

Tropical Cyclone Report  
Hurricane Hector  
10-16 August 2000

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Hector formed southwest of Mexico, moved westward and dissipated over colder water southwest of Baja California. The remnants of Hector passed over the Hawaiian Islands several days later, producing heavy rain over most of the island chain.

a. Synoptic history

Hector developed from a tropical wave that moved off the African coast late on 29 July, accompanied by 24-h pressure falls of about 4.0 mb. The wave maintained little deep convection as it moved across the central Atlantic Ocean at about 15 knots. Convection increased when the wave interacted with an upper-level trough in the central Caribbean Sea on 4 August, but the upper-level winds remained unfavorable for tropical cyclone formation while the wave moved into Central America.

The tropical wave slowed and moved across Mexico, emerging into the eastern Pacific Ocean on 9 August. Deep convection increased significantly when the wave moved off the coast and cloud-banding features began to develop on the morning of 10 August. It is estimated that a tropical depression formed at 1800 UTC 10 August about 160 n mi southwest of Manzanillo, Mexico. The system developed under northeasterly shear. However, banding features became more distinct on the evening of 11 August and satellite estimates indicated that the depression had reached tropical storm status.

Hector slowly became more organized except the outflow which remained restricted in the northern semicircle. A strong ridge to the north steered the storm generally westward about 10 knots into a more favorable upper-level environment for strengthening. It developed a Central Dense Overcast and a "ragged eye" began to appear on visible satellite pictures. The storm became a hurricane at 0000 UTC 14 August and it is estimated that the hurricane peaked in intensity around 1200 UTC 14 August while crossing the 26 C sea surface temperature isotherm. Hector rapidly weakened after it took a brief northwest track into much cooler water and less favorable upper-level winds. Most of the deep convection associated with Hector had weakened by 1800 UTC 15 August. Hector dissipated the next day and its remnants moved westward. On 20 August, the remnants interacted with an upper-trough near the Hawaiian Islands producing locally heavy rain and some thunderstorms.

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

Table 1. Best track for Hurricane Hector, 10-16 August 2000.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
10/1800	17.8	106.6	1006	25	tropical depression
11/0000	17.7	108.1	1005	25	“
11/0600	17.9	109.2	1003	25	“
11/1200	18.1	110.4	1003	30	“
11/1800	18.3	111.7	1003	30	“
12/0000	18.5	112.9	1002	35	tropical storm
12/0600	18.5	114.1	1001	40	“
12/1200	18.4	115.1	999	45	“
12/1800	18.2	115.8	997	50	“
13/0000	18.1	116.5	996	50	“
13/0600	18.2	117.2	994	55	“
13/1200	18.2	117.7	993	55	“
13/1800	18.3	118.1	990	60	“
14/0000	18.4	118.4	986	65	hurricane
14/0600	18.7	118.9	985	65	“
14/1200	19.1	119.3	983	70	“
14/1800	19.5	119.9	984	70	“
15/0000	20.0	120.5	987	65	“
15/0600	20.3	121.2	990	60	tropical storm
15/1200	20.3	122.1	994	55	“
15/1800	20.2	123.0	998	45	“
16/0000	20.0	123.9	1000	35	“
16/0600	20.0	125.0	1004	30	tropical depression
16/1200	20.0	126.6	1005	25	“
16/1800	20.0	128.0	1006	25	“
14/1200	19.1	119.3	983	70	minimum pressure

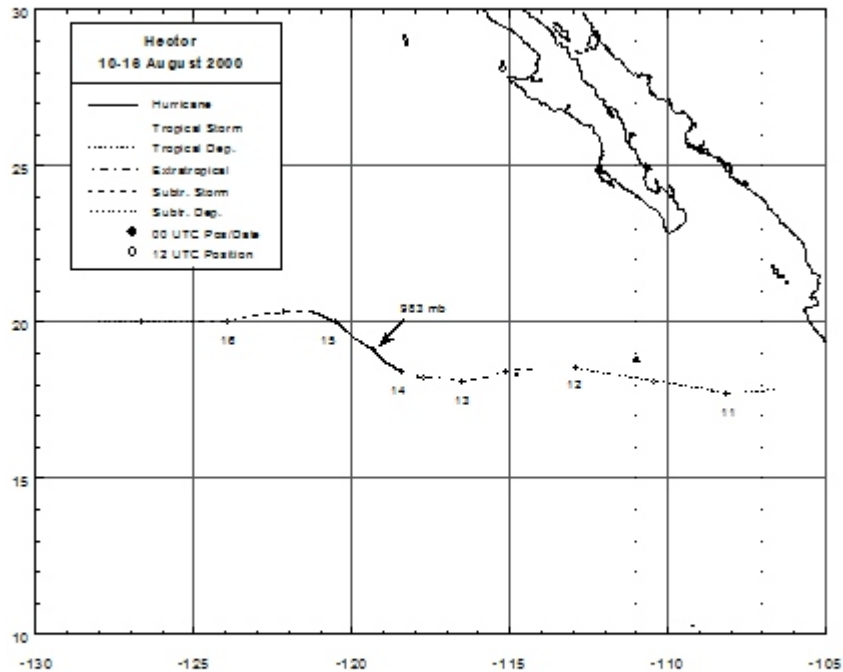


Fig. 1. Best track positions of Hurricane Hector, 10-16 August 2000.

## b. Meteorological statistics

Figure 2 shows the best track curves and maximum sustained 1-min surface winds and minimum central pressure data, respectively, as functions of time. These plots include Dvorak satellite classification estimates and early pressure estimates from synoptic analyses. SSM/I and TRMM microwave data were included in the analyses. The storm's remnants produced locally heavy rainfall over the Hawaiian Islands.

## c. Casualties and damages

No casualties or damages were associated with Hector.

d. Forecast and warning critique

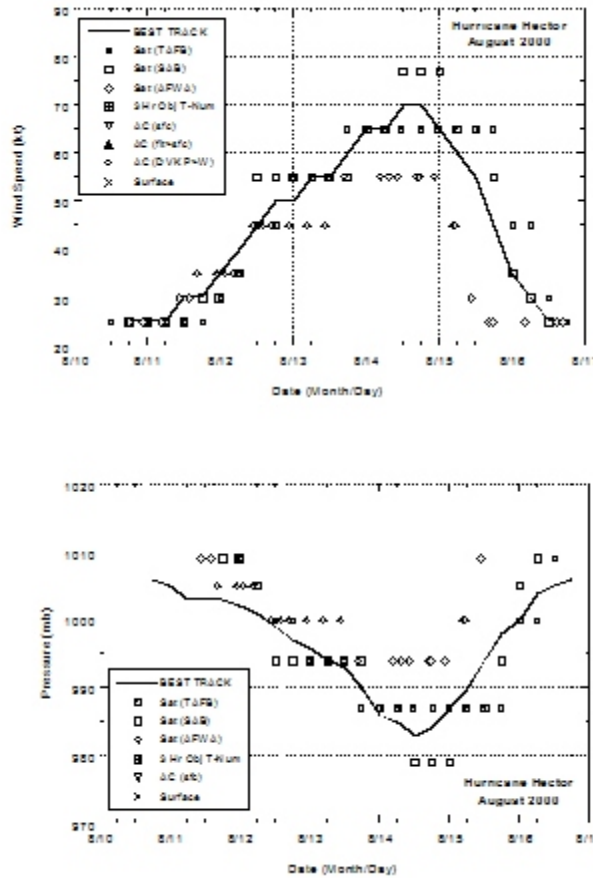


Fig. 2. Best track maximum sustained wind speed (top) and minimum pressure (bottom) central pressure curves for Hurricane Hector.

The official average track forecast error for Hector ranged from 74 n mi at 24 hours to 183 n mi at 48 hours to 290 n mi at 72 hours (5 cases only). The error at 24 hours is near the most recent ten-year average error, while the forecast error at 48 and 72 hours is considerably above the average error. However, this average is over five cases only and might not be representative.