

Preliminary Report  
Tropical Storm Gustav  
26 August - 2 September 1996

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a. Synoptic History

The origin of Gustav is tracked back to an area of disturbed weather that moved from Africa to the Atlantic Ocean on 24 August accompanied by a low-level cloud circulation. This was the third of three closely-spaced tropical cyclones which included Hurricanes Edouard and Fran. The disturbed weather gradually became better organized and a tropical depression formed from this weather on the 26th just south of the Cape Verde Islands. The best track begins on the 26th, as indicated in Table 1 and Fig. 1.

The depression moved west-southwestward at about 12 knots for two days, under the steering of a ridge of high pressure to its north. The motion turned toward the northwest on the 28th in response to a mid Atlantic trough. The trough became a cut-off low which continued to steer the storm northwestward for about five days, after which dissipation occurred. The maximum intensity of Gustav is estimated at 40 knots on the 29th. A limiting factor in the storm's development was originally the outflow from Hurricane Fran which interfered with the organization of convection during the 26th and 27th. Then the cut-off low mentioned above produced a shearing environment which eventually led to Gustav's dissipation on the 2nd of September.

b. Meteorological Statistics

Figures 2 and 3 show curves of minimum sea-level pressure and maximum one-minute surface wind speed, respectively, as a function of time. Satellite data plotted in these figures is based on the Dvorak satellite intensity estimating technique as applied at the Tropical Analysis and Forecast Branch (TAFB), the Satellite Analysis Branch (SAB) and the U.S. Air Force Global Weather Center (AFGWC). There were no ship reports of tropical storm force winds in association with Gustav.

c. Casualty and Damage Statistics

Gustav remained in the central tropical Atlantic Ocean during its existence and did not affect land.

d. Forecast and Warning Critique

The average official track forecast errors for this storm ranged from 64 nautical miles at 24 hours (14 cases) to 157 miles at 72 hours (6 cases). These values are considerably smaller than the previous 10-year average of official track forecast errors which range from 93 nautical miles at 24 hours to 273 nautical miles at 72 hours.

On the 28th and 29th, there were several official forecasts that brought the wind speed to 60 knots in 72 hours. Since this strengthening failed to materialize, there was a positive bias to the official wind speed forecast errors.

Table 1. Best track, Tropical Storm Gustav, 26 August - 2 September 1996

Date/Time (UTC)	Position		Pressure (mb)	Wind Speed (kt)	Stage
	Lat. (°N)	Lon. (°W)			
26/0000	12.7	23.0	1008	30	tropical depression
0600	12.7	24.1	1008	30	“
1200	12.5	25.3	1008	30	“
1800	12.3	26.6	1008	30	“
27/0000	12.1	27.8	1008	30	“
0600	11.7	28.8	1008	30	“
1200	11.1	30.0	1007	30	“
1800	10.6	31.0	1007	30	“
28/0000	10.4	31.8	1006	30	“
0600	10.6	32.7	1006	35	tropical storm
1200	11.0	33.6	1005	35	“
1800	11.8	34.4	1005	35	“
29/0000	12.5	35.2	1005	40	“
0600	13.1	36.2	1005	40	“
1200	13.7	37.2	1005	40	“
1800	14.4	38.0	1005	40	“
30/0000	15.2	38.4	1005	35	“
0600	15.8	38.9	1005	35	“
1200	16.2	39.5	1006	35	“
1800	16.6	40.4	1006	35	“
31/0000	17.1	41.1	1007	35	“
0600	17.7	41.8	1008	35	“
1200	18.3	42.5	1008	35	“
1800	18.7	43.2	1008	35	“
01/0000	19.3	43.8	1008	35	“
0600	19.9	44.5	1008	35	“
1200	20.5	45.4	1008	35	“
1800	20.9	46.5	1008	30	tropical depression
02/0000	21.3	47.7	1008	30	“
0600					dissipated
29/1200	13.7	37.2	1005	40	lowest pressure

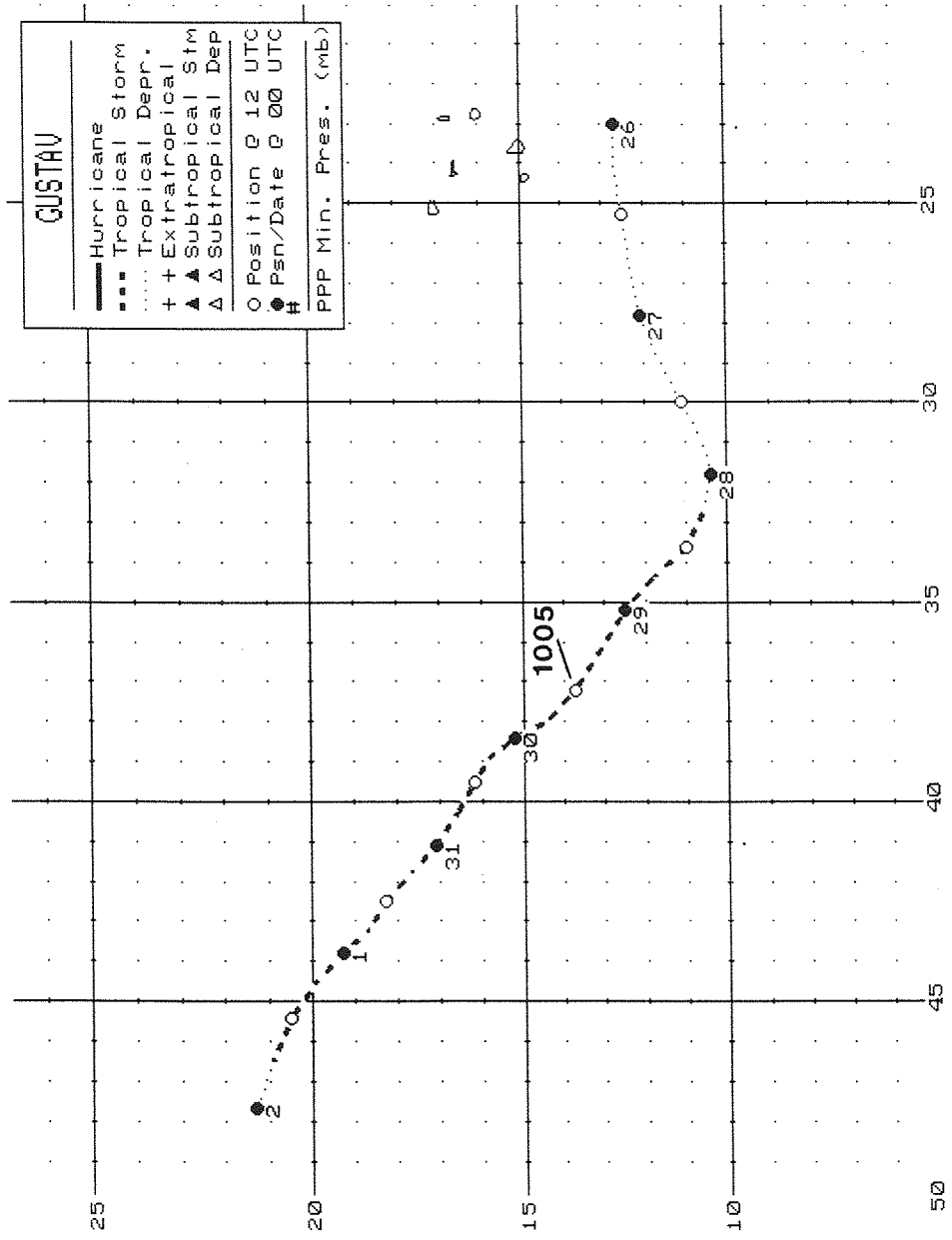


Fig. 1. Track of Tropical Storm Gustav, 26 August - 2 September 1996

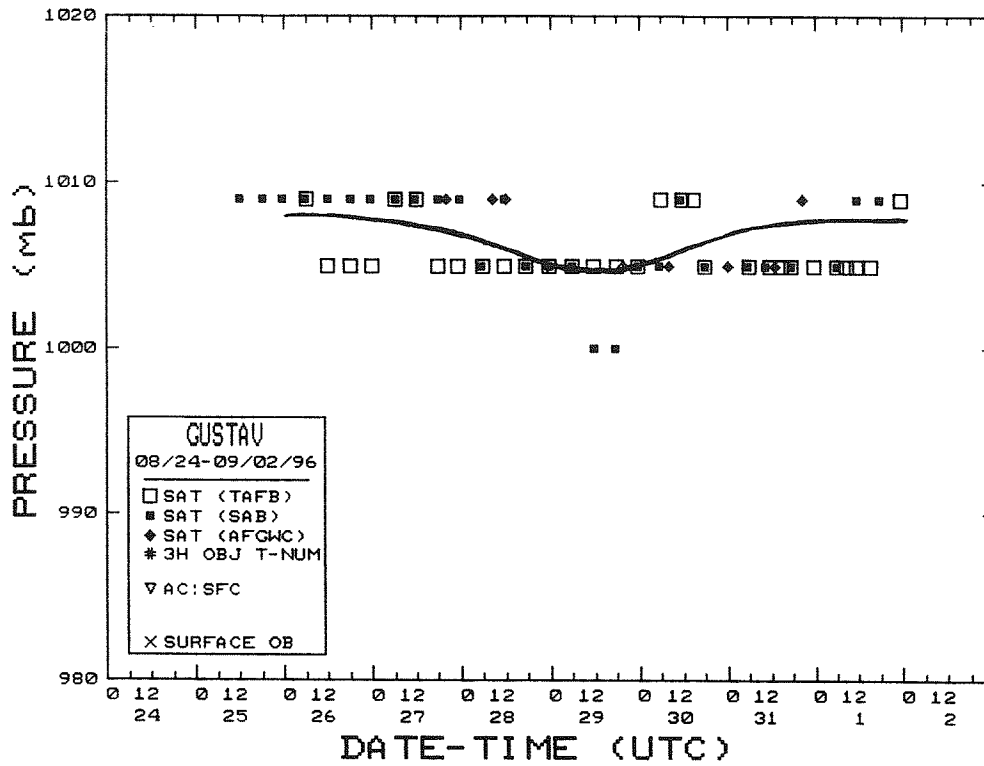


Fig. 2. Curve of minimum central sea-level pressure versus time for Tropical Storm Gustav

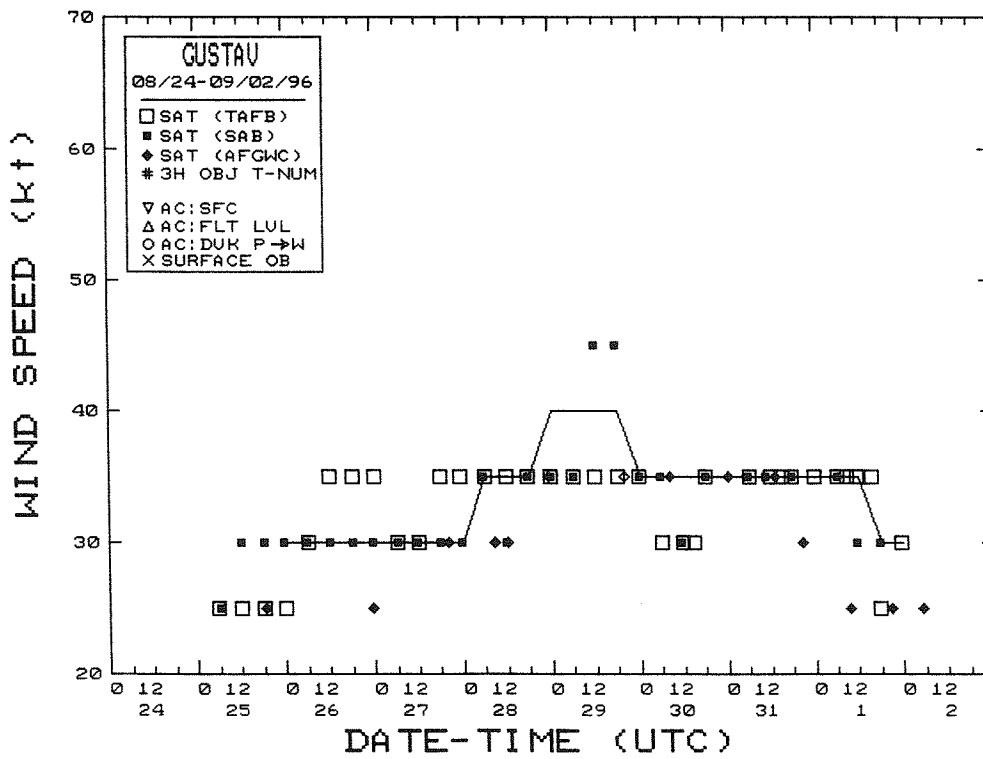


Fig. 3. Curve of maximum one-minute wind speed versus time for Tropical Storm Gustav