

PRELIMINARY REPORT

Tropical Storm Ernesto (03 - 05 September 1988)

a. Synoptic History

On 27 August a westward moving tropical wave emerged from the African coast. By 31 August, the wave came under the influence of an upper level low and the most prominent cluster of associated thunderstorms began moving northwestward. On 01 September, the area of showers and thunderstorms increased in areal coverage due to the interaction of the tropical wave with the upper level low. The convection moved northward, and a 1016 mb surface low was analyzed just east of Bermuda on the 1800 UTC surface map on 02 September. By this time the upper low had moved southwestward and a strong upper level anticyclone became the dominant upper level feature south of the surface low. Satellite imagery showed a poorly defined low level circulation exposed on the west side of deep convection, and the system became a tropical depression at 0000 UTC on 03 September. Under the influence of southwesterlies aloft, the circulation moved northeastward at 15 to 20 knots. In spite of the southwesterly shear aloft, however, the low level circulation became better defined near the edge of the convective overcast, and based on satellite imagery the system was upgraded to Tropical Storm Ernesto later on 03 September. Ernesto accelerated northeastward, with its forward motion reaching 35 to 45 knots on 04 September. By 05 September, Ernesto lost tropical characteristics and was absorbed by a large extratropical storm over the North Atlantic.

For a summary of the preliminary best track with 6-hourly pressure and wind data, see Figs. 1-3 and Table 1. Selected ship reports associated with the storm are listed in Table 2.

b. Meteorological Statistics

Tropical storm force winds remained over the open waters of the Atlantic ocean, although the island of Flores in the Azores reported near storm force winds of 30 knots as the center of Ernesto passed by over 200 nautical miles to the northwest.

c. Casualty and Damage statistics

There were no reports of casualties or damage related to Ernesto.

d. Forecast and Warning Critique

The usual forecast difficulties were encountered with a storm over the North Atlantic, well away from any useful rawinsonde data. While National Meteorological Center progs did not acknowledge the existence of Ernesto, they did provide useful guidance on the large extratropical storm which influenced Ernesto's track. The NHC statistical track forecasting models were usually slower than the actual storm track, as were the official forecasts. Two of the forecasts made in the early stages of Ernesto had 36 hour forecast errors in excess of 400 nautical miles. Nevertheless, official forecasts generally reflected the proper direction of motion as well as the expected increase in forward speed, and forecast errors are probably typical of a rapidly accelerating storm. Since Ernesto existed over the open waters of the North Atlantic, warnings were not required.

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BMM

Figure Captions:

Fig. 1. Best track of Tropical Storm Ernesto, 03 - 05 September 1988.

Fig. 2. Maximum sustained wind speed versus time for Tropical Storm Ernesto, 03 - 05 September 1988.

Fig. 3. Minimum central pressure versus time for Tropical Storm Ernesto, 03 - 05 September 1988.

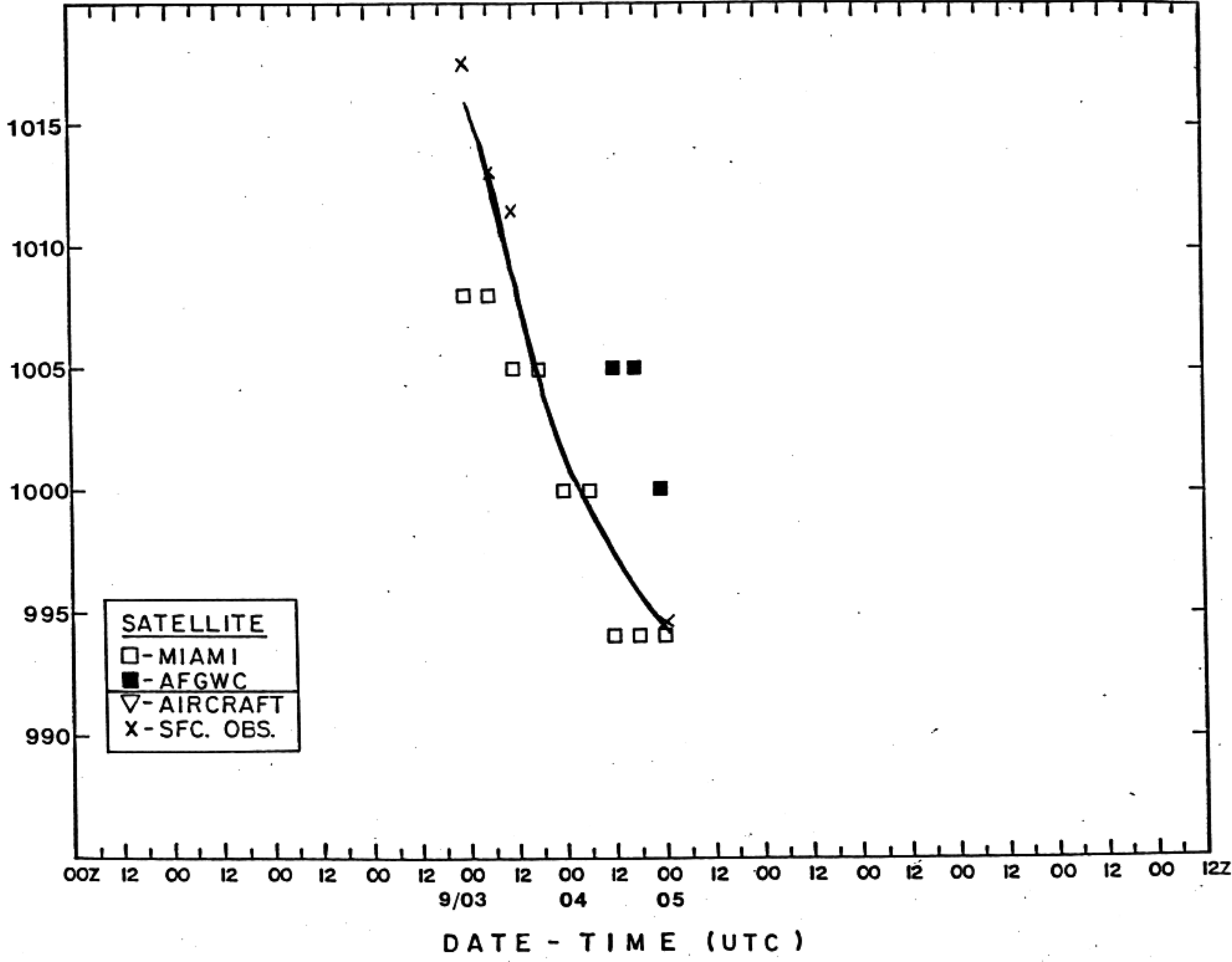
TABLE 1. Preliminary Best Track, Tropical Storm Ernesto, 03-05 September 1988.

DATE	TIME (UTC)	POSITION		PRESSURE (MB)	WIND (KT)	STAGE
		LATITUDE	LONGITUDE			
9/03	0000	32.5	60.5	1016	25	Tropical Depression
9/03	0600	33.1	59.2	1012	25	" "
9/03	1200	34.3	56.5	1008	30	" "
9/03	1800	35.2	53.1	1004	35	Tropical Storm
9/04	0000	35.9	49.5	1001	40	" "
9/04	0600	36.6	44.4	999	45	" "
9/04	1200	38.0	39.5	997	50	" "
9/04	1800	40.2	35.0	996	50	" "
9/05	0000	43.1	29.7	994	55	" "
9/05	0600	Absorbed by large extratropical storm over North Atlantic				
9/05	0000	43.1	29.7	994	55	Minimum Pressure

TABLE 2. Ship reports associated with Tropical Storm Ernesto, 03-05 September 1988.

DATE	TIME (UTC)	SHIP	POSITION		PRESSURE (mb)	WIND (dir/kt)
			LATITUDE	LONGITUDE		
9/03	1200	SXES	36.3	55.0	1011.5	050/10
9/03	1200	SHIP	33.3	56.3	1013.0	230/25
9/03	1200	3EHE	33.5	59.8	1014.5	340/20
9/03	1200	VPFT	38.0	59.4	1014.0	040/25
9/03	1200	KGDF	30.1	56.2	1017.5	220/25
9/03	1200	ZDAZ	28.6	57.2	1016.3	240/25
9/03	1800	SHIP	32.8	50.4	1012.0	200/30
9/04	0000	SHIP	33.0	48.5	1010.9	220/35
9/04	0000	UJUF	33.9	46.1	1013.4	190/25
9/04	0000	CLLV	32.8	50.0	1010.5	220/20
9/04	0600	SHIP	38.7	34.9	1013.8	170/30
9/04	1200	3ESF	35.5	40.8	1003.0	250/35
9/04	1200	GBDT	36.5	38.8	999.1	180/10
9/04	1200	GCCB	37.3	45.3	- - -	280/30
9/04	1800	WAFX	37.1	32.0	1007.9	180/40
9/04	1800	VWVY	37.3	34.4	1001.0	180/35
9/04	1800	GBDT	36.1	38.8	1003.6	240/35
9/04	1800	SHIP	33.9	39.1	1006.9	230/40
9/05	0000	UIZE	44.0	29.2	994.6	140/30
9/05	0000	UUXU	39.8	29.0	1003.8	190/35

PRESSURE (MB)



SATELLITE
□ - MIAMI
■ - AFGWC
▽ - AIRCRAFT
X - SFC. OBS.

DATE - TIME (UTC)

ERNESTO

- Tropical depression stage
- Tropical storm stage
- Hurricane stage
- +++++ Extratropical stage
- ▽▽▽▽ Subtropical depression stage
- ▽▽▽ Subtropical storm stage
- Position and date at 0000 GMT
- Position at 1200 GMT
- 999 mb Lowest central pressure in millibars
- 6 Initial position of system "Number 6"
- H HURRICANE
- T TROPICAL STORM
- ST SUBTROPICAL STORM

