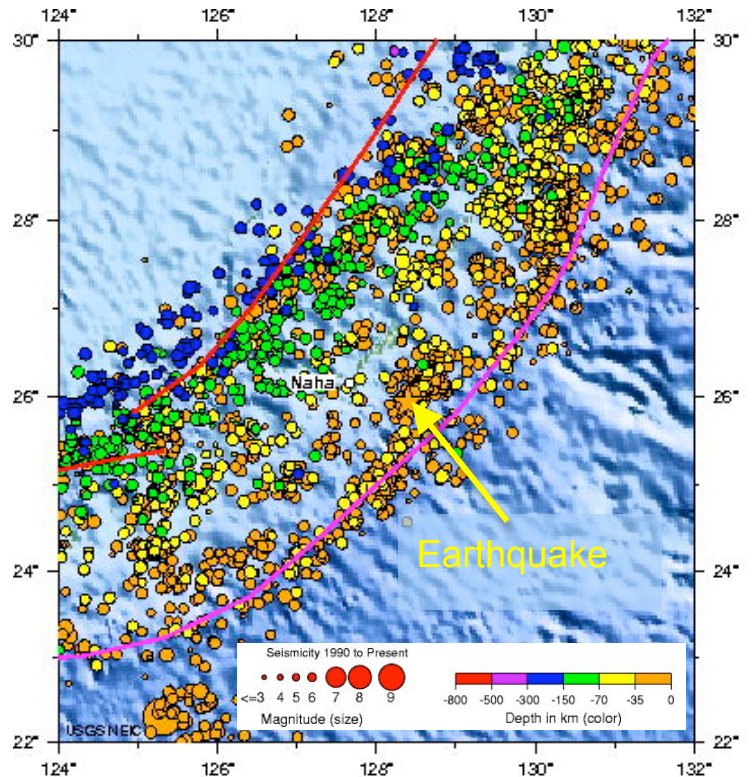
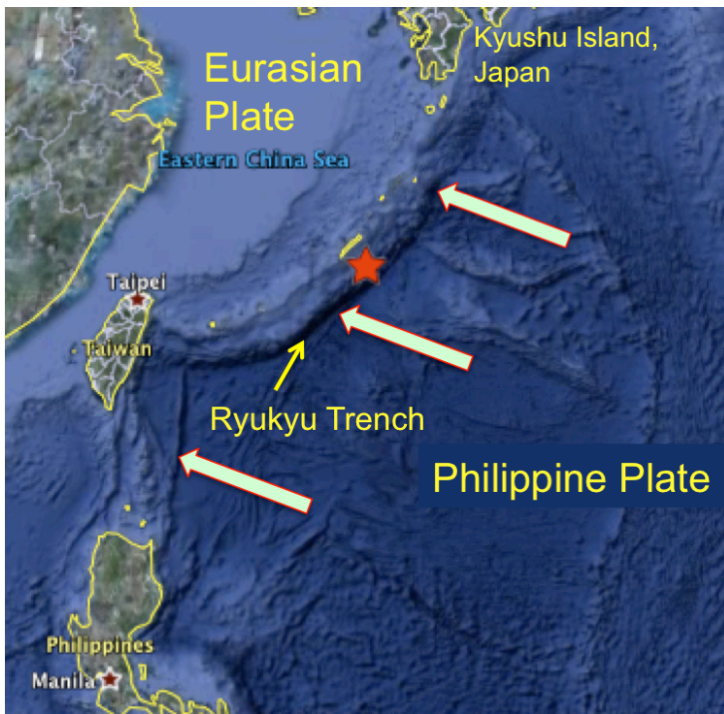


Magnitude 7.0 Earthquake in Ryukyu Islands Region of Japan
Friday, February 26, 2010 at 20:31:27 Universal Time
Friday, February 26, 2010 at 12:31:27 PM Pacific Time
Epicenter: Latitude 25.951 °N, 128.401 °E. Depth: 22 kilometers.

A magnitude 7.0 earthquake occurred Friday afternoon Portland time 75 km (50 miles) from Naha, Okinawa, Japan. The star on the left-side map below illustrates the epicenter of this earthquake as determined by the US Geological Survey. The earthquake of Friday February 26 occurred on the subduction zone boundary where the Philippine Plate subducts beneath the Eurasian Plate. The arrows on the left side map show the direction of motion of the Philippine Plate as it is subducted at a rate of about 7 cm/year into the Ryukyu Trench. The map on the right below shows historic earthquake activity near the epicenter (star) from 1990 to present. Historic earthquakes on this subduction zone are shallow at the Ryukyu Trench and increase to > 300 km depth (blue dots) towards the west as the Philippine Plate dives deeper beneath the Eurasian Plate. Although shallow earthquakes in subduction zones can produce tsunamis, this earthquake was not large enough to generate a tsunami and no tsunami warning was issued. Two injuries were reported but damage from this earthquake are expected to be minor.



The record of the M7.0 Ryukyu Islands, Japan earthquake on the University of Portland seismometer (UPOR) is illustrated below. Portland is about 9316 km (5789 miles, 83.93°) from the location of this earthquake. Following the earthquake, it took 12 minutes and 28 seconds (748 seconds) for the compressional P waves to travel a curved path through the mantle from the Ryukyu Islands to Portland. PP waves are compressional waves that bounced off the Earth's surface halfway between the earthquake and the station. PP energy arrived 15 minutes and 42 seconds (942 seconds) after the earthquake. S waves are shear waves that follow the same path through the mantle as P waves. The S waves arrived 22 minutes and 51 seconds (1371 seconds) after the earthquake. Surface wave energy required approximately 35 minutes and 30 seconds (2130 seconds) to travel the 9316 km (5789 miles) around the perimeter of the Earth from the Ryukyu Islands to Portland, Oregon. The surface waves are not very pronounced on the UPOR recording of this earthquake.

