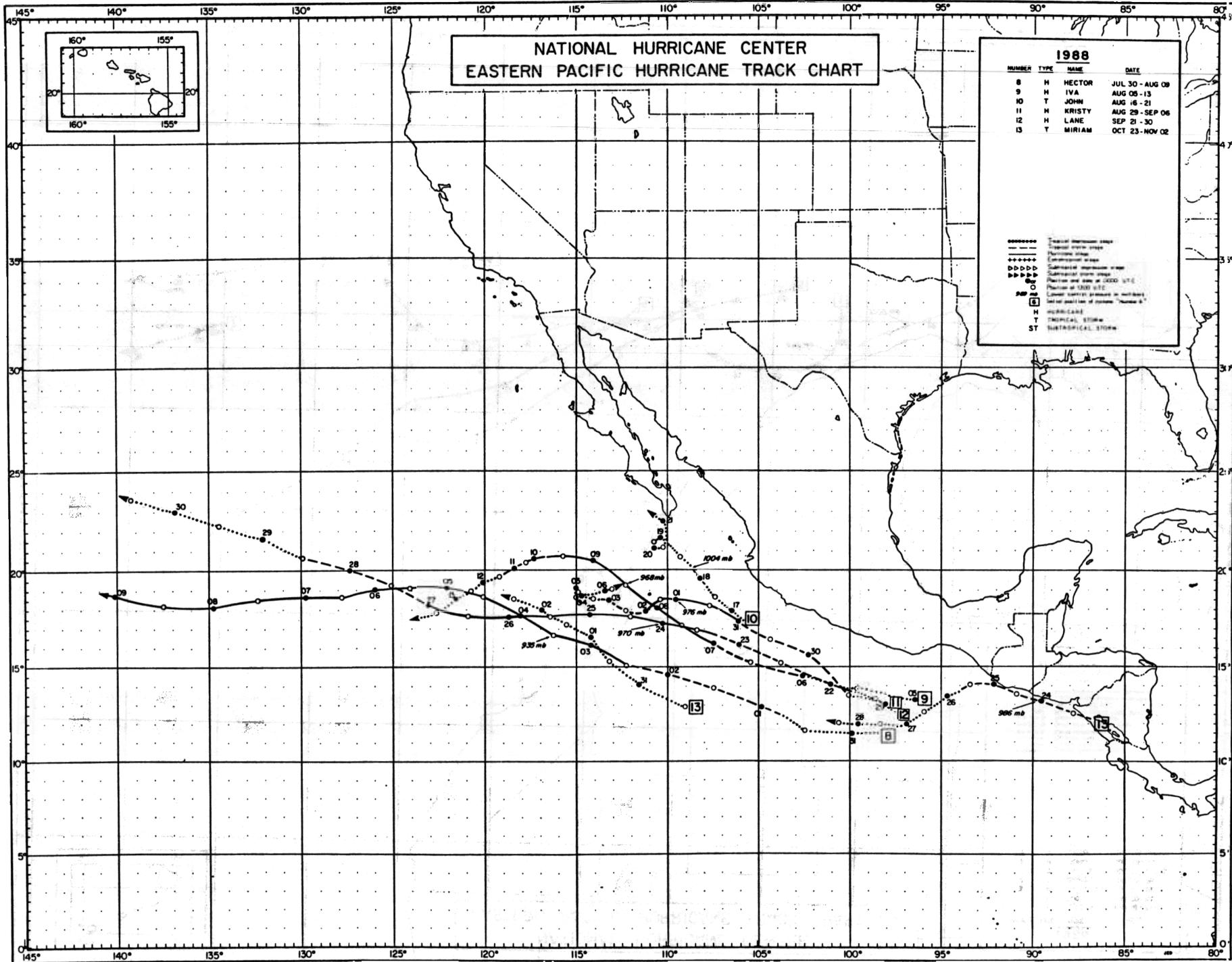
Table 2. Summary of 1988 tropical cyclone statistics

Table 3a. Best track, initial and forecast positions, initial position error and forecast errors for 1988 tropical cyclones.

Table 3b. Best track forecast windspeed verification for 1988 tropical cyclones.

Table 4. Center fix positions and intensity evaluations for 1988 cyclones.





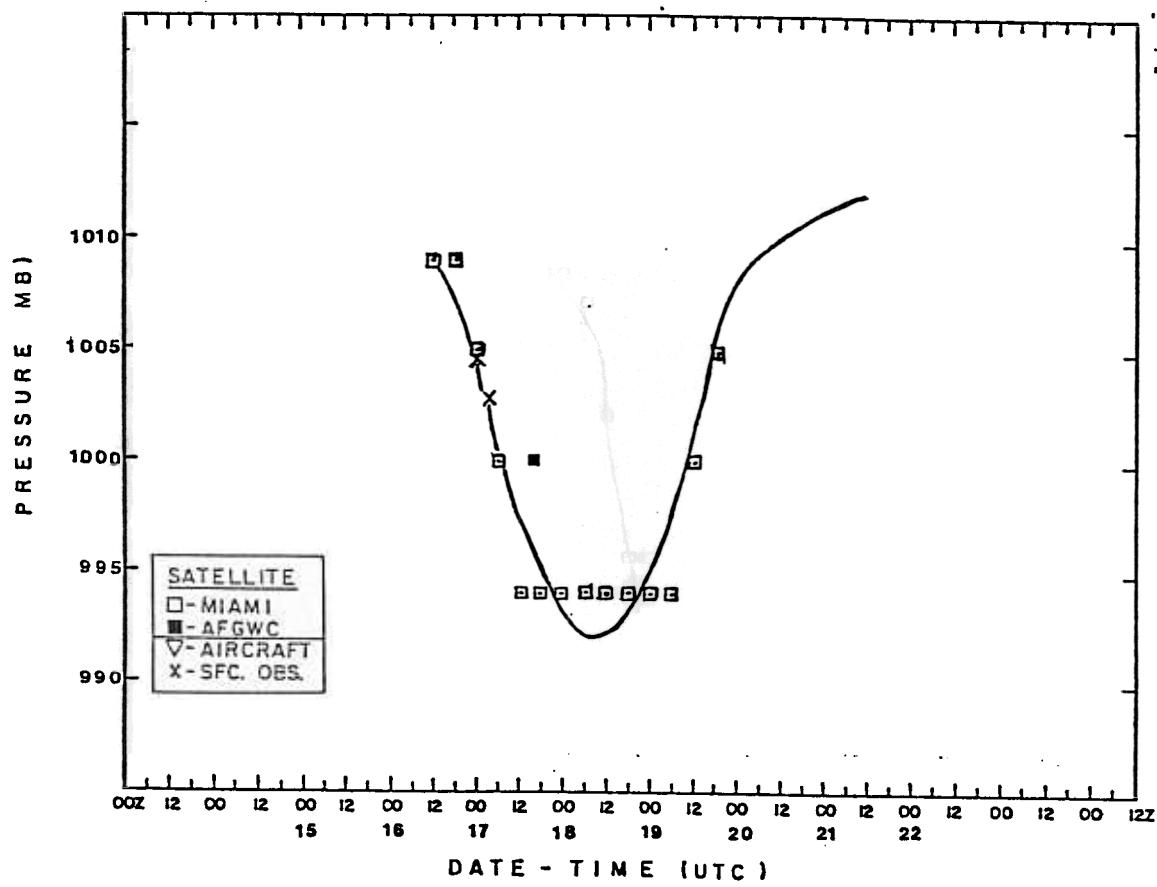


Fig. 2. "Best track" minimum pressure curve for Tropical Storm Aletta, 16-21 June 1988.

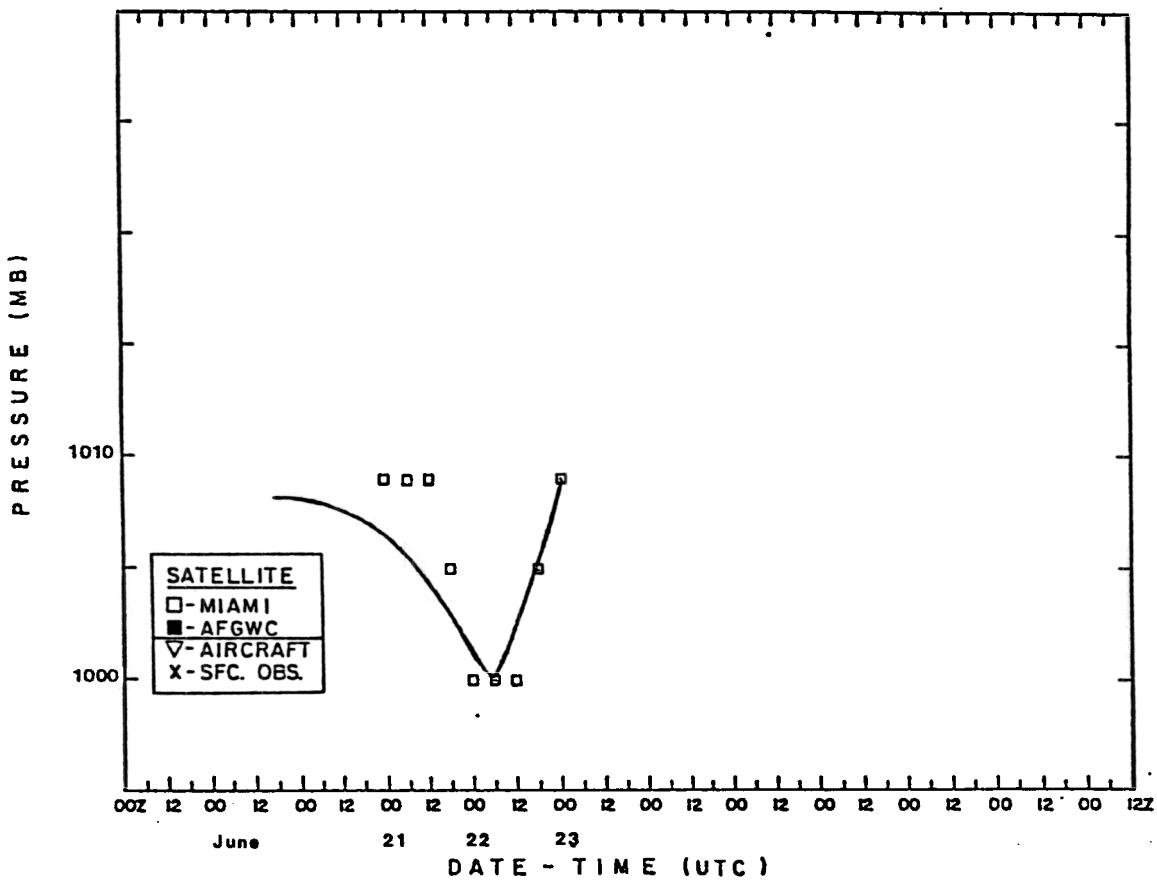


Fig. 2. Minimum central pressure for Tropical Storm Bud, 20-22 June 1988.

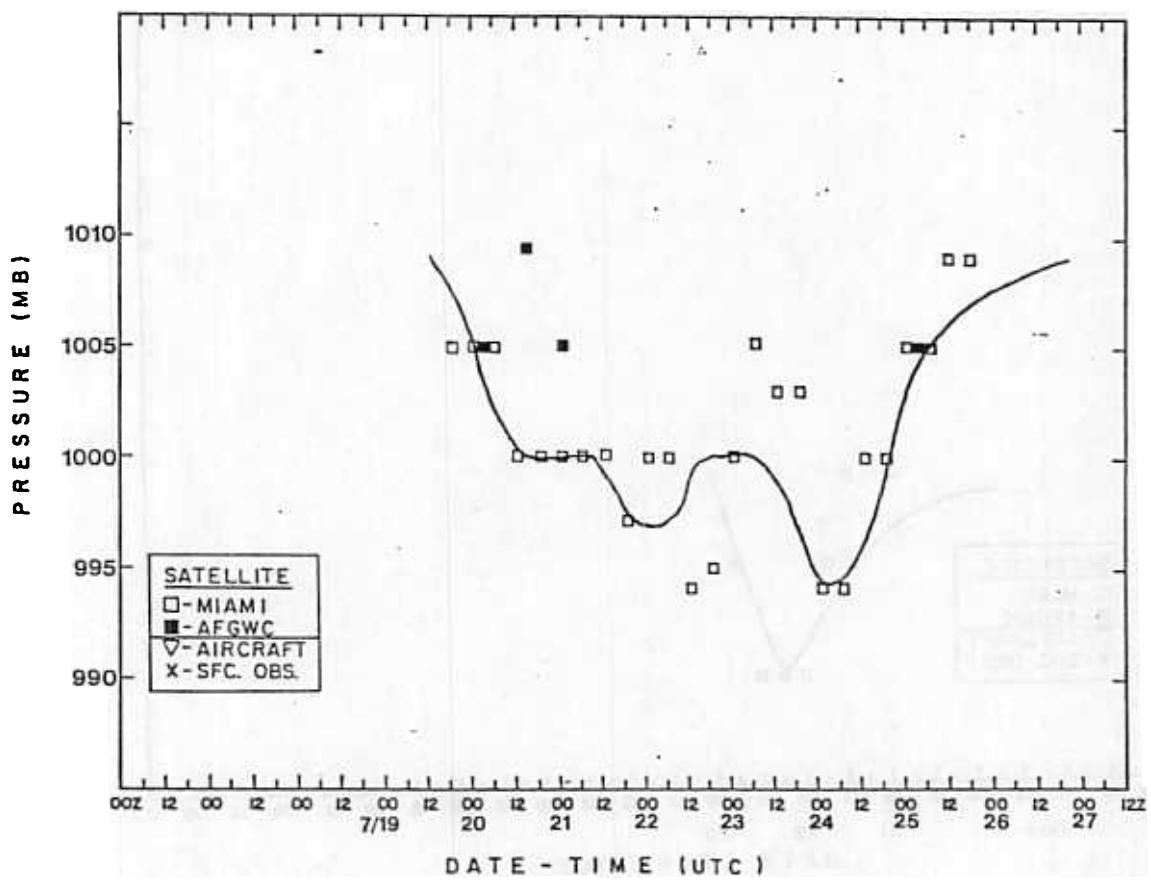
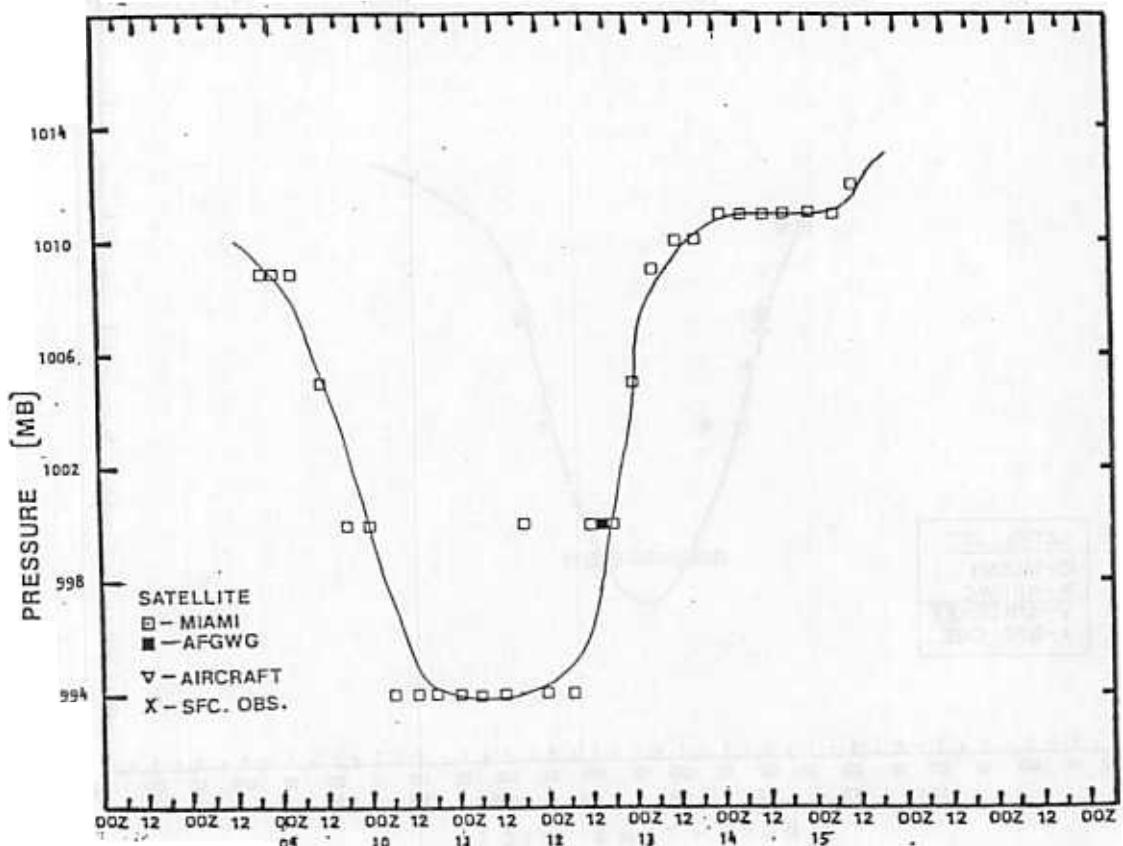


Fig. 2. Minimum central pressure for Tropical Storm Daniel, 19-26 July 1988.

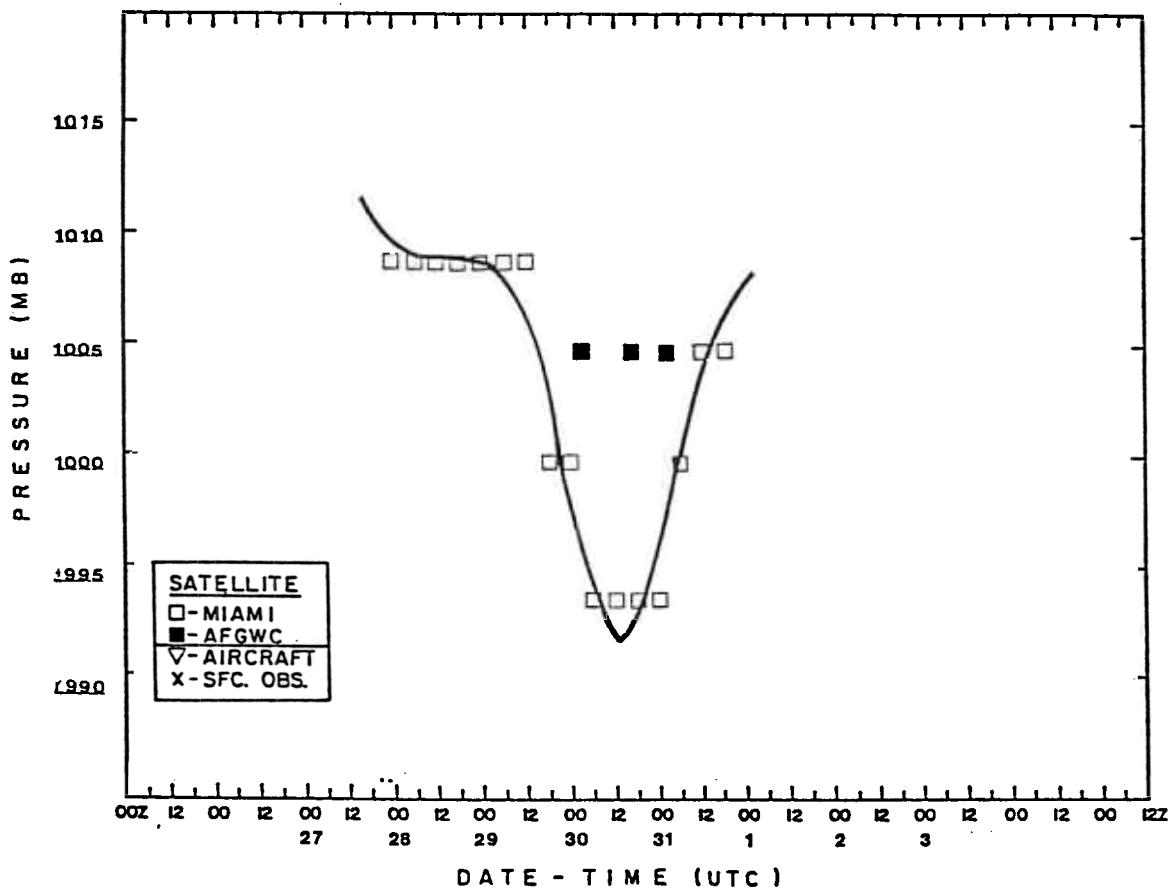


Fig. 2. Best track minimum central pressure curve for Tropical Storm Emilia, 27 July-2 August, 1988.

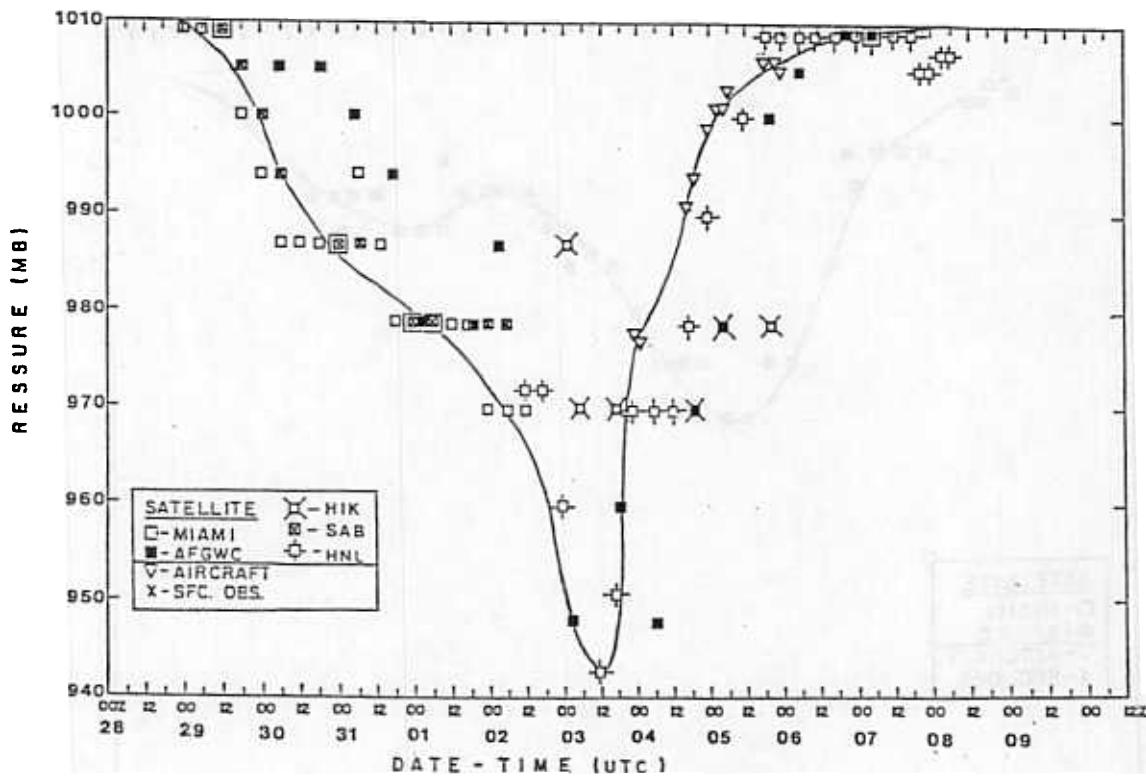


Fig. 2. Best track minimum central pressure curve for Hurricane Fabio, 28 July-9 August, 1988.

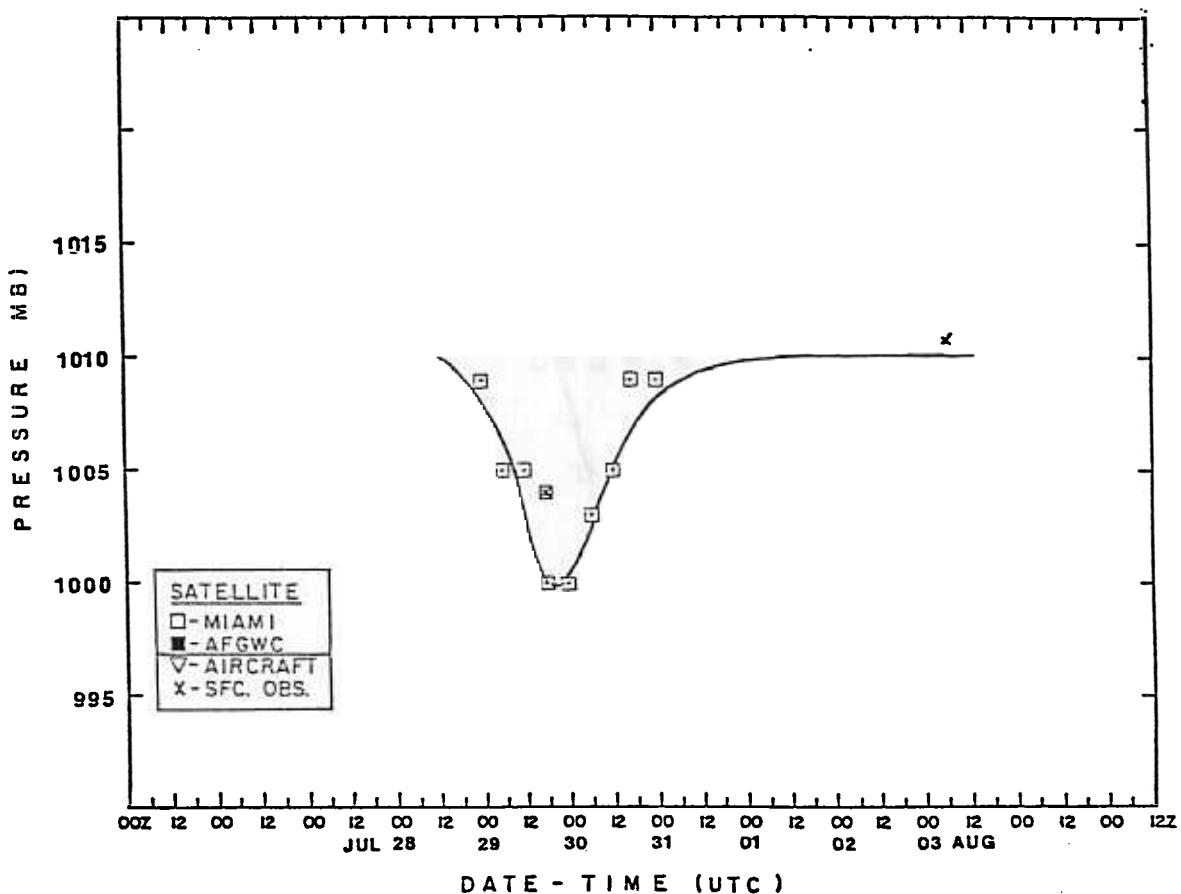


Fig. 2. Best track minimum central pressure curve for Tropical Storm Gilma,
28 July-3 August, 1988.

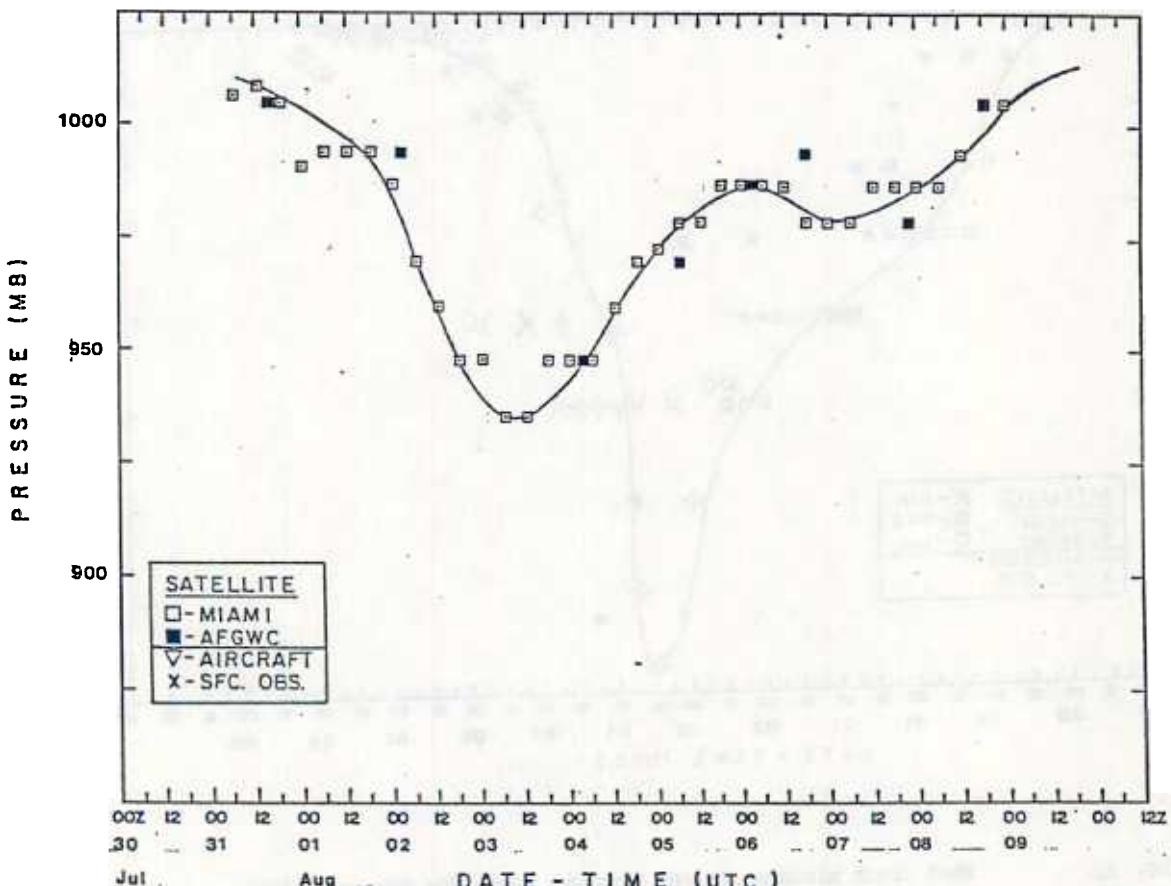


Fig. 2. Best track minimum central pressure curve for Hurricane Hector,
31 July-9 August, 1988. 10

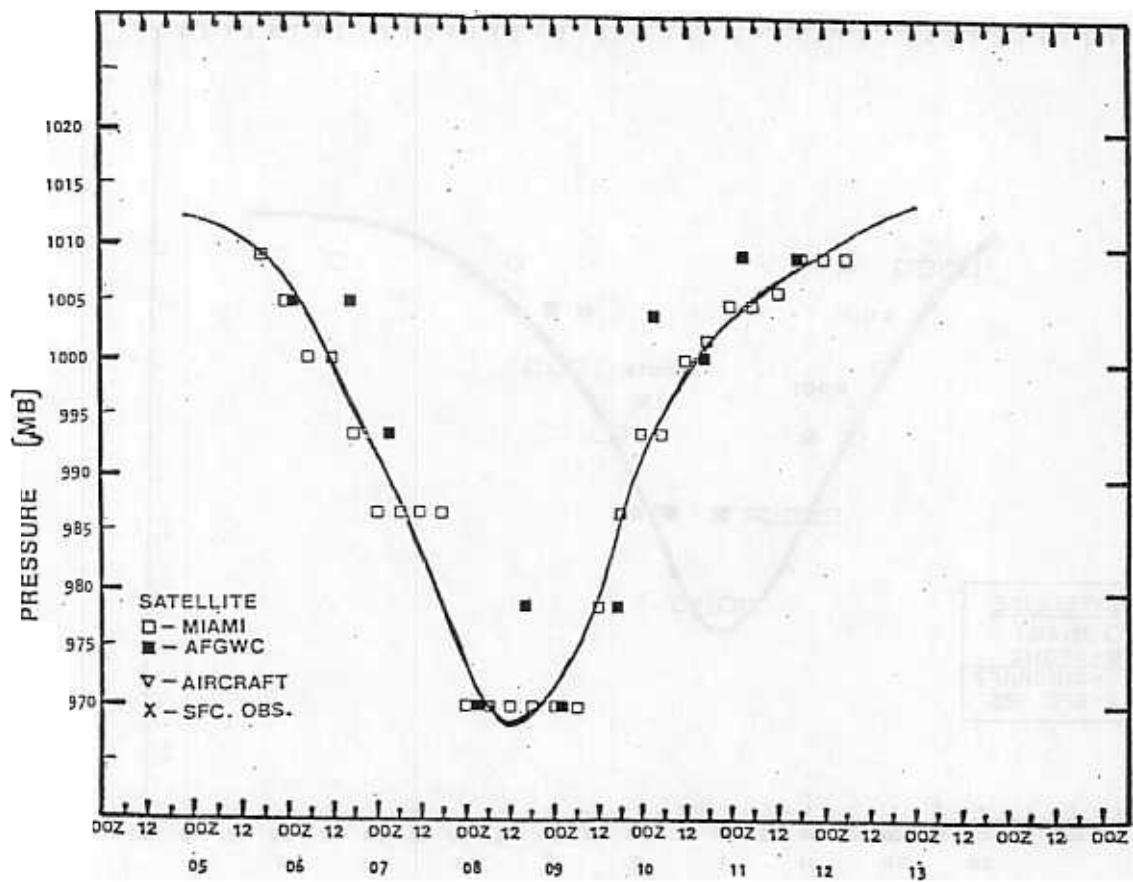


Fig. 2. Best track minimum central pressure curve for Hurricane Iva, 5-13 August, 1988.

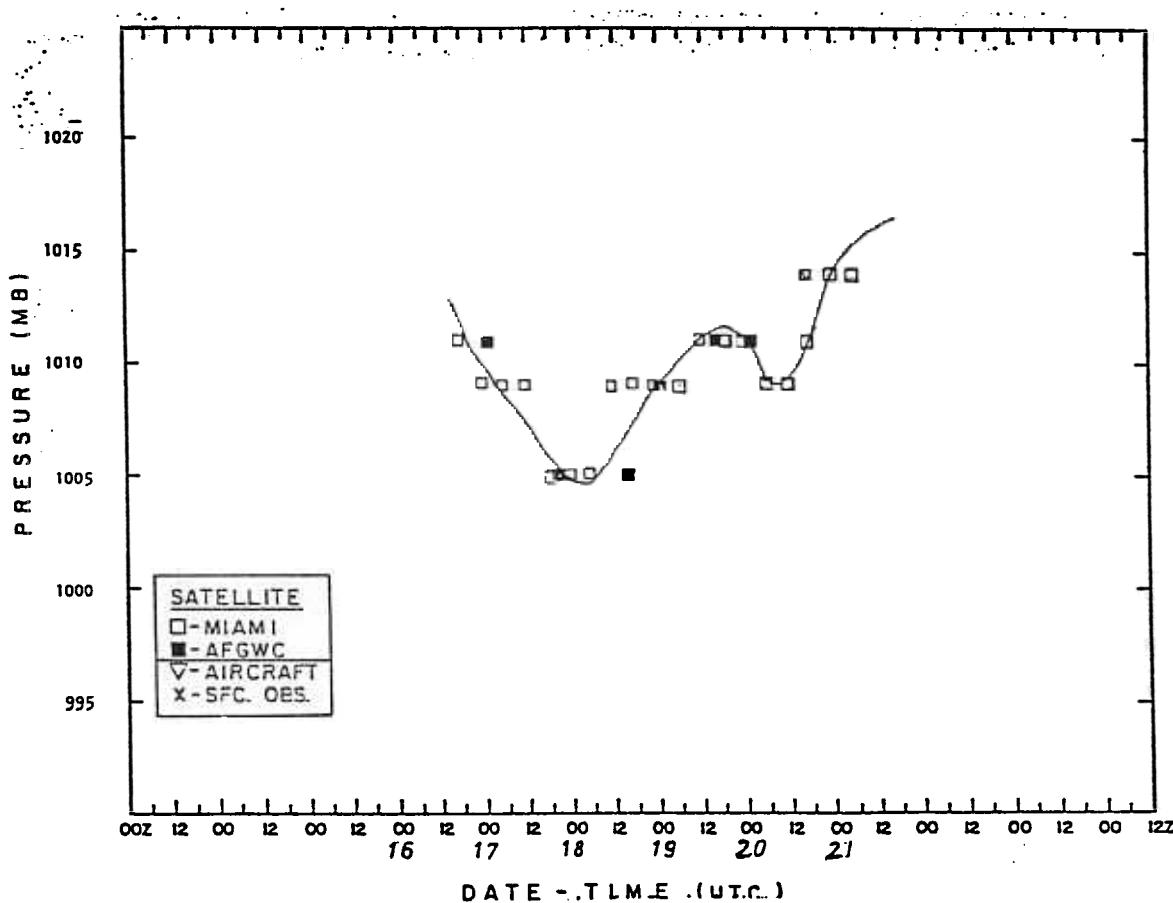


Fig. 2. Best track minimum central pressure curve for Tropical Storm John, 16-21 August, 1988.

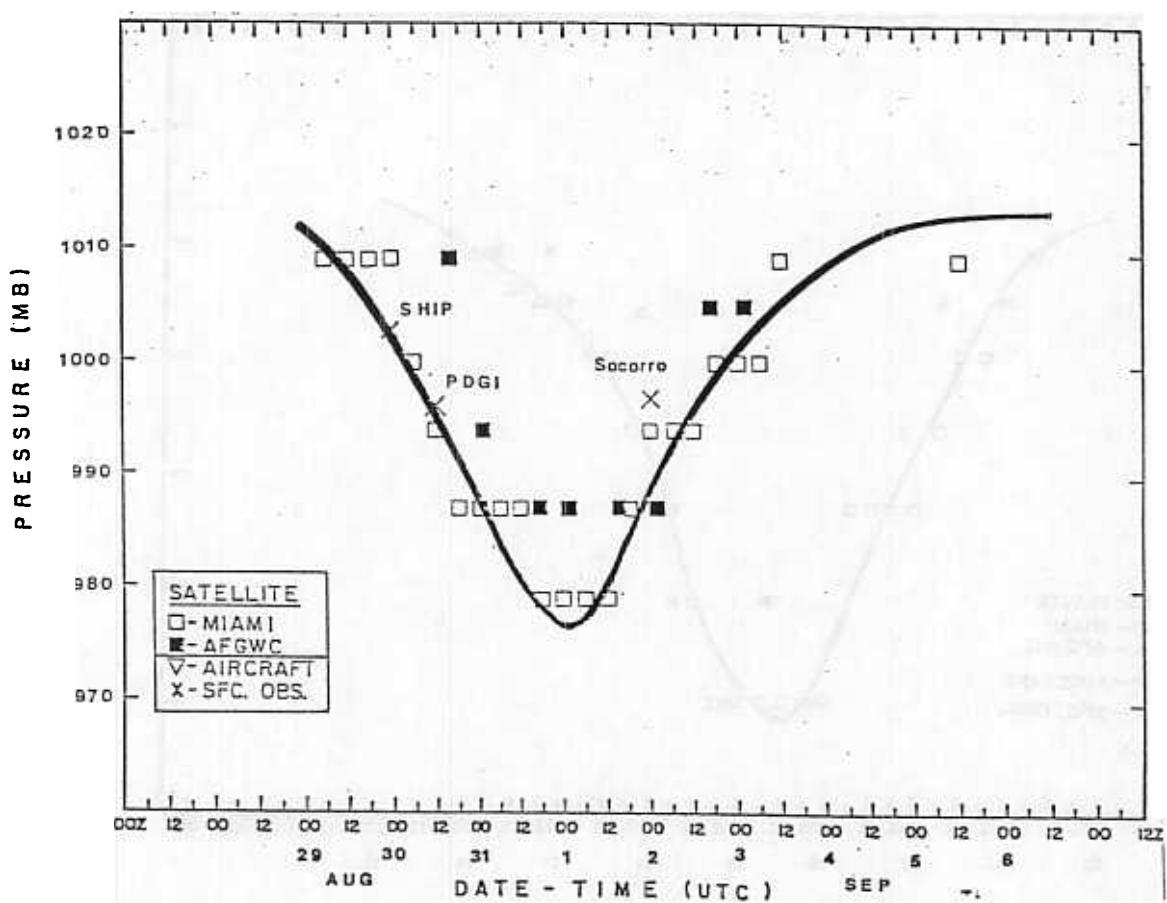


Fig. 2. Best track minimum central pressure curve for Tropical Storm Kristy, 29 August-6 September, 1988.

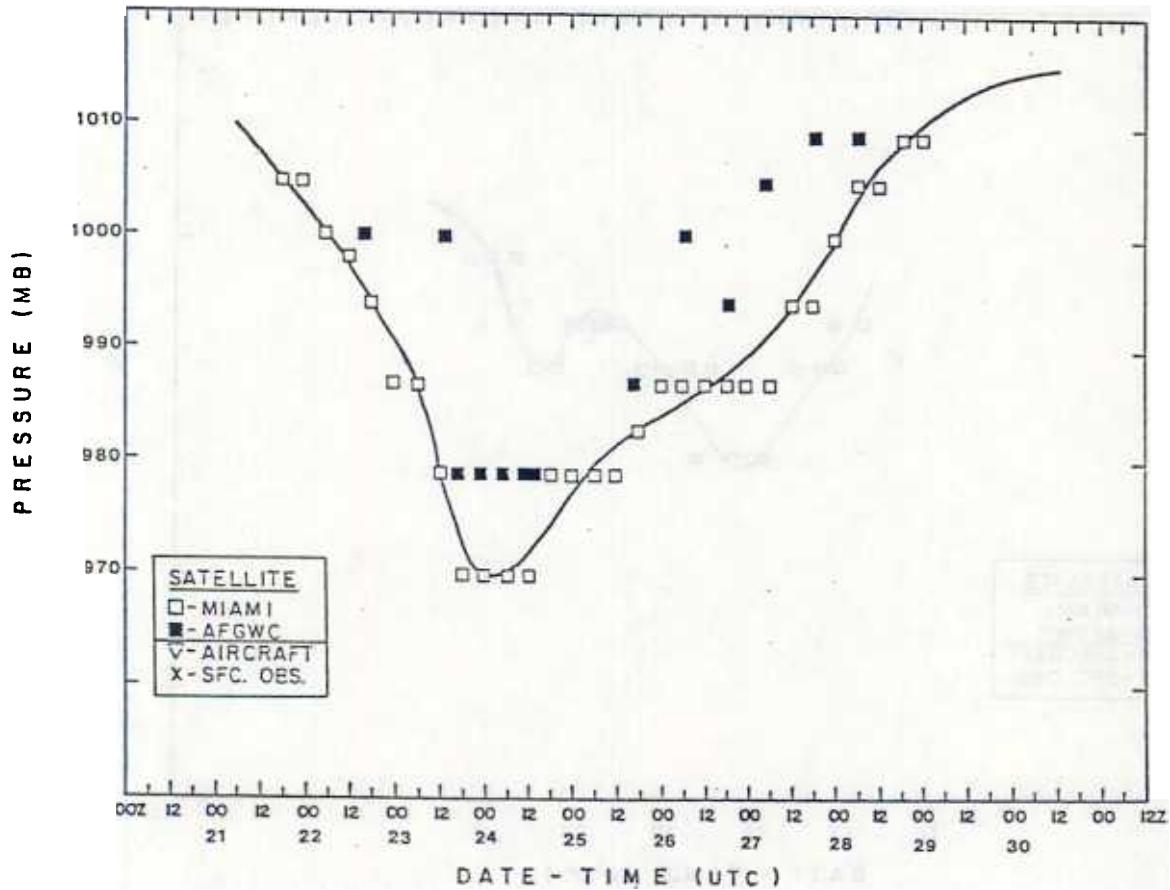


Fig. 2. Best track minimum central pressure curve for Hurricane Lane, 21-30 September, 1988.

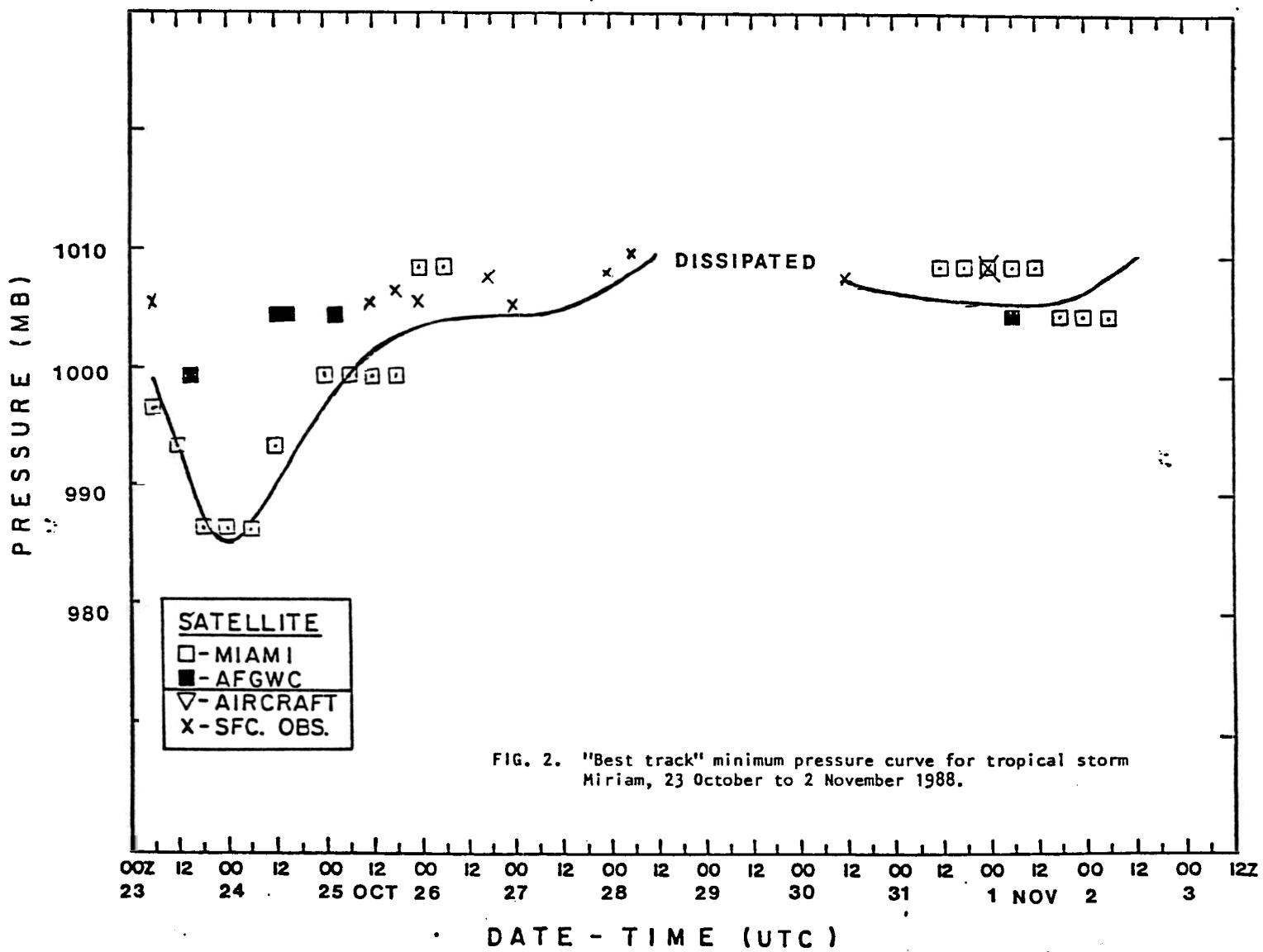
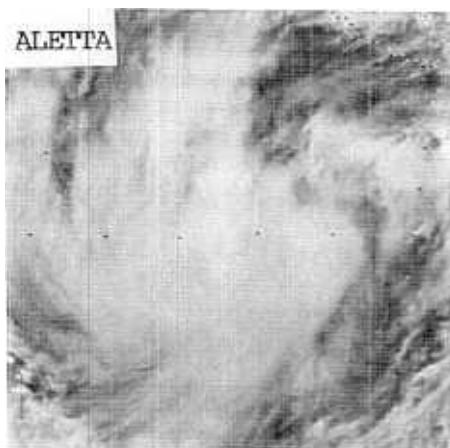
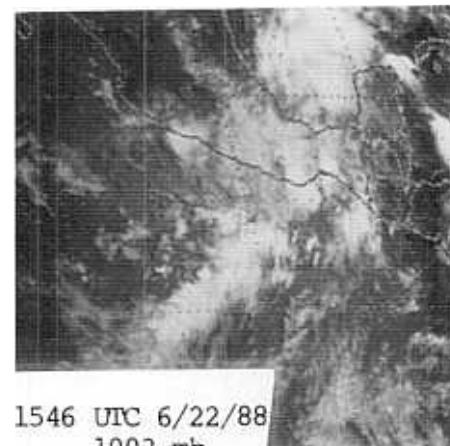
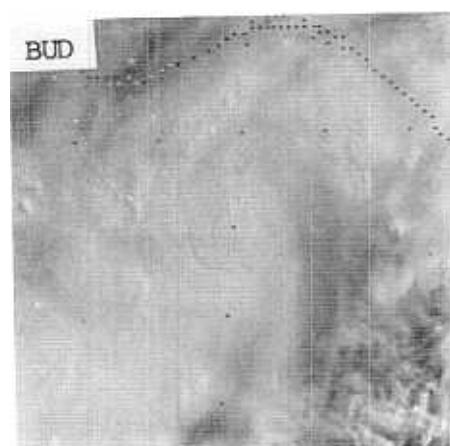
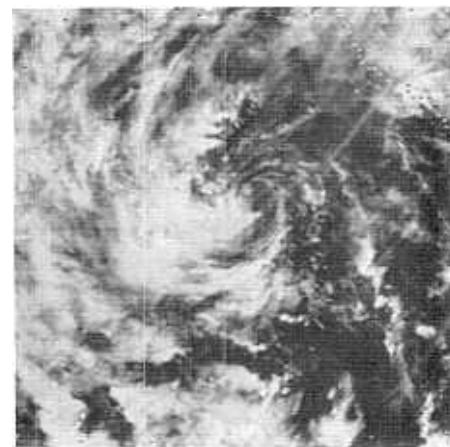
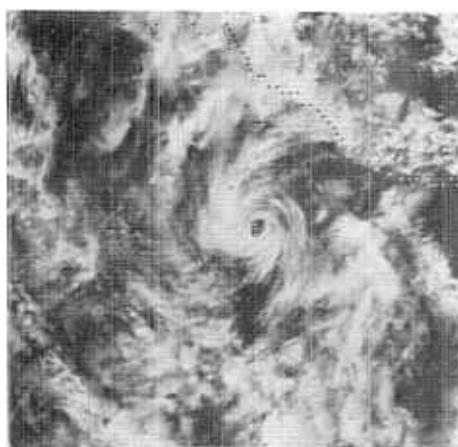
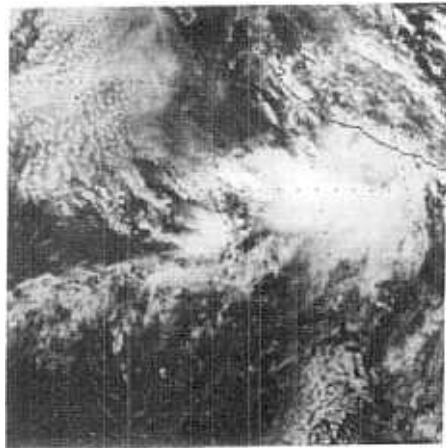
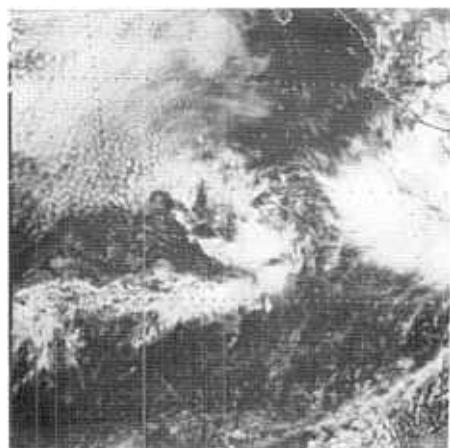


Figure 3. Daily satellite photographs of 1988 Eastern Pacific cyclones.

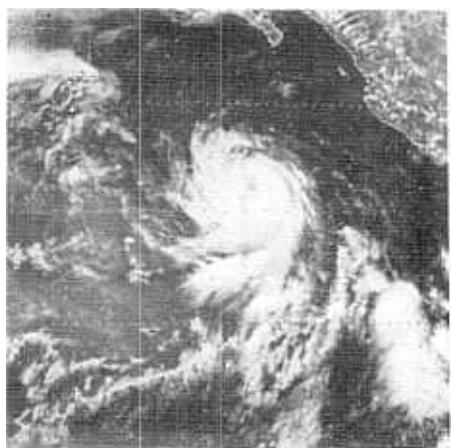


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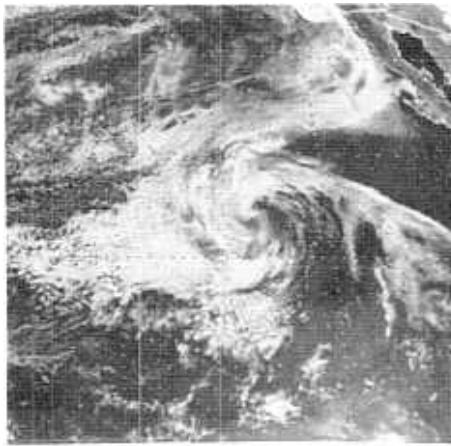
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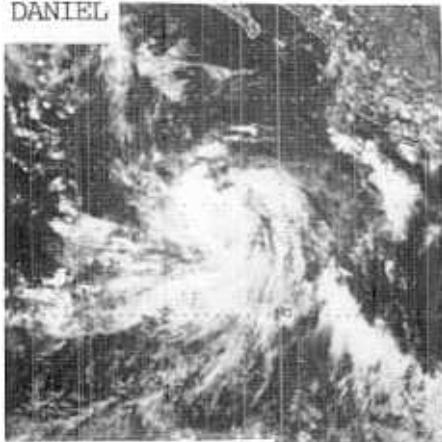


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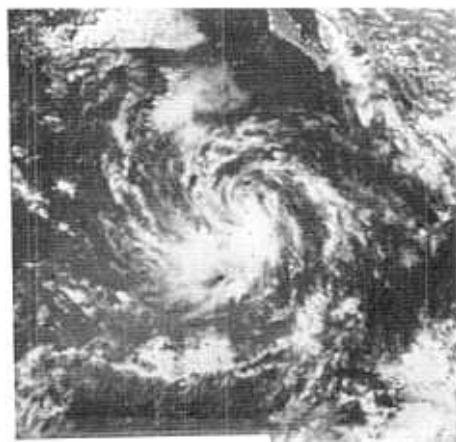


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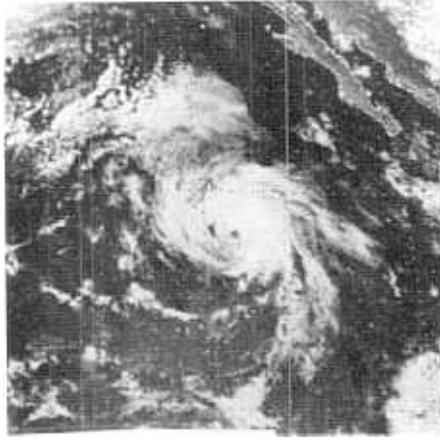
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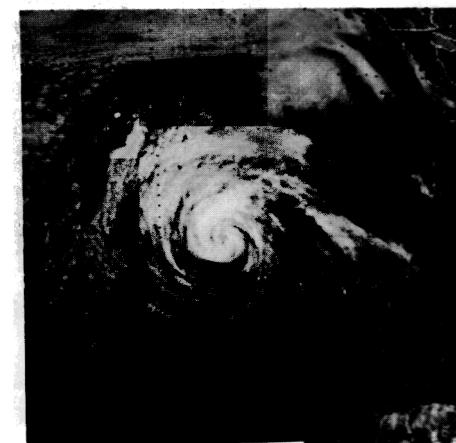
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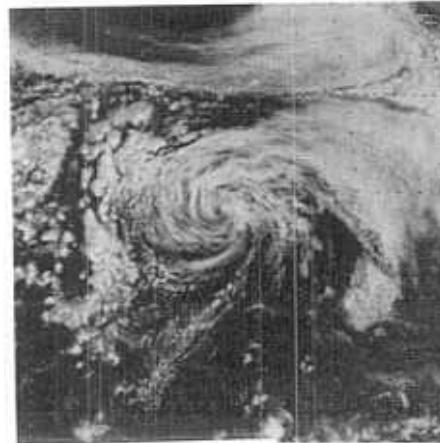
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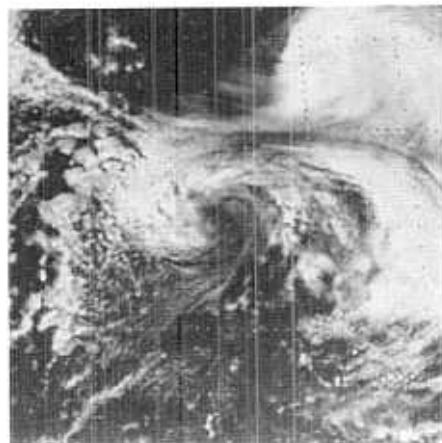
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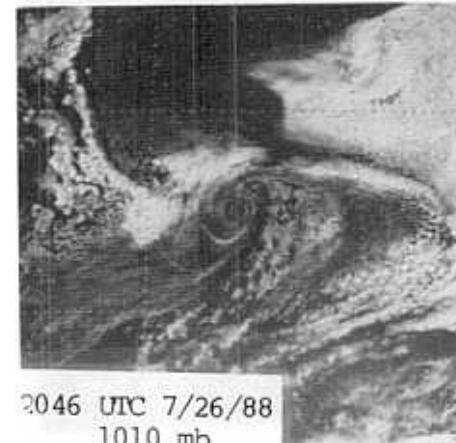
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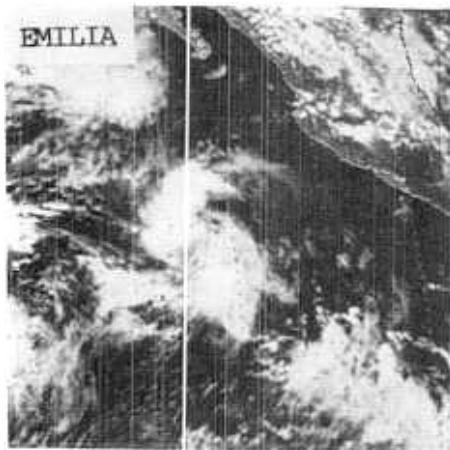
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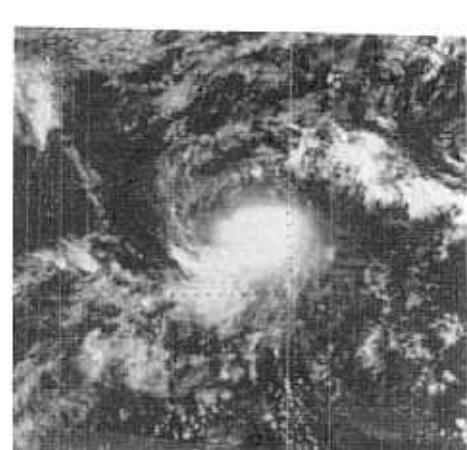
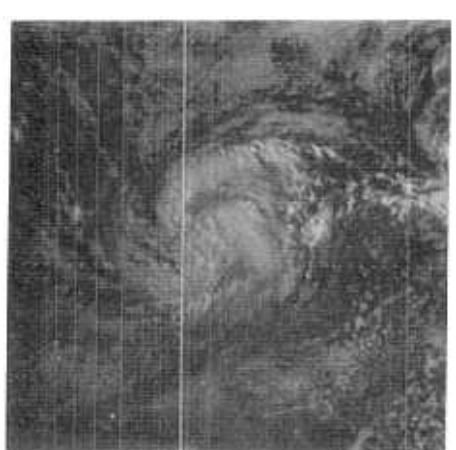
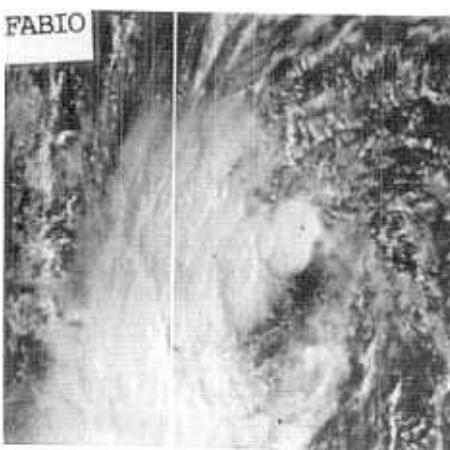
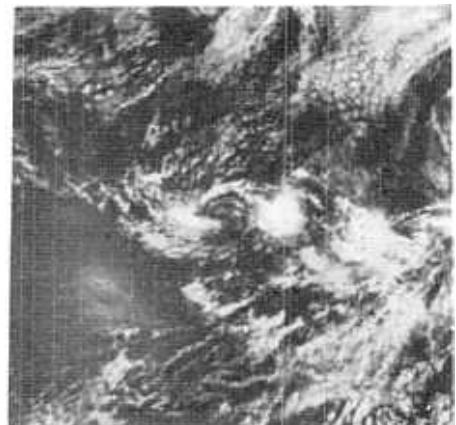
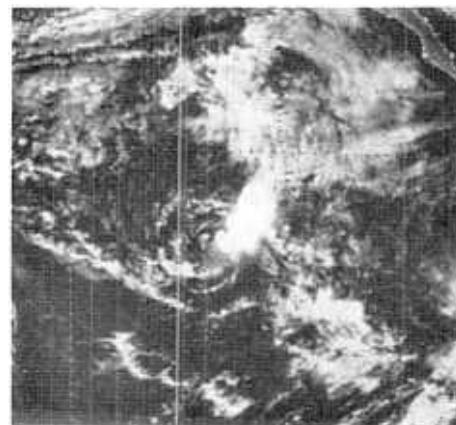
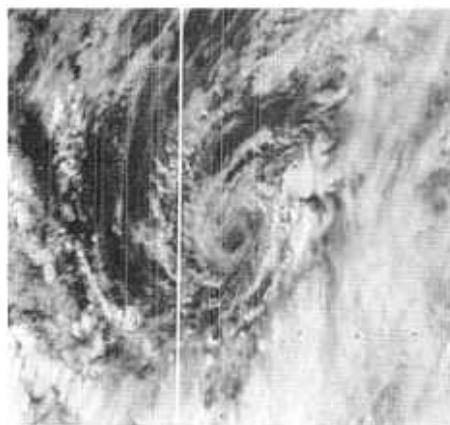
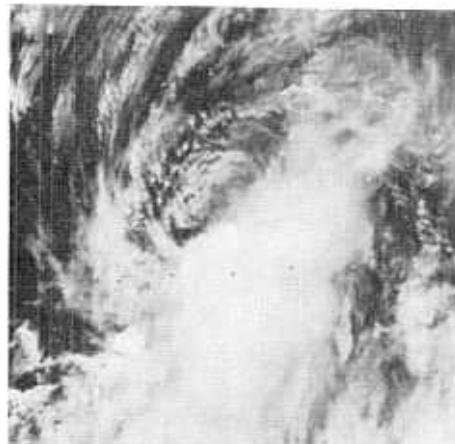
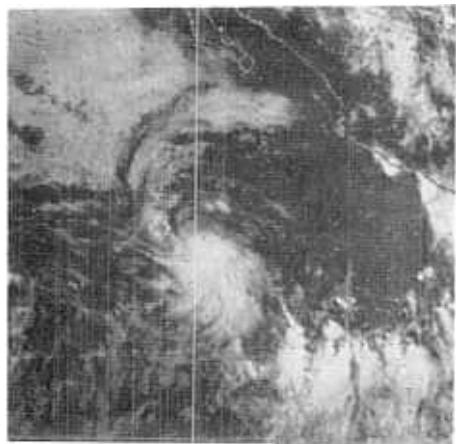
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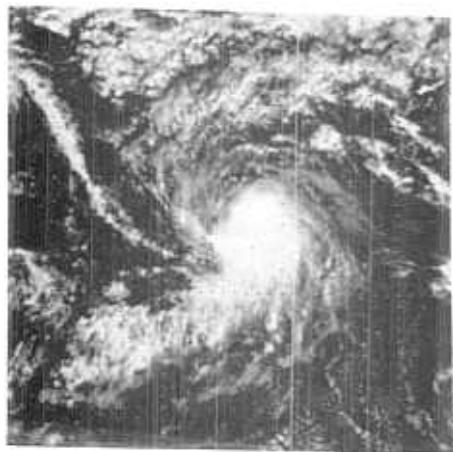


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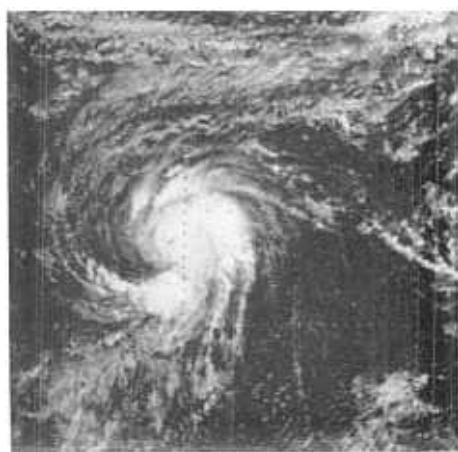


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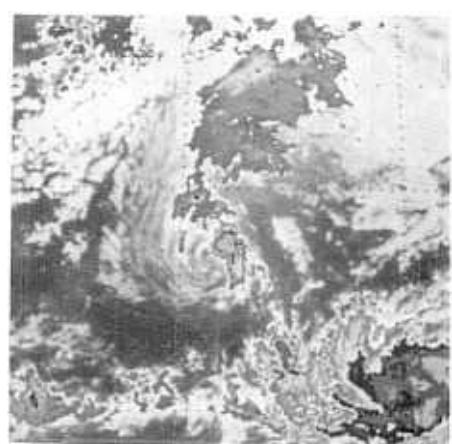
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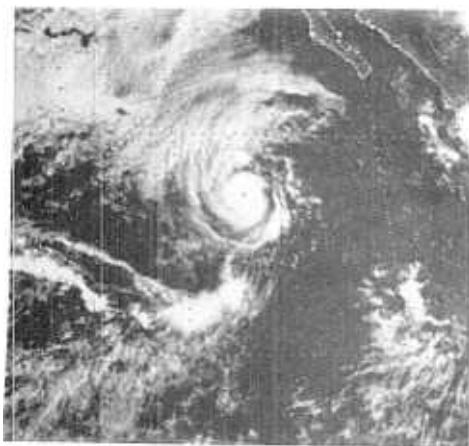
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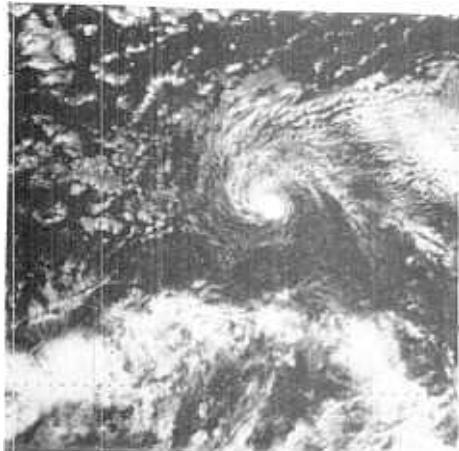
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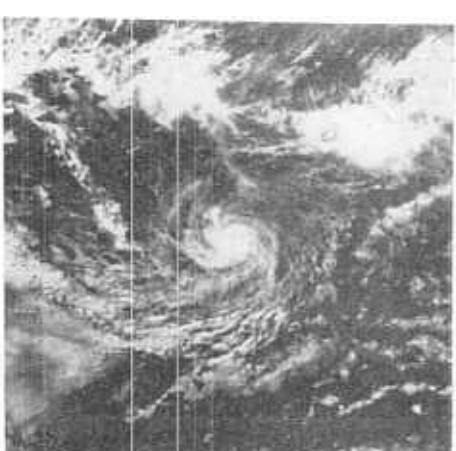
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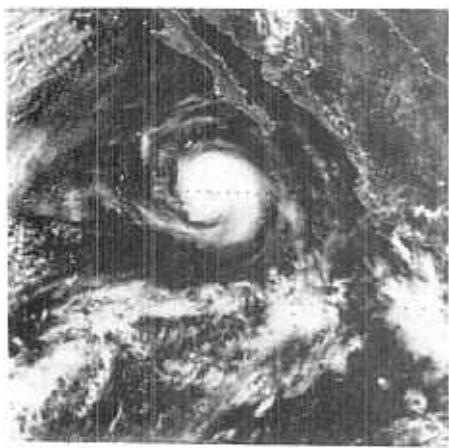
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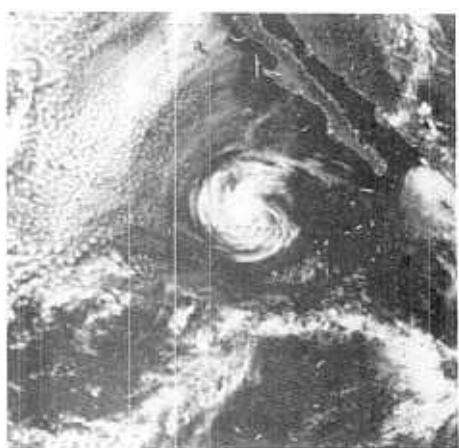
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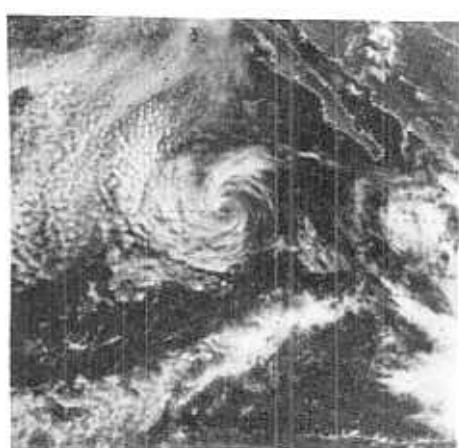
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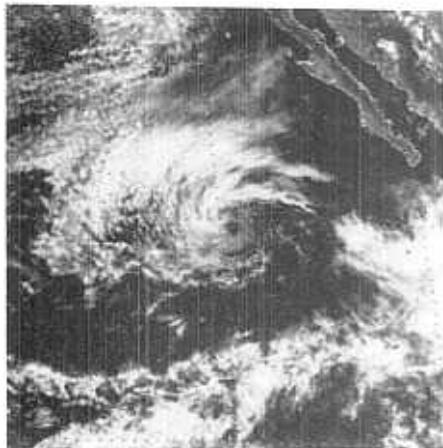
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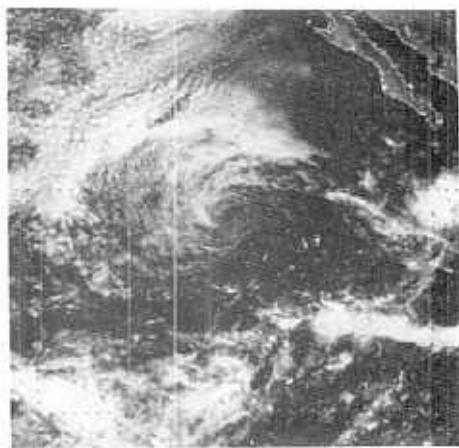
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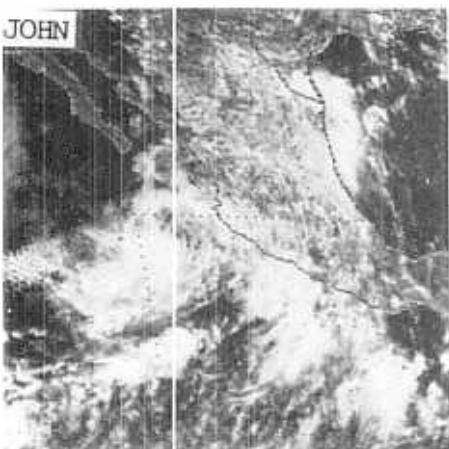
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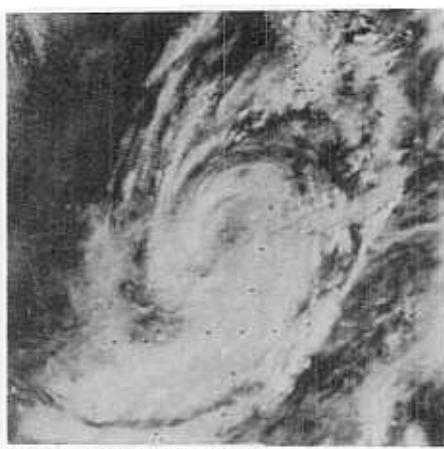
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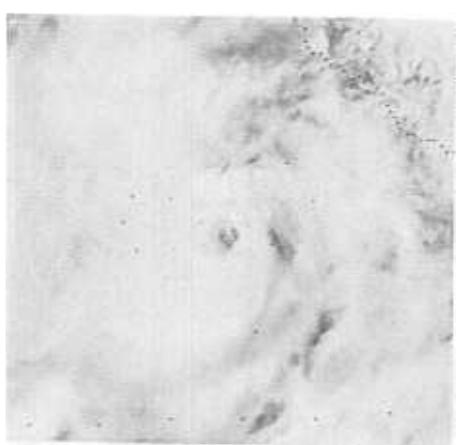


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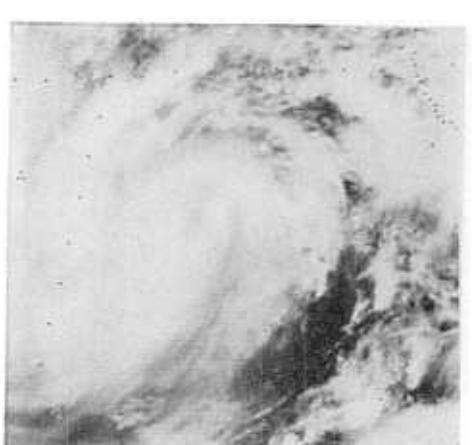
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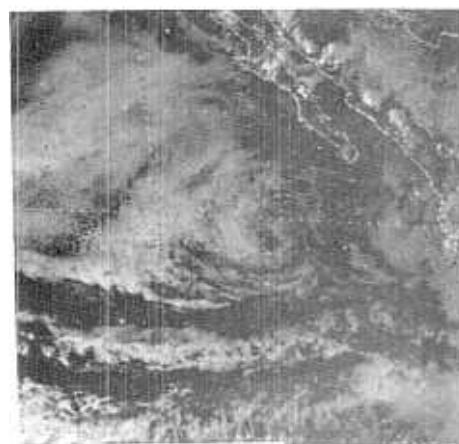
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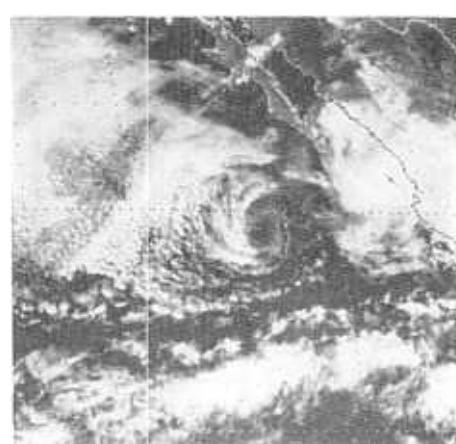
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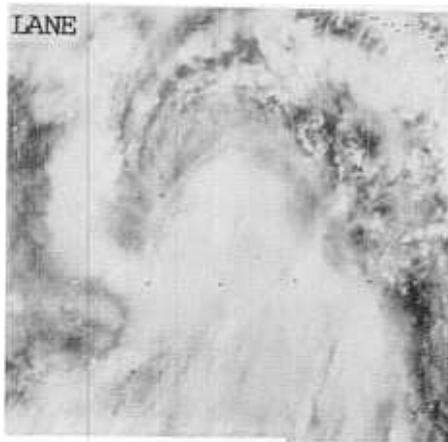
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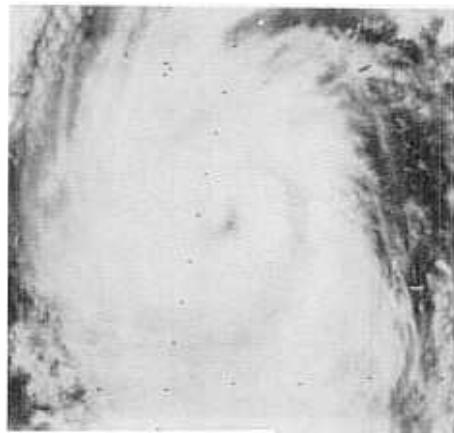
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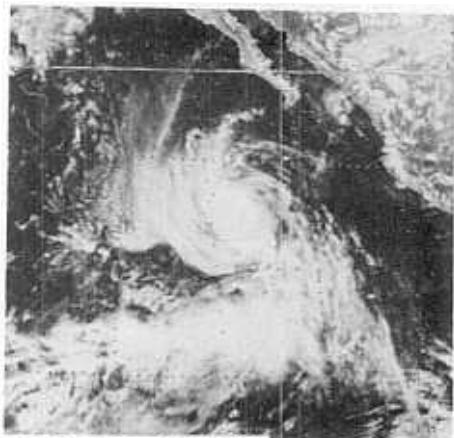
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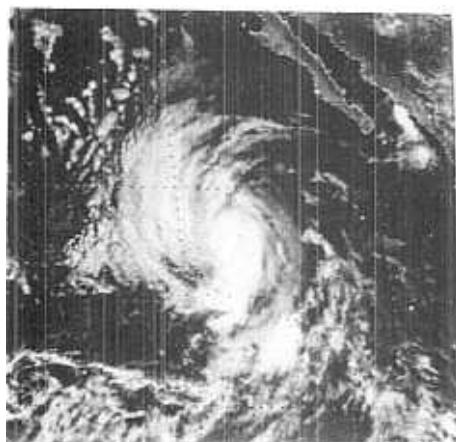
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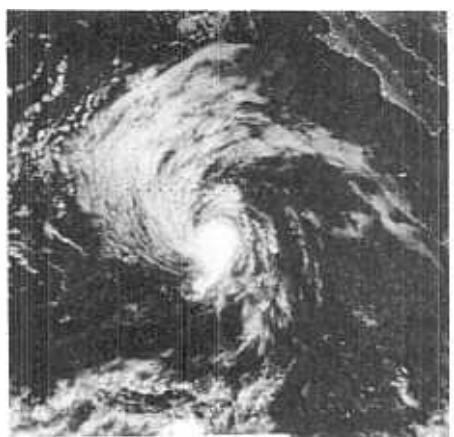
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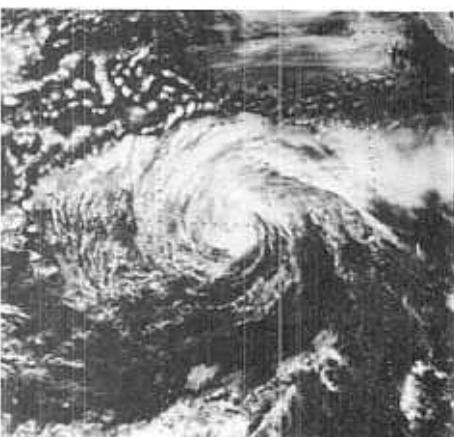
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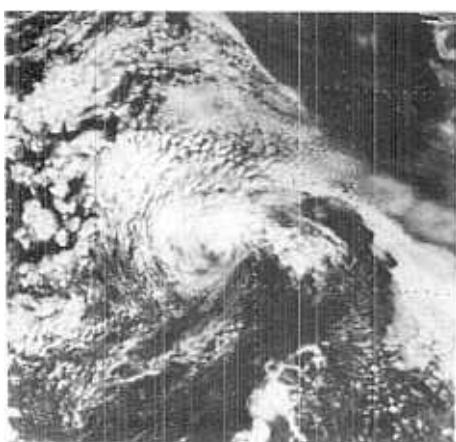
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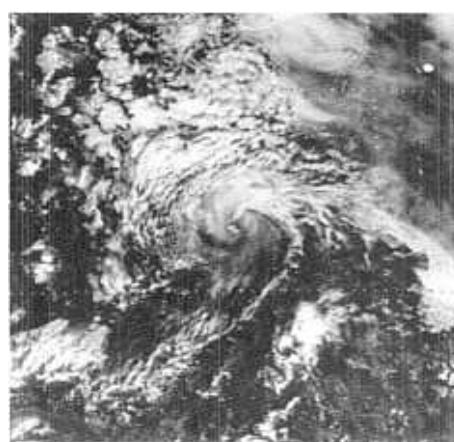
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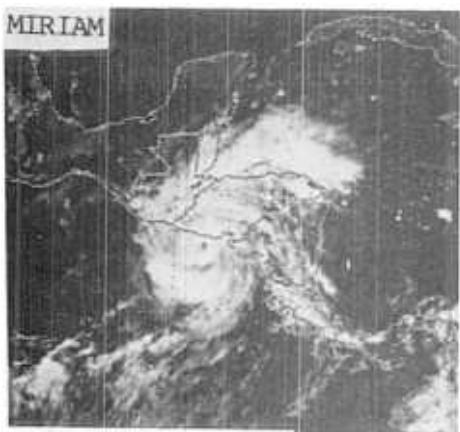
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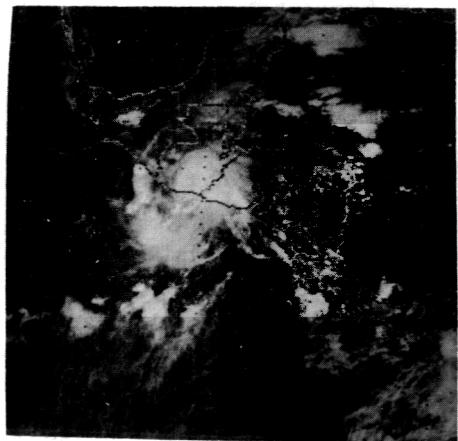
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2046 UTC 9/29/88
1014 mb



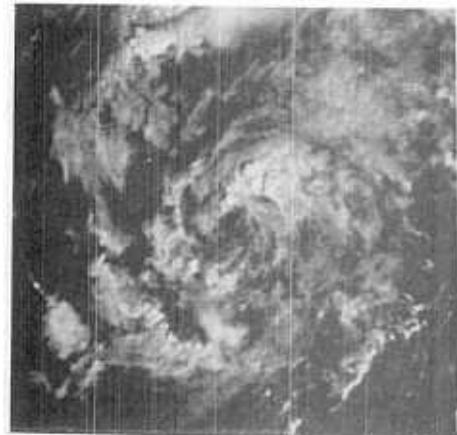
1901 UTC 10/23/88
988 mb



1601 UTC 10/24/88
993 mb



1701 UTC 10/25/88
1003 mb



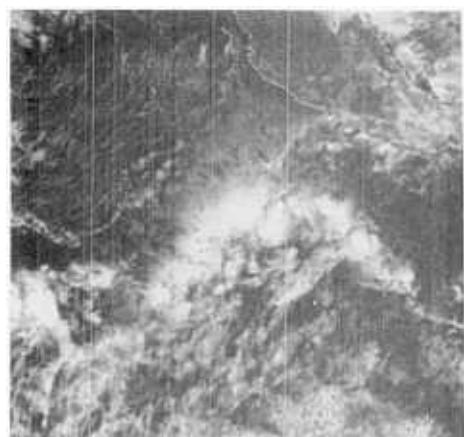
1501 UTC 10/26/88
1005 mb



1501 UTC 10/27/88
1006 mb



1646 UTC 10/28/88
1010 mb



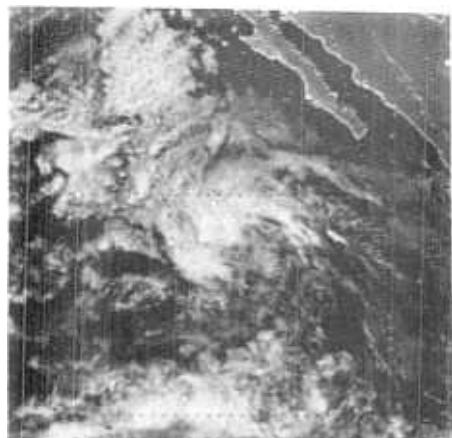
1746 UTC 10/29/88
1010 mb



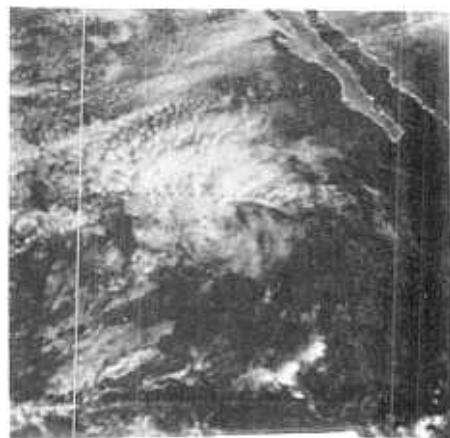
2046 UTC 10/30/88
1007 mb



1846 UTC 10/31/88
1006 mb



2146 UTC 11/01/88
1006 mb



1846 UTC 11/02/88
1010 mb

Table 1. Verification of 1988 tropical storm and hurricane forecasts.
 Track model forecast errors (average in nautical miles), eastern Pacific, 1988

model	forecast period (hours)					
	0	12	24	36	48	72
Official (number of cases)	20 (175)	45 (175)	75 (150)	103 (128)	138 (108)	176 (74)
BAM	68 (38)	76 (38)	69 (35)	109 (33)	140 (29)	215 (24)
EPCL84	22 (170)	47 (170)	78 (147)	109 (123)	138 (103)	180 (69)
EPAN85	21 (168)	46 (168)	77 (145)	110 (124)	141 (105)	191 (71)
EPSS87	22 (171)	45 (171)	73 (148)	103 (126)	131 (106)	182 (72)
SANBAR	18 (72)	52 (72)	96 (61)	144 (52)	193 (46)	299 (32)
EPHC81	20 (77)	43 (77)	71 (67)	109 (57)	141 (49)	183 (32)

TABLE 2. 1988 Eastern North Pacific hurricane season statistics

number	name	class*	dates**	maximum sustained wind ms^{-1} (kt)
1	Aletta	T	16-21 Jun	31 (60)
2	Bud	T	20-22 Jun	23 (45)
3	Carlotta	H	08-15 Jul	34
4	Daniel	T	19-26 July	28
5	Emilia	T	27 Jul-02 Aug	31
6	Fabio	H	28 Jul-09 Aug	62 (120)
7	Gilma	T	28 Jul-03 Aug	23
8	Hector	H	30 Jul-09 Aug	64 (125)
9	Iva	H	05-13 Aug	46 (90)
10	John	T	16-21 Aug	18 (35)
11	Kristy	H	29 Aug-06 Sep	41
12	Lane	H	21-30 Sep	46
13	Miriam	T	23-02 Nov	31

* T: tropical storm, wind speed $18\text{-}32 \text{ ms}^{-1}$ (34-63 kt).
 H: hurricane, wind speed 33 ms^{-1} (64 kt) or higher.

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

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FORECASTS

ALETTA

JUN 17-JUN 19 1988

DATE/TIM	BE	TRAC	OPERATIONAL POSITION ERROR	12HR FORECAST ERROR	24HR FORECAST ERROR	36HR FORECAST ERROR	48HR FORECAST ERROR	72HR FORECAST ERROR	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.
									LAT.	LONG.	NM	NM	NM	NM	NM	NM
251700	14.81121.4	15.21121.4	24	16.01122.2	85	17.31124.5	171	18.51125.5	216	20.01125.3	276	27.01125.5				
251705	14.21121.5	15.81122.5	73	17.01124.3	82	18.51125.5	173	20.31126.5	227	21.51126.5	229	23.01125.5				
251712	15.61121.4	15.01123.0	97	17.01124.5	83	17.31125.7	132	18.51126.3	157	20.01128.3	199	24.01129.0				
251718	15.81121.5	15.81122.5	57	15.01123.0	22	16.51125.5	34	17.31124.0	13	19.21124.0	21	21.01125.0				
251725	15.11121.5	15.81122.3	29	15.31122.9	33	17.31123.5	29	17.31124.4	42	18.51125.5	22	20.01125.5				
251800	15.41121.7	15.01122.3	29	14.11122.7	32	15.31123.0	42	16.51123.5	17	17.01124.0	13	18.01125.0				
251806	15.71121.7	15.21122.5	44	14.31122.9	33	15.31125.5	33	17.31124.0	13	18.01123.0	19	19.01125.0				
251813	17.01122.2	15.71121.3	23	17.61121.5	62	17.71122.0	20	17.31122.3	3	17.31122.3	23	18.01125.0				
251819	17.21122.5	17.01122.3	20	17.71122.3	37	18.21123.2	20	18.71123.5				21.01125.5	22.01125.0			
251925	17.31122.1	17.31123.5	18	18.01122.3	30	18.51123.0	20	18.31124.5	21	18.31125.5	22	19.01125.0				
251930	17.51122.3	17.41124.1	19	18.01123.0	30	18.51125.0	20	18.31127.0	20	18.31127.0	20	19.01125.0				

AV. VECTOR ERRORS(NM)

56

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OFFICIAL FORECASTS

BJD

JUN 21-JUN 22 1988

DATE/TIM	BE	TRAC	OPERATIONAL POSITION ERROR	12HR FORECAST ERROR	24HR FORECAST ERROR	36HR FORECAST ERROR	48HR FORECAST ERROR	72HR FORECAST ERROR	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.
									LAT.	LONG.	NM	NM	NM	NM	NM	NM
252116	14.01124.5	15.51123.5	55	14.21126.0	13	14.51127.0	60	15.31128.3		15.51129.3		16.01129.0				
252118	14.51125.2	15.91125.3	21	14.71126.2	67	15.21129.1	42	15.51129.0		15.31129.0		15.61129.0				
252120	15.01126.2	15.91126.2	44	15.31127.2	42	15.51129.0	42	15.21129.0		15.51129.0		17.51129.0				
252122	15.11127.3	15.01127.3	44	15.41128.0	42	15.31129.0	42	15.21129.0		17.01129.0		17.51129.0				
252212	15.51127.7	15.91128.0	30	15.51129.0	30	16.01129.1	32	16.51133.5		17.01129.4		18.01129.0				

AV. VECTOR ERRORS(NM)

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OFFICIAL FORECASTS

CARLOTTA JUL 3

JUL 13 1988

DATE/TIM	BE	TRAC	OPERATIONAL POSITION ERROR	12HR FORECAST ERROR	24HR FORECAST ERROR	36HR FORECAST ERROR	48HR FORECAST ERROR	72HR FORECAST ERROR	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.
									LAT.	LONG.	NM	NM	NM	NM	NM	NM
271912	13.91127.0	15.81126.8	13	14.21127.0	13	14.71111.0	43	15.21113.0	31	15.51115.0	132	16.51119.0	228			
272015	14.21128.1	15.11127.3	13	14.51127.5	25	16.31111.9	94	15.21113.9	122	15.61115.3	175	15.51120.0	257			
272033	14.61129.2	16.41129.3	13	14.71111.1	62	15.11113.1	93	15.51115.3	135	15.81117.0	138	15.6121.0	258			
272103	15.01129.3	16.51129.0	34	15.01122.4	33	15.51114.5	29	16.21115.5	127	15.51113.5	168	15.0121.5				
272105	15.51129.4	16.21129.2	21	15.51113.5	42	16.31115.5	97	16.51117.5	139	17.01119.5	196	18.51123.5				
272108	15.01122.5	15.51122.5	30	17.21114.5	12	15.31115.0	29	19.31115.3	55	19.5122.0	85	20.0122.5				
272113	15.01122.5	15.51122.5	30	17.21114.5	12	15.31115.0	29	19.31115.3	55	19.5122.0	85	20.0122.5				
272115	15.61123.5	15.61123.7	12	17.21114.8	21	18.31115.0	33	19.21120.5	35	19.5122.0	139	21.0122.0				
272118	17.31114.5	17.51115.2	61	19.01117.5	20	20.31123.0	45	20.5122.5	21	21.0124.0		21.5122.0				
272120	17.31115.4	17.41116.5	45	19.01117.5	5	20.31123.0	45	20.5122.5	39	21.0124.0		22.0122.0				
272122	17.91115.4	17.41116.5	45	19.01117.5	5	20.31123.0	45	20.5122.5	39	21.0124.0		22.0122.0				
272123	18.61116.5	18.51116.5	21	20.51113.5	13	20.51123.5	33	20.5122.5	21	21.0124.5		22.0122.0				
272125	19.11117.4	19.61117.5	21	20.41113.3	23	21.5121.0	17	22.5123.0		22.5122.0		23.5123.0				
272126	19.81113.5	20.51119.3	31	21.3121.8	12	22.5122.5		23.5124.0		23.5123.0		24.5123.0				
272128	20.41119.5	20.81119.5	24	21.9121.6	25	23.3123.0		23.5125.0		23.5124.5		24.0127.0				
272130	20.9120.3	20.8120.1	24	21.3121.5	25	21.5123.0		21.5124.5		21.5124.5		23.5123.0				

MEAN VECTOR ERRORS(NM)

21

26

54

77

150

248

NUMBER OF CASES

13

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OFFICIAL FORECASTS

DANIE JUL 20-JUL 25 1988

DATE/TIME GAT	BEST TRACK LAT. LONG.	OPERATIONAL		12HR FORECAST		24HR FORECAST		36HR FORECAST		48HR FORECAST		72HR FORECAST	
		POSITION LAT.LONG.	ERROR NM	LAT.LONG. NM	ERROR NM	LAT. LONG. NM	ERROR NM	LAT. LONG. NM	ERROR VM	LAT. LONG. NM	ERROR NM	LAT. LONG. NM	ERROR NM
072000	15.1113.4	15.0113.2	13	15.5114.5	29	15.0115.0	40	16.5117.0	59	17.0119.5	34	17.5123.0	130
072005	15.3113.3	15.3113.3	3	15.6116.3	33	15.3115.6	36	15.8118.3	156	15.5119.3	125	17.0122.0	181
072012	15.5114.2	15.5117.3	13	15.7115.4	16	16.0117.0	100	16.5119.0	121	17.5119.0	232	17.0122.0	327
072013	15.7114.7	15.5114.7	13	15.5115.3	37	17.0117.0	100	17.5119.0	130	15.0121.0	130	15.5121.5	320
072100	15.1115.5	15.3115.3	3	15.8115.4	54	17.2117.6	130	17.5119.0	130	13.3122.0	100	15.5122.5	292
072102	15.6110.3	15.1110.3	34	15.9117.6	51	17.4113.7	123	17.5119.4	130	13.6122.7	127	15.5123.2	273
072112	17.2112.4	17.3117.3	33	17.5113.5	53	17.9120.0	100	18.0124.4	130	17.5124.0	150	17.0125.0	150
072113	17.8110.5	17.5119.2	2	18.5120.5	53	19.0122.0	51	19.5124.8	130	20.0126.0	130	21.0131.0	206
072200	13.5112.0	13.5112.0	7	19.2121.0	11	20.0124.0	37	20.5126.0	130	21.5131.0	130	22.0134.0	146
072205	13.9120.0	13.5119.5	3	20.0112.0	52	21.0124.8	88	21.5126.0	130	22.5131.0	130	23.0134.0	256
072212	19.1120.1	17.3120.3	11	10.5124.0	24	20.0125.0	100	20.5126.0	130	21.0127.0	130	21.5130.0	130
072215	19.2120.3	17.2123.3	0	10.3122.0	24	19.5122.0	100	19.0123.0	130	19.5124.0	130	20.0125.0	130
072300	12.4120.5	12.4124.4	5	10.5125.0	64	19.7129.0	130	20.0124.0	232	20.5124.0	232	21.0125.0	130
072303	19.7125.7	15.7125.5	11	10.0123.0	101	20.0113.0	47	20.5123.0	130	21.0124.0	130	21.5125.0	130
072312	20.5126.5	17.3125.2	20	21.5120.0	30	22.0124.0	61	22.5125.0	130	23.0126.0	130	23.5127.0	130
072317	21.3127.2	17.3127.0	13	23.0124.0	20	24.0125.0	55	24.0126.0	130	24.5127.0	130	25.0128.0	130
072400	21.2128.3	22.3128.3	5	24.4121.0	33	24.0126.0	140	24.5127.0	130	25.0128.0	130	25.5129.0	130
072405	20.7128.2	22.6128.3	3	24.5131.0	25	24.0126.0	140	24.5127.0	130	25.0128.0	130	25.5129.0	130
072412	22.3130.1	23.5129.5	2	23.9132.0	24	24.0126.0	140	24.5127.0	130	25.0128.0	130	25.5129.0	130
072415	23.1131.1	23.5131.1	1	24.5132.0	17	25.0133.0	130	25.5134.0	130	26.0135.0	130	26.5136.0	130
072500	23.1132.2	23.4132.2	3	25.0132.0	17	26.0133.0	130	26.5134.0	130	27.0135.0	130	27.5136.0	130
072512	25.1134.1	25.4134.3	3	25.0132.0	17	27.0133.0	130	27.5134.0	130	28.0135.0	130	28.5136.0	130

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OFFICIAL FORECASTS

EMILIA JUL 20-JUL 31 1988

DATE/TIME GAT	BEST TRACK LAT. LONG.	OPERATIONAL		12HR FORECAST		24HR FORECAST		36HR FORECAST		48HR FORECAST		72HR FORECAST	
		POSITION LAT.LONG.	ERROR NM	LAT.LONG. NM	ERROR NM	LAT. LONG. NM	ERROR NM						
072912	15.1113.5	15.0114.3	23	15.3114.5	73	15.5116.0	76	16.0118.3	46	15.5120.0	42	17.5123.5	130
072913	15.2114.4	15.3114.3	3	15.6115.9	13	15.0117.5	13	16.5119.3	13	17.0121.0	36	18.0123.0	130
073000	15.2115.3	15.0115.3	11	15.1117.0	35	15.3113.8	37	15.5120.5	33	15.0122.5	126	17.0124.0	130
073005	15.2116.1	15.0115.9	15	15.0117.5	35	15.3119.2	60	15.1120.5	59	15.2122.5	130	16.0125.0	130
073012	15.4110.9	15.3110.9	5	15.4113.5	33	15.5121.0	37	15.3121.0	130	15.0123.5	127	17.0127.0	130
073015	15.7117.7	15.5117.5	13	15.6112.2	23	15.7123.9	23	16.2122.5	130	15.5124.0	130	17.5128.0	130
073100	16.0118.4	15.0118.4	3	16.2122.2	30	16.5122.0	23	16.3122.5	130	17.0125.5	129	18.0129.0	130
073102	15.1119.3	15.2119.5	11	16.4121.1	33	16.5122.8	20	16.9124.4	17	17.0125.0	129	17.5129.5	130
073112	16.2120.2	15.2120.2	2	16.5121.9	23	17.3123.2	23	17.4125.8	130	17.0125.0	130	17.5133.0	130
073113	16.3121.0	15.2121.2	2	16.4122.9	16	16.5126.5	130	16.3126.3	130	17.0123.0	130	17.5131.5	130

MEAN VECTOR ERRORS(NM)
NUMBER OF CASES11
324
342
638
439
20
0

Table 3a. continued.

OFFICIAL FORECASTS

FABIO

JUL 29-AUG 02 1988

DATE/TIME 34T	BEST TRACK LAT. LONG. NM	OPERATIONAL POSITION ERROR NM	12HR FORECAST LAT. LONG. NM		24HR FORECAST LAT. LONG. NM		36HR FORECAST LAT. LONG. NM		48HR FORECAST LAT. LONG. NM		72HR FORECAST LAT. LONG. NM		
			ERROR	NM									
372913	12.0125.0	13.0124.5	55	13.7125.3	63	14.3123.2	84	14.7130.1	95	15.5122.0	126	17.5135.5	217
373003	11.9125.0	11.0120.1	66	12.4127.9	15	12.4122.0	62	12.5131.0	50	13.2132.5	142	14.6132.0	96
373005	11.9125.0	11.9125.0	3	11.9123.9	17	12.3132.0	10	12.5132.0	10	13.4134.9	22	13.5132.0	29
373011	11.9127.7	11.9127.7	0	12.0125.5	5	12.0111.5	18	12.2133.5	5	12.4115.5	26	13.5132.0	18
373013	11.9125.0	11.9125.0	0	11.9123.8	17	12.0111.5	24	12.0115.5	7	12.0117.0	13	13.5132.0	5
373103	12.0125.0	11.9125.0	2	11.9123.8	55	12.0111.5	0	12.0115.5	0	12.0117.0	111	13.5132.0	0
373113	12.1137.0	12.0137.0	0	12.2143.0	4	12.4135.0	21	12.5137.0	21	12.5137.0	13	14.5142.0	0
373112	12.6131.4	11.9131.4	4	12.5133.7	11	12.5135.7	11	12.5135.7	11	13.0142.7	13	13.5142.0	0
373113	12.4132.4	11.9132.4	6	12.5134.5	11	12.5135.5	11	12.5135.5	11	13.0142.7	13	13.5142.0	0
373122	12.5133.0	11.9133.0	0	12.5134.0	25	13.0135.7	70	13.0135.7	70	13.5031.9	22	14.5031.9	0
373125	12.7133.4	11.9133.4	0	12.9133.0	25	13.5135.7	51	13.5135.7	51	13.5031.9	33	14.5031.9	0
373111	12.6133.5	11.9133.5	0	12.6133.5	5	12.6133.5	39	12.6133.5	39	13.2134.1	11	15.0143.0	0
373113	12.9135.0	11.9135.0	0	12.9135.0	1	13.5140.1	1	14.3142.1	1	14.5142.4	5	15.0143.0	0
373120	12.0135.0	11.9135.0	0	12.5135.0	3	13.5141.0	5	13.5141.0	5	14.5142.4	5	15.0143.0	0
373125	12.0135.0	11.9135.0	0	12.5135.0	0	13.5143.0	13	13.5143.0	13	14.5142.5	5	15.0143.0	0
373212	13.2139.0	13.2139.0	0	13.4141.5	0	13.5143.5	5	13.5143.5	5	14.5143.0	5	15.0143.0	0
MEAN VECTOR ERRORS(NM)		22		23		41		47		49		90	
NUMBER OF CASES		12		14		12		10		9		4	

OFFICIAL FORECASTS

GILMA

JUL 29-JUL 30 1988

DATE/TIME 34T	BEST TRACK LAT. LONG. NM	OPERATIONAL POSITION ERROR NM	12HR FORECAST LAT. LONG. NM		24HR FORECAST LAT. LONG. NM		36HR FORECAST LAT. LONG. NM		48HR FORECAST LAT. LONG. NM		72HR FORECAST LAT. LONG. NM		
			ERROR	NM									
372913	15.9136.2	17.9136.2	112	13.0135.6	61	20.2137.0	136	21.2137.5		22.0138.5		22.5143.5	
373022	15.0136.4	15.2136.3	13	16.3135.9	11	15.4137.6		16.5138.5					
373023	15.0136.5	15.2136.4	11	16.4137.1	54	15.3137.7		16.5138.5					
373012	15.1135.3	15.3137.4		15.5133.4		16.2132.4		16.3142.5					
373013	15.5138.0	15.5138.5		15.8140.4		17.5142.5		18.0144.5					
MEAN VECTOR ERRORS(NM)		43		42		136		0		0		0	
NUMBER OF CASES		3		3		1		0		0		0	

OFFICIAL FORECAST

HECTOR JUL 31-AUG 39 1953

DATE/TIME GAI	BEST TRACK LAT. LONG.	POSITION ERROR LAT.LONG. NM	OPERATIONAL			12HR FORECAST			24HR FORECAST			36HR FORECAST			48HR FORECAST			72HR FORECAST		
			LAT.	LONG.	NM	LAT.	LONG.	NM	LAT.	LONG.	NM	LAT.	LONG.	NM	LAT.	LONG.	NM	LAT.	LONG.	NM
073113	12.31133-7	12.11144-3	37	12.71135-5	32	13.3103-6	59	13.91113-3	57	14.5113-0	57	15.51117-0	101	16.51117-0	101	17.51117-0	101	18.51117-0	101	
073113	12.91134-3	13.01134-3	5	13.71137-0	21	14.51130-0	13	14.91113-0	50	15.51114-0	42	16.51123-3	120	17.51123-3	120	18.51123-3	120	19.51123-3	120	
073113	14.01135-1	13.01136-3	13	13.81136-3	11	14.51133-5	10	14.91113-0	50	15.51115-0	53	16.51123-3	120	17.51123-3	120	18.51123-3	120	19.51123-3	120	
073113	13.01137-3	13.01137-5	11	13.81139-7	23	15.51132-0	10	16.01113-0	16	16.51115-0	25	17.51117-0	26	18.51121-0	17	19.51121-0	17	20.51121-0	17	
073113	14.31138-3	14.21138-7	5	14.01139-0	25	15.51133-0	11	16.01113-0	16	16.51116-0	25	17.51117-0	26	18.51121-0	17	19.51121-0	17	20.51121-0	17	
073113	14.71139-1	14.61139-3	1	14.41140-0	1	15.51134-5	6	16.01113-0	16	16.51116-0	25	17.51117-0	26	18.51121-0	17	19.51121-0	17	20.51121-0	17	
073113	15.01139-1	15.01139-3	1	15.51139-0	1	16.01117-0	59	16.51117-0	153	17.51120-0	153	18.51124-0	153	19.51124-0	153	20.51124-0	153	21.51124-0	153	
073113	15.31139-1	15.41139-3	1	15.51139-0	1	16.01117-0	59	16.51117-0	153	17.51120-0	153	18.51124-0	153	19.51124-0	153	20.51124-0	153	21.51124-0	153	
073113	15.71139-1	15.81139-3	1	15.51139-0	1	16.01117-0	59	16.51117-0	153	17.51120-0	153	18.51124-0	153	19.51124-0	153	20.51124-0	153	21.51124-0	153	
073113	16.11139-1	16.21139-3	1	16.01139-0	1	16.51117-0	59	16.51117-0	153	17.51120-0	153	18.51124-0	153	19.51124-0	153	20.51124-0	153	21.51124-0	153	
073113	16.51139-1	16.61139-3	1	16.01139-0	1	16.51117-0	59	16.51117-0	153	17.51120-0	153	18.51124-0	153	19.51124-0	153	20.51124-0	153	21.51124-0	153	
073113	17.01139-1	17.11139-3	1	17.01139-0	1	17.01117-0	59	17.01117-0	153	18.01120-0	153	19.01124-0	153	20.01124-0	153	21.01124-0	153	22.01124-0	153	
073113	17.51139-1	17.61139-3	1	17.01139-0	1	17.01117-0	59	17.01117-0	153	18.01120-0	153	19.01124-0	153	20.01124-0	153	21.01124-0	153	22.01124-0	153	
073113	18.01139-1	18.11139-3	1	18.01139-0	1	18.01117-0	59	18.01117-0	153	19.01120-0	153	20.01124-0	153	21.01124-0	153	22.01124-0	153	23.01124-0	153	
073113	18.51139-1	18.61139-3	1	18.01139-0	1	18.01117-0	59	18.01117-0	153	19.01120-0	153	20.01124-0	153	21.01124-0	153	22.01124-0	153	23.01124-0	153	
073113	19.01139-1	19.11139-3	1	19.01139-0	1	19.01117-0	59	19.01117-0	153	20.01120-0	153	21.01124-0	153	22.01124-0	153	23.01124-0	153	24.01124-0	153	
073113	19.51139-1	19.61139-3	1	19.01139-0	1	19.01117-0	59	19.01117-0	153	20.01120-0	153	21.01124-0	153	22.01124-0	153	23.01124-0	153	24.01124-0	153	
073113	20.01139-1	20.11139-3	1	20.01139-0	1	20.01117-0	59	20.01117-0	153	21.01120-0	153	22.01124-0	153	23.01124-0	153	24.01124-0	153	25.01124-0	153	
073113	20.51139-1	20.61139-3	1	20.01139-0	1	20.01117-0	59	20.01117-0	153	21.01120-0	153	22.01124-0	153	23.01124-0	153	24.01124-0	153	25.01124-0	153	
073113	21.01139-1	21.11139-3	1	21.01139-0	1	21.01117-0	59	21.01117-0	153	22.01120-0	153	23.01124-0	153	24.01124-0	153	25.01124-0	153	26.01124-0	153	
073113	21.51139-1	21.61139-3	1	21.01139-0	1	21.01117-0	59	21.01117-0	153	22.01120-0	153	23.01124-0	153	24.01124-0	153	25.01124-0	153	26.01124-0	153	
073113	22.01139-1	22.11139-3	1	22.01139-0	1	22.01117-0	59	22.01117-0	153	23.01120-0	153	24.01124-0	153	25.01124-0	153	26.01124-0	153	27.01124-0	153	
073113	22.51139-1	22.61139-3	1	22.01139-0	1	22.01117-0	59	22.01117-0	153	23.01120-0	153	24.01124-0	153	25.01124-0	153	26.01124-0	153	27.01124-0	153	
073113	23.01139-1	23.11139-3	1	23.01139-0	1	23.01117-0	59	23.01117-0	153	24.01120-0	153	25.01124-0	153	26.01124-0	153	27.01124-0	153	28.01124-0	153	
073113	23.51139-1	23.61139-3	1	23.01139-0	1	23.01117-0	59	23.01117-0	153	24.01120-0	153	25.01124-0	153	26.01124-0	153	27.01124-0	153	28.01124-0	153	
073113	24.01139-1	24.11139-3	1	24.01139-0	1	24.01117-0	59	24.01117-0	153	25.01120-0	153	26.01124-0	153	27.01124-0	153	28.01124-0	153	29.01124-0	153	
073113	24.51139-1	24.61139-3	1	24.01139-0	1	24.01117-0	59	24.01117-0	153	25.01120-0	153	26.01124-0	153	27.01124-0	153	28.01124-0	153	29.01124-0	153	
073113	25.01139-1	25.11139-3	1	25.01139-0	1	25.01117-0	59	25.01117-0	153	26.01120-0	153	27.01124-0	153	28.01124-0	153	29.01124-0	153	30.01124-0	153	
073113	25.51139-1	25.61139-3	1	25.01139-0	1	25.01117-0	59	25.01117-0	153	26.01120-0	153	27.01124-0	153	28.01124-0	153	29.01124-0	153	30.01124-0	153	
073113	26.01139-1	26.11139-3	1	26.01139-0	1	26.01117-0	59	26.01117-0	153	27.01120-0	153	28.01124-0	153	29.01124-0	153	30.01124-0	153	31.01124-0	153	
073113	26.51139-1	26.61139-3	1	26.01139-0	1	26.01117-0	59	26.01117-0	153	27.01120-0	153	28.01124-0	153	29.01124-0	153	30.01124-0	153	31.01124-0	153	
073113	27.01139-1	27.11139-3	1	27.01139-0	1	27.01117-0	59	27.01117-0	153	28.01120-0	153	29.01124-0	153	30.01124-0	153	31.01124-0	153	32.01124-0	153	
073113	27.51139-1	27.61139-3	1	27.01139-0	1	27.01117-0	59	27.01117-0	153	28.01120-0	153	29.01124-0	153	30.01124-0	153	31.01124-0	153	32.01124-0	153	
073113	28.01139-1	28.11139-3	1	28.01139-0	1	28.01117-0	59	28.01117-0	153	29.01120-0	153	30.01124-0	153	31.01124-0	153	32.01124-0	153	33.01124-0	153	
073113	28.51139-1	28.61139-3	1	28.01139-0	1	28.01117-0	59	28.01117-0	153	29.01120-0	153	30.01124-0	153	31.01124-0	153	32.01124-0	153	33.01124-0	153	
073113	29.01139-1	29.11139-3	1	29.01139-0	1	29.01117-0	59	29.01117-0	153	30.01120-0	153	31.01124-0	153	32.01124-0	153	33.01124-0	153	34.01124-0	153	
073113	29.51139-1	29.61139-3	1	29.01139-0	1	29.01117-0	59	29.01117-0	153	30.01120-0	153	31.01124-0	153	32.01124-0	153	33.01124-0	153	34.01124-0	153	
073113	30.01139-1	30.11139-3	1	30.01139-0	1	30.01117-0	59	30.01117-0	153	31.01120-0	153	32.01124-0	153	33.01124-0	153	34.01124-0	153	35.01124-0	153	
073113	30.51139-1	30.61139-3	1	30.01139-0	1	30.01117-0	59	30.01117-0	153	31.01120-0	153	32.01124-0	153	33.01124-0	153	34.01124-0	153	35.01124-0	153	
073113	31.01139-1	31.11139-3	1	31.01139-0	1	31.01117-0	59	31.01117-0	153	32.01120-0	153	33.01124-0	153	34.01124-0	153	35.01124-0	153	36.01124-0	153	
073113	31.51139-1	31.61139-3	1	31.01139-0	1	31.01117-0	59	31.01117-0	153	32.01120-0	153	33.01124-0	153	34.01124-0	153	35.01124-0	153	36.01124-0	153	
073113	32.01139-1	32.11139-3	1	32.01139-0	1	32.01117-0	59	32.01117-0	153	33.01120-0	153	34.01124-0	153	35.01124-0	153	36.01124-0	153	37.01124-0	153	
073113	32.51139-1	32.61139-3	1	32.01139-0	1	32.01117-0	59	32.01117-0	153	33.01120-0	153	34.01124-0	153	35.01124-0	153	36.01124-0	153	37.01124-0	153	
073113	33.01139-1	33.11139-3	1	33.01139-0	1	33.01117-0	59	33.01117-0	153	34.01120-0	153	35.01124-0	153	36.01124-0	153	37.01124-0	153	38.01124-0	153	
073113	33.51139-1	33.61139-3	1	33.01139-0	1	33.01117-0	59	33.01117-0	153	34.01120-0	153	35.01124-0	153	36.01124-0	153</td					

on

OFFICIAL FORECASTS			CN	AUG 7	13 1988	FORECAST																
D	EST TRA LAT. LON	CAS ER	S RRC	AS E22 R	A OR	AT. LAT. LON	PRECAST LAT. LONG															
1718	19.4137.8	13.8137.5	24	10.2118.3	42	14.7	192.9	19.2111.1	20.1112.4	21.0115.0												
515022	19.5133.2	19.1135.1		10.5122.3	20.0	112.5	20.5112.0	21.0113.5														
361535	20.1138.7	19.5130.0		20.1112.1	20.3	111.3	21.112.5															
*****	*****	*****	*****	*****	*****	*****	*****	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	DATE/TIME	EST TRACK	OPERATIONAL POSITION ERROR	12HR FORECAST	24HR FORECAST	36HR FORECAST	48HR FORECAST	72HR FORECAST														
		LAT. LONG.	LAT. LONG. NM	LAT. LONG. NM	LAT. LONG. NM	LAT. LONG. NM	LAT. LONG. NM	LAT. LONG. NM	LAT. LONG.	LAT. LONG.												
332912	14.4100.0	15.0101.1	15.0101.0	15.6100.8	134	15.2101.7	193	16.3102.5	239	17.3103.4	290	18.5105.0	319									
331913	15.1101.1	15.5102.2	15.5102.2	15.5102.5	21	15.5104.5	24	17.3105.5	21	18.2108.3	21	18.5113.0	21	19.5113.5	165							
33183025	15.2102.2	15.0103.2	15.0103.5	15.0103.5	23	17.0105.5	30	18.3107.5	20	18.7109.5	38	19.5111.5	86	20.5113.0	234							
33183012	15.3104.3	15.3104.5	15.3104.5	15.3104.5	17	17.0107.0	45	17.5109.3	76	18.5111.5	96	19.0113.5	158	19.5115.0	220							
33183013	16.9105.1	17.1105.3	17.1105.3	17.1105.3	15	18.0117.4	23	19.3109.5	24	19.7111.0	78	20.5112.5	155	21.5115.0	220							
33153103	17.4115.0	17.5106.0	17.5106.0	17.5106.0	5	18.4107.8	15	19.3109.0	41	20.0111.0	99	21.0113.0	214	22.0115.0	270							
33183106	17.7106.8	17.3107.0	17.3107.0	17.3107.0	12	18.4113.7	30	19.3110.5	33	19.5112.2	123	20.0114.0	131	21.0117.5	257							
33183142	18.5107.7	18.5107.7	18.5107.7	18.5107.7	28	18.9113.2	29	19.7112.0	103	20.4113.5	139	21.0115.0	226	21.5113.0								
33183113	18.5107.5	18.5108.4	18.5108.4	18.5108.4	25	18.9109.8	23	19.5111.3	37	20.0112.7	153	20.5114.0	159	21.5115.5								
33091100	18.6107.5	18.4110.5	18.4110.5	18.4110.5	20	19.3111.2	74	20.3113.0	170	20.5114.3	214	21.0115.5	251	21.5123.0								
33091105	18.6107.9	18.5110.2	18.5110.2	18.5110.2	17	18.9111.8	61	19.3113.5	132	19.5115.5	141	19.8113.5	139	20.0119.5								
33091112	18.6107.9	18.5110.5	18.5110.5	18.5110.5	13	18.6112.0	63	18.3113.2	72	19.3114.5	78	19.2115.8		19.5113.5								
33092111	18.2110.7	17.8111.0	17.8111.0	17.8111.0	22	17.7115.0	24	17.3113.0	11	17.2114.0	50	17.5115.0		18.0117.0								
33092202	17.8111.1	17.9111.2	17.9111.2	17.9111.2	3	17.7112.0	13	17.5113.0	37	17.5114.0		17.5115.0		18.0117.0								
33092205	17.7111.5	17.9111.8	17.9111.8	17.9111.8	15	17.6112.9	47	17.5114.0	66	17.3115.0		17.5115.0		17.5117.0								
33092212	17.9112.2	17.8112.4	17.8112.4	17.8112.4	12	17.8113.3	24	17.7114.5		17.7116.0		17.7117.5		18.0121.0								
33092213	18.2112.7	18.2112.3	18.2112.3	18.2112.3	5	18.2113.9	15	18.3115.0		18.4116.3		18.5117.5		19.0121.0								
33092220	18.3113.1	18.3113.3	18.3113.3	18.3113.3		18.5114.5		18.4115.5		18.5117.0		18.5119.5		19.5122.0								
33093005	18.4113.5	18.6113.5	18.6113.5	18.6113.5		18.8117.5		18.9115.6		19.3115.5		19.0112.5		1								
MEAN VECTOR ERRORS(NM)		15		37		75		15		13		75		11								
NUMBER OF CASES		17		17		15		15		13		11		7								



library

611 Front Room 631

Florida 33148

DATE/TIME GAT	BEST TRACK LAT. LONG.	OPERATIONAL POSITION ERROR LAT. LONG. NM	12HR FORECAST LAT. LONG. NM			24HR FORECAST LAT. LONG. NM			36HR FORECAST LAT. LONG. NM			48HR FORECAST LAT. LONG. NM			72HR FORECAST LAT. LONG. NM		
			ERR1	ERR2	ERR3	ERR1	ERR2	ERR3	ERR1	ERR2	ERR3	ERR1	ERR2	ERR3	ERR1	ERR2	ERR3
12-11-3	13.6 29.7	14.0 120.3	29	14.5 172.3	53	15.3 104.0	99	15.5 104.3	124	16.0 125.0	124	17.0 112.0	103	17.5 111.0	23	17.5 111.0	36
12-22-0	14.0 121.0	14.2 130.7	55	14.5 172.0	65	15.3 105.0	77	15.5 107.2	70	16.0 127.7	42	16.5 111.1	62	17.0 111.2	23	17.5 111.2	36
12-22-3	14.2 132.4	14.2 132.4	32	14.5 173.5	45	15.3 105.3	45	15.5 110.8	72	15.5 110.8	49	17.3 113.3	78	17.5 111.7	124	17.5 111.7	124
12-22-4	14.2 132.4	14.5 173.5	32	14.5 173.5	45	15.3 105.6	74	15.5 111.1	72	16.0 125.0	148	16.5 111.0	148	17.0 111.0	174	17.0 111.0	174
12-22-5	15.8 81.4	15.6 312.3	37	15.5 312.3	45	16.0 210.8	25	16.0 211.1	52	16.0 211.1	132	16.5 211.5	177	17.0 211.5	203	17.0 211.5	203
12-23-0	15.8 213.0	15.6 213.0	17	15.5 213.0	45	16.0 211.9	45	16.0 211.9	106	16.0 211.9	144	16.5 211.7	181	17.0 211.7	228	17.0 211.7	228
12-23-5	16.6 312.0	15.4 412.7	25	16.0 212.7	55	16.0 211.3	45	16.0 211.3	112	16.0 211.3	120	16.0 211.7	160	16.5 211.7	212	17.0 211.7	212
12-23-6	17.4 113.0	16.5 413.8	35	17.0 211.2	45	17.0 211.2	45	17.0 211.2	116	17.0 211.2	120	17.5 211.2	200	17.5 211.2	200	17.5 211.2	200
12-24-0	17.4 411.0	17.4 311.1	25	17.0 211.1	45	17.0 211.4	45	17.0 211.4	117	17.0 211.4	124	17.5 211.2	131	17.5 211.2	131	17.5 211.2	131
12-24-1	17.6 112.0	17.6 311.2	25	17.0 211.2	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	135	17.5 211.1	135	17.5 211.1	135
12-24-3	17.6 711.0	17.6 311.2	25	17.0 211.2	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	106	17.5 211.1	106	17.5 211.1	106
12-25-0	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	112	17.5 211.1	112	17.5 211.1	112
12-25-5	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	171	17.5 211.1	171	17.5 211.1	171
12-25-6	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	158	17.5 211.1	158	17.5 211.1	158
12-25-7	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	156	17.5 211.1	156	17.5 211.1	156
12-25-8	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	153	17.5 211.1	153	17.5 211.1	153
12-25-9	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	151	17.5 211.1	151	17.5 211.1	151
12-26-0	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	150	17.5 211.1	150	17.5 211.1	150
12-26-1	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	149	17.5 211.1	149	17.5 211.1	149
12-26-2	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	148	17.5 211.1	148	17.5 211.1	148
12-26-3	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	147	17.5 211.1	147	17.5 211.1	147
12-26-4	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	146	17.5 211.1	146	17.5 211.1	146
12-26-5	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	145	17.5 211.1	145	17.5 211.1	145
12-26-6	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	144	17.5 211.1	144	17.5 211.1	144
12-26-7	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	143	17.5 211.1	143	17.5 211.1	143
12-26-8	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	142	17.5 211.1	142	17.5 211.1	142
12-26-9	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	141	17.5 211.1	141	17.5 211.1	141
12-27-0	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	140	17.5 211.1	140	17.5 211.1	140
12-27-1	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	139	17.5 211.1	139	17.5 211.1	139
12-27-2	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	138	17.5 211.1	138	17.5 211.1	138
12-27-3	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	137	17.5 211.1	137	17.5 211.1	137
12-27-4	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	136	17.5 211.1	136	17.5 211.1	136
12-27-5	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	135	17.5 211.1	135	17.5 211.1	135
12-27-6	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	134	17.5 211.1	134	17.5 211.1	134
12-27-7	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	133	17.5 211.1	133	17.5 211.1	133
12-27-8	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	132	17.5 211.1	132	17.5 211.1	132
12-27-9	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	131	17.5 211.1	131	17.5 211.1	131
12-28-0	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	130	17.5 211.1	130	17.5 211.1	130
12-28-1	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	129	17.5 211.1	129	17.5 211.1	129
12-28-2	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	128	17.5 211.1	128	17.5 211.1	128
12-28-3	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	127	17.5 211.1	127	17.5 211.1	127
12-28-4	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	126	17.5 211.1	126	17.5 211.1	126
12-28-5	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	125	17.5 211.1	125	17.5 211.1	125
12-28-6	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	124	17.5 211.1	124	17.5 211.1	124
12-28-7	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	123	17.5 211.1	123	17.5 211.1	123
12-28-8	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	122	17.5 211.1	122	17.5 211.1	122
12-28-9	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	121	17.5 211.1	121	17.5 211.1	121
12-29-0	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1	120	17.5 211.1	120	17.5 211.1	120
12-29-1	17.7 211.5	17.7 211.5	24	17.0 211.5	45	17.0 211.5	45	17.0 211.5	117	17.0 211.5	124	17.5 211.1</					

Table 3b. Best track wind speed verification for 1988 Eastern Pacific tropical cyclones.
VERIFICATION OF OFFICIAL MAY WIND FORECASTS

3444A37: STORM A-ETTA

MEAN ABSOLUTE ERROR (%)	-7.3	-5.5	-3.1	4.3	3.3	0.0
MEAN ABSOLUTE ERROR (%)	7.3	5.7	5.7	3.0	5.7	0.0
STANDARD ERROR (%)	2.5	5.3	3.2	3.2	10.1	0.0

THE PRACTICAL APPLICATION OF THEORIES - MAX WELLS EQUATIONS

INITIAL	12HR	24HR	36HR	48HR	72HR
DATA	+	+	+	+	+
DATA	+	+	+	+	+
DATA	+	+	+	+	+
DATA	+	+	+	+	+

卷之三

MEAN ERRORS ($\times 10^3$)	-3.5	-1.7	-5.2	.2	.2	.2
MEAN ABSOLUTE ERROR ($\times 10^3$)	3.3	5.0	5.0	.3	.3	.3
STANDARD ERROR ($\times 10^3$)	2.9	5.8	5.3	.3	.3	.3
N NUMBER OF CASES	5	5	5	5	5	5

VERIFICATION OF RESULTS - MAX WIND FORECASTS

ERRORS(KTS) FOR STORM CAROLINA		INITIAL	12HR	24HR	36HR	48HR	72HR
F22	EAST MADE FROM 071212Z DATA	5.0	-5.0	-10.0	-5.0	5.0	11.0
F22	EAST MADE FROM 071213Z DATA	5.0	-5.0	5.0	5.0	20.0	22.0
F22	EAST MADE FROM 071203Z DATA	5.0	-5.0	5.0	15.0	30.0	30.0
F22	EAST MADE FROM 071205Z DATA	5.0	10.0	15.0	10.0	5.0	5.0
F22	EAST MADE FROM 071212Z DATA	5.0	5.0	10.0	22.0	12.0	12.0
F22	EAST MADE FROM 071213Z DATA	5.0	10.0	20.0	20.0	15.0	15.0
F22	EAST MADE FROM 071203Z DATA	5.0	5.0	10.0	5.0	20.0	20.0
F22	EAST MADE FROM 071205Z DATA	5.0	5.0	10.0	-10.0	-10.0	-10.0
F22	EAST MADE FROM 071211Z DATA	5.0	5.0	-10.0	5.0	5.0	5.0
F22	EAST MADE FROM 071211Z DATA	5.0	-5.0	5.0	15.0	15.0	15.0
F22	EAST MADE FROM 071212Z DATA	5.0	5.0	5.0	5.0	5.0	5.0
F22	EAST MADE FROM 071213Z DATA	5.0	-5.0	10.0	10.0	10.0	10.0
F22	EAST MADE FROM 071203Z DATA	5.0	5.0	10.0	10.0	10.0	10.0
F22	EAST MADE FROM 071205Z DATA	5.0	5.0	10.0	10.0	10.0	10.0

STORM 5A8-2T

MEAN ERRORS (KTS) 1.5 4.6 1 1 2
 MEAN ABSOLUTE ERROR (KTS)
 STANDARD ERROR (KTS)
 NUMBER OF CASES

VERIFICATION OF OFFICIAL MAC WIND FOREC STS

ERRORS ((KT3)) FOR STORIES 2 AND -

~~2 4 5 3~~ ~~6 8 T 5~~ ~~- 2~~ ~~2 6~~ ~~5~~

— 2 — 9 2 2 7 12 13 5 13 2 11

VERIFICATION OF OFFICE - YAK WIVI PRACTITIONER

1330885(15) FOR STORY EMI-1A

SUMMARY: STORM ENI-IA

MEAN ERRORS (KTS)	-7.5	-5.3	-2.5	5.0	12.5	0
MEAN ABSOLUTE ERROR (KTS)	7.5	8.8	7.5	7.5	12.5	.3
STANDARD ERROR (KTS)	6.5	3.3	9.4	7.0	3.5	.0
NAMES OF BIAS	3	5	5	4	2	1

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FD STDR FAPI

TWEET 124 244 484 104 104

FORECAST MADE FROM 072205Z DATA	-5.3	-12.3	-5.3	5.3	-5.3	-12.3
FORECAST MADE FROM 072210Z DATA	-5.3	-12.3	-5.3	5.3	-5.3	-12.3
FORECAST MADE FROM 072215Z DATA	5.3	12.3	5.3	12.3	20.3	15.3
FORECAST MADE FROM 072212Z DATA	5.3	12.3	10.3	12.3	20.3	15.3
FORECAST MADE FROM 072305Z DATA	-5.3	-12.3	-15.3	-12.3	-20.3	-15.3
FORECAST MADE FROM 072310Z DATA	-5.3	-12.3	-15.3	-12.3	-20.3	-15.3
FORECAST MADE FROM 072315Z DATA	-5.3	-12.3	-15.3	-12.3	-20.3	-15.3
FORECAST MADE FROM 072312Z DATA	-5.3	-12.3	-15.3	-12.3	-20.3	-15.3
FORECAST MADE FROM 080105Z DATA	-5.3	-3.3	-10.3	-25.3		
FORECAST MADE FROM 080110Z DATA	-5.3	-3.3	-10.3	-25.3		
FORECAST MADE FROM 080115Z DATA	-5.3	-3.3	-10.3	-25.3		
FORECAST MADE FROM 080120Z DATA	-5.3	-3.3	-10.3	-25.3		
FORECAST MADE FROM 080125Z DATA	-5.3	-3.3	-10.3	-25.3		
FORECAST MADE FROM 080130Z DATA	-5.3	-3.3	-10.3	-25.3		

JMIA STORM

EDV O'S (TS)	1.3	3.3	3			
EDV 4330LJF ERROR (TS)	2.3	5.4	5.3	1.0	13.6	3.3
EDV 33 (CTS)	3.2	5.2	2.5	14.3	13.9	11.2

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FD STDR FAPI

TWEET 124 244 484 104 104

FORECAST MADE FROM 072205Z DATA	-6.3	-13.3	5.3			
FORECAST MADE FROM 072210Z DATA	-10.3	-13.3	5.3			
FORECAST MADE FROM 072215Z DATA	-5.3	3.3	5.3			
FORECAST MADE FROM 072212Z DATA	-10.3	3.3	5.3			
FORECAST MADE FROM 072305Z DATA						
FORECAST MADE FROM 072310Z DATA						

MARY: STORM

MEAN ERRORS (KTS) -1.3 -3.3 3.0 1.0 2.0 0.5

MEAN ABSOLUTE ERROR (KTS)

STANDARD ERROR (CTS) 3.2 7.5 2.3 1.3 1.3 0.3

REGISTRATION OF OFFICIERS AND AGENTS

~~220RS(CTSI FOR STORM PECTORS~~

SUMMARY: ST23 HECTOR

MEAN ± ERRORS (CTFS)	-2	-3.6	-3.7	-13.3	-21.3	-21.7
ABSOLU ERROR (CTFS)	3.2	7.5	4.1	23.1	27.2	33.9
STANDARD ERROR (CTFS)	3.5	4.4	4.4	5.2	5.4	5.5
NUMBER OF CASES	35	34	34	32	27	23

2.5 OFICIAL - MAX AND FORECASTS

ERRORS KTS FOR STORM

3725 << ;

2- 3-6 13-5 -3 -3 3 3

FEAR ABSOLUTE ERROR (55)

2

STANDARD ERROR (

4 2 5 2 12 1 15 1 13 3 20 1 5

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

13283(13) F23 S12R4 101V

F32-145T 440 F32-7 0317182 DA
F32-145T 440 F32-7 0313002 DA
F32-145T 440 F32-7 0313227 DA

SUMMARY: STORM JOHN

MEAN ERRORS (KTS)

1 5.3 2 1 1 1

ERRATA (KTS)

• 3 3 • 3 3 3 3 3

STANDARD ERROR OF CT3
NUMBER OF CASES

• 1 • 1 • 3 • 3 • 3 • 3

IUEU.
IFICATION OF OFFICIAL MAX WIND FORECASTS
ERRORS(KTS) FOR STORM KATE

			INITIAL	.2HR	24HR	36HR	48HR	72HR
FORECAST	MADE	FROM	082212Z DATA	-10.0	-15.0	-20.0	-25.0	-30.0
FORECAST	MADE	FROM	082215Z DATA	-10.0	-20.0	-25.0	-30.0	-35.0
FORECAST	MADE	FROM	082200Z DATA	-10.0	-15.0	-10.0	-15.0	-20.0
FORECAST	MADE	FROM	082300Z DATA	-10.0	-15.0	-15.0	-15.0	-20.0
FORECAST	MADE	FROM	082312Z DATA	-10.0	-15.0	-15.0	-15.0	-20.0
FORECAST	MADE	FROM	083018Z DATA	5.0	5.0	5.0	5.0	5.0
FORECAST	MADE	FROM	083100Z DATA	5.0	5.0	5.0	5.0	5.0
FORECAST	MADE	FROM	083102Z DATA	5.0	5.0	5.0	5.0	5.0
FORECAST	MADE	FROM	083112Z DATA	5.0	5.0	5.0	5.0	5.0
FORECAST	MADE	FROM	083115Z DATA	5.0	5.0	5.0	5.0	5.0
FORECAST	MADE	FROM	091100Z DATA	5.0	5.0	5.0	10.0	20.0
FORECAST	MADE	FROM	091105Z DATA	-10.0	-5.0	5.0	10.0	15.0
FORECAST	MADE	FROM	091112Z DATA	-10.0	-5.0	5.0	10.0	15.0
FORECAST	MADE	FROM	091115Z DATA	-10.0	-5.0	5.0	10.0	15.0
FORECAST	MADE	FROM	091200Z DATA	15.0	20.0	20.0	20.0	20.0
FORECAST	MADE	FROM	091212Z DATA	15.0	20.0	20.0	20.0	20.0
FORECAST	MADE	FROM	091300Z DATA	15.0	20.0	20.0	20.0	20.0
FORECAST	MADE	FROM	091305Z DATA	15.0	20.0	20.0	20.0	20.0

SUMMARY STORM

			3.0	2	2.5	5.4
MEAN ABSOLUTE ERROR (KTS)	4.	7	10	3		
STANDARD ERROR (KTS)	1.7	6.2	8.9	9.3	10.7	9.4

OFFICIAL MAX WIND FOR STORM

STORMS(KTS) FOR STORM KATE

FORECAST	MADE	FROM	092112Z DATA	-5.0	-10.0	-10.0	-10.0	-10.0
FORECAST	MADE	FROM	092200Z DATA	-5.0	-10.0	-15.0	-20.0	-25.0
FORECAST	MADE	FROM	092205Z DATA	-5.0	-10.0	-15.0	-20.0	-25.0
FORECAST	MADE	FROM	092212Z DATA	-5.0	-10.0	-15.0	-20.0	-25.0
FORECAST	MADE	FROM	092215Z DATA	-5.0	-10.0	-20.0	-25.0	-30.0
FORECAST	MADE	FROM	092300Z DATA	-5.0	-10.0	-20.0	-25.0	-30.0
FORECAST	MADE	FROM	092305Z DATA	-5.0	-10.0	-20.0	-25.0	-30.0
FORECAST	MADE	FROM	092312Z DATA	-5.0	-10.0	-20.0	-25.0	-30.0
FORECAST	MADE	FROM	092315Z DATA	-5.0	-10.0	-20.0	-25.0	-30.0
FORECAST	MADE	FROM	092400Z DATA	-5.0	-10.0	-20.0	-25.0	-30.0
FORECAST	MADE	FROM	092405Z DATA	-5.0	-10.0	-20.0	-25.0	-30.0
FORECAST	MADE	FROM	092412Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092415Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092500Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092505Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092512Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092515Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092600Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092605Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092700Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092705Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092712Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092715Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092800Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092805Z DATA	5.0	10.0	10.0	10.0	10.0
FORECAST	MADE	FROM	092912Z DATA	5.0	10.0	10.0	10.0	10.0

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SUMMARY STORM LANE

MEAN ERRORS (KTS)	2	-3	-2.5	-5.1	-7.3	-5.3
MEAN ABSOLUTE ERROR (KTS)	1.7	6.2	8.9	9.3	10.7	9.4
STANDARD ERROR (KTS) NUMBER OF CASES	3.0 25	7.4 25	0.5 24	2.2 22	11.1 23	9.0 15

Table 3b. continued.

SUMMARY: ALL 12 STORMS

	INITIAL	12HR	24HR	36HR	48HR	72HR
MEAN ERRORS ($\times 10^3$)	-2.1	-2.7	-3.4	-4.5	-5.0	-2.7
MEAN ABSOLUTE ERROR ($\times 10^3$)	3.2	5.5	10.2	13.3	15.1	17.5
STANDARD ERROR ($\times 10^3$)	8.2	8.5	13.5	17.5	20.2	21.1
NUMBER OF CASES	173	173	147	123	103	75

LEGEND FOR TABLE 4.

OBSERVATIONAL UNIT

Satellite

GOES-6 = Geostationary Operational Environmental Satellite

RESOLUTION

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 4. Center Fix positions and intensity evaluations for 1988 Tropical Cyclones.

CENTER FIXES

TROPICAL STORM ALETTA 17-21 JUNE 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.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
01	17	0000	15.2 101.4	35	1005					GOES 7	2,- VIS 1	
02	17	0530	15.8 102.6	45	1000					GOES 7	2,5 VIS 8	
03	17	1200	15.5 103.0	55	994					GOES 7	2,5 IR 8	
04	17	1637	15.9 102.5	45	1000					SIX DMSP		
05	17	1800	15.8 102.1	55	994					GOES 7	2,3 VIS 1	
06	18	0000	15.7 101.8	55	994					GOES 7	2,3 VIS 1	
07	18	0530	15.9 102.1	55	994					GOES 7	2,5 IR 8	
08	18	1200	16.3 102.7	55	994					GOES 7	2,5 IR 1	
09	18	1500	16.7 103.4							GOES 7	-,5 VIS 1	
10	18	1800	16.7 101.8	55	994					GOES 7	2,3 VIS 1	
11	19	0000	17.0 102.3	55	994					GOES 7	1,3 VIS 1	
12	19	0530	17.2 103.7	55	994					GOES 7	2,5 IR 8	
13	19	1200	17.4 104.1	45	1000					GOES 7	2,5 IR 8	
14	19	1500	17.5 103.8							GOES 7	-,- VIS 1	
15	19	1800	17.5 104.2	35	1005					GOES 7	2,3 VIS 1	
16	20	0000	17.5 105.0							GOES 7	2,3 VIS 1	
17	20	0439	17.8 105.5	25						FIV DMSP		
18	20	0530	17.3 106.8							GOES 7	-,3 IR 8	
19	20	1200	17.5 106.3							GOES 7	-,- ---	
20	20	1800	17.5 106.4							GOES 7	-,- VIS 1	
21	21	0000	17.3 107.5							GOES 7	-,5 VIS 1	
22	21	1200	16.5 108.0							GOES 7	-,5 IR 4	

CENTER FIXES

TROPICAL STORM BUD 21-23 JUNE 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	EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	21	0000	12.0 93.5							GOES 7	2,3 VIS 1	
02	21	0600	13.6 93.1	30	1009					GOES 7	2,5 IR 8	
03	21	1200	13.6 93.5	30	1009					GOES 7	2,5 IR 8	
04	21	1800	14.4 95.3	35	1005					GOES 7	2,3 VIS 8	
05	22	0000	14.5 95.9	45	1000					GOES 7	2,3 VIS 1	
06	22	0600	14.9 97.2	45	1000					GOES 7	-- IR 8	
07	22	1200	15.6 97.9	45	1000					GOES 7	2,5 IR 8	
08	22	1800	16.0 100.0	35	1005					GOES 7	2,3 VIS 1	
09	23	0000	16.6 99.8	30	1009					GOES 7	2,5 VIS 1	
10	23	1620	17.0 101.4	25						SIX/DMSP		

CENTER FIXES

HURRICANE CARLOTTA 08-15 July 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.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	08	0000								GOES 7	-,5 VIS 1	
02	08	0600								GOES 7	-,5 IR 8	
03	08	1200								GOES 7	-,5 IR 8	
04	08	1500		25						GOES 7	2,5 VIS 1	
05	08	1800		30	1009					GOES 7	2,5 VIS 1	
06	09	0000		30	1009					GOES 7	2,3 IR 8	
07	09	0300		30	1009					GOES 7	1,5 IR 8	
08	09	0600		30	1009					GOES 7	2,5 IR 8	
09	09	1200		35	1005					GOES 7	2,5 IR 8	
10	09	1500		35	1005					GOES 7	2,5 VIS 1	
11	09	1800		45	1000					GOES 7	2,5 VIS 1	
12	10	0000		45	1000					GOES 7	2,3 VIS 1	
13	10	0600		55	994					GOES 7	2,5 IR 8	
14	10	1200		55	994					GOES 7	2,5 IR 8	
15	10	1500								GOES 7	-,5 VIS 1	
16	10	1800		55	994					GOES 7	2,5 VIS 1	
17	11	0000		55	994					GOES 7	2,5 VIS 1	
18	11	0600		55	994					GOES 7	2,5 IR 8	
19	11	1200		55	994					GOES 7	2,5 IR 8	
20	11	1500								GOES 7	-,5 VIS 1	
21	11	1800		45	1000					GOES 7	2,5 VIS 1	
22	12	0000		55	994					GOES 7	2,3 VIS 1	
23	12	0600		55	994					GOES 7	2,5 IR 8	
24	12	1200		45	1000					GOES 7	2,5 IR 8	
25	12	1650		45	1000					FIV/DMSPP		
26	12	1800		45	1000					GOES 6	2,5 VIS 1	
27	13	0000		35	1005					GOES 7	2,3 IR 8	
28	13	0600		30	1009					GOES 7	2,5 IR 8	
29	13	1200		25						GOES 6	2,5 IR 8	
30	13	1800						GOES 6	-,5 VIS 1	

CENTER FIXES

Hurricane CARLOTTA (continued)

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.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
31	14	0000	21.6 124.3							GOES 7	-,3 VIS 1	
32	14	0600	21.0 125.0							GOES 6	-,5 IR 8	
33	14	1200	21.8 127.4							GOES 6	-,5 IR 8	
34	14	1500	21.0 126.5							GOES 7	-,5 VIS 1	
35	14	1800	21.5 126.2							GOES 7	-,5 VIS 1	
36	15	0000	21.0 127.1							GOES 7	-,3 VIS 1	
37	15	0600	21.0 127.6							GOES 6	-,5 IR 8	
38	15	1200	21.0 128.2							GOES 6	-,5 IR 8	

Post season analysis of the satellite data indicates that Carlotta reached minimal hurricane strength (65 KTS) at 11/1200Z and maintained minimal hurricane status until 12/0000Z on the 12th.

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CENTER FIXES

TROPICAL STORM DANIEL 19-26 July 1988

FIX NO.	DATE	TIME (UTC)	POSITION LAT. LON.	MAX WIND (KT)		MIN. SFC.	MIN. FLT.LVL.	TEMP. C 700MB HT. (M)	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	19	0000	14.2 111.1								GOES 6	-,5 VIS 1	
02	19	0600	13.4 112.1	25							GOES 6	2,5 IR 8	
03	19	1200	13.6 112.3	25							GOES 7	2,5 IR 8	
04	19	1613	15.7 112.9	25							FIV/DMSP		
05	19	1800	15.0 113.1	35		1005					GOES 7	2,5 VIS 1	
06	20	0000	15.0 113.2	35		1005					GOES 6	2,3 VIS 1	
07	20	0242	15.6 112.9	35		1005					SIX/DMSP		
08	20	0600	15.7 113.6	35		1005					GOES 6	2,5 IR 8	
09	20	0900	14.9 114.1	45		1000					GOES 6	2,3 IR 8	
10	20	1200	15.0 114.3	45		1000					GOES 7	2,5 IR 8	
11	20	1735	16.3 115.0	30		1009					FIV/DMSP		
12	20	1800	15.7 114.7	45		1000					GOES 7	2,5 VIS 1	
13	21	0000	16.0 115.4	45		1000					GOES 6	2,5 VIS 1	
14	21	0230	16.1 115.5	35		1005					SIX/DMSP		
15	21	0600	16.0 116.5	45		1000					GOES 6	2,5 IR 8	
16	21	1200	17.0 117.4	45		1000					GOES 7	2,5 IR 8	
17	21	1800	17.6 118.6	50		997					GOES 7	2,3 VIS 1	
18	22	0000	18.6 119.5	45		1000					GOES 6	2,3 VIS 1	
19	22	0600	19.0 120.7	45		1000					GOES 6	2,3 IR 8	
20	22	1200	19.0 122.3	40		1003					GOES 7	2,5 IR 8	
21	22	1800	19.2 123.3	40		1003					GOES 7	1,3 VIS 1	
22	23	0000	19.4 124.4	45		1000					GOES 6	2,3 VIS 1	
23	23	0600	19.7 125.5	35		1005					GOES 7	2,5 IR 8	
24	23	1200	20.2 126.2	40		1003					GOES 7	2,5 IR 8	
25	23	1800	21.6 127.1	40		1003					GOES 7	2,3 VIS 1	
26	24	0000	22.3 128.3	55		994					GOES 7	2,3 VIS 1	
27	24	0600	22.6 129.3	55		994					GOES 7	3,5 IR 8	
28	24	1200	23.3 130.6	45		1000					GOES 7	2,5 IR 8	
29	24	1800	23.7 131.1	45		1000					GOES 7	1,3 VIS 1	
30	24	2100	24.1 131.6								GOES 6	-,2 VIS 1	

CENTER FIXES

OPR 10 DANIEL (continued)

FIX	DATE		POSITION LAT. LON.	MAX WIND (KT) SFC. FLT.IVL.		MIN. 700MB	TEMP. C OUT IN	EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ALT.	
31	25	0000	24.4 132.1	35		1005				GOES 7	2,2 VIS 1		
32	25	0300	24.7 131.9	35						GOES 6	-,5 IR 8		
33	25	0322	24.5 132.5	35						FOR/DMSP			
34	25	0600	25.0 133.5	35						GOES 7	3,5 IR 8		
35	25	1200	25.3 134.2	30						GOES 6	2,5 IR 8		
36	25	1800	25.7 134.9	30						GOES 6	2,5 VIS 1		
37	26	0000	25.8 135.0							GOES 6	-,3 VIS 1		
38	26	0600	26.3 134.2							GOES 7	-,5 IR 8		
39	26	1200	26.3 135.7							GOES 6	-,5 IR 8		

CENTER FIXES

TROPICAL STORM EMILIA 27 July - 02 August 1988

FIX	DATE	TIME	POSITION LAT. LON.	MAX WIND (KT) SFC. FLT.LVL.	MIN. PRES. (MB)	700MB HT. (M)	TEMP. C OUT IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	27	1500	13.5 108.1	25						GOES 6	2,5 VIS 1	
02	27	1800	13.7 108.6	25						GOES 6	2,5 VIS 1	
03	28	0000	14.3 109.5	30	1009					GOES 6	2,5 VIS 1	
04	28	0600	14.3 110.1	30	1009					GOES 7	2,5 IR 8	
05	28	1200	14.6 110.7	30	1009					GOES 6	2,5 IR 8	
06	28	1638	15.7 111.5	25						FIV/DMSP		
07	28	1800	14.9 111.2	30	1009					GOES 6	2,5 VIS 1	
08	28	2100	15.2 111.6							GOES 6	-,2 VIS 1	
09	29	0000	15.0 111.8	30	1009					GOES 6	2,5 VIS 1	
10	29	0232	14.6 113.3	25						FIV/DMSP		
11	29	0300	15.1 112.1							GOES 6	-,5 IR 4	
12	29	0600	15.0 112.6	30	1009					GOES 7	2,5 IR 8	
13	29	1200	15.0 114.0	30	1009					GOES 6	2,5 IR 4	
14	29	1800	15.3 114.3	45	1000					GOES 6	2,5 VIS 1	
15	30	0000	15.0 115.3	45	1000					GOES 6	2,3 VIS 1	
16	30	0220	14.3 115.1	35	1005					SIX/DMSP		
17	30	0600	14.9 115.1	55	994					GOES 7	2,5 IR 8	
18	30	1245	15.5 116.9	55	994					GOES 7	2,5 IR 8	
19	30	1715	15.6 117.4	55	994					GOES 7	2,3 VIS 1	
20	30	1740	15.4 117.1	35	1005					SIX/DMSP		
21	31	0000	16.0 118.4	55	994					GOES 7	2,3 VIS 1	
22	31	0208	16.2 118.7	35	1005					FOR/DMSP		
23	31	0600	16.2 119.7	45	1000					GOES 7	2,3 IR 8	
24	31	1215	16.1 120.2	45	1000					GOES 6	2,5 IR 4	
25	31	1715	16.1 121.2	35	1005					GOES 6	2,3 VIS 1	
26	31	1720	16.2 121.2	25						3 /DMSP		
27	01	0000	16.2 121.9							GOES 7	-,3 VIS 1	
28	01	0155	16.3 122.1	25						SIX/DMSP		
29	01	0600	16.2 122.6							GOES 6	-,5 IR 4	
30	01	1145	16.5 123.3							GOES 6	-,3 IR 1	
31	01	1700	15.4 123.2	25						FOR/DMSP		

CENTER FIXES

TROPICAL STORM EMILIA (continued)

FIX NO.	DATE	TIME (GMT)	POSITION LAT. LON.	MAX WIND (KT) SFC. FLT. LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
32	01	1715	16.0 124.1						GOES 7	-,3 VIS 1	
33	02	0000	15.2 124.2						GOES 7	-,- VIS 1	
34	02	0325	15.0 124.3						SIX/DMSP		
35	02	0600	15.0 124.6						GOES 6	-,5 IR 8	
36	02	1145	14.0 125.3						GOES 6	-,3 IR 8	
37	02	1715	13.5 126.1						GOES 7	-,5 VIS 1	

CENTER FIXES

HURRICANE FABIO 28 July - 09 August 1988

FIX	DATE	TIME (UTC)	POSIT LAT.	MAX V SFC.	MIN. PRES	MIN. 700MB HT. (M)	TEMP. C OUT IN	EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	28	1500	11.9 120.4							GOES 6	2,5 VIS 1	
02	28	1800	12.1 120.9							GOES 6	2,5 VIS 1	
03	28	2100	12.3 121.3							GOES 6	-,2 VIS 1	
04	29	0000	11.7 121.0	30		1009				GOES 6	2,5 VIS 4	
05	29	0300	11.7 121.4							GOES 6	-,5 IR 8	
06	29	0600	11.7 121.4	30						GOES 7	2,5 IR 8	
07	29	1200	12.2 123.0	30						GOES 6	2,5 IR 8	
08	29	1800	11.8 124.6	25						SIX/DMSP		
09	29	1800	13.2 124.5	45		1000				GOES 6	2,5 VIS 1	
10	30	0000	11.5 125.9	55		994				GOES 6	2,- VIS 1	
11	30	0220	12.4 126.5	35		1005				SIX/DMSP		
12	30	0600	11.6 126.7	65		987				GOES 7	2,5 IR 8	
13	30	1215	11.9 127.7	65		987				GOES 6	2,5 IR 8	
14	30	1740	11.9 128.6	35		1005				SIX/DMSP		
15	30	1745	11.9 128.9	65		987				GOES 6	2,5 VIS 1	
16	31	0000	11.9 130.2	65		987				GOES 7	2,3 VIS 1	
17	31	0350	11.8 130.9	45		1000				SIX/DMSP		
18	31	0600	12.0 130.3	55		994				GOES 7	2,5 IR 8	
19	31	1245	12.5 130.9	65		987				GOES 7	2,5 IR 8	
20	31	1720	12.7 131.6	55		994				SIX/DMSP		
21	31	1816	12.2 132.5	77		979				GOES 6	2,5 IR 8	
22	01	0000	12.6 133.2	77		979				GOES 7	2,3 VIS 1	
23	01	0337	13.0 133.3	77		979				TWO/DMSP		
24	01	0600	12.7 134.1	77		979				GOES 6	2,5 IR 8	
25	01	1145	12.9 135.7	77		979				GOES 6	1,5 IR 1	
26	01	1745	12.9 136.1	77		979				GOES 6	1,5 VIS 1	
27	01	1842	13.1 136.2	77		979				SIX/DMSP		
28	02	0000	13.1 137.6	90		970				GOES 7	2,3 VIS 1	
29	02	0325	13.2 138.2	65		987				SIX/DMSP		
30	02	0600	12.8 138.5	90		970				GOES 6	2,3 IR 8	
31	02	1145	13.2 139.6	90		970				GOES 6	2,5 IR 8	
32												

-- ENTERED THE CENTRAL PACIFIC BASIN

CENTER FIXES

TROPICAL STORM GILMA 28 July - 03 August 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.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	28	1200	15.4 135.0	25						GOES 6	5,5 IR 8	
02	28	1800	15.6 135.8	25						GOES 6	5,5 VIS 1	
03	28	2100	15.8 136.0							GOES 6	-,2 VIS 1	
04	29	0000	16.2 135.9	30		1009				GOES 6	2,2 VIS 8	
05	29	0300	16.4 136.1							GOES 6	-,5 IR 8	
06	29	0600	16.5 136.1	35		1005				GOES 7	5,5 IR 8	
07	29	1200	17.0 136.1	35						GOES 6	2,5 IR 8	
08	29	1800	16.6 135.9	25						SIX/DMSP		
09	29	1800	17.9 136.2	45		1000				GOES 6	2,5 VIS 1	
10	30	0000	16.2 136.3	45		1000				GOES 6	2,3 VIS 1	
11	30	0402	16.4 136.5	25						SIX/DMSP		
12	30	0600	16.0 136.6	40		1003				GOES 7	2,1 IR 8	
13	30	1146	16.3 137.3	35		1005				GOES 6	2,3 IR 8	
14	30	1715	16.5 138.4	30		1009				GOES 6	2,3 VIS 1	
15	31	0000	16.8 139.4	30		1009				GOES 7	2,3 VIS 1	

ENTERED THE CENTRAL PACIFIC BASIN

CENTER FIXES

HURRICANE HECTOR 31 July - 09 August 1988

FIX	DATE	TIME	POSITION LAT. LON.	SFC.	FLT.LVL.	MIN. (MB)	MIN. HT. (M)	TEMP. C OUT IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	30		11.3 98.6	25							SIX/DMSP		
02	31		11.4 99.4	25							GOES 7	2,3 VIS 1	
03	31		11.2 100.4	25							SIX/DMSP		
04	31		11.5 101.9	30-35		1007					GOES 7	3,5 IR 8	
05	31		11.9 103.0	30		1009					GOES 7	2,5 IR 8	
06	31		12.3 103.5	35		1005					FIV/DMSP		
07	31		12.1 104.3	35		1005					GOES 7	2,5 VIS 1	
08	01		13.0 104.8	45		1000					GOES 7	2,3 VIS 1	
09	01		13.4 105.4	35		1005					SIX/DMSP		
10	01		13.1 106.2	55		994					GOES 6	2,3 IR 8	
11	01		13.9 107.5	55		994					GOES 7	1,5 IR 8	
12	01		14.2 108.4	55		994					FIV/DMSP		
13	01		14.1 108.6	55		994					GOES 7	2,3 VIS 1	
14	02		14.6 110.0	65		987					GOES 7	2,3 VIS 1	
15	02		14.8 110.1	55		994					SIX/DMSP		
16	02		14.5 111.0	90		970					GOES 6	1,1 IR 8	
17	02		15.0 112.2	102		960					GOES 7	1,1 IR 8	
18	02		15.4 113.0	115		948					GOES 7	1,1 IR 8	
19	03		16.1 114.2	115		948					GOES 7	2,1 VIS 1	
20	03		16.2 114.5	115		948					ONE/DMSP		
21	03		16.3 115.2	127		935					GOES 6	1,1 IR 8	
22	03		16.8 116.2	127		935					GOES 7	2,1 IR 8	
23	03		17.0 117.2	115		948					ONE/DMSP		
24	03		17.1 117.1	115		948					GOES 7	1,1 IR 8	
25	04		17.7 118.0	115		948					GOES 6	1,3 VIS 1	
26	04		17.9 118.2	115		948					TWO/DMSP		
27	04		18.0 118.9	115		948					GOES 6	1,3 IR 8	
28	04		18.6 119.9	115		948					GOES 6	2,2 IR 8	
29	04		18.7 120.4								GOES 6	-2, IR 8	
30	04		18.9 121.0	90		970					TWO/DMSP		

CENTER FIXES

HURRICANE HECTOR (continued)

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.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
31	04	1800	18.9 121.0	90	970					GOES 6	2,2 VIS 1	
32	05	0000	18.9 122.0	85	973					GOES 6	2,3 VIS 1	
33	05	0247	19.0 122.4	90	970					TWO/DMSP		
34	05	0600	19.2 123.2	77	979					GOES 6	2,3 IR 8	
35	05	1200	18.9 123.9	77	979					GOES 6	2,3 IR 8	
36	05	1723	18.8 124.8	65	987					SIX/DMSP		
37	05	1800	18.8 124.9	65	987					GOES 6	2,3 VIS 1	
38	06	0000	18.9 125.9	65	987					GOES 6	2,3 VIS 1	
39	06	0235	18.5 126.3	65	987					TWO/DMSP		
40	06	0600	18.6 126.8	65	987					GOES 6	2,1 IR 8	
41	06	1200	18.5 127.8	65	987					GOES 6	2,3 IR 8	
42	06	1703	18.3 128.3	55	994					SIX/DMSP		
43	06	1800	18.6 128.6	77	979					GOES 7	2,1 IR 8	
52	44	07000	18.4 129.7	77	979					GOES 6	1,3 VIS 1	
45	07	0222	18.3 130.9	77	979					TWO/DMSP		
46	07	0515	18.4 130.8	77	979					GOES 6	2,1 IR 8	
47	07	1146	18.4 132.0	65	987					GOES 6	2,3 IR 8	
48	07	1800	18.2 133.1	65	987					GOES 7	2,3 VIS 1	
49	08	0000	18.0 134.7	65	987					GOES 7	2,3 VIS 1	
50	08	0352	18.3 135.5	35	1005					SIX/DMSP		
51	08	0615	17.6 136.0	65	987					GOES 6	2,5 IR 8	
52	08	1200	17.8 137.5	55	994					GOES 7	2,3 IR 8	
53	08	1800	18.4 138.5	45	1000					GOES 7	2,3 VIS 1	
54	08	1805	18.3 138.4	35	1005					FOR/DMSP		
55	09	0000	18.6 140.0	35	1005					GOES 6	2,3 VIS 1	

ENTERED THE CENTRAL PACIFIC BASIN

CENTER FIXES

HURRICANE IVA 05 - 13 August 1988

FIX	DATE	TIME (UTC)	POSIT LAT.	MAX WIND (KT SFC. FLT)	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C OUT IN	EYE C=CIR.DIA. E=ELIP. (N.MI.)		OBS. UNIT	RESOLUTION	ACFT. ALT.
53	01	04		13.4 94.8	25					GOES 7	2,2 VIS 1	
	02	05		13.1 96.3	25					GOES 7	2,5 VIS 1	
	03	05		13.5 98.1	25					GOES 7	2,5 IR 8	
	04	05		13.8 99.9	25					GOES 7	2,5 IR 8	
	05	05		14.2 101.2	25					SIX/DMSP		
	06	05		14.4 101.1	30	1009				GOES 7	2,5 VIS 1	
	07	06		15.0 101.8	35					GOES 7		
	08	06		14.7 102.8	35	1005				SIX/DMSP		
	09	06		15.2 103.2	45	1000				GOES 7	2,5 IR 8	
	10	06		15.2 105.5	45	1000				GOES 7	2,5 IR 8	
	11	06		16.1 106.2	35	1005				SIX/DMSP		
	12	06		16.5 106.1	55	994				GOES 7	2,3 VIS 1	
	13	07		16.5 107.1	65	987				GOES 6	1,3 VIS 1	
	14	07		16.3 107.5	55	994				FIV/DMSP		
	15	07		16.7 108.4	65	987				GOES 7	2,3 IR 8	
	16	07		17.2 109.1	65	987				GOES 7	2,3 IR 8	
	17	07		17.6 109.9	65	987				GOES 7	2,5 VIS 1	
	18	08		18.1 110.5	90	970				GOES 7	-,3 VIS 1	
	19	08		18.1 110.7	90	970				ONE/DMSP		
	20	08		18.8 111.7	90	970				GOES 7	2,1 IR 8	
	21	08		19.2 112.5	90	970				GOES 7	2,3 IR 8	
	22	08		19.8 112.9	77	979				ONE/DMSP		
	23	08		20.1 113.3	90	970				GOES 7	2,1 VIS 1	
	24	09		20.4 114.2	90	970				GOES 7	2,3 VIS 1	
	25	09		20.3 114.6	90	970				FIV/DMSP		
	26	09		20.7 115.3	90	970				GOES 7	2,1 IR 8	
	27	09		20.9 116.9	77	979				GOES 6	2,3 IR 8	
	28	09		20.9 116.9	77	979				SIX/DMSP		
	29	09		20.9 117.4	65	987				GOES 6	2,5 VIS 1	
	30	10		20.8 117.8	55	994				GOES 6	2,5 VIS 1	

CENTER FIXES

HURRICANE IVA (inued)

FIX NO.	DATE	TIME (UTC)	POSIT LAT.	MAX WIND (KT) SFC. FLT.LVL.	MIN. PRES. (MB)	MIN. HGT. (M.)	P. C OUT IN	EYE C=CIR.DIA. E=ELIP.(N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
31	10	0145	21.6 117.9	30	1009					FIV/DMSP		
32	10	0545	20.0 118.0	55	994					GOES 6	2,5 IR 8	
33	10	1200	20.1 118.3	45	1000					GOES 7	2,5 IR 8	
34	10	1725	20.9 119.8	45	1000					TRE/DMSP		
35	10	1800	20.1 118.2	40-45	1002					GOES 7	1,3 VIS 1	
36	11	0000	20.1 118.3	35	1005					GOES 7	2,3 VIS 1	
37	11	0315	20.1 119.7	30	1009					SIX/DMSP		
38	11	0600	19.8 118.7	35	1005					GOES 6	2,5 IR 8	
39	11	0900	19.7 118.9							GOES 6	-,5 IR 8	
40	11	1200	19.0 119.1	35	1005					GOES 7	2,5 IR 8	
41	11	1706	19.4 119.5	30	1009					TRE/DMSP		
42	11	1800	19.5 119.6	30	1009					GOES 7	2,3 VIS 1	
43	12	0000	19.4 119.8	30	1009					GOES 7	3,3 IR 1	
44	12	0302	19.6 119.8	25						TRE/DMSP		
45	12	0600	19.2 120.0	25						GOES 7	-- IR 1	
46	12	1200	18.5 120.5	25						GOES 7	2,5 IR 8	
47	12	1800	18.7 121.2	20-25						GOES 7	1,3 VIS 1	
48	13	0000	18.4 121.5							GOES 6	-,3 VIS 1	
49	13	0250	18.2 121.5							FOR/DMSP		
50	13	0600	18.2 122.2							GOES 6	-,5 IR 8	
51	13	1200	17.5 122.5							GOES 7	-,5 IR 8	
52	13	1800	17.6 122.8							GOES 7	-,3 VIS 1	
53	13	1807	17.6 122.8							SIX/DMSP		

CENTER FIXES

TROPICAL STORM JOHN 16 - 21 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	EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	16	1500	16.3 106.0	25						GOES 6	2,5	VIS 1
02	16	1708	17.5 105.4	25						FIV/DMSP		
03	16	1800	17.3 106.0	25						GOES 6	2,3	VIS 1
04	17	0000	18.1 106.1	30						GOES 6	2,5	IR 8
05	17	0200	18.2 106.6	25						FIV/DMSP		
06	17	0600	18.1 107.2	30			1009			GOES 7	2,5	IR 8
07	17	1200	18.7 108.0	30			1009			GOES 7	2,5	IR 8
08	17	1648	18.6 108.7	35			1005			SIX/DMSP		
09	17	1800	18.8 107.5	35			1005			GOES 6	2,5	VIS 1
10	18	0000	19.4 108.1	35			1005			GOES 6	2,3	VIS 1
11	18	0600	19.3 109.2	35			1005			GOES 7	2,5	IR 8
12	18	1200	20.3 109.5	30			1009			GOES 7	2,5	IR 8
13	18	1628	21.5 109.7	30			1009			SIX/DMSP		
14	18	1800	21.5 109.8	30			1009			GOES 7	2,3	VIS 1
15	19	0000	21.6 110.5	25						GOES 7	2,2	VIS 1
16	19	0135	21.8 110.4	30			1009			FIV/DMSP		
17	19	0600	22.0 110.6	30			1009			GOES 7	2,5	IR 8
18	19	1200	22.2 111.2	25						GOES 7	2,5	IR 8
19	19	1609	21.1 110.6	25						TRE/DMSP		
20	19	1800	21.1 110.7	25						GOES 6	2,3	VIS 1
21	20	0000	21.2 110.5							GOES 7	-,2	VIS 1
22	20	0123	21.4 110.5	25						FIV/DMSP		
23	20	0600	21.0 111.0	25						GOES 7	2,5	IR 8
24	20	1215	21.0 110.0	30			1009			GOES 6	2,5	IR 8
25	20	1549	21.6 110.0	25						FIV/DMSP		
26	20	1745	22.4 109.6	30			1009			GOES 7	2,5	VIS 1
27	21	0000	22.3 110.3							GOES 7	-,5	VIS 1
28	21	0600	22.6 110.7							GOES 6	-,5	IR 4

CENTER FIXES

TROPICAL RICANE KRISTY

29 August - 06 September 1988

FIX	DATE	POSITION LAT. LON.	MAX WIND (KT) SFC. FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	EYE C=CIR.DIA.	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	29	14.5 102.5								
02	29	14.2 99.8	30	1009						-,5 VIS 1
03	29	14.7 99.7	30	1009						2,5 IR 8
04	29	15.0 101.0	30	1009						2,5 IR 8
05	30	15.7 102.2	30	1009						2,5 VIS 1
06	30	16.1 103.6	45	1000						2,5 VIS 1
07	30	16.3 104.6	55	994						2,3 IR 8
08	30	16.8 105.0	30	1009						2,3 IR 8
09	30	17.2 105.3	65	987						2,3 VIS 1
10	31	17.5 106.0	65	987						2,3 VIS 1
11	31	17.4 106.2	55	994						1,1 IR 8
12	31	17.8 107.0	65	987						2,5 IR 8
13	31	18.2 108.0	65	987						1,1 VIS 1
14	31	18.3 108.3	65	987						1,1 IR 8
15	31	18.3 108.4	77	979						2,3 VIS 1
16	01	18.4 109.5	77	979						1,1 IR 8
17	01	18.3 109.7	65	987						P
18	01	18.5 110.2	77	979						P
19	01	18.3 110.6	77	979						P
20	01	17.7 110.9	65	987						P
21	01	17.6 111.0	65	987						P
22	02	17.7 111.0	55	994						2,1 VIS 1
23	02	18.2 111.1	65	987						2,5 IR 8
24	02	18.0 111.8	55	994						2,5 IR 8
25	02	17.8 112.4	55	994						SP
26	02	18.2 112.4	35	1005						2,3 VIS 1
27	02	18.2 112.8	45	1000						2,1 VIS 1
28	03	18.3 113.2	45	1000						
29	03	18.5 113.3	35	1005						
30	03	18.6 113.4	45	1000						2,3 IR 8

CENTER FIXES

HURRICANE KRISTY (continued)

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.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
31	03	1200	18.7 113.8	30		1009				GOES 6	5,3 IR 8	
32	03	1616	18.9 114.4	25						TRE/DMSP		
33	03	1800	18.6 114.5	25						GOES 6	2,3 VIS 1	
34	04	0000	18.8 114.8							GOES 7	-,3 VIS 1	
35	04	0140	18.8 114.9	25						SIX/DMSP		
36	04	0600	18.7 115.0							GOES 7	-,5 IR 8	
37	04	1200	18.8 114.8	25						GOES 7	2,3 IR 8	
38	04	1738	18.9 115.1	25						TRE/DMSP		
39	04	1800	18.6 115.2	25						GOES 7	2,3 VIS 1	
40	05	0000	18.9 114.8							GOES 7	-,3 VIS 1	
41	05	0128	18.6 115.1	25						SIX/DMSP		
42	05	1200	18.4 114.6	30		1009				GOES 7	2,5 IR 8	
43	05	1718	19.2 114.3							FIV/DMSP		
44	05	1800	18.8 113.9	25						GOES 7	2,3 VIS 1	
45	06	0000	18.7 113.4							GOES 7	-,3 VIS 1	
46	06	0600	19.0 113.0							GOES 7	-,5 IR 8	
47	06	1200	18.9 113.1							GOES 6	-,5 IR 8	

CENTER FIXES

HURRICANE LANE 21-30 SEPTEMBER 1988

FIX	DATE	TIME	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	0000								GOES 7	-,5	VIS 1
02	21	0600		25						GOES 7	2,5	IR 8
03	21	1200		25						GOES 6	2,5	IR 8
04	21	1524		25						SIX/DMSP		
05	21	1730		35		1005				GOES 7	2,5	VIS 1
06	22	0000		35		1005				GOES 7	2,3	VIS 1
07	22	0405		25						SIX/DMSP		
08	22	0600		45		1000				GOES 7	2,5	IR 8
09	22	1200		50		998				GOES 7	2,5	IR 8
10	22	1646		45		1000				SIX/DMSP		
11	22	1800		55		994				GOES 7	2,3	VIS 1
12	23	0000		65		987				GOES 7	2,3	VIS 1
13	23	0600		65		987				GOES 7	2,5	IR 8
14	23	1200		77		979				GOES 7	2,5	IR 8
15	23	1353		45		1000				TWO/DMSP		
16	23	1626		77		979				ONE/DMSP		
17	23	1800		90		970				GOES 7	2,3	VIS 1
18	23	2247		77		979				TWO/NOAA		
19	24	0000		90		970				GOES 6	1,1	VIS 1
20	24	0237		77		979				ONE/DMSP		
21	24	0507		77		979				ONE/DMSP		
22	24	0600		90		970				GOES 7	2,-	IR 8
23	24	1133		77		979				SIX/NOAA		
24	24	1200		90		970				GOES 7	2,3	VIS 1
25	24	1340		77		979				SIX/DMSP		
26	24	1606		77		979				ONE/DMSP		
27	24	1800		77		979				GOES 7	2,3	VIS 1
28	25	0000		77		979				GOES 6	2,3	VIS 1
29	25	0600		77		979				GOES 6	2,3	IR 8
30	25	1200		77		979				GOES 7	2,5	IR 8

CENTER FIXES

HURRICANE LANE (Continued)

FIX NO.	DATE	TIME (UTC)	POSITION LAT. LON.	WIND (KT) SFC. FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C OUT IN	EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
25	1728	17.6 117.2	65		987					SIX/DMSP		
25	1800	17.5 117.4	65-71		983					GOES 7	2,3 VIS 1	
26	0000	17.8 119.1	65		987					GOES 6	2,5 IR 8	
26	0600	17.6 120.0	65		987					GOES 6	2,5 IR 8	
26	0609	17.7 120.2	45		1000					SIX/DMSP		
26	1200	17.6 120.9	65		987					GOES 7	2,5 IR 8	
26	1708	17.7 121.8	55		994					SIX/DMSP		
26	1800	17.8 121.9	65		987					GOES 7	2,3 VIS 1	
27	0000	18.0 122.8	65		987					GOES 6	2,5 VIS 1	
27	0549	18.8 123.3	35		1005					SIX/DMSP		
27	0600	18.0 123.6	65		987					GOES 6	2,3 IR 8	
27	1200	18.7 124.3	55		994					GOES 6	2,3 IR 8	
27	1800	19.6 125.8	55		994					GOES 6	1,3 VIS 1	
27	1830	20.0 126.0	30		1009					SIX/DMSP		
28	0000	20.1 127.2	45		1000					GOES 6	2,2 VIS 1	
28	0600	19.8 128.8	35		1005					GOES 6	2,5 IR 8	
28	0711	20.2 128.6	30		1009					SIX/DMSP		
28	1200	20.4 129.6	35		1005					GOES 6	2,5 IR 8	
28	1800	21.2 131.0	30		1009					GOES 6	2,3 VIS 1	
28	1810	20.9 131.2	25							FOR/DMSP		
29	0000	21.5 132.3	25							GOES 6	2,3 VIS 1	
29	0600	22.1 133.7	25							GOES 7	2,5 IR 8	
29	0651	21.6 133.7	25							FOR/DMSP		
29	1200	22.4 135.6	25							GOES 6	2,5 IR 8	
29	1750	22.9 136.1								FOR/DMSP		
29	1800	22.9 136.2								GOES 6	-,5 VIS 1	
30	0030	23.1 137.2								GOES 6	-,3 VIS 1	
30	0600	22.8 138.1								GOES 7	-,5 IR 8	
30	0631	23.6 138.5								SIX/DMSP		
30	1200	23.5 139.1								GOES 6	-,5 IR 8	

C FIXES

TROPIC L S.

23 SEPTEMBER - 02 NOVEMBER 1988

FIX NO.	DATE	T	TION LON.	FLT. LVL.	HT. (M)	C IN	EYE C=CIR.DIA.	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
01	23	1459	12.7 88.0	45					FIV/ GOES		
02	23	1800	12.8 88.5	65					2,1 VIS 1		
03	23	2222	12.8 88.9	45					FIV/NOAA		
04	23	2347	13.1 89.1	45					SIX/DMSP		
05	24	0000	13.1 89.5	65					GOES 7	2,1 IR 8	
06	24	0600	13.5 90.2	65					GOES 7		
07	24	1200	12.9 90.3	55					GOES 7		
08	24	1232	13.3 90.8	35					FIV/DMSP		
09	24	1439	13.7 90.9	35					FIV/DMSP		
10	24	1800	14.1 91.4						GOES 7		
11	25	0000	14.6 92.4	45	1000				GOES 7	-,5 IR 8	
12	25	0320	14.3 93.7	35	1005				FIV/DMSP		
13	25	0600	14.6 93.1	45	1000				GOES 7		
14	25	1200	14.7 93.8	45	1000				GOES 7	2,5 IR 8	
15	25	1800	13.6 94.0	45	1000				GOES 7	2,3 VIS 1	
16	26	0000	13.3 94.7	30	1009				GOES 7	2,5 IR 8	
17	26	0441	--.- --.-	35	1005				---/DMSP		
18	26	0600	13.5 95.2	30	1009				GOES 7	IR 8	
19	26	1200	13.3 95.5						GOES 7	IR 8	
20	26	1541	12.3 96.5	25					TRE/DMSP		
21	26	1800	12.1 96.4						GOES 7	-,3 VIS 1	
22	27	0000	11.8 96.8							-,3 IR 8	
23	27	0421	11.6 97.4	25							- IR 8
24	27	0600	11.9 97.7								
25	27	1521	11.6 97.7	25							
26	27	1800	11.8 97.8						GOES 7	-,5 VIS 1	
27	28	0000	11.7 99.9	25					GOES 7	1,5 VIS 1	
28	28	0402	12.1 99.3	25					FIV/DMSP		
29	28	0600	12.0 100.0						GOES 7	-,- IR 8	
30	30	0000	12.1 108.0						GOES 6	-,5 VIS 1	

CENTER FIXES

TROPICAL STORM MIRIAM (Continued)

FIX NO.	DATE	TIME (UTC)	POSITION LAT. LON.	MAX WIND (KT) SFC. FLT.LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C OUT	EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
31	30	1200	13.2 108.4							GOES 7	2,5 IR 8	
32	30	1603	13.2 110.4	25						FIV/DMSP		
33	30	1800	13.2 110.4	25						GOES 6	2,3 VIS 1	
34	31	0000	14.0 111.5	25						GOES 7	2,5 ---	
35	31	0444	14.2 111.1	25						FIV/DMSP		
36	31	0600	14.4 112.5	25						GOES 7	2,5 IR 8	
37	31	1200	15.0 113.3	30						GOES 7	2,5 IR 8	
38	31	1724	15.9 112.8	35		1005				FIV/DMSP		
39	31	1800	15.9 113.7	30		1009				GOES 7	2,3 VIS 1	
40	01	0000	16.5 114.0	30		1009				GOES 6	2,3 VIS 1	
41	01	0600	16.9 114.8	30		1009				GOES 6	2,5 IR 8	
42	01	0605	17.3 113.8	35		1005				FIV/DMSP		
43	01	1200	17.6 115.8	30		1009				GOES 6	2,3 IR 8	
44	01	1705	18.1 116.3	35		1005				FIV/DMSP		
45	01	1800	17.9 117.1	35		1005				GOES 6	2,3 VIS 1	
46	02	0000	18.0 117.0	35		1005				GOES 6	2,5 VIS 1	
47	02	0545	18.4 118.9	35		1005				TRE/DMSP		
48	02	0600	18.0 117.4	35		1005				GOES 7	2,5 IR 8	
49	02	1200	18.4 117.9	25						GOES 6	2,5 IR 8	
50	02	1645	19.0 119.4	25						FOR/DMSP		
51	02	1800	18.7 119.1							GOES 6	-,5 VIS 1	