This study focuses on the southern Sagaing fault in the lower Burma, where the latest destructive event is the Pegu earthquake (M = 7.3) in 1930. Buddhist documents from ancient Pegu record 34 strong earthquakes in the past 2.3 millennia.

We found its fault trace cuts through and offsets an 840 years old ancient city-wall. The city wall’s age is indicated from the descriptions in Burmese history. The offset on the city-wall is 6 m after accounting geomorphologically for the differential sedimentation. This result yields a 14 mm/yr approximate slip rate along this right-lateral fault, which is close to the rate estimated from previous GPS and geological studies.

The number of earthquakes involved in creating the 6 m offset is currently unknown. Candidates include historical earthquakes in 1582, 1644, 1768, 1830, 1888, 1913 and 1917 C.E. Paleoseismic excavations within the ancient city may well yield evidence of discrete offsets that we will be able to ascribe to specific large earthquakes in the historical record.

Offset ancient city-wall in the Sagaing fault, Burma (Myanmar)

- Plausible slip rate and historical events

Yu Wang1, Thura Aung2, Soe Min2, Kyaw Kyaw Lin1, Soe Thura Tun2, Kerry Sieh1,4, U Than Myint6

1 Tectonics Observatory, California Institute of Technology
2 Myanmar Earthquake Committee, MES
3 Department of Meteorology and Hydrology, Myanmar
4 Earth Observatory of Singapore, NTU

Offset City-Wall

Acknowledgement

We are specially thanks to Yan-Gui Chen at National Taiwan University for his use of the City-Wall Programme during the survey in 2008. We also appreciate for the help from Dr. Witt Bier, who has the expert knowledge about the city-wall.