

NEW FAULT IN INDIAN OCEAN MAY TRIGGER QUAKES IN FUTURE: STUDY

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This April 11, 2012 file photo shows patients being evacuated from a hospital after a massive 8.6-magnitude earthquake hit the western coast of Sumatra, in Banda Aceh in Aceh province. Scientists say a new plate boundary may be forming on the floor of the Indian Ocean as a result of that quake -- the largest to hit the Andaman-Sumatra region -- and have warned that the new fault system could trigger more quakes in the future.

A new plate boundary may be forming on the floor of the Indian Ocean as a result of the largest earthquake that shook the Andaman-Sumatra region in 2012, according to scientists who warn that the new fault system could trigger more quakes in the future.

Researchers, including those from the Nanyang Technological University in Singapore and the Indonesian Institute of Sciences, have found evidence of a possible new plate boundary forming on the floor of the Indian Ocean in the Wharton Basin.

A slip-strike quake occurs when two plates slide horizontally against one another. Such quakes can be caused by deformations that occur in plates distant from fault lines as pressure builds up across a plate. They can lead to inter-plate earthquakes and cause a plate to break, resulting in a new boundary and this in turn can lead to even more quakes. It is this scenario that the researchers believe happened in 2012 when two earthquakes struck the Andaman-Sumatran regio (north-west part) of the Indian Ocean — the largest inter-plate earthquakes ever recorded.

Seismic data analysis

Researchers studied seismic data that was recorded before, during and after the 2012 quakes and conducted sea floor depth analysis by venturing into the ocean aboard a research vessel.

They created a high-resolution imagery of the sea floor, which unveiled deformations that had occurred, *Phys.org* reported. The analysis showed a new fault system had developed in the area off the coast of Sumatra that was involved in the 2012 quakes.

The data also showed that the plate had broken along a 1,000 km fracture zone, resulting in a new plate boundary — one that is likely to be the site of future fault-slip quakes.

The study was published in the journal *Science Advances* .

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