

# ICYCLONE CHASE REPORT

storm	Tropical Storm RINA		
location	Paamul, Quintana Roo, Mexico		
date	27 October 2011		
chasers	Josh Morgerman	author	Josh Morgerman

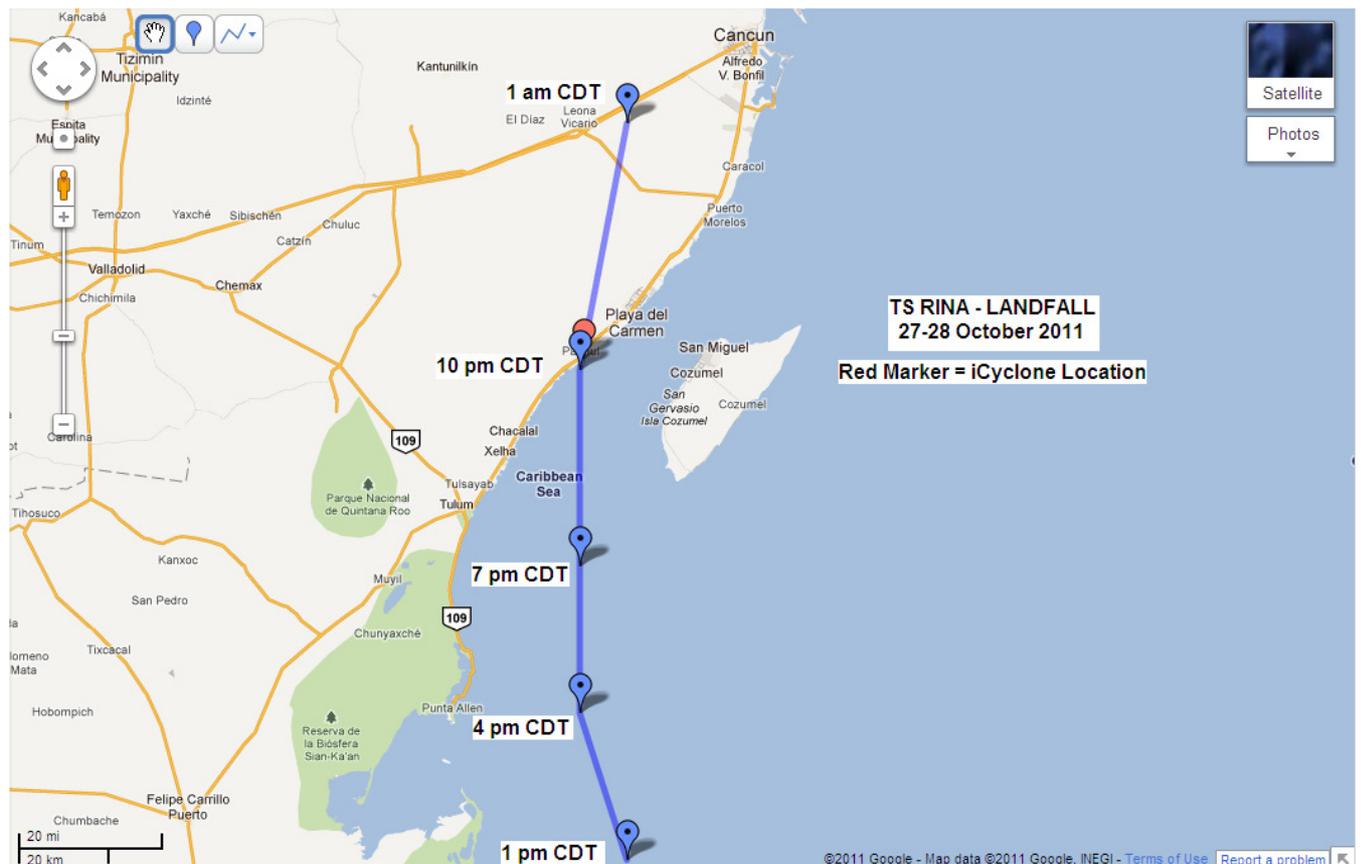
## Location

I observed the passage of Tropical Storm Rina in a beachside community in **Paamul, Quintana Roo, Mexico**, at **20.522478N 87.192073W**. This location is on a patio on the open beach. (*Note: This town is spelled "Palmul" in Google Maps.*)

See the **Chase Map** (below), which shows Rina's advisory positions and my position (**red marker A**). (**Chase Map Detail** is a closer view.) As can be seen, I was situated **exactly** along Rina's operational track, right at the landfall point.

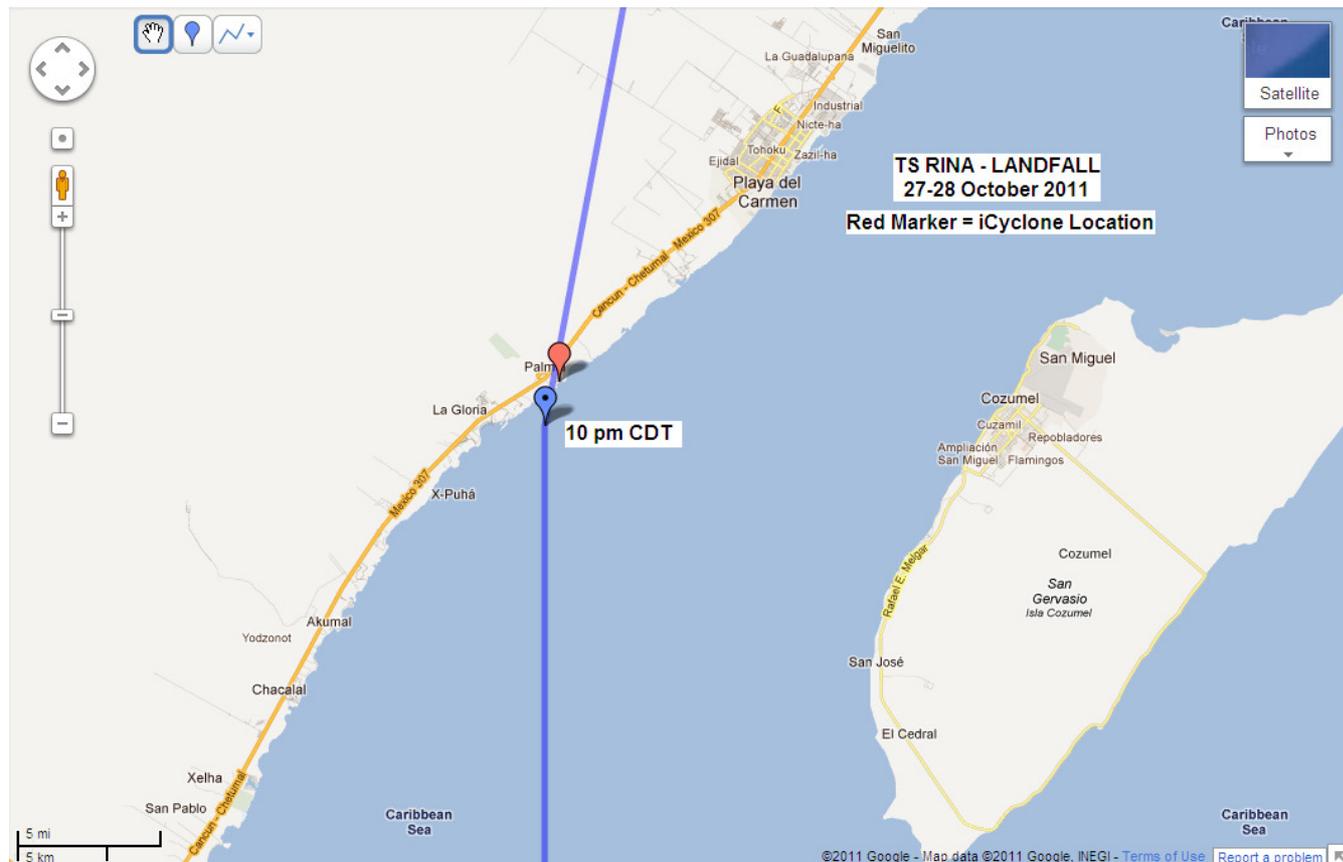
I arrived at this location at about **8:00 pm CDT 27 October**. I remained there during the approach and passage of Rina's center, departing around **11:30 pm CDT**.

**Figure 1: Chase Map**



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Figure 2: Chase Map Detail



## Overview

Although greatly weakened, Rina still had a classic, very observable tropical-cyclone structure as it made landfall near Paamul, including:

- A **sharp pressure dip** (and **equally fast recovery**) as the center passed.
- A **tight wind core**—with front side and backside.
- A **central lull** bookended by periods of rain and wind.
- A sharp **directional shift** in the wind after the center passed and the pressure started rising.

The lowest pressure was **996.5 mb**, measured at **9:12 pm CDT**, during the **lull**.

## Observations

The instrument used to collect all air-pressure and wind data was a Kestrel 4500. The elevation where I kept the instrument was ~10 ft, and the barometer was calibrated (for sea-level readings) using that value. (*Note: During the strong winds on the backside, I held the instrument high over my head to take wind readings—so that may have slightly affected the air-pressure values from ~10 to 11 pm.*)

Following are the observations—presented chronologically. All times are CDT and rounded to nearest 5 minutes unless it's the time of actual, recorded data:

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## Front Side

- The starting pressure at this location was **1001.5 mb**.
- Strong, gusty winds (along with moderate rain) started at **~8:20 pm** and went until **~8:45 pm**.
- During this time, the pressure dropped fast.

## Center

- At **~8:45 pm**, it started to **calm**, and by **~8:55 pm**, it had stopped raining.
- The **lull** lasted until **~9:25 pm**. **Lowest pressure** during this lull was **996.5 mb**, recorded at **9:12 pm**. (See the **Barogram** for a complete record of the pressure's fall and rise as Rina's center crossed this location.)
- **Comments**
  - The NHC's 10 pm CDT advisory position (20.5N 87.2W) is essentially at my location. However, **I had the calm and lowest pressure 1 hour earlier** (just after **9 pm**). The center was actually well past me by 10 pm. Therefore, I wonder if the advisory position was too far S.
  - The observed pressure corresponds nicely with the NHC's 10 pm advisory pressure (from recon) of 996 mb.

## Backside

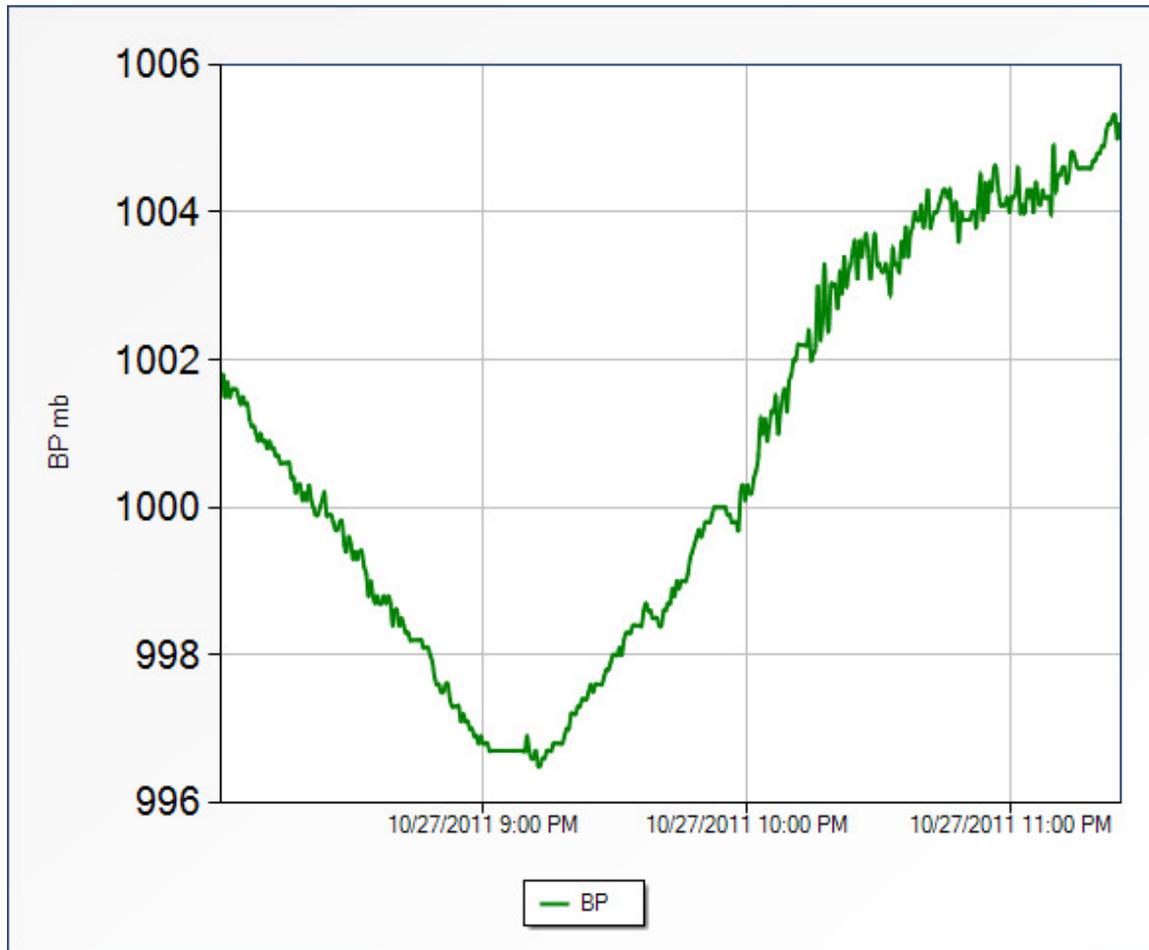
- Around **~9:20 pm**, there was a marked **shift** in the wind's direction and it was picking up speed again. The pressure was **997.0 mb** and rising.
- At **~9:25 pm**, the wind became gusty, and it started raining lightly. The pressure was **997.6 mb** and rising rapidly.
- The wind increased and became quite strong for an hour, blowing mostly from the **SW**, from **a little after 10 pm to a little after 11 pm**. During this time—a solid hour—the average wind speed was **20 kt** (sample rate = 30 seconds), with some extended periods of steady **25+ kt**, and a peak gust of **33 kt** (at **10:16 pm**). (See **Wind Trace** for a record of these winds during this time.) During this period of strong winds, there was very little rain.
  - **Note:** These measurements were taken on a patio on the open beach, so the exposure was good—however, the instrument's height was only **~4 m**, so the true winds (at 10 m) were most certainly higher.
- By **~11:05 pm**, the winds were down to **15 kt** and slacking.

## Other Observations

- There was **frequent, brilliant lightning** for much of the storm—for several hours, both before and after the center passed.
- I observed **very little damage** on the drive back up from Paamul to Playa del Carmen—just some downed branches and localized power outages.

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Figure 3: Barogram



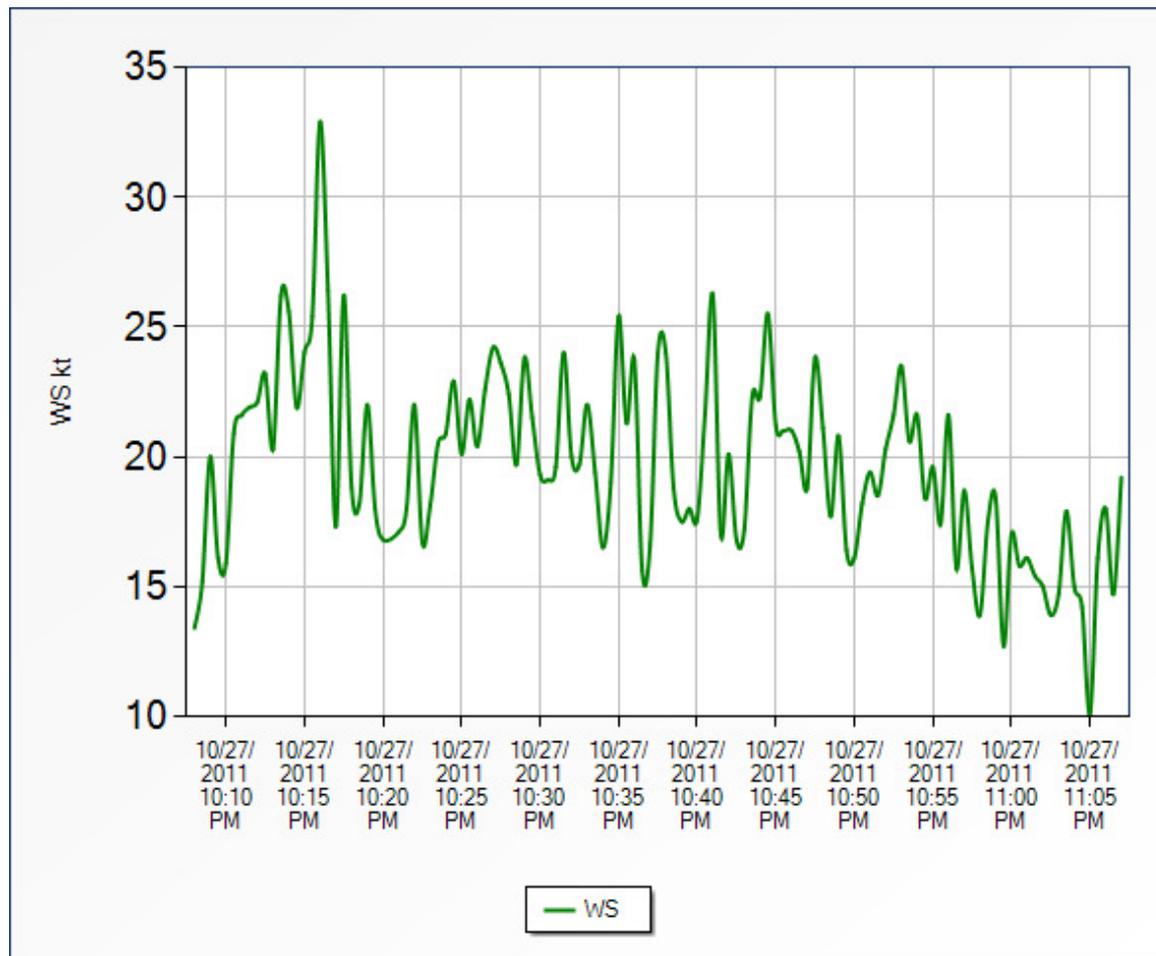
TS RINA: 27 Oct 2011

Paamul, Quintana Roo, Mexico (20.522478N 87.192073W)

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Figure 4: Wind Trace (Backside)



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## Questions or Feedback?

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