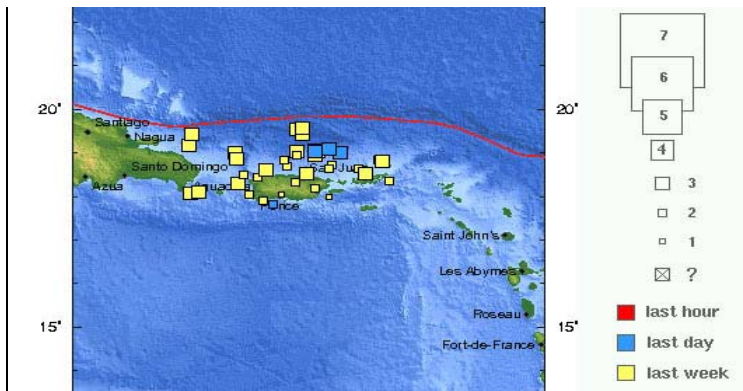


**Chronology of Major Caribbean Earthquakes**  
**By Dr. Frank J. Collazo**  
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Seismic Activity in the Caribbean Area

The image above represents the earthquake activity for the past seven days in Puerto Rico (roughly Jan 8-15, 2010). As you can see there are quite a few recorded. In fact, the Puerto Rico Seismic Network has registered around 80 earthquake tremors in the first 15 days of 2010. Thankfully for Puerto Rico, these are usually on the lower end of the scale, but they are felt around the island. In fact, while being on the island, I actually felt two earthquakes, one of which was the 7.4 magnitude Martinique earthquake back in November 2007.

The following is a chronology of the major earthquakes in the Caribbean basin:

- 1615: Earthquake in the Dominican Republic that caused damages in Puerto Rico.
- 1670: Damages in San Germán and San Juan (MJ). A strong earthquake, whose magnitude has not been determined, occurred in 1670, significantly affecting the area of San German District.
- 1692: Jamaica Fatalities 2,000. Level of damages is unknown.
- 1717: Church San Felipe in Arecibo and the parochial house in San Germán were destroyed (A).
- 1740: The Church of Guadalupe in Villa de Ponce was destroyed (A). Intensity VII, there is only information from Ponce that the earthquake was felt, absence of information of San Germán and the information of Yauco and Lajas suggest a superficial earthquake near to Ponce (G).
- 1787: Possibly the strongest earthquake that has affected Puerto Rico since the beginning of colonization. This was felt strongly throughout the Island and may have been as large as magnitude 8.0 on the Richter Scale. Its epicenter was possibly to the north, in the Puerto Rico trench. The quake was felt very strongly all across the Island. It demolished

the Arecibo church along with the El Rosario and La Concepcion monasteries and damaged the churches at Bayamon, Toa Baja and Mayaguez.

It also caused considerable damage to the castles of San Felipe del Morro and San Cristobal, breaking cisterns, walls and guard houses. A strong earthquake was felt in the whole island; damages were reported in all places except in the South. In the islet of San Juan there were considerable damages and several structures collapsed (DH, according to information of the Town hall of San Juan, 1787). The walls of the Guadalupe Church in Ponce were cracked.

1824: Strong earthquake in Saint Thomas, a building was destroyed (RT).

1843: Leeward Islands. Magnitude-M 8.3, Fatalities 5,000. Damage level is unknown.

1844: The epicenter was located to the north of the island and felt in Puerto Rico (VII-VIII, (RF)) and Saint Thomas. Several buildings collapsed and cracked. A tower of the Church of Isabela was cracked. It was felt for about 30 seconds (RT). In San Juan almost all the stone houses were cracked (Barbadian Newspaper, May 25 of 1844). Intensity of VII in San Juan.

A strong earthquake was felt in Ponce. It was accompanied by a strong underground noise, a terrible earthquake for the island (G). Asencio (1980) also includes it in its listing (it puts 3 references). Note: Since the different catalogues talk about the tremor of April 16 or May 5, with the exception of MJ that questions the 5 May, it can only be that it happened by one of these tremors.

1846: Felt on all the islands, more force and damages in the northwest with maximum intensity of VII (RF). Origin probably in the Passage of Mona (RT).

1851: The walls of the Mayoralty of San Juan were cracked (RT).

1855: Salinas VI and Aguas Buenas V (RF). One says that it is the strongest tremor felt in Salinas. Origin probably to the south of the island (RT). Díaz Hernández reported it was like the one of 4 February 1855.

1860: Strong earthquake with some damage in Mayagüez, Intensity VI-VII (RT).

1865: Two strong tremors in Saint Thomas, the second caused damages (RT). Churches in Manatí and Ponce were cracked. The origin could have been the center of the island. Intensity of VI (RF) (RT). It happened at night, origin probably in the central part of the island and deep (50-100 km).

1867: The epicenter of this earthquake was located between Saint Thomas and Saint Croix in the Virgin Islands, M=7.3 (PS). It produced great damages in the Virgin Islands and Puerto Rico by the acceleration of the ground and tsunami. Reid and Taber assigned an intensity equivalent from VIII to IX to this earthquake. This tremor was felt strong in

all Puerto Rico, but the most severe effects were in the Eastern part. A strong tsunami was observed for this earthquake, especially in the Virgin Islands; its height was considered in about twenty feet. Tsunami was observed throughout the coasts of the east and the south of Puerto Rico. Observations of peak altitudes for the waves in Puerto Rico went of three on five feet, in nearness of Arroyo, the south eastern coast.

Although to this earthquake a higher intensity equivalent to VIII to IX was assigned by Reid and Taber. Robson proposed that this earthquake had an intensity of VIII. It had more than 500 aftershocks during a period of six to seven months (PRWRA). In Ponce, 70 of the 80 chimneys of the sugar refinery fell down (intensity MM = VI; SL).

Three aftershocks of the earthquake of November 18, intensity VII-VIII (RF). Additional damages in Puerto Rico and Virgin Islands (RT).

1868: Greater aftershock of the earthquake of the 18 November 1867. It happened 30 miles to the southwest of the original epicenter. Smaller damage mainly in the Eastern part of the Island of Puerto Rico (PRWRA). Intensity, RG of VII - VIII (RT).

1869: Earthquake in Saint Thomas almost equal strong as the one of November 18, 1867.

1874: Strong tremor (V-VI) registered in Puerto Rico (in the morning). Informs of destroyed houses (DH) were received. In San Juan, the vibration lasted two minutes, the houses moved of side to side, the habitants were alarmed, did not report victims, intensity of VI (SL).

1875: Apparently an earthquake happened near Arecibo. Few damages were reported, except in a church that suffered enough. Originally was assigned with an intensity of VII-VIII (RF), but Reid and Taber concluded that it is too much high, because damage in only a site was reported (PRWRA). In Ponce was felt with great force, center surely in the island between 50-100 km.

1890: A violent earthquake was reported from different towns from the island. In Arecibo the bells of the church peal and in Ponce the municipal jail suffered damages (DH). In Ponce the event lasted about 8 to 10 seconds.

1902: Felt very strong (V-VI in Saint Thomas).

1906: The epicenter of this earthquake was considered about 50 km to the north of the island. The maximum intensity was of VI in San Juan where cracks in the Cathedral and many houses were observed. The intensity in the rest of the island was of IV - V. Tsunami was not reported. It was felt from Santo Domingo (Dominican Republic) to Saint Thomas, a distance of 500 km (RT). In addition to San Juan, other towns reported damages (DH).

1906: Felt in almost all the island. IV-VI (RF) reported from San Juan and Las Cruces (PRWRA; DH; RT).

1907: Kingston, Jamaica, Magnitude of M 6.5, Fatalities 1,000, and damage level is unknown.

1908: Strong earthquake (VI, (RF) in Ponce where there were some damages, also felt in Alto de la Bandera, Yauco, Arecibo and San Germán (RT). Origin probably in the south-center area of the island.

Strong Earthquake felt in Ponce, the Post Office's Building suffered damages. It had a vertical movement, very rare in this zone. Felt lightly in Carmelita. Origin probably near Ponce.

1909: Tremor felt in the Virgin Islands and almost all Puerto Rico. In Saint Thomas and Culebra an intensity of up to VI (RF); 90 Km NE of Vieques (RT).

1918: Mona Passage Earthquake, Magnitude of 7.5. The epicenter was located about 35 km to the Northwest of Aguadilla, PR in the Mona's Canyon. Magnitude of 7.3 (PS). Reid and Taber assigned a maximum intensity of IX (equivalent to VIII - IX in MM) in the western part of the island and of V - VI in Guayama.

This earthquake generated tsunami that reached 20 feet in Punta Agujereada (8 people reported themselves like drowned), 12 feet in Aguadilla (32 people died drowned), 5 feet in Mayagüez (116 people died because of the earthquake, including the 40 victims of the tsunami). The losses by damages to the property were considered in more than \$4,000,000 (RT). By several months they were continued feeling aftershocks of this earthquake, strongest being those of the 24 of October and 12 of November.

Aftershock of the earthquake of the 11 of October. Maximum intensity in the island was VII. Another aftershock of the earthquake of 11 of October. Maximum intensity in the island was VI (RF, RT).

1920: Earthquake felt in all of Puerto Rico. Maximum, intensity was VI (DH), M=6.5.

1922: Earthquake felt in all Puerto Rico. Maximum intensity in the island was VI (DH), M=6.3.

1939: Earthquake felt in the entire island. Maximum intensity of VI (DH).

1943: It happened to the Northwest of Puerto Rico. Its magnitude was of 7.5 (PS). It was felt by many people around Puerto Rico, but it did not cause damage.

1946: Mona Canyon earthquake. This earthquake of magnitude 7.8 (PS) happened outside the northeastern coast of the Dominican Republic. Ample damages and tsunami were reported in Haiti and the Dominican Republic. This earthquake was felt with an

intensity of up to VI in the Mona Island and the western coast of Puerto Rico. In the rest of the island an intensity of V was reported. A tsunami of 2 feet was observed in the western and north coast of the island (PRWRA). Smaller damages in all Puerto Rico were reported (DH). Earthquake in Dominican Republic (M=7.4, PS). Small tsunami in Mayagüez and Aguadilla. 116 casualties and damage level is unknown.

1953: Santo Domingo, Dominican Republic, was affected by the Santo Domingo earthquake. Experts blame both tragic earthquakes on the Puerto Rico trench fault, a magnitude of 6.9.

1969: Guadeloupe, Leeward Islands, an earthquake magnitude of 7.2 and damage level is unknown.

1974: Leeward Islands, magnitude of M 7.5, casualties and damage level is unknown.

1979: Strong earthquake felt in all the Caribbean area; in Puerto Rico it was felt with an intensity of VI. It was reported in Haiti, Colombia, Venezuela and Dominican Republic (DH). Epicenter located in the south of the Dominican Republic, 17.89N, 68.97W, and 73 km of depth, M=6.1 (USGS).

1981: Strong earthquake felt in all Puerto Rico, M=5.7. Epicenter in the Mona Passage. There were only light damages in Guayanilla (DH).

1987: Strong earthquake felt in the southwest of the island, M=4.6, intensity VI. Epicenter near Boquerón. There were light damages (USGS), magnitude 6.4

2003: (UTC), Puerto Plata, Dominican Republic. The depth of the earthquake was 10 KM (6 miles). The location was in the center region of the Dominican Republic (DR). The earthquake occurred near Puerto Plata, DR and 25 miles North of Santiago, DR. NEAR Puerto Plata, Dominican Republic, 40 km (25 miles) N of Santiago, Dominican Republic.