

Tropical Cyclone Report
Tropical Storm Calvin
26-29 June 2005

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a. Synoptic History

Calvin formed from a tropical wave that emerged from the west coast of Africa on 11 June. The wave moved westward with little associated shower activity until it reached the southwestern Caribbean Sea on 19 June. The associated convection increased on 20-21 June while the wave crossed Central America into the eastern Pacific. By 24-25 June, the wave was passing south of the Gulf of Tehuantepec and the convection was showing increasing organization. It is estimated that a tropical depression formed around 0600 UTC 26 June about 285 n mi south-southeast of Acapulco, 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 initially moved north-northwestward, and it intensified into a tropical storm later that day. Calvin turned west-northwestward on 27 June while reaching an estimated peak intensity of 45 kt. On 28 June, the cyclone then made a gradual turn toward the west-southwest and weakened as easterly vertical shear separated the convection from the low-level center. Calvin became a depression on 28 June, and it degenerated to a remnant low on 29 June as it turned westward. The low turned west-northwestward on 30 June as a transient re-development of convection occurred – one that lacked sufficient organization or longevity to again call Calvin a tropical cyclone. The low moved northwestward with some acceleration on 1 July, then turned westward on the south side of a strong low-level ridge on 2 July. The low dissipated on 3 July about 680 n mi west-southwest of Cabo San Lucas, Mexico.

b. Meteorological Statistics

Observations in Calvin (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). Microwave satellite imagery from NOAA polar-orbiting satellites, the NASA Tropical Rainfall Measuring Mission (TRMM), the NASA Aqua, the NASA QuikSCAT, the Department of Defense WindSat, and Defense Meteorological Satellite Program (DMSP) satellites were also useful in tracking Calvin.

There were two ship reports of tropical storm-force winds from Calvin. The **Saga Wind** reported 34-kt winds at 1800 UTC 26 June, while the **ITB New York** reported 34-kt winds at 0900 UTC 27 June.

c. Casualty and Damage Statistics

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

d. Forecast and Warning Critique

Calvin was a tropical cyclone for only 66 h, so there are relatively few forecasts to verify. Average official forecast track errors (with the number of cases in parentheses) were 44 (8), 68 (6), 78 (4), and 102 (2) n mi for the 12, 24, 36, and 48 h forecasts, respectively. These errors are greater than the average official track errors for the 10-yr period 1995-2004¹ at 12 h, equal to the 10-yr average at 24 h, and less than the average errors at 24-48 h (37, 68, 97, and 123 n mi, respectively).

Average official intensity errors were 9, 13, 26, and 40 kt for the 12, 24, 36, and 48 h forecasts, respectively. For comparison, the average official intensity errors over the 10-yr period 1995-2004 are 6, 11, 14, and 17 kt, respectively. The 40-kt error at 48 h resulted from forecasts that anticipated that Calvin would become a hurricane.

A tropical storm watch was issued for the coast of Mexico from Lagunas de Chachua to Lazaro Cardenas at 0300 UTC 27 June. At 0300 UTC 28 June, the watch was shifted westward to cover the coast from Acapulco to Manzanillo. The watch was discontinued at 1500 UTC 28 June.

¹ Errors given for the 96 and 120 h periods are averages over the four-year period 2001-4.

Table 1. Best track for Tropical Storm Calvin, 26-29 June 2005.

Date/Time (UTC)	Latitude (EN)	Longitude (EW)	Pressure (mb)	Wind Speed (kt)	Stage
26 / 0600	12.7	97.2	1004	25	tropical depression
26 / 1200	13.0	97.7	1004	25	"
26 / 1800	13.5	97.9	1003	35	tropical storm
27 / 0000	14.0	98.0	1003	35	"
27 / 0600	14.4	98.4	1001	40	"
27 / 1200	14.7	99.4	1000	45	"
27 / 1800	15.1	100.2	1000	45	"
28 / 0000	15.5	101.1	1002	40	"
28 / 0600	15.8	102.3	1004	35	"
28 / 1200	15.9	103.6	1005	30	tropical depression
28 / 1800	15.5	104.4	1006	25	"
29 / 0000	15.1	105.1	1006	25	"
29 / 0600	14.7	105.4	1006	20	remnant low
29 / 1200	14.5	105.9	1005	20	"
29 / 1800	14.5	106.7	1004	20	"
30 / 0000	14.7	107.5	1003	25	"
30 / 0600	14.8	108.0	1005	25	"
30 / 1200	15.0	108.3	1006	25	"
30 / 1800	15.4	108.7	1006	25	"
01 / 0000	15.9	109.3	1006	25	"
01 / 0600	17.0	110.0	1006	25	"
01 / 1200	18.0	110.9	1006	25	"
01 / 1800	18.7	112.2	1006	20	"
02 / 0000	19.3	113.5	1006	20	"
02 / 0600	20.2	114.5	1006	20	"
02 / 1200	21.0	115.6	1007	20	"
02 / 1800	21.2	117.1	1008	20	"
03 / 0000	21.2	118.7	1008	20	"
03 / 0600	21.1	120.3	1009	20	"
03 / 1200	21.0	122.0	1009	20	"
03 / 1800					dissipated
27 / 1200	14.7	99.4	1000	45	minimum pressure

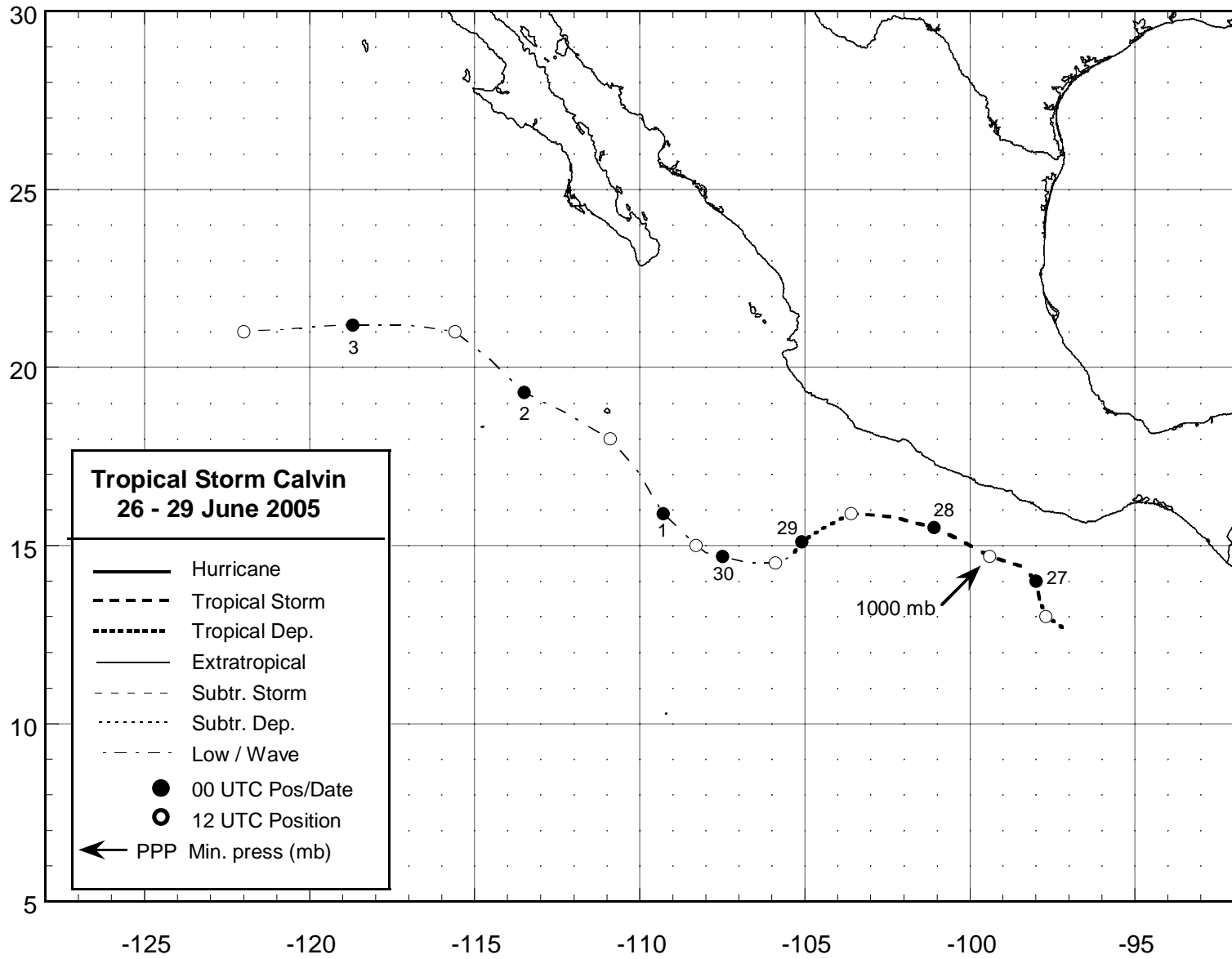


Figure 1. Best track positions for Tropical Storm Calvin, 26 – 29 June 2005.

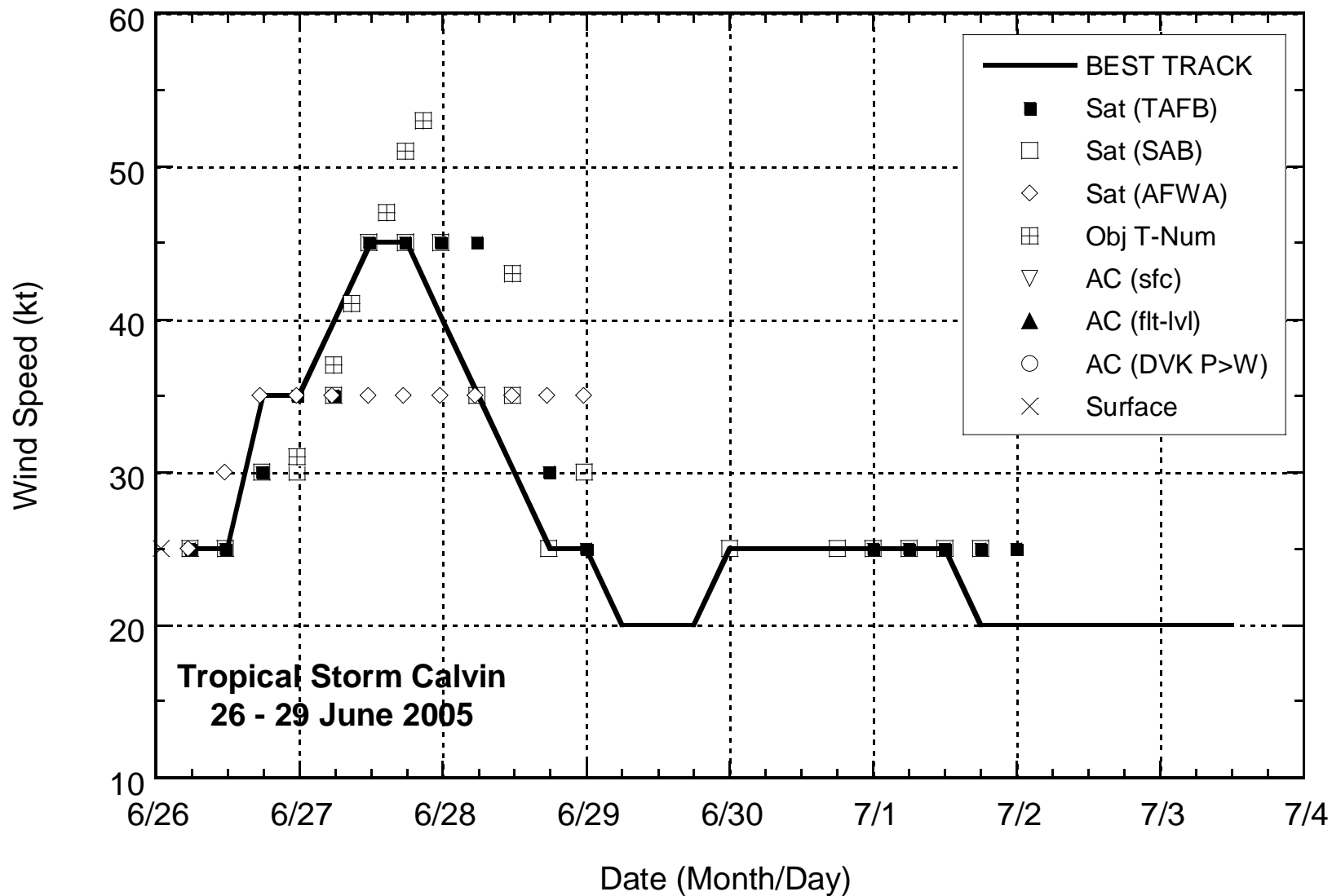


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Storm Calvin, 26 – 29 June 2005. Objective Dvorak estimates represent linear averages over a three-hour period centered on the nominal observation time.

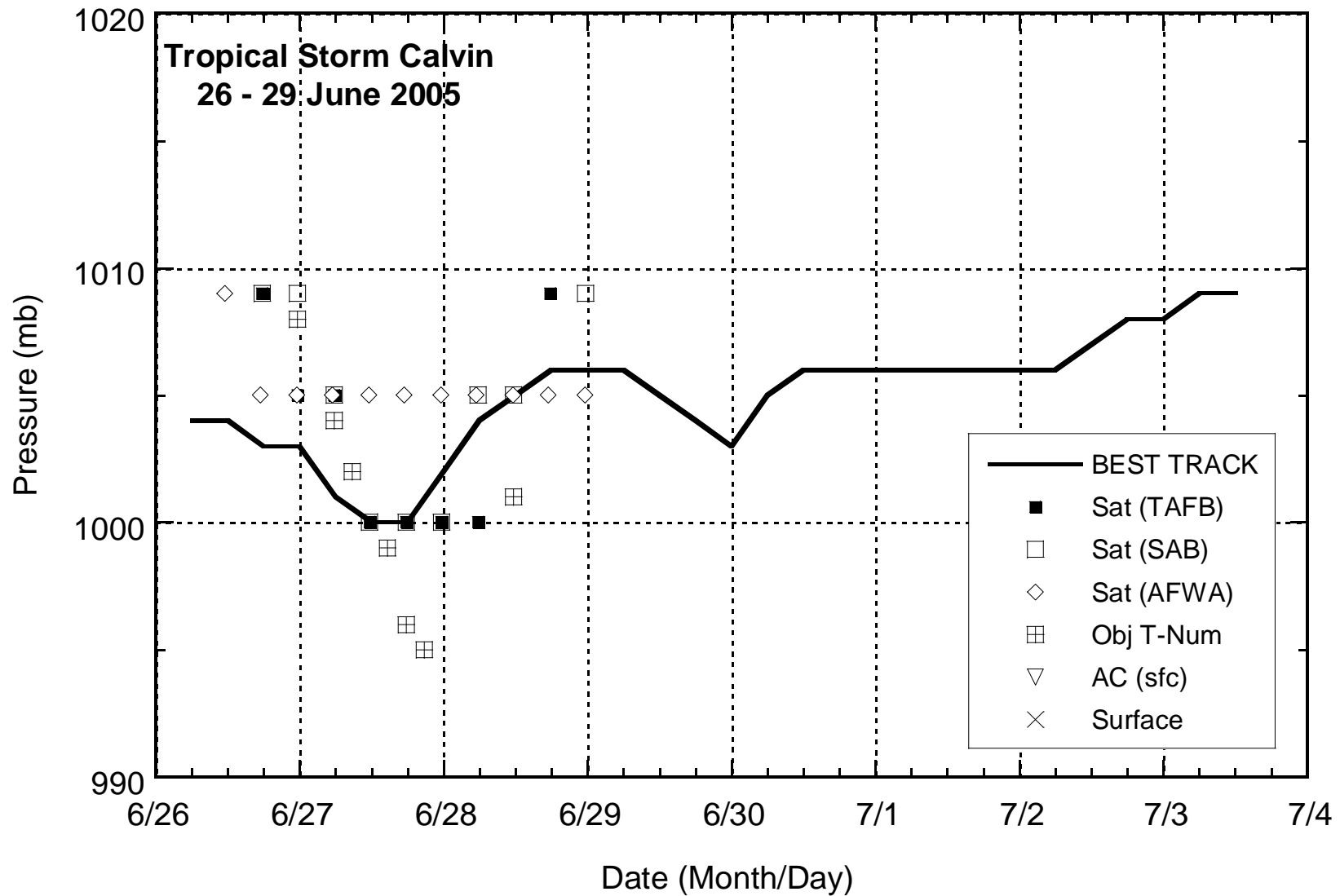


Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Storm Calvin, 26 – 29 June 2005. Objective Dvorak estimates represent linear averages over a three-hour period centered on the nominal observation time.