

# How did Mexicali earthquake affect Southern California fault lines? Scientists seek answers

**Hector Becerra, Los Angeles Times, 6-25-10**

The magnitude 7.2 Mexicali earthquake in April was destructive, killing two people and causing more than \$90 million in damage in California alone.

But scientists are studying why it wasn't worse. Specifically, they are studying why the quake did not trigger more seismic activity along fault lines to the north of the epicenter in Southern California. Had the quake rattled those fault lines, it would have been felt more strongly closer to Los Angeles.

"We're right in the thick of trying to understand that," said Andrea Donnellan, a Jet Propulsion Laboratory geophysicist.

The Baja California fault that broke during the quake is in close proximity to several faults north of the border, including the Elsinore, the San Jacinto and the San Andreas faults. The Whittier fault, which triggered a destructive temblor in 1987, lies on the north end of the Elsinore fault. The Elsinore fault is closest to the Mexican fault where the Easter Sunday quake occurred.

The Elsinore fault is a long one that hasn't ruptured in recorded history, Donnellan said, but it's likely only a matter of time. By analyzing satellite and other data and performing computer modeling, scientists want to know how the various faults affect each other, she said.

Donnellan added that aftershocks can trigger quakes in other faults, and that sometimes there is a lag time between a quake and activity on another fault.

The 7.2 quake caused ground deformities in both countries, causing the ground to shift downward and horizontally 31 inches near Calexico on the American side, and up to 10 feet near the epicenter on the Mexican side.

"If the 7.2 quake in Mexico continued along the Elsinore fault, it could have continued into the Whittier fault," said Eric Fielding, another JPL geophysicist. "It didn't. But we want to understand how faults in Mexico are linked to faults like the Elsinore."

Although it's possible for a very large quake on one fault to send tremors along the span of another fault, faults usually break in segments, so it would normally take very potent quakes to do that.

Though it hasn't ruptured in recorded time, Donnellan said the Elsinore fault, which links up with other potentially devastating faults, is capable of "producing very big quakes."