

**PRELIMINARY REPORT**  
Tropical Storm Fabian  
4-8 October 1997

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**a. Synoptic History**

A tropical wave crossed Dakar around the 22nd of September accompanied by a well-marked wind shift and considerable cloudiness between 8°N and 12°N. The wave moved westward for several days, with no significant change in the associated convective activity, and reached the Lesser Antilles on 29 September. Surface data indicated that a broad area of low pressure with a weak low-level circulation developed over the northern Windward Islands in association with the tropical wave. However, very strong westerly upper-level winds prevented the system from further development. Nevertheless, reports of very heavy rains and gusty winds were received from some of the islands.

The circulation moved toward the north-northwest and passed near Puerto Rico and the Virgin Islands. The relative wind shear over the system decreased as the system turned to the northeast and east to the same heading of the upper-level winds. This pattern allowed the system to become organized and a post-storm analysis of the satellite images indicate that a tropical depression formed at 1800 UTC 4 October. The depression consisted of a tight swirl of low clouds located on the edge and west of a cluster of deep convection. The thunderstorm activity fluctuated considerably during the tropical cyclone's lifetime and the low-level center was intermittently under the convection. It is estimated that the depression reached tropical storm status at 1800 UTC 5 October and reached its minimum pressure at 1200 UTC 7 October during one of the convective bursts. Fabian moved toward the northeast and became extratropical at 1200 UTC 8 October.

Fabian's track is shown in Fig. 1. Table 1 is a listing, at six-hourly intervals, of the best-track position, estimated minimum central pressure and maximum 1-minute surface wind speed.

**b. Meteorological Statistics**

The best track pressure and wind curves as a function of time are shown in Fig. 2 and 3 and are based on surface observations and satellite intensity estimates from the Tropical Analysis and Forecast Branch (TAFB), the Satellite Analysis Branch (SAB) and the Air Force Global Weather Center (AFGWC). Based on a 40-knot wind observation at 1200 UTC 8 October, from ship ZCBB7, the depression

was operationally upgraded to tropical storm status. However, a careful post-storm analysis of the observations and satellite images indicates that the system was already becoming extratropical and these winds were associated with a developing frontal zone.

#### **c. Casualty and Damage Statistics**

No reports of casualties or damage associated with Fabian were received at the National Hurricane Center, although, locally heavy rains over the Lesser Antilles could have caused some minor damage.

#### **d. Forecast and Warning Critique**

Fabian developed within a highly unfavorable upper-level environment and tropical cyclone formation was not expected. Fabian was a short-lived tropical storm and there were only a few official track or intensity forecasts. The small number of cases makes their evaluation meaningless.

#### **Figure Captions:**

- Fig. 1. Best track positions for Tropical Storm Fabian, 4 - 8 October 1997.
- Fig. 2. Best track one-minute surface wind speed curve for Tropical Storm Fabian.
- Fig. 3. Best track minimum central pressure curve for Tropical Storm Fabian.

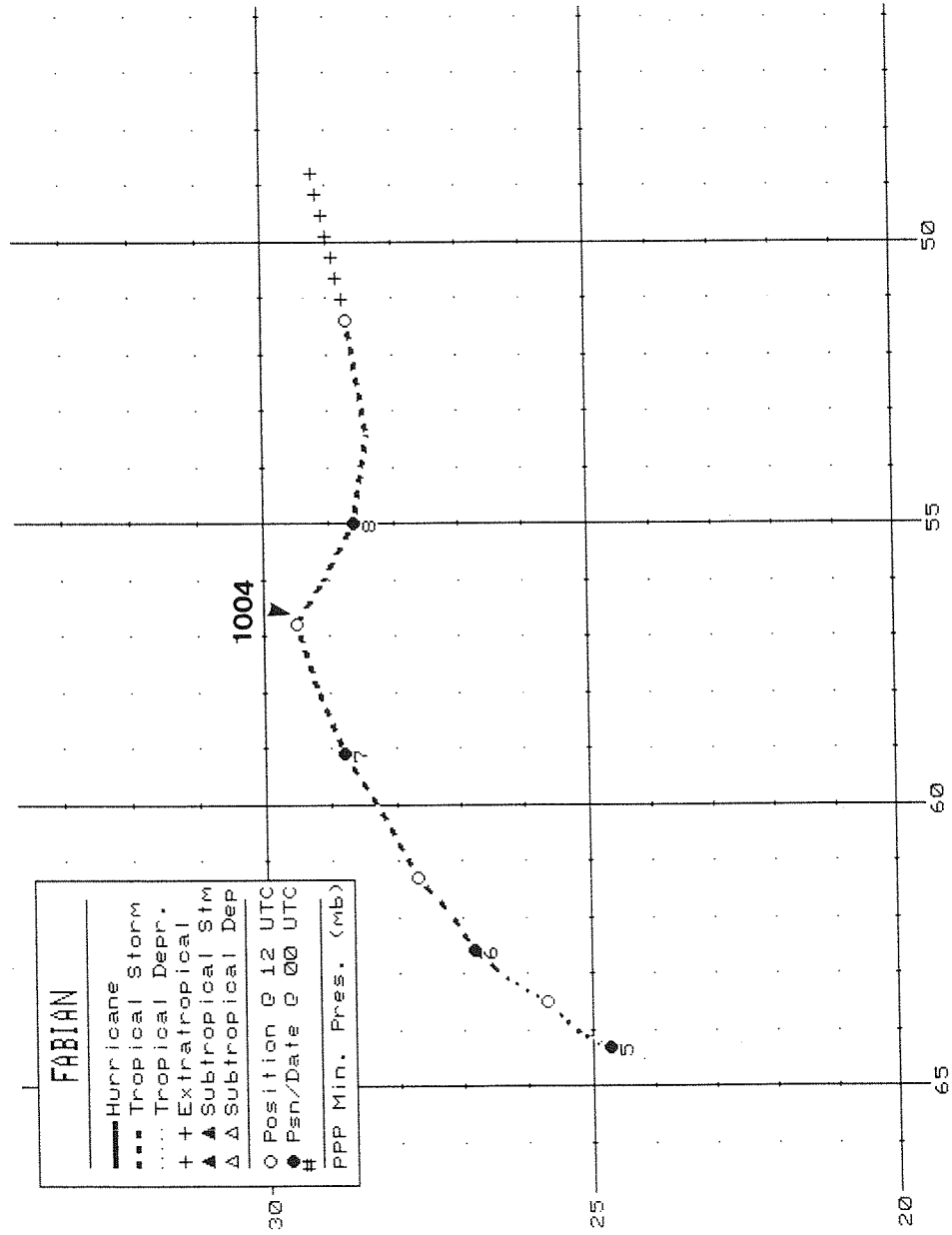


Fig. 1. Best track positions for Tropical Storm Fabian, 4 - 8 October 1997.

Correction

Table 1. Best track, Tropical Storm Fabian, 4-8 October, 1997

Date/Time (UTC)	Position		Pressure (mb)	Wind Speed (kt)	Stage
	Lat. (°N)	Lon. (°W)			
4/1800	24.2	64.5	1009	25	tropical depression
5/0000	24.7	64.3	1009	25	"
0600	25.2	64.0	1009	25	"
1200	25.7	63.5	1007	30	"
1800	26.3	63.1	1005	35	tropical storm
6/0000	26.8	62.6	1005	35	"
0600	27.2	61.9	1005	35	"
1200	27.7	61.3	1005	35	"
1800	28.2	60.2	1005	35	"
7/0000	28.8	59.1	1005	35	"
0600	29.2	57.9	1005	35	"
1200	29.5	56.8	1004	35	"
1800	29.1	56.0	1005	35	"
8/0000	28.6	55.0	1005	35	"
0600	28.4	53.4	1005	35	"
1200	28.7	51.4	1005	35	extratropical
1800	29.2	48.8	1005	40	extratropical
7/1200	29.5	56.8	1004	35	minimum pressure

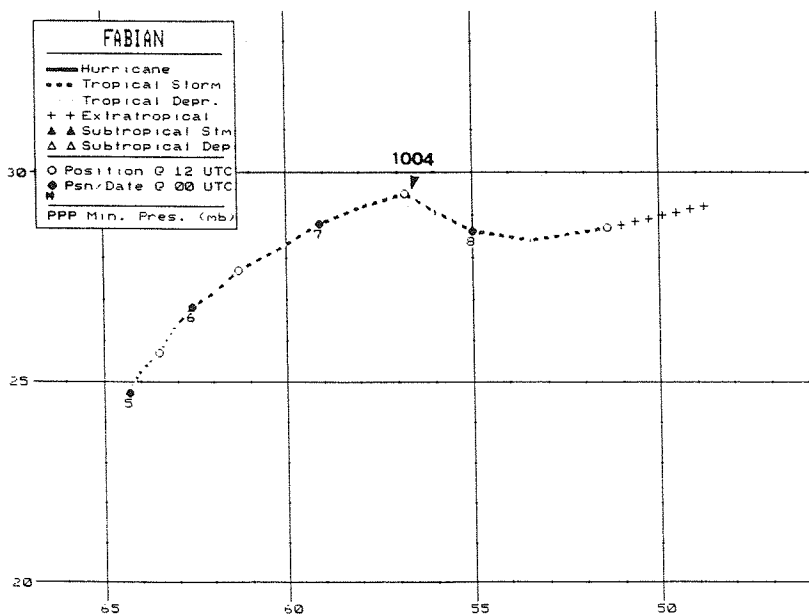


Fig. 1. Best track positions for Tropical Storm Fabian, 4 - 8 October 1997.

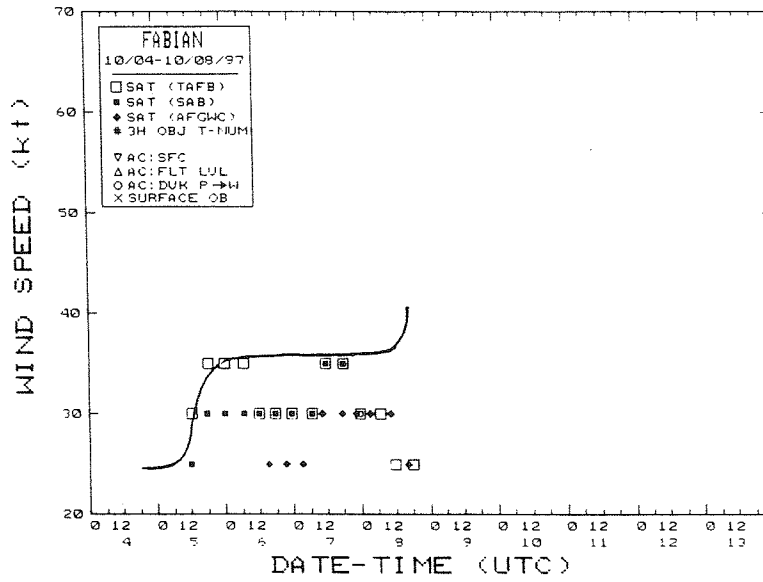


Fig. 2. Best track one-minute surface wind speed curve for Tropical Storm Fabian.

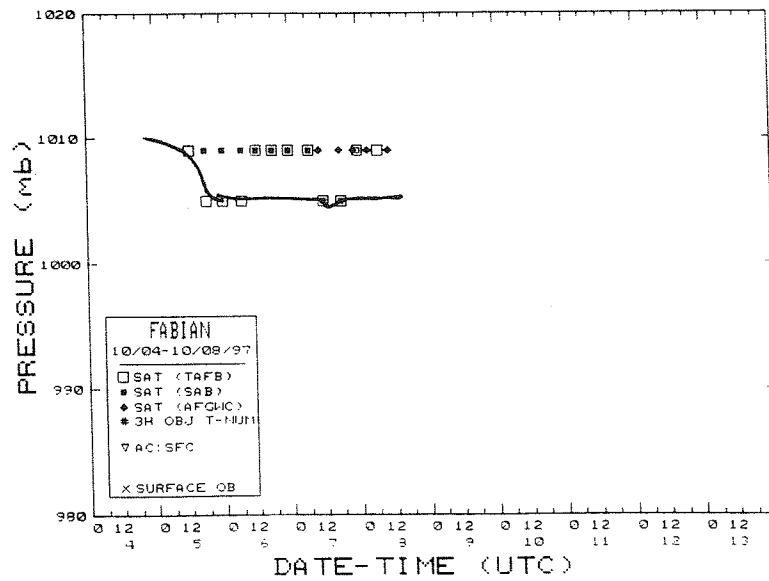


Fig. 3. Best track minimum central pressure curve for Tropical Storm Fabian.