

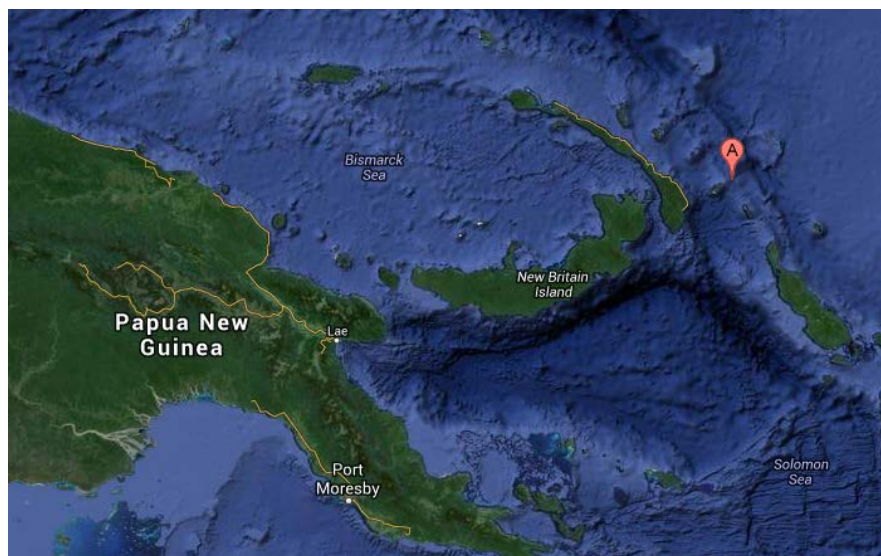
Magnitude 7.2 PAPUA NEW GUINEA

Sunday, July 7, 2013 at 18:35:30 UTC



A major 7.2 magnitude earthquake occurred at 4:35:30 AM local time 110 km east-northeast of Taron, New Ireland Island, Papua New Guinea.

The hypocenter was 378 km below Earth's surface and this depth accounts for the light ground shaking and minimal impact of this earthquake.



Ground Shaking Intensity

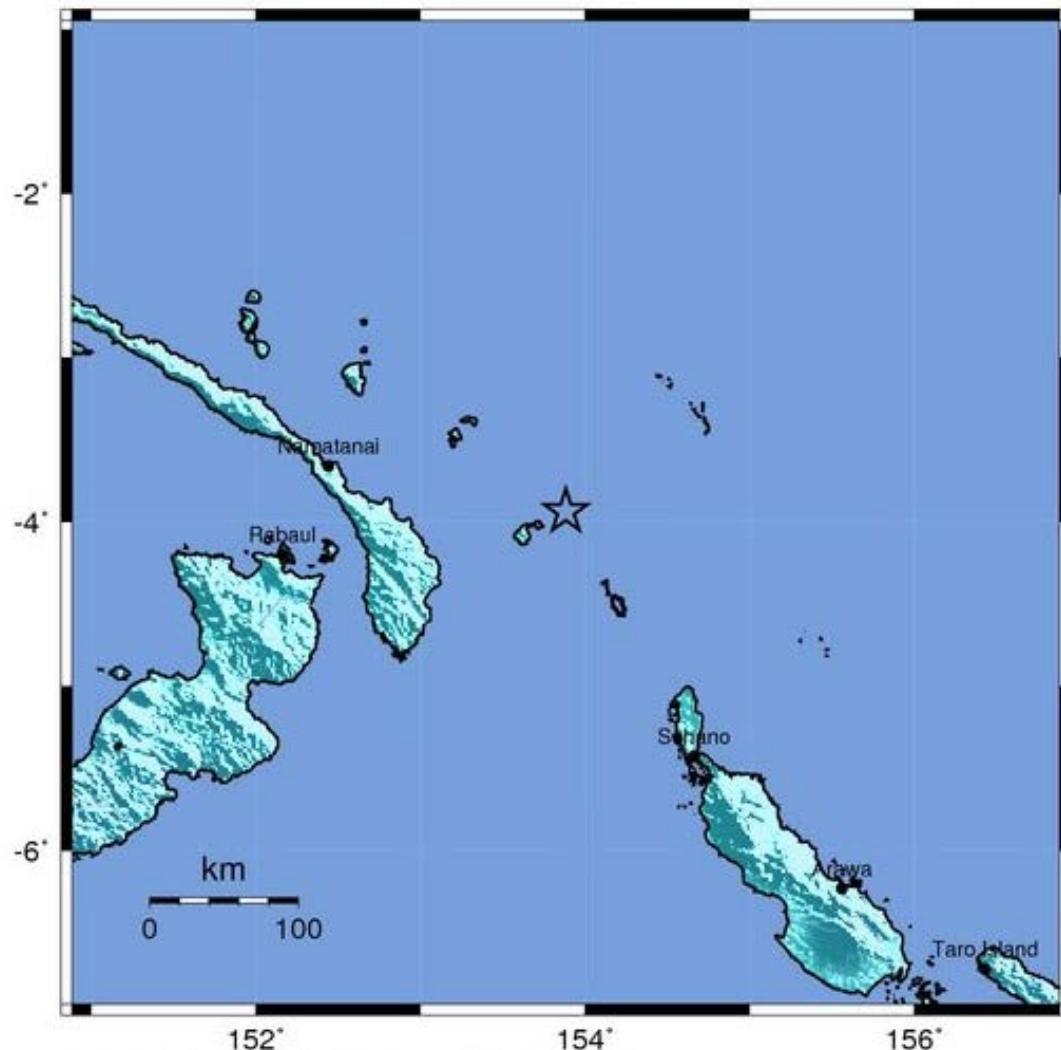
The Modified-Mercalli Intensity scale is a twelve-stage scale, from I to XII, that indicates the severity of ground shaking. Because this earthquake occurred at almost 400 km depth, the area nearest the epicenter only light ground shaking.

Modified Mercalli Intensity

X
IX
VIII
VII
VI
V
IV
III
II
I

Perceived Shaking

Extreme
Violent
Severe
Very Strong
Strong
 Moderate
 Light
 Weak
 Not Felt



USGS Estimated shaking Intensity from M 7.2 Earthquake

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USGS PAGER

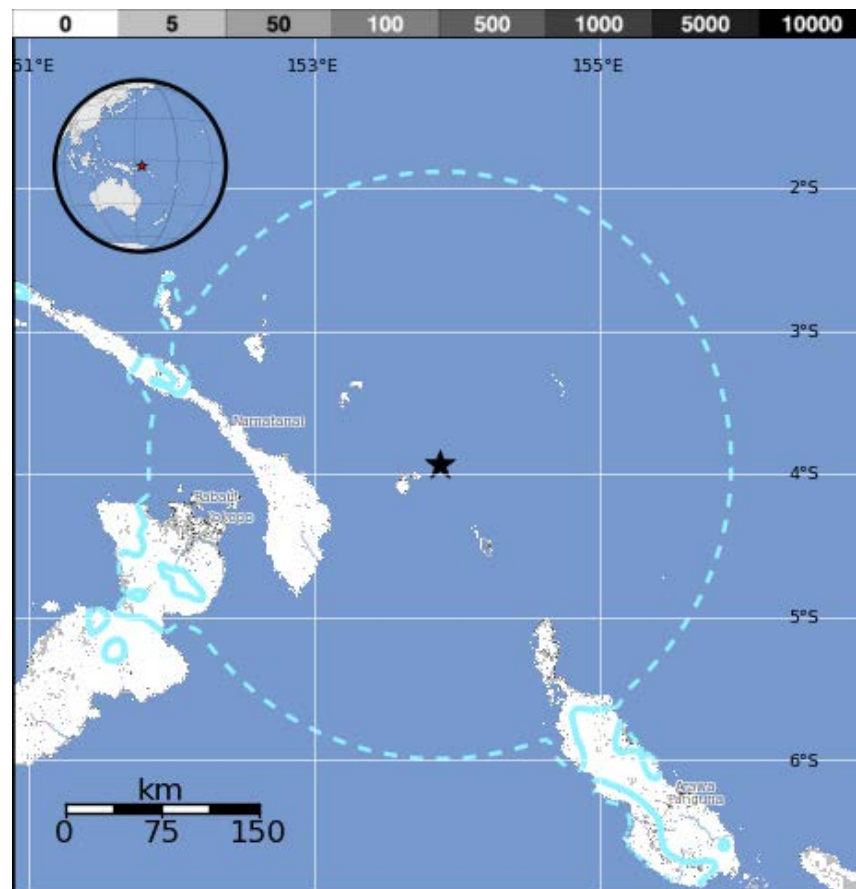
Population Exposed to Earthquake Shaking

The USGS PAGER map shows the population exposed to different Modified Mercalli Intensity (MMI) levels.

Because of the almost 400 km depth of this earthquake, only light ground shaking was felt by the 420,000 people living on the islands nearest the epicenter.

The color coded contour lines outline regions of MMI intensity. The total population exposure to a given MMI value is obtained by summing the population between the contour lines. The estimated population exposure to each MMI Intensity is shown in the table below.

Image courtesy of the US Geological Survey



Estimated Modified Mercalli Intensity	I	II-III	IV	V	VI	VII	VIII	IX	X
Est. Population Exposure	--*	143k*	421k	0k	0k	0k	0k	0k	0k
Perceived Shaking	Not Felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme

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This earthquake is shown by the blue star on the map at the right. The Australia Plate subducts at a steep angle towards the north beneath the Pacific Plate at the New Britain Trench. The depth of the July 7 earthquake fits the pattern of intermediate and deep earthquakes within the Australia Plate shown in the cross-section below.

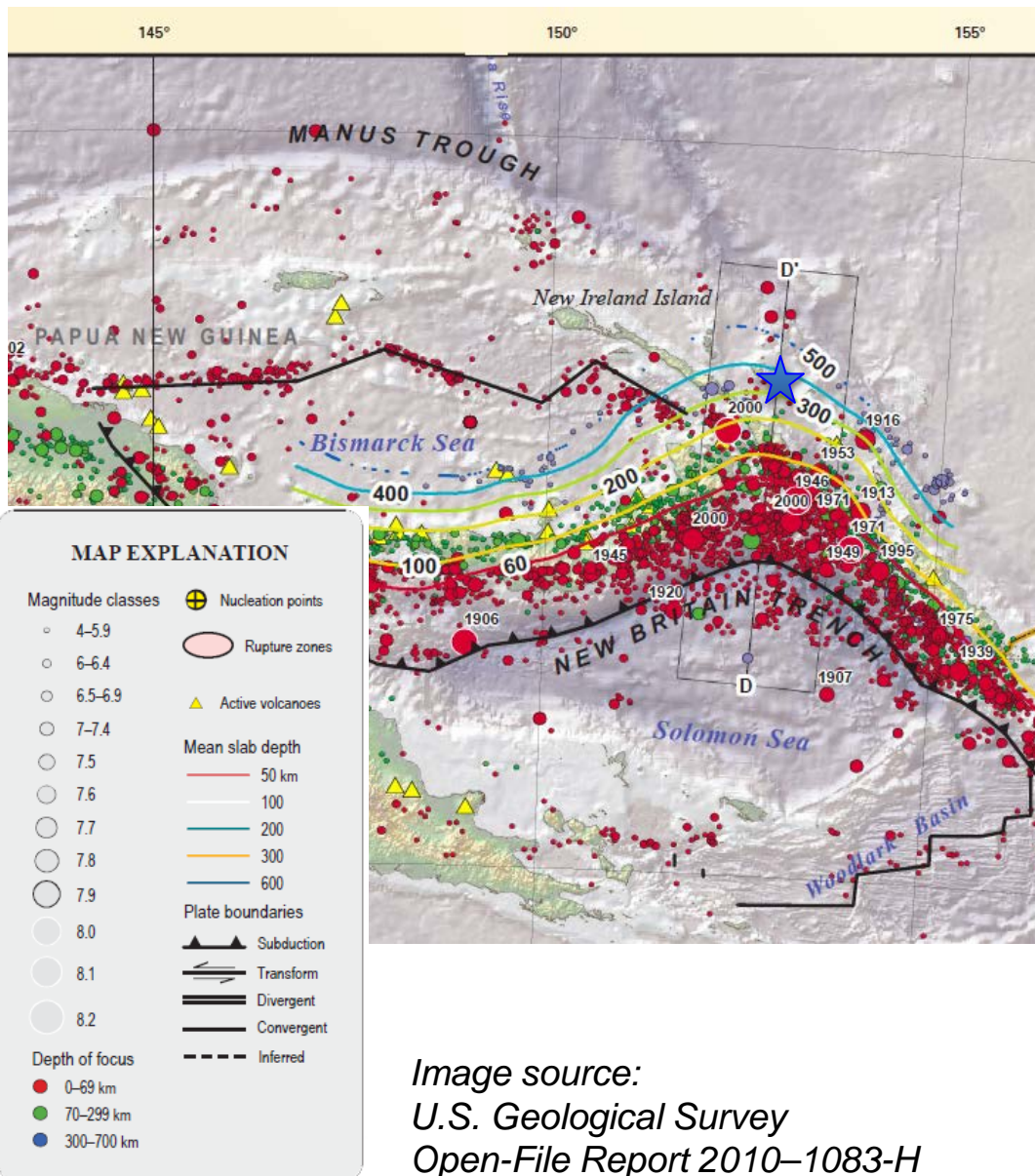
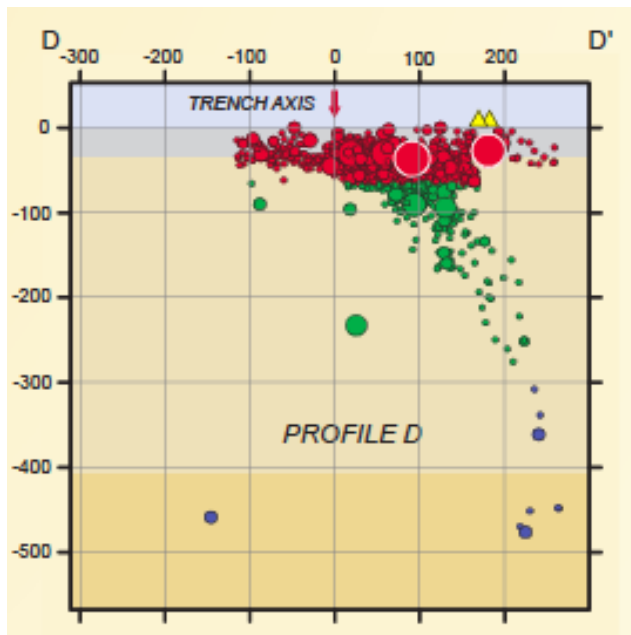


Image source:
U.S. Geological Survey
Open-File Report 2010-1083-H

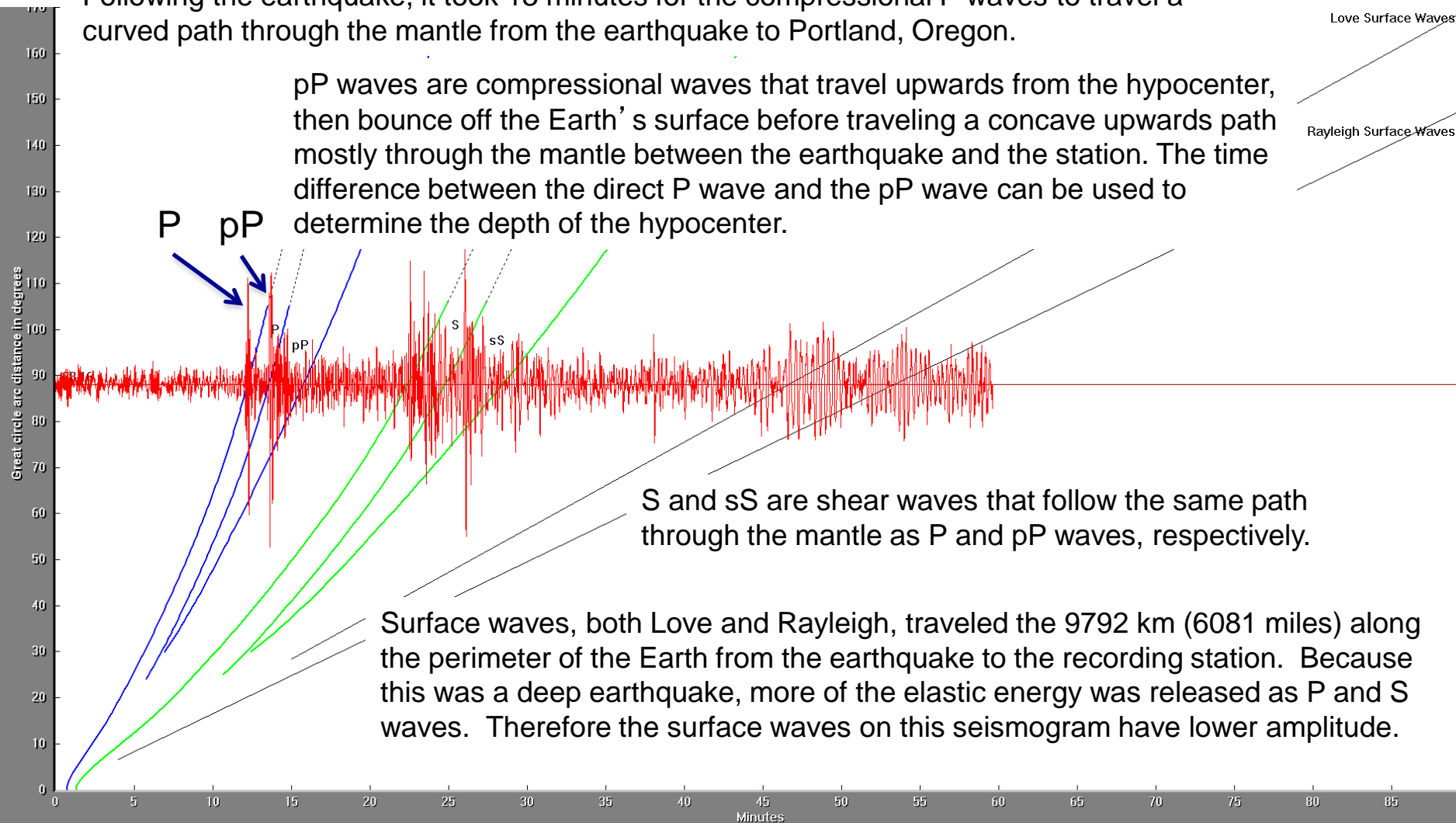
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The record of the earthquake on the University of Portland seismometer (UPOR) is illustrated below. Portland is 9792 km (6081 miles, 88.22°) from the location of this earthquake.

Following the earthquake, it took 13 minutes for the compressional P waves to travel a curved path through the mantle from the earthquake to Portland, Oregon.

pP waves are compressional waves that travel upwards from the hypocenter, then bounce off the Earth's surface before traveling a concave upwards path mostly through the mantle between the earthquake and the station. The time difference between the direct P wave and the pP wave can be used to determine the depth of the hypocenter.



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