

Earthquake (Mw 6.8) on 24th March 2011 caused by “international active fault” extending in Myanmar, Laos and China

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In 24 March 2011, an earthquake at the scale of Mw 6.8 occurred near Tarlay in Myanmar, which is located in the border region of China, Laos, Thailand called Golden Triangle. The news about the earthquake was released not by an organization of Myanmar but by US Geological Survey.

In the past century, many significant and destructive earthquakes occurred in and around the Golden Triangle region including the 1976 Longling earthquakes (Mw 6.7 and Mw 6.6), the 1988 Lancang earthquake (Mw 7.0), and the 1995 Menglian earthquake (Mw 6.8). The 2011 Tarlay earthquake is the most recent in this series.

The Golden Triangle region is bounded by two major strike-slip boundaries: the Red River and the Sagaing fault zones. Between these zones, numerous lesser strike-slip faults cut a region of rugged relief that ranges in elevations from 500 to 3000 m. Most of these lesser faults strike northeast-southwest and are arcuate. Nam Ma fault, 215 km long, running through Myanmar, Laos and China is one of the faults. By field observation after the shock, Soe et al. (2014) confirms that the earthquake resulted from rupture of a structurally distinct segment of the Nam Ma fault, bounded on the west by the fault's terminus and on the east by the Tarlay basin stepover. If the 215 km Nam Ma fault were to rupture entirely in a single event, the magnitude of the resulting earthquake would likely be about Mw 7.7.

As the active faults cross over several countries and must damage a wide area, systematic observation under international cooperation is required.

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