

Tropical Cyclone Report  
Tropical Storm Chris  
17-19 August 2000

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Chris was a short-lived tropical storm which was quickly torn apart by strong vertical wind-shear.

a. Synoptic history

Chris developed from a large amplitude tropical wave which moved off the coast of Africa on 12 August, accompanied by 24-h pressure falls of about 2.5 mb. Widespread cloudiness and showers were associated with the disturbance but most of the activity was displaced to the east and southeast of the poorly defined low-pressure circulation center. The system moved westward for a few days and the shower activity gradually became consolidated as indicated in Fig. 1. It is estimated that a tropical depression formed about 600 n mi east of the Lesser Antilles at 1200 UTC 17 August. No significant change in organization was observed during the next several hours until a burst of convection occurred and satellite estimates indicated that the depression reached tropical storm status at 1200 UTC 18 August. Soon thereafter, convection became disorganized and by the time the reconnaissance plane reached the area, the system had already weakened. In fact, data from the plane suggested that there was no longer a well-defined closed circulation. The wind-shear increased further and in about 24 hours later, Chris was just a swirl of low clouds and the tropical cyclone dissipated. Alex in 1998 and now Chris are the only two tropical storms weakened into dissipation by shear in the deep tropics since 1997 when El Nino episode enhanced the westerly wind-shear over the tropical Atlantic.

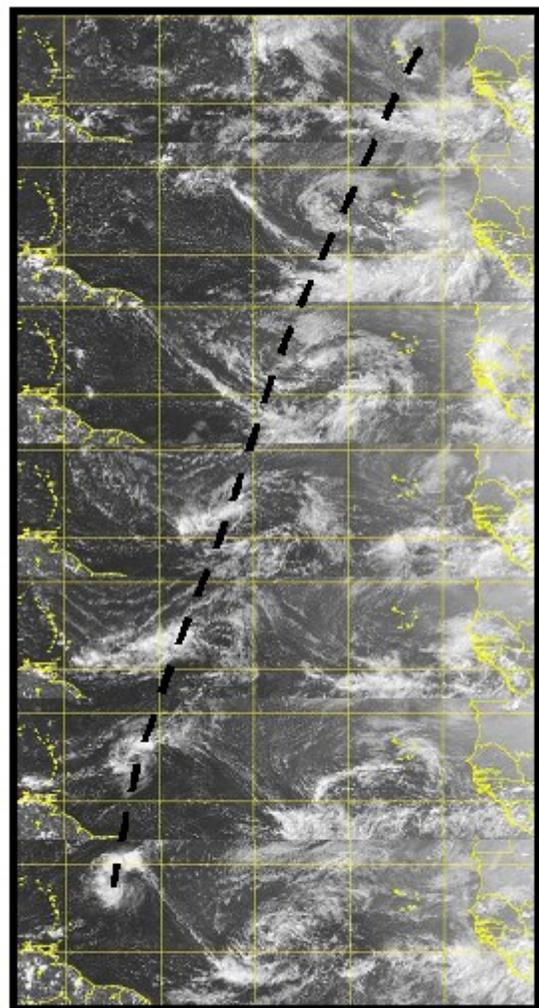


Figure 1. Sequence of daily GOES 8 visible satellite images taken at 1745 UTC 13 (top) to 18 (bottom) August, 2000. Dash line shows the westward propagation of the system center.

The best track is listed in Table 1 and is plotted in Fig. 2.

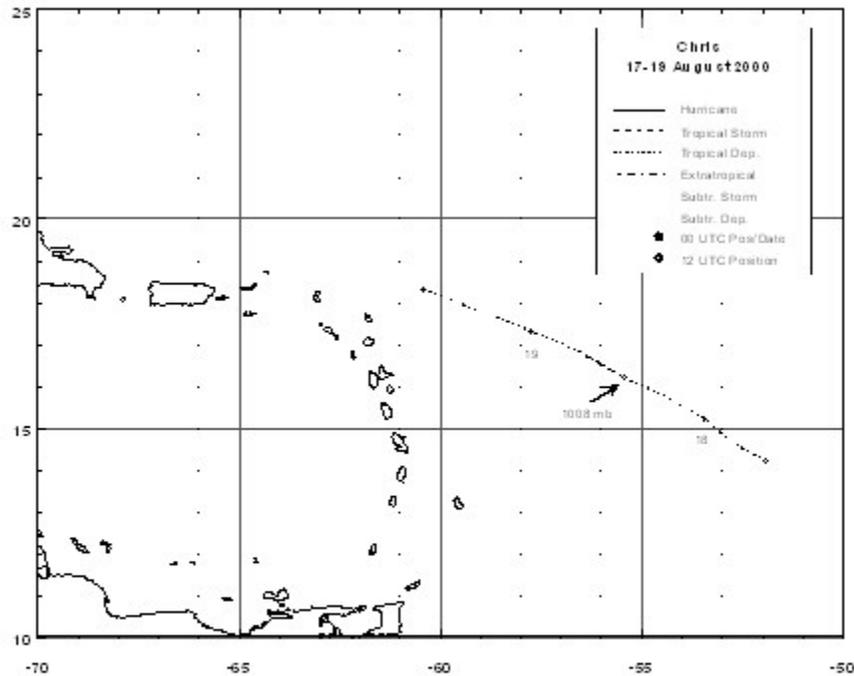


Fig 2. Best track positions for Tropical Storm Chris, 17-19 August 2000.

#### b. Meteorological statistics

Figure 3 depicts the best track curves and data plots of the maximum sustained 1-min surface winds and minimum central pressure, respectively, as a function of time. These plots include data gathered by aircraft reconnaissance and Dvorak satellite classification estimates. Chris was upgraded to a 35-knot tropical storm based on Dvorak T-numbers of 2.5 from the Tropical Prediction Center, the Satellite Analysis Branch and the Air Force Weather Agency. At that time, visible satellite images (Fig. 4) depicted the typical curved cloud band signature of a minimal tropical storm. This was the only data which implied that Chris may have reached tropical storm status and it is possible that the Dvorak technique overestimated the intensity. The satellite presentation deteriorated almost immediately and data from a reconnaissance plane about five hours later showed only a very poorly defined circulation and winds no higher than 25 knots.

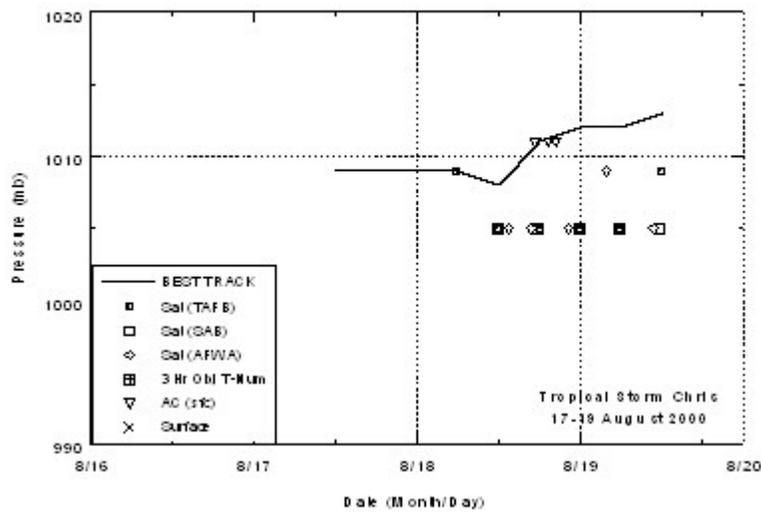
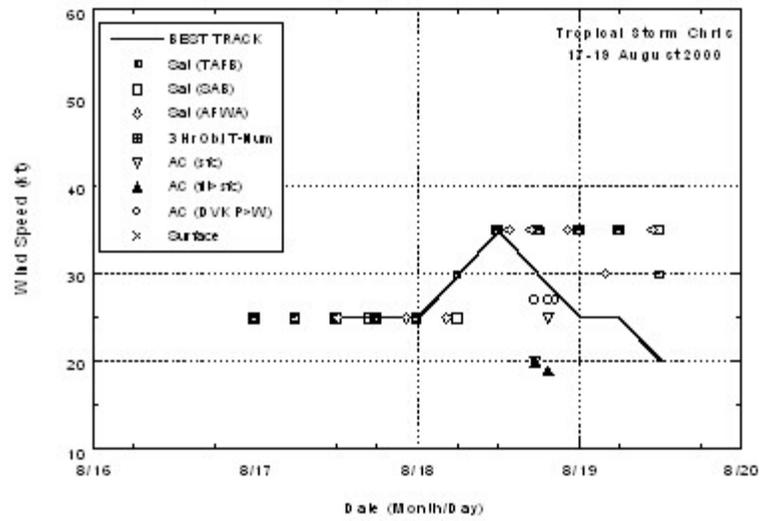


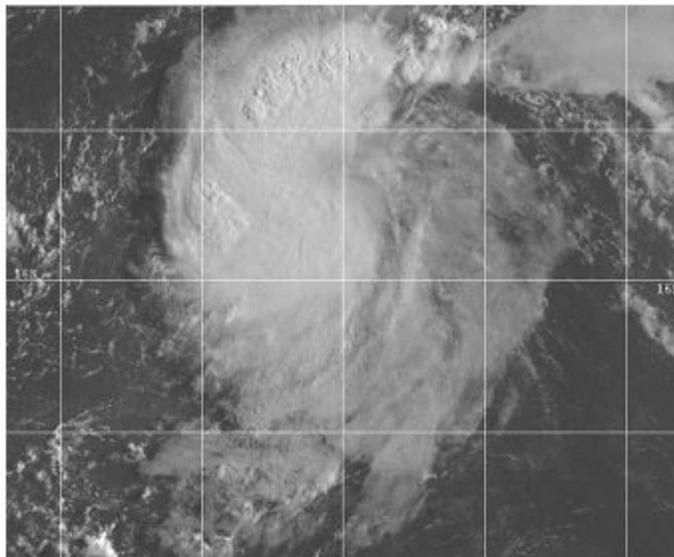
Fig. 3. Best track maximum sustained wind speed and minimum central pressure curves for Tropical Storm Chris.

c. Casualties and damages

No casualties or damages were associated with Chris.

d. Forecast and warning critique

There were too few forecasts associated with Chris to conduct a meaningful quantitative forecast evaluation. Despite the prevailing wind-shear environment, all intensity guidance as well as the official forecast incorrectly suggested strengthening.



*Fig 4. GOES 8 Visible satellite image taken at 1015 UTC 18 August near the time Chris was classified as tropical storm.*

**Table 1. Best track, Tropical Storm Chris, 17-19 August, 2000.**

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
17/1200	14.2	51.9	1009	25	tropical depression
1800	14.7	52.8	1009	25	"
18 /0000	15.2	53.4	1009	25	"
0600	15.6	54.1	1009	30	"
1200	16.2	55.4	1008	35	tropical storm
1800	16.8	56.5	1011	30	tropical depression
19/0000	17.3	57.7	1012	25	"
0600	17.8	59.0	1012	25	"
1200	18.3	60.4	1013	20	dissipating
18 / 1200	16.2	55.4	1008	35	minimum pressure