

Tropical Cyclone Report
Tropical Storm Aletta
(EP012006)
27-30 May 2006

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15 July 2006

Aletta was a weak tropical storm that produced some localized heavy rains over portions of southern Mexico.

a. Synoptic History

A tropical wave moved from Central America into the eastern North Pacific Ocean on 21 May, and moved very slowly westward for the next several days. On 23-24 May, the wave interacted with a low-level trough near the Gulf of Tehuantepec, and deep convection increased. By 25 May, a broad area of surface low pressure had formed a few hundred nautical miles to the south of Acapulco Mexico. Vertical shear, due in part to strong upper-tropospheric southwesterly winds over the area, inhibited development of this nearly-stationary low for a couple of days. By early on 27 May, however, the shear lessened slightly, and the system organized into a tropical depression centered about 165 n mi southwest of Acapulco around 0600 UTC 27 May. By 1800 UTC that day, convective banding features became more prominent and the system strengthened into a tropical storm. Aletta's peak intensity of 40 kt was reached by 0600 UTC 28 May, while the storm was centered about 110 n mi southwest of Acapulco.

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. Initially the system moved northeastward toward the coast of Mexico, but a weak mid-level ridge soon impeded this motion. By early on 28 May, Aletta turned toward the west. Steering currents then became weak and ill-defined and it is estimated that the center moved in a small counterclockwise loop for about a day. On 29 May, Aletta began to drift generally westward, while increased westerly shear and the incursion of dry, stable air caused the cyclone to weaken to a tropical depression by 1800 UTC 29 May. As the system moved slowly west-northwestward it continued to weaken and became a remnant low by 0000 UTC 31 May. This low dissipated soon thereafter.

b. Meteorological Statistics

Observations in Aletta (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 QuikSCAT, and Defense Meteorological Satellite Program (DMSP) satellites were also useful in tracking Aletta.

The maximum intensity estimate is a blend of Dvorak estimates of 35 and 45 kt from SAB and TAFB, respectively.

Rainfall totals of 3 to 3.5 inches were measured at a few locations in the Mexican states of Oaxaca and Chiapas. Higher amounts likely occurred in some of the mountainous places in southern Mexico. No reports of flooding, however, have been received.

c. Casualty and Damage Statistics

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

d. Forecast and Warning Critique

Tropical Weather Outlooks from the National Hurricane Center began describing the area of disturbed weather from which Aletta developed several days prior to tropical cyclogenesis. However, the Outlooks did not acknowledge the possible formation of a tropical depression in the area until 13 hours before genesis.

A verification of official and guidance model track forecasts is given in Table 3. Average official track errors for Aletta were 32, 40, 59, 74, and 82 n mi for the 12, 24, 36, 48, and 72 h forecasts, respectively. The number of forecasts ranged from 13 at 12 h to 3 at 72 h. Because Aletta was short-lived, there were no forecasts verifying at 96 or 120 h. These errors are lower than the average long-term official track errors (Table 3). Since there were so few forecasts in Aletta, these average errors are not very meaningful. There was generally an eastward bias in the official track forecasts.

Average official intensity errors for Aletta were 5, 11, 17, 19, and 17 kt for the 12, 24, 36, 48, and 72 h forecasts, respectively. For comparison, the average long-term official intensity errors are 6, 11, 14, 17, and 19. Although the mean errors are comparable to the long-term average intensity errors, there was a positive bias in the official intensity predictions for this storm.

Watches and warnings issued for Aletta are listed in Table 2. The tropical storm warning that was issued for the coast of Mexico proved to be unnecessary.

Table 1. Best track for Tropical Storm Aletta, 27-30 May 2006.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
27 / 0600	14.6	101.5	1005	25	tropical depression
27 / 1200	15.0	100.9	1004	30	"
27 / 1800	15.5	100.7	1003	35	tropical storm
28 / 0000	15.7	101.1	1003	35	"
28 / 0600	15.6	101.4	1002	40	"
28 / 1200	15.3	101.2	1002	40	"
28 / 1800	15.7	101.0	1002	40	"
29 / 0000	15.9	101.1	1002	40	"
29 / 0600	16.0	101.3	1002	35	"
29 / 1200	16.0	101.5	1003	35	"
29 / 1800	16.0	101.7	1004	30	tropical depression
30 / 0000	16.0	102.1	1004	30	"
30 / 0600	16.0	102.5	1005	30	"
30 / 1200	16.2	103.2	1006	25	"
30 / 1800	16.3	103.5	1007	25	"
31 / 0000	16.4	103.7	1007	25	remnant low
31 / 0600					dissipated
28 / 0600	15.6	101.4	1002	40	minimum pressure

Table 2. Watch and warning summary for Tropical Storm Aletta, 27-30 May 2006.

Date/Time (UTC)	Action	Location
27 / 1500	Tropical Storm Watch issued	Punta Maldonado westward to Zihuatanejo
27 / 2100	Tropical Storm Warning issued	Punta Maldonado westward to Tecpan de Galeana
27 / 2100	Tropical Storm Watch issued	East of Punta Maldonado to Puerto Escondido
28 / 2100	Tropical Storm Warning extended	West of Tecpan de Galeana to Zihuatanejo
28 / 2100	Tropical Storm Watch discontinued	East of Punta Maldonado to Puerto Escondido
29 / 1800	Tropical Storm Warning discontinued	Punta Maldonado westward to Zihuatanejo

Table 3. Preliminary forecast evaluation (heterogeneous sample) for Tropical Storm Aletta, 27-30 May 2006. Forecast errors (n mi) are followed by the number of forecasts in parentheses. Errors smaller than the NHC official forecast are shown in bold-face type. Verification includes the depression stage.

Forecast Technique	Forecast Period (h)						
	12	24	36	48	72	96	120
CLP5	38 (13)	64 (11)	99 (9)	118 (7)	239 (3)		
GFNI	60 (11)	81 (6)	107 (6)	133 (5)	299 (1)		
GFDI	43 (12)	65 (10)	87 (8)	124 (5)	286 (1)		
GFSI	35 (11)	62 (9)	99 (7)	133 (4)	105 (1)		
AEMI	29 (12)	44 (9)	64 (7)	88 (5)	93 (2)		
NGPI	40 (12)	57 (8)	82 (6)	118 (3)	181 (1)		
UKMI	25 (9)	48 (7)	78 (5)	108 (3)			
BAMD	42 (13)	68 (11)	93 (9)	123 (7)	287 (3)		
BAMM	41 (13)	63 (11)	84 (9)	106 (7)	127 (3)		
BAMS	45 (13)	69 (11)	72 (9)	76 (7)	74 (3)		
CONU	38 (12)	49 (10)	67 (8)	89 (5)	232 (1)		
GUNA	20 (9)	30 (6)	37 (4)	61 (2)			
OFCL	31 (13)	40 (11)	59 (9)	73 (7)	82 (3)		
NHC Official (2001-2005 mean)	35 (1300)	60 (1152)	83 (1009)	103 (877)	145 (652)	192 (465)	231 (313)

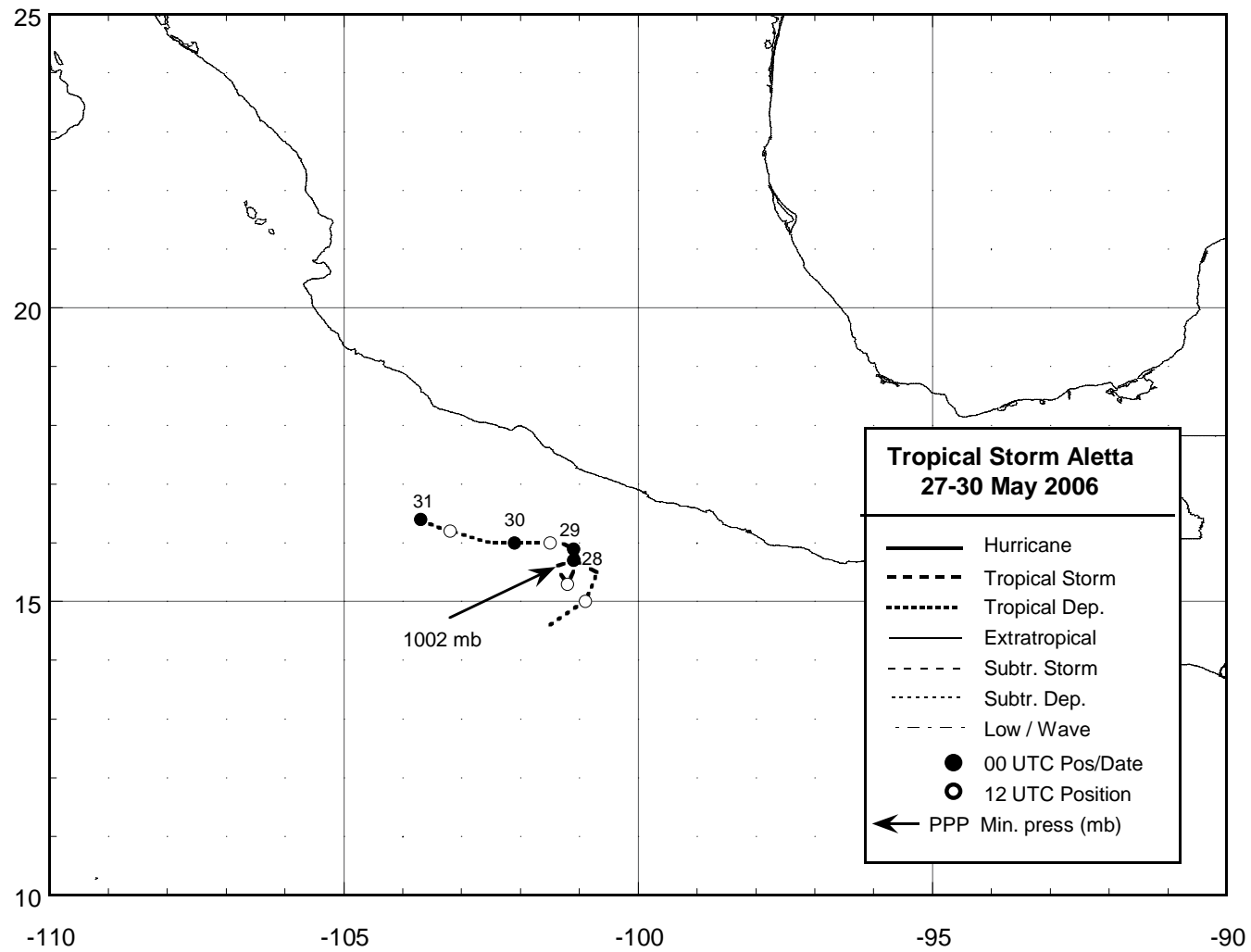


Figure 1. Best track positions for Tropical Storm Aletta, 27-30 May 2006.

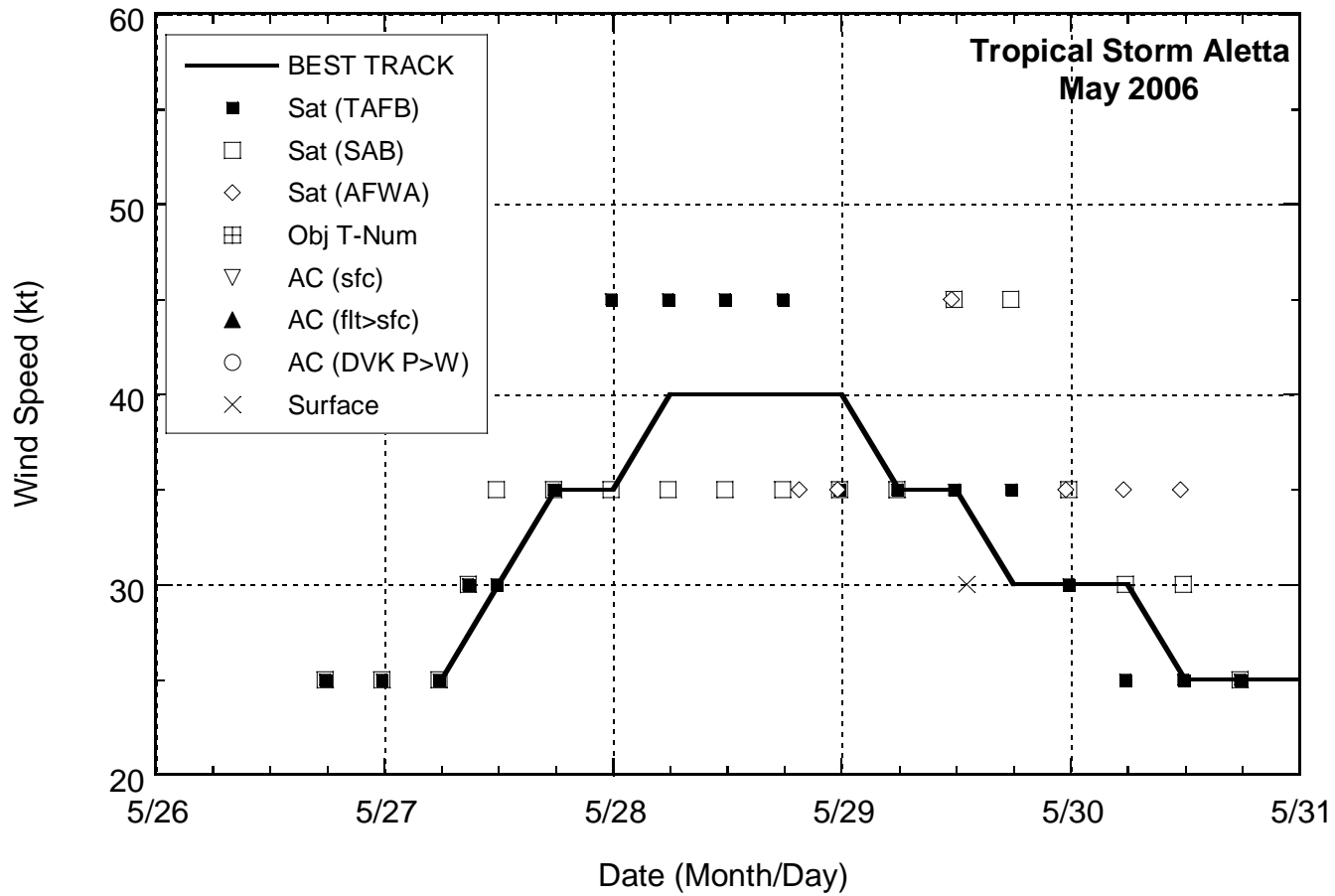


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Storm Aletta, 27-30 May 2006.

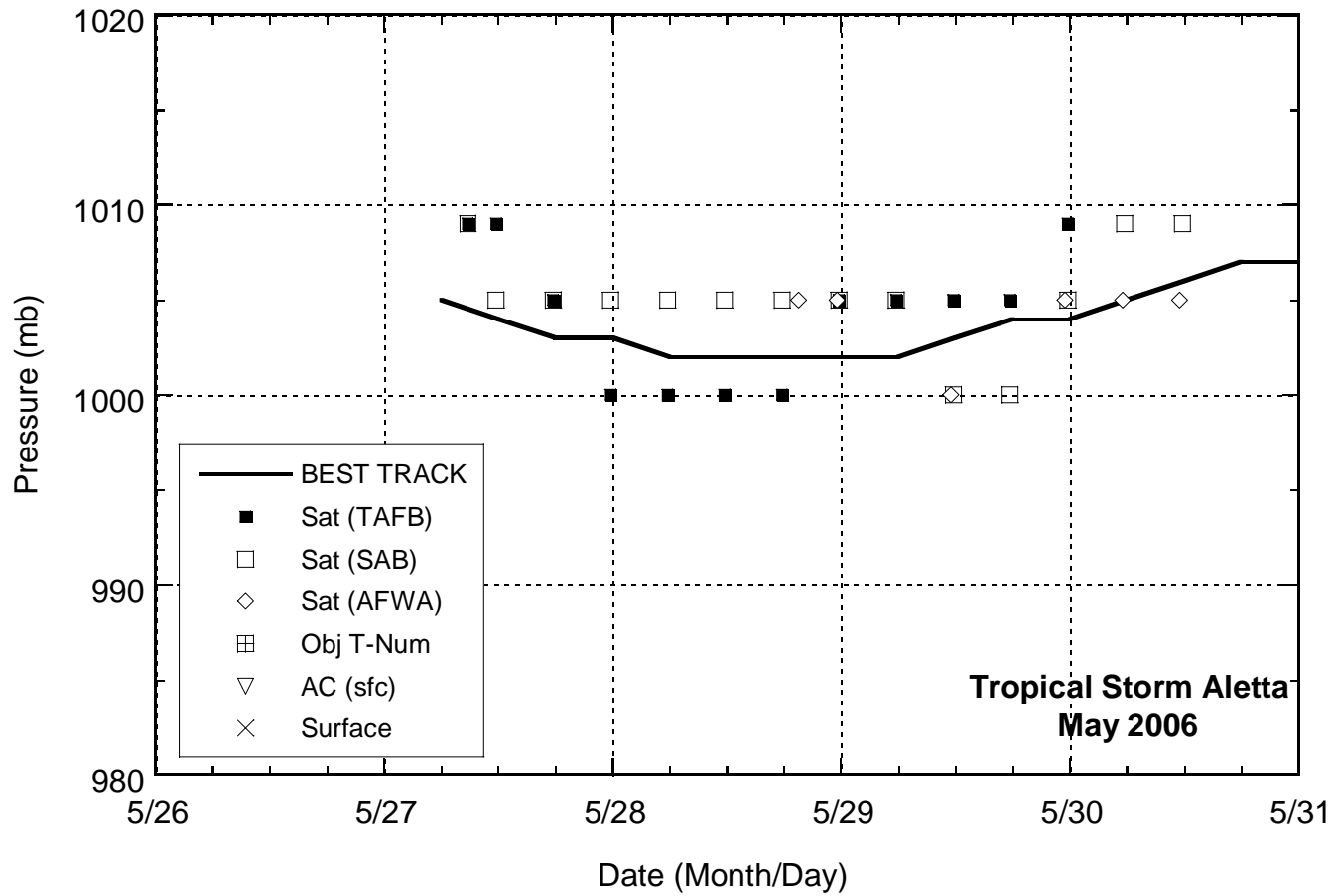


Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Storm Aletta, 27-30 May 2006.