

Tropical Cyclone Report
Tropical Storm Emilia
26-30 July 2000

Richard J. Pasch
National Hurricane Center
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a. Synoptic History

A tropical wave that emerged from Africa on 11 July appears to be the system that eventually spawned Emilia. This wave moved across the tropical Atlantic, reaching the Lesser Antilles about a week later. As it continued westward, the system produced little deep convection over the Caribbean Sea. However, cloud motions indicated the presence of a mid-level vorticity maximum over Venezuela on 19 July. A couple of days later, convective cloudiness increased over Panama as the wave reached the area. The system crossed Central America on the 22nd, and on the 23rd, an area of showers that showed some cyclonic rotation was noted a few hundred miles southeast of the Gulf of Tehuantepec. There was not much increase in organization of the system until around 0000 UTC on the 25th, when the convective cloud pattern showed enough curved banding to warrant an initial T1.0 Dvorak classification.

For the next day or so, the system developed rather slowly, but by 0600 UTC 26 July it is estimated that Tropical Depression Seven-E formed about 290 n mi south-southwest of Manzanillo, Mexico. Later on the 26th, visible satellite images showed a band of convection wrapping about halfway around the center, which indicated that the cyclone strengthened into Tropical Storm Emilia around 1800 UTC on that date. A low- to mid-level ridge to the north of the storm steered Emilia on a course between northwest and west-northwest. Initially, the environment was favorable for strengthening. Around 1800 UTC 27 July, the storm's cloud pattern became more tightly wound, and microwave imagery suggested a formative eyewall. Emilia strengthened to its estimated maximum intensity of 55 knots at that time, while centered about 60 n mi southwest of Socorro Island. Just 6 to 12 h later, the storm was moving over cooler sea surface temperatures, and entraining drier air from a mid- to upper-level trough to its northwest. Under the continued influence of cooler waters and drier air, deep convection associated with Emilia diminished, and the system slowly weakened. Guided by the lower-tropospheric steering flow, the cyclone turned westward, and weakened below storm strength by about 1800 UTC 29 July. Emilia dissipated soon thereafter, several hundred miles west-southwest of Cabo San Lucas, Mexico.

b. Meteorological Statistics

Table 1 gives the best track positions and intensities of Emilia at six-hourly intervals. Figure 1 shows a plot of this track. Figures 2 and 3 depict the curves of maximum one-minute average “surface” (10 meters above ground level) wind speed and minimum central sea-level pressure, respectively, as functions of time. Also plotted are the observations on which the curves are based. These consist of Dvorak-technique estimates using satellite imagery by the Tropical Analysis and Forecast Branch (TAFB), the Satellite Analysis Branch (SAB), and the U.S. Air Force Weather Agency (AFWA).

c. Casualty and Damage Statistics

No reports of casualties or damages associated with Emilia have been received.

d. Forecast and Warning Critique

Emilia was a short-lived tropical cyclone, and there were no 72 h official forecasts at tropical storm stage to verify. The mean official forecast errors at 12, 24, 36, and 48 h were 32, 52, 55, and 64 n mi, respectively (the number of cases ranged from 10 at 12 h to just 4 at 48 h). These errors are quite low, indicating that Emilia’s track was well forecast in the NHC advisories. In contrast, the track guidance models generally had higher average errors. NOGAPS, UKMI, and GUNS had much higher average errors than the official forecast, but the number of cases was quite small.

The official forecasts from the first several NHC advisories incorrectly showed Emilia reaching hurricane strength.

Table 1. Best track, Tropical Storm Emilia, 26-30 July, 2000.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
26 / 0600	14.9	106.9	1007	25	tropical depression
26 / 1200	15.3	107.7	1006	30	"
26 / 1800	15.8	108.4	1005	35	tropical storm
27 / 0000	16.2	109.0	1002	40	"
27 / 0600	16.8	109.8	1000	45	"
27 / 1200	17.4	110.8	998	45	"
27 / 1800	18.1	111.8	994	55	"
28 / 0000	18.8	112.9	996	55	"
28 / 0600	19.4	113.8	997	50	"
28 / 1200	19.9	114.7	997	50	"
28 / 1800	20.1	115.8	1000	45	"
29 / 0000	20.1	117.0	1004	40	"
29 / 0600	20.2	117.9	1005	35	"
29 / 1200	20.3	118.9	1006	35	"
29 / 1800	20.3	120.0	1006	30	tropical depression
30 / 0000	20.4	120.8	1007	25	"
30 / 0600					dissipated
27 / 1800	18.1	111.8	994	55	minimum pressure

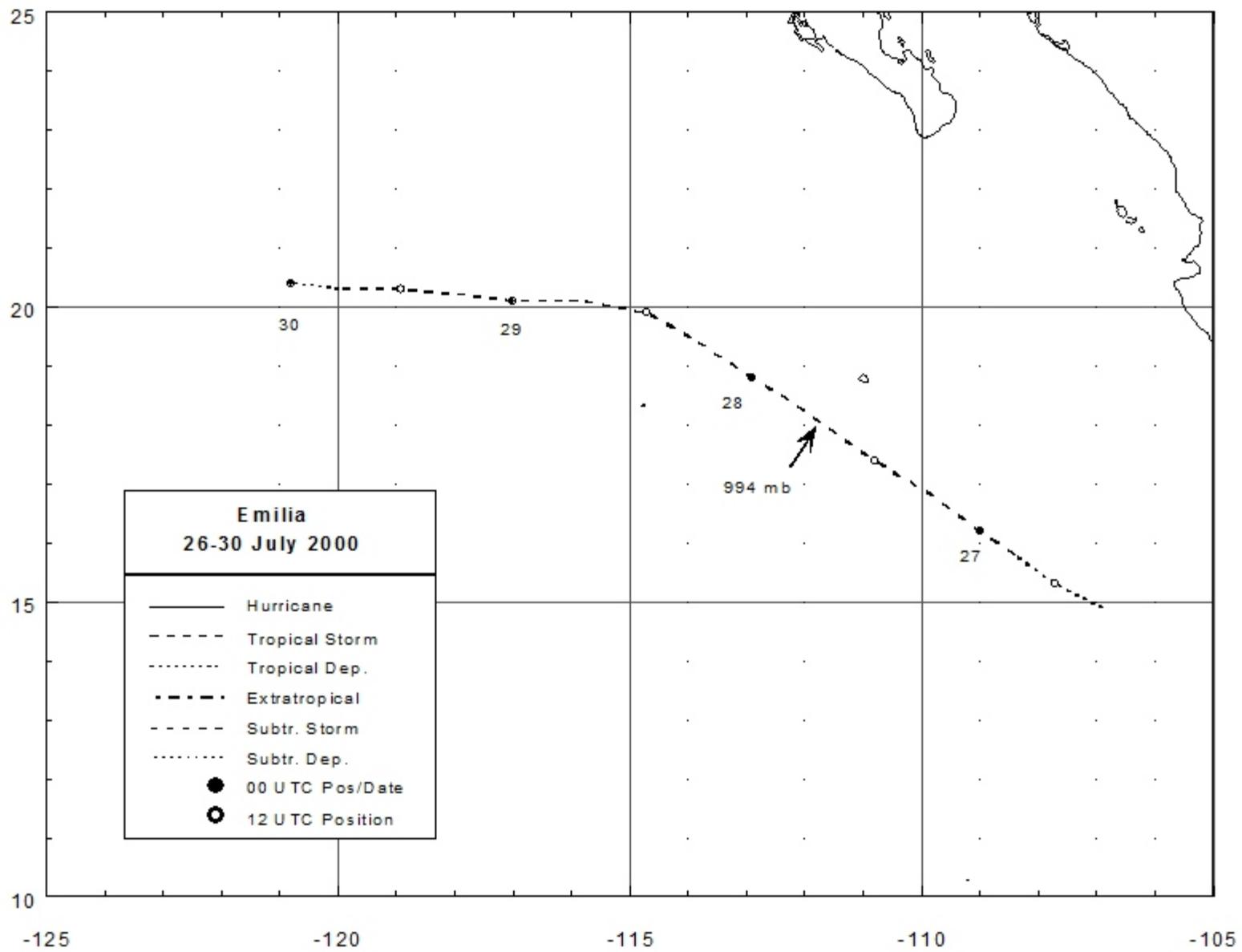


Fig. 1. Best track positions for Tropical Storm Emilia, 26-30 July 2000.

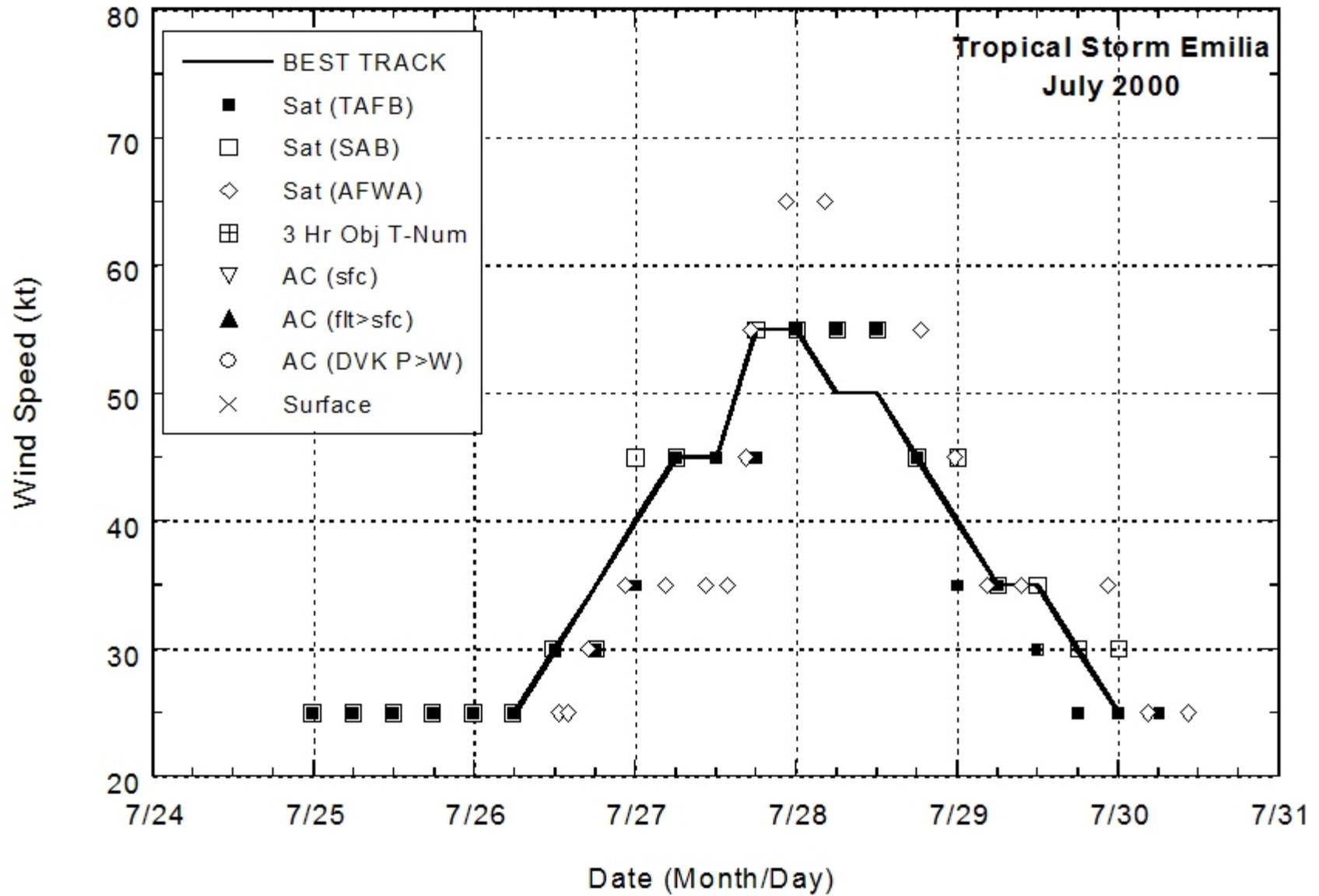


Fig. 2. Best track maximum sustained surface wind speed curve for Tropical Storm Emilia, 26-30 July 2000, along with the available intensity estimates.

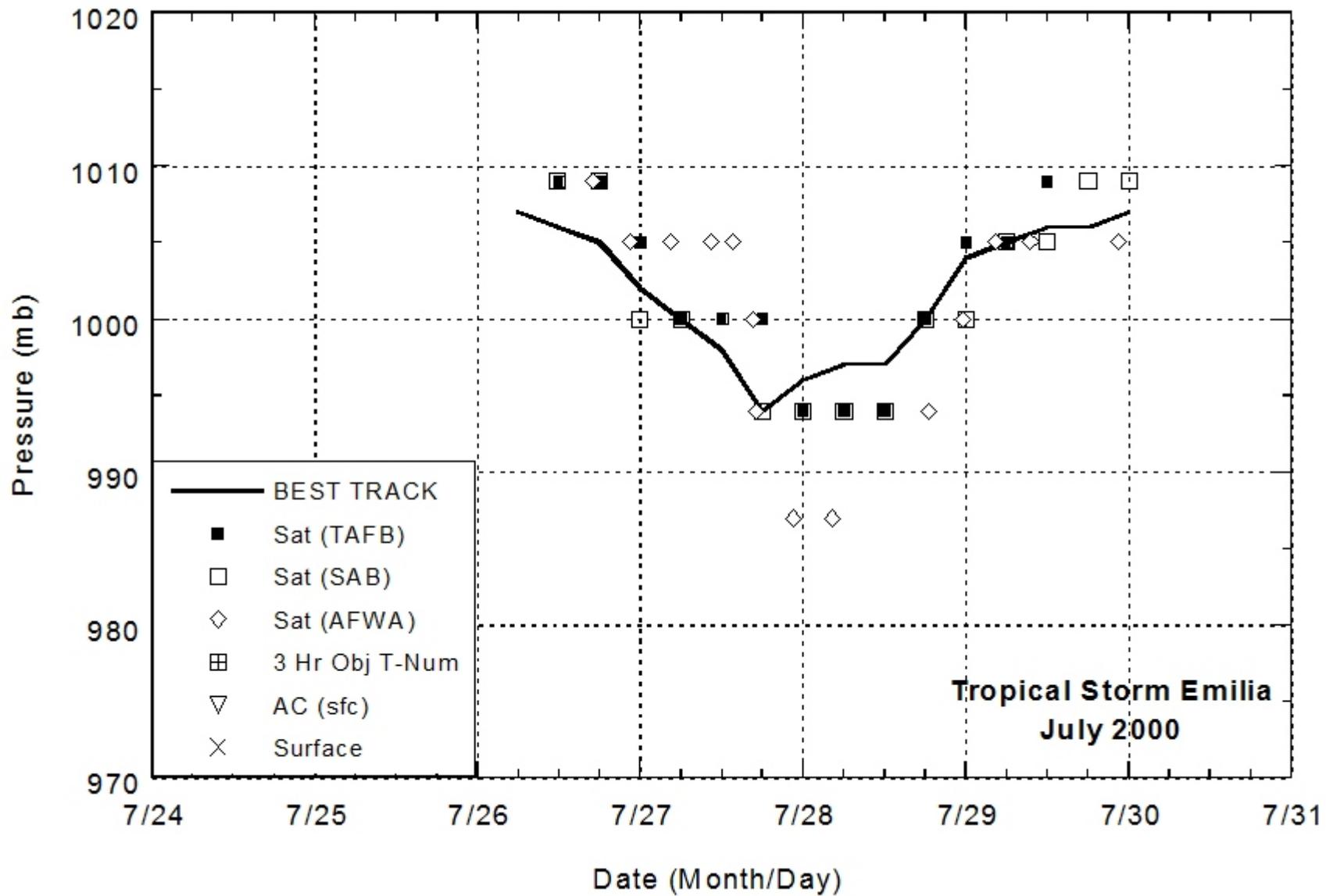


Fig. 3. Best track minimum central pressure curve and central pressure estimates for Tropical Storm Emilia, 26-30 July 2000.