



THE UNIVERSITY OF THE WEST INDIES

Seismic Research Centre

St. Augustine, Trinidad & Tobago, W.I.

QUESTIONS ABOUT THE 21/08/18 M 6.9 EVENT

Q: How long after an event like this one can we expect aftershocks and how large can they be?

A: We can expect aftershocks to continue for weeks and even extend to years. We cannot estimate how long the area in which the earthquake occurred will take to settle and as such aftershocks related to this event can be recorded and felt over a long period of time. *From past events, we observed aftershocks in the magnitude 5.0 – 5.9 range and this was recorded on Wednesday 22nd August at 9:27 a.m.* Other aftershocks have been felt and will continue to be felt over the coming weeks and months.

Q: This was the longest shaking most persons have ever experienced (a maximum of 90 seconds was reported) and many people ran out of buildings during this event. Is this the safest thing to do?

Generally speaking, no. During an earthquake, it is best practice to stay where you are. If you are outdoors, stay there and move away from things that can fall (e.g. buildings, trees and electricity wires). If inside, do NOT try to exit the building. It may seem unsafe to stay in a shaking building, but, research has shown that most casualties are caused by falling debris as persons run to seek ‘safer’ areas. We recommend you Drop, Cover and Hold on (DCH) until the shaking stops. Stay away from windows and unfixed objects. We do not recommend going under doorways as construction methods have changed. If you there is no sturdy piece of furniture, you still drop and cover your head and neck, remaining alert at all times. Conducting regular earthquake drills can serve to encourage persons to adopt this safety technique.

Q: The magnitude of this event was almost to the same as the 2010 Haiti event. Why is there not as much damage?

The 2010 Haiti event was located at a very shallow depth, close to a densely populated area with poorly constructed buildings. As a result, more energy reached the surface and more damage occurred. Had the 6.9 event been shallower and closer to Trinidad, we would have seen much more damage.

Q: When the earthquake occurred, there were various magnitudes being reported. Which one is correct and why can all the agencies not use the same method?

Different monitoring agencies use different systems for determining magnitude given their location and their network. As such there are different types of reported magnitudes, with different values. This apparent discrepancy is, therefore, expected and acceptable to scientists with each agency’s value being correct in its own context.

Q: The Centre has indicated numerous times about the need for T&T to be prepared for a large earthquake. Was this it?

This earthquake was not in the range that we consider the event that the region can experience. The region has experienced events close to magnitude 8 and these are the ones, for which we have warned the public to be prepared. This one was not the strongest but it serves to reinforce the fact that large earthquakes can and will occur. The duration of shaking and the damage that occurred during this event highlighted what still needs to be done to better be prepared for larger events. Such events need not be the largest possible but can simply be sufficient near to cause damage.

Q: Why was a tsunami warning issued if no tsunami waves were observed?

A tsunami warning was issued by the Pacific Tsunami Warning Center (PTWC); the agency that monitors tsunamis for the region. This is part of the normal procedure for an earthquake of this magnitude. The warning does not necessarily mean that tsunami waves have been generated from the event. An advisory was sent out shortly after determining that no tsunami waves were observed and the warning cancelled as per procedure.

Q: Industrialised countries like the US and Japan have some warning system in place for earthquakes. Earthquakes cannot be predicted, but why can we not have something like that here?

The warning systems that industrialised countries may have for earthquakes give only a few seconds notice before large events, which they have tried to use to send out warning messages and are usually linked to critical facilities such as power generation plants and hospitals. This allows these critical facilities to shut down operations just before the ground shaking starts preventing further damage to costly and critical machinery. In 2015, research was conducted to determine the usefulness of such a system in the Eastern Caribbean, with various regional stakeholders from critical facilities participating. It was found that the relatively short distances involved, in this region, would afford only a very short warning time, which had very limited application to us.

Q: Has there been an increase in global seismic activity in recent years and is this event linked to it? Can we expect more and stronger earthquakes in the coming months?

The global seismic system has been steadily producing more large magnitude events since the mid-1990's, reflected in the mega-earthquakes occurring around the world, since 2004. This earthquake fits with expected activity for the Eastern Caribbean, although the global system had a shortfall in 2017, which seems to have continued into 2018. Of course, there are still several months to go in 2018 and time will tell if the shortfall continues.

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