

**Magnitude 7.3 Earthquake Near Fiji**  
**Thursday, Sept 15, 2011 at 19:31:02 UTC (07:31:02 AM Local Time)**  
**Epicenter: Latitude 21.559°S, 179.369°E Depth: 626 km**

**Earthquake Summary:**

According to the US Geological Survey National Earthquake Information Center, a major earthquake occurred in the early morning local time southeast of and deep below Suva, Viti Levu, Fiji. Because this earthquake occurred over 600 km below the surface of the Earth, no tsunami was produced and only light ground shaking was felt even on the island closest to the epicenter.

As shown on the left-side map below, this earthquake occurred within the Pacific Plate that is subducting into the deeper mantle at the Tonga Trench where the Pacific and Australia plates converge.

Historic earthquakes from 1990 to present are shown on the right-side map below. From this map you can see that deep earthquakes are common beneath Fiji. The rate of convergence at the location of this earthquake is about 60 mm/year (6 cm/year). This is about twice the rate of convergence between the Juan de Fuca and North America plates at the Cascadia Subduction Zone off the coast of the Pacific Northwest.

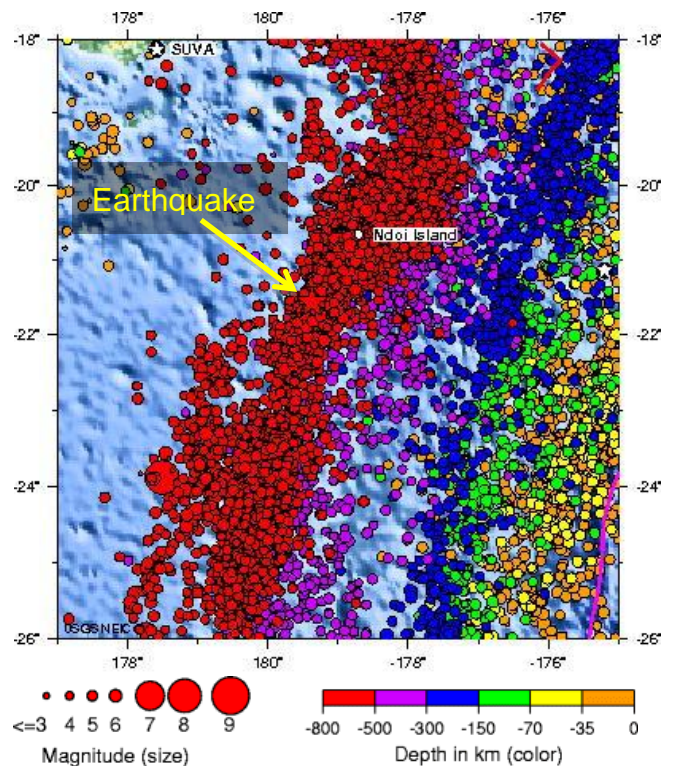
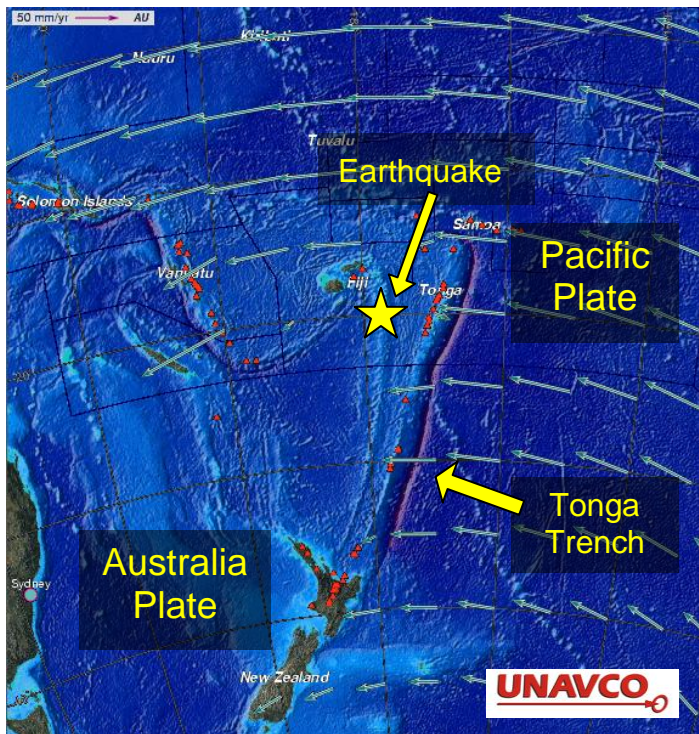


Image courtesy of the US Geological Survey

## Seismogram Description:

The seismogram of the Fiji earthquake recorded by the University of Portland seismometer in Portland, Oregon is shown below. The magnitude 7.3 earthquake in Fiji was 84.30 degrees (9357 km) away from the seismometer. This earthquake was very deep at 626.1 km below Earth's surface. Because the source is so far below the surface, it produced no surface wave energy, only body waves. The first P wave energy arrives 11 minutes 27 seconds after the earthquake. This body wave travels directly from the earthquake to the recording station through the mantle. The pP wave arrives 13 minutes 39 seconds after the earthquake. This body wave is energy that left the earthquake and traveled to the surface of the Earth (above the earthquake), before bouncing off the surface and traveling through the mantle to the recording station. The difference in arrival times between the P arrival and the pP energy can be used to determine the depth of the earthquake. A third pressure wave, PP, is clearly observed on the seismogram. PP is energy that bounced once off the Earth's surface halfway between the earthquake and the recording station. This PP wave energy arrives 14 minutes 54 seconds after the earthquakes. The S waves follow the same paths with the first S wave energy arriving 21 minutes 2 seconds after the earthquake. The sS wave arrives 24 minutes 58 seconds after the earthquake. Finally, the SS wave energy arrives 26 minutes 52 seconds after the earthquake.

