

Preliminary Report
Hurricane Henriette
1 - 8 September 1995

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a. Synoptic History

A category 2 hurricane on the Saffir/Simpson Scale strikes the southern tip of Baja California.

Henriette formed from a tropical wave that moved westward across the west coast of Africa on 15 August. The wave traversed the Atlantic, the Caribbean and Central America and reached the eastern Pacific by the 29th of August. Over the next few days it acquired considerable deep convection and a low-level circulation. It became a tropical depression on 1 September while centered about 150 n mi off the southwest coast of Mexico. Henriette's track begins here and is shown in Fig. 1; six-hour track positions, maximum one-minute wind speeds and minimum sea level pressure are listed in Table 1.

The depression moved northwest and then northward during the next two days and its motion slowed. It strengthened to a tropical storm on the 2nd and to a hurricane on the 3rd, while its center moved within 100 n mi of the mainland near Puerto Vallarta. Henriette turned back toward the northwest and accelerated and its center moved to the extreme southern tip of Baja California at mid day on the 4th. A well-defined eye formed and the hurricane is estimated to have reached its peak intensity of 85 knots at 1200 UTC on the 4th when the northern eyewall moved over land.

By the 5th, the hurricane was turning toward the west and moving away from land. It gradually weakened over the next three days. There was only a swirl of low clouds left to track by the 7th and 8th, about 900 n mi west of Baja California.

b. Meteorological Statistics

Figures 2 and 3 show the curves of minimum sea-level pressure and maximum one-minute wind speed as a function of time, along with the data on which they are based. No reports have been received from the area of Baja California that experienced hurricane conditions. Except for ship reports, all of the data in both figures are satellite-based estimates.

The ship WLDF reported 70-knot sustained winds, from 03-0500 UTC on the 3rd and while located about 20 n mi northeast of the center. This was the basis for operationally upgrading Henriette to a hurricane as the highest satellite-based estimates were 55 knots prior to the ship report. Ship reports of tropical storm winds or higher are listed in Table 2.

c. Casualty and Damage Statistics

It is estimated that sustained winds of 85 knots affected the extreme southern tip of the peninsula. There was heavy road damage (from storm surge flooding) in the state of Baja California Sur and 800 people were forced from their homes, according to Mexican officials. Agriculture was adversely affected. Up to ten inches of rainfall may have occurred, based on estimates from satellite imagery. No deaths have been reported.

d. Forecast and Warning Critique

The average official track errors ranged from 86 n mi at 24 hours to 180 n mi at 48 hours to 158 n mi at 72 hours. Except for 72 hours, the average errors are a little higher than the long-term averages since 1988. The largest track errors are from forecasts made on the 4th when the hurricane was moving northwestward near Baja California. The forecasts were biased to the north and too slow in anticipating the accelerating westward movement which followed. The 72-hour forecasts made at this time did not verify as Henriette weakened to a depression on the 7th.

There were some 30-35 knot negative errors of the 24-hour wind speed forecasts issued on the 2nd. These forecasts did not correctly anticipate the strengthening that occurred on the 3rd.

A tropical storm watch was issued by the government of Mexico for Baja California south of La Paz at 2100 UTC on the 2nd. This was changed to a hurricane watch at 0430 UTC on the 3rd and to a hurricane warning at 2100 UTC. The hurricane warning was extended northward to 25 degrees north latitude at 0900 UTC on the 4th. Warnings were discontinued 24 hours later. Landfall is estimated at 1500 UTC on the 4th, so the hurricane watch provided about 34 hours lead time and the warning gave 18 hours lead time. The lead times to the onset of tropical storm conditions are, of course, somewhat less.

Table 1. Track of Hurricane Henriette, September 1995.

Date/Time (UTC)	Position		Pressure (mb)	Wind Speed (kt)	Stage
	Lat. (°N)	Lon. (°W)			
01/0000	15.7	103.8	1007	25	Trop. Dep.
0600	16.0	104.9	1007	25	"
1200	16.4	105.9	1006	25	"
1800	17.0	106.6	1006	30	"
02/0000	17.7	107.0	1005	30	"
0600	18.2	107.1	1004	30	"
1200	18.7	107.2	1000	35	Trop. Storm
1800	19.3	107.3	995	45	"
03/0000	19.7	107.4	990	60	"
0600	20.1	107.5	983	75	Hurricane
1200	20.6	107.5	982	75	"
1800	21.0	107.6	981	75	"
04/0000	21.6	108.0	980	75	"
0600	22.1	108.8	975	80	"
1200	22.6	109.7	970	85	"
1800	23.2	110.7	975	80	"
05/0000	23.7	112.0	979	75	"
0600	24.2	113.4	981	75	"
1200	24.5	114.9	984	70	"
1800	24.6	116.4	987	65	"
06/0000	24.7	117.9	990	55	Trop. Storm
0600	24.7	119.2	996	50	"
1200	24.7	120.5	1001	40	"
1800	24.6	121.7	1004	35	"
07/0000	24.5	123.0	1005	35	"
0600	24.4	124.3	1007	30	Trop. Dep.
1200	24.4	125.5	1008	30	"
1800	24.6	126.7	1009	30	"
08/0000	24.6	127.7	1009	25	"
0600					dissipated
04/1500	22.8	109.9	970	85	landfall

Table 2. Ship reports of 34-knot sustained winds or higher.

Date/ time (UTC)	Ship	Lat.	Lon.	Wind spd/dir (knots)	Press. (mb)
02/1800	3FOB4	19.9	106.7	100/37	1004.2
03/0300	WLDF	20.3	107.4	70	991.1
03/0400	WLDF	20.2	107.2	090/70	991.0
03/0500	WLDF	20.2	107.1	090/70	992.6
03/0600	WLDF	20.1	107.0	090/55	997.5
03/0600	4XGR	20.5	106.3	100/39	1009.0
03/0900	4XGR	19.9	105.7	100/35	1009.0

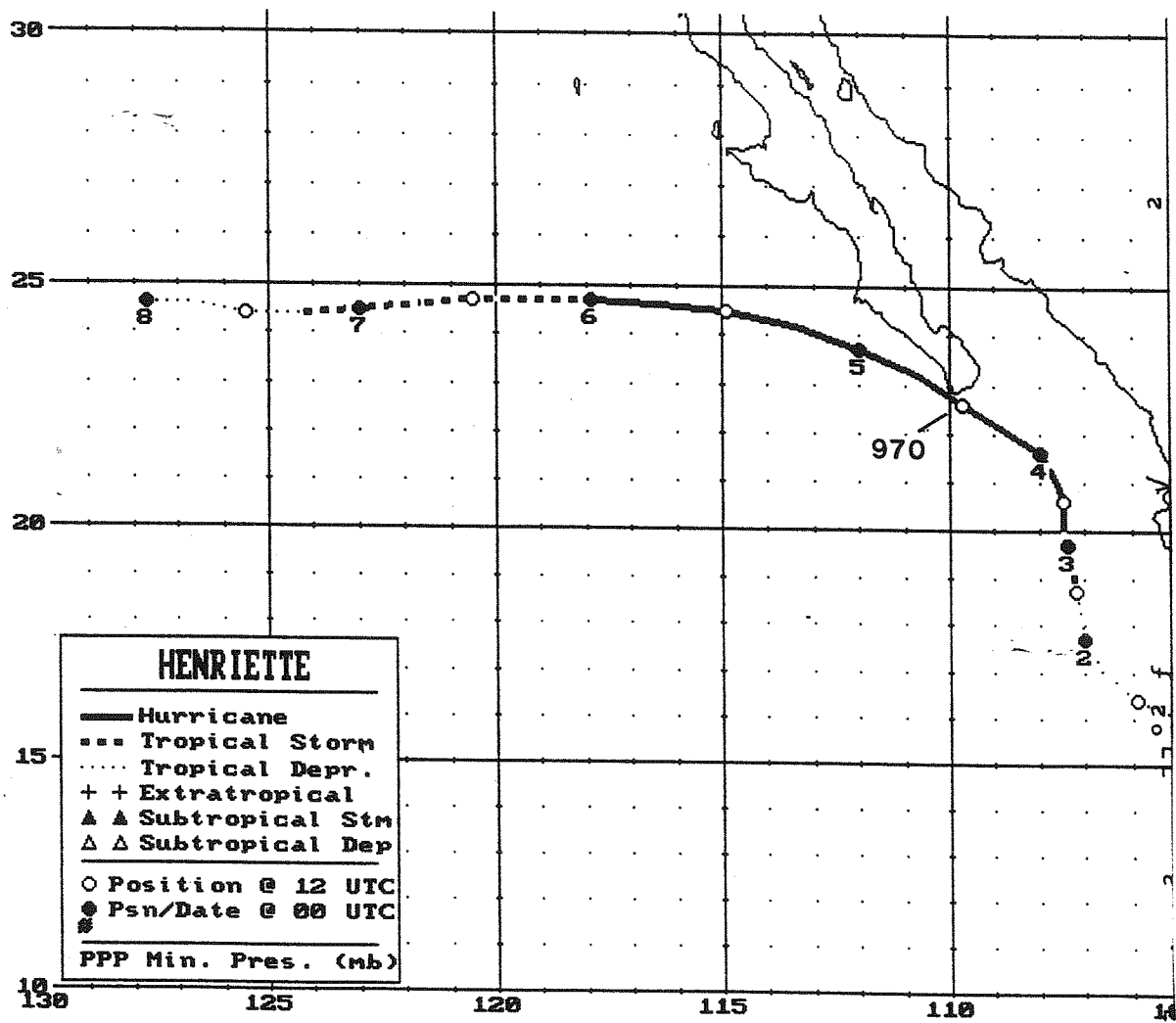


Fig. 1. Track of Hurricane Henriette, 1-8 September 1995

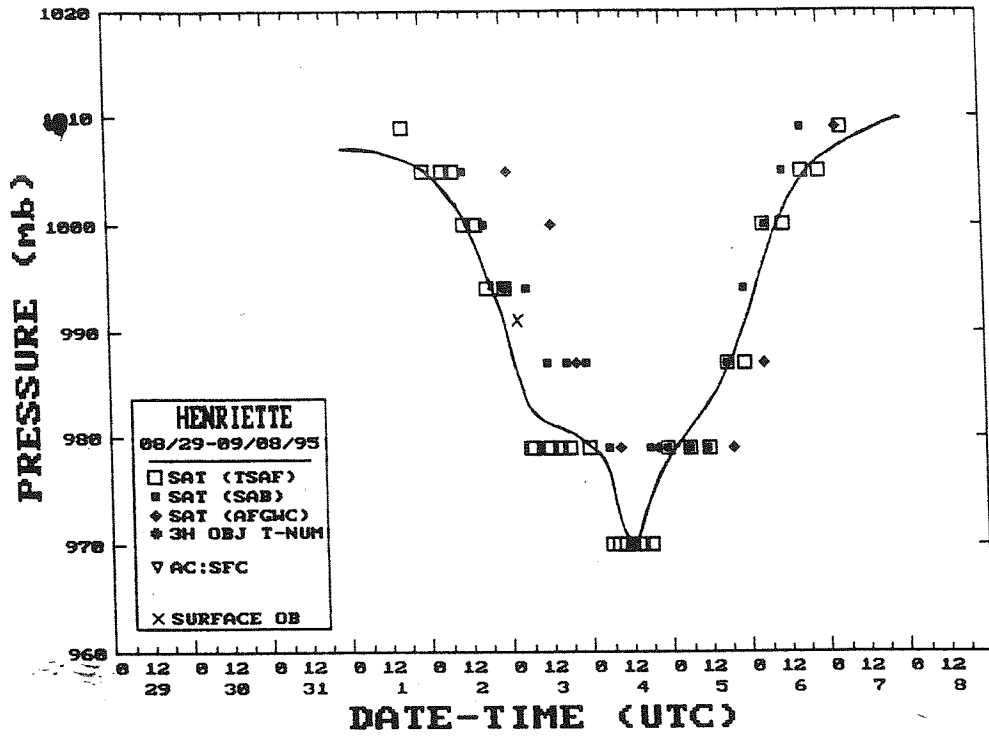


Fig. 2. Minimum sea-level-pressure versus time.

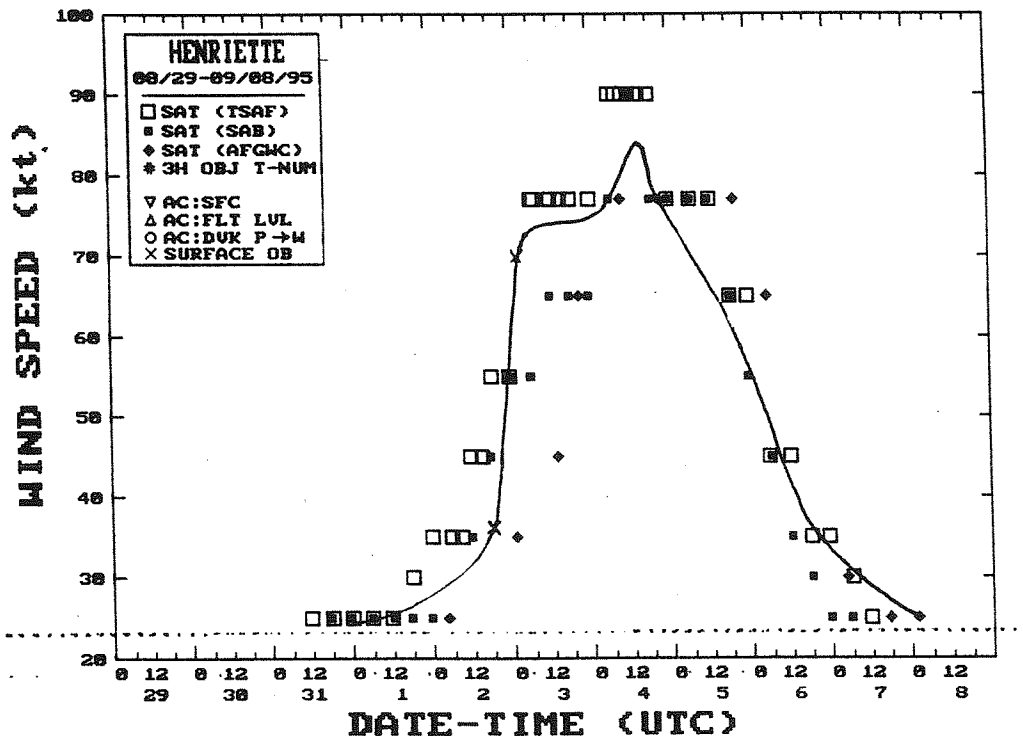


Fig. 3. Maximum one-minute wind speed versus time.