

Tropical Cyclone Report
Tropical Storm Kevin
3-6 September 2003

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Kevin was a short-lived, weak tropical storm that remained well offshore the west coast of the Baja California Peninsula.

a. Synoptic History

Kevin's origin was a tropical wave that moved off the west coast of Africa on 20 August. As the wave moved westward across the tropical Atlantic Ocean, it lost all thunderstorm activity on 21 August and remained devoid of thunderstorm activity until it reached the eastern North Pacific Ocean late on 28 August. A broad surface low pressure area developed along the wave axis by 29 August, but showers and thunderstorms remained poorly organized and there was a clear diurnal maximum in convective development during the nighttime hours. For the next couple of days, the unusually large low pressure system moved west-northwestward around the western periphery of a subtropical high pressure ridge located across central Mexico and the eastern North Pacific, which is typical for that time of the year. Surface pressures continued to decrease despite the large size of the low pressure system and the lack of organized deep convection near the center. By early on 3 September, thunderstorm activity had finally persisted long enough near the low-level circulation center for satellite classifications to begin. By 1200 UTC, the disturbance had enough convective organization, and satellite classifications indicated that Tropical Depression Eleven-E had formed about 245 n mi south-southwest of the southern tip of Baja California.

The broad wind field of the depression likely prevented a rapid development process while the cyclone moved west-northwestward between 6 to 8 kt. Also, like so many of its predecessors, Kevin developed at an unusually high latitude which placed the cyclone closer to unfavorably cool sea-surface temperatures. It is estimated that the depression briefly became a tropical storm at 1800 UTC 4 September about 300 n mi west-southwest of the southern tip of Baja California. Although upper-level winds remained favorable for additional development to occur, Kevin weakened back to a tropical depression shortly thereafter, at 0000 UTC 5 September when the system began moving over cooler water. Kevin continued moving west-northwestward while becoming less organized for the next 24 hours and gradually degenerated into a non-convective low pressure system by 1200 UTC 6 September about 500 n mi west of the southern tip of Baja California. The remnant low, however, remained quite tenacious. It meandered and looped slowly westward for the next 4 days before dissipating at 1200 UTC 10 September after looping back to the east and stalling about 365 n mi west of the southern tip of Baja California.

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.

b. Meteorological Statistics

Observations in Kevin (Figs. 2 and 3) include 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).

There were no ship reports of winds of tropical storm force associated with Kevin.

c. Casualty and Damage Statistics

There were no reports of damages or casualties associated with Kevin.

d. Forecast and Warning Critique

Kevin was a tropical cyclone for only 54 h, which resulted in a relatively small number of forecasts to verify. Average NHC official track errors (with the number of cases in parentheses) for Kevin were 32 (9), 59 (10), 97 (5), and 125 (3) n mi for the 12, 24, 36, and 48 h forecasts, respectively¹. These errors are comparable to the average official track errors for the 10-yr period [1993-2002²] of 39, 72, 103, and 131 n mi, respectively.

Average official intensity errors were 3, 7, 13, and 17 kt for the 12, 24, 36, and 48 h forecasts, respectively. For comparison, the average official intensity errors over the 10-yr period [1993-2002] are 6, 11, 15, and 17 kt, respectively.

No watches or warnings were associated with Kevin.

¹ All forecast verifications in this report include the depression stage of the cyclone. National Hurricane Center verifications presented in these reports prior to 2003 did not include the depression stage.

Table 1. Best track data for Tropical Storm Kevin, 3-6 September 2003.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
03 / 1200	19.0	111.5	1001	30	tropical depression
03 / 1800	19.3	112.0	1001	30	"
04 / 0000	19.5	112.5	1001	30	"
04 / 0600	19.8	113.0	1001	30	"
04 / 1200	20.4	113.8	1001	30	"
04 / 1800	21.2	114.6	1000	35	tropical storm
05 / 0000	21.9	115.4	1002	30	tropical depression
05 / 0600	22.3	116.0	1003	30	"
05 / 1200	23.0	117.0	1004	30	"
05 / 1800	23.1	117.9	1005	30	"
06 / 0000	23.6	118.5	1006	30	"
06 / 0600	23.8	119.0	1007	25	remnant low
06 / 1200	23.9	119.5	1008	25	"
06 / 1800	24.3	119.8	1009	25	"
07 / 0000	24.6	120.0	1009	25	"
07 / 0600	24.9	120.1	1010	20	"
07 / 1200	25.3	120.3	1010	20	"
07 / 1800	25.7	120.0	1010	20	"
08 / 0000	26.0	119.5	1011	20	"
08 / 0600	25.8	118.9	1011	20	"
08 / 1200	25.4	118.4	1011	20	"
08 / 1800	24.8	118.2	1011	20	"
09 / 0000	24.3	118.0	1012	15	"
09 / 0600	23.9	117.9	1012	15	"
09 / 1200	23.5	117.8	1012	15	"

09 / 1800	23.3	117.4	1013	15	"
10 / 0000	23.2	117.0	1013	15	"
10 / 0600	23.1	116.6	1013	15	"
10 / 1200					dissipated
04 / 1800	21.2	114.6	1000	35	minimum pressure

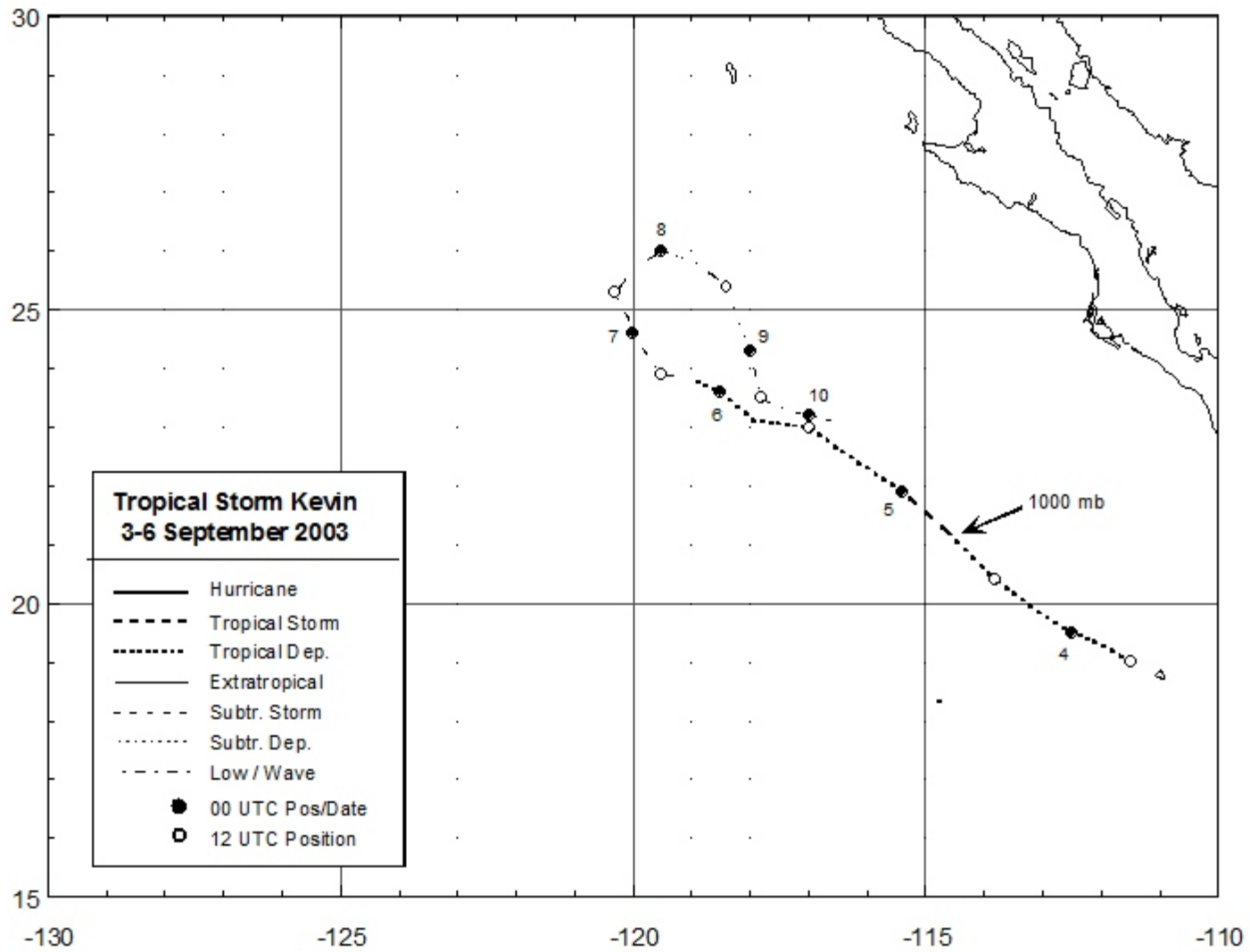


Figure 1. Best track positions for Tropical Storm Kevin, 3-6 September 2003. Track positions during the remnant low stage are based on analyses from the Tropical Prediction Center's Tropical Analysis and Forecast Branch.

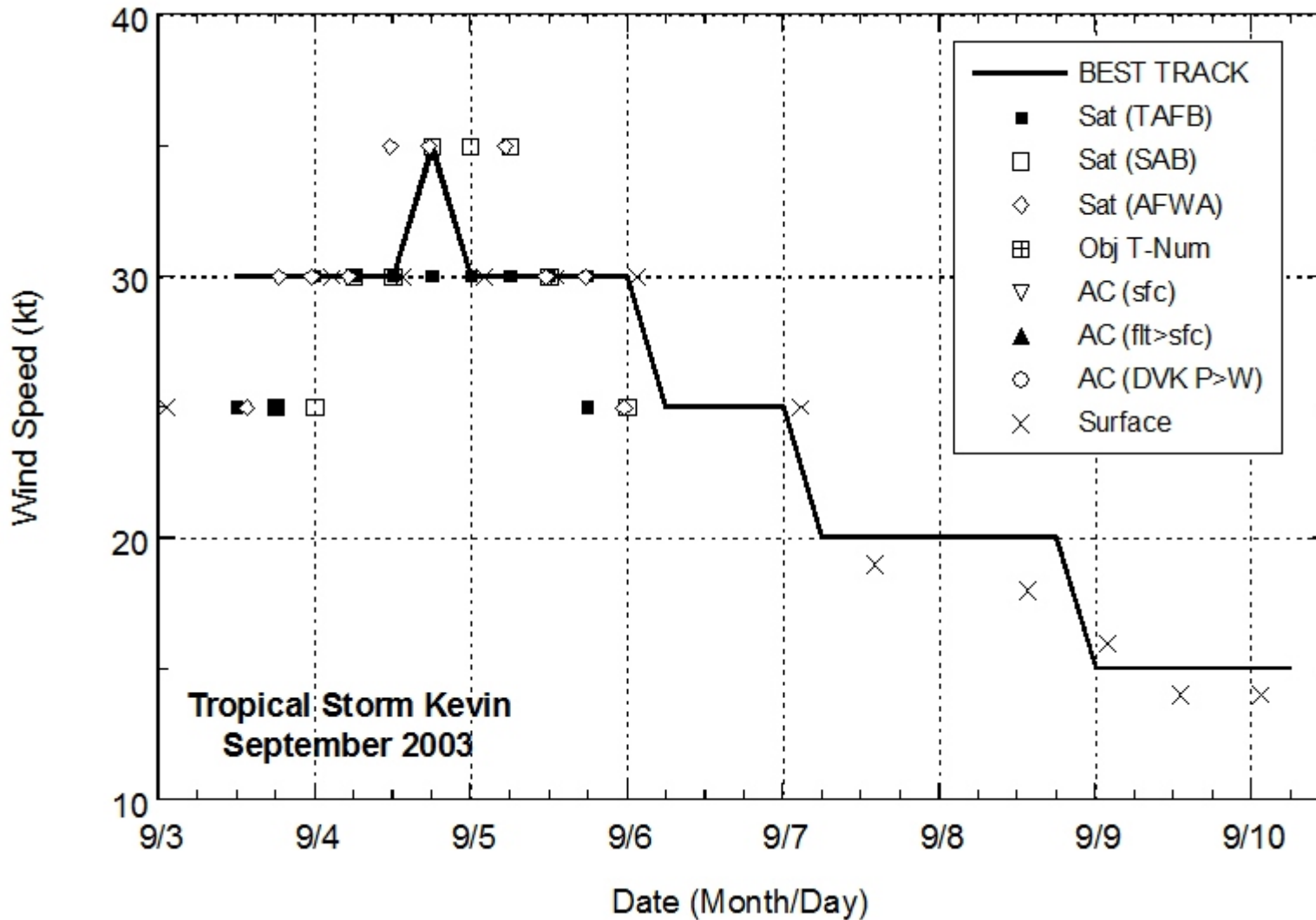


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Storm Kevin, 3-6 September 2003. Estimates during the remnant low stage are based on analyses from the Tropical Prediction Center's Tropical Analysis and Forecast Branch. Surface estimates indicated by "X" are based on uncontaminated QuikSCAT scatterometer wind data.

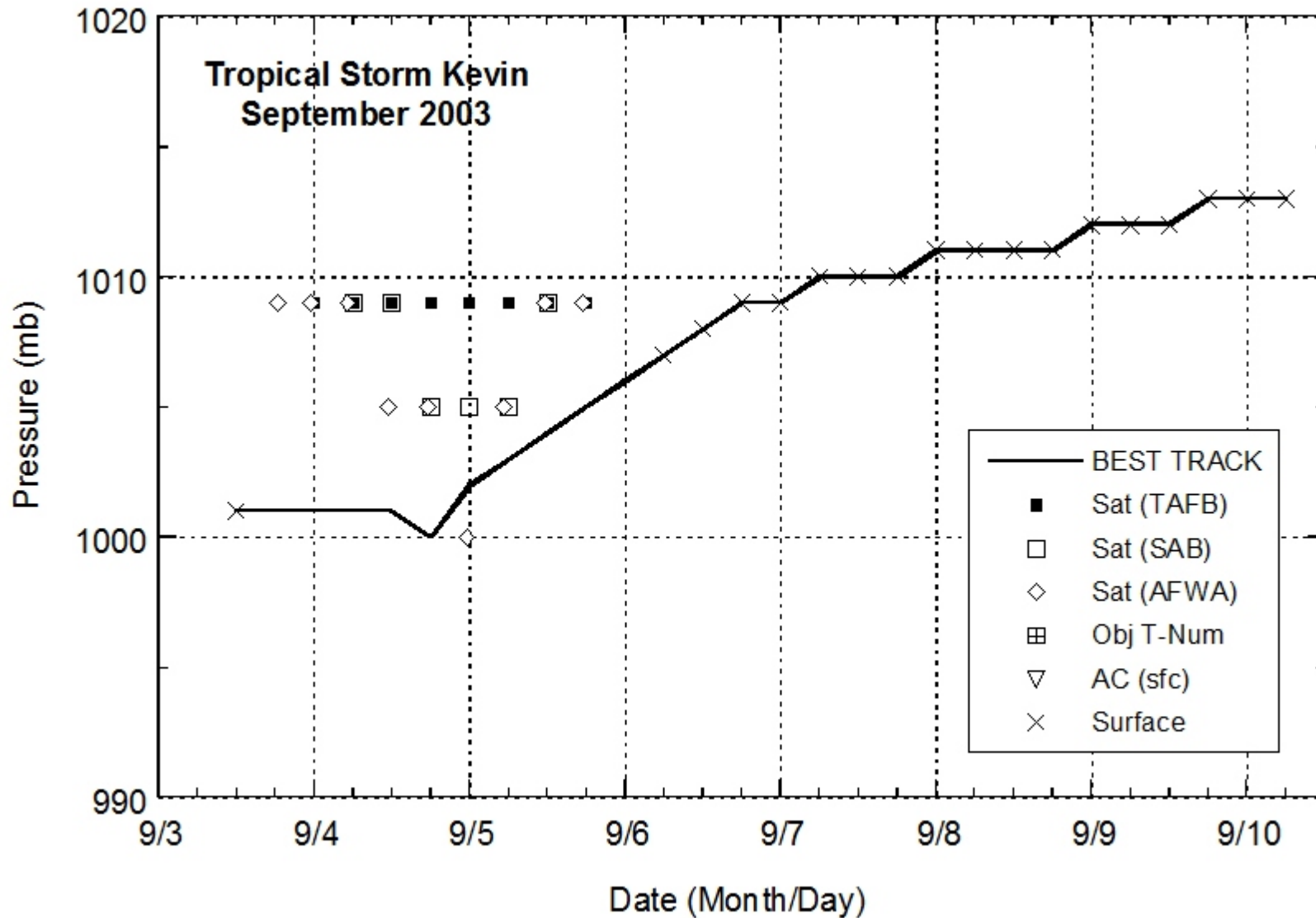


Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Storm Kevin, 3-6 September 2003. Estimates during the remnant low stage are based on analyses from the Tropical Prediction Center's Tropical Analysis and Forecast Branch.