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EARTH: Well-healed Faults Produce High-Frequency Earthquake Waves

Alexandria, VA – Much like our voices create sound waves with a variety of low and high pitches, or frequencies, earthquakes produce seismic waves over a broad spectrum. The seismic waves' frequencies determine, in part, how far they travel and how damaging they are to human-made structures. However, the inaccessibility of fault zones means that very little is known about why and how earthquakes produce different frequencies. With the help of a new tabletop model, scientists have now identified how a process known as fault healing can shape seismic waves and potentially alter their frequencies.

Fault healing, which can occur on all types of faults, is akin to a wound healing. Over time, changes in pressure, temperature and mineralization can increase the contact area between two sides of a fault, essentially welding the two sides together. When the fault finally ruptures, the frequency of seismic waves released is higher than it otherwise would have been, potentially causing much more damage. What factors promote fault healing, and how will it influence seismic hazard assessments in the future? Read the story online at <http://bit.ly/YeQGUE> and find out!

All shook up? Make sure to check out the other great stories in this month's issue of EARTH Magazine! Expose yourself to the Buckskin Glacier in Denali National Park; detect underground nuclear explosions with satellites; and discover the dark side of kerosene lamps all in this month's issue of EARTH.

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