

A magnitude 7.0 earthquake struck New Guinea Monday at a depth of 48 km and approximately 250 km west of the provincial capital Jayapura. New Guinea is the world's second-largest island, after Greenland, covering a land area of 786,000 km<sup>2</sup>.

No tsunami warning was issued after the quake, which struck inland. There were no immediate reports of casualties or damage. However, the area has steep mountain ranges and limited communications so reporting can be delayed.



Wamena Mountain Range  
West New Guinea

The Modified-Mercalli Intensity scale is a twelve-stage scale, from I to XII, that indicates the severity of ground shaking.

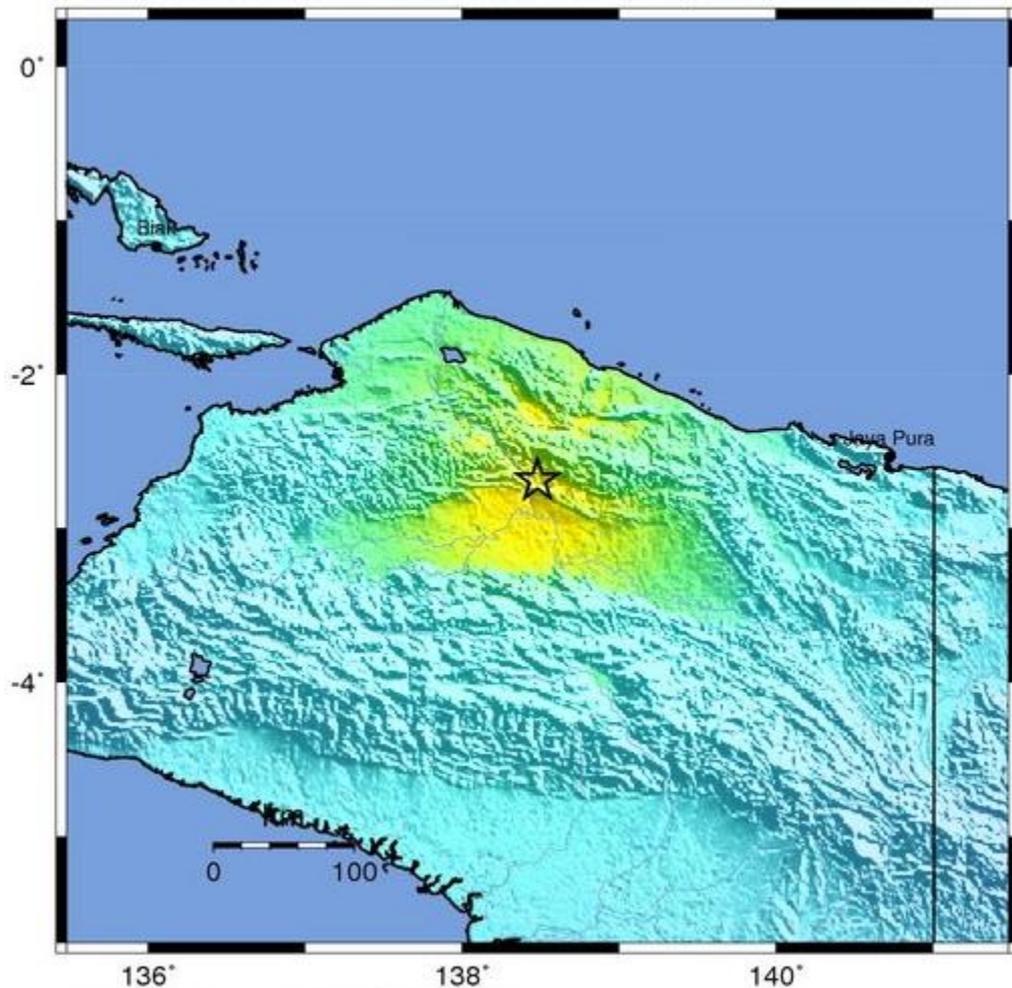
The current population of the island of New Guinea is about eleven million.

### Modified Mercalli Intensity



### Perceived Shaking

**Extreme**  
**Violent**  
**Severe**  
**Very Strong**  
**Strong**  
 Moderate  
 Light  
 Weak  
 Not Felt

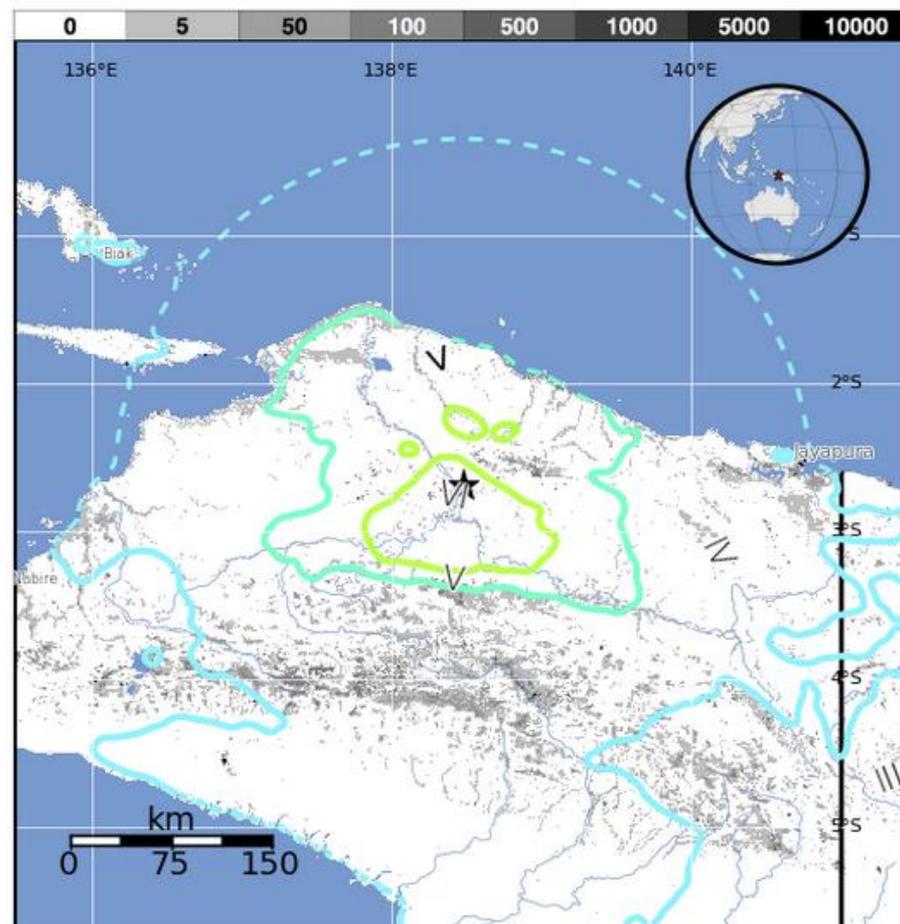


USGS Estimated shaking Intensity from M 7.0 Earthquake

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

36,000 people were exposed to strong shaking from this earthquake.

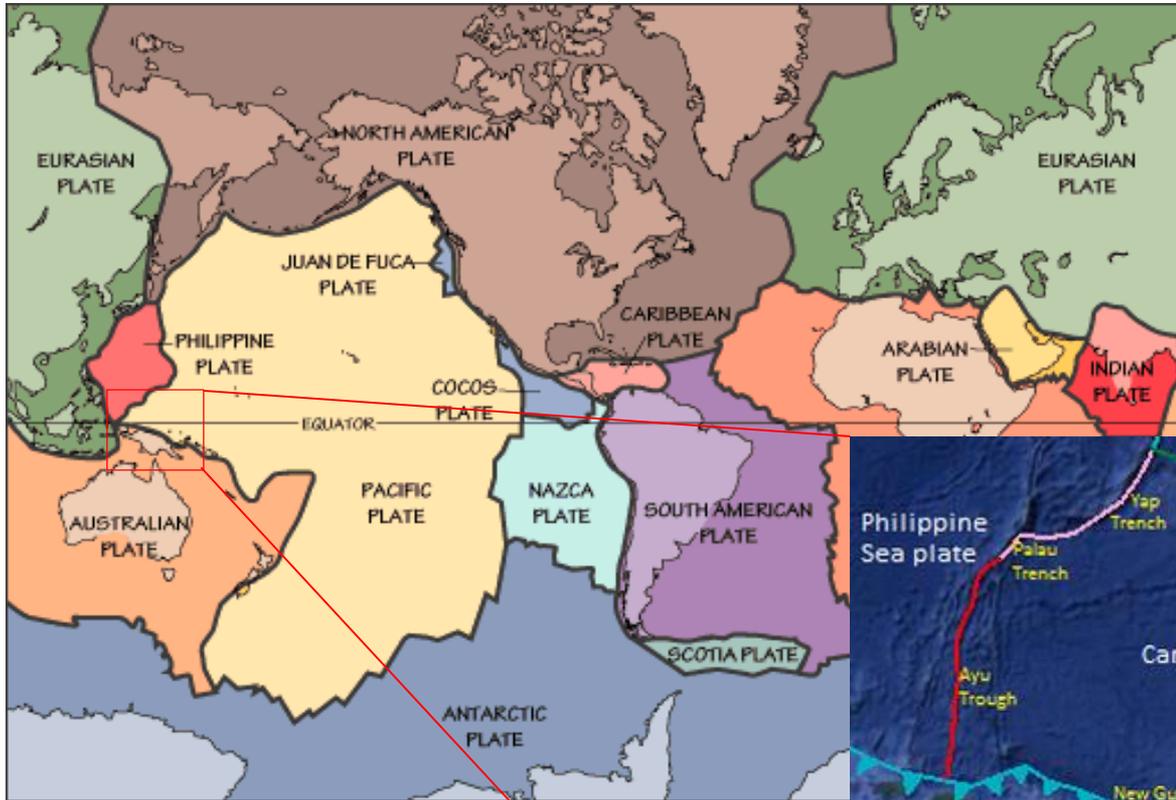
MMI	Shaking	Pop.
I	Not Felt	--*
II-III	Weak	719k*
IV	Light	1,644k
V	Moderate	209k
VI	Strong	36k
VII	Very Strong	0k



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.

# Magnitude 7.0 NEW GUINEA

Monday, July 27, 2015 at 21:41:21 UTC

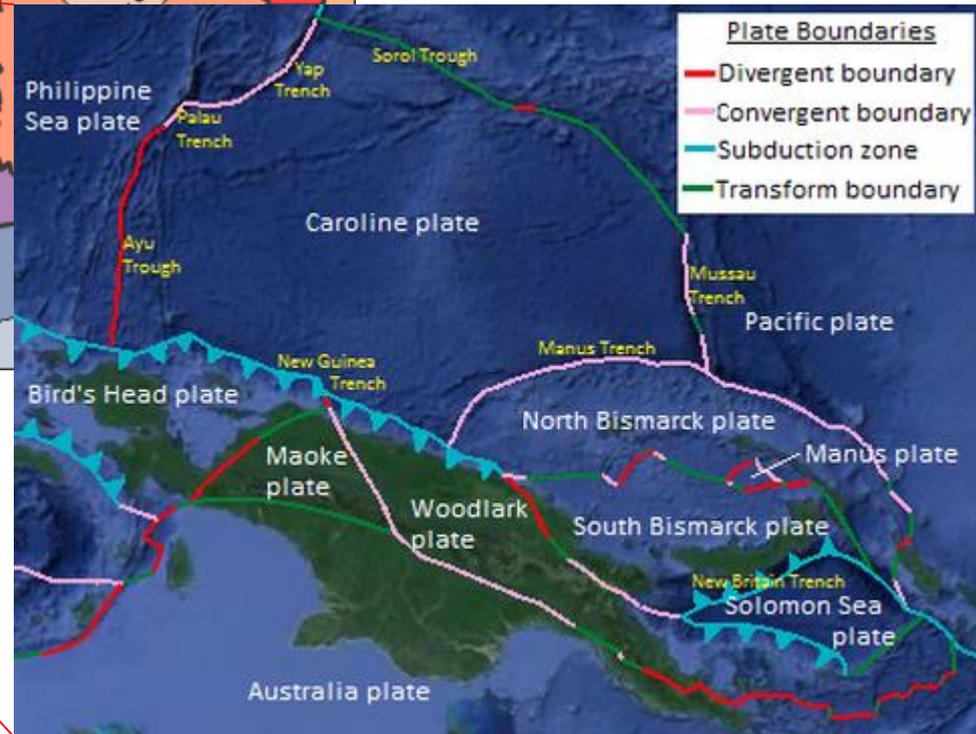


New Guinea occupies a region that is marked by a complicated arrangement of tectonic microplates crushed between the greater Pacific and Australian Plates.

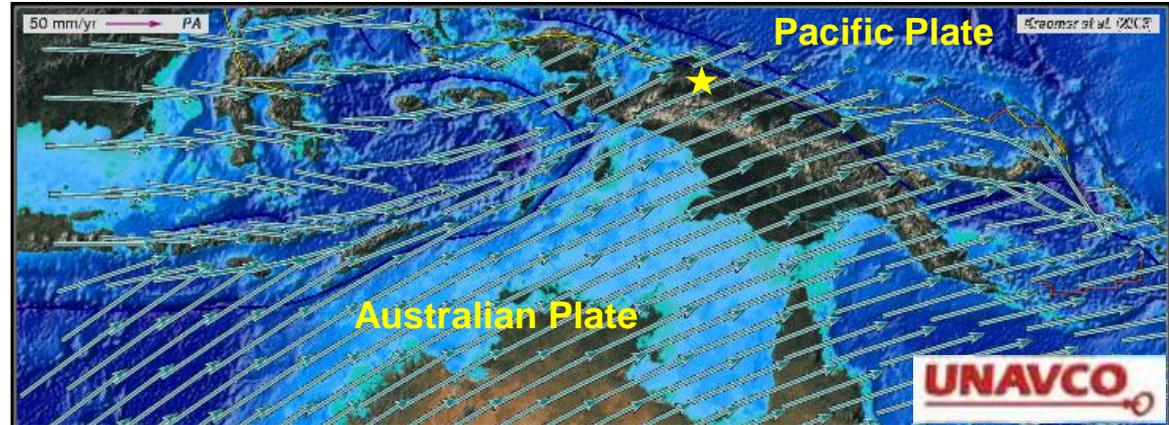
Image courtesy of the US Geological Survey

These microplates take up the overall convergence between the Australian Plate and the Pacific Plate.

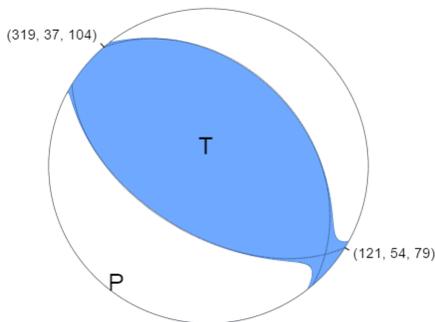
Image courtesy Kelsey Lamothe



The dominant convergence between the Australian Plate and the Pacific Plate is accommodated both by shortening and uplift in northern New Guinea, as well as subduction of the Pacific plate north of New Guinea at the New Guinea trench.

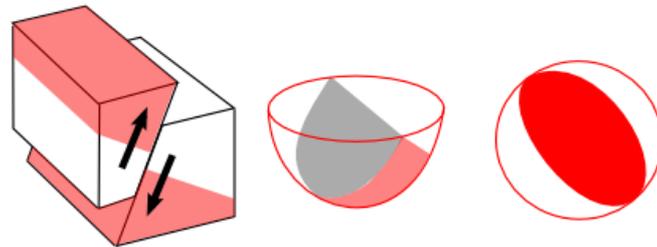


The Australia-Pacific plate relative velocity is approximately 110 mm/yr towards the northeast.



USGS Centroid Moment Tensor Solution

### Reverse/Thrust/Compression



Block model

Focal Sphere

2D Projection of Focal Sphere

The arrows show the motion of the Australian Plate and adjacent microplates relative to the Pacific Plate.

Shaded areas show quadrants of the focal sphere in which the P-wave first-motions are away from the source, and unshaded areas show quadrants in which the P-wave first-motions are toward the source. The letters represent the axis of maximum compressional strain (P) and the axis of maximum extensional strain (T) resulting from the earthquake.

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