

HIGH RESOLUTION EARTHQUAKE LOCATIONS IN THE TIBETAN PLATEAU

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In 1997, a large ($M_w=7.5$) earthquake occurred in a remote region within the Tibetan Plateau. The earthquake had two surface ruptures that were identified using satellite information. One of the outstanding problems associated with the plateau is how it is responding to tectonic forces, and how those forces are released in earthquakes. Seismicity within the plateau is disperse, and there are no clear seismogenic zones. However, there are large strike-slip faults within the plateau that are releasing the stress associated with the Indian-Eurasian collision. We revisit the 1997 earthquake sequence (mainshock and aftershocks) and try to obtain high precision earthquake locations using the latest seismological techniques. Using this information may reveal insights into the internal deformation of the plateau, and also will benchmark the latest location techniques by validating them with associated surface ruptures. Our preliminary results indicate that high precision locations, in conjunction with other techniques, reveal a secondary surface rupture occurred aseismically, an unusual result. This suggests that the plateau is a structurally weak geologic feature.

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