

Preliminary Report  
Tropical Storm Claudette  
13-16 July 1997

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a. Synoptic History

The frontal system that swept Hurricane Bill northeastward across the western Atlantic also generated a frontal low a few hundred miles to the east of Georgia and South Carolina on 11 July. Over the following two days the low moved little and gradually acquired a closed, low-level circulation that was independent of the frontal band dissipating in its vicinity. The low is estimated to have become a tropical depression at 0600 UTC on the 13th (Fig. 1 and Table 1), while located about 275 nautical miles to the south-southeast of Cape Hatteras, North Carolina.

The depression became Tropical Storm Claudette 12 hours later, based on 45-50 knot winds measured at a flight level of 750 ft during the first reconnaissance aircraft mission in the system. About this time, banding of convection increased enough for Dvorak T-numbers to reach 2.5. This development came despite some southerly to southwesterly wind shear which prevented Claudette from developing more than a weak anticyclone aloft.

Deep convection was episodic with most activity occurring during the night hours. Satellite classifications and aircraft data suggest that Claudette retained 30-40 kt winds from the 13th-16th. During that period, Claudette initially moved northward, but then was accelerated toward the east by the flow ahead of an approaching frontal system. On the 16th, Claudette merged with the front, its center once again becoming a frontal low. The extratropical low moved generally toward the east over the following week. Satellite pictures suggest that it dissipated near the Azores Islands on the 23rd.

b. Meteorological Statistics

The post-storm "best track" (Table 1) was obtained from the data presented in Figs. 2 and 3. Those figures show Claudette's estimated central pressure and maximum one-minute wind speed, respectively, versus time. Position and intensity estimates were obtained from analyses of satellite pictures by NOAA's Synoptic Analysis Branch (SAB) and Tropical Analysis and Forecast Branch (TAFB), and by the Air Force Global Weather Center (AFGWC). The analyses also included observations from the reconnaissance aircraft flights taken by the Air Force Reserve.

There were no land, ship or buoy reports of tropical storm force winds associated with Claudette.

c. Casualty and Damage Statistics

Claudette did not directly affect land and no reports of casualties or damages were received.

d. Forecast and Warning Critique

Claudette was a tropical storm for 60 hours. This is too short a period to provide a meaningful quantitative evaluation of forecast accuracy. Qualitatively, the NHC and guidance forecast tracks generally resembled the observed track. The NHC intensity forecasts indicated a little more strengthening than what eventually occurred.

Hurricane and tropical storm watches and warnings were neither issued nor necessary.

Table 1. Preliminary best track, Tropical Storm Claudette,  
13-16 July 1997.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
13/0000	31.3	73.6	1012	25	Extrat'l Frontal Low
0600	31.3	73.3	1011	25	Trop. Depression
1200	31.6	73.1	1008	30	" "
1800	31.9	73.0	1004	40	Tropical Storm
14/0000	32.3	73.0	1003	40	" "
0600	32.7	72.9	1003	40	" "
1200	33.4	72.7	1004	40	" "
1800	34.0	72.6	1005	40	" "
15/0000	34.9	71.8	1005	35	" "
0600	35.6	70.9	1006	35	" "
1200	36.2	69.3	1009	40	" "
1800	36.6	67.2	1009	35	" "
16/0000	36.7	64.9	1009	30	Trop. Depression
0600	36.6	62.7	1006	35	Tropical Storm
1200	36.3	60.5	1007	35	" "
1800	35.9	57.9	1009	30	Extrat'l Frontal Low
14/0000	32.3	73.0	1003	40	Minimum Pressure
14/0600	32.7	72.9	1003	40	Minimum Pressure

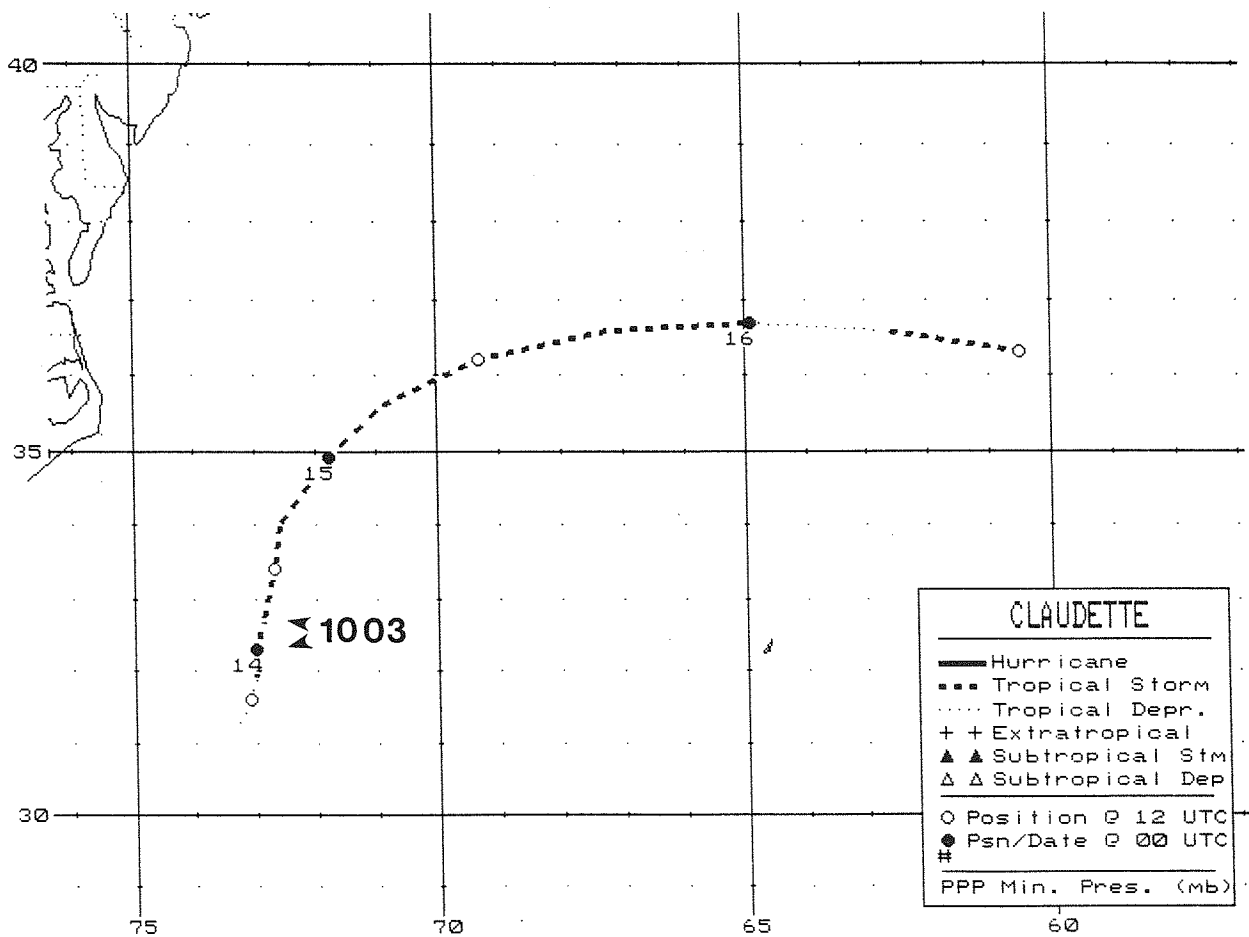


Figure 1. Best track positions for Tropical Storm Claudette.

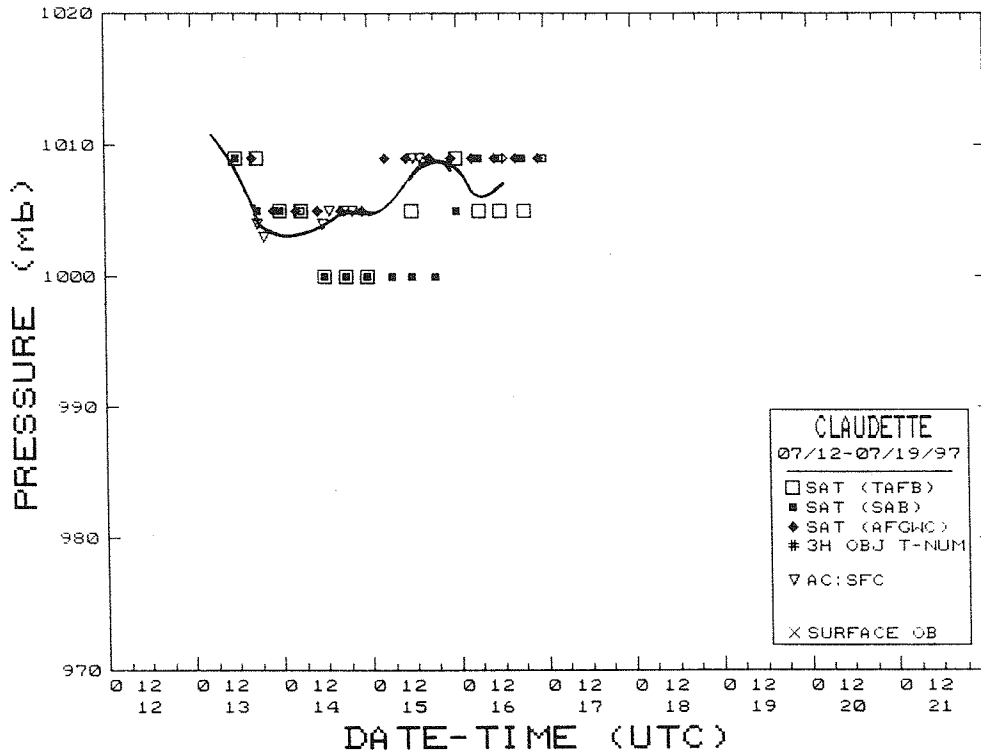


Figure 2. Best track central pressure curve for Tropical Storm Claudette, July 1997.

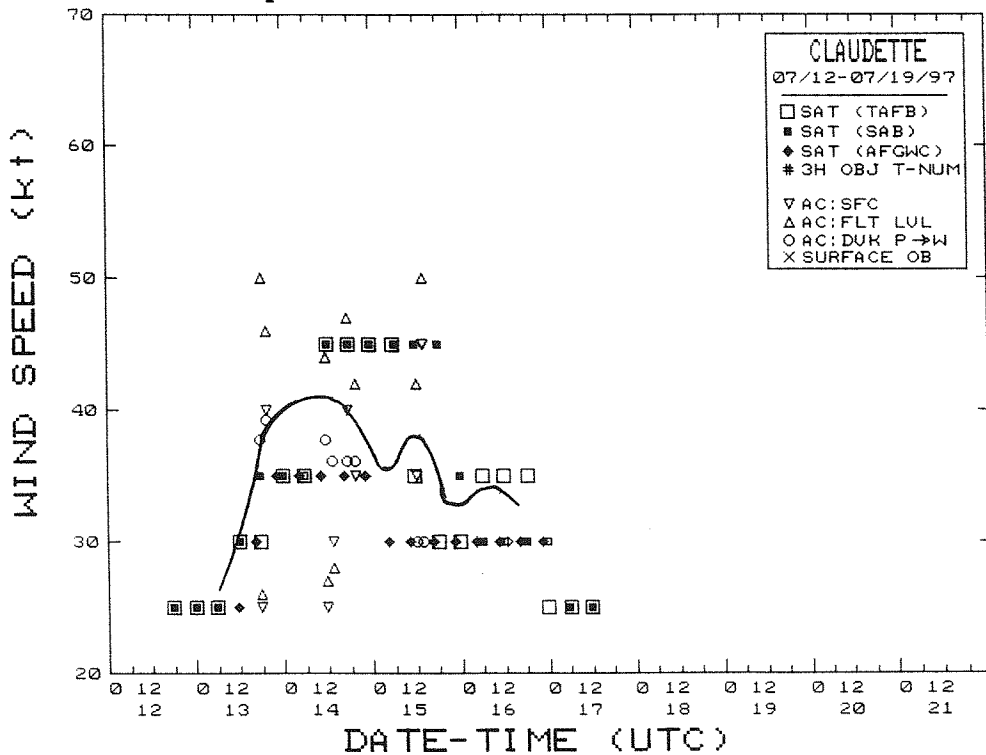


Figure 3. Best track maximum one-minute wind speed curve for Tropical Storm Claudette, July 1997. Not all aircraft observations are a sampling of the maximum wind speed.