iCyclone Chase Report

storm	**Hurricane JOVA**		
location	Emiliano Zapata, Jalisco, Mexico		
date	11-12 October 2011		
chasers	Josh Morgerman, Jim Edds	**author**	Josh Morgerman

Location

We observed the passage of Hurricane Jova in the small town of **Emiliano Zapata, Jalisco, Mexico**, at **19.386N 104.965W**. We rode out the storm tucked in a carport at the entrance to a small convenience store on Highway 200.

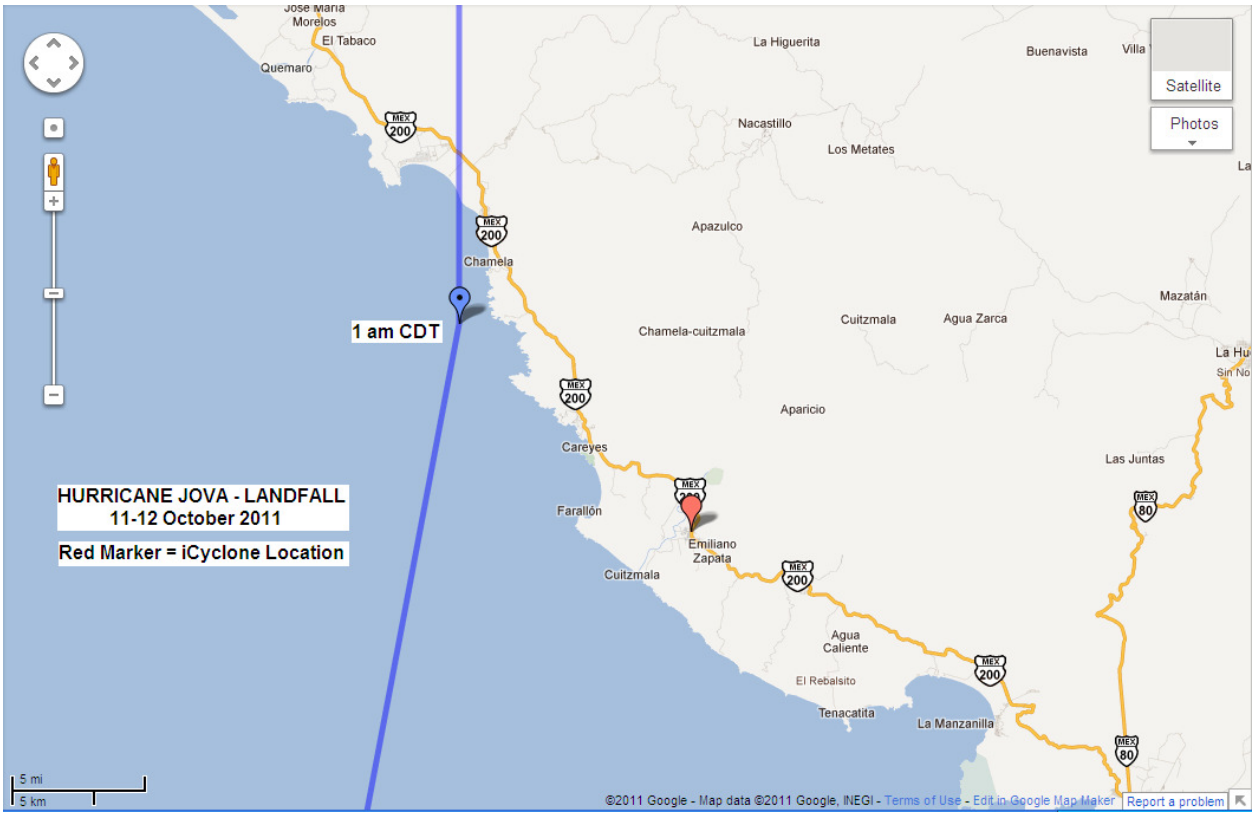
This location was **8 n mi E of Jova's center** (at its point of closest approach).

We arrived at this location at about **11:00 pm CDT 11 October**. We remained there during the approach and passage of Jova's inner core, departing a little after **1:30 am CDT 12 October**.

The **Chase Map** shows **our location** (**red marker**) in relation to **Jova's center** (**blue markers**), as per NHC advisory positions. (**Chase Map Detail** is a closer view.)

Figure 1: Chase Map

Figure 2: Chase Map Detail



Highlights

Jova was a **small, violent hurricane** with a tightly-wound wind core. While destructive winds lasted only about **2 hours** at our location, the cyclone's punch was surprisingly severe. We believe we were situated **in or very near Jova's RMW** and probably experienced some of the cyclone's highest winds.

- **Lowest pressure.** I measured a low pressure of **985.2 mb at 12:33 am CDT**, as the center passed to our W. (See the **Barogram** for a complete record of the pressure's fall and rise as Jova's center passed nearby. The sampling rate was 30 seconds.)
    - **Note:** The barometer, a **Kestrel 4500**, was calibrated for sea-level readings using an altitude of 73 ft, which is what the car GPS system indicated. The exact accuracy of that altitude is unknown, and it could be 10-20 ft higher or lower.

- **Maximum winds.** Winds became destructive starting around 11:30 pm CDT and **peaked between about 12:45 am to 1:00 am, as the SE eyewall apparently crossed the area.** The peak winds came in violent bursts, generally from the S, lasting 15 seconds to over 1 minute each. These bursts were accompanied by extremely heavy rainfall causing near whiteout conditions.

The following section lists observations chronologically, in greater detail.

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Detailed Chronology

Following are the observations presented chronologically. All times are **local (CDT)** and rounded to nearest 5 minutes (except for time of **lowest pressure**, which is precise). **Red text** indicates significant events or changes:

11 October 2011

- **11:15 pm**
  - **Precip/sky:** Moderate rain.
  - **Wind:** Strong—generally N.
  - **Pressure:** **994.8 mb**
- **11:30 pm**
  - **Precip/sky:** Moderate rain.
  - **Wind:** **Gusty, damaging**—generally N; tree across street uprooted.
  - **Pressure:** **992.5 mb**

12 October 2011

- **12:10 am**
  - **Precip/sky:** Moderate rain.
  - **Wind:** Gusty, strong—**seems to reverse: shifts to generally S**.
  - **Pressure:** **988.3 mb**
  - **Comment:** The reversal in the wind direction was rather abrupt, and we had trouble making sense of it—however, it's clearly documented in the video footage (see below).
- **12:33 am**
  - **Precip/sky:** Moderate rain.
  - **Wind:** Gusty, damaging—generally S; large sign bends and falls on the roof of the carport.
  - **Pressure:** **985.2 mb (lowest)**
- **12:45 am**
  - **Precip/sky:** **Heavy rain.**
  - **Wind:** **Severe & rapidly increasing**—generally S.
  - **Pressure:** **986.2 mb**
- **12:55 am**
  - **Precip/sky:** **Very heavy rain.**
  - **Wind:** **Violent**—generally S; **high-energy bursts lasting 15 seconds to well over 1 minute rake the area**.
  - **Pressure:** **986.8 mb**
  - **Comments**
    - These peak winds were accompanied by bursts of **extremely heavy rainfall**, reducing visibility to near-zero.
    - We noticed our **ears were popping** during these violent winds. (The next day, a resident mentioned this same sensation to me during an informal interview.)
- **1:05 am**
  - **Precip/sky:** Very heavy rain.
  - **Wind:** Still very strong, **but lessening**.
  - **Pressure:** **990.3 mb**
  - **Comment:** Even as the wind slackened, very heavy rain continued unabated for a while.
- **1:30 am**
  - **Precip/sky:** Moderate to heavy rain.
  - **Wind:** Strong, **but continuing to slacken**.
  - **Pressure:** **996.8 mb**
  - **Comment:** Long after the winds died, moderate-to-heavy rain continued—through to daybreak and beyond.

Everything described above can be seen in my 8-minute video summary of the event (see below).

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Figure 3: Barogram

HURRICANE JOVA: 11-12 Oct 2011
Emiliano Zapata, Jalisco, Mexico (19.386N 104.965W) **iCyclone © 2011**

Impact

Jova made a strong impression on locals, who described it as “scary” and much worse than any other hurricane they could remember. (This makes sense, given that this portion of the Mexican coast hasn’t had a major hurricane impact in the last few decades.)

A quick survey in and around the landfall region:

La Manzanilla

The coastal town was more than 20 n mi from the center and probably did not have sustained hurricane winds—and this supposition is supported by the fairly light wind damage.

The storm surge created a big mess on the beach, but it apparently didn’t inundate much of the town. This was surprising, give that the town was right of the center and the flow was onshore—but perhaps this relatively modest surge is additional evidence of the very small size of the storm.

This having been said, the storm impressed town residents, who described it as ***fuerte*** (strong) and much worse than Hurricane Beatriz earlier this year. One woman said she found it “scary” and would absolutely leave the next time a Cat 2 approached.

La Manzanilla to Emiliano Zapata

The 15-mi stretch of Highway 200 connecting these two towns was completely blocked by **numerous** fallen trees, rockslides, and mudslides.

A local woman who spoke English said the cyclone scared her—it was the first remark she made about it. Near her home, many trees with small to medium-sized trunks had been snapped or felled.

Emiliano Zapata

I returned to our chase location the day after the storm. Given the violence of the winds, the town looked surprisingly intact. This is probably because a lot of the houses and buildings are made of solid concrete or brick (including the roofs), so these types of structures did fine. Tile roofs were extensively damaged, and thatched or tin ones were in some instances completely destroyed.

Trees that were not blown down had lost branches and were partially defoliated and “burnt” looking.

One resident commented on **“that sound”** of the hurricane—it made a strong impression on him. He also noticed his ears were popping during the height of the storm.

Cuitzmala/Emiliano Zapata to San Mateo

This seemed to be the zone of heaviest wind damage, with the most felled trees.

A federal policeman in Cuitzmala said the storm was very strong and homes had lost roofs. He also said the damage lessened beyond San Mateo (which is a little N of Chamela). This makes sense, since areas beyond there were left of the center. My own observations matched well with his when I passed through those areas on the way back to Puerto Vallarta.

*(**Note:** The discussion with the policeman was in Spanish, so I had trouble understanding all of the details.)*

Video Footage

Everything described above can be seen in my 8-minute video summary of the event.

Find it on **YouTube** (http://youtu.be/FAoIAcQa3cA) or on the **iCyclone Website** (www.icyclone.com).

All of the footage is timestamped in local time (CDT).

Questions or Feedback?

Please get in touch:

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Imagery

The mangled sign that crashed down onto the roof of our carport during the cyclone (photographed the next day).

On the left is the carport/market where we rode out the cyclone. To the right is the unroofed building next door.

Various shots of Emiliano Zapata after the hurricane—showing the town damaged but mostly intact.

Imagery (cont'd)

Imagery from just before landfall shows a closed, reconsolidated eyewall and eye.