

Hurricane Juan: Eye-witness Reports

Did people really see the eye of Juan?

There have been several eyewitness reports by Nova Scotians stating what they believed to be the eye of Hurricane Juan to the west of where the hurricane made landfall which was near Prospect, Nova Scotia. The first of such reports was from a gentleman I was speaking with on the Tuesday after the storm hit. This gentleman was near Queensland Beach in westernmost Halifax County when Juan struck, and he reported that the winds had dropped to almost a flat calm around 12:30 am September 29th. He also recalled clearly seeing stars and an arc of cloud, which he interpreted as being the arc of the hurricane “eyewall”. He also explained that there was a wisp of cloud inside the clear area.

Some other reports of this nature came in during the weeks after Juan including one near Lunenburg and another well inland near Falmouth. In these other reports (similar to the Queensland Beach account) the witnesses also explained how winds increased again and rain returned.

So did these people actually see the eye of Hurricane Juan? Well, upon closer inspection of meteorological data including satellite imagery, these people did not see the eye of Juan. The most obvious reason for this is based on the infrared satellite [image](#) near landfall (12:00 am). In the image, the clear-slot is shown and would have been the area of clear sky and stars that people saw. This is well away from the actual storm centre. Normally a hurricane has a clear eye, which is in the same location as the storm centre (marked with an asterisk in the image). In the case of Juan, the eye was filled with cirrus cloud at the top, and that cirrus cloud shows up as red in the image. *There was still an eye in Juan*, but it was not a clear eye.

The return of rain after the clear period was likely from the yellowish band of cloud to the lower-left of the clear slot in the image. This could easily be mistaken with the other side of the eye moving in, but technically that is not what was happening.

So why did the winds diminish to calm when the stars were observed? The answer here is a bit more complicated. If Hurricane Juan was not moving when it was at the landfall position (Near Prospect) then the winds to the west of the storm over Mahone and St. Margaret’s Bay for example, would have been strong out of the north. However, Juan was racing in from the south, so the combination of the north winds and the rapid storm motion from the south produced a cancelling effect over those areas to the west. Areas on the east side of Juan (including Halifax proper) actually experienced an additive combination of the storm-only winds plus the fast storm motion. This explains the extreme winds and damage there.

In conclusion, there was an axis of very light to calm winds relative to the ground on the west side of the storm as it travelled northward across Nova Scotia. This axis extended only to the west side of the storm, and was co-located with the clear-slot in the cloud. The weak wind axis was quite far to the west – at least to Lunenburg - giving the false impression that the eye was overhead and far west.

Chris Fogarty
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