

Tropical Cyclone Report
Tropical Storm Cosme
13-15 July 2001

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Cosme was a weak and short-lived tropical storm that did not affect land.

a. Synoptic History

Cosme developed from a tropical wave that crossed Central America and emerged into the eastern Pacific basin on 6 July. Hovmöller diagrams of the tropical Atlantic prior to the 6th are not conclusive, but indicate that the responsible system emerged from the African coast on either the 24th or 27th of June.

The wave moved slowly westward from 6-10 July. On the 10th, the convective pattern began to show signs of organization about 350 n mi south of Acapulco, Mexico, and the system received its first Dvorak satellite classification. Over the next two days, the system moved generally west-northwestward as multiple low-level circulations developed within a broad area of low pressure. During this period, development of the disturbance was hindered by southerly shear from an upper-level trough to the west of the disturbance that caused the system to become elongated north-south. On the 12th, the upper trough cut off southwest of the disturbance and the organization improved. By early on the 13th, a single low-level circulation center had become established and it is estimated that a tropical depression formed at 0600 UTC about 330 n mi southwest of Manzanillo, Mexico.

The “best track” chart of the tropical cyclone’s path is given in Fig. 1, with the wind and pressure histories shown in Figs. 2 and 3, respectively. The best track positions and intensities are listed in Table 1. The depression moved west-northwestward at about 15 kt and quickly reached tropical storm strength by 1200 UTC on the 13th, about 425 n mi south of Cabo San Lucas, Mexico. The forward motion then slowed to about 10 kt over the next 12 hours. Cosme’s development was hindered by easterly shear; its peak intensity of 40 kt was reached late on the 13th. By early on the 14th convection was limited and well removed from the center. Cosme weakened back to a tropical depression by 1800 UTC, when it was about 400 n mi southwest of Cabo San Lucas. Cosme produced no more significant convection after about 0600 UTC on the 15th, at which point the tropical cyclone became a non-convective low center. The low then moved slowly westward until it dissipated on the 18th about 820 n mi west-southwest of Cabo San Lucas.

b. Meteorological Statistics

Observations in Cosme (Figs. 2 and 3) are limited to satellite-based Dvorak technique intensity estimates from the Tropical Analysis and Forecast Branch (TAFB), the Satellite Analysis

Branch (SAB) and the U. S. Air Force Weather Agency (AFWA). The peak intensity of 40 kt is a compromise between estimates from SAB and TAFB.

c. Casualty and Damage Statistics

There were no reports of damage or casualties associated with Cosme.

d. Forecast and Warning Critique

Cosme was a tropical storm for roughly 30 h, too short a time for a meaningful forecast evaluation. After Cosme became a tropical storm, initial intensity forecasts (and the SHIPS model guidance) overestimated its development potential.

There were no watches and warnings associated with Cosme.

Table 1. Best track for Tropical Storm Cosme, 13-15 July 2001.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
13 / 0600	15.0	108.4	1007	25	tropical depression
13 / 1200	15.8	110.0	1003	35	tropical storm
13 / 1800	16.3	111.4	1000	40	"
14 / 0000	16.8	112.4	1000	40	"
14 / 0600	17.2	113.3	1002	35	"
14 / 1200	17.7	114.2	1003	35	"
14 / 1800	18.2	115.1	1004	30	tropical depression
15 / 0000	18.8	115.9	1005	25	"
15 / 0600	19.2	116.6	1006	25	"
15 / 1200					dissipated to low
13 / 1800	16.3	111.4	1000	40	minimum pressure

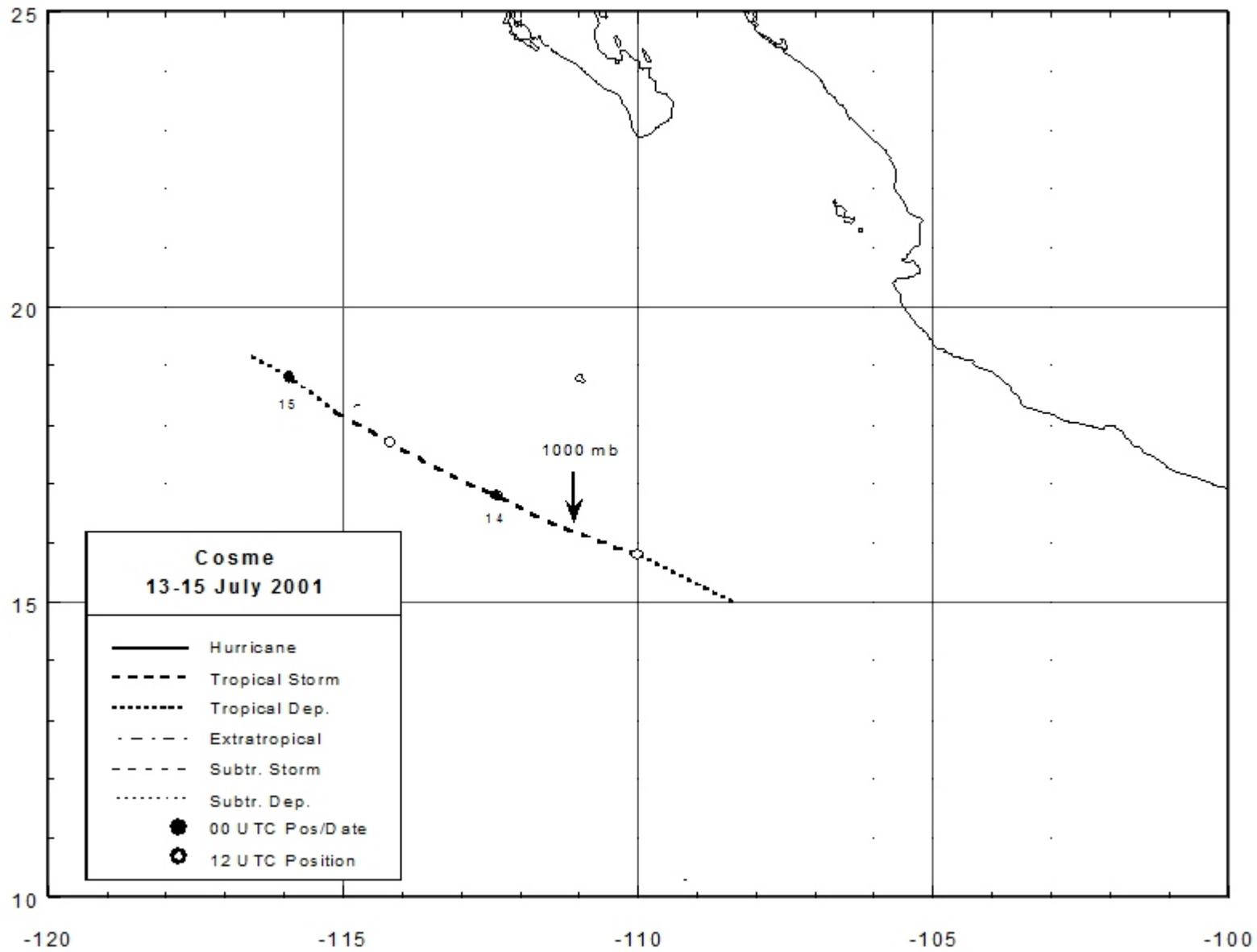
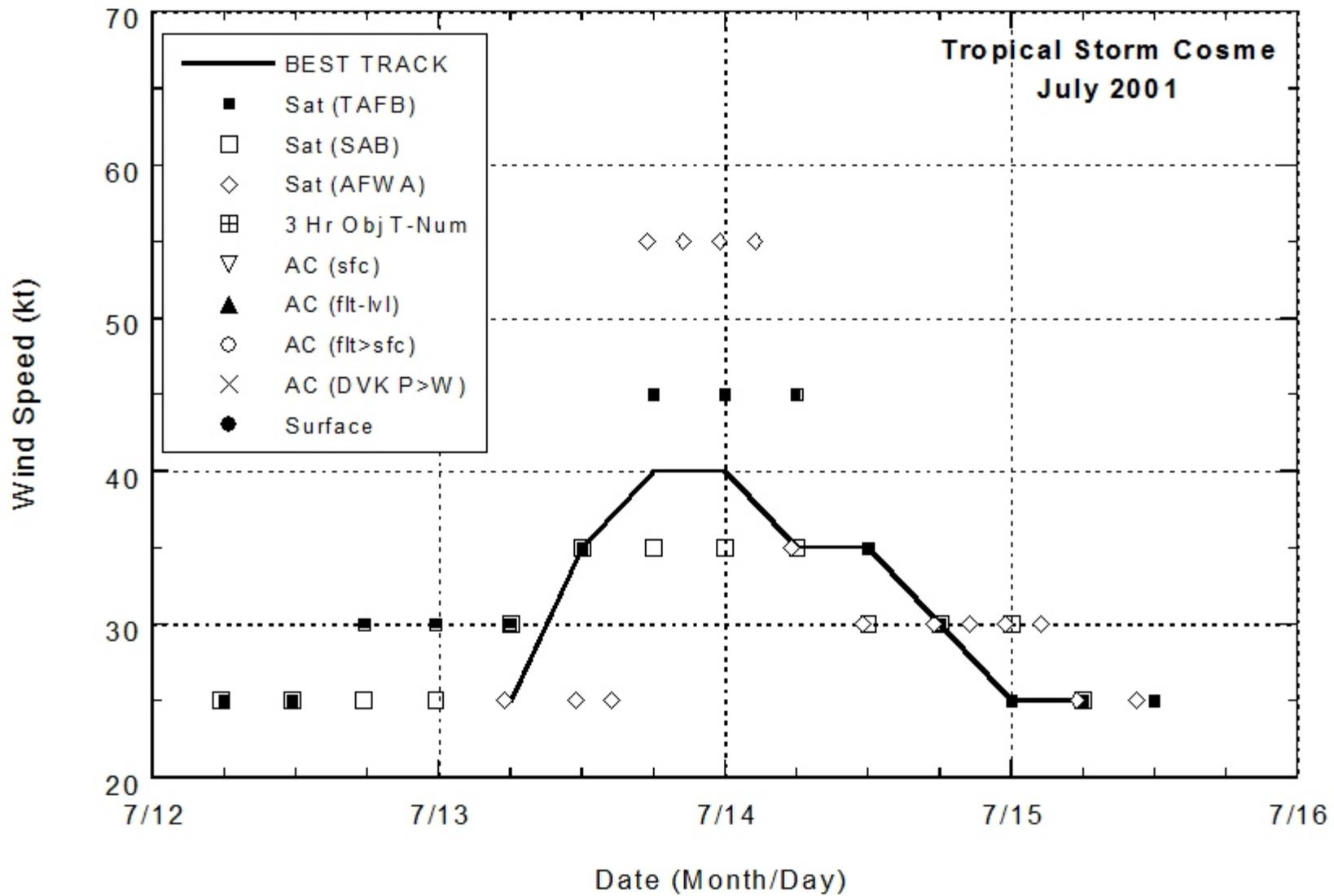


Figure 1.



Best track positions for Tropical Storm Cosme, 13-15 July 2001.

Figure 2. Best track maximum sustained surface wind speed curve for Tropical Storm Cosme, 13-15 July 2001, and the observations on which the best track curve is based.

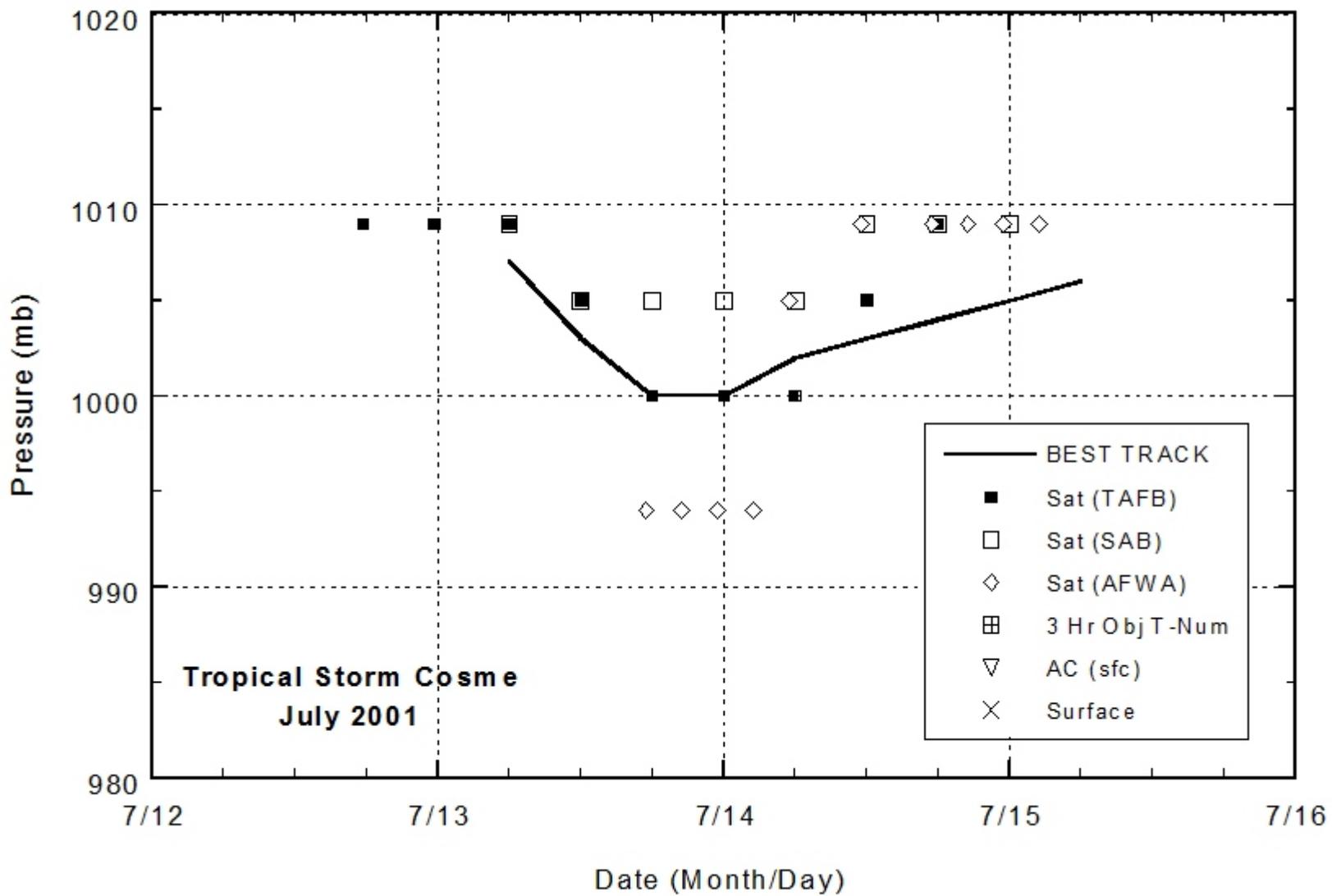


Figure 3. Best track minimum central pressure curve for Tropical Storm Cosme, 13-15 July 2001, and the observations on which the best track curve is based.