



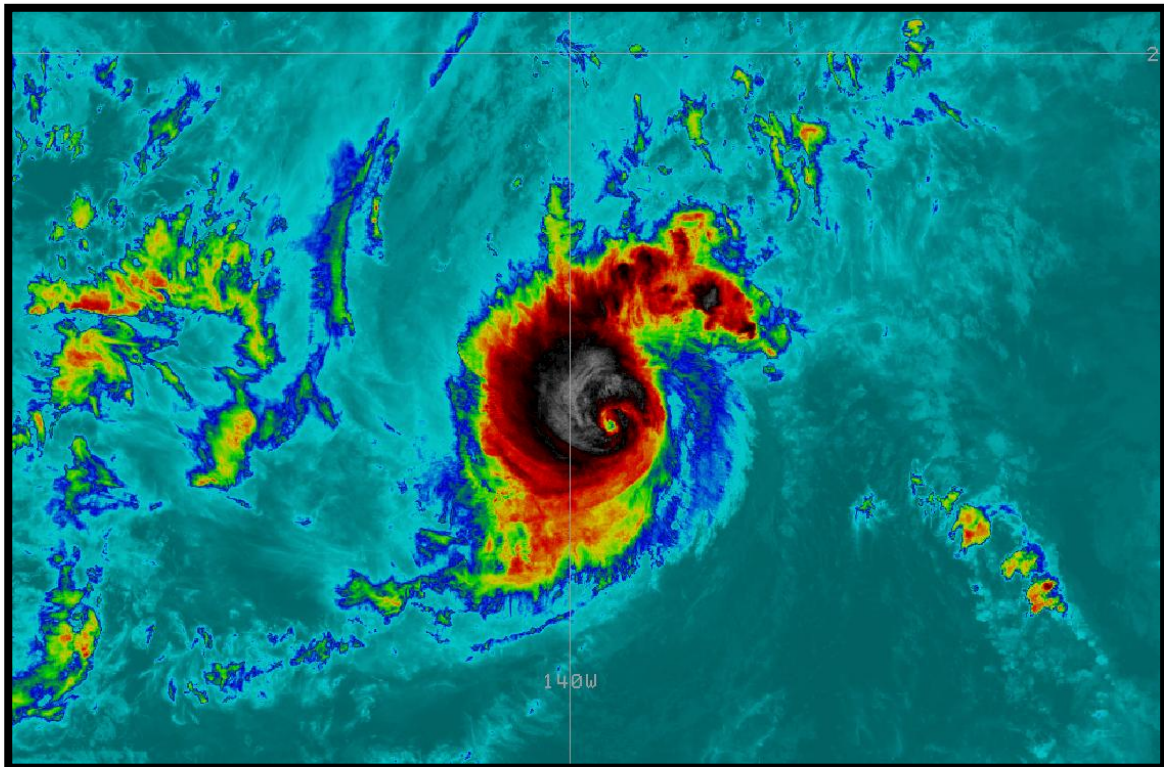
CENTRAL PACIFIC HURRICANE CENTER TROPICAL CYCLONE REPORT

HURRICANE HENRIETTE (EP082013)

3 – 11 August 2013

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SUOMI NPP VIIRS INFRARED IMAGE OF HURRICANE HENRIETTE AT 2226Z ON 8 AUGUST 2013 (COURTESY OF UW-CIMSS)

Hurricane Henriette

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SYNOPTIC HISTORY

A closed low was analyzed within a wave embedded in the Intertropical Convergence Zone (ITCZ) in the eastern Pacific basin on August 2. Convective organization improved sufficiently by 12Z August 3 to upgrade this low to tropical depression status. This depression continued to develop, becoming Tropical Storm Henriette at 00Z August 4. Skirting around the southern periphery of a mid-level ridge, Henriette stayed over warm water and strengthened to a hurricane at 06Z August 6 while about 1300 nm west southwest of the southern tip of Baja California.

Henriette crossed 140W into the Central Pacific Hurricane Center (CPHC) area of responsibility between 00Z and 06Z August 9 2013. CPHC assumed warning responsibility with the 09Z August 9 forecast package. Henriette was the eighth tropical cyclone to affect the central Pacific basin during the 2013 hurricane season and the third to cross over from the eastern Pacific basin, after Flossie and Gil. Henriette was a minimal hurricane as it crossed 140W, weakening over cooler water after reaching a maximum strength of 90 knots 12 hours previously with the 21Z August 8 forecast package from the National Hurricane Center (NHC). The overall intensity trend for Henriette was continued weakening for the three days that CPHC issued warnings for this system.

SHIPS intensity forecast guidance indicated southerly shear across Henriette was less than 15 knots from 06Z August 9 through 00Z August 11. Gradual system weakening during this time was likely caused by sub 27 degree C sea surface temperatures (SSTs). However, southerly shear began to increase after 06Z as this system continued its track to the west southwest along the southern periphery of strengthening deep high pressure. Henriette didn't encounter SSTs conducive for development along its track west of 140W until near dissipation, with SSTs staying near or below 26 degrees C until then. Being a rather small system, Henriette continued to weaken within this increasing shear environment even after SSTs started to warm near the end of the track. As deep convection dwindled, steering flow became shallower until it matched low level east northeast trade flow near the end. Henriette became a tropical storm again at 12Z August 9, only six hours after crossing into the central Pacific basin, then weakened to a depression at 12Z August 11 as it passed about 330 nm south of South Point on the big island of Hawaii. The remnant low then dissipated 12 hours later, at 00Z August 12, about 470 nm southwest of Kailua-Kona, Hawaii.

METEOROLOGICAL STATISTICS

Observations for Henriette include subjective satellite-based Dvorak technique intensity estimates from the Central Pacific Hurricane Center (HFO), Tropical Analysis and Forecast Branch (TAFB), the Satellite Analysis Branch (SAB), and the Joint Typhoon Warning Center (JTWC), and objective Advanced Dvorak Technique (ADT) estimates from the Cooperative Institute for Meteorological Satellite Studies/University of Wisconsin-Madison. Data and imagery from NOAA polar-orbiting satellites including the Advanced Microwave Sounding Unit (AMSU), the NASA Tropical Rainfall Measuring Mission (TRMM), the European Space Agency's Advanced Scatterometer (ASCAT), and Defense Meteorological Satellite Program (DMSP) satellites, among others, were also useful in constructing the best track of Henriette west of 140W (Table 1).

Henriette had already reached peak intensity before crossing into the CPHC area of responsibility. However, this system was still a minimal hurricane as it crossed into the central Pacific basin, with initial intensity set at 65 knots for the 09Z August 9 CPHC forecast package.

CASUALTY AND DAMAGE STATISTICS

There were no reports of damage or casualties associated with Henriette.

FORECAST AND WARNING CRITIQUE

A verification of CPHC official track forecasts for Henriette is given in Table 2. The CPHC official track forecasts had lower average errors than the BAMB and BAMD track models at all available tau as well as the GFDI through 24 hours. However, GFSI and BAMS had lower average errors than the CPHC track forecasts, with GFSI performing better at all tau. CPHC track forecasts had less error than the Canadian dynamical model, but more error than the European dynamical model and the consensus models. The Henriette best track had only 12 points west of 140W, enough for only two 48 hour verification points. No 72, 96 or 120 hour forecast verification points are available, so the forecast verification sample size for this system is quite small. There were no coastal watches or warnings issued in association with Henriette.

A verification of CPHC official intensity forecasts for Henriette is given in Table 3. The CPHC official intensity forecasts had lower average errors than all intensity models at all tau, except for LGEM at 48 hours.

Table 1. Best Track Data

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
09/0600	16.6	140.8	992	65	Hurricane
09/1200	16.1	141.7	995	60	Tropical Storm
09/1800	15.6	143.3	996	55	"
10/0000	15.1	144.6	998	50	"
10/0600	14.5	145.9	1002	45	"
10/1200	14.2	147.5	1002	45	"
10/1800	14.0	149.3	1002	45	"
11/0000	13.9	151.0	1006	35	"
11/0600	13.7	153.0	1008	35	"
11/1200	13.6	155.0	1009	30	Tropical Depression
11/1800	13.5	157.2	1010	30	Low
12/0000	13.4	159.3	1010	25	Low

Table 2. Track Verification Table entries are track forecast errors, measured in nautical miles. Values in parentheses indicate the number of forecasts. Values in bold represent guidance forecast errors equal to or less than the official CPHC forecast.

Forecast	12-hr	24-hr	36-hr	48-hr	72-hr	96-hr	120-hr
CPHC	22 (8)	37 (6)	60 (4)	100 (2)	n/a	n/a	n/a
CLP5	42 (8)	98 (6)	177 (4)	284 (2)	n/a	n/a	n/a
BAMD	53 (8)	93 (6)	156 (4)	241 (2)	n/a	n/a	n/a
BAMM	30 (8)	44 (6)	67 (4)	125 (2)	n/a	n/a	n/a
BAMS	21 (8)	35 (6)	49 (4)	66 (2)	n/a	n/a	n/a
GFDI	28 (8)	39 (6)	50 (4)	81 (2)	n/a	n/a	n/a
GFSI	23 (8)	29 (6)	41 (4)	95 (2)	n/a	n/a	n/a
HWFI	38 (8)	59 (6)	72 (4)	111 (2)	n/a	n/a	n/a
EMXI	20 (8)	28 (6)	55 (4)	95 (2)	n/a	n/a	n/a
CMCI	38 (8)	52 (6)	83 (4)	184 (2)	n/a	n/a	n/a
TVCE	26 (8)	34 (6)	52 (4)	88 (2)	n/a	n/a	n/a
AEMI	21 (8)	21 (6)	30 (4)	72 (2)	n/a	n/a	n/a

Table 3. Intensity Verification Table entries are intensity forecast errors, measured in knots. Values in parentheses indicate the number of forecasts. Values in bold represent guidance forecast errors equal to or less than the official CPHC forecast.

Forecast	12-hr	24-hr	36-hr	48-hr	72-hr	96-hr	120-hr
CPHC	3 (8)	4 (6)	5 (4)	3 (2)	n/a	n/a	n/a
HWFI	5 (8)	6 (6)	10 (4)	5 (2)	n/a	n/a	n/a
GFDI	4 (8)	5 (6)	9 (4)	6 (2)	n/a	n/a	n/a
DSHP	5 (8)	6 (6)	8 (4)	11 (2)	n/a	n/a	n/a
LGEM	5 (8)	5 (6)	7 (4)	2 (2)	n/a	n/a	n/a
ICON	5 (8)	5 (6)	7 (4)	3 (2)	n/a	n/a	n/a
IVCN	5 (8)	5 (6)	7 (4)	3 (2)	n/a	n/a	n/a