A magnitude 7.6 earthquake occurred off the south coast of the Solomon Islands. This was followed by a Magnitude 7.4 aftershock which occurred in a similar location. Both earthquakes occurred at a depth of around 30 km (18 miles). These events occurred in a region that is one of the most seismically active in the world.

A tsunami warning was issued but later cancelled. There are, as yet, no reports of serious damage or casualties.
## Modified Mercalli Intensity Scale

**I. Instrumental**  
Not felt by many people unless in favourable conditions.

**II. Weak**  
Felt only by a few people at best, especially on the upper floors of buildings. Delicately suspended objects may swing.

**III. Slight**  
Felt quite noticeably by people indoors, especially on the upper floors of buildings. Many do not recognise it as an earthquake. Standing motor cars may rock slightly. Vibration similar to the passing of a truck. Duration estimated.

**IV. Moderate**  
Felt indoors by many people, outdoors by a few people during the day. At night, some awakened.

**V. Rather Strong**  
Felt outside by most, may not be felt by some people in non-favourable conditions. Dishes and windows may break and large bells will ring. Vibrations like train passing close to house.

**VI. Strong**  
Felt by all; many frightened and run outdoors, walk unsteadily. Windows, dishes, glassware broken; books fall off shelves; some heavy furniture moved or overturned; a few instances of fallen plaster. Damage slight.

**VII. Very Strong**  
Difficult to stand; furniture broken; damage negligible in building of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken. Noticed by people driving motor cars.

**VIII. Destructive**  
Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture moved.

**IX. Violent**  
General panic; damage considerable in poorly designed structures, well designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.

**X. Intense**  
Some well build wooden structures destroyed; most masonry and frame structures destroyed with foundation. Rails bent.

**XI. Extreme**  
Few, if any masonry structures remain standing. Bridges destroyed. Rails bent greatly.

**XII. Cataclysmic**  
Total destruction – everything is destroyed. Lines of sight and level distorted. Objects thrown into the air. The ground moves in waves or ripples. Large amounts of rock move position. Landscape altered, or leveled by several meters. In some cases, even the routes of rivers are changed.

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Magnitude 7.6 & 7.4, SOLOMON ISLANDS

**Saturday 12th April 2014 20:14:39 UTC**

**Sunday 13th April 2014 20:14:39 UTC**

Shaking intensity

*Strong* (VI) to *very strong* shaking (VII) with localised *destructive shaking* (VIII) is believed to have occurred on the island of San Cristobal.
**Magnitude 7.6 & 7.4, SOLOMON ISLANDS**

**Saturday 12th April 2014 20:14:39 UTC**

**Sunday 13th April 2014 20:14:39 UTC**

**USGS PAGER**

Green alert for shaking-related fatalities and economic losses. There is a low likelihood of casualties and damage.

Overall, the population in this region resides in structures that are vulnerable to earthquake shaking, though some resistant structures exist. The predominant vulnerable building types are mud wall and informal (metal, timber, GI etc.) construction.

Recent earthquakes in this area have caused secondary hazards such as tsunamis that might have contributed to losses.
The region of the April 12 earthquake is very seismically active, with 27 earthquakes of M6+ occurring within 100 km and 62 events of M7+ within 500 km since 1900. The majority of these earthquakes are grouped to the northwest around the Solomon Islands and to the east near Vanuatu and the Santa Cruz Islands. Notable earthquakes within 100 km include a doublet of M7.0 events in November 1978, events of M7.1 in 1931 and 1937, and an M7.2 in 1910.
**Magnitude 7.6 & 7.4, SOLOMON ISLANDS**

**Saturday 12\textsuperscript{th} April 2014 20:14:39 UTC**

**Sunday 13\textsuperscript{th} April 2014 20:14:39 UTC**

**Tectonic interpretation**

**M7.6 mainshock**
This earthquake occurred as the result of nearly pure transform faulting, on a NW-SE oriented left-lateral fault, on or near the plate boundary between the Australia and Pacific plates. At the location of the earthquake, the Australia Plate converges with and slips past the Pacific plate at a rate of 95 mm/yr. The earthquake occurred along a portion of this plate boundary that transitions from thrust to transform tectonics between the New Britain Trench to the northwest and the New Hebrides Trench farther east.

**M7.4 aftershock**
The M 7.4 Solomon Islands aftershock occurred as the result of reverse faulting on an approximately east-west oriented structure near the oceanic trench that marks the plate boundary between the Australia and Pacific plates.

Tectonic setting plotted using plate boundary data from the USGS.
Aftershocks

Over 50 thousand aftershocks have so far been recorded. Aside from the M7.4 aftershock, the largest of these was a magnitude 5.9 earthquake on Monday 14\textsuperscript{th} April. More strong aftershocks are expected to occur.
Seismic waves took just 21 minutes to travel through the Earth from the earthquake to the UK!
Magnitude 7.6 & 7.4, SOLOMON ISLANDS

Saturday 12th April 2014 20:14:39 UTC
Sunday 13th April 2014 20:14:39 UTC

Seismogram recording from a school seismometer in Liverpool

First seismic waves arrive in Liverpool

Body waves (travel through centre of the Earth)

Surface waves
Higher amplitude, travel close to Earth’s surface
Magnitude 7.6 & 7.4, SOLOMON ISLANDS

Saturday 12th April 2014 20:14:39 UTC
Sunday 13th April 2014 20:14:39 UTC

Find out more....

- BGS (British Geological Survey) – seismology and earthquakes – frequently asked questions
  [http://www.earthquakes.bgs.ac.uk/education/faqs/faq_index.html](http://www.earthquakes.bgs.ac.uk/education/faqs/faq_index.html)

- IRIS (Incorporated Research Institutions for Seismology) – learning about earthquakes
  [http://www.iris.edu/hq/programs/education_and_outreach/students](http://www.iris.edu/hq/programs/education_and_outreach/students)

- UK School Seismology Project – classroom activities, videos and support documents
  [http://www.bgs.ac.uk/schoolseismology/home.html](http://www.bgs.ac.uk/schoolseismology/home.html)

- USGS (United States Geological Survey) – FAQs, glossary, posters, animations

- USGS summaries of the Solomon Islands earthquakes
  [http://earthquake.usgs.gov/earthquakes/eventpage/usc000phx5#summary](http://earthquake.usgs.gov/earthquakes/eventpage/usc000phx5#summary)
  [http://earthquake.usgs.gov/earthquakes/eventpage/usc000piqj#summary](http://earthquake.usgs.gov/earthquakes/eventpage/usc000piqj#summary)

- BBC news report on the earthquake