

Slow earthquake in Afghanistan detected by InSAR

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The Chaman fault system forms a prominent ~900-km-long left-lateral transform plate boundary between the Indian and Eurasian plates in Afghanistan and Pakistan. Here we show satellite radar interferometry data that revealed an afterslip (or slow earthquake) signal following an earthquake of magnitude 5.0. This slow slip episode lasted for more than a year, and accompanied a widespread creep signal that occurred at least ~50 km along the fault. We detected no continuous surface slip before the earthquake during the 1.5 years sampled by our data. This finding of long-lasting widespread afterslip demonstrates that the plate motion along the Chaman Fault is accommodated by slow slip episodes following moderate earthquakes, and suggests that a potential for magnitude 7-class earthquakes was significantly reduced. The duration and moment release of the detected afterslip are inconsistent with the recently proposed scaling law for slow earthquakes.