

Preliminary report
Tropical Storm Katrina
28 October - 01 November 1999

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Katrina was a tropical depression that briefly became a 35-knot tropical storm while moving onshore on the Caribbean coast of Nicaragua.

a. Synoptic history

Satellite imagery suggests that the remnants of a cold front moved slowly southward across the western Caribbean Sea beginning on 22 October. A broad area of low pressure gradually formed over much of the Caribbean during this time and cloudiness and thunderstorms became concentrated over the southwestern Caribbean Sea on the 26th of October. On the 27th, low-level cloud lines began to show a circulation just north of Panama. On the 28th, a reconnaissance aircraft reported a well-defined low-level circulation about 150 n mi east of Bluefields, Nicaragua and tropical depression fifteen had formed. The best track begins at 1800 UTC on the 28th as indicated in Table 1, which is a listing, every six hours, of best track positions, maximum one-min surface wind speeds, and minimum central surface pressure. A map of the best track positions is shown in Fig. 1.

Katrina was a tropical storm for about six hours from 1800 UTC on the 29th to 0000 UTC on the 30th, while making landfall on the coast of Nicaragua just south of Puerto Cabezas. For the rest of its four days of existence, Katrina was a tropical depression that moved on a generally northwestward track across Nicaragua and Honduras, back over the water of the northwest Caribbean, and then across northern Belize and the Yucatan Peninsula. The depression dissipated on the 1st just north of the Yucatan Peninsula as it was absorbed by a cold front.

b. Meteorological statistics

The best track pressure and wind speed time series curves are shown in Figs. 2 and 3, along with plots of the data on which the curves are based. The system was monitored by reconnaissance aircraft on the 28th and 29th of October while located in the southwestern Caribbean Sea. The basis for naming Katrina a tropical storm was a 43-knot, 1500-foot flight level wind observation at 1824 UTC on the 29th.

Satellite-based rainfall estimates suggest that 10 to 15 inches of rain may have occurred over portions of Nicaragua and Honduras and lesser amounts for the Yucatan Peninsula. A report of 3.58 inches of rain in six hours was received on the 28th from San Andres, Colombia, an island about 100 n mi east of the coast of Nicaragua.

c. Casualties and damages

It is possible that the rainfall described above caused some flash flooding over mountainous terrain over portions of Central America. No reports of damage or casualties have been received.

d. Forecast and warning critique

A tropical storm warning was issued for the east coast of Nicaragua at 0000 UTC on the 29th and for the San Andres Islands at 0300 UTC. This was a lead time of 24 hours for the Nicaragua coast, as Katrina made landfall as a tropical storm at 0000 UTC on the 30th. The warnings for San Andres and for the east coast of Nicaragua south of Bluefields were discontinued on 1500 UTC on the 29th. The warnings for the remainder of the east coast of Nicaragua were discontinued at 0300 UTC on the 30th.

Statistics of track and intensity forecasts are calculated only for forecasts when the tropical cyclone is a tropical storm or hurricane. Since Katrina was a tropical storm very briefly, there are no meaningful statistics of track and wind speed forecast errors to report on.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
28/1800	11.4	80.9	1001	30	tropical depression
29/0000	11.6	81.6	1001	30	“
0600	12.0	82.0	1001	30	“
1200	12.6	82.6	1000	30	“
1800	13.2	82.9	1000	35	tropical storm
30/0000	13.8	83.4	999	35	“
0600	14.1	84.0	1000	30	tropical depression
1200	14.3	84.5	1001	25	“
1800	14.7	85.2	1003	25	“
31/0000	16.0	86.6	1005	25	“
0600	17.2	87.4	1007	25	“
1200	18.4	88.0	1008	25	“
1800	19.4	88.7	1009	25	“
01/0000	19.9	89.6	1010	20	“
0600	20.4	89.8	1011	20	“
1200	21.2	89.8	1011	20	“
1800	dissipated				
30/0000	13.8	83.4	999	35	landfall just south of Puerto Cabezas, Nicaragua
30/0000	13.8	83.4	999	35	minimum pressure

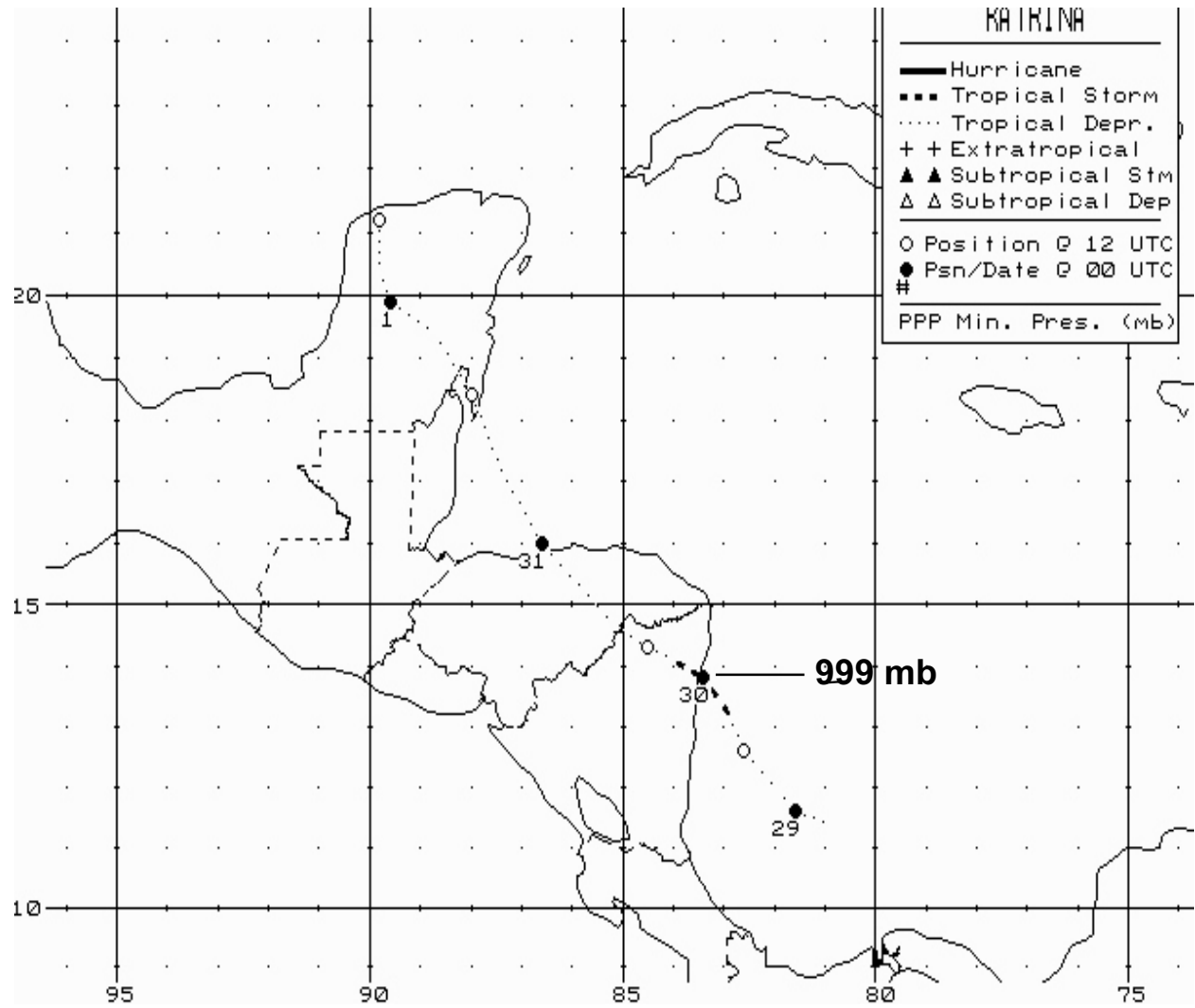


Fig. 1. Best track positions for Tropical Storm Katrina, 28 October-01 November 1999.

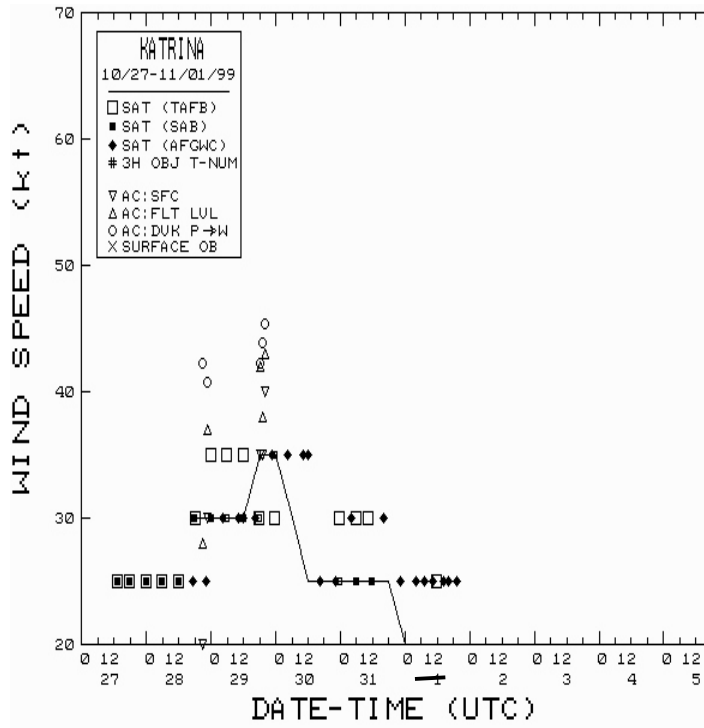


Fig. 2. Best track maximum-one-min-surface-wind-speed vs. time curve for Tropical Storm Katrina, 28 October-01 November 1999.

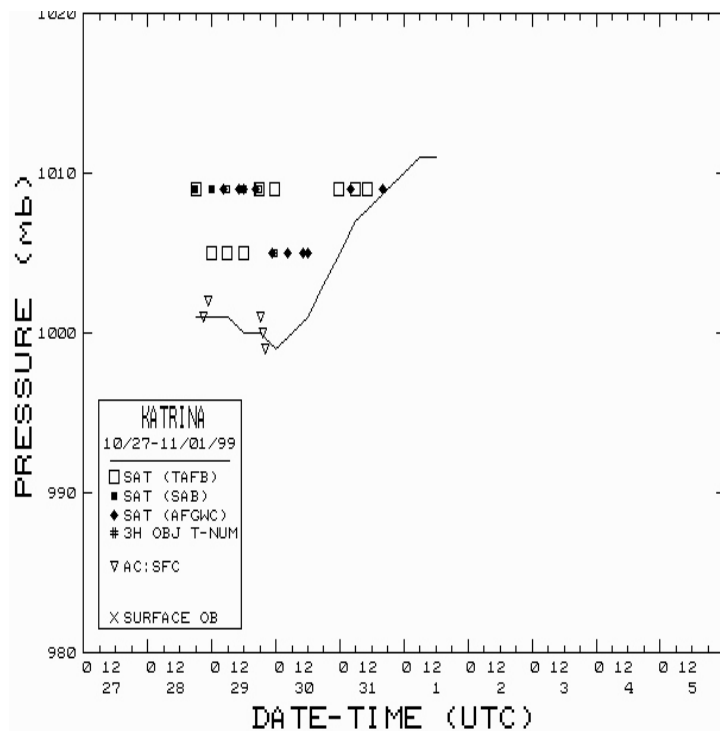


Fig. 3. Best track minimum-central-surface-pressure vs. time curve for Tropical Storm Katrina, 28 October-01 November 1999.